No. 2-8/2012-Policy-I
Government of India
Ministry of Communications & IT
Department of Telecommunications
(Policy-I Section)
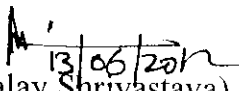
New Delhi dated the 13th June 2012.

OFFICE MEMORANDUM

SUBJECT: NATIONAL TELECOM POLICY-2012.

The Government has approved the National Telecom Policy-2012 (NTP-2012) on 31.5.2012.

2. National Telecom Policy-2012 (NTP-2012) is attached.

(Malay Shrivastava)
Joint Secretary (Telecom)
Ph: 2371 7411.

Copy for information and necessary action to:

(i)   Press Information Officer, Press Information Bureau for giving wide publicity to the above.

(ii) Director (IT), DoT for uploading the NTP-2012 on DoT web-site.

Copy also to:

(i)   Cabinet Secretariat
(ii) Prime Minister's Office

National Telecom Policy - 2012

(NTP - 2012)

PREAMBLE

Telecommunication has emerged as a key driver of economic and social development in an increasingly knowledge intensive global scenario, in which India needs to play a leadership role. National Telecom Policy-2012 is designed to ensure that India plays this role effectively and transforms the socio-economic scenario through accelerated equitable and inclusive economic growth by laying special emphasis on providing affordable and quality telecommunication services in rural and remote areas. Thrust of this policy is to underscore the imperative that sustained adoption of technology would offer viable options in overcoming developmental challenges in education, health, employment generation, financial inclusion and much else. NTP-2012 is an initiative to create a conducive policy framework to address these issues and to touch lives of all citizens and transform India. By formulating a clear policy regime, NTP-2012 endeavors to create an investor friendly environment for attracting additional investments in the sector apart from generating manifold employment opportunities in various segments of the sector. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the National Telecom Policy – 2012.

2. The last decade is characterised by significant penetration of telecommunications in India. The New Telecom Policy 1999 has been a catalyst for growth of the telecom sector. The number of telephone connections, at the end of February 2012, was 943 million, as compared to 41 million at the end of December 2001. This growth has been fuelled by the cellular segment (mobile phones) which alone accounted for 911 million connections at the end of February 2012. The composition of the telecom sector too has witnessed a structural change, with the private sector accounting for 88 % of the total connections.

3. Today, India is one of the fastest growing telecom markets in the world. The unprecedented increase in teledensity and sharp decline in tariffs in the Indian telecom sector have contributed significantly to the country's economic growth. Besides contributing to about 3% to India's GDP, Telecommunications, along with Information Technology, has greatly accelerated the growth of the economic and social sectors.

4. The National Telecom Policy 2012 (NTP 2012) is conceived against this backdrop. The vision is to transform the country into an empowered and inclusive knowledge-based society, using telecommunications as a platform.

5.   Notwithstanding the economic progress over the last decade, the digital divide in the country continues to be significant. On the one hand, expansion of telecommunications in the rural areas has been slower than urban areas, with the former accounting for only 34% of the total connections. On the other, the ability of the poorer sections of the society, both in rural and urban areas, to benefit from technology needs to be enhanced. NTP-2012 has the vision **Broadband on Demand** and envisages leveraging telecom infrastructure to enable all citizens and businesses, both in rural and urban areas, to participate in the Internet and web economy thereby ensuring equitable and inclusive development across the nation. It provides the enabling framework for enhancing India's competitiveness in all spheres of the economy. NTP-2012 envisages support to platform neutral services in e-governance and m-governance in key social sectors such as health, education and agriculture that are at present limited to a few organizations in isolated pockets. This will expand the footprint of these services and thus foster an atmosphere of participative democracy delivery model that is truly citizen-centric.

6.   Telecommunications is no longer limited to voice. The evolution from analog to digital technology has facilitated the conversion of voice, data and video to the digital form. Increasingly, these are now being rendered through single networks bringing about a convergence in networks, services and also devices. Hence, it is now imperative to move towards convergence between telecom, broadcast and IT services, networks, platforms, technologies and overcome the existing segregation of licensing, registration and regulatory mechanisms in these areas to enhance affordability, increase access, delivery of multiple services and reduce cost. It will be a key enabler of equitable and inclusive growth. The policy aims to address and enable the coordinated action to respond to the dynamic needs resulting from confluence of telecom, broadcasting and IT sectors.

7.   Given the continued predominant role of wireless technologies in delivery of services in ICT sector, NTP-2012 incorporates framework for increasing the availability of spectrum for telecom services including triple play services (voice, video and data) for which broadband is the key driver. This will be facilitated by deployment of services through appropriate instrumentalities, while safeguarding national interests.

8.   The emerging technology trends in electronics hardware, telecom connectivity and IT will make it possible for millions of citizens to access services electronically in self-service mode using mobile phones and the Internet or through assisted service points such as Common Service Centres etc. Once a mere communication device, the Telephone has now the potential of being an instrument of empowerment. There is need to reorient the telecommunication policy. This vision is made possible through ubiquitous network connectivity of mobile technology, broadband Internet, fiber penetration in all villages, high-technology low-cost affordable devices and software solutions which enable electronic

access to service including m-payment. A unique AADHAR based electronic authentication framework would be integral part of providing service to the people. Cloud computing will significantly speed up ability to design and roll out services, enable social networking and participative governance and m-Commerce at scale which were not possible through traditional technology solutions.

9.   A concerted effort to boost manufacturing activity is now exigent as robust economic growth in the country is leading to an extraordinarily high demand for electronic products in general and telecom products in particular. NTP-2012 provides a roadmap for India to become a leader in cutting edge, state of the art technologies through R&D and creation and incorporation of Indian IPRs in global standards. This will require measures for boosting entrepreneurship and creating a major global manufacturing hub for telecommunication equipment to achieve self-sufficiency while squarely addressing security and strategic concerns. At the same time establishment of processes and standards for protection of the environment will also be required.

10. For the continued growth trajectory of telecom sector, it is crucial to establish appropriate mechanisms to achieve balance between competition and consolidation while dealing with the legacy issues in the sector, thus benefiting both the users and providers of telecommunication services.

11. NTP-2012 recognises that the rapid growth in the telecom sector requires to be supported by an enhanced pace of human capital formation and capacity building. It becomes imperative to put in place an integrated skill development strategy for the converged ICT sector as a whole so that there is continuous up-gradation of skills in tune with the technological developments. The cornerstone of this strategy is to derive maximal dividend from our young population and their creative abilities. The advent of technologies like cloud computing present a historic opportunity to catapult India's vaunted service delivery capabilities to a new level domestically as well globally.

12. Introduction of new technologies has posed fresh challenges in network security, communication security and communication assistance to law enforcement agencies. NTP-2012 provides a clear strategy for squarely addressing these concerns.

13. The PSUs have played a pre-eminent role in provision of telecom services in the country, particularly in rural, remote, backward and hilly areas. Contribution of BSNL and MTNL to broadband penetration in the country is significant. The importance of PSUs in meeting the strategic and security needs of the nation can also not be understated. This policy recognises that these PSUs will continue to play such important role.

14. Institutions form the backbone for policy implementation if the policy objectives are to be fully realised. World over, the telecom regulator plays a critical role in the orderly growth of the telecommunication industry, balancing the interests of both the consumers and the service providers. By virtue of the TRAI Act, India has an independent regulator. NTP 2012 seeks to further empower the regulator.

15. NTP-2012 recognises the importance of creation of the robust and resilient telecom networks for adequately addressing the need for proactive support for mitigating disasters, natural and manmade.

16. NTP-2012 recognises futuristic roles of Internet Protocol Version 6 (IPv6) and its applications in different sectors of Indian economy.

I. VISION

To provide secure, reliable, affordable and high quality converged telecommunication services anytime, anywhere for an accelerated inclusive socio-economic development.

II. MISSION

1. To develop a robust and secure state-of-the-art telecommunication network providing seamless coverage with special focus on rural and remote areas for bridging the digital divide and thereby facilitate socio-economic development.

2. To create an inclusive knowledge society through proliferation of affordable and high quality broadband services across the nation.

3. To reposition the mobile device as an instrument of socio-economic empowerment of citizens.

4. To make India a global hub for telecom equipment manufacturing and a centre for converged communication services.

5. To promote Research and Development, Design in cutting edge ICTE technologies, products and services for meeting the infrastructure needs of domestic and global markets with focus on security and green technologies.

6. To promote development of new standards to meet national requirements, generation of IPRs and participation in international standardization bodies to contribute in formation of global standards, thereby making India a leading nation in the area of telecom standardization.

7. To attract investment, both domestic and foreign.

8. To promote creation of jobs through all of the above.

III. OBJECTIVES

1. Provide secure, affordable and high quality telecommunication services to all citizens.

2. *Increase rural teledensity from the current level of around 39 to 70 by the year 2017 and 100 by the year 2020.*

3. *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.**

4. Enable citizens to participate in and contribute to e-governance in key sectors like health, education, skill development, employment, governance, banking etc. to ensure equitable and inclusive growth.

5. *Provide high speed and high quality broadband access to all village panchayats through a combination of technologies by the year 2014 and* progressively to all villages and habitations by 2020*.*

6. *Promote innovation, indigenous R&D and manufacturing* to serve domestic and global markets, by increasing skills and competencies.

7. *Create a corpus to promote indigenous R&D, IPR creation, entrepreneurship, manufacturing, commercialisation and deployment of state-of-the-art telecom products and services during the 12th five year plan period.*

8. *Promote the ecosystem for design, Research and Development, IPR creation, testing, standardization and manufacturing i.e. complete value chain for domestic production of telecommunication equipment to* **meet Indian telecom sector demand to the extent of 60% and 80% with a minimum value addition of 45% and 65% by the year 2017 and 2020 respectively.**

9. *Provide preferen*ce to domestically manufactured telecommunication products, in procurement of those telecommunication products which have security implications for the country and in Government procurement for its own use, consistent with our World Trade Organization (WTO) commitments.

10. *Develop and establish standards to meet national requirements, generate IPRs*, and participate in international standardization bodies to contribute in formulation of global standards, thereby making India a leading nation in the area of international telecom

standardization. This will be supported by establishing appropriate linkages with industry, R&D institutions, academia, telecom service providers and users.

11. *Simplify the licensing framework* to further extend converged high quality services across the nation including rural and remote areas. This will not cover content regulation.

12. Strive to create *One Nation - One License* across services and service areas.

13. Achieve *One Nation - Full Mobile Number Portability* and work towards *One Nation - Free Roaming*.

14. *Reposition the mobile phone* from a mere communication device *to an instrument of empowerment* that combines communication with proof of identity, fully secure financial and other transaction capability, multi-lingual services and a whole range of other capabilities that ride on them and transcend the literacy barrier.

15. Encourage development of mobile phones based on open platform standards.

16. Deliver high quality seamless voice, data, multimedia and broadcasting services on *converged networks* for enhanced service delivery to provide superior experience to users.

17. Put in place a simplified Merger & Acquisition regime in telecom service sector while ensuring adequate competition.

18. Optimize delivery of services to consumers irrespective of their devices or locations by *Fixed-Mobile Convergence* thus making available valuable spectrum for other wireless services.

19. Promote an ecosystem for participants in VAS industry value chain to make India a global hub for Value Added Services (VAS).

20. Ensure adequate availability of spectrum and its allocation in a transparent manner through market related processes. *Make available additional 300 MHz spectrum for IMT services by the year 2017 and another 200 MHz by 2020.*

21. Promote efficient use of spectrum with provision of regular *audit of spectrum usage*.

22. De-licensing additional frequency bands for public use.

23. *Recognize telecom as Infrastructure Sector* to realize true potential of ICT for development.

24. Address the Right of Way (RoW) issues in setting up of telecom infrastructure.

25. Mandate an ecosystem to ensure setting up of a *common platform for interconnection* of various networks for providing non-exclusive and non-discriminatory access.

26. Strengthen the framework to address the environmental and health related concerns pertaining to the telecom sector.

27. Enhanced and continued *adoption of green policy in telecom* and incentivise use of renewable energy sources for sustainability.

28. *Protect consumer interest* by promoting informed consent, transparency and accountability in quality of service, tariff, usage etc.

29. *Strengthen the grievance redressal mechanisms* to provide timely and effective resolution.

30. Strengthen the *institutional framework to enhance the pace of human capital formation* and capacity building by assessing and addressing educational and training needs of the sector.

31. Encourage *recognition and creation of synergistic alliance of public sector* and other organisations of Department of Telecommunications (DoT). This should be achieved through appropriate policy interventions and support for optimum utilisation of their resources and strengths in building a robust and secure telecom and information infrastructure.

32. Evolve a *policy framework for financing the sector* consistent with long term sustainability.

33. Put in place appropriate fiscal and financial incentives required for indigenous manufacturers of telecom products and R&D institutions.

34. Achieve substantial *transition to new Internet Protocol (IPv 6)* in the country in a phased and time bound manner by 2020 and encourage an ecosystem for provision of a significantly large bouquet of services on IP platform.

35. Strengthen the institutional, legal, and regulatory framework and re-engineer processes to bring in more efficiency, timely decision making and transparency.

36. Put in place a web based, real time e-governance solution to support online submission of applications including processing, issuance of licences and clearances from DoT.

IV. STRATEGIES

1. BROADBAND, RURAL TELEPHONY AND UNIVERSAL SERVICE OBLIGATION FUND (USOF)

1.1. To develop *an eco-system for broadband* in close coordination with all stakeholders, including Ministries/ Government Departments/ Agencies to ensure availability of media for last mile access, aggregation layer, core network of adequate capacity, affordable equipment including user devices, terminals and

Customer Premise Equipment and an environment for development of relevant applications. Formulate policies to promote competition by encouraging service providers, whether large or small, to provide value added services under equitable and non-discriminatory conditions.

1.2. To recognise telecom, including broadband connectivity as a basic necessity like education and health and work towards **'Right to Broadband'.**

1.3. To lay special emphasis on *providing reliable and affordable broadband access to rural and remote areas* by appropriate combination of optical fibre, wireless, VSAT and other technologies. Optical fibre network will be initially laid up to the village panchayat level by funding from the Universal Service Obligation Fund (USOF). Extension of optical fibre connectivity from village panchayats to be taken up progressively to all villages and habitations. Access to this Optical Fibre Network will be open, non-discriminatory and technology neutral.

1.4. Provide appropriate incentives for rural rollout.

1.5. *To revise the existing broadband download speed of 256 Kbps to 512 Kbps and subsequently to 2 Mbps by 2015 and higher speeds of at least 100 Mbps thereafter.*

1.6. To encourage Fibre To The Home (FTTH) with enabling guidelines and policies, favouring fast transformation of cities and towns into *Always Connected* society.

1.7. To incorporate enabling provisions in the current regulatory framework so that existing infrastructure including cable TV networks are optimally utilised for extending high quality broadband services in rural areas also.

1.8. To establish appropriate institutional framework to coordinate with different government departments/agencies for laying and upkeep of telecom cables including *Optical Fibre Cables* for rapid expansion of broadband in the country.

1.9. To *leverage the mobile device and SIM Card with enhanced features* for enabling secure transactional services including online authentication of identity and financial services.

1.10. To promote synergies between roll-out of broadband and various Government programs viz e- governance, e-panchayat, MNREGA, NKN, AADHAR, AAKASH tablet etc.

1.11. To *ensure availability of adequate spectrum* to meet current and future demand for microwave access/ backhaul, in appropriate frequency bands.

1.12. To stimulate the demand of broadband applications and services, work closely with Department of IT in the promotion of *local content creation in regional languages* which would enhance the investment *in All-Internet Protocol (IP) networks* including NGN.

1.13. To promote the use of *energy efficient equipment and renewable energy technologies* to achieve long term sustainability.

1.14. To undertake periodic review of methodology adopted for utilising USO fund and benchmarking the same against the best practices followed in other countries.

1.15. To provide continued support from USO fund for telecom services, including converged communication services in commercially unviable rural and remote areas.

2. **R&D, MANUFACTURING AND STANDARDIZATION OF TELECOMMUNICATION EQUIPMENT**

   2.1. To *promote R&D, design, development and manufacturing* in the domestic telecom equipment manufacturing.

   2.2. To create a road-map to align technology, demand, standards and regulations for enhancing competitiveness of domestic manufacturing.

   2.3. To set up a *Council consisting of experts* from Telecom Service Providers, Telecom Manufacturing Industry, Government, Academia and R&D institutions. The Council would:
      2.3.1. Carry out technology and product development forecast.
      2.3.2. Evolve, and periodically update the national program for technology/product development.
      2.3.3. Be a nodal group to monitor and ensure the implementation of various recommendations made for promoting indigenous R&D, IPR creation, and manufacturing and deployment of products and services.

   2.4. To *promote synergy amongst manufacturers, R&D centres, academia, service providers and other stakeholders* for achieving collaboration and reorientation of their efforts for development and deployment of new products and services suited to Indian environment and meeting security needs of the country.

   2.5. To *assist entrepreneurs* to develop and commercialize Indian products by making available requisite funding (pre-venture and venture capital), management and mentoring support.

2.6. To **create fund** to promote indigenous R&D, Intellectual Property creation, entrepreneurship, manufacturing, commercialising and deployment of state-of-the-art telecom products and services.

2.7. To promote *setting up of Telecommunications Standard Development Organisation (TSDO)* as an autonomous body with effective participation of the government, industry, R&D centres, service providers, and academia to drive consensus regarding standards to meet national requirements including security needs. It will facilitate access for all the stakeholders in the International Standards Development Organisations and act as an advisory body for preparation of national contributions for incorporation of Indian requirement/IPRs/standards in the international standards.

2.8. To *notify specific guidelines for according preference to domestically manufactured telecommunication equipment and products* either for reasons of security or for Government procurement in accordance with relevant government decisions and policies in this regard.

2.9. To incentivise telecom service providers to use indigenous products by encouraging:

2.9.1. Commitment to purchase Indigenous products that are comparable in price and performance to imported products.
2.9.2. Commitment to participate in trials of newly created Indigenous products, nurture them and place pilot orders.
2.9.3. Funding R&D and support Indian IPR creation and participate in creation of standards.

2.10. To **support Electronic Design and Manufacturing Clusters** for design, development and manufacture of telecommunication equipment.

2.11. To facilitate provision of appropriate fiscal incentives through a **Modified Special Incentive Package Scheme (M-SIPS)** in manufacturing of telecom equipment.

2.12. To **mandate testing and certification** of all telecom products for conformance, performance, interoperability, health, safety, security, EMF/EMI/EMC, etc. to ensure safe-to-connect and seamless functioning in the existing and future networks.

2.13. To **create suitable testing infrastructure** for carrying out conformance testing, certification and to aid in development of new products and services. These state-of-the-art labs/infrastructure would be suitably positioned to make them available

to engineering/academic institutions to assist the scholars in telecom product development.

2.14. To appropriately *incentivise export of telecom equipment and services*. Synergies among the various telecom players (manufacturers and service providers) would be leveraged to provide integrated communication solutions for exports.

2.15. To facilitate *putting in place a stable tax regime* for telecom equipment manufacturing.

2.16. To *provide appropriate incentives to the Indian product manufacturers* for domestic deployment and exports.

3. LICENSING, CONVERGENCE AND VALUE ADDED SERVICES

3.1. To orient, review and harmonise the legal, regulatory and licensing framework in a time bound manner to *enable seamless delivery of converged services* in a technology and service neutral environment. Convergence would cover:

3.1.1. Convergence of services i.e. convergence of voice, data, video, Internet telephony (VoIP), value added services and broadcasting services.
3.1.2. Convergence of networks i.e. convergence of access network, carriage network (NLD/ ILD) and broadcast network.
3.1.3. Convergence of devices i.e. telephone, Personal Computer, Television, Radio, set top boxes and other connected devices.

3.2. To facilitate *convergence of local cable TV networks* post digitalisation.

3.3. To *move towards Unified Licence regime* in order to exploit the attendant benefits of convergence, spectrum liberalisation and facilitate *delinking of the licensing of Networks from the delivery of Services to the end users* in order to enable operators to optimally and efficiently utilise their networks and spectrum by sharing active and passive infrastructure. This will enhance the quality of service, optimize investments and help address the issue of the digital divide. This new licensing regime will address the requirements of level playing field, rollout obligations, policy on merger & acquisition, non-discriminatory interconnection including interconnection at IP level etc. while ensuring adequate competition.

3.4. To put in place a liberalized merger and acquisition policy with necessary thresholds, while ensuring adequate competition.

3.5. To **delink spectrum in respect of all future licences**. Spectrum shall be made available at a price determined through market related processes.

3.6. New Unified licensing regime will **provide flexibility to operators to operate any or all segment of services of the total basket of services** provided in the scope of licence. The entry fee regime will also be made flexible accordingly.

3.7. To promote introduction of area specific services and applications.

3.8. To **facilitate resale at the service level** under the proposed licensing regime – both wholesale and retail, for example, by introduction of virtual operators – in tune with the need for robust competition at consumer end while ensuring due compliance with security and other license related obligations.

3.9. To **frame appropriate Policies** for new licensing framework, migration of existing licensees to new framework, exit policy, measures for ensuring adequate competition etc. in consultation with TRAI.

3.10. To put in place an appropriate regulatory framework for delivery of **VAS at affordable price** so as to fuel growth in entrepreneurship, innovation and provision of **region specific content in regional languages**.

3.11. To put in place a framework **to regulate the carriage charges, which are content neutral and based on the bandwidth utilisation**. This will also encourage non value added services such as provision of data and information over the mobile platform.

3.12. To endeavour to make available Global Mobile Personal Communication by Satellite (GMPCS) compliant with security requirements.

3.13. To extend **Intra-circle mobile number portability facility on nationwide basis** so that the users can retain their mobile number while shifting from one service area to another, irrespective of the service provider.

3.14. To review roaming charges with the ultimate objective of **removing the roaming charge across the nation**.

3.15. To enable and enforce the VOIP facility to enhance consumer affordability.

4. **SPECTRUM MANAGEMENT**

4.1. To move at the earliest towards liberalisation of spectrum to enable use of spectrum in any band to provide any service in any technology as well as to permit **spectrum pooling, sharing and later, trading** to enable optimal utilisation of spectrum through appropriate regulatory framework.

4.2. To undertake *periodic audit* of spectrum utilisation to ensure its efficient use.

4.3. To refarm spectrum and allot alternative frequency bands or media to service providers from time to time to make spectrum available for introduction of new technologies for telecom applications.

4.4. To *prepare a roadmap* for availability of additional spectrum every 5 years.

4.5. To make available adequate globally harmonised IMT spectrum in 450 MHz, 700 MHz, 1800 MHz, 1910 MHz, 2.1 GHz, 2.3 GHz, 2.5 GHz, 3.5 GHz bands and other bands to be identified by ITU for commercial mobile services.

4.6. To identify additional frequency bands periodically, for *exempting them from licensing requirements* for operation of low power devices for public use.

4.7. To consider requirement of spectrum in certain frequency bands in small chunks at specified locations for *encouraging indigenous development of technologies/ products and their deployment*.

4.8. To *review the existing geographical unit of allocation of spectrum* with a view to identifying scope for optimization.

4.9. To *promote use of white spaces* with low power devices, without causing harmful interference to the licensed applications in specific frequency bands by deployment of Software Defined Radios (SDRs), Cognitive Radios (CRs), etc.

4.10. To establish and *strengthen Institute of Advanced Radio Spectrum Engineering and Management Studies (IARSEMS)* as a Government Society for undertaking policy research in radio spectrum engineering, management/radio monitoring and related aspects.

5. **TELECOM INFRASTRUCTURE/ ROW ISSUES, GREEN TELECOM, CLEAR SKYLINE, MITIGATION EFFORTS DURING DISASTERS AND EMERGENCIES**

5.1. To emphasize the active role of both private sector and Government including the State Governments and Local bodies to enable the growth of telecom infrastructure necessary for meeting the telecommunication demand of the country and leveraging USOF where appropriate.

5.2. To work towards *recognition of telecom as Infrastructure Sector for both wireline and wireless* and extension of the benefits available to infrastructure sectors to telecom sector also, to realize true potential of ICT for development.

5.3. To review and ***simplify sectoral policy for Right of Way*** for laying cable network and installation of towers, etc. for facilitating smooth coordination between the service providers and the State Governments/ local bodies.

5.4. To facilitate development of ***guidelines for provision of common service ducts*** for orderly growth of telecom infrastructure in consultation with all concerned Ministries/ Departments, State Governments and Local bodies.

5.5. To ***mandate for mapping*** and submission of information of the infrastructure assets on the standards based inter-operable ***GIS platform*** by all telecom infrastructure/ service providers to the licensor.

5.6. To review Standing Advisory Committee on Frequency Allocation (SACFA) clearance process for faster and simplified site clearances.

5.7. To facilitate increased use of alternative sources (Renewable Energy Technologies) of energy for powering telecom networks through active participation of all the stakeholders – the government, the telecom industry and the consumer for green telecommunications. Sector specific schemes and targets for promotion of green technologies will be finalised in consultation with Ministry of New and Renewable Energy (MNRE) and other stakeholders.

5.8. To ***promote the use of energy efficient equipment*** including low power wireless devices in telecom networks and adopt measures for the reduction of carbon footprint in the telecom sector.

5.9. To ***promote use of In-Building Solutions (IBS) and Distributed Antenna Systems (DAS)*** and their siting in coordination with Ministry of Urban Development by aligning the National Building Code as well as embedding these critical requirements in the process of developmental planning and finalization of master plans for rural and urban areas in consultation with the State Governments.

5.10. To undertake ***periodic review of EMF radiation standards*** for mobile towers and mobile devices with reference to international safety standards.

5.11. To encourage use of innovative methods like camouflaging, landscaping, monopole towers and stealth structures to conform to aesthetic requirements.

5.12. To prescribe sectoral ***Standard Operating Procedures*** for aiding effective and early mitigation during disasters and emergencies.

5.13. To create appropriate regulatory framework for provision of reliable means of public communication by Telecom Service Providers during disasters.

5.14. To encourage use of ICTs in prediction, monitoring and early warning of disasters and early dissemination of information.

5.15. To facilitate an ***institutional framework to establish nationwide Unified Emergency Response Mechanism*** by providing nationwide single access number for emergency services.

6. **QUALITY OF SERVICE AND PROTECTION OF CONSUMER INTEREST**

6.1. To strengthen the regulator for ensuring compliance of the prescribed performance standards and Quality of Service (QoS) parameters by the Telecom Service Providers.

6.2. To formulate a ***Code of Practice for Sales and Marketing Communications*** to improve transparency as well as address security issues relating to Customer Acquisition*.*

6.3. To support the sector regulator in its efforts to enhance consumer awareness about services, tariffs, and QoS.

6.4. To make mandatory provision for ***web based disclosure of area coverage*** by telecom service providers.

6.5. To facilitate ***establishment of a National Mobile Property Registry*** for addressing security, theft and other concerns including reprogramming of mobile handsets.

6.6. To ***undertake legislative measures*** to bring disputes between telecom consumers and service providers ***within the jurisdiction of Consumer Forums*** established under Consumer Protection Act.

7. **SECURITY**

7.1. To mandate and enforce that the Telecom Service Providers take adequate measures to ensure the security of the communication flowing through their network by adopting contemporary information security standards.

7.2. To provide communication assistance to Law Enforcement Agencies (LEAs) through regulatory measures in tune with the extant license guidelines and in conformity with Indian Telegraph Act keeping in view individual privacy and following international practices to the extent possible for fulfilling National Security needs. To develop and deploy State of art system for providing assistance to LEAs.

7.3. To create an institutional framework through regulatory measures to ensure that *safe-to-connect* devices are inducted into the Telecom Network and service providers take measures for ensuring the security of the network.

7.4. To build national capacity in all areas - specifically security standards, security testing, interception and monitoring capabilities and manufacturing of critical telecom equipment - that impinges on Telecom network security and communication assistance for law enforcement.

7.5. To ensure security in an increasingly insecure cyber space, indigenously manufactured multi-functional SIM cards with indigenously designed chips incorporating specific laid down standards are considered critical. The whole electronics eco-system for this and other purposes, starting from the wafer fab needs to be built and hence is viewed as a key policy objective and outcome.

7.6. To mandate standards in the areas of functional requirements, safety and security and in all possible building blocks of the communication network i.e. devices, elements, components, physical infrastructure like towers, buildings etc.

7.7. To develop a rational criterion for sharing of costs beyond a threshold limit between Government and the service providers in implementing security measures.

8. **SKILL DEVELOPMENT**

8.1. To put in place an ecosystem:

8.1.1. *To assess the manpower requirement at different skill and expertise levels by partnering* with *National Skill Development Council* and *industry* to identify the relevant needs of the sector and prepare a roadmap.

8.1.2. To advise and assist Ministry of Human Resource Development (MHRD) to periodically upgrade academic curriculum of telecommunication courses.

8.1.3. To create an enabling framework including funding mechanism to meet the demand for human resources in the sector in partnership with Ministry of Human Resource Development (MHRD).

8.1.4. To form a high level Apex body (supported by advisory groups comprising representatives from industry, academia, PSUs, etc.) to oversee and to act as guiding and enabling source for all aspects relating to skill development in telecom field.

8.2. To strengthen and develop National Telecom Institute for Policy Research, Innovation and Training (NTIPRIT) as an institute of international repute, for

capacity building and enabling research in India centric technologies and policies in telecom domain.

8.3. To set-up a comprehensive repository in NTIPRIT for disseminating telecom field related information, standards, benchmarks, resources, program curriculum, etc.

8.4. To develop other training institutes under Department of Telecommunications and its organisations as national level telecom schools of excellence for imparting training to Government/ PSU officials and other stakeholders.

8.5. To promote and augment vocational and non-formal training institutes in urban and rural areas to cater to the skill and training needs of telecom sector.

8.6. To encourage collaboration with premier educational institutes like IITs and telecom research organisations of excellence for directing research and development to field problems.

9. PUBLIC SECTOR

9.1. To recognise the ***strategic importance of Telecom PSUs*** in nurturing/enhancing Government's intervention capabilities in matters of national security or international importance, including execution of bilateral projects funded by Government of India.

9.2. Appropriately consider the restructuring of the Public Sector Undertakings, under the   Department of Telecommunications, in terms of management, manpower and equity.

9.3. To ***encourage Public Sector Units under the DoT to identify and exploit strategic and operational synergies*** so that they play a significant role in service provision, infrastructure creation, and manufacturing.

9.4. To exploit individual strengths of organisations under DoT/DIT to their mutual benefit for ensuring these organisations to effectively flourish in the competitive telecom market while adequately supporting the security needs of the nation. Efforts will be made for according preferential treatment for procurement of products and services rendered by individual organisations.

9.5. To recognise and enhance the opportunities available through/within Telecom PSUs for deployment of indigenously developed Telecom products, with Indian IPR, to provide vital support for domestic manufacturing of Indian Telecom products in the long run.

10. CLOUD SERVICES

10.1. To recognise that cloud computing will significantly speed up design and roll out of services, enable social networking and participative governance and e-Commerce on a scale which was not possible with traditional technology solutions.

10.2. To take new policy initiatives to ensure rapid expansion of new services and technologies at globally competitive prices by addressing the concerns of cloud users and other stakeholders including specific steps that need to be taken for lowering the cost of service delivery.

10.3. To identify areas where existing regulations may impose unnecessary burden and take consequential remedial steps in line with international best practices for propelling nation to emerge as a global leader in the development and provision of cloud services to benefit enterprises, consumers and Central and State Governments.

11. TELECOM ENTERPRISE DATA SERVICES, IPV 6 COMPLIANT NETWORKS AND FUTURE TECHNOLOGIES

11.1. To formulate appropriate policies in the area of enterprise and data services to fuel further growth of India's ICTE sector and attract investments.

11.2. To facilitate the role of new technologies in furthering public welfare and enhanced customer choices through affordable access and efficient service delivery. The emergence of new service formats such as *Machine-to-Machine (M2M) communications* (e.g. remotely operated irrigation pumps, smart grid etc.) represent tremendous opportunities, especially as their roll-out becomes more widespread.

11.3. To adopt best practices to address the issues (like encryption, privacy, network security, law enforcement assistance, inter-operability, preservation of cross-border data flows etc.) related to cloud services, M2M and other emerging technologies to promote a global market for India.

11.4. To recognize the importance of the new Internet Protocol IPv6 to start offering new IP based services on the new protocol and to encourage new and innovative IPv6 based applications in different sectors of the economy by enabling participatory approach of all stake holders.

11.5. To establish a dedicated centre of innovation to engage in R & D, specialized training, development of various applications in the field of IPv6. This will also be

responsible for support to various policies and standards development processes in close coordination with different international bodies.

12. FINANCING OF TELECOM SECTOR

12.1. To create a *Telecom Finance Corporation* as a vehicle to mobilize and channelize financing for telecom projects in order to facilitate investment in the telecom sector.

12.2. To endeavor to include telecom sector projects within the ambit of financing from existing entities.

12.3. To *rationalise taxes, duties and levies affecting the sector and work towards providing a stable fiscal regime* to stimulate investments and making services more affordable.

13. ROLE OF REGULATOR, CHANGES IN LEGISLATION

13.1. To review the TRAI Act with a view to addressing regulatory inadequacies/ impediments in effective discharge of its functions.

13.2. To undertake a comprehensive review of Indian Telegraph Act and its rules and other allied legislations with a view to making them consistent with and in furtherance of the above policy objectives.

13.3. To take requisite steps to strengthen various units of DoT as may be necessary to carry out functions required to achieve the objectives of this policy.

14. OPERATIONALISATION OF THE POLICY

14.1 To take suitable facilitatory measures to encourage existing service providers to rapidly migrate to the new regime in a uniformly liberalised environment with a level playing field.

14.2 Policy will be operationalized by bringing out detailed guidelines, as may be considered appropriate, from time to time.

The primary objective of NTP-2012 is maximizing public good by making available affordable, reliable and secure telecommunication and broadband services across the entire country. The main thrust of the Policy is on the multiplier effect and transformational impact of such services on the overall economy. It recognizes the role of such services in furthering the national development agenda while enhancing equity and inclusiveness. Availability of affordable and effective communications for the citizens is at the core of the vision and goal of the National Telecom Policy – 2012. NTP-2012 also recognizes the predominant role of the private sector in this field and the consequent policy imperative of ensuring continued viability of service providers in a competitive environment. Pursuant to NTP-2012, these principles would guide decisions needed to strike a balance between the interests of users/ consumers, service providers and government revenue.