COUNTRY: INDIA

SCORE: 48.39 | RANK: 20/24

Laws and regulations in India have not entirely kept pace with developments in cloud computing, and some gaps exist in key areas of protection; notably, India has not yet implemented effective privacy legislation, although work is underway to address this issue.

India has a comprehensive national cybersecurity strategy in place and strong cybercrime legislation. Some laws and standards in India are not technology neutral (e.g., electronic signatures), and these may be a barrier to interoperability.

This year's report notes that India imposes some local security testing requirements in addition to international testing requirements. These local testing arrangements have been the subject of criticism by India's trading partners, including the European Union.

There is a gap in trade secrets protection in India. In addition, guidance for examiners on how to evaluate patent applications for software-enabled inventions is lacking, although the revocation of guidelines that would have prevented most computer related inventions from being subject to patent protection if novel hardware was not present is a step in the right direction. Furthermore, India still has not ratified the WIPO Copyright Treaty.

Overall, India's ranking in 2018 is 20th. India fell two places because of its poor results in the Data Privacy and IT Readiness and Broadband Deployment.

# INDIA	RESPONSE	EXPLANATORY TEXT
DATA PRIVACY (SCORE: 4/12.5 | RANK: 20/24)		
1. Is a data protection law or regulation in place?	◑	India does not have a stand-alone data protection law and the protections that are available are contained in a mix of statutes, rules, and guidelines. The most prominent provisions are contained in the Information Technology Act 2000, as amended by the Information Technology Amendment Act 2008. In particular, Section 43A addresses "reasonable security practices and procedures" and is complemented by the Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules 2011. However, the scope and coverage of these rules is limited: • Most provisions only apply to "sensitive personal information"; • The provisions are restricted to corporate entities undertaking the automated processing of data; and • Consumers are only able to take enforcement action in relation to a small sub-set of the provisions. Besides this, elements of data protection principles have been incorporated into various statutes, spread across the information technology, banking and finance, telecom, consumer protection, e-governance, health and allied sectors. A draft Right to Privacy Law is being considered, and as of June 2017 its progress is uncertain.
2. What is the scope and coverage of the data protection law or regulation?	Sectoral	The relevant provisions of the Information Technology Act 2000 (as amended) apply only to the private sector, not to government.
3. Is a data protection authority in place?	◑	India does not have a central, national regulator, or complaints body for data protection. 36 local Adjudication Officers operate at the state and union territory level, and these officers can receive complaints regarding breaches of the Information Technology Act.
4. What is the nature of the data protection authority?	Other government official	India does not have a central, national regulator. 36 local Adjudication Officers operate at the state and union territory level.
5. Is the data protection authority enforcing the data protection law or regulation in an effective and transparent manner?	◑	There are very few reported privacy cases, and there is no overall culture of privacy enforcement. In addition, there is no central authority responsible for data protection, and this has a negative effect on national and international issues in relation to privacy.

# INDIA	RESPONSE	EXPLANATORY TEXT
6. Is the data protection law or regulation compatible with globally recognized frameworks that facilitate international data transfers?	Not applicable	India's extremely limited data protection provisions are not compatible with international frameworks, which require a broader degree of coverage and more detailed and extensive principles.
7. Are data controllers free from registration requirements?	✔	India has no registration requirements for any parties under the Information Technology Act 2000.
8. Are there cross-border data transfer requirements in place?	Brief requirements	Some limited rules are in place for the transfer of sensitive data offshore. Transfer to another country can only occur where it is clear that sensitive data will be adequately protected (Information Technology [Reasonable Security Practices and Procedures and Sensitive Personal Data or Information] Rules 2011). "Sensitive data" is defined under the 2011 rules as information relating to a data subject's password, financial information, health, sexual orientation, medical records, and biometric information. Further, with respect to transfer of government data specifically, restrictions on cross-border data transfers exist under the Public Records Act of 1993, which prevents any person from taking public records out of India without the prior approval of the Central Government. Second, the National Data Sharing and Accessibility Policy of 2012 also imposes requirements upon state agencies to ensure that such data resides within their IT facilities. The Ministry of Electronics and Information Technology (MeitY) issued the Guidelines for Government Departments on Contractual Terms Related to Cloud Services in March 2017, to provide strategic direction for adoption of cloud services by the government. These guidelines state that all services including data will be guaranteed to reside in India.
9. Are cross-border data transfers free from arbitrary, unjustifiable, or disproportionate restrictions, such as national or sector-specific data or server localization requirements?	◑	India's rules on cross-border data transfers apply to sensitive data. Besides this, some restrictions on cross-border data transfers exist with respect to public records and data owned by the Government of India. India has not yet developed cross-border data transfer rules that are compatible with international practice, and the available options for transferring sensitive data are very limited.
10. Is there a personal data breach notification law or regulation?	✖	India does not have a personal data breach notification law in place, although significant rules and requirements are in place for general security, including mandatory compensation for security breaches that cause loss.
11. Are personal data breach notification requirements transparent, risk-based, and not overly prescriptive?	Not applicable	India does not have a personal data breach notification law in place.
12. Is an independent private right of action available for breaches of data privacy?	✔	Under Section 43-A of the Information Technology Act, 2000, a body corporate is required to pay damages by way of compensation to the affected person if it is negligent in handling sensitive data and causes any wrongful loss to that person as a result of such failure or negligence. Section 72-A of the IT Act mandates punishment for disclosure of "personal information" in breach of lawful contract or without the information provider's consent. The Indian Constitution does not contain a specific right to privacy, but Indian courts have interpreted some of the other provisions broadly. In August 2017 a nine-member bench of the Supreme Court issued an important ruling that a right to privacy is part of the fundamental rights to life and liberty enshrined in the country's constitution <http://supremecourtofindia.nic.in/supremecourt/2012/35071/35071_2012_Judgement_24-Aug-2017.pdf>.
SECURITY (SCORE: 7/12.5 | RANK: 16/24)		
1. Is there a national cybersecurity strategy in place?	✔	The Indian government released the National Cyber Security Policy in 2013 <meity.gov.in/content/national-cyber-security-policy-2013-1>.
2. Is the national cybersecurity strategy current, comprehensive, and inclusive?	✔	The National Cyber Security Policy 2013 <meity.gov.in/content/national-cyber-security-policy-2013-1> is a detailed plan that includes both high-level principles and targeted objectives and proposals. The strategy is slightly out of date and there have been calls for the strategy to be upgraded to a Cybersecurity Law in order to align with similar initiatives in the region (e.g., Singapore).

COUNTRY: INDIA

# INDIA	RESPONSE	EXPLANATORY TEXT
3. Are there laws or appropriate guidance containing general security requirements for cloud service providers?	✔	The Information Technology Amendment Act 2008 includes Section 43A on "Compensation for failure to protect data," which states: "Where a body corporate, possessing, dealing or handling any sensitive personal data or information in a computer resource which it owns, controls or operates, is negligent in implementing and maintaining reasonable security practices and procedures and thereby causes wrongful loss or wrongful gain to any person, such body corporate shall be liable to pay damages by way of compensation to the person so affected." Furthermore, the Government of India has established the MeghRaj Policy to direct the procurement of cloud services from private service providers for establishing a "GI Cloud" for Government departments <meity.gov.in/content/gi-cloud-meghraj>. As per mandatory guidelines under the Policy, service providers must meet specified security requirements relating to the hardware, networks, and software supporting the infrastructure and present Virtual Machines to a Government department. They also must comply with any requirements specified by the CERT-IN. Refer to Guidelines for Government Departments for Adoption/ Procurement of Cloud Services <meity.gov.in/writereaddata/files/Guidelines-Procurement_Cloud_Services.pdf>.
4. Are laws or guidance on security requirements transparent, risk-based, and not overly prescriptive?	◑	Indian security requirements are generally appropriate and transparent, although some specific security measures (e.g., encryption) are managed by multiple agencies without a central guideline or strategy. This has led to overly prescriptive rules for encryption being published by some specific agencies and potential conflict with encryption regulations applicable to specific sectors such as health, banking, and finance. The Data Security Council of India (DSCI) <www.dsci.in>, a self-regulatory body set up by the National Association of Software and Services Companies (NASSCOM) <www.nasscom.in> issues best practice security guidance, but compliance is voluntary.
5. Are there laws or appropriate guidance containing specific security audit requirements for cloud service providers that take account of international practice?	◑	The Information Technology Act 2000 does not contain any requirements on security audits. As per the Information Technology Act, the government is required to notify/empanel a list of agencies to deal with security audits, and to prescribe independent standards. In June 2016, the CERT-IN released guidelines for empanelling auditing organizations. As of May 2017, 43 organizations have been empanelled <cert-in.org.in/PDF/Empanel_org.pdf>. In addition, the National Cyber Security Policy 2013 <meity.gov.in/content/national-cyber-security-policy-2013-1> encourages regular security audits (Section IV.B - Creating an Assurance Framework), but these are not mandatory. Under the MeghRaj Policy, service providers looking to offer cloud services to the Government of India are required to undergo a security audit conducted by the Standardisation Testing and Quality Certification Directorate <www.stqc.gov.in>. The Audit Criteria for Cloud Service Providers, issued December 2016 <meity.gov.in/audit-criteria-documents-have-been-approved-meity-auditing-empaneled-csps>, explicitly defines the contractual conditions and statutory requirements for cloud service providers/service providers doing business with Indian Government Organizations.
6. Are international security standards, certification, and testing recognized as meeting local requirements?	✖	In 2013 India was accepted as a Certificate Authorizing Member (the highest level) of the Common Criteria Recognition Agreement (CCRA) <www.commoncriteriaportal.org>. There is growing interest in certifications in India, although no comprehensive laws or requirements are in place at this stage. The National Cyber Security Policy 2013 briefly mentions the need to comply with global security standards, but provides no further details. In practice, India imposes some local security testing requirements in addition to international testing requirements. These local testing arrangements have been the subject of criticism by India's trading partners, including the European Union <madb.europa.eu/madb/barriers_details.htm?barrier_id=11261>. In-country security testing requirements will take effect in April 2018. Under these rules, an unspecified number of ICT products will require additional testing in Indian-certified labs.

#	INDIA	RESPONSE	EXPLANATORY TEXT
	CYBERCRIME (SCORE: 10/12.5 | RANK: 14/24)		
1.	Are cybercrime laws or regulations in place?	✔	The Information Technology Act 2000 contains a range of standard computer crime provisions, many of which are applicable to cybercrimes. The Information Technology Act 2000 was also amended in 2008 to include a range of new more specific cybercrime provisions. However, many of these provisions require implementing regulations before they come into force, and the relevant ones are not yet in place.
2.	Are cybercrime laws or regulations consistent with the Budapest Convention on Cybercrime?	✔	Although India is not a signatory to the Convention on Cybercrime, the core criminal provisions contained in the Information Technology Act 2000 closely follow the prohibitions contained in the Convention. Some provisions regarding international cooperation in investigations and enforcement that are present in the Convention are not present in Indian law. Also, requirements for data retention during an investigation that are contained in the Cybercrime Convention are also not present in Indian law. These inconsistencies do not detract from the general alignment between the Convention and the Information Technology Act.
3.	Do local laws and policies on law enforcement access to data avoid technology-specific mandates or other barriers to the supply of security products and services?	✔	There are no technology-specific mandates in India's law enforcement laws and policies at this stage. Access to encrypted data in India is subject to some limited oversight. The procedure for interception and decryption of information is set out in the Information Technology (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules 2009, and the Information Technology (Procedure and Safeguards for Monitoring and Collecting Traffic Data or Information) Rules, 2009. Telecommunications operators and Internet service providers licensed by the Department of Telecommunications may be required to provide reasonable technical assistance to law enforcement agencies. In September 2015, the Department of Electronics and Information Technology (now the Ministry of Electronics and Information Technology) released a draft National Encryption Policy. The proposed policy stated that applications using encryption would need to store plain text versions of all data for 90 days so that the content could be examined by the police if required. The proposal also required every encryption vendor or service provider operating within India to provide the government with working copies of the software and hardware that used for encrypting communications. However, the proposal was the subject of immediate criticism and controversy and was withdrawn by the government. The government has asked the department (now the Ministry) to develop a completely new encryption policy <meity.gov.in>, but this remains under development.
4.	Are arrangements in place for the cross-border exchange of data for law enforcement purposes that are transparent and fair?	✔	India has formal Mutual Legal Assistance Treaties (MLATs) in place with numerous countries (more than 30). This includes most major trading partners, although China is a notable omission. These agreements generally follow international practice for the exchange of data, although some of the older agreements (e.g., Canada and the UK) would benefit from revision.
	INTELLECTUAL PROPERTY RIGHTS (SCORE: 5/12.5 | RANK: 23/24)		
1.	Are copyright laws or regulations in place that are consistent with international standards to protect cloud service providers?	◑	The Copyright (Amendment) Act 2012 [No 27 of 2012] came into force in June 2012. It includes definitions and new provisions that help Indian law align with international standards. India has not signed the WIPO Copyright Treaty. However, the 2012 amendments to Indian copyright law pave the way for India to comply with the treaty and India may consider signing and ratifying it in the near future. Copyright "safe harbor" protection for intermediaries such as cloud service providers is contained in Section 52 of the Copyright Act, which stipulates exceptions to copyright infringement for "transient or incidental storage" of a work or performance, for the purposes of electronic transmission, and providing electronic links, access or integration. A notice-and-takedown system for copyright holders to approach service providers is also contained in Section 52, with further details provided in Rule 75 of the accompanying Copyright Rules of 2013. Additional "safe harbor" protection for intermediaries is contained in Section 79 (1) of the Information Technology Act 2000 (as amended by the Information Technology (Amendment) Act, 2008). These provisions include a very broad definition of intermediary and also provide protection from liability for matters beyond copyright infringement.
2.	Are copyright laws or regulations effectively enforced and implemented?	◑	The enforcement of copyright laws in India faces many challenges. The lack of statutory damages and relatively low damage awards in civil enforcement means that there is no effective deterrent to copyright infringement. The court system also suffers from significant procedural delays. Criminal enforcement is very rare. An effective intellectual property "safe harbor" is available for cloud service providers.

# INDIA	RESPONSE	EXPLANATORY TEXT
3. Is there clear legal protection against misappropriation of trade secrets?	✖	India does not have specific laws in place to protect trade secrets. In a few instances the Indian courts have protected trade secret by relying on the broader principles of equity and breach of confidence.
4. Is the law or regulation on trade secrets effectively enforced?	✖	Trade secrets are not adequately protected in India. Some civil cases have proceeded by relying on breach of confidence or breach of contract. No criminal enforcement is in place. Overall, this is a major gap in the protection of intellectual property in India.
5. Is there clear legal protection against the circumvention of Technological Protection Measures?	✔	Indian copyright law was amended in 2013 by the Copyright (Amendment) Act 2012. This included the insertion of Section 65A, which provides a range of prohibitions (and associated exemptions) for the circumvention of Technological Protection Measures.
6. Are laws or regulations on the circumvention of Technological Protection Measures effectively enforced?	✔	Anti-circumvention laws in India are very recent, but there have already been several high-profile cases, and the authorities have shown a willingness to use injunctions in urgent cases. For instance, the Delhi High Court issued an ex-parte injunction in 2013 for the circumvention of TPMs by defendants seeking to "jailbreak" Sony PlayStation devices. Criminal enforcement is also available.
7. Are there clear legal protections in place for software-implemented inventions?	✖	There has been some uncertainty whether software-implemented inventions could be patented in India. The Office of the Controller General of Patents, Designs, and Trade Marks (CGPDT) issued Revised Guidelines for Examination of Computer Related Inventions Guidelines in 2015 that had clarified the matter. However, the 2015 guidelines were replaced in February 2016. The revised guidelines appeared to require an application for a computer-related invention (CRI) to include novel hardware in order to be eligible for patent protection. This would prevent most software-enabled inventions from receiving patent protection in India. In July 2017, another set of guidelines was published removing the novel hardware requirement and restating the law. Although the removal of the novel hardware requirement is a positive development, there is now little interpretation or guidance for examiners on how to evaluate patent applications for software-enabled inventions.
8. Are laws or regulations on the protection of software-implemented inventions effectively implemented?	✖	The patent protection available for computer related inventions (CRIs) in India is not consistent with global practices. Although the July 2017 CRI Guidelines would not prevent CRIs from receiving patent protection, the lack of clear guidance for examiners still causes significant uncertainty and possible inconsistency as to how patent applications will be examined.
STANDARDS AND INTERNATIONAL HARMONIZATION (SCORE: 9.8/12.5 | RANK: 15/24)		
1. Is there a regulatory body responsible for standards development for the country?	✔	The Bureau of Indian Standards (BIS) <www.bis.org.in> has comprehensive management and regulatory responsibilities for standards setting in India. Additionally, the Standardisation Testing and Quality Certification Directorate <www.stqc.gov.in> is dedicated to providing quality assurance and conformity assessment services in the IT sector.
2. Are international standards favored over domestic standards?	◑	India has traditionally prioritized compliance with international standards. However, in recent years, India has introduced additional local testing requirements for some key ICT products and services. The "Audit Criteria for Cloud Service Providers" issued December 2016, explicitly define the contractual conditions and statutory requirements for cloud service providers doing business with Indian government organizations. Although this standard requires data center compliance with ISO 27001, it includes many other requirements for cloud service providers conducting business with the Indian government.
3. Does the government participate in international standards setting process?	✔	India participates in relevant International Standards Organization (ISO) and International Electrotechnical Commission (IEC) standard setting processes, and is a participant in the top-level ICT standards committee (JTC-1) <www.iso.org/isoiec-jtc-1.html>.
4. Are e-commerce laws or regulations in place?	✔	The Information Technology Act 2000 is an omnibus law that includes provisions on e-commerce, e-signatures, cybercrime, and privacy.
5. What international instruments are the e-commerce laws or regulations based on?	UNCITRAL Model Law on E-Commerce	Parts of the Information Technology Act 2000 closely follow the UNCITRAL Model Law on E-Commerce. However, as the law is an omnibus law it also includes a wide range of additional technology law provisions.

# INDIA	RESPONSE	EXPLANATORY TEXT
6. Is there a law or regulation that gives electronic signatures clear legal weight?	✔	The Information Technology Act 2000 includes provisions that enable the use of electronic signatures in most transactions. Section 5 states: "Legal recognition of digital signatures. — Where any law provides that information or any other matter shall be authenticated by affixing the signature or any document shall be signed or bear the signature of any person, then, notwithstanding anything contained in such law, such requirement shall be deemed to have been satisfied, if such information or matter is authenticated by means of digital signature affixed in such manner as may be prescribed by the central government." However, Section 3-A imposes a requirement for such electronic signature techniques to be specified in the Schedule of the Act. As a result, there is some ambiguity about the use of electronic signature techniques that are not specified therein.
7. Are cloud service providers free from mandatory filtering or censoring?	◑	Cloud service providers do not have to comply with any mandatory filtering or censoring. However, they do have to satisfy all due diligence requirements to qualify for the safe harbor extended to intermediaries under the Information Technology Act, 2000. These requirements, present in the Information Technology Rules, 2011 (Due Diligence Observed by Intermediaries Guidelines), require them to provide an acknowledgment of takedown notices on objectionable content, including anything "grossly harmful" or "harassing" within 36 hours of being notified. In March 2015, while hearing a case on online freedom of speech, the Supreme Court of India stated that intermediaries are not required to act on objectionable content prior to official notification by a government authority or court. Section 67 of the Information Technology Act of 2000 includes an offense of "publishing of information which is obscene in electronic form." This is a very broad provision as it covers "any material which is lascivious or appeals to the prurient interest." The constitutionality of Section 67 has not been questioned before the court. The CERT-IN <www.cert-in.org.in> was set up by the Ministry of Electronics and Information Technology <meity.gov.in> to implement India's filtering regime. This includes administering the prohibition against publishing obscene content and the filtering of websites. CERT-IN was empowered in 2003 to review complaints and act as the sole authority for issuing blocking instructions to the Department of Telecommunications.
PROMOTING FREE TRADE (SCORE: 5.8/12.5 | RANK: 18/24)		
1. Is a national strategy or platform in place to promote the development of cloud services and products?	✔	The Government of India has established the GI Cloud initiative, named MeghRaj and available at <cloud.gov.in>. The objective of this initiative is to "implement various components including governance mechanisms to ensure proliferation of Cloud in the government. The focus of this initiative is to accelerate delivery of e-services in the country while optimizing ICT spending of the Government." The initiative also includes a GI Cloud Strategic Direction Paper and a GI Cloud Adoption and Implementation Roadmap. In October 2016, 11 cloud service providers were provisionally empanelled for two years. <meity.gov.in/content/gi-cloud-meghraj>. In May 2017, the MeitY released an invitation for proposals from new entrants <meity.gov.in/tenders/invitation-applicationproposal-empanelment-cloud-service-offerings-cloud-service-providers>.
2. Are there any laws or policies in place that implement technology neutrality in government?	◑	A National E-Governance Plan was introduced in 2006 and updated in 2011 <meity.gov.in/divisions/national-e-governance-plan>. It is made up of 31 Mission Mode Projects (MMPs) with eight components, promoting interoperability through the establishment of common services. This does not include a detailed commitment to technology neutrality.

# INDIA	RESPONSE	EXPLANATORY TEXT
3. Are cloud computing services able to operate free from laws or policies that either mandate or give preference to the use of certain products, services, standards, or technologies?	✖	India has published the Policy on Adoption of Open Source Software for the Government of India 2014 (implemented in 2015) <meity.gov.in/content/policy-adoption-open-source-software-government-india>, which establishes a strong preference for open source software. The policy is mandatory for e-Government initiatives in India (with some exceptions), and includes a requirement for source code to be publicly available. The 2008 amendments to the Information Technology Act also included a provision that would allow the government to determine what modes of encryption companies and individuals may use: Section 84A states: "The Government may, for secure use of the electronic medium and for promotion of e-governance and e-commerce, prescribe the modes or methods for encryption." As of June 2017, no rules have been issued under Section 84A.
4. Are cloud computing services able to operate free from laws, procurement policies, or licensing rules that discriminate based on the nationality of the vendor, developer, or service provider?	◑	There are multiple, complex layers of government procurement in India. Many of the state and local procurement practices give preferences to local suppliers (although these may not necessarily be relevant to cloud computing). At the national level, the Preference for Domestically Manufactured Electronic Goods (PMA) provides a domestic preference system for many of the key underlying components in the provision of cloud computing services <meity.gov.in/esdm/pma>. The PMA Guidelines were updated and strengthened in 2015. In March 2017 the MeitY issued Guidelines for Government Departments for Adoption/Procurement of Cloud Services <meity.gov.in/writereaddata/files/Guidelines-Procurement_Cloud_Services_0.pdf> under the MeghRaj policy. The March 2017 Guidelines do not discriminate based on the nationality of the vendor, but they do envisage the establishment of a panel of pre-approved cloud service providers. However, the notification for invitation released in May 2017 encourages entities that have not been empanelled to submit proposals, which would allow them to provide cloud services to the government if their applications for empanelment are accepted.
5. Has the country signed and implemented international agreements that ensure the procurement of cloud services is free from discrimination?	✖	India was accepted as an observer in 2011 of the World Trade Organization (WTO) plurilateral Agreement on Government Procurement. India is not yet a member <www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm>.
6. Are services delivered by cloud providers free from tariffs and other trade barriers?	◑	No customs duty is levied on the delivery of cloud services. However, delivery of "of-the-shelf software" in certain physical mediums (such as installation discs) would be subject to import duties. Note, however, that requirements relating to encryption (discussed above) may act as a potential trade barrier for some mobile applications. India also imposes some local ICT product testing requirements in addition to international testing requirements.
7. Are cloud computing services able to operate free from laws or policies that impose data localization requirements?	◑	Guidelines under the MeghRaj policy mandate that service providers offering cloud services to government agencies must ensure that all services provided, including data, will be guaranteed to reside in India. There are specific data and server localization requirements on public records and data owned by the Government of India, imposed through regulatory structures and procurement contracts, For example, the National Data Sharing and Accessibility Policy imposes data localization requirements for weather data, undermining the capability of ICT companies to offer smarter cities and disaster management solutions. There are also restrictions on the cross-border transfer of Government of India data under the Public Records Act of 1993, which prevents any person from taking public records out of India without the prior approval of the Central Government. However, there are no mandatory requirements directly applicable to private data collection by ICT companies.

# INDIA	RESPONSE	EXPLANATORY TEXT
IT READINESS, BROADBAND DEPLOYMENT (SCORE: 6.9/25 | RANK: 24/24)		
1. Is there a National Broadband Plan?	By 2016–17: • Fiber network to reach 250,000 local government areas	The National Telecom Policy (2012) specified goals including to provide affordable and reliable broadband-on-demand by the year 2015 and to achieve 175 million broadband connections by the year 2017 and 600 million by the year 2020 at minimum 2 Mbps download speed and making available higher speeds of at least 100 Mbps on demand. The National Optical Fibre Network (NOFN) is part of the Digital India initiative <www.digitalindia.gov.in>. NOFN, which is being funded by the Universal Service Obligation Fund (USOF) is aimed at providing broad, non-discriminatory access to bridge the digital divide across rural India. NOFN is the world's largest rural broadband project through optical fibre. It features a minimum of 100 Mbps bandwidth at each Gram Panchayat (local government area) and approximately 600,000 kilometers of new optical fibre cable. The government intends to connect each Gram Panchayat in India by December 2018 through the NOFN to reach 250,000 local government areas.
2. Is the National Broadband Plan being effectively implemented?	✖	The Telecommunications Regulatory Authority of India (TRAI) has noted that the national optical fibre network (NOFN) project has failed in achieving its original objectives of increasing broadband subscription in the country. TRAI recommended in February 2016 a public-private partnership (PPP) model for rolling out the broadband network in rural India <www.news18.com/news/tech/trai-recommends-ppp-model-for-rolling-out-broadband-network-in-rural-india-1198017.html>. The plan faces considerable delays and a sharp escalation in cost <telecom.economictimes.indiatimes.com/news/policy/governments-pan-india-broadband-network-not-possible-before-2018/48723289>.
3. Are there laws or policies that regulate "net neutrality"?	Regulation under consideration	There has been considerable public debate in India on the topic of net neutrality. The Telecom Regulatory Authority of India (TRAI) released a consultation paper on net neutrality on April 1, 2017 <trai.gov.in/telecom/net-neutrality>. As of May 2017, the consultation process has been completed, with the TRAI chairman stating that recommendations on net neutrality may be released by the end of September for the consideration of the Government of India.
4. Base Indicators		
4.1. Population (millions) (2015) • Total for all countries in this scorecard: 4,700 million	1,282	In 2015, the population of India increased by 1.2%. [International Telecommunication Union (ITU), World Telecommunication/ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]
4.2. Urban Population (%) (2015) • Average for all countries in this scorecard: 73%	33%	In 2015, the urban population of India increased by 1.2%. [World Bank, Data Catalog, Indicators, Urban Population (Jan. 2017) <data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS>]
4.3. Number of Households (millions) (2015) • Total for all countries in this scorecard: 1,249 million	259	In 2015, the number of households in India increased by 1.2%. [International Telecommunication Union (ITU), World Telecommunication/ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]
4.4. Population Density (people per square km) (2015) • Average for all countries in this scorecard: 471	441	In 2015, the population density of India increased by 1.2%. [World Bank, Data Catalog, Indicators, Population Density (Jan. 2017) <data.worldbank.org/indicator/EN.POP.DNST>]
4.5. Per Capita GDP (US$ 2015) • Average for all countries in this scorecard: US$ 22,649	$1,598	In 2015, the per capita GDP for India increased by 7.6% to US$ 1,598. This was above the five-year compound annual growth rate (CAGR) from 2010–2015 of 3.5%. This ranks India 24th for value of per capita GDP and 5th for growth (CAGR) for this indicator in this scorecard. [World Bank, Data Catalog, Indicators: GDP Per Capita, Current US$ (Jan. 2017) <data.worldbank.org/indicator/NY.GDP.PCAP.CD> and GDP Growth, Annual % (Jan. 2017) <data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>]
4.6. ICT Service Exports (billions of US$) (2015) • Total for all countries in this scorecard: US$ 978 billion	$105	In 2015, the value of ICT service exports for India increased by 2.1% to US$ 105.14 billion. This was below the five-year compound annual growth rate (CAGR) from 2010–2015 of 7%. This ranks India 3rd for value of ICT service exports and 5th for growth (CAGR) for this indicator in this scorecard. [World Bank, Data Catalog, Indicators: ICT Service Exports US$ (Jan. 2017) <data.worldbank.org/indicator/BX.GSR.CCIS.CD>]

# INDIA	RESPONSE	EXPLANATORY TEXT
4.7. Personal Computers (% of households) (2015) • Average for all countries in this scorecard: 63%	14%	In 2015, 14.1% of households in India had personal computers. This is an increase of 8.6% since 2014 and ranks India 141st out of 236 countries surveyed. The growth from 2014 is below the five-year compound annual growth rate (CAGR) from 2010 to 2015 of 16%. This ranks India 24th for the number of personal computers (as a % of households) and 1st for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]
5. IT and Network Readiness Indicators		
5.1. ITU ICT Development Index (IDI) (2016) (score is out of 10 and covers 175 countries) • Average for all countries in this scorecard: 6.58	2.69	India's ITU ICT Development Index (IDI) for 2016 is 2.69 (out of 10), resulting in a rank of 138th (out of 175 economies). The 2016 IDI for India increased by 7.6%, and the IDI ranking declined by 3 from a rank of 135th since 2015. This ranks India 24th in the ITU ICT Development Index and 1st for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), Measuring the Information Society (Dec. 2016) <www.itu.int/net4/ITU-D/idi/2016>]
5.2. World Economic Forum Networked Readiness Index (NRI) (2016) (score is out of 7 and covers 139 countries) • Average for all countries in this scorecard: 4.77	3.75	India has a Networked Readiness Index (NRI) score of 3.75 (out of 7), resulting in a rank of 91st (out of 139 economies) and a rank of 13th (out of 35) in the Lower middle income grouping of economies. The 2016 NRI for India increased by 0.5% and declined by 2 places from a rank of 89th since 2015. This ranks India 24th in the ITU ICT Development Index and 2nd for growth (CAGR) for this indicator in this scorecard. [World Economic Forum, Global Information Technology Report (2016) <reports.weforum.org/global-information-technology-report-2016>]
6. Internet Users and International Bandwidth		
6.1. Internet Users (millions) (2015) • Total for all countries in this scorecard: 2,330 million	333	[International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]
6.2. Internet Users (% of population) (2015) • Average for all countries in this scorecard: 67%	26%	In 2015, 26% of the population in India used the Internet, resulting in a ranking of 142nd out of 236 countries surveyed by the ITU. This is an increase of 23.8% since 2014 and is below the five-year compound annual growth rate (CAGR) from 2010–2015 of 28.2%. This ranks India 23rd in the proportion of the population using the Internet and 1st for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>] Note: There may be some variations as to how countries calculate this. Some countries base this upon all or part of the population — such as between 16 and 72 years of age.
6.3. International Internet Bandwidth (total gigabits per second (Gbps) per country) (2015) • Total for all countries in this scorecard: 117,736 Gbps	1,909	India has increased its international Internet bandwidth by 47% since 2014 to 1,909 Gbps and is ranked 24 out of 236 countries surveyed by the ITU. The growth from 2014 is above the five-year compound annual growth rate (CAGR) from 2009–2014 of 29%. This ranks India 17th for total international Internet bandwidth and 12th for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]
6.4. International Internet Bandwidth (bits per second (bps) per Internet user) (2015) • Average for all countries in this scorecard: 97,747 bps	5,725	The international Internet bandwidth (per Internet user) of India has increased by 18% since 2014. The growth from 2014 is above the five-year compound annual growth rate (CAGR) from 2010–2015 of -0.7%. This ranks India 24th for international Internet bandwidth per user and 23rd for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]

# INDIA	RESPONSE	EXPLANATORY TEXT
7. Fixed Broadband		
7.1. Fixed Broadband Subscriptions (millions) (2015) • Total for all countries in this scorecard: 697 million	17	India has increased the number of fixed broadband subscribers by 8% since 2014 to 16.94 million, and is ranked 10th out of 236 countries surveyed by the ITU. The growth from 2014 is below the five-year compound annual growth rate (CAGR) from 2010–2015 of 9%. This ranks India 10th for the number of fixed broadband subscriptions and 8th for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/ publications/wtid.aspx>]
7.2. Fixed Broadband Subscriptions (% of households) (2015) • Average for all countries in this scorecard: 63%	7%	[International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/ publications/wtid.aspx>] Note: This may be skewed by business usage in some countries.
7.3. Fixed Broadband Subscriptions (% of population) (2015) • Average for all countries in this scorecard: 21%	1%	India has increased its fixed broadband subscriptions (as a % of the population) by 6.3% since 2014, which is below the five-year compound annual growth rate (CAGR) from 2010–2015 of 7.7%. This ranks India 152nd out of 236 countries surveyed by the ITU. This ranks India 23rd for the number of fixed broadband subscriptions (as a % of the population) and 8th for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/ publications/wtid.aspx>]
7.4. Fixed Broadband Subscriptions (% of Internet users) (2015) • Average for all countries in this scorecard: 29%	5%	[International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/ publications/wtid.aspx>]
7.5. Average Broadband Data Connection Speed (total megabits per second (Mbps) per country) (Q1 2017) • Average for all countries in this scorecard: 12 Mbps • Average peak for all countries in this scorecard: 70 Mbps	6	In India the Q1 2017 average broadband data connection speed was 6.49 Mbps and is ranked 104th out of 239 countries measured by Akamai. This ranks India 23rd for average broadband data connection speed in this scorecard. Additional connection metrics for Q1 2017 in India include: • Average peak broadband connection speed: 41.42 Mbps (ranked 116th globally and 22nd in this scorecard) • Above 4 Mbps: 42% (ranked 129th globally and 24th in this scorecard) • Above 10 Mbps: 19% (ranked 88th globally and 19th in this scorecard) • Above 15 Mbps: 10% (ranked 79th globally and 17th in this scorecard) • Above 25 Mbps: 3% (ranked 69th globally and 15th in this scorecard) [Akamai, The State of the Internet (1st Quarter, 2017) <www.akamai.com/us/en/ about/our-thinking/state-of-the-internet-report/>]
8. Fiber-to-the-home/building (FttX)		
8.1. Fiber-to-the-home/building (FttX) Internet Subscriptions (millions) (2015) • Total for all countries in this scorecard: 258 million	0.2	India has increased the number of FttX subscribers by 97% since 2014 to 0.197 million, and is ranked 44th out of 236 countries surveyed by the ITU. This ranks India 20th for the number of FttX subscriptions and 6th for growth (from 2014) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/ publications/wtid.aspx>]
8.2. Proportion of Fiber-to-the-home/building (FttX) Internet Subscriptions (% of households) (2015) • Average for all countries in this scorecard: 18%	0.1%	India has increased the proportion of FttX subscribers to households by 97% (since 2014) to 0.08%. This ranks India 22nd for the proportion of FttX subscriptions to households and 6th for growth (from 2014) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/ publications/wtid.aspx>] Note: This may be skewed by business usage in some countries.

# INDIA	RESPONSE	EXPLANATORY TEXT
8.3. Proportion of Fiber-to-the-home/building (FttX) Internet Subscriptions (% of fixed broadband subscriptions) (2015) • Average for all countries in this scorecard: 23%	1.2%	India has increased the proportion of FttX subscribers to fixed broadband subscribers by 97% (since 2014) to 1.16%. This ranks India 22nd for the proportion of FttX subscriptions to fixed broadband subscriptions and 6th for growth (from 2014) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]
9. Mobile Broadband		
9.1. Mobile Cellular Subscriptions (millions) (2015) • Total for all countries in this scorecard: 4,823 million	1,001	In 2015, India increased the number of mobile cellular subscriptions by 6% since 2014, which is above the five-year compound annual growth rate (CAGR) from 2010–2015 of 5.9%. India is ranked 2nd out of 236 countries surveyed by the ITU. The number of subscriptions account for 78% of the population. This ranks India 2nd for the number of mobile cellular subscriptions and 7th for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>] Note: This figure may be inflated due to multiple subscriptions per head of population, but excludes dedicated mobile broadband devices (such as 3G data cards, tablets, etc.).
9.2. Number of Active Mobile Broadband Subscriptions (millions) (2015) • Total for all countries in this scorecard: 2,506 million	120	In 2015, India has increased the number of active mobile broadband subscriptions by 71%, which is below the four-year compound annual growth rate (CAGR) from 2011–2015 of 78.8%. India is ranked 5th out of 236 countries surveyed by the ITU. This ranks India 5th for the number of active mobile broadband subscriptions and 2nd for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>]
9.3. Active Mobile Broadband Subscriptions (% of population) (2015) • Average for all countries in this scorecard: 77%	9%	India has increased the number of active mobile broadband subscriptions (as a % of the population) by 69% since 2014, which is below the four-year compound annual growth rate (CAGR) from 2011–2015 of 76.6%. India is ranked 163rd out of 236 countries surveyed by the ITU. This ranks India 24th for the number of active mobile broadband subscriptions (as a % of the population) and 2nd for growth (CAGR) for this indicator in this scorecard. [International Telecommunication Union (ITU), World Telecommunication/ ICT Indicators Database (Dec. 2016) <www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>] Note: This refers to the sum of standard mobile broadband and dedicated mobile broadband subscriptions to the public Internet. It covers actual subscribers, not potential subscribers, even though the latter may have broadband enabled-handsets.
9.4. Average Mobile Data Connection Speed (total megabits per second (Mbps) per country) (Q1 2017) • Average for all countries in this scorecard: 11 Mbps	5	In India the Q1 2017 average mobile data connection speed was 4.9 Mbps and is ranked 63rd out of 70 countries measured by Akamai. This ranks India 23rd for average mobile data connection speed in this scorecard. [Akamai, The State of the Internet (1st Quarter, 2017) <www.akamai.com/us/en/about/our-thinking/state-of-the-internet-report/>]