

AMCHAM comments on Draft National Digital Communications Policy 2018

S.No.	Clause/ Point No.	Existing Text	Suggested Text
		Chapter 1 Preamble	AMCHAM
1	1	<p>Digital infrastructure and services are increasingly emerging as the key enablers and critical determinants of a country’s growth and well-being. With significantly advanced capabilities in both telecommunications and software, India, more than most countries, stands poised to benefit from harnessing the new digital technologies and platforms; as a means to unlock productivity, as well as to reach unserved and underserved markets; thus catalysing economic growth and development, generating new- age jobs and livelihoods, and ensuring access to next generation services for its citizens.</p>	<p>We fully support the DoT’s objectives as stated in the preamble to the National Digital Communications Policy 2018 (“Policy”). We agree that India “stands poised to benefit from harnessing the new digital technologies and platforms” but will only be able to do so with a forward-looking, light-touch regulatory regime that balances the need for innovation, competition and investment with a secure India. Today’ and tomorrow’s technologies should not be stifled by yesterday’s regulations. Apropos, regulatory approach to reflect changes in technologies and markets need to be reexamined. The future will require a more technology-agnostic and flexible approach.</p> <p>To propel India forward in this 4th Industrial revolution, policies should consider enable the economy to prosper in a world where productivity, innovation, and efficiency will increasingly depend on reliable, mobile, and ubiquitous access to powerful, cloud-based information and information processing capabilities. We encourage DoT to develop a balanced regulatory framework that will ensure the future growth of new and emerging data services. The Policy should have a regulatory regime that minimizes the amount of complex regulatory permissions needed to invest and innovate, is future proof, forward looking and sufficiently flexible to adapt to new technologies, new services and platforms, while embracing international best practices.</p> <ul style="list-style-type: none"> • Firstly, AMCHAM agree that it is critical that the entire population of India have access to new technologies. This means ensuring they are accessible to all persons, including those with differing abilities. And, it means ensuring that all parts of India are connected to broadband networks and internet access services. India can achieve these goals through innovative spectrum policies. The foremost consideration for the government while formulating any such policy should be to try and balance the need to regulate in the public interest with the freedom necessary for technological innovation and economic growth.

			<ul style="list-style-type: none"> • Second, the DoT states in paras. 4 and 7 of the preamble, “creation of a vibrant competitive telecom market” must be a key objective because “[a] robust competitive landscape...ensures availability of new communications technologies, services and applications...[and] is central to growth of GDP, productivity and creation of new jobs in the economy.” <ul style="list-style-type: none"> • Competition among network operators and competition among services will fuel the virtuous cycle of investment in broadband that will benefit India’s economy and India’s citizenry for decades to come. Specifically, by permitting new and innovative services into the marketplace – services that may be delivered “over the top” of broadband networks – the DoT will drive consumer and enterprise demand for more and better broadband. Without the services provided by online service providers, consumers and businesses have little incentive to demand better broadband; and, without this demand, the necessary investment will not be forthcoming. • AMCHAM support DoT’s objective in para. 8 “to remove regulatory barriers and reduce the regulatory burden that hampers investment, innovation and consumer interest.” Under the current licensing construct, which licenses too many types of innovative services, tends to micromanage the specific implementation and operation of services deployed in India and imposes significant entry fees on the licensee, new entrants are unable to provide their services in India. These providers, with innovative communications capabilities that are readily available in hundreds of other countries across the globe, are forced to invest in infrastructure outside of India and deprecate the service offering for consumers and businesses located in India. More detail will be in Chapter’s 3 and 4, there are alternative regulatory approaches that can protect consumers and competition, while enabling the entry of new services provided by businesses large and small.
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			<ul style="list-style-type: none"> In para. 10 of the preamble, the DoT lists the key stakeholders that are necessary to achieve the goals of the new policy. Respectfully, we suggest that a key stakeholder may be missing from the list: that is, providers of online services – the very services that drive demand for broadband, thereby driving investment in India. While the DoT recognizes that “innovators” are a key stakeholder, it is important to clarify that many such innovators, whether established businesses or start-ups, are neither network operators nor Telecom Service Providers, but they nonetheless create a significant positive impact on the telecoms marketplace by driving demand for services, which in turn, drives demand for broadband networks and infrastructure.
2	2	The task before India’s policy makers is to ensure that the advantages of the new technologies are accessible to all equitably and affordably; while securing them against existing and emerging threats. India needs to particularly ensure that its communications infrastructure supports the entire population, whose demographic profiles vary widely across various indices such as literacy, economic conditions and urbanisation. It is important for India to remain sensitive to these factors and promote policies that increase opportunities for their social and economic development.	<p>It is imperative that the policy and regulatory framework should be enabler and supportive for promotion and easy deployment of new technologies by telecom service providers.</p> <p>In addition, the following change in the para is recommended:</p> <p>Existing: “while securing them against existing and emerging threats.”</p> <p>Revised: "while creating an environment to promote the adoption of security measures necessary to mitigate securing them against existing and emerging threats.”</p> <p>Instead of securing against emerging threats, it is important to highlight creation of an environment to promote the adoption of security measures necessary to mitigate securing them against existing and emerging threats.</p>
3	3	Digital India is already unfolding. India’s digital profile and footprint is one of the fastest growing in the world. With over a billion mobile phones and digital identities and half a billion internet users, India’s mobile data consumption is already the	To propel India forward in this Fourth Industrial revolution, policies should enable the economy to prosper in a world where productivity, innovation, and efficiency will increasingly depend on reliable, mobile, and ubiquitous access to powerful, cloud-based information and information processing capabilities.

		<p>highest in the world. Over 200 million Indians regularly use social media and in the last year alone, over 200 million Indians took to mobile banking and digital payments. At the current pace of digitisation and digitalisation, it is estimated that India's digital economy has the potential to reach one trillion USD by 2025. The rapid and unprecedented proliferation of the mobile phone, the internet, social media platforms, digital payments, data consumption and generation across India indicate that the data economy and digital technologies and services are no longer the prerogative of the privileged few; but that they have indeed evolved into widespread instruments of access and empowerment for more than a billion Indians.</p>	<p>The policy should aim to develop a balanced regulatory framework that will ensure the future growth of new and emerging data services.</p> <p>The NDCP 2018 should create a regulatory regime that minimizes the amount of complex regulatory permissions needed to invest and innovate, is future proof, technology neutral, forward looking and sufficiently flexible to adapt to new technologies, new services and platforms, while embracing international best practices and frameworks of interoperability.</p> <p>Data will usher in next phase of growth. However, it should not be restricted to internet or social media alone. Enterprise data services segment hold immense potential. Therefore appropriate policies should be formulated in the area of and as specific / relevant to enterprise and data services to fuel further growth of India's ICTE sector and attract investments. This is important from a holistic perspective.</p>
4	4	<p>The objective of this document is to lay out a policy and principles framework that will enable creation of a vibrant competitive telecom market to strengthen India's long term competitiveness and serve the needs of our aspiring nation. It has been broadly estimated that a 10% increase in broadband penetration in a country could potentially lead to an over 1% increase in GDP. However, studies in India estimate that the impact could be significantly higher for the country, given the increased productivity and efficiency gains that are likely to accrue to the economy.</p>	<p>Given the title of the policy, the word "telecom" to be replaced with "Digital Communications".</p>
5	5	<p>Currently, India has approximately 1.5 million kilometres of OFC, and less than one-fourth of the towers are fibre-connected. In order to expand mobile and broadband connectivity across the country, it is necessary to explore and utilise the opportunities presented by next-generation-networks like 5G and other pioneering network</p>	<p>Technology alone may not help if the networks on which these are to be deployed are not upgraded or aligned with the requirements suited. The policy should be formulated and reformed considering the requirements of these emerging technologies.</p>

		<p>access technologies including satellite communications. It would be critical to focus on fixed infrastructure development initiatives related to fibre deployment and Right of Way clearances that will form the bedrock of next generation technologies.</p>	<p>Traditional brick and mortar networks are paving the way to software defined networks (SDN) and network virtualisation functions (NVF). The policy should recognise emergence of these networks and the benefits of deploying such networks in meeting the stated objectives. Convergence of networks, services and devices and removal of restrictions on IP-PSTN will provide the much needed flexibility at the hands of operators in rolling out networks and services.</p> <p>To promote the deployment and adoption of Software Defined Networks and cloud-based services, the policy should recognize services that can and must be managed globally. The use of international standards, such as International Standards Organization as a benchmark for compliance obligations will have a significant impact on promoting these new software based technologies and services.</p> <p>Managing a network is no longer restricted to managing network devices in pre-identified physical locations. Instead, today's networks are increasingly run and managed remotely, from centers that could be located in many locations. The consumer benefits from this network model are significant, paralleling that of cloud computing: users will benefit from the capability of network operators to deploy advanced functions more quickly and uniformly, at lower costs, and using fewer facilities (and thus less energy).</p> <p>The policy should encourage the players in the eco-system, take advantage of transforming their network architecture to apply efficiencies of cloud computing to the telecommunications network.</p>
6	6	<p>While India has embarked on one of the world's largest rural optic fibre roll-outs in the world, aiming to connect 600,000 of its villages by broadband through its flagship initiative called 'BharatNet'; the convergence of a cluster of revolutionary technologies including 5G, the cloud, IOT and data analytics, along with a growing start-up community, promise to accelerate and deepen its</p>	<p>While India has embarked on one of the world's largest rural optic fibre roll-outs in the world, aiming to connect 600,000 of its villages by broadband through its flagship initiative called 'BharatNet'; the convergence of a cluster of revolutionary technologies not limited to 5G, Software Defined Networks (SDNs) and Network Function Virtualization (NFV), Software Defined Wide Area Network (SD-WAN), Unified Communication and other emerging technologies, the cloud, IOT and data analytics, along with a growing start-up community, promise to accelerate and deepen its digital engagement, opening up a new horizon of opportunities. As the</p>

		digital engagement, opening up a new horizon of opportunities. As the world prepares for what is increasingly being called as the fourth industrial revolution, India, and indeed every single sector of its economy, need to be readied to embrace this wave.	world prepares for what is increasingly being called as the fourth industrial revolution, India, and indeed every single sector of its economy, need to be readied to embrace this wave.
7	7	A robust, competitive landscape, which ensures availability of new communications technologies, services and applications, is central to the growth of GDP, productivity and creation of new jobs in the economy. For consumers, competition leads to innovation, access to new technologies, improved quality, affordable prices and wider choice. Indian consumers need and deserve the widest range of services at competitive rates. The Policy seeks to promote and protect fair competition across the communications and digital economy sector.	A robust and fair competitive landscape with flexible regulatory regime which ensures availability of new communications technologies, services and applications, is central to the growth of GDP, productivity and creation of new jobs in the economy. For consumers, competition leads to innovation, access to new technologies, improved quality, affordable prices and wider choice. Indian consumers need and deserve the widest range of services at competitive rates. The Policy seeks to promote and protect fair competition across the communications and digital economy sector.
8	8	Improvement in regulation and ongoing structural reforms are the pillars of a sound policy initiative. Regulatory reform is not a one-off effort, but a dynamic, long-term and multi-disciplinary process. The Policy recognises the importance of continued improvement in the regulatory framework for attracting investments and ensuring fair competition, to serve the needs of Indian citizens. Given the sector's capital-intensive nature, the Policy aims to attract long-term, high quality and sustainable investments. To serve this objective, the Policy further aims to pursue regulatory reforms to ensure that the regulatory structures and processes remain relevant, transparent, accountable and forward-looking. Additionally, the Policy aims to remove regulatory barriers and reduce the regulatory burden that hampers investments, innovation and consumer interest. The Policy also	The policy should ensure regulatory and policy certainty for ease of doing telecom business in India.

		identifies steps to strengthen the sector's institutional mechanism and legislative framework, to ensure that India's economy and citizens can derive the full potential of its digital communications sector.	
9	9	If India's economic, social and political interests in the emerging data economy are to be effectively secured, its 'digital sovereignty' encompassing the data privacy, choice and security of its citizens requires to be kept in prime consideration while participating in the global digital economy.	This should not lead to any restriction on cross border data flow or mandate on forced localisation under "digital sovereignty". Privacy is of utmost importance. However, that should not lead to restrictive measures. Governments need to build trust by creating an environment for service providers to follow industry best practices and guidelines regarding the cross-border use and protection of personal data, while providing appropriate accountability mechanisms.
10	10	The objective of a national policy on digital communications is to prepare the country and its citizens for the future. Achieving these goals would require that the key stakeholders – namely the Centre, the States, local governments and agencies, Telecom Service Providers, Internet Service Providers, handset and equipment manufacturers, the academic community, the innovators and start-ups come together to forge a coalition to deliver this national policy and its missions.	The key stakeholders should also include social media platforms and OTTs.
		Chapter 2 – Strategic Objectives & Vision & Missions of the National Digital Communications Policy	
		Section 1 – Strategic Objectives	
11		The National Digital Communications Policy, 2018 seeks to unlock the transformative power of digital communications networks - to achieve the goal of digital empowerment and well being of the people of India; and towards this end, attempts to outline a	

		set of goals, initiatives, strategies and intended policy outcomes.	
12		<p>The National Communications Policy aims to accomplish the following Strategic Objectives by 2022:</p> <ol style="list-style-type: none"> 1. Provisioning of Broadband for All 2. Creating 4 Million additional jobs in the Digital Communications sector 3. Enhancing the contribution of the Digital Communications sector to 8% of India's GDP from ~ 6% in 2017 4. Propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017 5. Enhancing India's contribution to Global Value Chains 6. Ensuring Digital Sovereignty 	<p>The National Communications Policy aims to accomplish the following Strategic Objectives by 2022:</p> <ol style="list-style-type: none"> 1. Provisioning of Broadband for All 2. Creating 4 Million additional jobs in the Digital Communications sector 3. Enhancing the contribution of the Digital Communications sector to 8% of India's GDP from ~ 6% in 2017 4. Propelling India to the Top 50 Nations in the ICT Development Index of ITU from 134 in 2017 5. Enhancing India's contribution to Global Value Chains by adopting global best practices. 6. Ensuring Digital Sovereignty by enhancing collaboration with all major countries.
		Section 2 – Vision and Missions	
13		<p>Vision: To fulfil the information and communication needs of citizens and enterprises by establishment of a ubiquitous, resilient, secure and affordable Digital Communications Infrastructure and Services; and in the process, support India's transition to a digitally empowered economy and society.</p>	There policy should lead to the establishment of modernized and horizontally consistent regulatory framework that is ubiquitous, resilient and secure,
14		<p>Mission: In pursuit of accomplishing these objectives by year 2022, the National Digital Communications Policy, 2018 envisages three Missions:</p>	
	1	Connect India: Creating Robust Digital Communications Infrastructure	

		To promote Broadband for All as a tool for socio-economic development, while ensuring service quality and environmental sustainability.	
2	<p>Propel India: Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation</p> <p>To harness the power of emerging digital technologies, including 5G, AI, IoT, Cloud and Big Data to enable provision of future ready products and services; and to catalyse the fourth industrial revolution (Industry 4.0) by promoting Investments, Innovation and IPR.</p>	<p>Propel India: Enabling Next Generation Technologies and Services through Investments, Innovation and IPR generation</p> <p>To harness the power of emerging digital technologies, not limited to 5G, Software Defined Networks (SDNs) and Network Function Virtualization (NFV), Software Defined Wide Area Network (SD-WAN), Unified Communication, AI, IoT, Cloud and Big Data to enable provision of future ready products and services; and to catalyse the fourth industrial revolution (Industry 4.0) by promoting Investments, Innovation and IPR.</p>	
3	<p>Secure India: Ensuring Sovereignty, Safety and Security of Digital Communications</p> <p>To secure the interests of citizens and safeguard the digital sovereignty of India with a focus on ensuring individual autonomy and choice, data ownership, privacy and security; while recognizing data as a crucial economic resource.</p>	<p>The policy should promote a horizontal framework to address the security of communications networks and the Internet ecosystem, while also ensuring innovation. This is should be based on an approach that promotes global interoperability and data security on a technology-neutral basis, focusing on the following principles: <i>Performance-based, rather than Prescriptive; Proportionate, rather than One-Size-Fits-All Utilize Industry Standards</i></p>	
1	<p>Chapter 3 - Connect India - Creating a Robust Digital Communication Infrastructure</p>	<p>In order to achieve the goals the policy document should also state the time frame when the specific reforms will happen. Also how the reforms will be implemented to help aid and achieve the objectives.</p> <p>While the quantitative deliverables to be achieved by 2022 are stated the time frame for implementing policy reforms will help achieve the stated targets.</p> <p>Spectrum is also allocated administratively to Captive wireless users of important sectors such as Defense, Paramilitary, Police, Airports, Metros, Sea ports, Railways, mining, oil & gas and manufacturing and similar users. These important Captive wireless users also contribute very significantly in building the nation and our economy..</p>	

			<p>A section on Captive wireless users to address following problems of these users should be included:</p> <ul style="list-style-type: none"> • Optimal Pricing of Spectrum to ensure sustainable and affordable access to Digital Communications, in line with international best practices. Price of spectrum should cover cost of spectrum management, and not be seen as a source of revenue for the government • Simplifying the process of obtaining permissions from various agencies such as WPC and SACFA in order to promote efficiency • Transparent and fair mode of spectrum allocation by developing a fair, flexible, simple and transparent method for spectrum assignments and allocations
15		<p>Section 1- Connect India - 2022 Goals:</p>	<p>The proposals in the Connect India section are a positive step towards achieving the DoT’s goals of connecting all Indians to broadband internet access services. The DoT’s overall narrative regarding future spectrum policy is encouraging and recognizes the need to optimize availability and utilization via spectrum sharing. While there could be more specificity on the specific measures for implementing this vision, AMCHAM supports a regulatory framework that enables light-touch licensing and de-licensing for the purposes of broadband proliferation, including the broad deployment of Wi-Fi hotspots. DoT’s discussion of a unifying policy framework and spectrum management regime for broadcast and broadband, which could facilitate utilizing broadcast spectrum for broadband connectivity across all of India, rural and urban is encouraging.</p> <p>DoT may like to consider adding one more item to its Connect India list of goals: “Ensure ubiquitous connectivity for Internet of Things (IoT).” This should be a separately stated goal – separate and apart from, e.g., providing universal broadband, because IoT connectivity may not always be “broadband.” Rather, some IoT will be driven by narrowband services that provide wide coverage. An example of such connectivity need would be in agricultural IoT use cases.</p> <p>DoT could consider a quantifiable goal for achieving broadband affordability. One potential benchmark could be Alliance for Affordable Internet A4AI’s “1 for 2”</p>

			target for affordable internet — 1GB of mobile broadband data available for 2% or less of GNI per capita. This benchmark has been <u>adopted</u> as the new affordability target by the United Nations Broadband Commission, and endorsed by a number of developing countries around the world.
	a.	Provide Universal broadband coverage at 50 Mbps to every citizen	
	b.	Provide 1 Gbps connectivity to all Gram Panchayats of India by 2020 and 10 Gbps by 2022	
	c.	Enable 100 Mbps broadband on demand to all key development institutions; including all educational institutions	
	d.	Enable fixed line broadband access to 50% of households	
	e.	Achieve ‘unique mobile subscriber density’ of 55 by 2020 and 65 by 2022	
	f.	Enable deployment of public Wi-Fi Hotspots; to reach 5 million by 2020 and 10 million by 2022	
	g.	Ensure connectivity to all uncovered areas	
16		Section 2: Connect India Strategies- National Broadband Mission – Rashtriya Broadband Abhiyan	
	1.1	Establishing a ‘ National Broadband Mission – Rashtriya Broadband Abhiyan ’ to secure universal broadband access	
	1.1 (a)	Implementation of the following broadband initiatives, to be funded through USOF and Public Private Partnerships:	
	(i)	BharatNet – Providing 1 Gbps to Gram Panchayats upgradeable to 10 Gbps	
	(ii)	GramNet – Connecting all key rural development institutions with 10 Mbps upgradeable to 100 Mbps	
	(iii)	NagarNet – Establishing 1 Million public Wi-Fi Hotspots in urban areas	

	(iv)	JanWiFi – Establishing 2 Million Wi-Fi Hotspots in rural areas	
		Section 3: Connect India Strategies – Fibre First Initiative & National Digital Grid	
	1.1 (b)	Implementing a ‘ Fibre First Initiative ’ to take fibre to the home, to enterprises and to key development institutions in Tier I, II and III towns and to rural clusters:	
	(i)	According Telecom Optic Fibre cables the status of Public utility	
	(ii)	Promoting collaboration models involving state, local bodies and private sector as necessary for provision of shared duct infrastructure in municipalities, rural areas and national highways	
	(iii)	Facilitating Fibre-to-the-tower programme to enable fiberisation of at least 60% base stations thereby accelerating migration to 4G/5G	
	(iv)	Leveraging existing assets of the broadcasting and power sector to improve connectivity, affordability and sustainability	In Section 1.1 (b) (iv), it is stated that DoT intent to “Leverag[e] existing assets of the broadcasting and power sector to improve connectivity, affordability and sustainability.” This forward-looking policy direction for India will ensure the deployment of broadband throughout India. The DoT could spell out this objective clearly by defining such “assets” to include “broadcast spectrum, towers, fiber, power lines and poles, right of roads, etc.” Doing so will provide concrete guidelines to developing implementation measures and facilitate coordination among different government agencies overseeing these sectors.
	(v)	Incentivising and promoting fibre connectivity for all new developmental construction	
	(vi)	By making requirement for telecom installations and the associated cabling and in-building solutions mandatory in in all commercial, residential and office spaces by amending National Building Code of India (NBC), through Bureau of Indian Standards (BIS)	
	1.1 (c)	Establishment of a National Digital Grid by:	
	(i)	Creating National Fibre Authority	

	(ii)	Establishing Common Service Ducts and utility corridors in all new city and highway road projects, and related elements	
	(iii)	Creating a collaborative institutional mechanism between Centre, States and Local Bodies for Common Rights of Way, standardisation of costs and timelines; and removal of barriers to approvals	
	(iv)	Facilitating development of Open Access Next Generation Networks	
		Section 4: Connect India Strategies – Mobile Tower Infrastructure, International Connectivity	
	1.1 (d)	Facilitate the establishment of Mobile Tower Infrastructure by:	
	(i)	Extending incentives and exemptions for the construction of telecom towers	
	(ii)	According accelerated Rights of Way permissions for telecom towers in government premises	
	(iii)	Promoting deployment of solar and green energy for telecom towers	
	1.1 (e)	Improve international connectivity and reduce the cost of international bandwidth by facilitating setting up of International Cable Landing Stations by rationalising access charges and removing regulatory hurdles	The cost of international bandwidth to be benchmarked to global trends. Policy to encourage Equal access, rationalisation of cable landing access facilitation charges and encourage competition. The policy to aim at promoting greater transparency in the rate setting and enforcement process.
	(i)	Encourage sharing of active infrastructure by enhancing the scope of Infrastructure Providers (IP) and promoting deployment of common sharable, passive as well as active, infrastructure;	Encourage sharing of active infrastructure by enhancing the scope of Infrastructure Providers (IP) and promoting deployment of common sharable, passive as well as active, infrastructure including backhaul/lastmile by all Licensees.
		Section 5: Connect India Strategies – Convergence, ROW, VNOS, Investments, Incentives	

	1.1 (f)	Enabling Infrastructure Convergence of IT, telecom and broadcasting sectors:	<p>AMCHAM supports Convergence of networks, services and devices should pave the way for true convergence across sectors – IT, telecom and broadcasting.</p> <p>A unified license would encourage single billing, infrastructure to support provisioning of all telecom services under a single license through a common network.</p> <p>The current unified license is a compilation of existing license. A true unified license which permits provision of all telecom services without any service or network related barriers would be useful.</p> <p>The current policy of not allowing IP-PSTN mixing undermines growth and innovation and prohibits India from reaping full benefits of convergence.</p> <p>Government of India prohibits any mixing between PSTN endpoints and IP endpoints, except in relatively narrow cases subject to licensing requirements. The policy, created originally to combat toll bypass and advance innovation, now produces the opposite result of undermining core goal of ‘Propel India’ to become the front-runner in the Fourth Industrial Revolution.</p> <p>We present the following reasons to allow IP-PSTN mixing:</p> <p>a. Innovative, converged services mix IP and PSTN streams</p> <p>A wide array of innovative offerings often depend on enabling IP and PSTN endpoints simultaneously, particularly in order to extract maximum benefits. A good example of this is collaborative videoconferencing, where multiple end users join a single meeting in which they meet via video, chat via electronic message, and work on documents and virtual whiteboards in real time. For a variety of reasons, including bandwidth limits for some users and physical equipment limitations for others, many participants connect their audio to the meeting via PSTN endpoints, while</p>
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			<p>many others connect directly via IP from laptops and smartphones. Prohibiting IP-PSTN mixing vastly limits the reach and effectiveness of this kind of collaboration service.</p> <p>The prohibition also impacts many Internet-of-Things services. While the core of most IOT services rests on machine-to-machine communications, many applications include a communication layer that enables factory managers or other observers to interact with each other in real time based on the data the IOT service delivers. As with collaboration services, this capability is most valuable when it is open to all end users, including those that do not have ready access to an IP endpoint.</p> <p>The IP-PSTN barrier will impact a wide array of innovative services that are still on the drawing board. These include applications ranging from connected homes, to connected classrooms, to healthcare, and to autonomous vehicles. The future scale of the potential impact is immense.</p> <p>b. The IP-PSTN barrier drives away innovators</p> <p>The current IP-PSTN barrier poses a significant challenge to the innovators developing these services and to the consumers and enterprises that use them. This impacts Indian consumers and enterprises directly, as they are often forced to use significantly pared back versions of the services. It also impacts India more broadly and more indirectly, as service providers and innovators will increasingly consider developing and testing new advanced services in other countries.</p> <p>c. The barrier is not aligned with global technological convergence</p> <p>While different transmission technologies were once distinct in their capabilities and uses, they are now virtually interchangeable.</p>
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	(i)	Amending the Indian Telegraph Act, 1885 and other relevant acts for the purpose of convergence in coordination with respective ministries	
	(ii)	Establishing a unified policy framework and spectrum management regime for broadcast and broadband technologies	<p>The current unified license which continues to have service specific differentiation to pave the way for a true unified license. This will enable telecom service providers to efficiently utilise their infrastructure to provide all types of services.</p> <p>In Section 1.1(f) (ii) the DoT proposes to promote infrastructure convergence by “Enabling Infrastructure Convergence of IT, telecom and broadcasting sectors” by “establishing a unified policy framework and spectrum management regime for broadcast and broadband technologies.” We agree that this is critically important and matches with the same convergence trend currently ongoing in both technology and business models. Matching the regulatory framework, that enables such convergence, to the realities of the marketplace is a critical component of the DoT’s Connect India objectives in the Policy. This should be matched by an organizational convergence of government agencies – as described in section 1.2(a)(vi) wherein the DoT proposes to “simplif[y] the process of obtaining permissions from various agencies.” Streamlining and rationalizing the licensing process is critical to ensuring rapid deployment of new technologies.</p>
	(iii)	Restructuring of legal, licensing and regulatory frameworks for reaping the benefits of convergence	Restructuring of legal, licensing and rationalize the regulatory frameworks in a time bound manner is the key. In order to reap the benefits of convergence, the policy

			and regulatory framework should enable convergence across networks, services and devices.
	1.1 (g)	Creating a Broadband Readiness Index for States/ UTs to attract investments and address RoW challenges	
	1.1 (h)	Encouraging investment in broadband infrastructure through fiscal incentives, including accelerated depreciation and tax incentives; and incentivizing fixed line broadband	Encouraging investment in all infrastructure creation and sharing should be suitably incentivized through fiscal incentives, including accelerated depreciation and tax incentives; and incentivizing fixed line broadband
	1.1 (i)	By encouraging innovative approaches to infrastructure creation and access including through resale and Virtual Network Operators (VNO)	By implementing policy reforms aimed at improving business viability and competitiveness of VNOs as resellers by providing flexibility to provide innovative services through multiple arrangements with telecoms service providers.
	1.1 (j)	Promoting broadband connectivity through innovative and alternative technologies	
		Section 6: Connect India Strategies – Spectrum as a Key Resource (Adequacy, Pricing, Innovation, Efficiency)	
17	1.2	Recognizing Spectrum as a key natural resource for public benefit to achieve India’s socio-economic goals, optimise availability and utilisation by:	We find it highly encouraging to see so many progressive policy statements proposed by the Department related to spectrum and broadly endorses these spectrum related policies. One area of the spectrum section which needs further addition is the strategy plan to explicitly include a provision to promote the use of license-exempt spectrum, including identifying allocations and promulgating a device-based regulatory regime for its use. Most world economies are relying more substantially on license-exempt spectrum for broadband. In 2016 for India, the Visual Networking Index found that Wi-Fi from a fixed broadband connection (known as “Fixed Wi-Fi”) amounted to just 34 percent of total IP traffic, while in 2021, it is forecasted that Fixed Wi-Fi will amount to just 30 percent of total IP traffic. Compare that outcome to the US in 2021, where Fixed Wi-Fi will amount to 43 percent of total IP traffic, up from 35 percent in 2016. While India’s public initiative to place Wi-Fi at the edges of its extensive fiber build will help address the shortfall, India needs regulatory policies that maximize the ability of wired service providers to make capital investments that result

			<p>in broadband services to homes and businesses. Wired broadband with Wi-Fi at the edge could be the “gold standard” for as many enterprises and households as possible.</p> <p>In addition, Indian consumers’ use of Wi-Fi to offload traffic from their carriers’ data plans is less than average. Mobile phone traffic offloaded to a Wi-Fi network amounts to just 28 percent of mobile data traffic in 2016 and forecasts the share of data continues at 28 percent through 2021. In major economies, offloaded traffic already amounts to over 60 percent of traffic from the phones, with the share expected to rise to 70 percent by 2021. Once again, this heavy Wi-Fi use is contingent on the availability of Wi-Fi at home, at work, and on the go.</p> <p>Wi-Fi is important for several reasons – it alleviates congestion that would otherwise occur on licensed spectrum, it helps consumers avoid data limits on mobile data plans, and it often can support better reception indoors relative to outdoor mobile networks. For enterprises, Wi-Fi is a significant generator of productivity and will play a key role in enterprise Internet of Things deployments. Moreover, Wi-Fi is a huge global ecosystem consisting of hundreds of companies collectively shipping billions of units of products, thereby allowing consumers to take advantage of economies of scale. Finally, the linkage between Wi-Fi and 5G. Spectrum-based technologies are nearing a pivotal moment of transition. Both the LTE-based ecosystem and the Wi-Fi ecosystem are about to take a significant leap forward in technology and capability. In doing so, the lines between them will become less defined. Wi-Fi is a key part of 5G and in the new 5G architecture, Wi-Fi is yet another radio that can be attached to the 5G core.</p> <p>Up until this point, India has roughly kept pace with global license-exempt allocations, although there is some room for improvement and flexibility needed for certain 5 GHz bands. But there is more to be done. Just as more licensed spectrum is needed to meet demand, so too is more license-exempt spectrum needed. Both the US and Europe are currently in the process of designating 1200 and 500 megahertz, respectively, to license-exempt</p>
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			<p>spectrum, by introducing a license-exempt underlay into the 6 GHz band, starting at 5925 MHz. This reflects the need for large blocks of contiguous spectrum to support 160 MHz wide channels to be used on the next generation of Wi-Fi devices.</p> <p><u>A specific policy goal of promoting license-exempt spectrum should be added to the Clause 1.2 of the national digital communications policy.</u></p>
	1.2 (a)	Making adequate spectrum available to be equipped for the new broadband era:	
	(i)	Identifying and making available new Spectrum bands for Access and Backhaul segments for timely deployment and growth of 5G networks.	<p>Section 1.2 (a) (i) addresses “Identifying and making available new Spectrum bands for Access and Backhaul segments for timely deployment and growth of 5G networks.” The 5G ecosystem encompasses both license-exempt and licensed spectrum to support the higher demands and lower costs expected of 5G networks and applications. 5G deployments are set to take place in a combination of all low- (below 1 GHz), mid- (between 1-7 GHz), and high bands (above 7 GHz) where low-bands will be used to provide wide-area coverage for low capacity use, such as agricultural sensors, and high bands for more high capacity and low latency use, such as autonomous driving. In all cases, license-exempt use such as Wi-Fi will be crucial to support and manage increased traffic by offloading. This will serve as a complement to licensed spectrum access. This includes expanding license-exempt access to spectrum in the 5 GHz, 6 GHz, to allow for new 80 MHz and 160 MHz channels. Likewise, to support high capacity 5G deployment and use, the E and V bands, or the extended 60 GHz band, should be made available for license-exempt use, in line with a growing movement in the US, UK, Europe, Canada, Australia, and Singapore. This is in line with Strategy 1.2 d (iii) on promoting the spectrum in line with international best practices.</p>
	(ii)	Making available harmonized and contiguous spectrum required for deployment of next generation access technologies	
	(iii)	Further liberalizing the spectrum sharing, leasing and trading regime	
	(iv)	Coordinating with Government departments for freeing underutilised/ substitutable spectrum, and	<p>Section 1.2 (a) (iv) states that the DoT will make adequate spectrum available by “Coordinating with government departments for freeing underutilized/substitutable spectrum, and its auctioning and/or assignment along with unutilized spectrum for</p>

		its auctioning and/ or assignment along with unutilised spectrum for efficient and productive use	efficient and productive use.” AMCHAM supports the DoT’s efforts in this regard. The U.S. government engaged in a similar initiative a few years back under the Obama administration, through the President’s Council of Advisors on Science and Technology (PCAST) report on <i>Realizing the Full Potential of Government-Held Spectrum to Spur Economic Growth</i> . One of the key findings from the PCAST report is the fact that freeing or clearing government-held spectrum, or any large blocks of spectrum, for auction or re-assignment is extremely costly and time-consuming, and oftentimes not feasible. It therefore concluded that more efficient and immediate use of government-held spectrum would be obtained through spectrum sharing. The PCAST recommended a 3-tier Spectrum Access System (SAS) with geo-location spectrum database that would allow shared access to unused spectrum while protecting the incumbent primary user. The Citizen Broadband Radio Services (CBRS) in the 3.5 GHz band is a piloting implementation of such SAS system. We encourage DoT to take a similar approach in enabling immediate access to underutilized spectrum via spectrum sharing and use of dynamic spectrum database. This is consistent with 1.2 (a) (iii) on liberalization of spectrum sharing and 1.2 (c) (ii) on dynamic database systems. A good place to start could be the vast amount of UHF TV broadcast spectrum, among which over 100 MHz is not utilized across India. This would be a good example of “leveraging existing assets of the broadcasting and power sector to improve connectivity, affordability and sustainability”, as stipulated in section 1.1 (b) (iv), applied beyond the fiber context.
	(v)	Optimal Pricing of Spectrum to ensure sustainable and affordable access to Digital Communications	
	(vi)	Simplifying the process of obtaining permissions from various agencies such as WPC and SACFA in order to promote efficiency	
	(vii)	Enabling Light Touch licensing/ de-licensing for broadband proliferation	
	(viii)	Promoting the co-use/ secondary use of spectrum	Regarding Section 1.2 (a) (viii), the DoT’s strategy for further liberalizing spectrum sharing. Wi-Fi, for example, has become a major on-ramp to the Internet for a majority of the population worldwide. The vibrant Wi-Fi ecosystem has realized a greater amount of economic value in terms of consumer surpluses. Expanding license-exempt access to spectrum in the 5 GHz, 6 GHz, and 60 GHz bands will

			help to meet the demand for more Wi-Fi in the 5G era by both consumers and businesses alike. The convergence of licensed and license-exempt spectrum for mobile and Wi-Fi is also an increasingly common approach to spectrum sharing. Spectrum sharing extends beyond just Wi-Fi use. US FCC has specified a 3-tier Spectrum Access System (SAS) in the 3.5-3.7 GHz band for Citizen Broadband Radio Services (CBRS). Ofcom in the UK has announced it is looking at spectrum sharing models in the 3.8-4.2 GHz bands for 5G networks.
	(ix)	Constituting a Spectrum Advisory Team (SAT) consisting of experts, industry and academia to facilitate the identification of new bands, applications and efficiency measures to catalyse innovation and efficient spectrum management	
	1.2 (b)	Transparent and fair mode of spectrum allocation by developing a fair, flexible, simple and transparent method for spectrum assignments and allocations	
	1.2 (c)	Efficient spectrum utilisation and management:	
	(i)	Ensuring the optimum utilisation of spectrum by management of interference free spectrum and encouraging new technologies and consolidation	With respect to Section 1.2 (c) (i) and (ii), dynamic database systems are effective ways of managing under-utilized and unused spectrum efficiently by identifying available spectrum for shared use, and reallocating users when an incumbent or prioritized user requires the spectrum. Examples of dynamic spectrum database systems that are operating today include 3.5 GHz CBRS in the US, and UHF TV band White Space Device operations adopted in the US, Canada, UK, Singapore, South Korea, the Philippines, Colombia, Trinidad and Tobago, and most recently in South Africa. These database systems can be configured accordingly to adhere to different rules and criteria such as power limits and emission masks, giving regulators a greater degree of control and flexibility in improving spectrum utilization while managing interference effectively.
	(ii)	Monitoring efficient utilization of spectrum by conducting systematic audits of the spectrum allocated to both commercial and government organizations and deploy dynamic database systems for interference assessment	
	(iii)	Publishing annual spectrum utilization and availability roadmap for communication needs including those of aircraft and vessels	
	1.2 (d)	Promoting Next Generation Access Technologies in India through the following actions:	In Section 1.2(d), the DoT plans to promote Next Generation Access Technologies through a number of actions. AMCHAM requests that the DoT's proposed list of actions also include both next-gen licensed spectrum technologies such as IMT-

			2020 as well as next-gen unlicensed spectrum technologies such as 802.11ad (WiGig , 60 GHz band), 802.11af and 802.11ah (TVWS and Wi-Fi HaLow respectively, both in sub 1 GHz band), 802.11ax (2.4 GHz and 5 GHz band), and 802.11ay (next-gen 60 GHz). In particular, among the mid-band spectrum, the 6 GHz band is being considered for unlicensed WLAN operations in the U.S., Europe, as well as in Canada, Australia and Singapore, and it is viewed as a natural extension of the adjacent 5 GHz band unlicensed operation. Similarly, unlicensed access can also result in highly effective utilization in the high-capacity bands such as 57-71 GHz, 71-76 GHz, and 81-86 GHz bands, as demonstrated by 802.11ad and 11ay WiGig technologies. Consistent with DoT's goal of promoting public Wi-Fi hotspots as specified in section 1 (f), and the directive of "enabling light touch licensing/de-licensing for broadband proliferation" in section 1.2 (a) (vii), DoT may consider increased unlicensed access across low (UHF TV Band), mid (5 GHz and 6 GHz bands), and high (V and E) bands.
	(i)	Encouraging licensed service providers to utilise next generation access technologies to ensure cost optimization, service agility and new revenue streams	Encouraging licensed service providers to utilize next generation access/ backbone technologies to ensure cost optimization, service agility and new revenue streams like Unified Communications coupled with remote management through cloud based platforms.
	(ii)	Recognising mid-band spectrum, particularly the 3 GHz to 24 GHz range, as central to India's strategy for Next-Generation Networks	
	(iii)	Promoting the effective utilisation of high capacity backhaul E-band (71-76/ 81-86 GHz) and V-band (57-64 MHz) spectrum in line with international best practices	
	(iv)	Rationalizing annual royalty charges for microwave links for backhaul connectivity	
		Section 7: Connect India Strategies – Satellite Communication Technologies	
18	1.3	Strengthening Satellite Communication Technologies in India	
	1.3 (a)	Review the regulatory regime for satellite communication technologies, including:	

	(i)	Revising licensing and regulatory conditions that limit the use of satellite communications, such as speed barriers, band allocation, etc.	Revising licensing and regulatory conditions that limit the use of satellite communications, such as speed barriers, band allocation, and also opening up for enterprise customer etc.
	(ii)	Simplifying compliance requirements for VSAT operators to ensure faster roll out	
	(iii)	Expanding scope of permissible services under the Unified Licensing regime using High Throughput Satellite communication systems	
	1.3 (b)	Optimise Satellite communications technologies in India, by:	
	(i)	Reviewing SATCOM policy for communication services, along with Department of Space, keeping in view international developments and social and economic needs of the country	
	(ii)	Making available additional transponders and new spectrum bands (such as Ka band) for satellite-based commercial communication services	
	(iii)	Rationalizing satellite transponder, spectrum charges and charges payable to WPC	
	(iv)	Assessing the bandwidth demands across various spectrum bands used for satellite communications, in consultation with stakeholders	
	(v)	Prioritising international engagement with ITU on spectrum management issues, specifically with respect to satellite communications in India	
	1.3 (c)	Develop an ecosystem for satellite communications in India, with focus on:	
	(i)	Streamlining administrative processes for assignment and allocations, clearances and permissions related to satellite communication systems	
	(ii)	Promoting local manufacturing and development of satellite communications related infrastructure through appropriate policies	

	(iii)	Promoting participation of private players, with due regard to national security and sovereignty	
		Section 8: Connect India Strategies – Connecting the Unconnected – Universal Service Obligation Fund (USOF)	
19	1.4	Ensuring Inclusion of uncovered areas and digitally deprived segments of society by:	
	1.4 (a)	Channelizing the Universal Service Obligation Fund (USOF) for:	
	(i)	Ensuring connectivity for all uncovered areas in the North Eastern States, Himalayan region, LWE areas, Islands and Border Areas	
	(ii)	Marginalised communities, women and persons with differential capabilities,; and for economically and socially weaker sections in urban pockets	
	(iii)	Promoting innovative, effective and scalable alternate technologies for remote areas	In Section 1.4 (a) (iii), the DoT states that it will ensure inclusion of uncovered areas and digitally deprived segments of society by “Promoting innovative, effective and scalable alternate technologies for remote areas.” AMCHAM agrees and strongly recommend that DoT consider approving unlicensed access to spectrum that has long been allocated for television broadcast but has never been put into use. This spectrum band, below 700 MHz, has been proven an effective and affordable solution for rural broadband in many other countries. There is no reason to believe it cannot fulfill the same rural broadband need in India. Moreover, using this unused television spectrum for unlicensed deployments of rural broadband connectivity fulfills several of the policies stipulated in the draft, in terms of leveraging broadcasting asset for broadband connectivity, e.g., 1.1 (b) (iv), spectrum sharing [1.2 (a) (iii)], de-licensing for broadband proliferation [1.2 (a) (vii)], co-use/secondary use of spectrum [1.2 (a) (viii)], and dynamic database [1.2 (c) (ii)].
	(iv)	Enabling access provision by any entity capable of fulfilling the Universal Service Obligation	The DoT also proposed to ensure inclusion in 1.4 (a) (iv) by “Enabling access provision by any entity capable of fulfilling the Universal Service Obligation.” This as broadening the access to USO Fund to any entity, such as many of the Community Network operators, who are capable of contributing to the Universal Service goals even though in small, local areas. While they themselves are not

			capable of fulfilling USO on a national nor regional scale like the big carriers do, the aggregated effect of many small community network operators can certainly be a strong force in achieving the Universal Service objectives. DoT may enable these smaller players to access USO Fund. Moreover, when USO Fund is paired with de-licensed spectrum, the entry barrier to becoming a network operator is significantly lowered. Such a policy combination could spur entrepreneurship and private sector investment that could significantly contribute to the goal of “Connecting India”.
	1.4 (b)	Reviewing the scope and modalities of USOF:	
	(i)	Redesigning the USOF and broadening its objectives to enable universal broadband access	
	(ii)	Strengthening institutional capacity of USOF to ensure effective rollout of services in uncovered, remote and rural areas	
		Section 9: Connect India Strategies – Customer Satisfaction	
20	1.5	Ensuring Customer Satisfaction, Quality of Service and effective Grievance Redressal	<p>The policy should give equal emphasis to qualitative aspects of broadband networks and not just quantitative aspects.</p> <p><u>Hence, we suggest to add in the policy a goal of - ‘creating a future-ready network which is scalable, has better Quality of Service, is robust and fault-tolerant for diverse scenarios.’</u></p>
	1.5 (a)	Establishing effective institutional mechanisms to protect consumers’ interests including:	
	(i)	Telecom Ombudsman	
	(ii)	A centralised web based complaint redressal system	
	1.5 (b)	Focussing on public health and safety standards to promote the well-being of citizens:	
	(i)	Framing a comprehensive policy to encourage the adoption of environmental and safety standards and building trust by enabling self-certification	
	(ii)	Generating awareness around Electro Magnetic Fields Emissions based on international experience and global best practices	

	(iii)	Generating awareness on hazards of e-waste and encouraging proper disposal management of equipment used	
		Section 10: Connect India Strategies – Renewal Energy	
	1.5 (c)	Incentivising the use of renewable energy technologies in the communications sector, including:	
	(i)	Encouraging the utilisation of small cell fuel batteries, lithium-ion batteries or other similar technologies to improve energy consumption efficiencies	
	(ii)	Promoting research and development of green telecom through active participation of stakeholders across government, industry and academia	
	(iii)	Rationalising of taxes and levies on the manufacture, production and import of such equipment for digital communication technologies	
21	2	Chapter 4: Propel India: Enabling Next Generation Technologies and Services through Investments, Innovation, Indigenous Manufacturing and IPR Generation	
		Section 1: Propel India - 2022 Goals	
	(a)	Attract investments of USD 100 Billion in the Digital Communications Sector	<p>The policy need to have a time bound action plan for implementation of steps aimed at ensuring FDI of USD 100 billion. In order to encourage investments in the country it is important to have regulatory certainty. The issues like Remote Access, Anomalies in the definition of Adjusted Gross Revenue which also leads to double taxation etc needs to be resolved.</p> <p>Among the goals DoT lays out in this section is the intention to attract USD \$100B to help propel India’s digital economy. To attract that very significant investment, which presumably would span not only traditional telecom and broadband networks but also other types of facilities, jobs and infrastructure to support an array of cloud and online services, it will be critical to adopt regulatory policies that do not drive investment offshore. Today’s licensing rules in India, as applied to some types of</p>

			online services (including the use of new technologies and services in the context of call centers per the OSP registration process), do not accommodate the convergence of technologies that enables the global internet and internet protocol-based services. This restricts investment in the country, due to existing licensing obligations, which drives investment offshore. Two such examples are the significant licensing entry fees imposed by the Unified License regime – particularly for those licensees that desire to provide voice services that may, to some extent, connect with traditional telecom voice services. Additionally, the current licensing regime – both the Unified License and the OSP -- can be interpreted as dictating the manner in which services are architected and deployed, as well as what type of entity can operate what type of facility (including facilities that are not traditional telecom operations). The implications of these risks are fundamental to the provision of online services and, as a result, drive infrastructure investment and service origination to other countries where compliance is manageable.
	(b)	Increase India's contribution to Global Value Chains	Increase India's contribution to Global Value Chains by adopting global best practices and enhancing collaboration with all major countries.
	(c)	Creation of innovation led Start-ups in Digital Communications sector	Steps need to be outlined to create the required eco-system in the form of policies for financing, approvals and roadmap.
	(d)	Creation of Globally recognized IPRs in India	
	(e)	Development of Standard Essential Patents (SEPs) in the field of digital communication technologies	
	(f)	Train/ Re-skill 1 Million manpower for building New Age Skills	
	(g)	Expand IoT ecosystem to 5 Billion connected devices	Need to have a IoT and M2M Policy with clearly laid out implementation roadmap.
	(h)	Accelerate transition to Industry 4.0	Accelerate transition to Industry 4.0 in collaboration and consultation with the industry and alignment with global best practices.
		Section 2: Propel India Strategies – Catalysing Investments, Reforming Licensing & Regulatory Regime	
22		Strategies:	Enhancing/Broad basing the scope of services in the license framework to realize the full benefits of the emerging and innovative services.

		The recent past has witnessed an unprecedented transformation in the Digital Communications Infrastructure and Services sector with the emergence of new technologies, services, business models and players. There is hence an imperative need to review the existing licensing, regulatory and resource allocation frameworks to incentivize investments and innovation to optimise new technology deployments and harness their benefits.	The new technologies, services and formats are evolving and in a nascent stage. Need to adopt a light touch regulatory framework with ex-post regulation as against ex-ante. The framework to enable the deployment and adoption of such services. Compliance requirements on based on evidence of harm only.
23	2.1	Catalysing Investments for Digital Communications sector:	
	2.1 (a)	According Telecom Infrastructure the status of Critical and Essential Infrastructure	Section 2.1(a) proposes to extend the critical infrastructure designation to communications networks. While this is an important national security and public interest objective, the types of infrastructure to be included need to be considered appropriate. Expanding the designation too broadly to facilities that are not traditional telecom facilities may result in sweeping converging technologies into yesterday's traditional regulatory frameworks, thereby slowing the pace of investment and innovation in India.
	(i)	By recognizing communication systems and services as essential connectivity infrastructure at par with other connectivity infrastructure like Roadways, Railways, Waterways, Airlines etc. for development of India, and, in the process, enable low cost financing for development of communication infrastructure	
	2.1 (b)	Reforming the licencing and regulatory regime to catalyse Investments and Innovation, and promote Ease of Doing Business by:	Notably, Section 2.1(b) proposes to reform India's telecom licensing framework. This is an important component of a new era of technological innovation in India. India's current licensing construct, which differs drastically from many other telecom licensing frameworks around the world, micromanages the operations and services of providers traditionally outside the bounds of traditional telecom regulation. Moreover, the entry fees – as the DoT appears to recognize in 2.1(b)(i) – are quite high. For example, to obtain a VNO (UL-AS) license, a party must pay over USD \$1M – simply to resell the voice or other services provided by an underlying UL-AS licensee. In Canada, there is no fee to obtain such a reseller

			authorization; in Singapore, an analogous license fee is US\$ 3,000; and in Hong Kong and Korea there is no entry fee for a similar license. In most European countries and the United States, there is no such up-front license fee. One exception is Belgium, where the entry fee for registering as an Electronic Communications Service is ~700 Euro. And, finally, in the U.S. there is no required license fee – and no obligation to obtain a license at all -- for engaging in the resale of communications services.
	(i)	Reviewing levies and fees including License Fee, Universal Service obligation Fund (USOF) levy and concept of pass through revenues in line with principles of input line credit.	Rationalizing in a time bound manner with specific road map levies and fees including License Fee, Universal Service obligation Fund (USOF) levy and concept of pass through revenues in line with principles of input line credit.
	(ii)	Rationalising Spectrum Usage Charges (SUCs) to reflect the costs of regulation and administration of spectrum	
	(iii)	Rationalising taxes and levies on Digital Communications equipment, infrastructure and services	In Section 2.1(b) (iii), the DoT proposes differential licensing for different layers of the ecosystem. This too is a key ingredient to encouraging investment in India. By recognizing that many services today are unbundled from the underlying telecom network, it is important to enable such services without requiring that they are tethered to a particular entity in India. This is true both for encouraging the provision of new, more efficient and productive services, as well as for the use of such services by businesses in India, e.g., call centers that are overly constrained under the current OSP structure. Moreover, not every service – or every layer – need be subject to telecom regulation. Imposing detailed licensing obligations on all such layers, particularly licensing obligations that prohibit certain types of operations or deployment of particular types of facilities by all players in the converging ecosystem, will continue to drive investment to countries outside of India. Enabling flexibility in deployment of services, so long as the public and national security are adequately protected, is critical to propelling India into a digitally transformed society.

	(iv)	Enabling unbundling of different layers (e.g. infrastructure, network, services and applications layer) through differential licensing	Unified license is the key. Service specific licenses to be discouraged.
	(v)	Establishing light touch licensing regime for the proliferation of Public Data Offices and Public Data Office Aggregators for providing internet access through Wi-Fi Hotspots	“Licensing” should be replaced with “regulatory framework”. Not every service requires a licensing. It can be simply authorisation or registration also. Flexible, horizontally consistent and light touch approach should be followed in all segments and not just public data.
	(vi)	Introducing various fiscal and non-fiscal benefits for development of telecom clusters around cable landing stations to foster innovation in Digital Communications Technologies	
	(vii)		Enhancing/Broad basing the scope of services in the license framework to realize the full benefits of the emerging and innovative services.
		Section 3: Propel India Strategies – Simplifying Compliance Obligations	
	2.1 (c)	Simplifying and facilitating Compliance Obligations by:	<p>Simplifying compliance – as DoT proposes in Section 2.1(c) – is a critical step to the propel India goal. One way to protect consumers, protect national security and simultaneously drive innovation and investment in India is to adhere to international technical standards. Whether in the realm of cybersecurity or networking, international standards have been vetted and tested, and will enable the deployment of innovative services in India. Although India is a unique country with its own challenges, we believe that adhering to international norms and technical standards is the most effective, efficient and competitive avenue for achieving DoT’s important objectives.</p> <p>Acceptance of global testing and certifications are critical to eliminating unnecessary hurdles to business and redundant repetitive compliance processes hindering ease-of-business.</p> <p><u>You may consider modification of the clause to include: ‘...best international practices including acceptance of global certifications’.</u></p>

	(i)	Reducing license and regulatory compliance requirements keeping in view best international practices	<p>This could also include sharing cost of compliance between Government and Industry in the larger interest of the country.</p> <ul style="list-style-type: none"> • Reduce royalty and license fee for captive users of spectrum, to bring it in line with international best practices to cover cost of spectrum management and not a source of revenue • Accept Global Test Certifications instead of insisting on re doing all tests in India, which could be expensive and time consuming • Simplifying approvals/ processes for R&D procurements/ imports <p>Reducing annual charges on experimental Licenses for equipment procurements/ imports</p>
	(ii)	Simplifying all existing technical systems and online systems applicable for grant of licenses, approvals, clearances, permissions and developing a comprehensive end-to-end online platform	The system should be robust, scalable, futuristic and secure.
	(iii)	Specifying timelines within which various types of licenses, permissions and clearances shall be provided by the relevant administrative offices	<p>All prior approval requirements should be reviewed. The advanced approval requirement should be replaced with an advanced notification requirement, to be followed with pre-intimation or deemed approval if no update is received within specified time lines.</p> <p>Licensed operators understand their compliance obligations. Seeking compliance in terms of prior approval prior to adding a new feature, function or site for managing our network adds significant delay, cost and complexity and compromises network security.</p> <p>The process for according approvals should be transparent and objective in nature.</p> <p>In line with the same, the policy on Remote Access needs to be reviewed and aligned with the requirement of technology and networks.</p> <p>The current restrictions requiring pre-approval needs to give way to a policy on notification or pre-intimation or post intimation where prior intimation is not practically feasible as well as deemed approval (if prior approval is not received in fixed time frame). Unless the policy is not reviewed to suit the ever increasing</p>

			requirements to efficiently manage the networks, the benefits of adoption of new technologies may not be forthcoming
	(iv)	Improving the Terms and Conditions for ‘Other Service Providers’, including definitions, compliance requirements and restrictions on interconnectivity	Simplifying the Terms and Conditions for ‘Other Service Providers’, including definitions, compliance requirements, reduction in Bank Guarantee value, city wise registration and restrictions on interconnectivity.
	(v)	Reforming the Guidelines for Mergers & Acquisitions, 2014 to enable simplification and fast tracking of approvals	
	(vi)	Establishing exit norms for licensees including alignment to bankruptcy code to maximize telecom sector system efficiencies and consumers interest	Establishing exit norms for licensees including alignment to bankruptcy code to maximize telecom sector system efficiencies and consumers interest. A time bound schedule for affecting surrender of license.
	(vii)	Fixing the penalty provisions to ensure proportionality and reasonableness	An objective framework on imposing penalty which should be proportionate after providing due opportunity to parties.
	(viii)	Creating a regime for fixed number portability to facilitate one nation – one number including portability of toll free number, Universal Access numbers and DID numbers	This point needs discussion
	(ix)	Simplify ETA (Equipment Type Approval) process for low powered (< 1 watt) radio devices	
		Section 4: Propel India Strategies – Harnessing Emerging Technologies 5G, Cloud Computing, M2M, IOTs, AI, Big Data, OTTs, etc	Section 4: Propel India Strategies – Harnessing Emerging Technologies 5G, SDN, NFV, SD-WAN, Cloud Computing, M2M, IOTs, AI, Big Data, OTTs, etc
	2.2	Ensuring a holistic and harmonised approach for harnessing Emerging Technologies	<p>Government’s procurement policies for high-end technologies need to evolve. A lowest-cost procurement approach would be self-defeating and counter-intuitive to the aim of setting up of world-class infrastructure harnessing emerging technologies.</p> <p><u>AMCHAM suggest that the policy adds a point about ‘Using appropriate procurement methods such as QCBS (Quality, Cost Based Selection) while procuring new and high-end technologies’</u></p>
24	2.2 (a)	Synergising deployment and adoption of new and emerging technologies by:	

	(i)	Creating a roadmap for emerging technologies and its use in the communications sector, such as 5G, Artificial Intelligence, Robotics, Internet of Things, Cloud Computing and M2M	Creating a roadmap for emerging technologies and its use in the communications sector, such as 5G, Software Defined Networks (SDNs) and Network Function Virtualization (NFV), Software Defined Wide Area Network (SD-WAN), Artificial Intelligence, Robotics, Internet of Things, Cloud Computing and M2M
	(ii)	Simplifying licensing and regulatory frameworks whilst ensuring appropriate security frameworks for IoT/ M2M / future services and network elements incorporating international best practices	Simplifying policy and regulatory frameworks whilst ensuring appropriate security frameworks for IoT/ M2M / future services and network elements incorporating international best practices and light touch in nature.
	(iii)	Earmarking adequate licensed and unlicensed spectrum for IoT/ M2M services	
	(iv)	Encourage use of Open APIs for emerging technologies	
	2.2 (b)	Promoting innovation in the creation of Communication services and network infrastructure by Developing a policy framework for ‘Over The Top’ services	Promoting innovation in the creation of Communication services and network infrastructure by Developing a light touch policy framework for ‘Over The Top’ services.
	2.2 (c)	Ensuring the Transition to IPv6 for all existing communications systems, equipment, networks and devices	
	2.2 (d)	Enabling Hi - speed internet, Internet of Things and M2M by rollout of 5G technologies:	
	(i)	Implementing an action plan for rollout of 5G applications and services	
	(ii)	Enhancing the backhaul capacity to support the development of next-generation networks like 5G	
	(iii)	Ensuring availability of spectrum for 5G in <1 GHz, 1-6 GHz and >6 GHz bands	
	(iv)	Reviewing industry practices with respect to traffic prioritisation to provide 5G-enabled applications and services	
	(v)	Developing framework for accelerated deployment of M2M services while safeguarding security and interception for M2M devices	We support light touch regulatory framework based on security requirements which are flexible, proportionate and relevant.
	(vi)	Defining policy for EMF radiation for M2M devices, with accompanying institutional	

		framework to coordinate government-funded and India-specific research in this regard	
	2.2 (e)	Ensuring adequate numbering resources, by:	In Section 2.2(e), the DoT proposes a unified numbering plan for fixed and mobile services. We believes this unified approach will help achieve the DoT’s goal of propelling India and encouraging the entry of new and innovative services – but only if the DoT clearly recognizes the use of VoIP technologies for the provision of services that use phone numbers. Whether on a fixed or mobile device, VoIP technologies can enable new competitive entrants into the marketplace offering unique communications and collaboration experiences to India’s consumers and businesses. However, VoIP services must not be limited to only one type of telephone number, fixed or mobile. These technologies should benefit from the unified numbering plan if consumers and businesses are to realize the full benefits of this Propel India policy.
	(i)	Allocating 13-digit numbers for all M2M mobile connections	
	(ii)	Developing a unified numbering plan for fixed line and mobile services	
	2.2 (f)	Establishing India as a global hub for cloud computing, content hosting and delivery, and data communication systems and services	In Section 2.2(f), the DoT proposes to “establish[] India as a global hub for cloud computing, content hosting and delivery, and data communication systems and services.” This is an important and readily achievable goal, and one critical component necessary to achieving that goal would be to revise India’s regulatory requirements concerning the ownership and operation of fiber optic transport by companies other than telecommunications operators. Infrastructure and equipment such as data centers and edge servers are necessary for the development and growth of cloud computing and content hosting. Such facilities also must be networked together in order to distribute and provide content, applications, and services to users. Service providers can purchase transport as a service or lease dark fiber from telecommunications providers to provide this needed connectivity. But, especially in cases where a cloud services provider has sufficient volumes of traffic, it often makes more financial sense to own fiber optic transport and operate fiber transport facilities rather than purchase transport services or lease dark fiber from a telecommunications operator. The current regulatory structure regulates the ownership and operation of fiber optic transport the same as traditional telecom operators and services—even if a company has no intention of using fiber optic

			<p>facilities to provide telecommunications services, <i>i.e.</i>, it has no intention of selling capacity on its network as a service to others.</p> <p>The lease of dark fiber is restricted even when such fiber is not used for the provision of telecommunications services. There are numerous licenses under which a vendor can lease dark fiber in India, such as IP-I (Infrastructure Provider), UAS (Unified Access Services), NLD (National Long-Distance License), ISP (Internet Service Provider) and the latest, UL (Unified License). These licenses include onerous obligations and restrictions on the vendor, and even include restrictions on the types of customers to whom the vendor can lease dark fiber. Because cloud service providers' use of connectivity involves use of dark fiber to connect data centers, it is not expressly addressed by applicable law, and thus many carriers take the conservative view that they cannot lease dark fiber to any person that is not a telecom licensee. This is a regulatory obstacle which should be addressed and removed in order to allow more data center investors to build and connect data sites in India.</p> <p>By subjecting all operation of fiber optic facilities to traditional telecommunications regulations, including the requirement to obtain a telecommunications license, India effectively eliminates the option of cloud computing companies owning and operating fiber optic networks for the provision of their own services. This creates a disincentive for companies to deploy their cloud operations in India. It also can drive cloud services providers to arrange their networks in ways that are more complicated and less efficient than they would be if they were able to own and operate dark fiber. Accordingly, construction and deployment of more data centers and edge servers – the very essence of the cloud computing capabilities DoT seeks to attract to India – would be to lighten or eliminate telecommunications regulatory requirements for companies who want to operate fiber optic networks for the provision of their own cloud computing services rather than the provision of telecommunications services. DoT may consider eliminating such regulations that apply to telecom service providers. Doing so would help advance India's goal of becoming a hub for cloud computing, content hosting and delivery, and data communications systems and services.</p> <p>Further, incentive schemes for developing various aspects of cloud computing ecosystem would be welcomed by the industry, such as tax incentives and tax holidays for cloud computing investment in data centers. Beyond tax holidays, other ways to encourage development in the sector would be to designate specific</p>
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			<p>areas or zones where new technologies and businesses could sandbox ideas and new cloud services, such as IoT and Smart Cities.</p> <p>Subsidies and incentives to building data centers are important because they help keep operational costs down for the cloud provider, who can then pass on the cost savings to customers. Some states (such as Tamil Nadu, Maharashtra, Telangana, etc.) have tax incentives for cloud development, which is an incentive that could be deployed on a national level. These incentives should be clear and unambiguous, and should not be changed or cancelled with changes in government administrations.</p> <p>With regard to establishing a light touch regulatory approach to cloud services and considering TRAI's recommendations to DoT to prescribe a framework for registration of Cloud Service Providers, creating a registration obligation for cloud service providers will lead to increasing regulatory burdens that create inefficiencies, impede market access, and restrict innovation. The likely result is cloud providers will be driven out of India to countries without similar regulatory burdens. This will defeat the DoT's goal of creating a global cloud hub in India.</p> <p>It is important to note that cloud service providers are subject to the regulations provided in the IT Act. Although the IT Act seeks to govern certain aspect pertaining to data security and privacy, its limited scope of application to cloud computing services leaves much to be desired. Any further regulation for the proliferation of cloud-based systems, should neither restrict innovation in the sector, nor inhibit the emergence of India as a global hub for data communications systems and services.</p> <p>Reforms, enabling cross-border data flows to ensure the free flow of the global information and data that drive the Internet and the digital economy, and preventing data localization by not requiring companies to build data centers to store data in-country as a condition for operating in the market, will encourage investment and help innovation prosper in India.</p>
	(i)	Evolving enabling regulatory frameworks for promoting the establishment of International Data Centres, Content Delivery Networks and independent interconnect exchanges in India	Evolving enabling regulatory frameworks for promoting the establishment of International Data Centres, Content Delivery Networks and independent interconnect exchanges in India with allowing remote management.
	(ii)	Enabling a light touch regulation for the proliferation of cloud based systems	

	2.2 (g)	Leveraging Artificial Intelligence and Big Data in a synchronized and effective manner to enhance the overall quality of service, spectrum management, network security and reliability	
	2.2 (h)	Recognizing Digital Communications as the core of Smart Cities by:	
	(i)	Developing, in collaboration with Ministry of Urban Development, a Common Service Framework and Standards for Smart Cities	
	(ii)	Facilitating and supporting deployment of innovative solutions in identified Smart Cities	
		Section 5: Propel India Strategies – Research and Development, IPRs, Experimental Licenses	
	2.3	Research and Development	
	2.3 (a)	Promoting research & development in Digital Communication Technologies by:	
	(i)	Restructuring C-DOT as a premier Telecom Research and Development Centre for identification, customization, and development of digital products and services in the country as per indigenous needs	
	(ii)	Simplifying approvals/ processes for R&D procurements/ imports	
	(iii)	Creating a framework for testing and certification of new products and services	Creating a framework for testing and certification of new products and services based on prior industry consultation and voluntary basis.
	2.3 (b)	Creating a Fund for R&D in new technologies for start-ups and entrepreneurs to enable innovation in cutting edge communications, 5G, software, content, security and related technologies and applications; and commercialization of products and services through grants, scholarships, venture capital, etc.	
	2.3 (c)	Establishing Centres of Excellence including in Spectrum Management, Telecom Security and Next Generation Access Technologies	

	2.3 (d)	Fostering an Intellectual Property Rights regime that promotes innovation, by:	
	(i)	Implementing key recommendations in the National IPR Policy pertaining to Digital Communications, including a review of the legal regime around copyright, patents and trade marks	
	(ii)	Assisting start-ups in filing copyright, patent and trademarks applications	
	(iii)	Providing financial incentives for the development of Standard Essential Patents (SEPs) in the field of digital communications technologies	
	(iv)	Promoting Indian IPR through international collaborations and active participation in standard development processes and IPR related events	
	2.3 (e)	Simplifying the process of obtaining Experimental Licenses and establishing regulatory sandboxes; viz.:	
	(i)	Enabling creation of suitable infrastructure for testing of new products and services with due regard to safety and security concerns	<p>Section 2.3(e) DoT's intention to "simplify[] the process of obtaining Experimental Licenses" and "fast-track approvals for products and services for experimental purposes through de-licensing...". increasing availability of and accessibility to Experimental Licenses will be integral to developing India's capabilities in Next-Generation Technologies including 5G and IoT. By lowering the barriers for testing new and innovative technologies in the local environment, the DoT will facilitate the deployment and commercialization of potentially market-altering products and services.</p> <p>For example, in 2017, the U.S. announced that qualified institutions could apply for a new type of experimental license, a 'program experimental license', whereby these institutions -- including universities, research labs, health care facilities, and manufacturers of radio frequency equipment -- 'may conduct testing for multiple non-related experiments under a single authorization within a defined geographic area under control of the licensee and where the licensee has institutional processes to manage and oversee experiments'.¹ Under the streamlined procedures, if there</p>

¹ https://apps.fcc.gov/edocs_public/attachmatch/DA-17-362A1.pdf

			are no objections, a program experimental license requires a 10 to 15 day waiting period, depending on whether non-federal or federal spectrum will be used, before the innovator is permitted to proceed. This represents a significant improvement over the typical 4-to-6-week processing period for a conventional experimental license. It currently takes 6-9 months for applicants to receive a conventional Experimental License in India. DoT's objective of propelling India into the digital age would be furthered by the adoption of a similar experimental licensing arrangement. Streamlining the approval process will not only encourage international stakeholders to trial their technologies in the India market at an earlier stage, thus reducing time-to-market for transformative technologies, but it would also support the participation of small local innovators' in an exciting new frontier.
	(ii)	Facilitating allocation of spectrum for R&D and experimentation at affordable prices	
	(iii)	Simplifying and fast-track approvals for products and services for experimental purposes through de-licensing and other mechanisms; and promoting establishment of test beds, incubators, innovation centres, etc. in collaboration with industry and academia	
		Section 6: Propel India Strategies – Startups	
	2.4	Promoting Start-ups	
	2.4 (a)	Supporting Start-ups with various fiscal and non-fiscal benefits, including:	
	(i)	Academic collaborations, permissions for pilots and testing, concessions on imported software, mentoring support, etc.	
	(ii)	Promoting participation of Start-ups in government procurement	
	2.4 (b)	Reducing the entry barriers for start-ups by reducing the initial cost and compliance burden, especially for new and innovative segments and services	
	2.4 (c)	Prescribing a simple and enabling regulatory framework for application service providers in	Section 2.4(c) The scope of the definitions and the types of regulations under consideration are critical. To the extent possible, the DoT may enable consistency and flexibility for application service providers in India by facilitating the

		order to promote innovation in Application Services for Digital Communications	<p>application of international norms and standards. Ensuring that India does not create an island of regulatory obligations that differ from those of other countries will increase the likelihood that apps and services are developed in India, provided in India and used by consumers and businesses throughout India to propel a Digital India for all its citizens.</p> <p>In the application space, the default should be no regulation. Starting with the assumption that a regulatory framework needs to be in place for applications will hinder innovation.</p> <p><u>Suggest Clause 2.4 c) should be removed or specific areas be mentioned in the application eco-system where there is need for an enabling ‘regulatory framework’.</u></p>
		Section 7: Propel India Strategies – Local Manufacturing	
	2.5	Local Manufacturing and Value Addition	
	2.5 (a)	Maximising India’s contribution to global value chains, by focussing on domestic production, increasing exports and reducing the import burden, by:	
	(i)	Rationalising taxes, levies and differential duties to incentivize local manufacturing of equipment, networks and devices to the extent of domestic value addition	
	(ii)	Introducing Phased Manufacturing Program for identified product segments in Digital Communication Technologies	
	(iii)	Attracting Global OEMs and Generic Component players to setup manufacturing base in India	<p>The policy could specify the importance of providing incentives to Global OEMs based on their exports from India and local sourcing of components from India.</p> <p><u>Suggest that the clause is modified to – ‘Attracting Global OEMs and Generic Component players to setup manufacturing base in India by</u></p>

			<u>providing incentives based on their exports, throughput and sourcing from India’</u>
	(iv)	Ensuring the availability of essential background IPR in Fair, Reasonable And Non-Discriminatory (FRAND) terms required for promoting local manufacturing	
	(v)	Promoting design led manufacturing in India by leveraging indigenous software/ R&D capabilities	
	(vi)	Incentivizing fab and/or fab-less design and manufacturing of chips and system on a chip (SOC) for network and devices in emerging technologies	
	(vii)	Attracting global talent from Indian diaspora to create best in class enterprises	
	2.5 (b)	Ensuring strict compliance to Preferential Market Access requirements:	<p>IPR and manufacturing are two distinct issues with different drivers for growth.</p> <p>AMCHAM would like to submit that Indian government agencies, especially in security area should not be deprived of best-in-class software and hardware products solely on account of creating a preference for local suppliers. This will be highly detrimental to Indian security interests as well as future-readiness and robustness of Indian telecommunication networks.</p> <p>Hence, we suggest that the phrase ‘ .. while adequately ensuring quality criteria’ be added to each of the above points modifying them as –</p> <ul style="list-style-type: none"> i) <u>‘..procurement of security related products while adequately ensuring quality criteria.’ And</u> ii) <u>‘..private operators to buy domestic telecom products while adequately ensuring quality criteria’</u> <p><u>AND add the following point in this clause –</u></p> <p><u>‘Use PMA as an incentive for Global OEMs to increase their exports, throughput and sourcing from India’</u></p>

	(i)	Preferring domestic products and services with domestically owned IPR in the procurement by government agencies, especially for the procurement of security related products	
	(ii)	Incentivizing private operators to buy domestic telecom products	
		Section 8: Propel India Strategies – Capacity Building	
	2.6	Capacity Building	
	2.6 (a)	Building human resource capital to facilitate employment opportunities in Digital Communications Sector:	Building human resource capital to facilitate employment opportunities in Digital Communications Sector by encouraging public–private partnership.
	(i)	Building national capacity and institutional capabilities in telecom security tools, standards and forensics including in manufacturing of critical telecom equipment	
	(ii)	Creating educational resources relating to the communications sector and making them available in an open and accessible format to promote self-directed and collaborative learning through interactive formats, including audio, video and text	
		Section 9: Propel India Strategies – Telecom PSUs	
	2.7	Strengthening of PSUs	
	2.7 (a)	Focus on building technical expertise and knowledge management for Public Sector Units, through the following initiatives:	
	(i)	Building internal capacity within PSU’s to promote secure and efficient service delivery, infrastructure development and domestic manufacturing.	
	(ii)	Identifying and exploiting operational synergies in service provisioning, infrastructure creation, R&D, Standardization and manufacturing	
	(iii)	Using the training infrastructure available with telecom PSUs for skill development	

	(iv)	Upgrading the manufacturing PSUs under DoT to effectively harness strategic and operational synergies	
		Section 10: Propel India Strategies – Industry 4.0	
	2.8	Accelerating Industry 4.0	
	(a)	Create a roadmap for transition to Industry 4.0 by 2020 by closely working with sector specific Industry Councils	Create a roadmap for transition to Industry 4.0 by 2020 by closely working with sector specific Industry Councils and aligning with global best practices.
	(b)	Establish a multi-stakeholder led collaborative mechanism for coordinating transition to Industry 4.0	
	(c)	Developing market for IoT/ M2M connectivity services in sectors including Agriculture, Smart Cities, Intelligent Transport Networks, Multimodal Logistics, Smart Electricity Meter, Consumer Durables etc. incorporating international best practices.	
25	3	Chapter 5: Secure India - Ensuring Digital Sovereignty, Safety and Security of Digital Communications	Security and Privacy of data is of the utmost importance and cant be compromised. However Data Security is not related to where the data is stored but the processes that are followed. Data Security should flow along with the flow of data and not be restricted through means such as Data localization
		Section 1: Secure India - 2022 Goals:	
	(a)	Establish a comprehensive data protection regime for digital communications that safeguards the privacy, autonomy and choice of individuals and facilitates India's effective participation in the global digital economy	
	(b)	Ensure that net neutrality principles are upheld and aligned with service requirements, bandwidth availability and network capabilities including next generation access technologies	The principles should create carve out exceptions for enterprise / Specialised services for Net Neutrality principles.
	(c)	Develop and deploy robust digital communication network security frameworks	Develop and deploy robust digital communication network security frameworks in alignment with global best practices and with prior industry consultation

	(d)	Build capacity for security testing and establish appropriate security standards	Build capacity for security testing and establish appropriate security standards with prior industry consultation and alignment with global best practices. It will also recognize to international accreditation and standards.
	(e)	Address security issues relating to encryption and security clearances	Permit use of encryption upto any limit subject to IT Act rules on providing keys on reasonable assistance on decrypted data.
	(f)	Enforce accountability through appropriate institutional mechanisms to assure citizens of safe and secure digital communications infrastructure and services	
	(g)		Implement global best practices and enhance mutual global co-operation on cyber/data security
		Section 2: Secure India Strategies – Data Protection Regime	<p>The ability of business and consumers in India to use strong encryption protects their corporate and personal information. Strong encryption also enables India’s rapidly growing IT and business processing industries to secure their global clients’ confidential information. The Government of India should be urged to more appropriately reflect the needs of next generation data and IP services providers and the considerations of their business enterprise customers by allowing for the robust use of encryption to protect data and privacy. We encourage the Government of India to work with the U.S. and other governments to share best practices in this area. As we look towards the NDCP-18, it is remarkable that the legally permissible strength of encryption in India is 40-bit level, a standard that is nearly two decades out of date with cybersecurity best practices, thereby making operations in India a weak link in a global security chain.</p> <p>Cybersecurity is a true common cause, as industry shares many risks and objectives with governments, users, and other stakeholders. The breadth of cybersecurity threats is vast; from cyber terrorism to online safety and conventional cybercrimes. A key component in strengthening networks against cybersecurity threats is strong encryption. So that businesses may employ the measures to reasonably protect information, a critical component of India’s updated encryption policy must include updating the permissible level of encryption for enterprise services beyond the current 40-bit level. Businesses must instead be permitted to apply encryption consistent with industry standard guidelines, such as the Advanced Encryption Standard (AES).</p>

			<p>We urge Policy to recognize that it is essential that enterprise services providers be permitted to offer and provide network services that employ more robust encryption to allow business customers to better secure customers' networks and communications from cyber threats. The current encryption limitation reduces the ability of business customers to apply industry-standard encryption to network services to help defend against cybersecurity threats, which are increasing in volume and sophistication at exponential rates.</p> <p>Moreover, the government should support the use of internationally-accepted encryption standards and algorithms, rather than those mandated by the government.</p> <p>The policy should aim at a outcome based approach on the issue of encryption. The requirement is to have a decrypted information for lawful enforcement purposes. This requirement should be clearly spelt out in the policy. Given the pace of innovation, emerging technologies, and dynamism of networks and adoption of cloud / virtualised networks, there is less relevance on the permissibility limit. Policy should factor the sectoral requirements, need of stake holders to secure their networks and services due to growing threats of cyber attacks and recognise that the network elements by default contain encryption related security feature.</p> <p>In view of the above the existing requirements on bulk encryption as well as limit to certain bits is archiac. Thus the policy on encryption policy should factors in the above changing requirements pursuant to new technologies, and remove the ambiguity arising from varying standards of sector regulators and sets out realistic and reasonably possible requirements relating to decryption.</p> <p>The telecom service providers already mandated under provisions of Information Technology Act on encryption. Therefore the license and policy should by default permit use of encryption subject to the requirements of IT Act without any mandates on prior approvals.</p>
		Strategies:	
	3.1	Establish a strong, flexible and robust Data Protection Regime	Establish a strong, flexible and robust Data Protection Regime and in line with global best practices including but not limited to the APAC CBPR and prior industry consultation

	3.1 (a)	Harmonising communications law and policy with the evolving legal framework and jurisprudence relating to privacy and data protection in India, including:	Harmonising communications law and policy with the evolving legal framework and jurisprudence relating to privacy and data protection in India with prior industry consultation and aligning with international best practices including but not limited to the APAC CBPR:
	(i)	Amending various licenses and terms and conditions, wherever necessary, to incorporate provisions with respect to privacy and data protection	Amending various licenses and terms and conditions proportionately keeping consistency wherever necessary, to incorporate provisions with respect to privacy and data protection
	3.1 (b)	Addressing issues of data protection and security in digital communications sector, by:	Addressing issues of data protection and security in digital communications sector in consistent with other sectors by:
	(i)	Ensuring that core data protection and security principles are applied and enforced	Ensuring that core data protection and security principles are applied and enforced in line with global best practices including but not limited to the APAC CBPR
	(ii)	Promoting the usage of indigenous communication products and services	
		Section 3: Secure India Strategies – Net Neutrality	
	3.2	Provide Autonomy and Choice for every citizen and enterprise	
	3.2 (a)	Recognising the need to uphold the core principles of net neutrality:	
	(i)	Amending the license agreements to incorporate the principles of non-discriminatory treatment of content, along with appropriate exclusions and exceptions as necessary	Amending the license agreements to incorporate the principles of non-discriminatory treatment of content, along with appropriate exclusions and exceptions in all licenses for enterprise services/ specialized services need to be carved out for not enforcing NN rules on them.
	(ii)	Ensuring compliance with net neutrality principles, by introducing appropriate disclosure and transparency requirements	
		Section 4: Secure India Strategies – Security of Digital Communications	Prior industry consultation and as per international best practices would be useful.
	3.3	Assure Security of Digital Communications	
	3.3 (a)	Addressing security issues across layers:	
	(i)	Infrastructure Security (physical infrastructure, cyber-physical infrastructure, hardware & network elements), Systems Security (equipment, devices, distributed systems, virtual servers)	

	(ii)	Application and Platform security (web, mobile, device and software security)	
	3.3 (b)	Developing security standards for equipment and devices:	<p>Clause 3.3b i) and 3.3b ii) seem contradictory. TTSC need not develop and enforce standards in case the global standards already exist. It will lead to redundant, repeat testing and compliance without accomplishing any particular purpose while significantly hampering ease-of-business.</p> <p><u>We suggest that Clause 3.3b i) be modified as following –</u> <u>i. Telecom Testing and Security Certification (TTSC) to develop and enforce security standards for digital communications products and services ‘ only in case where an international standard does not exist’</u></p>
	(i)	Telecom Testing and Security Certification (TTSC) to develop and enforce security standards for digital communications products and services	
	(ii)	Aligning with global standards on safety and security	
	(iii)	Harmonising the legal and regulatory framework applicable to security standards such as the BIS Act, Electronics & Information Technology Goods (Requirements for Compulsory Registration) Order, Indian Telegraph Act, etc.	
	3.3 (c)	Participating in global standard setting organisations to ensure consideration for local needs of the Indian communications industry	
	3.3 (d)	Strengthening security testing processes by:	<p>We suggest modification as following – <u>ii. Establishing comprehensive security certification regime based on global standards ‘without the need of repeat certification’.</u></p>
	(i)	Enhancing institutional capacity to perform testing, including establishing domestic testing hubs and laboratories with state-of-the art facilities	
	(ii)	Establishing comprehensive security certification regime based on global standards	
	3.3 (e)	Formulating a policy on encryption and data retention, by harmonising the legal and regulatory	Formulating a policy on encryption and data retention, by harmonising the legal and regulatory regime with support of new technology as a holistic policy in India

		regime in India pertaining to cryptography with global standards, as applicable to communication networks and services	pertaining to cryptography with global standards, as applicable to communication networks and services
	3.3 (f)	Facilitating Security and Safety of Citizens, Institutions and Property by:	
	(i)	Facilitating establishment of a Central Equipment Identity Registry for addressing security, theft and other concerns including reprogramming of identity of mobile handsets	
	(ii)	Facilitating lawful interception agencies with state of the art lawful intercept and analysis systems for implementation of law and order and national security	
	(iii)	Increasing awareness amongst users about security related issues concerning digital communications networks, devices and services	
	3.3 (g)	Establishing a Security Incident Management and Response System for Digital Communications Sector by:	
	(i)	Instituting a sectoral CERT	
	(ii)	Improving information sharing and coordination between various security agencies, including CERT-In and sectoral CERTs as may be necessary	
	(iii)	Enforcing obligations on service providers to report data breaches to authorities and affected users, based on specific parameters	
	(iv)	Strengthening the Security Audit Mechanism	
		Section 5: Secure India Strategies – Disaster Management and Emergency Communications	
	3.4	Developing a comprehensive plan for network preparedness, disaster response relief, restoration and reconstruction	We support and recommend alignment to international standards like ISO 22301 requirements which are internationally recognized for Business. In such situations, the network operators should be permitted to deploy suitable mechanism whether in country or overseas to continue serving customers. The prior approval requirements for Remote Access and approval of foreign nationals should

			be relaxed with pre-intimation only for a limited period or till the recovery process is on.
	3.4 (a)	Strengthening network resilience by:	
	(i)	Framing and enforcing standard operating procedures to be followed during disasters and natural calamities, including sectorial guidelines for disaster response applicable to various service providers	
	(ii)	Establishing institutional framework to promote monitoring of activities, rapid dissemination of early warning disaster notifications and better coordination and collaboration between relevant Ministries / Departments, including the National Disaster Management Authority of India	
	3.4 (b)	Developing a Unified Emergency Response Mechanism, by:	Next Generation Dial 112 Control Centre provides a means for a citizen to reach emergency first responder services (like fire, police, medical, disaster etc). But in order to make it effective, it requires the Control Centre to be able to communicate and collaborate with various first responders in the field to help citizen in distress. And for the same, Government cannot depend solely upon commercial networks. It is a known fact that in times of crisis or disasters, or during major events, cellular networks get congested and calls often do not get through. Hence a common shared Government mission critical radio communication system is needed that enables Control Centre to engage with emergency first responders and help the citizen in distress. A Government Radio Network (GRN) should be included within the policy framework alongside a Next generation Dial 112 Emergency response Control Centre solution. GRN will be a common, shared two-way radio communications system owned by the government and shared by all the emergency responder agencies. Such GRN communication networks are very common worldwide and deployed as statewide or country wide networks by many countries like UK, US, Korea, Australia, most European countries, etc. The GRN concept promotes safety, security and good governance as it allows government emergency service responders to utilize advanced communication tools for its agencies to communicate more effectively. A mission critical GRN radio network is at the heart of Safer Cities framework and acts as the binding factor to make all subsystems interwork effectively and efficiently.

	(i)	Creating an institutional framework with clearly defined roles and responsibilities, Standard Operating Procedures and technical guidelines	
	(ii)	Incorporating obligations under the license terms and conditions for implementation of Next Generation 112 services in all areas, based on geo-location technologies, and provide online access to caller location and details to authorised central and state agencies	
	(iii)	Enforcing obligations of service providers to share infrastructure, and ensure interoperability in emergency situations in a network-agnostic, operator-agnostic and technology-agnostic manner	
	3.4 (c)	Enhancing the Public Protection and Disaster Relief (PPDR) plan for India by:	
	(i)	Facilitating the establishment of a Pan-India network for Public Protection and Disaster Relief (PPDR)	
	(ii)	Making necessary spectrum available for PPDR including by establishing INSAT satellite-based mobile communication systems	
	(iii)	Implementing global and regional harmonized spectrum Plans for PPDR	