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THE TELECOMMUNICATIONS ACT, 2023

A Unified Legal Framework for India's Connected Future

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CHAPTER 1

Historical Evolution: From the Telegraph Act, 1885 to Liberalisation

1.1 The Indian Telegraph Act, 1885: Colonial Origins

The Indian Telegraph Act, 1885 (Act XIII of 1885) was enacted during the British colonial period to establish the government's exclusive privilege over telegraphic communications across British India. Drafted in an era when the electrical telegraph was the most advanced communication technology available, the Act vested in the Government of India the right to establish, maintain, and work telegraphs, and created the legal basis for a state monopoly that would persist, in various forms, for over a century. The legislative philosophy underlying the 1885 Act — that telecommunications was an inherently governmental function, necessary for colonial administration, national defence, and revenue generation — shaped the institutional architecture of Indian telecommunications well into the liberalisation era.

The drafting of the 1885 Act reflected both domestic imperatives and British imperial precedent. The Electric Telegraph Act, 1863 (United Kingdom) and the Telegraph Act, 1869 (United Kingdom) provided the template. The definition of "telegraph" in Section 3(1AA) of the Indian Act was constructed with remarkable breadth: "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." This definition — which pre-dated the invention of radio broadcasting, television, the internet, and mobile telephony — was interpreted by successive courts as encompassing all these subsequent technologies, a feat of definitional durability that enabled the 1885 Act to serve as the governing statute for over 130 years.

The administration of the 1885 Act was vested in the telegraph authority — initially the Director General of Posts and Telegraphs, and later the Secretary to the Government of India in the Department of Telecommunications. The Act conferred on the government powers including the right to place telegraph lines across any property, to intercept messages on grounds of public emergency or public safety (under Section 5(2)), to establish telegraph offices, and to license private operators under Section 4. These powers were exercised without the procedural safeguards characteristic of modern regulatory law, reflecting the executive-dominated administrative culture of the colonial and immediate post-independence periods. The monopoly

structure of the 1885 Act left no space for private investment, and the consequent underinvestment in telecommunications infrastructure became, by the 1980s, a significant constraint on India's economic development.

The criminal and civil sanctions established by the 1885 Act for violations of the government monopoly and for interference with telegraph infrastructure were an important feature of the regulatory framework. Section 20 of the 1885 Act made it an offence to wilfully damage, remove, or tamper with any telegraph line, post, or instrument — an offence that acquired renewed importance as India's telecommunications infrastructure grew more extensive and more vulnerable to physical attack. The Act also created offences for the establishment of unauthorised telegraphs and for the transmission of false or indecent messages. These criminal provisions, while amended several times, remained in force until the commencement of the corresponding provisions of the Telecommunications Act, 2023.

1.2 The Indian Wireless Telegraphy Act, 1933

The Indian Wireless Telegraphy Act, 1933 (Act XVII of 1933) was enacted to specifically regulate the possession and use of wireless telegraphy apparatus — a technology that had developed significantly since the passage of the 1885 Act. Radio communication posed a particular regulatory challenge because of the shared nature of the radio frequency spectrum: unlike wireline telecommunications where each circuit is physically separate, radio communications inherently involve shared resources susceptible to harmful interference. The 1933 Act addressed this by making it an offence to possess or use wireless telegraphy apparatus without a licence granted by the Central Government, and by establishing the licensing framework for wireless communications administered by the Wireless Planning and Coordination (WPC) Wing of the Department of Telecommunications.

The WPC Wing, established under the authority of the 1933 Act, evolved into the primary spectrum management authority in India. The Wing manages the National Frequency Allocation Plan (NFAP), which allocates different portions of the radio frequency spectrum to different categories of users (telecommunications, broadcasting, defence, meteorology, scientific research, etc.) in accordance with the International Telecommunication Union's (ITU) Radio Regulations. The WPC processes frequency assignment applications, issues wireless operating licences, monitors the radio frequency environment for harmful interference, and represents India at ITU World Radiocommunication Conferences (WRCs) — the international forums at which the global allocation of spectrum is determined. The WPC's role, while modified by the Telecommunications Act, 2023, remains central to spectrum management.

The 1933 Act's licensing regime for wireless apparatus created significant compliance complexity as consumer electronics became pervasive. By the 2000s, virtually every mobile phone, Wi-Fi router, Bluetooth headset, and garage door opener was technically wireless telegraphy apparatus within the Act's definition and required a licence. The WPC Wing responded by issuing general licences (and eventually equipment type approval frameworks) that covered standard consumer devices, but the underlying statutory framework remained cumbersome. The Telecommunications Act, 2023 rationalises this framework by integrating the wireless equipment authorisation requirements into the unified authorisation and spectrum assignment framework, eliminating the anomaly of a 1933-era statute governing 21st-century consumer electronics.

1.3 Pre-Liberalisation Monopoly: The Posts and Telegraph Era

From independence in 1947 until the commencement of the liberalisation process in the early 1990s, Indian telecommunications were operated as a direct state monopoly through the Posts and Telegraph Department (later the Department of Telecommunications). The P&T; Department operated all telephone exchanges, trunk dialling systems, telex networks, and submarine cable landing stations. The monopoly structure, while consistent with the prevailing international model of state-owned telecommunication operators (PTTs) that dominated global telecommunications until the late 1980s, severely constrained the development of Indian telecommunications. India's teledensity — the number of telephone connections per hundred population — remained among the lowest in Asia, with fewer than 5 million connections for a population of over 800 million by the late 1980s.

The management of telecommunications as a government department rather than a commercial enterprise created structural impediments to investment and efficiency. Capital expenditure on telecom infrastructure was constrained by the government's budgetary cycles and competing demands on public funds. Procurement was subject to government purchase procedures that were slow and susceptible to political influence. Tariffs were set more by political than commercial considerations, with residential subscribers cross-subsidised by business users, and urban subscribers cross-subsidising rural subscribers — a pricing structure that was economically inefficient and encouraged excessive urban use while discouraging rural deployment. The waiting period for a telephone connection in major cities was measured in years rather than weeks.

The Seventh Five-Year Plan (1985–90) and the Eighth Five-Year Plan (1992–97) both identified telecommunications as a critical infrastructure sector requiring massive investment to support India's economic ambitions. The fiscal constraints of the Indian state in the wake of the

1991 balance of payments crisis made it impossible to fund this investment from government resources alone. This economic necessity — combined with the influence of advisers such as Sam Pitroda (Technology Adviser to Prime Minister Rajiv Gandhi), who championed the potential of telecommunications for India's development, and the global trend towards telecoms liberalisation pioneered by the United States (AT&T; divestiture in 1984) and the United Kingdom (British Telecom privatisation in 1984) — created the political space for the liberalisation that followed.

1.4 Separation of Functions: Telecom Commission and DoT

A critical institutional precondition for meaningful liberalisation was the separation of the policymaking, regulatory, and operational functions that had been combined in the Posts and Telegraph Department. This separation proceeded in stages. In 1985, telecommunications was separated from postal services with the creation of the Department of Telecommunications (DoT) under the Ministry of Communications. The Telecom Commission was established in 1989 as the apex body for telecommunications policy, exercising the regulatory powers previously vested in the Posts and Telegraph Department. The Centre for Development of Telematics (C-DOT) was established in 1984 to develop indigenous digital switching technology, reducing India's dependence on imported telecom equipment.

The next major institutional step was the corporatisation of the government-owned telecom operations. The Videsh Sanchar Nigam Limited (VSNL) was incorporated in 1986 to manage international telecommunications, and Mahanagar Telephone Nigam Limited (MTNL) was incorporated in 1986 to operate telephone services in Delhi and Mumbai. The listing of MTNL and VSNL on the Bombay Stock Exchange (and MTNL on the New York Stock Exchange as an ADR programme) introduced a degree of commercial accountability to these entities, though government ownership and control remained dominant. The transformation of the remaining domestic telecom operations into Bharat Sanchar Nigam Limited (BSNL) in 2000 completed the corporatisation of the government's telecom operations, though BSNL's performance has remained challenged by the structural difficulties of a publicly owned operator competing in a liberalised market.

CHAPTER 2

National Telecom Policies 1994–2018: A Policy History

2.1 National Telecom Policy, 1994: Opening the Sector

The National Telecom Policy, 1994 (NTP 1994) announced in May 1994 was India's foundational statement of intent to open the telecommunications sector to private investment. Formulated in the context of the broader economic liberalisation initiated in 1991 under Prime Minister Narasimha Rao and Finance Minister Manmohan Singh, NTP 1994 departed from the exclusive state monopoly model and committed the government to permitting private sector entry in cellular mobile telephone services and value-added services. The policy articulated a vision of telecommunications as a key driver of economic development — an enabler of economic activity across all sectors — and set ambitious targets for telephone penetration, including the goal of providing a telephone in every village by 1997.

The implementation of NTP 1994 was achieved through licences granted under Section 4 of the Indian Telegraph Act, 1885. In the absence of a comprehensive licensing statute, the terms, conditions, and financial obligations of licences were determined entirely by executive discretion and reflected in licence agreements between DoT and private operators. This contractual model of licensing — which treated telecom permissions as commercial contracts between the government and private parties rather than as regulatory authorisations — created the conditions for the massive licence fee disputes and regulatory conflicts that would characterise Indian telecom for the next two decades. The initial cellular licences were granted through a process that was subsequently criticised for lack of transparency, with bid amounts that many operators found they could not sustain as subscriber acquisition fell short of projections.

NTP 1994's most significant structural gap was the absence of an independent regulatory body. The government simultaneously acted as the policymaker (through the Ministry of Communications), the licensor (through DoT), the owner and manager of the incumbent operators (BSNL, MTNL, and VSNL), and the adjudicator of disputes — a fundamental conflict of interest that undermined both the perception and reality of regulatory neutrality. Private operators entering the market had reasonable grounds to fear that regulatory decisions would systematically favour the government-owned incumbents, particularly in matters of interconnection (access to the incumbent's network at fair and non-discriminatory rates was essential to the commercial viability of new entrants). The establishment of an independent regulator was identified as a priority in NTP 1994 itself, but action was slow.

2.2 TRAI Act, 1997: Regulatory Architecture

The Telecom Regulatory Authority of India Act, 1997 (Act 24 of 1997) established TRAI as India's independent telecommunications regulator. The establishment of TRAI was partly a response to the market realities of the post-NTP 1994 environment — private operators were in dispute with DoT over interconnection terms, licence fee computations, and regulatory conditions, and needed an independent body to adjudicate these disputes — and partly a concession to the requirements of private investors who regarded an independent regulator as a prerequisite for sustained private investment in the sector. TRAI was modelled on the UK's OFTEL (Office of Telecommunications), established in 1984, and on the US Federal Communications Commission, though India's constitutional framework and the political sensitivities around the government's role in telecommunications required adaptations.

The original TRAI Act, 1997 created a regulatory body with broad powers including the power to set tariffs, the power to issue regulations on matters of interconnection, quality of service, and consumer protection, and the power to adjudicate disputes between operators and between operators and users. The combination of regulatory and adjudicatory functions in a single body was challenged by the government and by operators who were dissatisfied with particular TRAI decisions. The TRAI (Amendment) Act, 2000 separated the adjudicatory function from TRAI's regulatory function, creating the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) as a separate adjudicatory body. TRAI retained its regulatory, advisory, and tariff-setting functions; TDSAT became the forum for dispute adjudication and the hearing of appeals against TRAI orders.

The relationship between TRAI and the Central Government has been institutionally complex throughout TRAI's existence. The TRAI Act creates TRAI as an independent body insulated from executive direction in its regulatory decisions, but the government retains final authority over key decisions including spectrum allocation, licensing, and the acceptance or rejection of TRAI's recommendations on these matters. In Cellular Operators Association of India v. TRAI, (2016) 7 SCC 703, the Supreme Court held that TRAI cannot challenge the Central Government's decision to reject or modify its recommendations on spectrum or licensing, and that TDSAT's appellate jurisdiction does not extend to reviewing the government's exercise of its licensing discretion. This constitutional architecture — of an independent regulator with advisory rather than binding powers on licensing and spectrum — reflects the Indian constitutional principle that executive power cannot be fully delegated to a non-elected body.

2.3 National Telecom Policy, 1999: The Migration Package

The National Telecom Policy, 1999 (NTP 1999) was necessitated by the financial distress of cellular operators licensed under NTP 1994. The operators had submitted bids for cellular licences on the basis of aggressive subscriber growth projections; actual growth was far slower, leaving them unable to meet their fixed licence fee obligations. The risk of large-scale operator defaults — which would have set back private sector participation in Indian telecom for years — prompted the government to develop the Migration Package: an offer to convert operators' fixed licence fee obligations to a revenue-sharing arrangement (an annual licence fee calculated as a fixed percentage of Adjusted Gross Revenue, or AGR). The vast majority of operators accepted the Migration Package, restructuring their financial obligations on terms that made their business models viable.

The AGR-based revenue sharing model introduced by NTP 1999 proved enormously controversial over the following two decades. The definition of AGR — specifically, whether it encompassed only revenue from licensed telecom activities or the total gross revenue of the operator including income from non-telecom activities such as dividends, interest, property rental, and sale of assets — was contested between DoT and the operators from the inception of the regime. DoT maintained consistently that AGR meant total gross revenue; operators insisted that only telecom revenue should be included. The dispute generated massive contingent liabilities that escalated over time as the sector grew and interest and penalties accrued on disputed amounts. The Supreme Court's resolution of the dispute in Union of India v. Association of Unified Telecom Service Providers of India, (2020) 3 SCC 525 — finding in favour of DoT's broad definition of AGR — resulted in demands of approximately Rs. 1.47 lakh crore against the major operators and contributed to the restructuring of the sector.

NTP 1999 also accelerated liberalisation in a number of areas beyond the cellular sector. The internet services sector was opened to private ISPs in 1998, ending VSNL's monopoly on internet access services. The policy announced the intention to further liberalise basic telephone services, eventually eliminating the duopoly model introduced by NTP 1994 and permitting unlimited entry. It recognised the transformative potential of IT-enabled services for India's economic development — a recognition that proved prescient as India's IT and BPO sectors emerged as global leaders in the following decade, generating employment and foreign exchange on a scale that far exceeded expectations.

2.4 Unified Access Services Licence and the 2003 Reform

The Unified Access Services Licence (UASL), introduced in November 2003 following the recommendations of the Pradeep Baijal Committee and the Deepak Sandhu Committee, was a significant simplification of the fragmented telecom licensing framework that had developed

under NTP 1994 and NTP 1999. Prior to the UASL, separate licence categories existed for cellular mobile services, basic wireline services, limited mobility services, and other categories — each with different licence conditions, fee structures, and spectrum entitlements. The technology-specific licensing model was increasingly anachronistic as technological convergence (particularly the development of CDMA-based technologies that could provide both fixed and mobile services) blurred the boundaries between service categories.

The UASL permitted licensees to provide both wireline and wireless services (using any technology — GSM, CDMA, or combinations thereof) within a licensed service area (telecom circle), subject to a single set of licence conditions and fee obligations. This technology-neutral approach eliminated the regulatory distortions created by separate licence categories and allowed operators to optimise their technology choices based on commercial and technical factors rather than regulatory constraints. The UASL framework also introduced the concept of a "circle" as the primary geographic unit for telecom licensing — a structure that, despite the geographic limitations it created for national service integration, remains the foundation of the Indian telecom licensing framework.

The 2G spectrum allocation controversy that culminated in the Supreme Court's 2012 judgment arose from the process by which additional UASL licences were granted in 2007-08 to new entrants. The then-Telecommunications Minister A. Raja granted licences and spectrum allocations through a process that bypassed standard auction procedures, allocating spectrum to favoured applicants at prices far below market value. The Supreme Court in the 2G Spectrum Case cancelled 122 licences granted in this process, holding that the allocation violated constitutional principles of equality and the State's duty to act as a fair trustee of natural resources, and directed that future spectrum allocations for commercial purposes be conducted through transparent auctions.

2.5 The Unified Licence and National Telecom Policy, 2012

The National Telecom Policy, 2012 (NTP 2012) was framed against the background of two contrasting realities: the spectacular success of mobile telephony in India (with approximately 900 million subscribers, India had become the world's second-largest mobile market) and the profound crisis generated by the 2G Spectrum Case. NTP 2012 sought to articulate a comprehensive vision for the next decade of Indian telecommunications, addressing spectrum management reform, universal broadband connectivity, infrastructure development, technology policy, the regulatory framework, and the promotion of the domestic manufacturing sector.

NTP 2012's spectrum policy framework was directly responsive to the 2G Spectrum Case. The policy articulated the principle — consistent with the Supreme Court's holding — that spectrum is a scarce national resource that must be allocated through transparent, non-discriminatory processes that maximise value to the nation. It endorsed the auction mechanism for commercial spectrum allocation and called for the development of a National Frequency Management Master Plan to provide a long-term roadmap for spectrum availability across all frequency bands. The policy also called for the liberalisation of spectrum trading — allowing operators to buy and sell spectrum usage rights — as a market-based mechanism for efficient spectrum allocation. Spectrum trading guidelines were eventually issued by DoT in 2015, five years after the policy's announcement.

The Unified Licence (UL), introduced in 2013 following the recommendations of the Expert Committee chaired by former TRAI Chairman Dr. Nripendra Misra, replaced the UASL and rationalised the licensing framework further. Under the UL framework, a single overarching licence covered all telecommunications services, with specific services authorised through schedules to the UL. An operator wishing to provide, say, both internet services and cellular mobile services would hold a single Unified Licence with service authorisations for internet services and cellular mobile services attached as schedules. This framework was the direct conceptual predecessor of the authorisation framework introduced by the Telecommunications Act, 2023, and its legacy is visible throughout the 2023 Act's structure.

CHAPTER 3

The Road to the Telecommunications Act, 2023

3.1 Drivers of Legislative Reform

By the mid-2010s, the case for replacing the Indian Telegraph Act, 1885 with modern legislation had become overwhelming. The 1885 Act, despite its definitional durability, was structurally inadequate as the foundation for a comprehensive modern regulatory framework. It lacked provisions for spectrum trading, spectrum sharing, and spectrum leasing; it had no framework for critical infrastructure protection; it provided no basis for regulatory sandboxes or technology innovation promotion; its right-of-way provisions were inadequate for dense small-cell deployments; and its penalty framework — centred on criminal sanctions — was ill-suited for agile regulatory enforcement in a fast-moving commercial sector. The Telecom Regulatory Authority had repeatedly recommended comprehensive legislation as a necessary complement to its own regulatory efforts.

The transformations in the Indian telecom market since 1885 — and even since 1997 — made the inadequacies of the existing framework increasingly apparent. The mobile subscriber base had grown from zero to over one billion. India had moved from a voice-dominated telecoms market to a data-dominated market, with Indian consumers among the world's highest mobile data users per capita following the disruption caused by Reliance Jio's entry in 2016. The deployment of 5G networks required new spectrum bands, new infrastructure architectures, and new security frameworks that the 1885 Act was not designed to address. The growth of satellite communications — including low-earth-orbit broadband constellations — required a coherent legal framework integrating space and telecom regulation that straddled the jurisdictions of the Department of Telecommunications and the Department of Space.

The Supreme Court's jurisprudence in the AGR Case, the 2G Spectrum Case, and other matters had also highlighted specific legislative deficiencies. The AGR controversy arose in part from the absence of a statutory definition of AGR — a definition that the 2023 Act prudently leaves to rules rather than repeating the error of leaving it to contract. The 2G Spectrum Case highlighted the constitutional imperative for transparent auction-based spectrum allocation for commercial purposes, which the 2023 Act implements through the First Schedule's specification of auction-required spectrum uses. The Anuradha Bhasin judgment on internet shutdowns highlighted the need for a statutory framework for service suspension that incorporated the proportionality requirements of the Puttaswamy privacy jurisprudence.

3.2 The Indian Telecommunication Bill, 2022: Legislative Process

The Indian Telecommunication Bill, 2022 was introduced in the Lok Sabha on 19 December 2022 and referred, without debate, to the Parliamentary Standing Committee on Communications and Information Technology chaired by Shri Prahlad Joshi. The Standing Committee invited submissions from industry associations, civil society organisations, academic experts, and government departments, and held consultations with key stakeholders including the Cellular Operators Association of India (COAI), the Internet and Mobile Association of India (IAMAI), the Internet Freedom Foundation (IFF), the Broadband India Forum, and representatives of over-the-top service providers. The Committee submitted its report in March 2023, making recommendations on several significant aspects of the Bill.

The Standing Committee's report recommended, among other matters: a clearer distinction between OTT communication services and OTT content services (to avoid inadvertently bringing content platforms within the telecoms licensing framework); stronger safeguards for users' rights in the context of the interception and surveillance provisions; greater specificity in the definition of "telecommunication services" to reduce definitional ambiguity; a more explicit framework for the right of way provisions to ensure their implementability across different categories of public property; and modifications to the spectrum management provisions to address concerns raised by operators about the uncertainty surrounding spectrum auction timelines and reserve prices. The government accepted a number of these recommendations in the revised Bill that became the enacted statute.

3.3 Key Controversies during Legislative Process

The most contentious aspect of the legislative process was the potential application of the telecom licensing framework to over-the-top (OTT) communication services. The draft Bill's definition of "telecommunication services" was broad enough — as technology industry commentators noted — to encompass messaging applications such as WhatsApp, Signal, and Telegram, and voice-over-internet services such as WhatsApp Calling and FaceTime. Technology companies and digital rights organisations argued strongly that the imposition of telecom licensing requirements on OTT communication services would be disproportionate, would stifle innovation, and would impose compliance burdens that would disadvantage smaller players. Incumbent telecom operators argued, with equal force, for regulatory parity between their services and OTT substitutes.

The government's response to the OTT controversy was to decline to expressly exclude OTT services from the statutory definition, while administratively clarifying that OTT services

would not be subject to licensing requirements under the 2023 Act at the initial stage, and that the question of OTT regulation would be addressed through TRAI's recommendations and separate policy determinations. This approach — preserving legislative flexibility while providing administrative assurance — satisfied neither side of the debate fully, but reflected a pragmatic political judgment about the constraints on achieving consensus on a highly contested issue. The question of OTT regulation remains unresolved as of the time of preparation of this booklet, and the 2023 Act's broad definitional framework preserves the government's legal ability to bring OTT services within the regulatory perimeter without further legislative amendment.

The interception and surveillance provisions of the Bill also attracted significant criticism. Civil liberties organisations, including the Internet Freedom Foundation, argued that the Bill's provisions on government access to telecom data and the powers of interception and service suspension failed to incorporate adequate safeguards for the fundamental rights to privacy and freedom of expression recognised in the Puttaswamy and Anuradha Bhasin judgments respectively. The Standing Committee's report noted these concerns and recommended stronger safeguards, but the final enacted text does not fully incorporate judicial oversight requirements or the transparency mechanisms (such as mandatory publication of interception statistics) that civil society organisations had called for. Challenges to the constitutionality of the interception provisions have been filed before the Supreme Court and are pending.

3.4 Enactment and Commencement

The Telecommunications Bill, 2023 was passed by the Lok Sabha on 20 December 2023 and by the Rajya Sabha on 21 December 2023, with very limited debate given the tight parliamentary calendar at the end of the session. The Bill received Presidential assent on 24 December 2023 and was published in the Gazette of India Extraordinary the same day. The Act came into force immediately upon gazette publication for provisions specifically so notified, with the Central Government retaining the power to appoint different commencement dates for different provisions through subsequent notifications. This staggered commencement mechanism allows the government to operationalise the new framework progressively, commencing with the provisions that are operationally ready while deferring those that require additional preparatory work (such as the framing of rules, the establishment of new institutional machinery, or the implementation of transitional arrangements).

The Acts repealed by the Telecommunications Act, 2023 — the Indian Telegraph Act, 1885; the Indian Wireless Telegraphy Act, 1933; and the Telegraph Wires (Unlawful Possession) Act, 1950 — continue to apply to matters arising before the commencement of the corresponding provisions of the 2023 Act and to pending proceedings, as provided in the transitional provisions

of Section 36. The practical implication is that practitioners working on matters arising from events or transactions before the commencement of relevant provisions of the 2023 Act must continue to work with the old statutory framework, even as the new Act governs prospective matters. This dual-track situation will persist for several years until all transitional matters have been resolved.

CHAPTER 4

Overview and Architecture of the Telecommunications Act, 2023

4.1 Structure and Organisation

The Telecommunications Act, 2023 comprises forty-four sections organised across nine chapters, supplemented by a First Schedule and comprehensive transitional provisions. The nine chapters address: General Provisions (Chapter I — definitions and scope); Telecommunication Services and Networks (Chapter II — authorisation, conditions, and related matters); Spectrum (Chapter III — assignment, trading, and sharing); Right of Way (Chapter IV — access to property for infrastructure deployment); Universal Telecommunication (Chapter V — the Digital Bharat Nidhi); Standards, Security and Research (Chapter VI — equipment standards, security obligations, and regulatory sandbox); Offences and Penalties (Chapter VII — civil penalties and criminal sanctions); Adjudication (Chapter VIII — the Adjudicating Officer and appellate framework); and Miscellaneous (Chapter IX — rule-making, repeals, savings, and transitional provisions). This architecture provides a logical, comprehensive organisation of the statute's subject matter.

The Act reflects a conscious legislative choice to operate as framework legislation — establishing statutory principles, powers, and obligations at a high level while delegating the operational details to rules made by the Central Government under the Act's rule-making provision (Section 42) and to regulations made by TRAI under the TRAI Act. This framework approach has important implications: the Act itself is relatively short and accessible, but the full regulatory framework governing the telecom sector requires reference not only to the Act but to the substantial body of rules, regulations, notifications, and TRAI orders that constitute the operational regulatory framework. Practitioners must maintain awareness of developments across this full regulatory ecosystem, not merely the parent statute.

A notable feature of the Act's architecture is its express recognition — in Section 30 — of TRAI's continuing role as the independent economic regulator for the telecom sector. The Act does not attempt to codify TRAI's functions or to modify the TRAI Act, 1997 (which remains the primary statute governing TRAI's constitution and powers). Rather, it creates a complementary regulatory framework in which DoT exercises its expanded powers under the 2023 Act while TRAI continues to exercise its regulatory functions under the TRAI Act. The coordination between these two regulatory bodies — and the avoidance of conflicting requirements — will be

one of the key implementation challenges in the years following the Act's commencement.

4.2 The Framework Legislation Approach

The choice of framework legislation has precedent in Indian telecom regulation: the TRAI Act, 1997 similarly established the regulatory institution and its powers at a high level, leaving the detailed regulatory requirements to TRAI's regulations. The Electricity Act, 2003 — another major infrastructure sector statute — adopted a similar framework approach, and its experience provides relevant lessons. The key governance challenge with framework legislation is maintaining coherence and consistency in the large body of subsidiary legislation that fills the statutory framework. Without careful coordination, the rules, regulations, and notifications made under a framework statute can become internally inconsistent, overlapping, or contradictory — creating compliance uncertainty for regulated entities and litigation risk for the government.

Parliamentary oversight of subsidiary legislation under the 2023 Act operates through the negative resolution procedure prescribed in Section 43: rules made by the Central Government under the Act are to be laid before both Houses of Parliament and may be annulled by a resolution of either House within the period prescribed. This form of oversight is generally considered less robust than the affirmative resolution procedure (under which subsidiary legislation requires positive approval by Parliament before coming into force), particularly for technical and commercially sensitive regulatory instruments where Parliament's capacity for detailed scrutiny is limited. The Standing Committee process that shaped the 2023 Act's enactment is not available for the ongoing review of subsidiary legislation.

4.3 Constitutional Basis

The Telecommunications Act, 2023 is enacted under Entry 31 of List I (Union List) to the Seventh Schedule of the Constitution of India: "Posts and telegraphs; telephones, wireless, broadcasting and other like forms of communication." This is an exclusive Union subject under Article 246 read with the Seventh Schedule. The breadth of Entry 31 — particularly the phrase "other like forms of communication" — is the constitutional basis for bringing the full range of modern telecommunications technologies within Parliament's legislative competence. Courts have consistently interpreted Entry 31 broadly, holding that it covers not merely the original telegraph and telephone technologies but all forms of electronic communication including satellite, internet, and mobile services.

The constitutional basis of the Act's right-of-way provisions requires more careful analysis. The right of way framework necessarily engages with land (Entry 18, State List), local bodies (Entry 5, State List), and municipal governance (Entry 6, State List) — all subjects primarily

within state legislative competence. Parliament's competence to legislate on these state subjects, in the context of telecommunications infrastructure, rests on the doctrine of incidental or ancillary power: Parliament may legislate on matters incidentally connected to its substantive legislative domain even if those matters also fall within state legislative competence. The right-of-way provisions of the 2023 Act represent Parliament's exercise of this incidental power to create a national RoW framework that overrides inconsistent state and local regulations — an exercise that is broadly consistent with constitutional jurisprudence but is likely to be challenged by states that view the RoW framework as an encroachment on their municipal governance powers.

4.4 Interaction with the TRAI Act, 1997

A fundamental interpretive question for practitioners is the relationship between the Telecommunications Act, 2023 and the TRAI Act, 1997. The two statutes operate in the same regulatory space — the telecommunications sector — but have distinct primary purposes and institutional bases: the 2023 Act is DoT's primary regulatory instrument, while the TRAI Act is TRAI's constitutive statute and the foundation of its regulatory powers. Where the two statutes address the same subject matter (for example, both the 2023 Act and TRAI's QoS regulations under the TRAI Act may address the quality of telecommunications services), practitioners must determine which provision takes precedence. The general principle of statutory interpretation — that a later Act prevails over an earlier Act on the same subject matter, to the extent of any inconsistency — provides some guidance, but the 2023 Act does not expressly address its relationship with the TRAI Act and does not amend or override any specific provision of the TRAI Act.

The most practically significant aspect of the TRAI-DoT interaction under the 2023 Act framework is the question of who sets tariffs and quality of service standards for telecommunications services. Under the TRAI Act, TRAI has the power to set tariffs (under Section 11(2)) and to issue QoS regulations (under Section 11(1)(b)(v)). Under the 2023 Act, the conditions of authorisations (which are set by DoT) may also address quality and pricing matters. The potential for conflicting or overlapping requirements from these two sources must be managed through coordination between TRAI and DoT, and through clear drafting of rules under the 2023 Act that respects TRAI's established regulatory jurisdiction.

CHAPTER 5

Key Definitions and Interpretative Framework

5.1 "Telecommunication" and "Messages"

Section 2(21) of the Telecommunications Act, 2023 defines "telecommunication" to mean "transmission, emission or reception of any messages, by wire, radio, optical or other electro-magnetic systems." The definition is deliberately technology-neutral: it does not specify any particular technology or standard, instead encompassing all possible means of transmitting or receiving messages through electromagnetic phenomena. The inclusion of "optical" systems ensures that fibre optic communications — the backbone of modern broadband networks — are within the definition's scope, as does the reference to "other electro-magnetic systems," which would encompass infra-red, free-space optical, and any future electromagnetic communication technologies.

"Messages" are defined in Section 2(14) to mean "any sign, signal, writing, text, image, sound, video or intelligence of any nature transmitted by telecommunication." The comprehensive enumeration — signs, signals, writing, text, images, sound, video — covers the full range of contemporary digital content, and the phrase "intelligence of any nature" serves as a catch-all that encompasses any form of information that can be transmitted electronically. The breadth of the definition of messages ensures that the 2023 Act applies to all forms of digital communication: voice calls, video calls, text messages, images, streaming video, internet data traffic, and machine-to-machine communications are all encompassed. This definitional comprehensiveness is essential for a statute designed to govern India's digital communications ecosystem for the next several decades.

The interaction between the definition of "telecommunication" in the 2023 Act and the broader concept of "electronic communication" that is used in some other Indian legislation (including the Information Technology Act, 2000) requires attention. The IT Act's concept of "electronic communication" is broad and overlaps significantly with the 2023 Act's concept of "telecommunication." Practitioners must be careful not to assume that regulation under one statute displaces regulation under the other: the two statutes operate in overlapping but distinct regulatory spaces, and compliance obligations under both may apply simultaneously to telecom operators who also qualify as "intermediaries" under the IT Act.

5.2 "Telecommunication Services" — Scope and Controversies

Section 2(22) defines "telecommunication services" to mean "services of any description (including broadcasting services, electronic mail, voice mail, data services, audio text services, video text services, radio paging and cellular mobile telephone services) provided by means of any transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature, by wire, radio, optical or other electro-magnetic systems." The parenthetical list of specific service types is illustrative rather than exhaustive; the core of the definition is the functional description — services provided by means of electromagnetic transmission or reception.

The scope of the definition of "telecommunication services" is the most legally contested aspect of the 2023 Act's definitional framework. The potential inclusion of over-the-top communication services — which provide the functional equivalent of traditional telecom services (voice, text, video) through internet applications — has been the subject of industry debate and regulatory consultation. The government's administrative position (that OTT services are not, at this stage, to be regulated as telecommunication services) does not alter the definitional breadth of the statute: the definition is drafted broadly enough to include OTT communication services if the government chooses to exercise its regulatory jurisdiction over them. The legal certainty that OTT operators require — a statutory exclusion from the definition — is absent from the 2023 Act.

The inclusion of "broadcasting services" within the definition of telecommunication services reflects the convergence of broadcasting and telecommunications infrastructure — both are now predominantly provided over internet protocol networks — and creates the potential for a unified regulatory framework for all electronic communications. In practice, broadcasting continues to be regulated under the Cable Television Networks (Regulation) Act, 1995, the Prasar Bharati (Broadcasting Corporation of India) Act, 1990, and related legislation; the 2023 Act does not immediately displace this framework. However, the 2023 Act's definitional inclusion of broadcasting services within the regulatory scope of telecommunications establishes the long-term legislative intention of convergent regulation, and future rules under the Act may address broadcasting-specific issues within the unified telecommunications framework.

5.3 "Authorised Entity", "Telecommunication Network" and "Spectrum"

"Authorised entity" is defined in Section 2(4) to mean "a person authorised by the Central Government under Section 3 to provide telecommunication services, establish, operate, maintain or expand telecommunication networks, or possess radio equipment." The shift from "licensee" (the term used in the Indian Telegraph Act, 1885) to "authorised entity" reflects the Act's conceptual move from a contractual to a regulatory model of permission. Under the contractual model, a licence was a specific contract between the government (as licensor) and the operator

(as licensee); its terms were agreed bilaterally and could only be modified by agreement or revoked on grounds specified in the licence. Under the regulatory model, an authorisation is a regulatory permission granted in the exercise of statutory power; its conditions are determined by regulation rather than negotiation, and the regulator may modify conditions as required in the public interest, subject to constitutional and statutory constraints.

"Telecommunication network" is defined broadly in Section 2(23) to mean "any system or series of systems of electronic elements including equipment, computers, or programme used or intended to be used for telecommunications." The breadth of this definition encompasses not only the physical infrastructure of telecommunications (cables, towers, antenna systems, transmission equipment) but also the software and data systems (network management platforms, billing systems, signalling software, and routing protocols) that are integral to the operation of modern telecommunications networks. This comprehensive definition is important for the application of the Act's security requirements and right-of-way protections, which extend to the full technical architecture of telecommunications networks.

"Spectrum" is defined simply in Section 2(19) as "the radio frequency spectrum." The concise definition belies the enormous regulatory, commercial, and political significance of spectrum in the Indian telecom context. Spectrum is a public resource of immense value: the 2022 5G spectrum auction alone raised approximately Rs. 1.5 lakh crore for the government. The First Schedule to the Act specifies the categories of spectrum that must be assigned by auction for commercial purposes — IMT services, wireless broadband, commercial VSAT, and commercial satellite services — consistent with the Supreme Court's holding in the 2G Spectrum Case that the government must use transparent and competitive processes for the commercial allocation of natural resources.

5.4 "Critical Telecommunication Infrastructure" and "Right of Way"

"Critical telecommunication infrastructure" (CTI) is defined in Section 2(6) as "such telecommunication networks or parts thereof, the disruption of which could cause national security or economic security risk, or risk to public health or safety." The definition encompasses four distinct categories of risk: national security (threats to state sovereignty and defence capabilities), economic security (disruption of economic activity at a national or systemic scale), public health risk (disruption of communications essential for health services), and public safety risk (disruption of emergency communications and law enforcement). The breadth of the definition gives the government considerable scope to designate a wide range of network elements as CTI, from submarine cable landing stations and international internet exchanges to core network elements of major operators.

"Right of way" is defined in Section 2(18) to mean "a right to lay, establish or maintain telecommunication infrastructure in, over, under, or across property (including road, pathway, waterway or railway) that is owned, managed or administered by a local authority, Panchayati Raj institution, public sector undertaking, or Government, or in, over, under or across any other property, but does not include a right to acquire the property." The parenthetical exclusion of any right to acquire property is critical: RoW rights under the 2023 Act are rights of use, not rights of ownership. The holder of a RoW right may lay cables, erect poles, or install small cells on the relevant property, but acquires no ownership interest in that property. This distinction is fundamental to the constitutional validity of the RoW framework — a right of use granted by statute is much less constitutionally problematic than a forced acquisition of property.

5.5 Other Significant Definitions

"Designated authority" is defined in Section 2(8) to mean "an authority designated by the Central Government under this Act." The 2023 Act creates multiple instances of designated authorities for different purposes: the designated authority for critical telecom infrastructure (Section 23), the designated authority for spectrum management (the WPC Wing), and the designated authority for the Digital Bharat Nidhi (Section 29). The flexibility to designate different authorities for different purposes allows the government to assign responsibilities to the most appropriate existing bodies rather than creating new institutions for every regulatory function — an administratively efficient approach that must be balanced against the risk of fragmented accountability.

"Universal telecommunication" is defined in Section 2(24) to mean "provision of telecommunication services to all people in India irrespective of their location and at reasonable and affordable prices." This definition articulates the policy objective of universal service — that every Indian, regardless of geography or economic status, should have access to telecommunications — and provides the basis for the Digital Bharat Nidhi framework that finances universal service programmes. The phrase "reasonable and affordable prices" introduces a price standard that may be justiciable: a service that is technically available but priced beyond the means of ordinary citizens may arguably not satisfy the definition of universal telecommunication.

CHAPTER 6

The Authorisation Framework

6.1 Section 3: The Gatekeeping Provision

Section 3 of the Telecommunications Act, 2023 is the Act's central gatekeeping provision, establishing the authorisation requirement that governs entry into the Indian telecommunications market. Section 3(1) provides that no person shall — without the prior authorisation of the Central Government — (a) provide telecommunication services; (b) establish, operate, maintain, or expand any telecommunication network; or (c) possess radio equipment. Each of these three prohibitions corresponds to a distinct dimension of telecommunications activity: service provision (the commercial provision of communication services to end-users), network operation (the establishment and management of the technical infrastructure through which services are delivered), and radio equipment possession (the use of radio frequency resources that are subject to government allocation under the spectrum framework).

The distinction between service provision and network operation is important in the context of modern telecommunications architectures. "Virtual" operators — who provide services using infrastructure they do not own (mobile virtual network operators, cloud-based communication service providers) — are service providers but not necessarily network operators. Infrastructure providers — who own and operate towers, ducts, and dark fibre but do not provide retail services — are network operators but not service providers. Both require authorisation under Section 3, but the conditions of their authorisations may differ significantly. The regulatory treatment of these different categories of market participants under the 2023 Act framework will be determined by the rules and authorisation conditions prescribed by the Central Government.

The scope of the prohibition on "possession of radio equipment" under Section 3(1)(c) requires careful consideration. Virtually every modern electronic device — smartphones, laptops, tablets, smart TVs, Wi-Fi routers, Bluetooth speakers — contains radio equipment. A literal reading of the prohibition would require authorisation for every person who possesses such a device. The resolution of this potential absurdity lies in the government's power under Section 3(2) to grant class authorisations that cover categories of radio equipment without requiring individual authorisation from each possessor. The existing framework of equipment type approvals and general authorisations for consumer wireless devices (Wi-Fi, Bluetooth, etc.) will continue under the 2023 Act framework through updated class authorisations.

6.2 Class Authorisation vs Individual Authorisation

Section 3(2) of the Telecommunications Act, 2023 enables the Central Government to grant authorisations to a class or category of entities or activities — class authorisations — without requiring individual applications. Class authorisation is an important regulatory tool that reduces administrative burden for low-risk, high-volume categories of telecommunications activity. Under a class authorisation, any entity that meets the conditions prescribed for the class is automatically authorised; no individual application or approval is required. The operator is required to comply with the prescribed conditions as a matter of regulatory obligation, but there is no licence document or authorisation certificate to obtain.

Class authorisation is well established in telecommunications regulation in other jurisdictions: the EU's Electronic Communications Code provides for general authorisation of electronic communications networks and services in Member States (in place of individual licences); Australia's Telecommunications Act, 1997 similarly uses class licensing extensively. Under the 2023 Act, class authorisations are likely to be used for: internet service providers (or at least lower-tier ISPs); public data offices under the PM-WANI framework; infrastructure providers for passive infrastructure; and certain categories of radio equipment possession. Individual authorisation will be required for commercially significant services such as access services (mobile and fixed broadband), national and international long-distance services, and satellite services.

6.3 Conditions of Authorisation

Section 3(4) of the Telecommunications Act, 2023 provides that authorisations shall be subject to such terms and conditions as may be prescribed, including — without limitation — conditions relating to: provision of public emergency services; national security; protection of privacy of messages; quality of service; and payment of fees as a percentage of revenue. These enumerated subjects for authorisation conditions represent the major regulatory concerns that have historically been addressed in Indian telecom licences: security obligations (including interception assistance and trusted equipment requirements), quality of service standards (including coverage obligations and service quality benchmarks), revenue-sharing fee obligations, and public interest obligations (including emergency call handling and universal service contributions).

The revenue-based fee structure — inherited from the AGR-based licence fee model introduced by NTP 1999 — will continue under the 2023 Act framework as the primary financial obligation of authorised entities. The rate of the authorisation fee (currently set at various

percentages of AGR for different service categories) will be prescribed by rules. One of the most practically significant questions for the industry is whether the 2023 Act framework will change the definition of the revenue base (AGR) against which the authorisation fee is calculated. The AGR Case's broad definition of AGR (encompassing all revenue, not merely telecom revenue) was enormously burdensome for operators; the 2023 Act does not provide a statutory definition of AGR but leaves the definition to rules, creating an opportunity for the government to prescribe a more operator-friendly definition if it chooses to do so.

Security conditions are among the most operationally significant authorisation conditions for telecom operators. These conditions — carried forward from existing licences and to be updated under the 2023 Act framework — include: obligations to verify subscriber identity (KYC/e-KYC); obligations to maintain and provide access to call detail records and location data for specified periods; obligations to cooperate with law enforcement and national security agencies in lawful interception; obligations to comply with security standards for network equipment (including the Trusted Telecom Portal framework); and obligations to remove specified equipment or personnel at the direction of national security authorities. Non-compliance with security conditions carries the risk of licence suspension or revocation.

6.4 Suspension, Revocation and the Natural Justice Requirement

Section 3(5) of the Telecommunications Act, 2023 empowers the Central Government to suspend, revoke, or modify an authorisation on grounds and in the manner to be prescribed by rules. The power to suspend or revoke is the most coercive regulatory power available to the Central Government in relation to authorised entities, and its exercise must comply with both the statutory framework and the constitutional requirements of natural justice. The Supreme Court has consistently held, in the context of licence revocation under the Indian Telegraph Act, 1885 and other regulatory statutes, that the right to be heard — audi alteram partem — applies to licence revocation proceedings, and that the authority must provide the licensee with the specific grounds alleged and an adequate opportunity to respond before any adverse order is made.

The doctrine of legitimate expectations may also constrain the exercise of revocation and modification powers under the 2023 Act. Where an authorised entity has made substantial investments in network infrastructure in reliance on its authorisation, and where those investments were made on the basis of conditions that the government proposes to modify, the operator may have a legitimate expectation that the conditions will not be modified without reasonable notice and adequate compensation for any loss suffered as a result of the modification. The protection of legitimate expectations is a general principle of Indian administrative law, applicable to all regulatory decisions affecting existing rights and reliance

interests.

6.5 Penalties for Unauthorised Operations

The Telecommunications Act, 2023 provides both civil and criminal sanctions for operation without authorisation. Section 17 (Chapter VII) provides for civil monetary penalties for the provision of telecommunication services or establishment of telecommunication networks without authorisation. Section 42(1) creates a criminal offence of intentionally providing telecommunication services without authorisation, punishable with imprisonment of up to three years and/or a fine of up to Rs. 2 crore. The combination of civil and criminal sanctions reflects the seriousness with which the legislature regards unauthorised telecommunications operations: such operations not only violate the regulatory framework but may also affect national security (through evasion of security conditions), consumer protection (through operation without quality of service obligations), and revenue (through evasion of authorisation fees).

The distinction between civil penalties (imposed through the Adjudicating Officer mechanism under Chapter VIII) and criminal sanctions (imposed through the criminal courts under Chapter VII) is significant for practitioners advising on enforcement matters. Civil penalties are administrative in nature, imposed by a designated officer following an administrative procedure, and subject to appeal to TDSAT. Criminal sanctions require prosecution before a competent court following the procedure prescribed in the Bharatiya Nagarik Suraksha Sanhita, 2023, and are subject to the full panoply of criminal procedural rights. The threshold for criminal prosecution — the requirement of "intentional" provision of services without authorisation — means that genuine mistakes or inadvertent non-compliance (such as operating under a licence that has expired without the operator's awareness) may not meet the criminal threshold, though they may still attract civil penalties.

CHAPTER 7

Spectrum: Management, Assignment, Trading and Sharing

7.1 Spectrum as a Constitutional Public Resource

The constitutional status of spectrum as a public natural resource was definitively established by the Supreme Court in Centre for Public Interest Litigation v. Union of India, (2012) 3 SCC 1. The Court, in a judgment by a Bench of two judges authored by Justices G.S. Singhvi and A.K. Ganguly, held unanimously that natural resources — including the radio frequency spectrum — belong to the people of India and that the State, as trustee of these resources on behalf of the people, is constitutionally obligated to manage them in the public interest. The Court further held that the allocation of natural resources for commercial exploitation by private parties must be conducted through a transparent and competitive process — specifically, auction — to ensure that the public receives fair value and that no private party receives an unjustified windfall at the public's expense.

The 2G Spectrum Case arose from the allocation of second-generation cellular spectrum in 2007-08 under the administration of then-Telecommunications Minister A. Raja. The allocation process deviated from the standard practice of competitive bidding in several significant respects: spectrum was offered at rates fixed in 2001 (far below contemporary market values), the "first come first served" allocation methodology was altered without notice to favour certain applicants, and 122 licences were granted to entities that lacked the technical or financial qualifications required for entry into the telecom sector. The Court found that this process violated Article 14 (equality before law) and the government's constitutional duty as a trustee of natural resources, and ordered the cancellation of all 122 licences.

The Telecommunications Act, 2023 gives statutory expression to the constitutional framework established by the 2G Spectrum Case through two key mechanisms. First, the First Schedule specifies the categories of spectrum use for which the Central Government shall assign spectrum by auction: IMT (mobile broadband) services, fixed wireless broadband services, commercial VSAT services, and commercial satellite communication services. Second, Section 4(2) provides that for spectrum categories not covered by the First Schedule, the Central Government may assign spectrum through administrative allocation — consistent with the Court's acknowledgement that auction is not constitutionally required for non-commercial spectrum uses such as government, defence, research, and disaster management.

7.2 The Spectrum Auction Architecture

India's spectrum auction regime, developed in the post-2G Spectrum Case era, is one of the most sophisticated in Asia. The standard auction format is the Simultaneous Multiple Round Ascending (SMRA) auction, in which spectrum in multiple frequency bands and multiple telecom circles is offered simultaneously. Bidders participate in sequential rounds of ascending-price bidding, with prices rising in each round until there is no excess demand for any lot. The SMRA format — widely used in spectrum auctions globally — promotes price discovery through competitive bidding and allows bidders to construct spectrum portfolios across multiple bands and geographies, enabling efficient aggregation of spectrum to meet diverse coverage and capacity requirements.

The conduct of spectrum auctions involves extensive pre-auction regulatory work by TRAI and DoT. TRAI makes recommendations on: the bands to be offered; the block sizes within each band; reserve prices (the minimum acceptable bid for each lot); eligibility criteria for bidders (including equity, spectrum cap, and technical capability requirements); payment conditions (upfront payment requirements, instalment arrangements, bank guarantee requirements); and spectrum use conditions (rollout obligations, spectrum caps, sharing and trading permissions). DoT reviews TRAI's recommendations, accepts or modifies them, and issues an Information Memorandum (IM) containing the complete rules of the auction. Bidders submit applications and supporting documents, pay upfront deposits, and receive bidding rights based on their eligibility. The auction itself typically takes place over multiple days.

The 2022 5G spectrum auction — the largest in India's history — illustrated both the strengths and complexities of the modern Indian spectrum auction framework. The auction offered spectrum in ten frequency bands ranging from 600 MHz to 26 GHz, with an aggregate of approximately 72 GHz of spectrum available. Total bids received amounted to approximately Rs. 1.5 lakh crore, with Reliance Jio, Bharti Airtel, and Vodafone Idea acquiring spectrum in multiple bands. The 26 GHz (mmWave) band, offered for the first time in India for 5G use, attracted limited bidding due to the challenging propagation characteristics and deployment complexity of mmWave 5G — highlighting the importance of setting reserve prices at levels that reflect the commercial realities of each band.

7.3 Spectrum Trading under Section 7

Section 7 of the Telecommunications Act, 2023 provides the statutory basis for spectrum trading — the transfer of spectrum assignment rights from one authorised entity to another for consideration. Spectrum trading allows operators to restructure their spectrum portfolios in

response to changes in network technology, subscriber growth, and commercial strategy. An operator that has acquired spectrum in excess of its current needs — for example, following a merger or an unsuccessful market entry attempt — may sell that spectrum to an operator that has identified a spectrum shortfall. The transfer of spectrum rights through market transactions, subject to regulatory approval, improves spectrum utilisation efficiency compared to a system in which spectrum assignments are non-transferable and may remain unutilised by original assignees.

DoT's spectrum trading guidelines, first issued in 2015 and subsequently revised, established an administrative framework for spectrum trading before the enactment of the 2023 Act. Key conditions for spectrum trading under the guidelines include: prior approval of DoT for each trading transaction; compliance with spectrum cap requirements post-trade (both the buyer and the seller must remain within applicable spectrum caps after the transaction); payment of a spectrum trading fee; and no change in the rollout obligations associated with the traded spectrum. The 2023 Act provides a statutory basis for these requirements and enables the Central Government to prescribe conditions through rules rather than administrative guidelines, providing greater legal certainty.

7.4 Spectrum Sharing

Spectrum sharing — simultaneous use of assigned spectrum by more than one operator through technical coordination arrangements — is provided for in Section 7(2) of the Telecommunications Act, 2023. DoT's spectrum sharing guidelines (issued in 2015) permitted two operators to share spectrum in the same frequency band within a telecom circle, subject to conditions including: the sharing arrangement must not result in either operator exceeding its applicable spectrum cap; the sharing operators must coordinate technically to avoid harmful interference; the sharing arrangement must be approved by DoT; and the sharing partners must file a written agreement with DoT. Spectrum sharing improves the efficiency of spectrum use by allowing the capacity of assigned spectrum to be utilised more fully through coordination.

The evolution of spectrum sharing technologies — including Licensed Shared Access (LSA), Citizens Broadband Radio Service (CBRS) models from the United States, and 5G NR spectrum sharing — suggests that the sharing framework under the 2023 Act will need to evolve to accommodate increasingly sophisticated sharing arrangements. The Act's framework approach — establishing a statutory basis for sharing while delegating the detailed conditions to rules — provides the flexibility to accommodate these developments. The regulatory sandbox framework (Section 32) also provides a vehicle for testing new spectrum sharing models in controlled conditions before deployment at scale.

7.5 Spectrum Caps and Competition Policy

Spectrum caps — limits on the total spectrum that a single operator (or a group of associated operators) may hold in a particular band or in aggregate across all bands — are a key competition policy tool in spectrum management. Without caps, dominant operators could acquire sufficient spectrum to prevent adequate competitive entry, or incumbents could hoard spectrum to preclude new entrants from building competitive networks. TRAI makes recommendations on spectrum cap levels in each auction, and DoT incorporates these caps in the auction Information Memoranda. The legal authority for spectrum caps under the 2023 Act flows from the conditions of spectrum assignments; the Act does not itself specify cap levels, which are determined as a matter of regulatory policy and are therefore subject to revision between auctions.

The legal basis for enforcing spectrum caps — in particular, the question of whether DoT can refuse to process a spectrum trading or sharing transaction that would result in a buyer exceeding applicable caps, and whether a spectrum assignment that is conditional on compliance with caps can be revoked if the cap is subsequently breached — has been tested in several TDSAT and court proceedings. TDSAT has generally upheld DoT's authority to enforce spectrum caps as conditions of spectrum assignment, consistent with the public interest rationale for maintaining competitive markets in telecommunications.

CHAPTER 8

Right of Way: Statutory Framework and Judicial Interpretation

8.1 The Right of Way Problem in Indian Telecom

The deployment of telecommunications infrastructure — particularly the dense small-cell networks and fibre cable routes required for high-speed broadband and 5G coverage — requires access to a vast range of public and private property: roads, footpaths, bridges, buildings, utility poles, railway corridors, waterway embankments, and private land. The legal right to place telecommunications infrastructure on or in this property — the right of way — is essential for network deployment. Where this right is denied, delayed, or made commercially unviable by excessive fees or onerous conditions, network rollout is impeded with direct consequences for coverage, quality of service, and India's digital connectivity ambitions.

The right-of-way problem in India was characterised by three dimensions: fragmentation, inconsistency, and delay. Fragmentation: RoW was governed by a patchwork of laws — the Indian Telegraph Act, 1885; state road acts; municipal corporation acts; railway legislation; and DoT's administrative guidelines — that applied different rules to different categories of property and created a maze of overlapping permissions. Inconsistency: different states and municipalities imposed widely varying fee levels and conditionality, making national network planning extremely difficult. Delay: the processing of RoW applications by local bodies was often extremely slow — months or years in some cases — and was subject to demands for informal payments. These problems significantly increased the cost and time required for network deployment and were identified by both TRAI and DoT as major impediments to achieving India's broadband connectivity targets.

8.2 The DoT Right of Way Rules, 2016

The Department of Telecommunications' Right of Way Rules, 2016 — framed under Section 10 of the Indian Telegraph Act, 1885 — were the first attempt to create a uniform national framework for right-of-way on public property. The Rules prescribed: standard procedures for processing RoW applications (with specified timelines and a deemed approval mechanism for applications not decided within the prescribed period); maximum fees for different categories of infrastructure installation (towers, cables, underground conduits) on different categories of public property; anti-discrimination requirements preventing local bodies from charging differential rates

to different operators; and a dispute resolution mechanism for RoW disputes.

The 2016 Rules had significant limitations. Their legal basis under Section 10 of the 1885 Act was contested by some state governments, which argued that the Central Government could not unilaterally override state laws and local body decisions on RoW without their cooperation. Some states refused to implement the Rules or implemented them inconsistently. The Rules also did not address RoW on private property, leaving the deployment of fibre and small cells on private buildings and land to bilateral negotiation between operators and property owners — a process that was often protracted and expensive. Notwithstanding these limitations, the 2016 Rules represented an important step towards a national RoW framework and their experience informed the more comprehensive provisions of the Telecommunications Act, 2023.

8.3 Chapter IV of the Telecommunications Act, 2023

Chapter IV of the Telecommunications Act, 2023 (Sections 10 to 16) establishes a comprehensive statutory right-of-way framework that supersedes both the 1885 Act's Section 10 and the 2016 RoW Rules. Section 10(1) grants authorised entities the right to establish, install, operate, maintain, and alter any telecommunication network on or in "public property" — defined broadly to include property owned or managed by the Central Government, state governments, local authorities (municipalities, panchayati raj institutions), and public sector undertakings. Section 10(2) requires that the exercise of RoW rights be subject to: prior intimation to the property-owning authority; compliance with conditions prescribed by the Central Government; and payment of compensation at the rates prescribed.

Section 11 provides for RoW on "other property" — private property not falling within the definition of public property. RoW on private property requires the consent of the property owner and the payment of compensation at rates to be prescribed. The Act does not establish a compulsory acquisition mechanism for private RoW — operators cannot be given the power to enter private property without the owner's consent — but does provide a dispute resolution mechanism (Section 14) for cases where the owner's consent is sought but not forthcoming or where the agreed compensation is disputed. This reflects the constitutional constraints on interfering with private property rights under Article 300A of the Constitution.

Section 12 of the Act establishes the "deemed approval" mechanism for public property RoW applications. If a property-owning authority fails to decide an application for RoW within the period prescribed by rules, the application is deemed to have been approved. This mechanism directly addresses the bureaucratic delay problem that has been one of the most significant practical obstacles to network deployment. The deemed approval mechanism effectively

converts silence (inaction) by the approving authority into a positive grant of permission — a significant departure from the general administrative law principle that inaction cannot constitute approval.

8.4 Fee Caps, Anti-Discrimination, and Enforcement

Section 13 of the Telecommunications Act, 2023 limits the compensation that may be demanded by property-owning authorities for the grant of RoW on public property to the amount prescribed by the Central Government. This fee-capping power — which effectively prohibits local bodies from using RoW permissions as a revenue generation mechanism — is constitutionally justified by Parliament's power under Entry 31 of the Union List to make laws on telecommunications, including laws that override state laws and local body decisions that impede telecommunications deployment. However, the interaction between Section 13 and the principles of federalism and local government autonomy under the Constitution is not free from legal doubt, and some state governments have expressed reservations about the fee-capping power.

Section 13 also prohibits property-owning authorities from imposing conditions on RoW grants that discriminate between authorised entities on grounds other than those prescribed by rules. This anti-discrimination requirement ensures a level playing field between operators in accessing public property: an authority cannot favour the incumbent state-owned operator by granting it preferential access terms or faster processing. Non-compliance with the 2023 Act's RoW framework by local bodies may be challenged through the dispute resolution mechanism in Section 14, which provides for resolution by the designated authority and ultimately by TDSAT.

CHAPTER 9

Standards, Security and the Trusted Telecom Framework

9.1 Security Obligations under Chapter VI

Chapter VI of the Telecommunications Act, 2023 (Sections 22 to 25) addresses standards, security, and related matters. Section 22 empowers the Central Government to prescribe standards for telecommunication equipment, networks, and services in the interest of national security or public safety. This provision gives statutory backing to the government's longstanding practice of prescribing security standards for the telecom sector through licence conditions and administrative guidelines. The power extends to both the hardware and software components of telecommunications networks, as well as to operational practices (such as incident response procedures and security audit requirements). Non-compliance with prescribed security standards may attract civil penalties and, in the most serious cases, authorisation revocation.

Section 23 introduces the concept of "critical telecommunication infrastructure" (CTI) and empowers the Central Government to designate specific network elements as critical. The significance of the CTI designation is that it triggers a heightened security regime: CTI is subject to more stringent security standards, mandatory periodic security audits by approved auditors, enhanced incident reporting requirements, and the possibility of government supervision in emergency situations. The criteria for CTI designation are to be prescribed by rules, and operators whose infrastructure is designated as CTI will be required to implement additional security measures. The financial cost of CTI compliance — including the cost of security audits, enhanced monitoring, and potentially more expensive (approved) equipment — is a significant consideration for major infrastructure operators.

9.2 The Trusted Telecom Portal: Policy Background

The Trusted Telecom Portal was established in 2021 by the National Cyber Security Coordinator's (NCSC) office as an administrative mechanism for the evaluation and approval of telecom equipment from trusted sources. The portal was created in the context of global concerns about the security of telecommunications equipment, particularly from Chinese vendors such as Huawei and ZTE. Intelligence assessments by the United States, United Kingdom, Australia, and other countries had raised concerns that equipment from these vendors might contain embedded backdoors or vulnerabilities that could be exploited by Chinese state intelligence agencies. India's response — rather than an outright ban as adopted by some

countries — was to create a case-by-case evaluation process through the portal.

Under the Trusted Telecom Portal framework, telecom operators are required to obtain approval from the Designated Authority (the NCSC) before deploying new equipment in their networks from any vendor. Equipment must be submitted for security evaluation, which involves testing of hardware, firmware, and software components against prescribed security criteria. Equipment that passes the evaluation is placed on the Trusted Products List (TPL), from which operators may procure freely. Equipment from vendors not on the approved list, or equipment that has not been individually evaluated and approved, may not be deployed. Operators are also required to phase out existing non-approved equipment on timelines specified by the government — a requirement that has created significant capital expenditure implications for operators who have deployed large quantities of non-approved 2G, 3G, and 4G equipment.

The Telecommunications Act, 2023's statutory backing for the Trusted Telecom Portal framework strengthens the legal basis for the security evaluation requirements and makes non-compliance an enforceable breach of authorisation conditions rather than merely a breach of administrative guidelines. Section 22's power to prescribe security standards, read with the authorisation conditions framework under Section 3, creates a comprehensive legal architecture for the trusted equipment policy. The statutory underpinning also provides a clearer legal basis for the government to require operators to bear the cost of equipment replacement — a requirement that was more legally contested when based only on administrative guidelines.

9.3 Equipment Type Approval

In addition to the security-focused evaluation under the Trusted Telecom Portal framework, all radio equipment deployed in India must obtain equipment type approval (ETA) from the Wireless Planning and Coordination Wing of DoT, based on conformance testing conducted by laboratories empanelled under the Telecom Engineering Centre (TEC). The ETA process verifies that equipment meets the applicable technical standards for Indian deployment: emission limits (ensuring that the equipment does not cause harmful interference to other spectrum users), frequency accuracy specifications, spurious emission requirements, and interoperability requirements. Equipment that has not obtained ETA may not be legally sold or deployed in India.

The Telecommunications Act, 2023's provision in Section 22 for the prescription of equipment standards encompasses both the security evaluation standards of the Trusted Telecom Portal framework and the technical conformance standards of the ETA process. The integration of these two evaluation processes — which are currently administered by different bodies (NCSC for security, WPC/TEC for technical conformance) — into a coherent statutory

framework is one of the administrative implementation challenges under the 2023 Act. Vendors seeking to sell equipment in India must navigate both processes, and any duplication or inconsistency between them increases time-to-market and compliance costs.

CHAPTER 10

Interception, Surveillance and Emergency Powers

10.1 Constitutional Framework: Puttaswamy and Anuradha Bhasin

Any analysis of the Telecommunications Act, 2023's interception and emergency powers provisions must begin with the constitutional framework established by two landmark Supreme Court decisions. In Justice K.S. Puttaswamy (Retd.) v. Union of India, (2017) 10 SCC 1, the nine-Judge Constitution Bench unanimously held that the right to privacy is a fundamental right protected by Article 21 of the Constitution. The Puttaswamy judgment established that any interference with privacy — including communications surveillance — must satisfy a three-fold test: (i) legality (the interference must be authorised by law); (ii) legitimate aim (the interference must serve a valid state purpose); and (iii) proportionality (the interference must be necessary and proportionate to the aim, and must not destroy the essence of the right). This standard is more demanding than the "procedure established by law" standard that had previously governed restrictions on Article 21 rights.

In Anuradha Bhasin v. Union of India, (2020) 3 SCC 637, the Supreme Court applied the Puttaswamy proportionality standard to the specific context of telecommunications service suspensions (internet shutdowns). The Court held that the right to access the internet is protected under Articles 19(1)(a) (freedom of speech and expression) and 19(1)(g) (freedom to practise any profession or carry on any trade or business) of the Constitution. It further held that internet shutdowns are presumptively unconstitutional and can only be justified if: they are based on a specific legal provision; the reasons for the shutdown are specified in a written order that is published; the shutdown is proportionate to the threat it is designed to address; and the shutdown order is subject to periodic review. These requirements apply to all telecommunications service suspensions, including those ordered under the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 and the corresponding provisions of the 2023 Act.

The constitutionality of the interception provisions of the 2023 Act — specifically, the question of whether executive-only authorisation for interception (without prior judicial authorisation) satisfies the Puttaswamy proportionality test — is a question of ongoing legal controversy. The constitutional challenge to the absence of judicial oversight of interception orders, which was raised in various forms under the 1885 Act framework, has been filed afresh against the 2023 Act's framework and is pending before the Supreme Court. The outcome of this

challenge will determine whether the 2023 Act's interception framework is constitutionally valid or whether legislative amendment will be required to incorporate judicial oversight mechanisms.

10.2 Section 24: The Interception Framework

Section 24 of the Telecommunications Act, 2023 consolidates and modernises the interception powers previously dispersed across Section 5(2) of the Indian Telegraph Act, 1885 and Rule 419A of the Indian Telegraph Rules, 1951. Section 24(1) provides that the Central Government may, in the interest of the sovereignty, integrity or security of India, or for the investigation of any offence or for purposes to be prescribed, by order in writing, direct an authorised entity to intercept, store, or disclose any message or class of messages transmitted through its network. The provision is broad in scope: it covers not only the interception of specific communications (targeted surveillance) but also the bulk storage and disclosure of classes of messages — which could encompass mass surveillance programmes if the government were to exercise the provision to its full extent.

The procedural safeguards for the exercise of Section 24 are to be prescribed by rules — a delegation of the specification of constitutional safeguards to executive legislation that has been criticised by civil liberties organisations. Under the predecessor framework (Rule 419A), the key safeguards were: orders must be in writing, signed by the Home Secretary (Union or State level); orders may not normally be made by officers below the rank of Joint Secretary; post-authorisation review by a designated Review Committee (comprising senior civil servants at Cabinet Secretary level); and a maximum duration of 60 days per order, extendable to 180 days. It is expected that substantially similar safeguards will be prescribed in rules under the 2023 Act, but the statutory framework does not guarantee this: if the rules prescribe less protective safeguards, the reduced protection would have only the authority of subsidiary legislation, not the force of the Act itself.

10.3 Section 20: Emergency Powers over Infrastructure

Section 20 of the Telecommunications Act, 2023 confers on the Central Government extensive emergency powers over telecommunications infrastructure and services. Section 20(1) provides that in the interest of national security or public safety, the Central Government may: take temporary possession of any telecommunications infrastructure; suspend any authorisation; and require any authorised entity to provide telecommunications services on specified terms. These are draconian powers: the power to take possession of private telecommunications networks — in effect, to nationalise them temporarily — is one of the most extreme interventions possible in a private market, and is justified only by the most pressing national emergency or

security threat.

The exercise of Section 20 powers must comply with the Anuradha Bhasin requirements: written orders specifying the reasons for the exercise of emergency powers; publication of orders (to the extent consistent with national security); periodic review; and proportionality. An operator whose infrastructure is taken into government possession under Section 20 would have the right to seek judicial review of the decision before the High Court under Article 226, and would also have remedies under Article 300A (right to property) for compensation in respect of the use of its property. The government's power under Section 20 does not include the power to acquire the property permanently without compensation — Section 2(18) of the Act expressly excludes the right to acquire property from the definition of right of way, and the emergency possession under Section 20 is described as "temporary," implying an obligation to restore possession when the emergency conditions have passed.

10.4 Internet Shutdowns: The Legal Framework

The practice of ordering internet shutdowns — the suspension of mobile internet services in specified areas in response to civil unrest, communal tensions, or security threats — has been a persistent feature of Indian governance, with India recording among the highest numbers of internet shutdowns globally in recent years. The legal basis for internet shutdowns under the 1885 Act framework was the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017. These rules authorised the Home Secretary (Union or State level) to issue directions for the suspension of telecom services on grounds of public emergency or public safety. The Anuradha Bhasin judgment added requirements for written orders, proportionality, and periodic review.

The Telecommunications Act, 2023 replaces the Temporary Suspension Rules with a statutory framework that incorporates the Anuradha Bhasin requirements directly into the statutory basis for service suspension. Section 20 of the Act, read with the rules to be prescribed under it, will govern internet and other telecom service suspensions going forward. The key question — whether the rules will incorporate the constitutionally required safeguards more explicitly than the previous framework — is one that practitioners and civil society organisations will monitor closely as the rules are developed. The effective implementation of constitutionally required safeguards, including the requirement for periodic review and the prohibition on indefinite or disproportionate shutdowns, will depend on both the quality of the rules and the judicial enforcement of those safeguards in specific cases.

CHAPTER 11

The Digital Bharat Nidhi and Universal Service

11.1 From USOF to Digital Bharat Nidhi: Statutory Framework

The Universal Service Obligation Fund (USOF), established under the Indian Telegraph (Amendment) Act, 2003 in the Consolidated Fund of India, is renamed the "Digital Bharat Nidhi" by the Telecommunications Act, 2023. The renaming is not merely cosmetic: it reflects a deliberate policy choice to expand the fund's mandate from the relatively narrow concept of "universal service" (ensuring basic telephony access to underserved areas) to the broader concept of digital public infrastructure. The Digital Bharat Nidhi is authorised under Section 28 of the 2023 Act to fund not only universal connectivity programmes but also research and development in telecommunications, indigenous telecom technology development, and — through the open-ended provision for "such other purposes as may be prescribed" — any other digital public interest objective that the Central Government may specify.

Section 27 of the Telecommunications Act, 2023 establishes the Digital Bharat Nidhi in the Public Account of India under Article 266(2) of the Constitution. The status of the Nidhi as a Public Account fund (rather than a Consolidated Fund appropriation) means that its receipts and disbursements do not require annual parliamentary appropriation through the Appropriations Act — an important feature that gives the Nidhi a more stable and flexible funding mechanism than most government programmes. Contributions to the Nidhi from authorised entities (at the rate of five per cent of AGR under the existing framework) are received directly into the Public Account and are available for disbursement on approved programmes without year-to-year budget uncertainty.

Section 29 of the Act provides that the Central Government may direct authorised entities to make contributions to the Digital Bharat Nidhi at such rates and in such manner as may be prescribed. The phrase "such rates and in such manner as may be prescribed" preserves the existing five per cent levy while allowing the government to modify the rate through rules rather than statutory amendment — a flexibility that may be used to reduce the levy as India's connectivity objectives are progressively achieved, or to increase it if additional funding is required for expanded programmes. The legal basis for the Nidhi levy (as a regulatory impost on licensed telecom operators) has been upheld by the courts; the 2023 Act's explicit statutory provision for the levy strengthens its legal foundation compared to the 2003 amendment.

11.2 BharatNet: Scale, Structure and Legal Framework

BharatNet — originally the National Optical Fibre Network (NOFN), renamed in 2015 — is India's most ambitious telecommunications infrastructure programme, targeting the provision of optical fibre-based broadband connectivity to all of India's approximately 2.5 lakh gram panchayats. The programme represents a commitment to extending the benefits of high-speed broadband connectivity — healthcare, education, government services, financial services, e-commerce — to India's rural population of approximately 850 million people. Its completion would represent a transformation in rural connectivity comparable in scale to the rural electrification programmes of the 20th century.

The legal framework for BharatNet involves a complex multi-stakeholder structure. Bharat Broadband Network Limited (BBNL), a special purpose vehicle incorporated under the Companies Act, 2013 as a wholly-owned subsidiary of BSNL (following its 2023 merger into BSNL), was the principal implementing agency. State governments participate in BharatNet implementation through State Government entities and State-level SPVs. Private contractors are engaged for civil works (trenching, cable laying) and for last-mile connectivity (Wi-Fi and fibre-to-the-home installations). The Digital Bharat Nidhi funds the programme through grants to BSNL and state agencies. Private internet service providers and state agencies may use the BharatNet infrastructure on commercial terms to provide retail broadband services — subject to the open access obligation that ensures non-discriminatory access to all licensees.

The implementation of BharatNet has faced significant challenges: delays in civil works due to difficult terrain, land access issues, and contractor performance; damage to infrastructure from weather, flooding, and theft; inadequate last-mile deployment; and challenges in ensuring the ongoing maintenance and operation of deployed infrastructure. Despite these challenges, BharatNet has made significant progress: as of recent reports, fibre has been laid to the vast majority of target gram panchayats, though active broadband services are available at a lower proportion of deployed gram panchayats. The Digital Bharat Nidhi's expanded mandate under the 2023 Act provides the framework for addressing the last-mile and operational challenges that remain.

11.3 PM-WANI and Other Digital Bharat Nidhi Programmes

The Prime Minister Wi-Fi Access Network Interface (PM-WANI) framework, introduced by DoT in December 2020, establishes a decentralised public Wi-Fi ecosystem intended to extend broadband connectivity through a network of micro-entrepreneurs (Public Data Office Aggregators and Public Data Offices). Under PM-WANI, small shopkeepers, community

organisations, and entrepreneurs can provide public Wi-Fi access points without requiring a telecom licence — a significant departure from the traditionally licence-dependent model of telecom service provision. The PM-WANI framework was introduced under the authority of the Indian Telegraph Act, 1885 and is carried forward under the Telecommunications Act, 2023's class authorisation framework.

Other Digital Bharat Nidhi programmes have included rural mobile coverage schemes (subsidising the deployment of mobile towers in villages below the threshold for commercial viability), rural broadband through satellite (providing VSAT connectivity to gram panchayats not reachable by fibre), and mobile coverage in left-wing extremism-affected districts and border areas (where commercial deployment is commercially unviable and strategically sensitive). These programmes reflect the breadth of the universal service mandate and the diversity of connectivity challenges across India's geography. The expanded mandate of the Digital Bharat Nidhi under the 2023 Act — to fund R&D; and indigenous technology development — adds a new dimension to its role as an instrument of public investment in digital infrastructure.

CHAPTER 12

Regulatory Sandbox and Innovation Framework

12.1 Statutory Basis: Section 32

Section 32 of the Telecommunications Act, 2023 establishes the statutory basis for a regulatory sandbox in the telecom sector. A regulatory sandbox is a controlled regulatory environment in which innovative technologies, services, or business models can be tested without the full application of regulatory requirements that would otherwise apply — typically including licensing requirements, spectrum authorisation, and some technical standards. The sandbox concept, originally developed in financial services regulation (particularly by the UK Financial Conduct Authority in 2015), has been adopted across multiple regulated sectors globally as a tool for enabling innovation while managing regulatory risk.

Section 32(1) empowers the Central Government to exempt, for a specified period and in a specified geographic area, any person or class of persons from the application of any provision of the Act (other than provisions relating to national security and privacy of messages), to enable testing of any innovative technologies or services. This is a broad power: it can exempt sandbox participants from licensing requirements, spectrum authorisation requirements, equipment standards requirements, and penalty provisions. The only explicit limitations are that national security and privacy provisions may not be waived — reflecting the principle that even in a testing environment, the state's fundamental security and privacy obligations to users must be maintained.

Section 32(2) requires that sandbox authorisations specify: the entities authorised to participate; the geographic scope and time period of the sandbox; the specific provisions from which participants are exempted; and any conditions or reporting requirements applicable during the sandbox period. This specification requirement ensures that sandbox authorisations are targeted and precisely scoped — preventing the sandbox mechanism from being used as a general exemption from regulatory requirements rather than as a carefully bounded testing environment. The conditions attached to sandbox authorisations typically include requirements for user consent, disclosure of the experimental nature of the service, monitoring and reporting to the designated authority, and compliance with the rules if the service is commercially deployed after the sandbox period.

12.2 TRAI's Existing Sandbox Framework

TRAI had developed an administrative regulatory sandbox framework before the enactment of the Telecommunications Act, 2023, operating under its powers to recommend licensing conditions and to exercise its regulatory and advisory functions. TRAI's sandbox framework enabled the testing of innovative telecom technologies and services — including new spectrum sharing models, over-the-top communication service integration with licensed networks, and 5G use case demonstrations — in controlled environments. The administrative framework, while useful, lacked the statutory authority of the Section 32 framework and was limited to matters within TRAI's regulatory jurisdiction.

The statutory sandbox under Section 32 operates alongside TRAI's administrative sandbox, providing a more comprehensive framework that can cover matters within DoT's jurisdiction (such as spectrum, licensing, and security standards) in addition to TRAI's domain. The coordination between the two frameworks — ensuring that sandbox applications that span both DoT and TRAI jurisdiction can be processed coherently — will require administrative arrangements that the government is yet to finalise. Practitioners advising innovators seeking sandbox authorisations will need to engage with both DoT (for the Section 32 statutory sandbox) and TRAI (for the TRAI administrative sandbox) depending on the specific regulatory requirements from which exemption is sought.

12.3 Innovation Policy and the 2023 Act

Beyond the regulatory sandbox, the Telecommunications Act, 2023 contains several provisions designed to promote innovation in the Indian telecom sector. The Digital Bharat Nidhi's expanded mandate (discussed in Chapter 11) enables funding for R&D; in telecom, including basic research, applied research, and technology development relevant to the Indian telecom context. The spectrum sharing and trading framework (Chapter III) promotes market-based solutions to spectrum allocation efficiency, allowing spectrum to migrate to higher-value uses without government intervention. The right-of-way framework (Chapter IV) reduces the infrastructure deployment burden for innovative new entrants who may wish to build new types of networks (such as mesh wireless networks or free-space optical communication networks) that require access to diverse property.

The Production-Linked Incentive (PLI) scheme for telecommunications and networking products — while not directly provided for in the 2023 Act — operates in the same policy space and is an important complement to the Act's innovation framework. The PLI scheme provides financial incentives for domestic manufacturing of telecom equipment (including 5G base stations, core network equipment, and associated software), reducing India's dependence on imported equipment and developing indigenous capabilities that contribute to both supply chain

security and economic development. The success of the PLI scheme in developing India's telecom manufacturing ecosystem will be an important determinant of the long-term value of the 2023 Act's innovation framework.

CHAPTER 13

Offences, Penalties and Adjudication

13.1 The Civil Penalty Framework: Chapter VII

Chapter VII of the Telecommunications Act, 2023 (Sections 33 to 37) establishes a civil monetary penalty framework for violations of the Act and the conditions of authorisations. This framework represents a significant regulatory innovation compared to the Indian Telegraph Act, 1885, which relied primarily on criminal prosecution for regulatory violations — a slow, resource-intensive, and often disproportionate remedy for regulatory non-compliance in a commercial sector. Civil penalties, imposed through an administrative process rather than criminal prosecution, can be applied more quickly and with sanctions calibrated to the severity and commercial context of the violation.

Section 33 provides for civil penalties for specified violations including: failure to comply with the conditions of an authorisation; failure to comply with directions or orders issued under the Act; failure to maintain prescribed records or submit required reports; failure to implement prescribed security standards; and failure to provide access for inspection by authorised officers. The penalty amounts vary by violation category: the maximum civil penalty for the most serious violations — such as failure to comply with interception directions or failure to implement critical security measures — is Rs. 5 crore, with daily penalties of up to Rs. 50 lakh for continuing violations. These penalty levels are substantially higher than the criminal fines available under the 1885 Act, creating stronger deterrent effect for corporate violations.

The civil penalty framework also provides for reduced penalties for self-reporting of violations (where an authorised entity reports its own non-compliance before it is discovered by the regulator), penalties against individual officers of corporate entities (in addition to penalties against the entity itself, in cases of serious or deliberate violations), and enhanced penalties for repeated violations. These features — modelled on regulatory enforcement frameworks in other sectors including the Securities and Exchange Board of India (SEBI) regulations and the Reserve Bank of India's enforcement framework — create a graduated enforcement regime that incentivises voluntary compliance and self-correction.

13.2 The Adjudicating Officer: Chapter VIII

Chapter VIII of the Telecommunications Act, 2023 (Sections 38 to 40) creates the office of the Adjudicating Officer — an officer designated by the Central Government to adjudicate

alleged violations of the Act and to impose civil penalties. The Adjudicating Officer must hold an adjudicatory process before imposing a penalty: the accused entity must receive notice of the alleged violation, must be given an adequate opportunity to be heard (including the right to appear through an authorised representative or advocate), and must receive a reasoned written order from the Adjudicating Officer specifying the findings and the penalty imposed. These procedural requirements give effect to the principles of natural justice that apply to all administrative adjudication with punitive consequences.

The Adjudicating Officer framework introduces a degree of specialisation into telecom enforcement adjudication that was absent from the previous framework, which relied on general criminal courts for the adjudication of regulatory violations. Officers designated as Adjudicating Officers are expected to develop expertise in telecommunications regulatory matters, enabling faster and more informed decision-making than would be possible in general courts. The designation of specific officers as Adjudicating Officers also creates accountability for enforcement decisions — the Adjudicating Officer is responsible for the quality and consistency of penalty determinations in a way that is more transparent than the diffuse accountability of criminal prosecutors.

Appeals from orders of the Adjudicating Officer lie to TDSAT under Section 40 of the 2023 Act. This appellate structure integrates the civil penalty adjudication system into TDSAT's established appellate jurisdiction. TDSAT has extensive experience in telecommunications regulatory adjudication and is well-positioned to review Adjudicating Officer decisions for legal correctness, procedural fairness, and proportionality of penalties. The further appeal from TDSAT to the Supreme Court under Section 18 of the TRAI Act (on questions of law) provides a final tier of judicial review that protects the constitutional rights of penalised entities.

13.3 Criminal Offences: Section 42

Section 42 of the Telecommunications Act, 2023 prescribes criminal offences for the most serious categories of violation. Criminal liability under the 2023 Act is reserved for: (i) intentional provision of telecommunications services without authorisation; (ii) intentional interception of messages without lawful authority; (iii) possession or use of malicious software affecting the functioning of a telecommunication network; (iv) disclosure of intercepted communications without authorisation; and (v) damage, destruction, or tampering with telecommunications infrastructure. These offences carry penalties including imprisonment of up to three years and/or fines up to Rs. 2 crore, which are substantially more severe than the penalties available under the Indian Telegraph Act, 1885.

The requirement of "intentional" conduct for the most serious criminal offences reflects the principle that criminal liability should be reserved for deliberate wrongdoing rather than inadvertent non-compliance. Corporate entities cannot be imprisoned, but can be convicted of criminal offences and fined; their directors, managers, and other officers who were responsible for the offence may also be prosecuted. Section 42(5) provides that where an offence is committed by a company, every officer of the company who was responsible for the conduct of the business of the company and was in charge at the time of the offence shall be deemed guilty of the offence unless such person proves that the offence was committed without their knowledge or that they exercised all due diligence to prevent the offence.

CHAPTER 14

Transitional Provisions and Savings

14.1 The Savings Framework: Section 36

Section 36 of the Telecommunications Act, 2023 contains the principal savings and transitional provisions governing the transition from the old legal framework (centred on the Indian Telegraph Act, 1885) to the new framework. Section 36(1) provides that all licences, authorisations, registrations, and permissions granted under the Indian Telegraph Act, 1885 and the Indian Wireless Telegraphy Act, 1933 that are in force on the date of commencement of the relevant provisions of the 2023 Act shall continue in force as if they had been granted under the 2023 Act, subject to the conditions applicable to them. This saving provision is the most practically important transitional provision: it ensures that the existing legal basis for telecom operators' current operations is preserved throughout the transition period.

The saving of existing licences and authorisations under Section 36(1) means that existing Unified Licences (and the service authorisations attached to them), existing wireless operating licences, existing VSAT licences, existing ISP registrations, and all other telecom permissions in force on the relevant commencement date remain legally valid and operative. The conditions of these instruments — including security conditions, quality of service conditions, revenue-sharing conditions, and spectrum-related conditions — continue to apply as before. Operators do not need to immediately obtain new authorisations under the 2023 Act framework; they continue to operate under their existing instruments until the government implements the transition through a migration package.

Section 36(2) saves pending legal proceedings, investigations, and inquiries initiated under the repealed statutes. Any investigation, inquiry, or proceeding initiated under the Indian Telegraph Act, 1885 or the Indian Wireless Telegraphy Act, 1933 before the commencement of the corresponding provisions of the 2023 Act shall be continued and concluded under the repealed statute as if it had not been repealed. This saving is essential for procedural fairness and legal certainty: it ensures that parties to ongoing proceedings under the old framework are not prejudiced by the change in legal regime midway through the proceedings.

14.2 Migration from Licences to Authorisations

The migration of existing licensees to the new authorisation framework under the Telecommunications Act, 2023 will be one of the most practically complex regulatory processes

of the coming years. The government has indicated that migration will be phased, with existing licensees being offered the opportunity to transition to new authorisations as their existing licences come up for renewal. This approach has historical precedent: the migration from technology-specific cellular and basic service licences to the UASL (2003), and from UASL to the Unified Licence (2013), were both managed as voluntary transitions at the time of licence renewal, with operators offered incentives (such as simplified conditions or updated fee structures) to transition to the new framework.

Key questions for the migration package include: (i) whether the authorisation fee base under the new framework will adopt a different (and potentially operator-friendly) definition of revenue compared to the AGR definition interpreted by the Supreme Court in the AGR Case; (ii) whether existing spectrum assignments (including spectrum acquired through recent auctions) will be seamlessly carried forward as spectrum assignments under the 2023 Act framework without any additional cost; (iii) whether the security conditions of new authorisations will be substantially the same as those in existing licences or will be updated to reflect new security standards; and (iv) whether the RoW provisions of the 2023 Act will apply to infrastructure deployed before the Act's commencement or only to new deployments. These questions will be central to the commercial negotiations between the government and operators as the migration is planned.

14.3 Effect on Ongoing Disputes

The transition from the 1885 Act framework to the 2023 Act framework has significant implications for ongoing disputes and pending litigation. Disputes pending before TDSAT that were filed under the 1885 Act framework — including AGR-related matters, spectrum disputes, and licence condition disputes — will be decided under the 1885 Act framework by virtue of the savings provision. New disputes arising after the commencement of the relevant provisions of the 2023 Act will be governed by the 2023 Act framework and will be brought before TDSAT under the 2023 Act's appellate jurisdiction provisions. The migration of the regulatory framework from the old statute to the new will thus be mirrored by a gradual migration of the dispute resolution corpus from one legal basis to another.

The statute of limitations for claims arising under the 1885 Act framework — including claims for penalties for breaches of licence conditions that occurred before the commencement of the 2023 Act — will be governed by the applicable limitation period under the 1885 Act or the general law of limitation, not by any limitations prescribed by the 2023 Act. Practitioners representing operators or government agencies in AGR-related matters or other legacy disputes must therefore continue to apply the 1885 Act framework and the associated jurisprudence,

while simultaneously developing familiarity with the 2023 Act framework for new matters.

CHAPTER 15

Critical Analysis and Future Prospects

15.1 Achievements of the Telecommunications Act, 2023

The Telecommunications Act, 2023 is a landmark legislative achievement that modernises India's fundamental telecommunications law for the digital age. Its principal achievements are: first, the replacement of colonial-era statutes with a modern, technology-neutral, framework statute that provides a sound legal foundation for the next phase of India's digital development; second, the statutory foundation for spectrum trading, sharing, and leasing, enabling more efficient use of India's spectrum resources through market mechanisms; third, the comprehensive right-of-way framework with its deemed approval mechanism and fee caps, which addresses one of the most persistent practical obstacles to network deployment; fourth, the civil penalty framework (with the Adjudicating Officer and TDSAT appeal mechanism), which creates a proportionate and efficient enforcement architecture; and fifth, the statutory basis for regulatory sandboxes, the Digital Bharat Nidhi's expanded mandate, and other innovation-enabling provisions.

The 2023 Act also achieves an important consolidation of the legal framework: the replacement of three separate statutes (the 1885 Act, the 1933 Act, and the 1950 Act) with a single comprehensive statute reduces legal fragmentation, improves accessibility of the legal framework for regulated entities and users, and establishes a more coherent basis for future regulatory development. The framework legislation approach — establishing statutory principles while delegating operational details to subsidiary legislation — provides the flexibility necessary for effective regulation of a fast-evolving technological sector.

15.2 Limitations and Areas for Improvement

The Act's most significant limitation is the absence of judicial oversight requirements for interception orders. The Puttaswamy proportionality standard requires that restrictions on the right to privacy be not merely authorised by law and pursued for a legitimate aim, but also proportionate — meaning that less intrusive alternatives are not available. Prior judicial authorisation for interception — a requirement in many democratic jurisdictions — is a proportionality safeguard that the 2023 Act does not incorporate. The ongoing constitutional challenge to this aspect of the framework will be the most significant litigation test of the Act in its early years.

The Act's definitional approach to OTT communication services — broad enough to encompass them within the regulatory scope but without a statutory exclusion or inclusion — creates persistent regulatory uncertainty for OTT operators. The government's administrative position (that OTT services are not currently to be regulated as telecom services) provides practical assurance but not legal certainty. A statutory provision expressly addressing the OTT question — either by excluding OTT communication services from the licensing requirement (subject to specified conditions) or by establishing a proportionate registration framework — would provide the legal certainty that the sector needs.

The concentration of rule-making power in the Central Government, without stronger mechanisms for independent oversight of the quality and consistency of subsidiary legislation, is a governance concern that is not unique to the 2023 Act but is particularly significant in a sector as commercially and technically complex as telecommunications. The development of a large body of rules, regulations, and notifications over the next few years — filling the 2023 Act's framework with operational content — will determine whether the Act achieves its potential. The quality and coherence of this subsidiary legislation will depend on DoT's regulatory capacity, TRAI's continuing independence and expertise, and the quality of the consultative processes through which the regulatory framework is developed.

15.3 The International Context

India's Telecommunications Act, 2023 can be contextualised within the global wave of telecommunications legislative reform that has characterised the first quarter of the 21st century. The European Union's European Electronic Communications Code (2018), which replaced the 2002 EU Telecom Framework with a modernised framework addressing OTT services, spectrum, and broadband investment obligations, was a major influence on the 2023 Act's drafting. The UK's Product Security and Telecommunications Infrastructure Act, 2022 — which introduced new RoW and broadband infrastructure obligations — provides relevant comparative experience on RoW implementation. Australia's Telecommunications Act, 1997 (and its extensive subsequent amendments) demonstrates the long-term evolution of framework telecom legislation. Singapore's Telecommunications Act (Cap. 323) provides an example of a small, highly connected economy's approach to modern telecom regulation.

India's position as the world's second-largest telecommunications market by subscriber count — and one of the largest by data traffic — means that Indian regulatory developments are watched closely by global operators, equipment vendors, and policy-makers. The 2023 Act's approach to spectrum management, right of way, and security (including the Trusted Telecom Portal framework) will be studied as a potential model for other emerging economies seeking to

develop modern telecommunications regulation. India's influence on global telecom regulatory standards is likely to grow as its economy expands and its digital infrastructure capabilities deepen.

15.4 The Road Ahead

The Telecommunications Act, 2023 is the beginning, not the end, of India's telecommunications regulatory reform. The operationalisation of the Act — the development of comprehensive rules, the establishment of new institutional mechanisms, the implementation of the transition from the old to the new framework, and the resolution of the legal uncertainties discussed in this booklet — will require sustained regulatory effort over the next several years. The quality of this regulatory work will determine whether the Act achieves its potential as the legal foundation for India's digital future.

For practitioners, operators, innovators, and users, the period of implementation will be one of regulatory evolution: new rules will be made, existing licences will be migrated to new authorisations, new enforcement actions will be brought under the civil penalty framework, and courts and TDSAT will develop new jurisprudence under the 2023 Act's provisions. The five companion booklets in this series — on TRAI and the regulatory architecture, licensing and spectrum, TDSAT jurisprudence, cybersecurity and data protection, and emerging issues in OTT, satellite, and the digital future — collectively address the full breadth of the Indian telecom legal landscape, providing the comprehensive analysis needed to navigate this dynamic and consequential regulatory environment.

India's telecommunications sector is entering a period of extraordinary transformation: the deployment of 5G networks connecting hundreds of millions of users to gigabit-speed broadband; the emergence of satellite broadband from LEO constellations bridging the rural connectivity gap; the deployment of AI-enabled network management; the growth of the Internet of Things connecting billions of devices; and the digital empowerment of India's vast rural population through BharatNet and associated connectivity programmes. The Telecommunications Act, 2023 — for all its imperfections — provides a legal framework capable of supporting this transformation. Its effective implementation, guided by the constitutional values of equality, privacy, freedom of expression, and public interest, will be one of the defining regulatory challenges of India's digital decade.

SUPPLEMENTARY NOTE A

Section-by-Section Commentary: Selected Provisions

A.1 Section 1 — Short Title, Extent and Commencement

Section 1 of the Telecommunications Act, 2023 provides that the Act may be called the Telecommunications Act, 2023 and that it extends to the whole of India. The territorial extent of the Act — the whole of India — is consistent with the Union List subject matter of telecommunications and with the constitutional principle that national communications infrastructure requires uniform national regulation. The Act's application to the whole of India encompasses the territorial sea, the continental shelf, and the exclusive economic zone of India to the extent that telecommunications services are provided in or to those areas — an important clarification given India's growing submarine cable infrastructure and the potential for satellite services to Indian offshore territories.

The commencement provision in Section 1(3) — that the Act shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint, and different dates may be appointed for different provisions — is a standard feature of complex Indian legislation. It allows the government to sequence the commencement of different provisions to align with the availability of implementing infrastructure (rules, regulations, institutional designations). Several provisions of the Act were brought into force immediately upon gazette publication in December 2023, while others await the framing of rules and the establishment of institutional machinery. Practitioners must verify the commencement status of specific provisions before relying on them.

A.2 Section 2 — Definitions: Comprehensive Commentary

Section 2 of the Telecommunications Act, 2023 contains twenty-six definitions, each of which is significant for the application of the Act's substantive provisions. The definition of "Adjudicating Officer" in Section 2(1) — a person designated as such under Section 38 — is the foundation of the civil penalty adjudication framework in Chapter VIII. The definition of "broadcast" in Section 2(5) — transmission of telecommunications for reception by the general public — is relevant to the coverage of broadcasting services within the Act's scope. The definition of "Central Government" in Section 2(7) includes the Ministry of Communications (which houses the Department of Telecommunications) and, for certain specified purposes, any other ministry or department designated by the Central Government.

The definition of "entity" in Section 2(9) — encompassing individuals, Hindu undivided families, companies, firms, limited liability partnerships, associations of persons, bodies of individuals, local authorities, and every artificial juridical person — is broader than the concept of "person" used in many regulatory statutes, and deliberately so. The breadth of the definition

ensures that the Act's obligations apply across the full range of legal forms through which telecommunications activities may be conducted, including unincorporated associations and bodies that might otherwise seek to evade regulatory obligations by structuring their operations outside the normal corporate form. The definition of "licensor" in Section 2(13) — meaning the Central Government — reflects the 2023 Act's preservation of the government's role as the primary grantor of authorisations and the assignor of spectrum.

Section 2(15) defines "number" to mean "any combination of digits, symbols, characters or such other identifiers, by whatever name called, used to identify or route calls or messages to any particular subscriber, terminal or service in a telecommunication network." This broad definition of number encompasses not only traditional telephone numbers (in the E.164 format) but also IP addresses (used to route internet traffic), SIP URIs (used in VoIP services), and any other identifier used in telecommunications routing. The breadth of the definition is important for TRAI's exercise of its numbering management functions — which extend under the 2023 Act to all forms of telecommunications identifiers, not merely traditional telephone numbers.

A.3 Section 4 — Spectrum Assignment: The First Schedule

Section 4 of the Telecommunications Act, 2023 governs the assignment of spectrum by the Central Government. Section 4(1) provides that the Central Government may, subject to such terms and conditions as may be prescribed, assign spectrum to any entity. Section 4(2) provides the constitutional requirement — consistent with the 2G Spectrum Case — that assignment of spectrum for the purposes specified in the First Schedule shall be done through auction. The First Schedule specifies four categories of services for which spectrum must be assigned by auction: (i) IMT (International Mobile Telecommunications) services; (ii) wireless broadband services; (iii) commercial VSAT services; and (iv) commercial satellite communication services.

The specification of auction-required spectrum uses in the First Schedule (which can be amended by the Central Government through notification, subject to parliamentary procedure) reflects the constitutional principle that natural resources must be allocated transparently for commercial purposes. The categories in the First Schedule correspond to the main commercial uses of spectrum: mobile broadband (IMT services), fixed wireless broadband, satellite-based internet (commercial VSAT), and satellite communications broadly. Non-commercial and government uses of spectrum — defence, internal security, scientific research, disaster management — are excluded from the auction requirement. The Central Government may assign such spectrum through administrative allocation, consistent with the Supreme Court's acknowledgement that auction is not constitutionally required for non-commercial allocations.

Section 4(3) provides that spectrum assignment under Section 4(1) shall be for a period not exceeding twenty years, and may be renewed. The twenty-year assignment period is a significant improvement over the five-year assignment terms that have historically characterised some spectrum auctions in India, which were considered too short to provide operators with sufficient certainty for long-term infrastructure investment. Longer assignment periods — aligned with the economic life of telecommunications infrastructure — provide operators with the regulatory certainty needed to invest in network deployment and generate a reasonable return on capital. The renewal provision ensures that spectrum can be reassigned at the end of each period, enabling the government to respond to changes in technology and market structure.

A.4 Section 5 — Directions in Emergencies and National Security

Section 5 of the Telecommunications Act, 2023 empowers the Central Government to issue directions to authorised entities in the interest of national security, public safety, or public emergency. These directions may require authorised entities to provide telecommunications services on specified terms; to suspend, restrict, or terminate services; and to undertake other actions necessary to address the relevant security or emergency situation. Section 5 is the statutory basis for internet shutdown orders and for other emergency interventions in telecommunications services, replacing the Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rules, 2017 that operated under the 1885 Act.

The constitutional validity of Section 5 directions must be assessed against the Anuradha Bhasin standard: directions must be based on a written order specifying reasons; must be proportionate to the identified threat or emergency; must not be indefinite or blanket in their application; and must be subject to periodic review and, if continued, renewed. The Act's provision — that directions under Section 5 must be in writing (Section 5(2)) — incorporates the Anuradha Bhasin requirement at the statutory level. The additional requirement that written orders be published or made available for judicial challenge is reflected in the rules to be prescribed, though the degree of transparency required (given the national security context of many Section 5 directions) will remain a subject of ongoing legal debate.

Section 5(3) provides that authorised entities that comply with directions issued under Section 5 shall not be liable for any loss, damage, cost, or expense arising from such compliance. This indemnification provision is essential for operators who are directed to suspend or restrict services — potentially causing financial loss to themselves and to their users — in the public interest. Without such indemnification, operators might face civil liability claims from users whose services are suspended pursuant to government directions, creating a financial disincentive for compliance. The indemnification applies to compliance with lawful directions;

operators that comply with unlawful directions (for example, directions issued without the required written authorisation) may not be protected by Section 5(3).

A.5 Section 8 — Delegation of Spectrum Assignment

Section 8 of the Telecommunications Act, 2023 empowers the Central Government to delegate its powers of spectrum assignment under Section 4 to any officer or authority. This delegation power is important for the operational management of spectrum assignment: the Central Government cannot itself process the millions of individual spectrum assignments required for a complex telecommunications market (from major cellular operators to individual radio amateur licensees). The delegation enables the WPC Wing, the DoT's designated spectrum management body, to process spectrum assignments operationally while the Central Government retains overall policy authority.

The distinction between delegation (under Section 8) and sub-delegation (further delegation by the delegatee) is relevant to the administrative law framework applicable to spectrum assignment decisions. If the Central Government delegates to the WPC Wing under Section 8, and the WPC Wing further delegates to a subordinate officer, the legality of the sub-delegation depends on whether Section 8 authorises sub-delegation (the general principle being that delegated power may not be further delegated without express statutory authority — delegatus non potest delegare). This is a technical but practically important point for entities challenging specific spectrum assignment decisions: the authority of the officer who made the decision must be verified.

A.6 Sections 17–21 — Offences and Penalties: Detailed Analysis

The penalty framework in Sections 17-21 of the Telecommunications Act, 2023 establishes a graduated scale of civil monetary penalties for different categories of violations. Section 17 provides for penalties for operating without authorisation (up to Rs. 50 lakh per violation and up to Rs. 10 lakh per day for continuing violations). Section 18 provides for penalties for breach of authorisation conditions (up to Rs. 5 crore per violation and up to Rs. 50 lakh per day for continuing violations). Section 19 provides for penalties for breach of directions (up to Rs. 5 crore). Section 20 provides for penalties for breach of security standards (up to Rs. 10 crore — the highest civil penalty in the framework, reflecting the seriousness of security non-compliance). Section 21 provides for penalties for other contraventions (up to Rs. 1 crore).

The penalty scale in Sections 17-21 is calibrated to the severity and public interest significance of different categories of violation. Security non-compliance attracts the highest penalties (up to Rs. 10 crore under Section 20), reflecting the systemic risk that security

breaches in telecommunications infrastructure can cause. Unauthorised operation (Section 17) attracts lower maximum penalties than breach of authorisation conditions (Section 18), on the logic that some unauthorised operations may be inadvertent (such as inadvertent licence expiry) while deliberate breaches of conditions by authorised operators are more culpable. The daily penalty provisions — applying where violations continue after the initial order — create strong incentives for prompt remediation.

The factors that the Adjudicating Officer must consider in determining the amount of penalty within the applicable maximum are prescribed in Section 37: the nature, gravity, and duration of the violation; the extent of harm caused; whether the violation was intentional or negligent; the financial resources of the violating entity; whether the entity cooperated with the investigation; and whether the entity has a history of previous violations. These factors — drawn from best practice in regulatory penalty frameworks globally — ensure that penalties are proportionate to the specific circumstances of each case rather than automatically set at the statutory maximum. The Adjudicating Officer's discretion in applying these factors is subject to judicial review by TDSAT on grounds of unreasonableness or disproportionality.

A.7 Sections 25–31 — Miscellaneous Powers and Provisions

Sections 25 to 31 of the Telecommunications Act, 2023 address a range of miscellaneous matters that are important for the implementation of the Act. Section 25 provides for the inspection of telecommunications networks and services by authorised officers — an important enforcement tool enabling the government to verify compliance with the Act's requirements, including security standards, coverage obligations, and quality of service standards. Authorised officers may enter the premises of authorised entities, inspect equipment and records, and take samples for testing. The exercise of inspection powers must comply with natural justice principles (requiring advance notice except in urgent situations) and with the constitutional right against unreasonable searches under Article 20(3).

Section 26 provides for the protection of confidentiality of messages: authorised entities and their employees are prohibited from disclosing the content of any message (other than as required by law or with the consent of the sender and addressee). This provision gives effect to the constitutional right to privacy of communications recognised in the Puttaswamy judgment, and creates criminal liability for unauthorised disclosure of message content. Section 26 is the legislative basis for operator employees' obligation of professional secrecy in relation to customer communications — an obligation that exists independently of any contractual confidentiality provision in employment agreements.

Section 28 governs the Digital Bharat Nidhi (discussed in Chapter 11). Section 29 provides for TRAI's continuing regulatory role under the TRAI Act, confirming that nothing in the 2023 Act derogates from TRAI's statutory powers. Section 30 provides that the Central Government may enter into agreements with foreign governments and international organisations on telecommunications matters — an important provision for international regulatory cooperation, including cooperation with the ITU, GSMA, and regional telecommunications bodies, and for the implementation of international spectrum coordination obligations. Section 31 provides for the power to exempt specified entities or services from the application of any provision of the Act, subject to conditions — a flexible power that may be used to grant sector-specific exemptions for government entities, emergency services, or other special cases.

A.8 Section 42 — Rule-Making Power

Section 42 of the Telecommunications Act, 2023 is the omnibus rule-making provision, empowering the Central Government to make rules to carry out the purposes of the Act. Section 42(2) provides an extensive non-exhaustive list of matters for which rules may be made, including: the manner and conditions of authorisation; the determination of spectrum fees and auction procedures; right-of-way compensation rates and procedures; the Digital Bharat Nidhi's contribution rates, utilisation, and administration; the regulatory sandbox framework; the security standards for critical telecom infrastructure; the procedure for adjudication by the Adjudicating Officer; the procedure for inspection and investigation; and the forms and fees for applications and proceedings under the Act.

The breadth of the rule-making power under Section 42 means that the most operationally significant aspects of the regulatory framework will be found not in the Act itself but in the subordinate legislation made under it. This is a feature of the framework legislation approach that practitioners must understand: the Act establishes the regulatory architecture and the powers, but the rules fill in the operational detail without which the Act cannot be applied. The progressive development of rules under Section 42 over the coming years will progressively operationalise the 2023 Act's framework. Monitoring the Official Gazette for new rules and notifications is an essential part of telecom legal practice in India.

Rules made under Section 42 are subject to the parliamentary oversight procedure prescribed in Section 43: all rules must be laid before both Houses of Parliament and may be annulled by a resolution of either House within the specified period. This negative resolution procedure provides a theoretical parliamentary check on executive rule-making. In practice, the volume of subsidiary legislation under a complex statute like the 2023 Act, the technical nature of the regulatory issues involved, and the limited parliamentary time available for detailed review of

subsidiary legislation mean that parliamentary scrutiny of rules is typically limited. The development of a technically expert parliamentary oversight process for telecommunications regulation — perhaps modelled on the pre-legislative scrutiny process applied to the Bill itself — would improve the quality and accountability of rule-making under the Act.

SUPPLEMENTARY NOTE B

Comparative Analysis: India's Framework in International Context

B.1 The European Union Electronic Communications Code, 2018

The European Union's European Electronic Communications Code (Directive (EU) 2018/1972, the EECC) — which replaced the 2002 EU Telecom Framework in December 2018 — is the most comprehensive recent example of telecommunications regulatory reform in a developed market and was a significant influence on the drafting of India's Telecommunications Act, 2023. The EECC introduced several innovations that are reflected, in adapted form, in the 2023 Act: the treatment of number-independent interpersonal communications services (a category that encompasses many OTT communication services) within the regulatory framework; enhanced provisions for spectrum management including coordination between member states; a strengthened framework for universal service and connectivity objectives; and provisions for very high-capacity network deployment.

A key difference between the EECC and the 2023 Act is in the treatment of OTT communication services. The EECC explicitly brings "number-independent interpersonal communications services" (NIICS) — which encompasses most messaging and voice-over-internet applications — within the scope of the regulatory framework, subject to a lighter set of obligations than apply to traditional licensed services. The 2023 Act's approach — leaving OTT services outside the regulatory perimeter for now while preserving the legislative flexibility to include them — is more cautious but equally valid from a policy perspective. India's larger and more diverse OTT market, and the political sensitivity of regulating OTT services used by hundreds of millions of ordinary citizens, may justify a more gradual approach than the EECC's more immediate inclusion.

B.2 The United Kingdom's Approach

The United Kingdom's telecommunications regulatory framework is governed by the Communications Act, 2003, the Electronic Communications Code (Part 2 of the Digital Economy

Act, 2017, amending the Code in the 1984 Telecommunications Act), and the recently enacted Product Security and Telecommunications Infrastructure Act, 2022. The Communications Act, 2003 established Ofcom as the UK's converged communications regulator (encompassing telecommunications, broadcasting, and spectrum management) — a model of regulatory convergence that India has not yet adopted, with TRAI regulating telecommunications and a separate broadcasting regulatory framework applying to content. The UK's experience with converged regulation — including the synergies and tensions that arise from regulating very different industries (network infrastructure and content) within a single regulatory body — is relevant to India's ongoing policy discussion about regulatory convergence.

The UK's Electronic Communications Code (ECC), governing the rights of communications providers to install and maintain infrastructure on public and private land, provides a closely relevant model for India's right-of-way framework. The ECC grants operators a "Code right" to install and maintain apparatus on land, including buildings, subject to conditions set by the courts or agreed with the relevant landowner. The ECC was significantly amended by the Digital Economy Act, 2017 and the Product Security and Telecommunications Infrastructure Act, 2022 to facilitate the deployment of full-fibre broadband and 5G networks, including through reduced compensation standards for sharing and upgrading of apparatus. India's Chapter IV RoW framework can be expected to evolve similarly as the needs of 5G and fibre deployment become more pressing.

B.3 The United States FCC Framework

The United States' telecommunications regulatory framework is centred on the Federal Communications Commission (FCC), established under the Communications Act, 1934, as amended by the Telecommunications Act, 1996. The US framework differs from India's in several important respects: the FCC is a fully independent regulatory commission (not an advisory body like TRAI), with binding regulatory authority over spectrum and telecommunications; the US relies more heavily on market mechanisms and less on direct regulation than India; and the US has a federal-state jurisdictional division that creates complexity analogous (though not identical) to India's Centre-state framework. The FCC's experience with spectrum auctions — which the US pioneered in 1994, with Indian auctions following in 2010 — is a relevant reference for the development of India's auction framework under the 2023 Act.

The US Telecommunications Act, 1996's framework for competitive entry into local telephone markets — including the unbundled network elements (UNE) framework and the interconnection requirements — provides relevant precedent for India's interconnection

regulatory framework. The US experience with mandatory network unbundling (requiring incumbent operators to provide competitors with access to their network elements at regulated prices) illustrates both the competition-enhancing potential and the investment-dampening risks of intensive unbundling mandates — a balance that India's TRAI has had to strike in its own interconnection and access policy.

B.4 Singapore's Telecommunications Act and Regulatory Model

Singapore's Telecommunications Act (Chapter 323) and its regulatory framework administered by the Infocomm Media Development Authority (IMDA) provide a useful comparative reference as a highly connected, small-economy model. Singapore achieves among the world's highest standards of telecommunications quality and innovation while maintaining a clear and efficient regulatory framework. Key features of Singapore's approach that are relevant to India include: the IMDA's converged mandate covering both telecommunications and media (analogous to the convergence discussion in India); Singapore's "code of practice" framework for regulatory compliance (using codes of practice rather than detailed prescriptive rules, which may be more flexible); and Singapore's approach to spectrum management for satellite and 5G services in an environment with competing regional spectrum assignments.

B.5 Lessons for India

The comparative analysis suggests several lessons for the implementation of India's Telecommunications Act, 2023. First, regulatory independence matters: jurisdictions where the independent regulator has binding rather than advisory powers in licensing and spectrum decisions tend to have more stable and predictable regulatory environments that attract greater infrastructure investment. India's hybrid model — TRAI as the independent economic regulator with advisory powers, and DoT as the licensing and spectrum authority — has served India reasonably well but creates institutional tensions that the 2023 Act does not fully resolve. Strengthening TRAI's practical independence (even if not its formal legal powers) would improve the investment climate.

Second, the treatment of OTT services will be one of the most important regulatory decisions of the coming decade. The EU's experience with the EECC suggests that a tiered framework — with OTT communication services subject to some regulatory obligations (particularly on security and lawful access) while being exempt from the full licensing framework — can be implemented in a workable manner. India's eventual OTT framework should be informed by this experience, adopting a proportionate approach that addresses the competitive asymmetry and security concerns raised by incumbent operators without imposing disproportionate burdens on the OTT

sector.

Third, right-of-way reform requires ongoing attention and enforcement. Experience in the UK, EU, and elsewhere demonstrates that statutory RoW frameworks require active enforcement to be effective: local authorities do not automatically comply with statutory obligations, and the deemed approval mechanism may require judicial enforcement in specific cases before it changes local authority behaviour at scale. India's implementation of the Chapter IV RoW framework must be accompanied by robust enforcement mechanisms, clear guidance for local authorities, and a dispute resolution process that provides timely and effective remedies for operators whose RoW rights are impeded.

SUPPLEMENTARY NOTE C

Practitioner's Compliance Guide

C.1 Authorisation Compliance

Practitioners advising telecom operators on compliance with the Telecommunications Act, 2023 should prioritise the following compliance areas. First, authorisation status: operators must verify that their current licences are covered by the saving provision in Section 36 and remain valid pending the transition to the new authorisation framework. The commencement status of specific provisions of the 2023 Act must be verified, as different provisions may have been brought into force at different dates. Operators should maintain registers of all their current licences and authorisations, including the service categories covered, the geographic areas authorised, and the expiry dates.

Second, authorisation conditions compliance: all conditions of existing licences and authorisations — carried forward under Section 36 — must continue to be observed. Operators must have robust internal compliance management systems covering: KYC/subscriber verification; lawful interception capability maintenance; security standards (including Trusted Telecom Portal compliance for new equipment); quality of service monitoring and reporting; AGR computation and authorisation fee payment; and coverage obligation fulfilment. Non-compliance with any of these conditions may attract civil penalties under the 2023 Act (once the civil penalty provisions are commenced) or revocation of the authorisation.

C.2 Spectrum Compliance

Spectrum compliance is a critical area for all operators using radio frequency resources. Key compliance obligations include: payment of spectrum usage charges (SUC) in accordance with

the prescribed rates and timelines; maintenance of wireless operating licences for all radio equipment deployed; compliance with the technical conditions of spectrum assignments (including power limits, frequency accuracy, and co-channel interference avoidance); compliance with rollout obligations (coverage or network launch requirements attached to spectrum assignments); and compliance with spectrum cap requirements (ensuring total spectrum holdings do not exceed applicable caps after any trading, sharing, or acquisition transactions).

Under the 2023 Act, spectrum trading and sharing transactions require prior approval from the designated authority. Operators planning to trade or share spectrum must submit the required applications and supporting documentation (including the draft agreement between the sharing parties) well in advance of the intended effective date, as the processing of such applications may take several months. Non-compliance with spectrum conditions — particularly rollout obligations — has historically attracted penalties including forfeiture of bank guarantees and, in serious cases, revocation of the spectrum assignment.

C.3 Right-of-Way Compliance

Operators seeking to deploy telecommunications infrastructure under the right-of-way framework of Chapter IV should follow the procedures prescribed in the DoT's RoW Rules (which carry forward and update the 2016 RoW Rules under the new statutory authority). Key steps in the RoW process include: identifying the category of property (public or private) on which infrastructure is to be deployed; filing the prescribed application with the property-owning authority within the required timelines; paying the prescribed compensation; and monitoring the application for a response within the prescribed period. Where no response is received within the prescribed period, the deemed approval mechanism under Section 12 activates, and operators should have systems in place to document and track deemed approvals.

Where RoW is disputed — either because the property-owning authority refuses the application, imposes unlawful conditions, or demands compensation in excess of the prescribed maximum — the dispute resolution mechanism under Section 14 provides the primary remedy. Operators should document all RoW applications, responses, and disputes systematically, as this documentation will be essential in any dispute resolution proceeding. Practitioners advising operators on RoW matters should be familiar with both the central RoW framework under the 2023 Act and with any applicable state-level laws and local authority procedures that remain relevant (particularly for private property RoW, which is not fully governed by the central framework).

C.4 Security Compliance

Security compliance is one of the most technically complex and commercially significant compliance areas for telecom operators. Key security obligations under the 2023 Act framework include: compliance with the Trusted Telecom Portal requirements (approval of new equipment before deployment, phased replacement of non-approved existing equipment on prescribed timelines); compliance with security audit requirements (periodic third-party audits by CERT-In empanelled auditors); compliance with incident reporting obligations (reporting to CERT-In within prescribed timelines for specified categories of cybersecurity incidents); compliance with the subscriber verification (KYC) requirements; and cooperation with national security agencies in lawful interception and related matters.

The financial consequences of security non-compliance under the 2023 Act are significant: Section 20 provides for civil penalties of up to Rs. 10 crore for breach of security standards — the highest penalty level in the Act. Operators should establish dedicated security compliance functions with sufficient technical expertise to manage the complex and evolving security requirements. Regular engagement with DoT, CERT-In, and the NCSC on security matters — including participation in their consultation processes — is advisable both to stay abreast of evolving requirements and to contribute constructively to the development of technically sound security standards.

C.5 Ongoing Monitoring of Subordinate Legislation

Given the Telecommunications Act, 2023's framework legislation approach, practitioners must maintain a systematic approach to monitoring the development of subordinate legislation. New rules, notifications, and amendments to existing rules under Section 42 may significantly affect the compliance obligations of authorised entities. TRAI's regulations under the TRAI Act are equally important and must be tracked separately. The Official Gazette (published by the Department of Publication) is the primary source for notifications, rules, and orders under the 2023 Act. DoT's website and TRAI's website are important secondary sources for consultations, recommendations, and explanatory materials.

Practitioners should also monitor the development of TDSAT jurisprudence under the 2023 Act's framework. TDSAT's decisions on the interpretation of the Act's provisions — particularly the civil penalty framework, the RoW provisions, and the scope of the Adjudicating Officer's powers — will constitute the primary body of legal guidance on the Act's application in specific factual situations. TDSAT decisions are published on the tribunal's website and are reported in specialised telecom law publications. Early decisions under the 2023 Act framework will be particularly significant, as they will set the interpretive tone for subsequent TDSAT and judicial practice.

SUPPLEMENTARY NOTE D

Advanced Analysis: The Telecommunications Act, 2023 in Practice

D.1 The Transition from Contractual to Regulatory Licensing

The conceptual shift from the contractual licensing model that governed Indian telecommunications under the Indian Telegraph Act, 1885 to the regulatory authorisation model introduced by the Telecommunications Act, 2023 has profound practical implications that practitioners must understand thoroughly. Under the contractual model, the Central Government issued licences as specific bilateral contracts: each licence was a discrete legal instrument negotiated (or at least consented to) by the specific operator, containing mutually agreed terms. The consequence was that the government's right to modify licence conditions was contractually constrained — modifications required the licensee's agreement, and unilateral modifications could be challenged as breaches of contract. When the government wished to update security conditions, introduce new technological requirements, or change fee structures, it often needed to negotiate amendment agreements with each individual licensee — a process that was time-consuming, expensive, and created a risk of inconsistent terms across the sector. The contractual model also created the conditions for the AGR dispute: a definitional ambiguity in a bilateral agreement, rather than a matter addressed by statute, led to decades of litigation and ultimately to sector-threatening financial demands that the Supreme Court felt unable to relieve given the contractual nature of the obligations.

Under the regulatory authorisation model introduced by the Telecommunications Act, 2023, authorisations are instruments of public law — regulatory permissions granted in the exercise of statutory power rather than contracts between private parties. The conditions of authorisations are prescribed by rules and regulations made under the statutory framework, not by individual negotiation. The Central Government can modify authorisation conditions by amending the applicable rules, subject only to the constitutional requirements of natural justice (providing notice and opportunity to be heard to affected operators) and legitimate expectations (protecting the reasonable reliance that operators have placed on existing conditions). This is a fundamentally different legal relationship: operators hold authorisations as regulatory permissions that can be modified in the public interest, not as contractual entitlements that can only be varied by agreement. The practical implication is that operators under the new framework have more limited legal grounds to resist condition changes than they had under the

licence-as-contract model — but also that the government has a clearer legal basis for updating conditions as technology, market conditions, and policy priorities evolve, without the need for bilateral renegotiation.

The transitional period — during which existing licence-as-contract instruments remain in force alongside the new regulatory authorisation framework — creates a complex dual legal environment for practitioners. Operators continue to be bound by the terms of their existing UL licences (as preserved by Section 36 of the 2023 Act), which are contractual in character and must be interpreted using the contractual canons established by the AGR Case. At the same time, new regulatory developments under the 2023 Act framework — new security standards, new right-of-way conditions, new reporting requirements — may apply to operators through the regulatory authorisation framework even before their individual licences are formally migrated. The interaction between the contractual obligations of the old licence and the regulatory obligations of the new framework creates interpretive complexity that will require careful analysis in specific compliance situations. Practitioners advising operators during the transition must maintain awareness of both frameworks simultaneously, identifying which set of rules governs each specific compliance obligation and how to resolve any conflicts that arise.

D.2 The Digital Bharat Nidhi: Governance and Impact Assessment

The Digital Bharat Nidhi (DBN) — the renamed and expanded Universal Service Obligation Fund — represents one of the most significant public investment mechanisms in India's digital development agenda. Since its establishment in 2002 (as USOF), the fund has collected approximately Rs. 55,000 crore in contributions from licensed operators and has disbursed approximately Rs. 27,000 crore on universal connectivity programmes — leaving a significant unspent balance that reflects both implementation delays in DBN-funded programmes and the fund's rapid accumulation of revenue from the growing telecom sector. The gap between collection and disbursement has attracted criticism: critics argue that the fund is collecting money from operators (which is ultimately borne by subscribers as part of their telecommunications costs) that is not being used for its intended purpose, and that operators' financial burden could be reduced if the collection rate were aligned with actual programme disbursement requirements rather than set at a fixed 5% of AGR regardless of the fund's utilisation rate.

The governance framework for the Digital Bharat Nidhi under the Telecommunications Act, 2023 provides a statutory basis for the fund and for the Central Government's power to direct contributions and prescribe utilisation modalities, but does not itself establish the detailed governance arrangements needed for effective fund management. Key governance questions that the implementing rules must address include: what criteria determine which connectivity

programmes are eligible for DBN funding? How are DBN-funded programmes evaluated for impact and value for money? What mechanisms ensure accountability of implementing agencies (BSNL, state agencies, private contractors) for the deployment and maintenance of DBN-funded infrastructure? How are conflicts of interest between BSNL's role as DBN programme implementer and its role as a competitive operator managed? And how is the utilisation of the fund reported to Parliament and to the public? The development of a robust, outcomes-oriented governance framework for the DBN — drawing on best practices from infrastructure fund management globally, including the United States' Rural Digital Opportunity Fund and the European Union's Digital Connectivity Infrastructure Fund — is an essential complement to the Telecommunications Act's statutory framework.

The expanded mandate of the Digital Bharat Nidhi to fund research and development in telecommunications — a new power granted by the Telecommunications Act, 2023 — has significant implications for India's telecommunications innovation ecosystem. Historically, telecommunications R&D; in India has been funded primarily through ISRO (for satellite communications), C-DoT (for switching and transmission technology), and TEC (for standards development), with limited direct public funding for private sector telecommunications R&D.; The DBN's new R&D; mandate provides a mechanism for targeted public investment in telecommunications technologies where India has strategic interests — including 5G and 6G radio access technologies, open RAN, quantum communications, and indigenous satellite communications technologies. The specific criteria and processes through which DBN R&D; funding will be allocated — and the mechanisms for ensuring that publicly funded R&D; generates accessible innovations rather than proprietary technologies controlled by specific commercial interests — are important governance questions that the implementing rules must address carefully.

D.3 Section 24 Interception: Operational and Constitutional Analysis

Section 24 of the Telecommunications Act, 2023 replaces Section 5(2) of the Indian Telegraph Act, 1885 as the statutory basis for government-authorised interception of telecommunications. The operational framework for interception under Section 24 — including the specific procedures for issuing, implementing, and reviewing interception orders — will be prescribed by rules under the Act. Until the new rules are prescribed and notified, the procedures established under Rule 419A of the Indian Telegraph Rules, 1951 and the corresponding framework for internet-based communications under Section 69 of the IT Act, 2000 continue to govern interception in practice. Practitioners advising operators on interception compliance must maintain awareness of both the historical Rule 419A framework (which continues to apply to

legacy matters) and the evolving framework under the 2023 Act (which will progressively replace it as rules are notified).

The constitutional standard against which Section 24's interception framework must be assessed is the Puttaswamy three-part test: legality (Section 24 itself provides the legal basis, satisfying the first requirement); legitimate aim (national security, public safety, and investigation of offences are clearly legitimate aims, satisfying the second requirement); and proportionality (this is the most contested requirement, since Section 24 does not itself specify the procedural safeguards that ensure proportionate exercise of the interception power, delegating these to rules). The proportionality of the interception framework depends critically on the adequacy of the safeguards prescribed in the rules — the strength of the review mechanism, the specificity of the grounds for interception, the limitations on bulk collection, and the accountability mechanisms for ensuring that interception powers are not abused. Civil society organisations have argued that the rules as currently envisaged (based on the model of the existing Rule 419A framework) do not incorporate adequate proportionality safeguards — specifically, that executive-only authorisation without judicial oversight is constitutionally insufficient after Puttaswamy.

The Supreme Court's consideration of the constitutionality of the Section 24 framework — through pending petitions filed by civil liberties organisations — is the most important constitutional litigation affecting the Telecommunications Act, 2023 in its early years. The Court's approach to this question will be informed by its comparative assessment of judicial oversight systems in other jurisdictions (the US FISA Court, the UK Investigatory Powers Tribunal, the German G-10 commission) and by the academic literature on the constitutional requirements for oversight of surveillance activities in a democratic society. If the Court holds that prior judicial authorisation (or at least post-hoc independent judicial review within a short period) is constitutionally required for telecommunications interception, the government will need to establish an independent judicial oversight mechanism — potentially creating a dedicated surveillance court or expanding the jurisdiction of the High Courts to include rapid review of interception orders. The design of such a mechanism would need to balance the constitutional rights of surveillance targets against the legitimate security interests that justify the surveillance — a balance that requires careful legislative design and robust institutional implementation.

D.4 Right of Way Implementation: Practical Challenges

The implementation of Chapter IV's right-of-way framework in practice faces three categories of challenges that practitioners advising operators must address. The first category is constitutional challenge: several state governments have questioned the Central Government's

authority to impose the RoW framework (including the fee caps and deemed approval provisions) on state agencies and local bodies without the relevant states' consent. The constitutional basis for Parliament's authority to legislate on right-of-way matters rests on the doctrine of incidental and ancillary power — the principle that Parliament may legislate on matters incidentally necessary for the effective exercise of its substantive legislative power (here, telecommunications under Entry 31 of the Union List). While the Supreme Court has generally upheld this doctrine in the context of telecommunications infrastructure, the specific application to fee caps imposed on state local bodies — whose revenue powers are protected under the constitutional scheme — is not free from doubt. Practitioners advising on RoW matters must assess the legal robustness of the Central Government's fee cap impositions in specific states, and should be prepared for the possibility that specific state-level challenges succeed in some jurisdictions.

The second category of RoW implementation challenge is administrative: the processing of RoW applications by local bodies in a timely, consistent, and transparent manner is a significant administrative challenge in a country as large and administratively diverse as India. Many local bodies — particularly in smaller towns and rural areas — lack the technical capacity and administrative systems to process RoW applications within the timelines prescribed by the Act and its implementing rules. The training and capacity building of local body officials, the development of digital application processing systems that enable operators to file and track applications online, and the establishment of clear guidance on the conditions that may and may not be imposed on RoW grants are all essential components of effective RoW framework implementation. The Central Government and state governments must invest in these administrative capacity building measures if the 2023 Act's RoW framework is to achieve its intended effect of reducing infrastructure deployment timelines and costs.

The third category of challenge is commercial: even with a strong statutory framework, operators must negotiate with local bodies for RoW on commercial terms within the framework's constraints. Local bodies that are cooperative and well-administered will grant RoW efficiently and at the prescribed fee levels; local bodies that are resistant, poorly administered, or seeking informal payments will create delays even if they cannot legally demand fees above the prescribed maximum. The effectiveness of the deemed approval mechanism — which treats inaction within the prescribed period as approval — depends on operators' ability to document their applications (so that the prescribed period can be objectively established), their willingness to commence work on the basis of a deemed approval (accepting the risk of challenge if the local body subsequently contests the deemed approval), and the practical enforceability of deemed

approvals in the event of local body resistance. Building a body of jurisprudence — through TDSAT and High Court decisions — that clearly confirms the legal effectiveness of deemed approvals and that awards meaningful remedies for interference with deemed-approved infrastructure is an essential complement to the statutory framework.

D.5 Spectrum Assignment: Forward-Looking Analysis

The spectrum assignment framework under the Telecommunications Act, 2023 will be tested in the context of India's preparation for 6G technology, which is expected to require new spectrum in millimetre-wave and sub-terahertz frequency bands not currently allocated for commercial mobile use. The ITU World Radiocommunication Conference 2023 (WRC-23) took initial steps towards identifying spectrum for 6G, and WRC-27 and WRC-31 are expected to make definitive spectrum allocations for International Mobile Telecommunications (IMT) in bands above 7 GHz and potentially in the sub-terahertz range (100-300 GHz). India's preparation for WRC-27 — including the development of national positions on new spectrum allocations, the coordination of India's frequency band proposals through the Asia-Pacific Telecommunity (APT), and the technical studies supporting India's positions — will be one of the most important spectrum policy activities under the 2023 Act's spectrum management framework over the next several years.

The 2023 Act's spectrum assignment framework will need to accommodate several new assignment modalities that were not contemplated in the previous framework. Shared spectrum — where multiple operators, including both licensed telecom operators and unlicensed users, coexist in the same frequency band under a regulatory sharing framework (analogous to the CBRS framework in the United States) — is expected to become more important as spectrum demand grows and efficient utilisation requires more flexible sharing arrangements than the traditional exclusive licensed assignment model. The Act's spectrum assignment provisions, and the rules made under them, must provide a clear legal basis for shared spectrum frameworks — including the legal status of shared use rights, the mechanisms for protecting primary users from harmful interference, and the liability framework for interference caused by secondary users. The development of India-specific shared spectrum frameworks — informed by international experience with CBRS, LSA, and other sharing models — will be an important area of spectrum policy innovation under the 2023 Act.

D.6 The Civil Penalty Regime: Enforcement in Practice

The civil penalty regime introduced by the Telecommunications Act, 2023 — replacing the primarily criminal enforcement framework of the Indian Telegraph Act, 1885 — is expected to

transform the enforcement landscape for telecom regulation in India. The new regime has several significant advantages over its predecessor. First, it enables calibrated financial penalties proportionate to the severity of specific violations, rather than requiring either criminal prosecution (which is rarely proportionate for routine regulatory non-compliance) or no enforcement at all (which was the practical outcome in many cases where the criminal threshold was not met). Second, it creates a specialised administrative adjudication mechanism (the Adjudicating Officer) with sector expertise and the ability to process enforcement actions more quickly than criminal courts. Third, it provides for enhanced penalties for repeated violations and reduced penalties for self-reported violations, creating incentives for proactive compliance monitoring and prompt disclosure of compliance failures.

The development of effective civil penalty enforcement practice under the 2023 Act will require attention to several institutional design questions. How will the Adjudicating Officer gather evidence of regulatory violations — through document requests, site inspections, technical assessments, or referrals from TRAI and CERT-In? How will the Officer manage the tension between the need for efficient enforcement (requiring some degree of presumption or reversal of the burden of proof for certain well-documented violations) and the natural justice rights of accused operators (who are entitled to a fair opportunity to contest the evidence against them and to present mitigating circumstances)? What guidelines will govern the exercise of the Officer's penalty-setting discretion (to ensure consistency across similar violations by different operators)? And how will the Officer coordinate with TDSAT (which may have concurrent jurisdiction over some compliance matters) to avoid inconsistent or duplicative proceedings?

The TDSAT appellate framework for civil penalties — providing operators with access to an independent review of Adjudicating Officer decisions — is an important constitutional safeguard that ensures that the civil penalty regime does not become a tool of arbitrary or disproportionate enforcement. TDSAT's review of Adjudicating Officer decisions will cover both the merits of the penalty decision (was the violation established on the evidence? was the penalty proportionate to the violation and the operator's circumstances?) and the procedural regularity of the enforcement process (was the operator given adequate notice and opportunity to be heard? were relevant considerations taken into account and irrelevant ones excluded?). The development of a coherent body of TDSAT jurisprudence on the application of the civil penalty framework — particularly on the factors relevant to penalty calibration and on the procedural requirements for a valid enforcement process — will be essential for the predictability and legitimacy of the new enforcement regime.

D.7 The 2023 Act and International Obligations

India's obligations under international telecommunications law — primarily the ITU Constitution and Convention, the ITU Radio Regulations, and India's bilateral and multilateral telecommunications agreements — must be reflected in and are generally accommodated by the Telecommunications Act, 2023. The ITU instruments, to which India is a party as a Member State of the ITU, impose obligations on India in several areas relevant to the 2023 Act: the obligation to coordinate satellite frequency assignments through the ITU Radiocommunication Bureau; the obligation to implement international telecommunications accounting and settlement arrangements; the obligation to ensure that Indian telecommunications services and networks do not cause harmful interference to telecommunications in other ITU Member States; and the obligation to maintain the availability of international telecommunications services (particularly for distress and emergency communications). The 2023 Act's provisions are generally consistent with these international obligations, and the Act's rule-making power enables the government to implement specific international obligations through rules as required.

India's bilateral telecommunications agreements — including the telecommunications provisions of free trade agreements, investment treaties, and specific bilateral telecom arrangements — may also impose obligations that interact with the 2023 Act's framework. The telecommunications chapters of India's FTAs with trading partners (including the India-UAE CEPA, the India-Australia ECTA, and proposed agreements with the EU, UK, and Canada) typically address: market access for foreign telecommunications operators; obligations to maintain competitive licensing frameworks; regulatory transparency and non-discrimination requirements; and reference interconnection arrangements. The 2023 Act's authorisation framework must be compatible with India's FTA commitments on market access and non-discrimination — ensuring that the conditions of authorisation do not constitute hidden barriers to foreign participation in India's telecommunications market in violation of India's trade commitments.

SUPPLEMENTARY NOTE E

Regulatory Jurisprudence and Policy Analysis

E.1 Doctrine of Legitimate Expectations in Telecom Regulation

The doctrine of legitimate expectations — a principle of administrative law that protects the reasonable expectations of persons who have relied on representations or established practices of a public authority — is of particular significance in telecommunications regulation given the long-term nature of infrastructure investments and the consequent reliance by operators on the

regulatory conditions prevailing at the time of investment decisions. When a telecom operator makes a multi-thousand-crore investment in spectrum or network infrastructure based on the regulatory conditions (licence fee rates, spectrum caps, quality standards, or other conditions) applicable at the time of investment, it acquires a legitimate expectation that those conditions will not be radically changed without adequate notice and without adequate consideration of the operator's reasonable reliance interests. The Supreme Court has recognised the doctrine of legitimate expectations as part of Indian administrative law, deriving it from the constitutional requirements of fairness under Article 14 and procedural protection under Article 21, and has applied it in several administrative contexts to require that regulatory authorities provide reasonable notice and an opportunity to respond before making changes to established practices that adversely affect affected parties.

The application of the legitimate expectations doctrine in the specific context of telecommunications regulation has been explored in several TDSAT decisions and High Court cases. Operators challenging unilateral modifications of licence conditions — particularly modifications that increase the financial burden of licences or that introduce new compliance obligations — have invoked the doctrine to argue that the government is required to consult operators and consider the impact on their reasonable reliance before implementing changes. TDSAT has generally accepted the principle while recognising that the scope of protection afforded by legitimate expectations depends on the nature of the representation or practice on which the expectation is based: a specific, unambiguous representation by the licensor (such as a guarantee that fee rates will not increase for a specified period) attracts stronger protection than a general policy or practice that was always subject to regulatory change. The government's power to modify licence conditions in the public interest — particularly in response to new security threats, technological developments, or policy priorities — cannot be entirely constrained by legitimate expectations, but the exercise of that power must be procedurally fair and must take into account the legitimate reliance interests of operators.

The intersection of the legitimate expectations doctrine with the Telecommunications Act, 2023's transition provisions creates specific interpretive questions. Section 36 of the Act preserves existing licences "as if granted under the 2023 Act," but does not explicitly guarantee that all conditions of existing licences will be maintained unchanged during the transition period. Operators whose existing licences contain specific conditions (such as guaranteed fee rates, specific service area definitions, or specific spectrum usage conditions) have a legitimate expectation that these conditions will be respected during the transition period. Where the government proposes to modify conditions as part of the transition to the new authorisation

framework, the legitimate expectations doctrine requires: adequate advance notice of the proposed changes; an opportunity for operators to respond and to present evidence of the impact on their reasonable reliance interests; genuine consideration of that evidence before the modification is made; and (in appropriate cases) transitional arrangements or compensation for operators who have made irrecoverable investments in reliance on the conditions being changed. The development of a principled framework for managing legitimate expectations during the licence-to-authorisation transition is one of the important regulatory governance challenges under the 2023 Act.

E.2 The Proportionality Standard in Telecom Regulation

The proportionality principle — requiring that regulatory interventions be no more extensive than necessary to achieve the legitimate regulatory objective — has become an increasingly important constraint on telecom regulatory decision-making in India following the Puttaswamy judgment's elevation of proportionality to a constitutional standard for restrictions on fundamental rights. While the Puttaswamy formulation of proportionality was developed specifically in the context of restrictions on the right to privacy, the principle has broader application in administrative law: regulatory measures that restrict the commercial freedom of operators, that impose burdens on operators, or that affect consumers' choices must be proportionate to the regulatory objectives they serve. The application of proportionality in the telecom regulatory context encompasses both substantive proportionality (the measure must achieve the objective and must not be more burdensome than necessary) and procedural proportionality (the regulatory process must be fair and must give adequate consideration to the interests of those affected).

The substantive proportionality analysis for telecom regulatory measures requires a two-step assessment: first, is the measure effective at achieving its stated objective? And second, are there less restrictive alternatives that could achieve the same objective at lower cost to the regulated entities and to consumers? This "least restrictive means" requirement — a demanding standard that obliges regulators to actively consider alternatives before adopting a restrictive measure — has been applied in TDSAT's review of TRAI's quality of service regulations (assessing whether mandatory compensation for call drops is a proportionate response to quality problems, as compared to less intrusive enforcement mechanisms such as public disclosure of quality data), in the context of internet shutdown challenges (assessing whether a blanket, area-wide shutdown is proportionate when more targeted measures might address the specific security concern), and in the context of equipment security requirements (assessing whether mandatory equipment replacement at operators' expense is proportionate when the security risk

posed by non-approved equipment has not been specifically demonstrated). The development of a consistent proportionality framework in Indian telecom regulation — applied by TRAI in its regulatory decision-making, by TDSAT in its appellate review, and by courts in constitutional challenges — would improve both the quality of regulatory outcomes and the legitimacy of the regulatory process.

The burden of demonstrating proportionality — whether it lies with the regulator (to demonstrate that the measure is necessary and proportionate) or with the challenger (to demonstrate that the measure is disproportionate) — is an important procedural question. In constitutional challenges before courts, the burden generally lies with the state (in this case, the regulator) to demonstrate that a measure restricting a fundamental right satisfies the proportionality standard. In regulatory challenges before TDSAT (which are not constitutional challenges but administrative law appeals), the burden typically lies with the challenger (the operator challenging the TRAI order) to demonstrate that the order is unreasonable, takes into account irrelevant considerations, or is otherwise legally defective. This asymmetry — with the constitutional challenge framework placing the burden on the government and the administrative law challenge framework placing it on the challenger — creates strategic considerations for operators deciding how to challenge regulatory decisions: a constitutional route (before a High Court) may be preferable where the fundamental rights implications are strong, while the TDSAT appellate route may be more appropriate where the challenge is primarily about the economic rationality or procedural adequacy of the regulatory decision.

E.3 Competition Policy and Sector-Specific Regulation

The relationship between sector-specific telecommunications regulation (administered by TRAI and DoT) and general competition law (administered by the Competition Commission of India under the Competition Act, 2002) is a fundamental institutional design question in the Indian telecommunications regulatory architecture. Both frameworks serve competition-promoting objectives — TRAI regulates the sector specifically, while the CCI applies general competition principles — but they use different tools, apply different analytical frameworks, and are enforced by different institutional actors. The potential for conflicting or duplicative decisions from these two regulatory channels is a persistent concern for telecom operators operating simultaneously in both regulatory spaces.

The Supreme Court's approach to the TRAI-CCI relationship — articulated in cases including Bharti Airtel Ltd. v. CCI, (2019) SCC Online SC 1 and related decisions — has been to affirm concurrent jurisdiction: TRAI's sector-specific regulation does not pre-empt the CCI's competition law jurisdiction, and the CCI may investigate and remedy competition law violations by telecom

operators even where TRAI has addressed the same conduct through its regulatory framework. The rationale is that the Competition Act's substantive standards (the prohibition on anti-competitive agreements under Section 3 and the prohibition on abuse of dominance under Section 4) are different from TRAI's regulatory standards (licence conditions, QoS standards, interconnection regulations) and address different aspects of the same conduct. A single act — such as an operator's refusal to provide interconnection to a new entrant — may simultaneously constitute a breach of TRAI's interconnection regulations (addressed through TRAI enforcement or TDSAT proceedings) and an abuse of dominant position under Section 4 of the Competition Act (addressed through CCI proceedings). Both regulatory channels may be available to the aggrieved party, and both may result in remedies.

The coordination mechanism between TRAI and CCI — developed through an MoU and inter-institutional consultations — is intended to reduce duplication and ensure consistency between their respective regulatory activities in the telecommunications sector. The MoU provides for information-sharing between the two bodies, for mutual consultation on matters of concurrent relevance, and for consideration of each other's findings and orders in making their respective decisions. In practice, coordination has been imperfect: specific cases (such as the Reliance Jio-incumbent competition disputes in 2016-17) saw both TRAI/TDSAT and CCI proceedings involving the same conduct, with the two bodies reaching broadly consistent conclusions but not operating in a fully coordinated manner. The development of more formal coordination mechanisms — perhaps including a joint regulatory committee or a formal referral framework — would improve the consistency and efficiency of telecom competition oversight in India.

E.4 Technology Neutrality in Regulation

Technology neutrality — the principle that regulatory frameworks should not favour or disfavour specific technologies, but should regulate outcomes (the quality, availability, and affordability of telecommunications services) rather than the means by which those outcomes are achieved — is a foundational principle of modern telecommunications regulation that the Telecommunications Act, 2023 embodies in its authorisation framework. The authorisation granted to an operator under Section 3 of the 2023 Act covers the provision of specified services (access services, long-distance services, internet services) regardless of the technology used to provide those services; it does not specify or restrict the technology the operator must use. This technology neutrality allows operators to choose the best available technology for each use case — fibre, 4G, 5G, satellite — without regulatory constraint, enabling the technology mix to evolve with the market and with the state of technology.

The practical implementation of technology neutrality in spectrum policy — allowing spectrum to be used for any technology within the technical constraints of the band (power limits, bandwidth, co-existence requirements) rather than restricting it to a specific technology standard — has been an important regulatory development in India. Spectrum bands that were initially licensed specifically for GSM (2G) use have been progressively liberalised for use with any technology (2G, 3G, 4G, 5G), enabling operators to upgrade their network technology within their existing spectrum holdings without requiring additional regulatory approval. This technology-neutral approach to spectrum management improves spectrum efficiency (by allowing operators to allocate spectrum to the technologies that provide the best performance for their subscribers) and reduces regulatory barriers to technology modernisation.

The limits of technology neutrality — situations where specific technology requirements are justified for regulatory purposes — are also an important aspect of the principle. In the security context, technology specificity may be appropriate: the Trusted Telecom Portal framework evaluates specific equipment and software implementations, not technologies in the abstract. A network element that provides 5G connectivity using a particular vendor's proprietary implementation must be evaluated and approved as a specific implementation, not merely as "5G equipment" in the abstract. Similarly, in the quality of service context, specific technology characteristics (such as the latency inherent to different satellite orbital altitudes) may justify different QoS standards for different technologies providing the same service — applying terrestrial mobile QoS standards to GEO satellite services (with their inherent 600ms latency) would make satellite services non-compliant for reasons inherent to the technology rather than operator performance failures.

E.5 International Roaming Regulation

International mobile roaming — the ability of mobile subscribers to use their devices and services while visiting foreign countries, with the visited network providing connectivity and the home network charging the subscriber — involves a complex web of commercial and regulatory arrangements between telecom operators globally. India's international roaming framework is governed by a combination of: bilateral roaming agreements between Indian operators and foreign operators (specifying the commercial terms for roaming, including the wholesale rates charged between operators for providing roaming services); TRAI's International Mobile Roaming Tariff Orders (specifying the maximum retail rates that Indian operators may charge their subscribers for inbound and outbound roaming); and the ITU's accounting rate framework (the international standards for settlement of international telecommunications accounts between national operators).

TRAI's regulatory oversight of international roaming charges has been motivated by the historically very high retail prices charged by Indian operators for international roaming services — prices that reflected both the high wholesale rates charged by foreign host operators and the operators' commercial opportunity to profit from subscribers who had limited price awareness when roaming abroad. TRAI's Tariff Order on International Roaming (most recently updated in 2020) requires Indian operators to: disclose roaming rates clearly to subscribers before they roam; provide "roaming packs" at specified maximum prices for common roaming destinations; implement automatic usage alerts (SMS notifications when usage reaches specified thresholds); and offer a "roaming bill limiter" that prevents subscribers from incurring roaming charges above a specified amount without explicit consent. These consumer protection measures — which have reduced but not eliminated bill shock for Indian subscribers roaming abroad — reflect TRAI's consumer protection mandate applied to a specific high-risk commercial situation.

E.6 The Number Portability Framework

Mobile Number Portability (MNP) — enabling subscribers to retain their telephone numbers when switching between operators — is regulated by TRAI's Mobile Number Portability Regulations, which were first introduced in 2011 for intra-circle porting and extended to inter-circle portability (full MNP) in subsequent years. Full MNP — allowing subscribers to retain their numbers when switching operators even if they move to a different telecom circle — requires a complex national number management architecture: the national Number Portability Clearinghouse (NPC) maintains a real-time database of ported numbers and their current serving networks, which all operators must query before routing calls to portable numbers. The legal and technical framework for full MNP in India was a significant regulatory achievement that required TRAI recommendations, DoT licence amendments, and substantial investment by operators and the NPC in the technical infrastructure required.

The commercial impact of MNP on the Indian mobile market has been significant and broadly positive for consumers. MNP has reduced the switching cost for subscribers, enabling them to take advantage of better offers from competitors without losing their established phone numbers. Monthly porting volumes — the number of subscribers who switch operators each month — reached several million per month at peak periods of competitive activity (particularly in the period following Reliance Jio's 2016 market entry, when many subscribers ported from incumbent operators to Jio to take advantage of Jio's disruptive pricing). High porting volumes create competitive pressure on all operators to maintain attractive pricing and service quality, as customers are demonstrably willing to switch if a competitor offers better value. The steady-state monthly porting volumes — which have moderated from the peak levels of 2016-18 but remain

significant — are an indicator that the Indian mobile market continues to be competitively active at the consumer level.

E.7 Rural Connectivity: Regulatory Obligations

Rural connectivity obligations — the requirements on licensed operators to provide service coverage in rural and remote areas that may not be commercially viable without subsidy or regulatory compulsion — are a core dimension of the universal service framework that the Telecommunications Act, 2023 carries forward and strengthens. Operators' coverage obligations — which specify the percentage of villages, tehsils, and districts that must be covered within specified timelines — are one of the primary regulatory tools for ensuring that commercial mobile networks extend to areas that the market alone would not serve. The enforcement of coverage obligations has been a persistent challenge: operators may technically comply with coverage obligations by ensuring that a mobile signal is detectable at the required level in covered areas, while actual service quality (data speeds, call quality, reliability) may be far below the standards that subscribers in covered areas can access compared to urban subscribers.

The emergence of new connectivity technologies — particularly LEO satellite broadband and 5G fixed wireless access — offers new tools for extending coverage to areas that terrestrial mobile networks struggle to serve economically. The regulatory framework must accommodate these new technologies: coverage obligations that specify the technology to be used (rather than the service outcome to be achieved) may inadvertently exclude cost-effective new technologies that could achieve the coverage objective. A technology-neutral definition of coverage obligations — specifying the minimum service quality (data speed, latency, reliability) that must be available in covered areas, regardless of the technology used to provide it — would enable operators to use the most cost-effective combination of terrestrial and satellite technologies to meet their coverage obligations. The Digital Bharat Nidhi's support for satellite backhaul to remote areas is consistent with this technology-neutral approach to coverage obligation fulfilment.

E.8 Quality of Service Enforcement: An Evolving Framework

TRAI's enforcement of quality of service standards — ensuring that operators actually deliver the service quality they are regulated to provide, rather than merely reporting compliance — has evolved through several phases since TRAI's establishment. The earliest QoS enforcement approach relied primarily on operator self-reporting (quarterly QoS performance reports submitted by operators in prescribed formats), supplemented by TRAI's own periodic drive tests (field measurements of network performance conducted by TRAI or its authorised agents). This

approach was limited by: the reliability of self-reported data (operators have commercial incentives to present their performance favourably); the limited geographic coverage of TRAI's own drive tests (which could not cover the full extent of India's diverse and vast territory); and the absence of real-time monitoring (which precluded rapid regulatory response to service quality deteriorations).

The introduction of the TRAI MySpeed and MyCall crowd-sourced measurement applications represented a significant methodological innovation in QoS monitoring. By enabling millions of subscribers to measure and report their actual service quality experiences, TRAI created a large-scale, geographically distributed measurement system that complements its own drive tests and operator self-reports. The MySpeed database — which contains millions of broadband speed measurements from subscribers across India — provides TRAI with unprecedented visibility into the distribution of actual broadband speeds by operator, geography, and time period, enabling the identification of systematic performance gaps that operator self-reports might not reveal. The development of TRAI's analytical capabilities to extract maximum regulatory insight from this large dataset — including the use of statistical analysis to identify outlier operators and geographic areas for further investigation, and the use of machine learning to identify patterns of systematic under-performance — is an important priority for TRAI's regulatory modernisation agenda.

SUPPLEMENTARY NOTE F

The 2023 Act: Sector-by-Sector Legal Impact

F.1 Impact on Mobile Virtual Network Operators

Mobile Virtual Network Operators (MVNOs) — entities that provide retail mobile telephony services to subscribers without owning their own radio access network infrastructure, instead reselling network capacity acquired wholesale from a licensed MNO (Mobile Network Operator) — have a unique legal position under India's telecommunications regulatory framework. MVNOs obtain access to the MNO's network through a commercial wholesale agreement, then provide retail services under their own brand. MVNOs exist in a regulatory grey area in India: they are not traditional licensed operators (since they have no spectrum and no physical network), yet they provide public telecommunications services that affect subscribers. TRAI's recommendations on MVNOs (2008) proposed a regulatory framework, but formal MVNO licensing was not implemented until DoT issued revised MVNO guidelines in 2016, permitting MVNOs to operate under the host MNO's licence with limited direct regulatory obligations. The

Telecommunications Act, 2023's class authorisation mechanism is particularly relevant to MVNOs: class authorisation could provide a more flexible and commercially appropriate regulatory basis for MVNO operations than the current host-licence model, potentially enabling a wider range of MVNO business models and new entrants into the retail telecoms market.

The international MVNO experience — particularly in markets such as the United Kingdom, Germany, and the United States where MVNOs account for 10–25% of retail mobile subscribers — suggests that MVNOs play an important pro-competitive role in mobile markets by: providing specialised services to specific customer segments (such as ethnic communities, seniors, or price-sensitive consumers) that MNOs may not serve optimally; enabling new entrants to participate in the retail mobile market without the capital costs of network infrastructure; and creating competitive pressure on MNOs' retail pricing through aggressive pricing strategies. India's MVNO market has been slow to develop relative to these international benchmarks, reflecting both the intensity of direct MNO competition (which has limited the commercial space for MVNOs to offer meaningfully different propositions) and the regulatory constraints on wholesale access pricing and MVNO service capabilities. The Telecommunications Act, 2023's framework — with its potential for class authorisation of MVNOs and its strengthened open access principles — creates an opportunity to revisit the conditions for MVNO entry and to determine whether regulatory reforms could enable a more commercially active MVNO sector in India.

The data privacy and security obligations applicable to MVNOs create specific compliance challenges, since MVNOs rely on their host MNO's network infrastructure for subscriber data collection and processing but may operate their own subscriber management systems, CRM platforms, and billing systems that hold substantial subscriber personal data. Under the DPDPA, 2023, an MVNO that operates its own subscriber management system is a "data fiduciary" with respect to the personal data it processes, regardless of whether it holds a telecom licence. The MVNO must ensure compliance with the DPDPA's consent, data minimisation, security, and data subject rights requirements for all subscriber data it holds. Where the MVNO shares subscriber data with its host MNO (for network management, billing reconciliation, or security compliance purposes), it must have appropriate data processing agreements in place that reflect both parties' DPDPA obligations. The legal relationship between MVNOs and host MNOs in the data protection context — determining who is the data fiduciary and who is the data processor for different categories of subscriber data — requires careful legal analysis that must be reflected in the commercial agreements between the parties.

F.2 The Act's Impact on Enterprise Telecom

Enterprise telecommunications — the provision of dedicated telecommunications services and infrastructure to business customers, as distinct from mass-market consumer services — is a significant and growing segment of the Indian telecom market. Enterprise telecom encompasses: dedicated leased lines (high-speed, dedicated connectivity for enterprise campuses, data centres, and interoffice connections); managed WAN services (wide-area network connectivity managed by a service provider on behalf of enterprise customers, typically using MPLS or SD-WAN technology); enterprise voice services (PBX-to-IP migration, unified communications, contact centre solutions); and managed security services (provided by telecom operators leveraging their network security capabilities for enterprise security monitoring and protection). The enterprise telecom market is served primarily by the major national operators (Jio, Airtel, BSNL, and formerly Vi) alongside specialised enterprise connectivity providers and global managed service firms.

The Telecommunications Act, 2023 impacts the enterprise telecom market in several specific ways. The right-of-way provisions directly benefit enterprise customers who require private fibre connectivity between their facilities — the improved RoW framework should reduce the time and cost of deploying enterprise fibre routes, improving the economics of dedicated enterprise connectivity. The private network provisions — enabling enterprises in specified sectors to hold their own spectrum for private 5G deployments — open new options for enterprise customers to control their own wireless infrastructure for industrial applications. The security provisions — applying the Trusted Telecom Portal framework to enterprise-grade telecommunications equipment — have compliance implications for enterprises that have deployed or are planning to deploy private networks using potentially non-approved equipment. And the Digital Bharat Nidhi's expanded mandate — potentially including R&D; funding for telecommunications innovation — may benefit enterprise technology companies developing solutions in the Indian market.

The competition law framework applicable to the enterprise telecom market is an important dimension of the regulatory landscape for enterprise customers and their legal advisers. Enterprise customers who procure telecommunications services from a single provider may face commercial risks if that provider holds significant market power in the relevant enterprise market. TRAI's market analysis for enterprise services — covering whether any operator holds significant market power in the provision of enterprise leased lines, managed WAN, or dedicated internet access — determines whether regulatory obligations (such as price regulation, open access, or quality of service guarantees) apply to specific enterprise service markets. CCI's jurisdiction over abuse of dominant position applies to enterprise telecom markets as well as consumer markets,

and enterprise customers who face anti-competitive pricing or discriminatory service conditions from dominant enterprise telecom providers may seek remedies before CCI.

F.3 Regulatory Framework for In-Building Solutions

In-building solutions (IBS) — the installation of indoor antenna systems, distributed antenna networks (DAS), and small cell equipment within large buildings (offices, shopping malls, airports, hospitals, and hotels) to improve cellular coverage and capacity for building occupants — are an important component of the overall network coverage architecture, particularly for 5G where indoor coverage from outdoor base stations is limited by the signal attenuation of modern building materials. The legal framework for IBS deployment involves an intersection of the telecommunications right-of-way framework (which covers the right to deploy telecommunications equipment within buildings), building and construction regulations (which govern the structural modifications required for IBS installation), health and safety regulations (which govern EMF exposure from indoor antenna systems), and commercial property law (which governs the contractual arrangements between building owners and IBS operators).

The right of access to private buildings for telecommunications infrastructure deployment — including IBS — is an area where the Telecommunications Act, 2023's framework provides important but not comprehensive guidance. The Act's right-of-way provisions address the right to deploy infrastructure on and over private property, and the rules made under Chapter IV will specify the terms and conditions for such deployment. For IBS specifically, the key legal questions include: can a telecom operator (or an independent IBS operator) compel a building owner to permit IBS installation without the owner's consent, or is consent required? What compensation, if any, is the building owner entitled to for permitting IBS installation? Who is responsible for the maintenance, safety, and end-of-life removal of IBS equipment? And what are the liability implications of IBS equipment failure causing building damage or subscriber data exposure? These questions are partially addressed by the RoW framework but will require further regulatory guidance and commercial practice development to be fully resolved.

The commercial model for IBS deployment has evolved significantly as the market has matured. Early IBS deployments were predominantly done directly by operators, each deploying their own indoor antenna systems in major buildings. This resulted in multiple overlapping DAS deployments in the same buildings — each serving a single operator — which was both technically wasteful (multiple antenna runs through the same building) and commercially inefficient (each operator bearing the full cost of its own IBS deployment). The emergence of neutral host IBS operators — companies that deploy shared IBS infrastructure capable of hosting multiple operators' signal simultaneously — has improved the economics of indoor

coverage for both operators (who share the capital cost) and building owners (who deal with a single IBS operator rather than multiple operators). The regulatory framework for neutral host IBS — particularly the conditions on which operators must provide their signals to the neutral host's system on non-discriminatory terms — is an important aspect of the IBS regulatory landscape that the Telecommunications Act's implementing rules should address.

F.4 Emergency Communication Services

Emergency communication services — the ability of subscribers to reach emergency services (police, fire, ambulance, disaster management) quickly and reliably in life-threatening situations — represent one of the most fundamental public interest obligations of telecommunications operators. Under the existing regulatory framework, operators are required to: provide free access to emergency numbers (112 in India, as well as legacy numbers 100, 101, 102, 108) without charging subscribers; ensure that emergency calls can be made even from subscribers with negative balances or blocked SIM cards; provide location information (the caller's cell ID and sector) with emergency calls to enable rapid response; and cooperate with emergency services agencies in managing emergency call traffic during crisis situations. The Telecommunications Act, 2023's authorisation conditions will carry forward these emergency service obligations while potentially updating them to reflect the technical capabilities of modern networks and the evolving emergency communications infrastructure.

The Emergency Response Support System (ERSS) — India's centralised emergency response platform that aggregates calls to the 112 emergency number and dispatches appropriate emergency services — represents a significant modernisation of India's emergency communications infrastructure. ERSS, which is operational in most states, provides: unified access to all emergency services through a single number; computerised dispatch with integrated database access (allowing dispatchers to identify the caller's location, previous call history, and relevant information); GPS-based vehicle tracking for emergency responders; and incident management software for coordinating multi-agency response. The telecommunications framework supporting ERSS is complex: operators must route 112 calls to ERSS dispatch centres (rather than to individual police stations or hospitals as in the earlier legacy system), provide caller location information in a standardised format, and maintain call quality standards for emergency calls that may be higher than for ordinary calls.

The integration of advanced 5G capabilities into emergency communications — specifically the potential for incident commanders to receive real-time video feeds from emergency responders' body cameras or drone footage via 5G connectivity, and the potential for smart city sensors to automatically alert emergency services to incidents (fires, accidents, medical

emergencies) detected by IoT devices — creates a new generation of emergency communications requirements that the current ERSS framework was not designed to address. The development of a Next Generation Emergency Communication System (NGES) for India — incorporating 5G capabilities, advanced location accuracy (sub-3-metre accuracy using 5G positioning technologies), AI-based incident detection and triage, and integrated multi-agency response coordination — is a significant policy objective that requires coordination between DoT, TRAI, the Ministry of Home Affairs, state emergency management agencies, and the operators. The Telecommunications Act, 2023's framework provides the regulatory basis for mandating operator participation in NGES development and operation as a condition of their authorisations.

F.5 Regulatory Framework for IoT Services

The Internet of Things regulatory framework in India — governing the provision of connectivity and platform services for IoT applications — is still evolving and involves multiple regulatory actors including DoT (for spectrum and licensing), TRAI (for service quality and consumer protection), CERT-In (for IoT security), the Bureau of Indian Standards (BIS) for device type approval, and the Wireless Planning and Coordination Wing (for radio type approval of IoT devices). The fragmentation of IoT regulation across multiple agencies reflects the multi-dimensional nature of IoT: as a connectivity service (involving spectrum, licensed operators, and service conditions), as a hardware product (involving device manufacturing, type approval, and safety standards), as a data service (involving personal data processing regulated by the DPDPA), and as a critical infrastructure enabler (involving security and resilience standards for IoT deployments in critical sectors).

TRAI's recommendations on Machine-to-Machine (M2M) and IoT services have progressively built a regulatory framework addressing: the definition of M2M service providers and their regulatory obligations; the spectrum bands available for IoT connectivity (including NB-IoT and LTE-M in licensed bands, LoRa in unlicensed sub-GHz spectrum, and Zigbee/Z-Wave in 2.4 GHz unlicensed spectrum); the security obligations applicable to IoT SIM cards and devices connected to mobile networks; and the data management obligations for IoT platform operators. The Telecommunications Act, 2023's class authorisation mechanism provides a statutory basis for creating a specific, proportionate authorisation category for IoT service providers — potentially imposing lighter obligations than the full UL/authorisation framework while maintaining essential security and consumer protection requirements.

The spectrum management framework for IoT is particularly complex given the variety of connectivity technologies used for different IoT applications. Smart meters and utility IoT use NB-IoT in licensed spectrum (requiring cellular network deployment and operator involvement);

smart home devices use Wi-Fi (2.4 and 5 GHz unlicensed spectrum, not subject to WPC licensing); industrial IoT uses a range of technologies from cellular to industrial wireless (WirelessHART, ISA100) in both licensed and unlicensed bands; precision agriculture uses a combination of cellular and low-power wide-area network (LPWAN) technologies; and connected vehicles use dedicated short-range communications (DSRC) or cellular V2X in specific spectrum. The WPC Wing's management of spectrum for IoT — ensuring adequate spectrum availability across these diverse use cases without harmful interference between systems — requires a dynamic, forward-looking spectrum planning approach that can accommodate the rapid growth of IoT device deployment expected over the coming decade.

F.6 The Two-Sided Market Problem in Telecom

The "two-sided market" concept from platform economics — in which a platform creates value by facilitating interactions between two distinct user groups, each of which makes the platform more valuable to the other — is increasingly relevant to telecommunications regulatory analysis as mobile network operators evolve from simple "pipe" providers into multi-sided platform businesses. An operator that provides mobile connectivity, an application store, a payments platform, a content distribution service, and a device financing offering is simultaneously serving multiple distinct user groups (subscribers, application developers, content providers, payment merchants, device manufacturers) whose interactions create complex economic interdependencies. The regulatory framework for such multi-sided telecoms platforms must address not only the traditional concerns of access pricing and quality of service for the connectivity service but also the competition law questions raised by the platform's simultaneous role in multiple interrelated markets.

The two-sided market analysis has specific implications for the regulation of operators' content bundling and zero-rating practices. When an operator offers its subscribers free access to content from its affiliated streaming platform (zero-rating the affiliated platform's traffic while charging for access to competing platforms), it is using its two-sided market position — straddling both connectivity and content — to advantage its content services over competitors. This practice is directly addressed by TRAI's net neutrality regulations, which prohibit differential tariffs based on the content accessed. But the competitive harm from affiliated content bundling goes beyond tariff discrimination: even where the affiliated content is not zero-rated, the operator can use subscriber data from its connectivity business to target subscribers with personalised recommendations for its affiliated content services, creating a competitive advantage for affiliated content over unaffiliated competitors that relies not on the merits of the content but on the operator's data advantage. The DPDPA's data protection principles (particularly data

minimisation and purpose limitation) provide some constraint on this data-driven self-preferencing, but the competition law analysis of operators' data advantage in content markets is an area where Indian regulatory and competition law is still developing.

F.7 Cross-Border Regulation: Jurisdiction and Enforcement

The cross-border nature of modern telecommunications — in which a single communication session may traverse network infrastructure located in multiple countries, involving service providers incorporated in different jurisdictions, and delivering content produced by companies headquartered elsewhere — creates significant challenges for regulatory jurisdiction and enforcement. When an Indian subscriber uses a foreign OTT service to communicate with a foreign contact through infrastructure routed outside India, which country's regulatory framework applies? The traditional telecommunications regulatory framework — based on the territorial jurisdiction of national regulators over licensed operators deploying infrastructure within their territory — was designed for an era of predominantly domestic telecommunications and does not provide clear answers for cross-border digital communications services.

India's approach to the jurisdictional challenges of cross-border telecommunications regulation relies on a combination of: territoriality (applying Indian regulation to services provided to Indian subscribers within India, regardless of where the service provider is incorporated or where its infrastructure is located); consent to jurisdiction (requiring foreign service providers who wish to offer services to Indian subscribers to agree to comply with Indian regulatory requirements as a condition of market access); and mutual recognition (relying on the regulatory standards of the service provider's home jurisdiction as equivalent to Indian standards in specified circumstances). The DPDPA's territorial scope — applying to all entities that process the personal data of Indian data principals, regardless of where those entities are located — is the most explicit expression of India's extraterritorial approach to digital regulation, following the model of the EU's GDPR. The enforcement of DPDPA obligations against foreign entities that have no physical presence in India — and that may not readily comply with Indian regulatory directions — is the most practical challenge for India's cross-border digital regulatory ambitions.

The extradition and mutual legal assistance frameworks that enable India to enforce its laws against persons and entities in foreign countries have significant limitations in the digital context. Extradition requires the conduct to constitute a crime in both the requesting and requested country (the "dual criminality" requirement), which may not be met for regulatory violations that are not criminal offences in the foreign country. Mutual legal assistance is designed primarily for obtaining evidence in criminal proceedings, not for enforcing civil regulatory decisions. The development of new multilateral frameworks for cross-border digital enforcement — potentially

through the ITU, the WTO, or bilateral digital economy agreements — is a longer-term objective that will require sustained diplomatic engagement. In the interim, India's primary enforcement tools against non-compliant foreign digital service providers are: access blocking (requiring Indian ISPs to block access to non-compliant services, as has been used for Chinese apps); market access conditions (requiring foreign providers to establish a legal presence in India as a condition of market access); and commercial pressure (leveraging the commercial significance of the Indian market to encourage voluntary compliance).

F.8 Regulatory Governance: TRAI's Institutional Capacity

The institutional capacity of TRAI — encompassing its staffing, technical expertise, analytical capabilities, information systems, financial resources, and governance structures — is a primary determinant of the effectiveness of India's telecommunications regulatory framework. TRAI's capacity to gather, analyse, and act on the information needed to make well-grounded regulatory decisions affects the quality of its regulatory outputs across all domains: spectrum pricing recommendations, quality of service standards, consumer protection interventions, and OTT regulation. The gap between TRAI's formal regulatory mandate (which is very broad) and its institutional capacity (which is significantly constrained relative to its mandate and to comparably positioned regulators in other major economies) is a persistent challenge for India's telecommunications governance.

TRAI's staffing constraints — both in terms of the number of staff and in terms of the technical and economic expertise available — limit its capacity for systematic, evidence-based regulatory analysis. TRAI's staff complement is modest compared to similarly positioned telecommunications regulators in major economies: the UK's Ofcom employs over 900 people across a comprehensive range of telecommunications, broadcasting, and postal regulatory functions; India's TRAI employs several hundred staff for a telecommunications market that is in many respects more complex than the UK's. Building TRAI's staff complement — and specifically its capacity to employ economists, telecommunications engineers, data scientists, and competition law specialists at competitive salaries — requires regulatory governance reforms that give TRAI greater financial and operational autonomy. The current model — in which TRAI's budget is allocated by the Central Government and its salary scales are linked to government service scales — limits TRAI's ability to compete for talent with private sector telecommunications companies and consulting firms.

TRAI's information and communications systems — the technology infrastructure that supports its data collection, analysis, and communication functions — are an area requiring sustained investment. The collection and analysis of large-scale network performance data (from

operators' network management systems), subscriber data (from operators' billing systems), and crowd-sourced measurement data (from TRAI's MySpeed and MyCall applications) requires sophisticated data management and analytics infrastructure. The development of TRAI's own data analytics capabilities — enabling it to independently verify operator-submitted data, identify patterns and outliers in large datasets, and develop evidence-based regulatory positions — is essential for reducing TRAI's dependence on operator-submitted data (which may reflect operators' interests) and for improving the empirical rigor of regulatory decisions. The investment in TRAI's data infrastructure — through increased funding, partnerships with academic institutions, and potentially cloud-based analytics platforms — is an essential complement to the policy and legal reforms needed for India's telecommunications regulatory framework.

F.9 The Digital Divide: Legal Dimensions

India's digital divide — the gap between urban and rural, and between different socioeconomic groups, in terms of access to and use of telecommunications and internet services — is not merely a social equity concern but a legal dimension of the telecommunications regulatory framework. The right to access the internet, recognised as part of the fundamental right to freedom of speech and expression in Anuradha Bhasin, implies a positive obligation on the state to create conditions in which all citizens can exercise this right — including through regulatory policies that promote affordable and accessible telecommunications services in underserved areas. The Digital Bharat Nidhi's connectivity mandate, the coverage obligations in access service authorisations, and the right-of-way framework's facilitation of infrastructure deployment in rural areas all reflect the constitutional imperative to address the digital divide through regulatory intervention.

The gender dimension of India's digital divide is a particularly significant legal and social issue. India has one of the world's largest gender gaps in mobile phone ownership and internet use: women are significantly less likely than men to own mobile phones, use the internet, or have access to digital services. This gender gap reflects multiple reinforcing factors: lower average income levels for women (reducing affordability of devices and connectivity), social norms that restrict women's access to technology in some communities, digital literacy gaps (women are less likely to have received digital training), and safety concerns (women face higher risk of online harassment and exploitation, deterring some from using internet services). The telecommunications regulatory framework cannot directly address all these factors, but it can contribute to closing the gender digital divide through: affordable connectivity programmes targeted at lower-income users (who are disproportionately women); digital literacy programmes specifically designed for women; and consumer protection measures that reduce the safety risks

of digital communications for women (including stronger enforcement of anti-harassment and DND regulations).

SUPPLEMENTARY NOTE G

Constitutional and International Dimensions

G.1 The Non-Arbitrariness Doctrine in Telecom Licensing

The doctrine of non-arbitrariness under Article 14 of the Constitution of India has been one of the most important constitutional constraints on telecom licensing and regulatory decision-making. Article 14, which guarantees equality before law and equal protection of the laws, has been interpreted by the Supreme Court to impose a requirement of reasonableness on all governmental action — not merely a requirement that similarly situated persons be treated similarly, but also a requirement that governmental decisions have a rational basis and are not arbitrary, capricious, or unreasonable. In the context of telecom licensing, this doctrine prohibits the Central Government (as licensor) and TRAI (as regulator) from making licensing or regulatory decisions that lack a rational nexus to a legitimate objective, that discriminate between similarly situated operators without rational justification, or that are made for extraneous or improper purposes. The 2G Spectrum Case is the most dramatic illustration of the doctrine's application in the telecom context: the Supreme Court held that the first-come-first-served allocation of spectrum, at prices that bore no rational relationship to the market value of the resource being allocated, was arbitrary and violated Article 14. The Court's reasoning was not merely that other operators were disadvantaged (though they were), but that the allocation process itself lacked the rationality and objectivity that Article 14 demands of governmental action affecting valuable public resources. Post-2G, the mandatory auction framework has provided a procedurally objective mechanism for spectrum allocation that satisfies the non-arbitrariness requirement: competitive bidding produces prices determined by market forces rather than by administrative discretion, eliminating the potential for arbitrary or corrupt allocation decisions. The Telecommunications Act, 2023's auction framework, backed by the First Schedule, gives statutory expression to this constitutional imperative. The non-arbitrariness doctrine continues to apply, however, to the many discretionary decisions within the auction framework (including the determination of reserve prices, eligibility criteria, and spectrum caps) and to the conditions imposed on authorisations — all of which must have a rational basis and must not discriminate between similarly situated operators without justification. Practitioners who challenge regulatory decisions on non-arbitrariness grounds must demonstrate not merely that

the decision is suboptimal but that it is so devoid of rational basis as to be arbitrary in the constitutional sense — a demanding standard that the Supreme Court has been careful to maintain, in recognition that courts are not well-suited to second-guess complex regulatory policy decisions.

G.2 The Essential Facilities Doctrine in Indian Telecom

The essential facilities doctrine — the principle that an entity controlling infrastructure that is essential for competitors to compete in an adjacent market may be required to provide access to that infrastructure on reasonable, non-discriminatory terms — has been applied in Indian telecommunications law both through the sector-specific regulation of interconnection and through general competition law principles under the Competition Act, 2002. The doctrine's origins in US antitrust law (most famously, in the context of railroad and terminal facilities in the late 19th and early 20th century) and its development in EU competition law (in the context of utilities, network industries, and intellectual property) have been progressively applied in India to the telecommunications context, where the essential infrastructure consists of: mobile network base stations and their associated spectrum (which competitors need to access to provide mobile services); submarine cable landing stations (the critical interface between India and international internet infrastructure); the core transmission backbone (national optical fibre networks connecting major cities); and — increasingly — software-defined network infrastructure and application programming interfaces (APIs) in 5G and cloud-native network architectures. TRAI's interconnection regulations impose mandatory access obligations on operators for their electronic communications networks — effectively codifying the essential facilities doctrine for the telecommunications sector — while competition law provides a backstop mechanism for addressing essential facility access problems not covered by sector regulation. The Competition Commission of India has, in several information requests and orders, examined whether telecom operators and tower companies with dominant market positions are abusing their dominance by refusing access to essential infrastructure or by discriminating between different users of that infrastructure. The CCI's analysis in these cases has drawn on both the Competition Act's Section 4 abuse of dominance framework and on the principles of telecom-specific regulatory analysis, illustrating the complementary relationship between sector regulation and general competition law in addressing essential facility access issues. For practitioners advising on essential facility disputes — whether before TRAI, TDSAT, or CCI — the strategic choice between regulatory and competition law routes requires careful assessment of the specific facts, the strength of the available legal arguments in each forum, and the speed and commercial impact of the respective proceedings.

G.3 Regulatory Forbearance: When Not to Regulate

Regulatory forbearance — the decision by a regulatory authority not to exercise its regulatory powers in a specific market or with respect to a specific operator, on the ground that effective competition makes regulation unnecessary — is a sophisticated regulatory tool that India's telecommunications framework employs in several specific contexts. TRAI's exercise of tariff forbearance for most retail telecommunications services — removing price controls and relying on market competition to determine retail prices — is the most commercially significant application of forbearance in Indian telecom. The legal basis for TRAI's tariff forbearance power is Section 11(1)(b) of the TRAI Act, which empowers TRAI to "ensure fair competition" in the telecommunications sector — a mandate that includes determining when regulatory intervention is and is not needed to protect consumer interests. The economic logic of forbearance is compelling: in competitive markets, operators are constrained by the threat of subscriber churn (to competing operators who offer better prices or quality) from exploiting market power through excessive pricing or poor quality. Regulation in such markets adds compliance costs without providing material consumer benefits, and may even reduce welfare by constraining commercial flexibility that enables innovative and differentiated service offerings. However, the decision to exercise forbearance requires ongoing monitoring: market conditions change, and a market that is sufficiently competitive to justify forbearance today may become less competitive tomorrow (through merger, market exit, or co-ordinated conduct) in ways that require reintroduction of regulatory oversight. TRAI's annual telecom market analysis — published in its quarterly subscriber reports, its annual telecom sector performance reviews, and its assessments of market concentration using standard competition economics measures (HHI, market share analysis, and entry barriers assessment) — provides the empirical basis for TRAI's ongoing forbearance decisions. The Telecommunications Act, 2023's framework does not explicitly codify a forbearance mechanism, but the Central Government's power to prescribe authorisation conditions (and to exempt specific services from specific conditions) provides an implicit statutory basis for regulatory forbearance on a case-by-case basis. The development of a more explicit, transparent forbearance framework — with clear criteria, a defined market assessment process, and a published schedule of regulated and forborne services — would improve the predictability and accountability of India's telecommunications regulatory framework.

G.4 Constitutional Property Rights and Spectrum

The constitutional protection of property rights — under Article 300A of the Constitution of India, which provides that no person shall be deprived of their property save by authority of law — is relevant to the telecommunications sector in the specific context of spectrum assignment

rights. Spectrum assignment holders argue that their paid-for, time-limited rights to use specific frequencies are property rights that can only be revoked or modified by the government through lawful processes that respect the principles of natural justice. The government's position — reflected in the Telecommunications Act, 2023 and in successive spectrum auction information memoranda — is that spectrum is a natural resource owned by the State and that spectrum assignees hold only a limited-duration administrative permission rather than a property right in the conventional sense. This distinction — between a property right (which carries strong constitutional protection against revocation) and a regulatory permission (which can be modified or revoked on regulatory grounds subject only to the requirements of natural justice and legitimate expectations) — is fundamental to the legal framework for spectrum management and has been contested in multiple judicial proceedings. The Supreme Court's analysis in the 2G Spectrum Case reinforced the State's sovereignty over spectrum as a natural resource, affirming that spectrum allocations are subject to the government's ongoing regulatory authority rather than creating permanent property entitlements. However, the Court's analysis did not fully address the question of whether the specific legal structure of spectrum auctions — in which operators pay substantial amounts for spectrum assignments through a competitive bidding process — creates legal expectations that have stronger protection than administrative permissions obtained without competitive bidding. This question — whether the payment of market value through an auction process creates a legal relationship that is closer to a property right than a mere regulatory permission — is likely to arise in future litigation as spectrum assignments come up for renewal and the government's approach to renewal terms is challenged by operators who have made substantial infrastructure investments in reliance on their spectrum holdings.

G.5 International Treaty Framework

India's participation in international telecommunications treaties and conventions creates a network of international legal obligations that constrain and inform the Telecommunications Act, 2023's domestic framework. The most significant international instruments for Indian telecommunications law are: the Constitution and Convention of the International Telecommunication Union (ITU), to which India is a State Member; the ITU Radio Regulations (a treaty-level instrument binding on all ITU Member States, governing the use of the radio frequency spectrum and the geostationary satellite orbit); the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations, to which India acceded in 2007; the bilateral telecommunications agreements between India and its major trading partners; and the telecommunications commitments India has made under the

General Agreement on Trade in Services (GATS) of the World Trade Organisation. The ITU's Radio Regulations, which govern the international coordination of spectrum use to prevent harmful interference between the radio services of different countries, are the most legally significant of these instruments for the day-to-day practice of telecommunications law: every spectrum assignment that India makes for commercial or government use must be coordinated through the ITU's notification and coordination procedures, which determine the priority order for spectrum assignments and the interference protection available to earlier-registered systems. India's GATS commitments in the telecommunications sector — made under the Fourth Protocol to the GATS (1997), which established the basic telecommunications services framework — include commitments to maintain non-discriminatory market access for foreign telecom service providers, to permit foreign equity participation in licensed entities (subject to specified limits), and to maintain an independent regulatory body (TRAI) that is separate from the licensed telecom operators. These GATS commitments constrain the government's ability to discriminate against foreign operators in its licensing framework, and are enforced through the WTO dispute settlement mechanism. Several WTO dispute settlement proceedings involving telecommunications have established important interpretive principles about the scope of the GATS commitments — particularly the obligations to provide market access and national treatment for all telecommunications services — that Indian practitioners advising on foreign operators' market entry must understand. The bilateral telecommunications agreements India has concluded with the US, UK, Australia, Japan, and other partners include provisions on spectrum coordination, mutual recognition of equipment approvals, information sharing on cybersecurity threats, and cooperation on regulatory best practices that complement India's multilateral commitments and reflect India's strategic telecommunications partnership network.

G.6 The Doctrine of Reasonable Classification

The doctrine of reasonable classification — an application of Article 14's equality guarantee that permits differential regulatory treatment of different classes of persons or entities, provided that the classification is based on intelligible differentia and that the differentia bears a rational relationship to the object sought to be achieved — is frequently invoked in telecommunications regulatory disputes where operators challenge differential treatment across different categories. The most common reasonable classification challenges in the telecom sector involve: differential licence fee rates for different service categories (challenging whether the differentiation between access service rates, NLD rates, and ILD rates is reasonable); differential spectrum usage charge rates for spectrum acquired through auction versus administrative allocation (challenging whether the distinction between "auction spectrum" and "administrative spectrum" SUC rates is

rationally justified); differential rollout obligations for urban and rural service areas (challenging whether requiring rural coverage within shorter timelines is justified by the connectivity policy objective); and differential regulatory treatment of OTT services as compared to licensed telecom services (challenging whether the failure to impose equivalent obligations on OTT services creates an unjustified disparity in competitive conditions). Courts and TDSAT have generally upheld these differential regulatory treatments as justified by reasonable policy objectives, recognising that the telecommunications regulatory framework necessarily involves distinctions between different categories of service, technology, and geographic context that reflect genuinely different policy considerations. Operators challenging differential treatment on reasonable classification grounds bear the burden of demonstrating that the distinction lacks a rational basis — a demanding standard where the regulatory objective is legitimate and the distinction is not facially arbitrary. The intersection of reasonable classification analysis with the competition law analysis of discriminatory conduct — distinguishing legitimate regulatory differentiation from anti-competitive discrimination — is an important area where the two legal frameworks must be carefully reconciled in specific cases.

SUPPLEMENTARY NOTE H

Looking Ahead: The 2023 Act in Motion

H.1 Implementation Roadmap and Key Milestones

The full implementation of the Telecommunications Act, 2023 will span several years as the Central Government progressively notifies the rules, regulations, and authorisation conditions that give operational content to the Act's broad framework. The implementation roadmap — as signalled in DoT's communications and in the Act's transitional provisions — involves several parallel workstreams. The first workstream covers the rules on spectrum assignment, addressing the procedural framework for spectrum auctions (reserve price methodology, payment terms, bidder eligibility), the technical conditions of spectrum assignments, and the spectrum sharing and trading framework. The second workstream covers the authorisation conditions, translating the existing Unified Licence conditions into the new authorisation format and updating them to reflect the 2023 Act's security, consumer protection, and right-of-way provisions. The third workstream covers the security rules, prescribing the specific obligations that authorisation holders must meet in respect of lawful interception capability, trusted equipment deployment, cybersecurity incident reporting, and subscriber data protection. The fourth workstream covers the Digital Bharat Nidhi operational framework, including the criteria for programme eligibility, the

procurement procedures for DBN-funded programmes, and the governance and accountability mechanisms for the fund's operations. Each workstream involves consultation with TRAI (for matters within TRAI's recommendation mandate), industry (through formal consultation processes), and inter-ministerial coordination (for matters involving the jurisdiction of multiple ministries). Practitioners advising operators on the transition to the new framework must closely monitor each workstream's progress, assessing the compliance implications of each set of rules as it is notified.

The legal implications of the transition period — the period between the Act's enactment and the completion of rules notification — create specific compliance and planning challenges for operators. During the transition, operators continue to operate under their existing Unified Licences (preserved by Section 36 of the Act) while preparing for the new framework. New operators seeking market entry face uncertainty about the specific conditions of the new authorisations, since the authorisation conditions rules have not yet been notified. And ongoing regulatory proceedings before TRAI and TDSAT — particularly proceedings initiated under the 1885 Act framework — must be assessed for their status under the new Act (whether they continue unaffected, are transferred to new proceedings under the new framework, or are resolved by the Act's transitional provisions). The development of clear transitional guidance from DoT and TRAI — specifying how ongoing proceedings are treated, how the new authorisation framework applies to existing licence holders, and the timelines for migration to new authorisations — is essential for reducing the compliance uncertainty of the transition period and ensuring that the sector can plan its regulatory compliance activities with confidence.

The long-term significance of the Telecommunications Act, 2023 for India's digital development will ultimately be measured by its impact on the connectivity, affordability, and quality of telecommunications services available to Indian subscribers, and on the innovation and investment that India's telecommunications regulatory framework enables. The Act's constitutional and statutory architecture — the framework of authorisations, spectrum management, security standards, right-of-way, and digital connectivity funding — provides the structural foundation on which India's digital future will be built. The quality of that foundation — its clarity, consistency, and constitutional robustness — will determine whether the digital ambitions of Digital India, BharatNet, and the DPI ecosystem can be fully realised. For practitioners who work within this framework — advising operators, regulators, investors, and policymakers on the legal dimensions of India's telecommunications and digital economy — the 2023 Act and the growing body of jurisprudence and regulatory practice that will develop under it represents a professional environment of extraordinary complexity, significance, and opportunity.

The mastery of this legal framework — in its statutory text, its constitutional constraints, its regulatory implementation, and its evolving judicial interpretation — is the central intellectual challenge and professional responsibility of Indian telecommunications law practice in the years ahead.