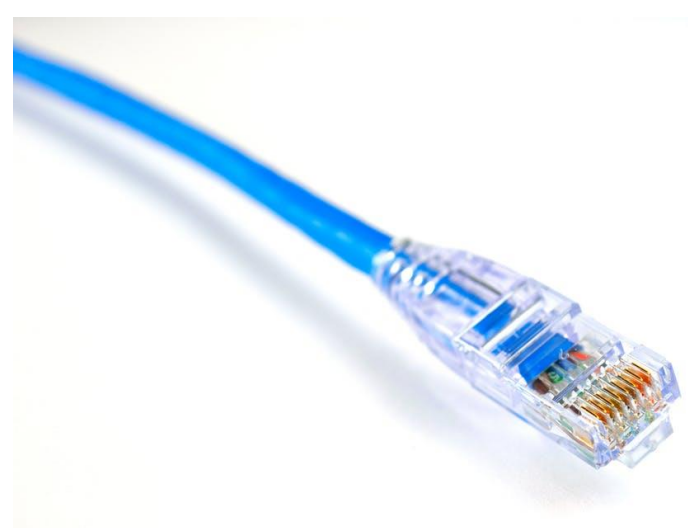


Position Statement

Digital Communications Policy Draft 2018



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Cover Images (clockwise from top left)

- Telephone Tower
- Evolution of Telephone
- Apps on Phone
- Data cable

Purpose

This position statement lays out the opinion of the IET IoT Panel and its members on the draft Digital Communications Policy (DCP) (previously National Telecom Policy (NTP) 2018). DCP draft covers various aspects of the telecommunication environment including support requirements, innovation, infrastructure, safety and security, regulations and standards. Since this policy aims at a complete transition of India from physical to digital infrastructure, it is only befitting that the interdisciplinary, neutral panel that we lead on the Internet of Things, reviews it from all standpoints and presents a comprehensive feedback.

Background

Institution of Engineering and Technology (IET) is a 147 years old professional society for engineers headquartered in the UK. It started its operations in India in 2006 and has over 15,000 member engineers in India. Internet of Things is a focus sector for the IET in India and the IET IoT Panel is a think-tank of IoT professionals. The IET IoT Panel was constituted in 2015 and aims to be a neutral, credible force shaping the evolving movement of Internet of Things in India. Telecommunications is at the heart of IoT evolution in India and therefore, the DCP will have lasting impact on how IoT pans out in India. Our expert volunteers approach the DCP in an integrated manner in the sections below, to review its strengths, weaknesses and areas of improvement.

Digital Communications Climate 2018

- India has the world's second largest mobile phone user base with the lowest tariffs in the world
- Indian telecommunication industry has shown impressive growth from 600 Million wireless connections by the end of FY 2009-10 to 1.2 billion connections today.
- As per COAI, the industry has made significant and consistent efforts to optimise networks, with more than 390 lakh sites being installed in the last 12 months for 3G and 4G services across the country.
- In the year 2016, new entrant Reliance Jio (RJio) disrupted the industry by offering unmatched freebies that included ultra-low data prices, free calls for consumers.
- 4G services became more accessible and affordable due to the intense competition faced by the players.
- Voice and data are not just the offerings of the service providers.
- The sector today is also witnessing a shift and growth of digital payments, primarily mobile and a rise of mobile wallets. Reserve Bank of India (RBI) is also considering interoperability guidelines to facilitate the uptake of these wallets.

Strengths

The DCP has a succinct mission of Connect – Propel and Secure India

- Connect India: Universal broadband at 50 Mbp, Enable 100 Mbps broadband on demand, 5 million wifi hotspots by 2020.
- Propel India : Attract investments of USD 100 Billion, Reskill 1 million manpower for building new age skills, Expand IOT ecosystem to 5 billion connected devices, Accelerate transition to Industry 4.0.
- Secure India: Ensure compliance to net neutrality, Develop network security frameworks

Overall comments

- Government targets to setup 5 Million WIFI hotspots by 2020 which is very ambitious. As of 2018 this number is close to 50,000. An increase of close to 100 times in a time span of 2 years looks optimistic. The modalities for attaining this needs to be laid down.
- The current policy has little reference to non-industrial, rural, agriculture and logistics implementations. These areas also need to be focused upon.
- The current draft could use a bit more of incentivisation on the innovation front. Enabling a push pull eco system to experiment, pilot and scale solutions and IP needs to be built further.
- Sectors identified as the beneficiaries of new technologies (Agriculture, Healthcare etc.) will have a role to play in building the required skills. How these entities will get integrated into the framework needs consideration,
- The goal of ubiquitous connectivity, fiberisation of base stations (fiber-to-the-tower program) and 5G plus are welcome moves. However, public health and safety, mobile base station sites and passive infrastructure requirements should be planned simultaneously.
- Collaborative approach should be taken across state, local bodies and private sector so that the implementation is seamless.
- India holds less than 25% in fiberisation of towers. This needs to reach 60% and the policy must spell out guidelines how to improve the fiberisation.
- Establish the standardization life cycle: Standardization cannot be driven in an isolated manner.
- With India currently ranked at 67 in fixed broadband and 100 in mobile broadband a lot more is desired. Average spectrum holding for Telecom companies in India is much below global standards, hence spectrum management is of utmost importance.
- The policy should address issues on how we can move up in the speed test global index. Customer experience is still bad. Quality of Service guidelines needs to be articulated. Telecom companies should be penalised if they don't meet QOS standards.

- India still has a very uncertain regulatory framework, and there exist a lot of grey area regarding dos and don'ts. A case in point is the recent example of two telecom providers fight for the SIM card of a leading wearable device. There are unresolved tax issues faced by another telecom major as well.
- The National Digital Communications Policy, 2018 identifies 6 strategic objectives to be achieved by 2022, one more inclusion could be to “Add universal 5G roll out in all districts. This is easier to achieve than Broadband for All”.

Review framework

Our panel members have reviewed the DCP draft from six different viewpoints:

- Infrastructure
- Innovation
- Safety and Security
- Standards
- Support Requirements
- Regulation

Infrastructure

- **Base stations:** Recent consolidation of telecom operators in India has made way for a possibility for sharing (or creating a consortium) for mobile base stations. Most of the proposed initiatives in the draft policy for the "Fiber first initiative" can be applied to mobile base stations infrastructure also.
- **Spectrum:** Making 5G spectrum available (prior to auction) for trial purposes for a pre-established and mutually agreed duration, in predefined wide geographic areas for field tests and trial projects is desirable. This allows trials to not be limited to labs and academic institutions alone.
- **Skills** It is believed that this policy can address some challenges around manpower requirement in specific sectors. Sectors identified as the beneficiaries of the new technologies like Agriculture, Healthcare etc. will have a role to play in building up the required skills.
Vocational training around the new technologies is the need of the hour with the proposed scale of the implementation. The section referring to creating educational resources relating to the communications sectors should Focus on “Education About Standardization”.
Modalities of how this will work, who will be responsible, how will monitoring be done and what will the milestones be, needs more clarity.
Establishment of excellence centers, which also includes PPDR (Public Protection and Disaster Recovery) and IoT/M2M (Internet of Things and Machine to Machine Communication technologies) should be given priority.

Telecom ministry shall also work with other ministries by creating a forum of academic and industry representatives to constantly review the course curriculum of new technologies and monitor the quality for training conducted.

Support for implementation of policy on “train/ reskill 1 million manpower with the new age skills” is recommended.

- **Access** The policy should also better convey how connectivity for **Primary Health Centers**, public secondary care centers and sub centers would happen in broad access. This will allow leveraging of telehealth and provide access to care to rural citizens. The section referring on to Enable a light touch regulation for the proliferation of cloud based system should also include setting up of Health Information Exchanges at district and national levels to aid exchange of health data.

- **Universal broadband coverage** at 500 per mbps to every citizen is also something that this panel strongly suggests. 1 Bbps connectivity to all grams panchayats of India by 2020 and 100mbps by 2022 is desirable (5G Specification is 20Gbps). Clarity is also needed that urban areas it would be 20Gbps connectivity in line with 5G roll out and atleast 100 mbps in rural.

- **Partnerships:** Mobile cross industry partnerships between the vertical industries and technology industry seems beneficial. As digital communication proliferates across various verticals, these collaborations are essential for developing the use cases and standards which leverage the full potential of technology. Schemes that promote such cross pollination are to be thought through.

R&D and Innovation

- A bottom up identification and support for experimentation- both in formal and informal rural sectors should be in plan. Top down planned standard driven method is riddled with difficulties. Emergent disruption cannot be foreseen with clarity by the regulator.
- There exists ambiguity around the role that TELCO's play in the ecosystem/ Industry development as well as plans of having incubation centers. The question remains unanswered whether it will be a state owned one'?
- Propel India shall also include mentioning emerging technologies such as Future Network, Future Internet, Next Generation of M2M/IoT, Fixed Line, Open System, Open API, Open Data, Sustainability, Society, Convergence OR if going for a next subjective exploration including NFV/SDN, MEC, MMW, Smart Card (EUICC), m-Wallet, Internet Protocol, ITS, e-Health, UWB, PLT, Deep Learning, Context Information Modeling, Energy Efficiency, Active Assisted Living etc.

- It is recommended that research and development section should also cover fostering standards driven research projects.
- PSUs are integral to India's success story. To strengthen the PSUs we need to ensure that our PSUs become globally competitive by setting a framework of metrics, ranking etc. and also, it is recommended to set targets for global market share for all PSUs and drive them to compete effectively.
- It is observed that, support is required for creating a fund for R&D, promoting Global competitiveness of Indian Start-up and enterprises by incentivizing IP development and contributions in Local SDO (TSDSI) and Global Standardization.

Privacy, Safety and Security

- The concern of safety and security is still prevailing. There is a need to facilitate establishment of a Central Equipment Identity Registry for addressing security, theft and concerns including reprogramming of identity of mobile handsets. It should also extend to other IoT devices and not just mobile handsets
- We recommend that inclusion of new safety approaches like Fresh Thinking IoT Safety network through a regulatory sandbox.
- Security across layers, obligation on personal data protection and privacy must be considered more seriously.
- The 2022 Goals should address security issues relating to encryption as well as security clearances that also include interception.
- Establishing a data protection regime - Justice B.N Sri Krishna Committee on legal framework for data protection and privacy has suggested core principles on privacy that must be incorporated into the omnibus legislation on data protection and privacy. To improve the standards, framework must be created for encryption and data retention in sync with global standards. These standards must be reconciled and included into the license terms and conditions.

Standards

- Standards form a dominant area of strength as well an area for opportunities, creative thinking and improvement in this ambitious project. There is imminent need to strengthen the standardization framework in ICT, to enable early adoption of new technologies and promote a globally competitive industry. It can be done by defining a Standardization strategy which synergizes the fragmented efforts across TSDSI, BIS, TEC, STQC
- The current approach to standardization needs to be complemented with an aggressive Pre-Standardization Focus driving (open) innovation, development of India centric, disruptive use cases associated with Digital India, Smart City, Make in India, Swachh Bharat etc. Establishment of vertical

focused use case labs; standards driven research projects and IP development associated with each vertical will help deliver this better.

- It is understood by the draft that the Standardization Flow should include leveraging Global SDOs to adopt and influence global standards as National Standards and lower barriers for Indian industry and start-ups.
- Standardisation capability should be built with a long term focus. Identifying, incentivizing and nurturing a pool of standardization experts in the Local SDO (TSDSI) and positioning them for high impact at Global SDOs is very important. To strengthen the standardization framework, it is recommended to enhance participation in Global SDO's by targeting selected SDOs based on the technology and application areas and nurturing teams of Standardization experts to participate and contribute in these forums in a sustained manner.
- It is observed that there are very few role models in other countries that can be readily deployed when we think of standards from an India standpoint. This group would encourage the decision makers to slow down on pushing 3GPP and OneM2M standards in IoT but rather allow for development of local ground up approaches.
- Standardized emerging technologies and its use in the communications sector should also include: Multi Access Edge Computing, millimeter wave, Smart Card (EUICC), m-Wallet, Internet Protocol, ITS, e-Health, UWB, PLT, Deep Learning, Context Information Modeling, Energy Efficiency, Active Assisted Living and Big Data and M2M
- There should be special focus on promoting interoperability, portability and establishing an open source repository/ directory of applications.
- It is believed that under local manufacturing and value addition focus on creating a patent regime, standards and certification framework shall promote global competitiveness.
- For simplifying the process of obtaining experimental Licenses, establishing regulatory sandboxes and promoting start-ups, we should drive focus on contributions to Global Standards as a desired outcome from various initiatives
- A post Standardization framework enabling evangelization, PoC and interoperability testing, pilots, trials and certifications also needs to be put in place to achieve global competitiveness.

Support Requirement

- There is a support requirement for low cost long range IoT networks using sub GHz unlicensed spectrum and decentralized community and local networks under guidance and licensing by local and rural authorities. This is the case in ports, smart cities, campuses large villages etc., Cooperative federalism is a need.
- Active support is required for crowd sourced data for formal and community decision making through low cost and convenient methods of sourcing data and using Big Data and machine learning that requires regulatory thought process.

Regulations

- There is a need of policy requirements on
 - Offering SOPs/ incentives to protect / encourage domestic players under 'Make in India / Startup India' program prevents MNCs from grabbing the major pie of the Indian market share.
 - On tariff policies and the basis of framing the tariff structure so as to clearly identify free Vs paid services. Any policy framed by Govt. of India has to be in the larger interest of protecting local players.
 - Stringent laws that will be enforced upon infringement of rights of any kind
 - CALL DROP is a major faced by citizens in India. While we may be talking of providing higher bandwidth as a resolution, there needs to be a mention of how existing infrastructure / investments can be leveraged to address this issue.
- Ensuring customer satisfaction and Consumer Grievance Redressal should be priority. Laws on consumer protection needs to be amended to accommodate new-age consumer grievance scenarios in a digital service environment.
- There could be policy framework for OTT services as this may add to compliances for the OTT sector. It will ensure uniform and consistent regime for all stakeholders.
- There could be inclusion of infrastructure providers or IPs in the Telegraph Right Way of Rules, 2016, which currently applies to licensed telecom service providers.

The Institution of Engineering and Technology - UK

The IET is one of the world's largest engineering institutions with over 168,000 members in 150 countries. It is also the most multidisciplinary – to reflect the increasingly diverse nature of engineering in the 21st century.

The IET is working to engineer a better world by inspiring, informing and influencing our members, engineers and technicians, and all those who are touched by, or touch, the work of engineers.

Institution of Engineering and Technology - India

The IET office started operations in India in 2006, in Bangalore. Today, we have over 13,000 members and have the largest membership base for the IET outside of the UK.

About IET IoT Panel

Leveraging its position as a multi-disciplinary organisation, IET India launched its IoT panel on February 20, 2015. The panel, being a first of its kind in India, focuses not only on technology but the application aspect of IoT in various segments.

The focus is to facilitate discussions that will help in making the inevitable connected world more efficient, smart, innovative and safe. The IET IoT Panel will provide a platform for stakeholders to participate in becoming an authoritative, but neutral voice for the evolving movement of IoT in India. It aims to enable all the IoT practitioners (including people from the hardware – devices, portables, sensors, software, business) and IoT enablers (including people from regulatory area, training area, investors in IoT, end users) to work together on relevant areas to make this industry efficient as well as robust. The panel envisions laying a solid foundation by supporting policy makers, industry in the next step of adoption of IoT

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