



**Department of Telecommunications
Ministry of Communications & IT
Government of India**

STRATEGIC PLAN

2011-15



1.0 INTRODUCTION

1.1 The Indian Telecom sector has come a long way since liberalization started with New Telecom Policy (1999). Telecom sector has witnessed exponential growth especially in the wireless segment in the last few years. Telecom has evolved as a basic infrastructure like electricity, roads, water etc. and has also emerged as one of the critical components of economic growth required for overall socio economic development of the country. Total number of telephone subscribers have increased from mere 76 million in 2004 to more than 764.77 Million in 30th November 2010.

1.2 The telecom sector is one of the major drivers of the growth of the Indian economy. It is the fastest growing telecom sector in the world with more than 16 million subscribers being added every month.

1.3 The auction of 3G and BWA spectrum in June 2010 has opened the gates for the availability of the latest technology and innovations for Indian consumers.

1.4 The total tele-density is now 64.34% as on 30th Nov 2010 and the telecom sector is one of the significant contributors to the Government revenue.

1.5 Although, the progress of the past few years has been spectacular, there are several areas of deficit and concern for which a well thought out strategy has to be evolved for the development of this sector.

1.6 In order to further boost the growth in Telecom sector, Government has decided to draft a Strategic Plan of Department of Telecommunications, for next five years.

2.0 Vision, Mission, Objectives and Functions

2.1 Vision:

2.1.1 To provide to the people of India, reliable and affordable tele-connectivity capable of delivering tele-services anytime, anywhere.

2.2 Mission:

2.2.1 To develop a strong, vibrant, secure state-of-the-art telecommunication network providing seamless coverage with special focus on rural and remote areas and bridging digital divide .

2.2.2 Promote Research and Development and Product Developments in cutting edge technologies and services for domestic and worldwide markets

2.2.3 Promote Development of new standards and generate IPRs to make India a leading nation in the area of telecom standardization, especially among Asia Pacific countries.

2.2.4 To create knowledge based society through proliferation of broad band facilities in every part of the country.

2.2.5 Make India a global hub, for telecom services and telecom equipment manufacturing.

2.3 Objectives:

2.3.1 To facilitate inclusive growth of telecommunications by formulating coherent policies in the following areas, for,:

2.3.2 Optimum utilization of scarce spectrum resource.

2.3.3 Ensure security in telecom networks and adopt effective measures to deal with cyber threats.

2.3.4 Grant of telecom licences in an objective and transparent manner .

2.3.5 Promotion of robust competitive Market for telecom services

2.3.6 Convergence of technologies, services and harmonization of regulatory framework

2.3.7 Convergence of IT, Broadcasting & Telecom

2.3.8 Refarming of radio frequency spectrum including increased availability for telecom services

2.3.9 Rapid expansion of Telecom infrastructure for Voice, Data & Video with special emphasis on rural and remote areas.

- 2.3.10 To have a responsive consumer grievances redressal mechanism.
- 2.3.11 Promoting R&D and indigenous manufacturing of telecom related equipment.
- 2.3.12 Facilitate Migration of networks from IPV 4 to IPV 6.
- 2.3.13 Encourage deployment of green/renewable energy sources for telecom equipment.
- 2.3.14 To introduce testing and certification of all telecom products.
- 2.3.15 Promotion of R&D and indigenous manufacture of telecom equipment for domestic and international market

2.4 Functions:

2.4.1 Policy, Licensing and coordination matters relating to Telegraphs, Telephones, Wireless Data, Facsimile, Telematic services and other like forms of telecommunications.

- Promotion of standardization, research and development in telecommunications.
- Promotion of private investment in telecommunications.

2.4.2 Financial assistance for the further research and study in telecommunication technology and for building up adequately trained manpower for telecom programme including assistance to institutions and to universities for advance scientific study and research.

2.4.3 Promotion of indigenous telecom equipment manufacturing for domestic market as well as for export.

2.4.4 To promote deployment of secure indigenous equipment for strategic, security and government networks.

3.0 ASSESSMENT OF THE SITUATION

A) STAKEHOLDERS CONSULTATION

The DoT is responsible for facilitating various activities for the growth and expansion of the telecom sector. In doing so it is ensured that the interest of various stake holders like telecom operators, equipment manufacturer, government and above all the consumer are safeguarded. Growth of Telecom in India is an outcome of initiatives and contribution by various stakeholders.

3.A.1 STAKEHOLDERS AND THEIR CORE AGENDA

i. Customers

Availability of Accessible, Affordable and Quality telecom services and prompt handling of grievances.

ii. Telecom Service Providers

Open, stable and growing telecom market which can provide good return on investment.

iii Telecom equipment manufacturers

Growing market, strengthening the production base in the country with a focus on the global market.

iv Public Sector Units in Telecom

Growth and sustainability.

v Telecom workforce in service provisioning and manufacturing

Growing market and stability. Growth of value added services, opening of more opportunities.

vi Telecom Regulatory Authority of India (TRAI)

To protect the interests of consumers and nurture conducive atmosphere for growth of telecommunications, broadcasting and cable services to enable India to play a leading role in the emerging global telecom sector.

vii Academia

To harness the potential of academia available in institutes and industry to match global standards and competitiveness.

viii Government

Growth in telecom services to continue with special emphasis on rural teledensity and broadband, orderly expansion of the networks with efficient utilization of scarce spectrum and sharing of highly capital intensive infrastructure. Continuing growth of revenues and affordable tariffs and wide choice of service providers to customers. To synergise the R&D efforts of various organizations for developing new products, standards, IPRs, etc.

B) KEY CHALLENGES FACING THE TELECOM SECTOR

India has witnessed a tremendous growth in the telecom sector in the last decade. This has been possible due to advances in technology, regulatory reforms, policy changes introduced by the Government and the dynamics of the private sector in fiercely competitive environment. This has led to more telephone connections and lowest tariffs in the world. However, the rural teledensity is still very low. There are less than 11 million broadband connections and about 40% of the country does not have wireless coverage.

Indian Telecom sector has achieved positive growth trajectories despite changes in economic conditions. Telecoms sector is influenced and shaped by various external factors. Following are the key factors which have an influence on the growth of Telecom sector:

- 3.B.1 Policies relating to Foreign Direct Investment(FDI)
- 3.B.2 Policies relating to Service Tax
- 3.B.3 Policies relating to import of Telecom equipment
- 3.B.4 Evolution and expansion of emerging telecom technologies like NGN , LTE , Cloud computing etc.
- 3.B.5 Convergence of Telecom services and networks.
- 3.B.6 Effective security system for Protection of Telecom Infrastructure
- 3.B.7 Need for evolving uniform policy for addressing Right Of Way(ROW) issues
- 3.B.8 Availability of affordable Customer Premises Equipment(CPE)
- 3.B.9 Availability of adequate power for Telecom infrastructure
- 3.B.10 Addressing various issues related to EMF radiation
- 3.B.11 Need of encouragement for development of content/application as per the regional requirement for wider and faster penetration of Broadband.
- 3.B.12 Availability of adequate spectrum
- 3.B.13 Need for promoting R & D, Product Development and indigenous manufacturing

4 Outline of the strategy

The journey of Indian telecom from low density/high tariff to high density /low tariff offers valuable learning's. Even with sharp rise in mobile services, further deepening the penetration of telecom services remains an important challenge. The future thrust of policy in telecom sector has to be on raising the competitiveness of India's telecom sector, to make it a world leader. In view of the situation analysis and the identified needs of the key stakeholders, the following policy options are proposed for achieving the long term goals and objectives of the DOT.

4.1 Spectrum availability, management and policy

- 4.1.1 Review of the Spectrum management taking into consideration
 - Global trend of moving away from command and control
 - License free spectrum allocations for low power devices/applications.
- 4.1.2 Development of a framework for using white spaces
- 4.1.3 Vacation of Spectrum
- 4.1.4 Disclosure of spectrum availability
- 4.1.5 Biannual review of NFAP and its disclosure.
- 4.1.6 Incentive mechanism for effective usage of spectrum.

4.2 Licensing Reforms

This is an area requiring attention for facilitating orderly growth of the telecom sector. In this regard following broad issues may be kept in view

- 4.2.1 De-linking license and spectrum
- 4.2.2 License renewal terms
- 4.2.3 Technology neutrality
- 4.2.4 Rationalization of license fee

4.3 Broadband Expansion

The penetration of broadband in India at present is still very low. We have just 10.55 million broadband connections in the country at the end of October 2010 as against the target of 20 million broadband subscribers by 2010 set by the Broadband Policy 2004

It has been estimated that every 10% increase in access of broadband connectivity leads to 1.38% increase in GDP.

Following key thrust areas are relevant in this regard:

4.3.1 Broadband penetration: 'Broadband for all' be made a reality by increasing availability of high speed broadband in all Gram Panchayats.

4.3.2 Allocation of resources for broadband: Ensure sufficient allocation of resources like spectrum, right of way management and infrastructure sharing for broadband.

4.3.3 Cross-sectoral use of broadband: Provide incentives to encourage the uptake of broadband in sectors like education, healthcare, public safety, government operations, etc. by subsidizing customer premise equipment.

4.3.4 Expansion of broadband in rural areas: Provide funding and support to encourage the rollout of mobile broadband on 3G/BWA spectrum speedily in rural and remote areas.

4.4 Rural communication and USOF activities

4.4.1 Incentives for pilot projects

4.4.2 Incentives for fixed wireline/wireless phones

4.4.3 Incentives for backhaul

4.4.4 Incentives for non-conventional energy sources

4.4.5 Incentives for telecom infrastructure policy

4.4.6 Policy on revision of National Charging Plan for improvement of QoS

4.5 Strengthening of PSU's/Autonomous organization

4.5.1 Reimbursement to BSNL for loss making socially desirable activities

4.5.2 Support to MTNL for bearing Pension liability

4.5.3 Strengthening of ITI

4.5.4 Strengthening of CDoT

4.5.5 Strengthening of TCIL

4.5.6 Strengthening of TEC

4.6 Strengthening of R&D and promotion of Telecom Equipment Manufacturing

4.6.1 Creation of R&D, IPR and product development Fund

4.6.2 IPR Generation

- 4.6.3 R&D and product development
- 4.6.4 Development of Testing Labs
- 4.6.5 Telecom Centres of Excellence (TCoE)
- 4.6.6 Development of Human Resources

5. Implementation Plan

The following Implementation Plan is proposed

Option Sl. No.	Policy Option	Stakeholder Responsible	Funds Required	Tracking and Monitoring	Year & Priority
5.1	Spectrum Availability, Management and Policy				
5.1.1	Framework for using white spaces	DoT, DoS, MoI & B		DoT, Telecom Commission (TC),	31/3/2016 High
5.1.2	Vacation of Spectrum	DoT, DoS, MoI & B	Fund for alternate network	DoT, Telecom Commission (TC)	31/3/2015 High
5.1.3	Biannual review of NFAP and its disclosure.	DoT, DoS, MHA, TC		DoT, Telecom Commission (TC)	31/3/2013
5.1.4	Disclosure of Spectrum availability	DoT	NIL	DoT	31/3//2012 Medium
5.1.5	Policy on Incentive mechanism	DoT, MoF	NIL	DoT, TC,	31/3/2013 Medium
5.2	Licensing Reforms				
5.2.1	Policy on De-linking license and spectrum	DoT, TRAI	NIL	DoT, TC,	31/3/2013 High
5.2.2	Policy on License Renewal	DoT, TRAI, Operators	NIL	DoT, TC	31/3/2012 Medium
5.2.3	Service and Technology neutrality	DoT	NIL	DoT, TC	31/3/2012 High
5.2.4	Rationalisation of license fee	DoT, TRAI, MoF	NIL	DoT, TC,	31/3/2012 High
5.3	Broadband Expansion				
5.3.1	Broadband penetration	DoT , DIT MoPR , PRIs	Funds from USOF	DoT, Telecom Commission (TC),	31/03/2013 Medium
5.3.2	Allocation of resources for Broadband	DoT, MoF, State Governments, Local bodies	NIL	DoT	31/3/2012 High
5.3.3	Cross-sectoral use of Broadband	DoT, DIT, MHRD, MoPR MoHFW, State Governments, Consumer premised equipment manufacturers,	Funds from USOF	DoT, TC, DIT	31/3/2012 Medium

5.3.4	Expansion of Broadband in Rural areas	DoT, DIT, MoPR, PRIs, State Govts.	Funds from USOF	DoT, TC,	31/3/2013 Medium
5.4	Rural Communication and USOF activities				
5.4.1	Incentives for pilot projects	DoT, USOF, State Governments	Funds from USOF	DoT, TC,	31/3/2012 Medium
5.4.2	Incentives for fixed wireline/wireless phones	DoT, USOF	Funds from USOF	DoT,	31/3/2012 Medium
5.4.3	Incentives for backhaul	DoT, USOF	Funds from USOF	DoT, TC,	31/3/2012 High
5.4.4	Incentives for non-conventional energy sources	DoT, USOF, MNRES	Funds from USOF	DoT, TC,	31/3/2013 High
5.4.5	Incentives for telecom infrastructure policy in States	DoT, USOF, State Governments	-	DoT, TC	31/3/2012 Medium
5.4.6	Policy on revision of National Charging Plan for improvement of QoS	DoT, TRAI	-	DoT, TC	31/3/2012 Medium
5.5	Strengthening of PSU's/Autonomus organization				
5.5.1	Reimbursement to BSNL for loss making socially desirable activities*	DoT, TC MoF	Funds from USOF	DoT, TC	31/3/2012 High
5.5.2	Support to MTNL for bearing Pension liability	DoT, TC, MoF	Share from License Fee & Taxes paid by BSNL & MTNL	DoT, TC	31/3/2012 High
5.5.3	Strengthening of ITI	DoT, TC	NIL	DoT, TC	31/3/2012 Medium
5.5.4	Strengthening of CDoT	DoT, TC	NIL	DoT, TC	31/3/2012 Medium
*Policy on Traffic Independence					
5.5.5	Strengthening of TCIL	DoT, TC	NIL	DoT, TC	31/3/2012 Medium

5.5.6	Strengthening of TEC	DoT, TC	NIL	DoT, TC	31/3/2012 Medium
5.6	Strengthening of R &D and promotion of Telecom Equipment Manufacturing				
5.6.1	IPR Generation	TEC, TCoE, Industry, C-DOT		DoT,TC	31/3/2014
5.6.2	Telecom Centres of Excellence (TCoE)	DoT, IITs, IIMs, IISc			31/3/2013 Medium
5.6.3	R & D Fund	DoT,TEC,TCoE			31/3/2013 Medium
5.6.4	Development of Human Resources	DoT,TEC,TCoE, C-DOT, Training Institutes of DoT			31/3/2015 Medium
5.6.5	R&D and product development	DoT, Equipment Manufacturers, Telecom Operators, C-DoT, TCoE,TEC		DoT, TC,	31/3/2015 Medium
5.6.6	R&D and Testing Labs	DoT, Pvt. Labs, TCoE,TEC			31/3/2014 Medium

6 STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREAT (SWOT) ANALYSIS

The success of Telecom sector is very inspiring for the whole of Indian economy. Like any other sector, Telecom sector also has its Strengths, Weaknesses, Threats and Opportunities which have been identified as below:

6.1 Strengths

- I. Fastest growing telecom market.
- II. Progressive reform process.
- III. Forward looking approach of the Government.
- IV. Technology neutrality.
- V. Formulation of policies in tune with the growth requirement.
- VI. Fast adaptation of technological development i.e. Mobile Number Portability(MNP), Next generation Network (NGN), 3G and Broadband Wireless Access(BWA), IPv6 etc.
- VII. Establishment of Regulatory /Dispute resolution bodies.
- VIII. Framework for responsive Customer Grievance Mechanism.
- IX. Establishment of decentralized units of DoT like, Controller of Communication Account (CCA) and Telecom Enforcement, Resource and Monitoring (TERM) units etc.
- X. Liberal FDI policy.
- XI. Healthy competition resulting in the most affordable tariffs in the world.
- XII. Policy of infrastructure sharing leading to optimum utilization of resources.

6.2 Weaknesses

- I. Lack of indigenous Telecom Manufacturing and R&D
- II. Comparatively slower growth of Telecom services in rural/remote areas.
- III. Low Broadband penetration in the country
- IV. Lack of local content/application development.
- V. Low profitability of Telecom PSUs.
- VI. Non availability of adequate spectrum
- VII. Utilization against the available corpus of USOF.
- VIII. Non availability of adequate power supply for Telecom Services.
- IX. High Cost of data hosting in India.

6.3 Opportunities

- I. For developing a new comprehensive Telecom policy.
- II. For accelerating the growth of teledensity in the country.
- III. For creation of telecom infrastructure in rural and remote areas by utilization of the USO Fund.
- IV. For laying of Optical Fibre Cable (OFC) to uncovered areas and effective utilization of the existing resources to provide backhaul connectivity.
- V. For huge Broadband potential in the country.
- VI. For R&D, product development and indigenous telecom manufacturing.

- VII Development of local content/application.
- VIII Development of affordable equipment at the customer end.
- IX Adoption of emerging technologies.

6.4 Threats

- I. Non availability of adequate spectrum for telecom services
- II. Underperformance of PSUs resulting in industrial unrest and erosion of value of government equity.
- III. Dependence on foreign telecom equipment suppliers.
- IV. Cyber threats on ICT networks, leading to security concerns.
- VI. Obsolescence of existing network elements due to fast changing telecom technologies.

7.0 **Linkage between Strategic Plan and RFD**

The proposed strategic plan though slightly modified, is yet in tune with the Vision, Mission, Functions and Objectives of the DoT, as stated in its RFD. However, the strategic plan goes beyond the scope of RFD, in view of its longer time horizon of 5 years instead of 1 year for RFD. The revised timelines as well as the priority levels of various policy options of the proposed strategic plan have been brought out in the Implementation Plan, as stated above. The RFDs of the forthcoming years would be prepared on the basis of the proposed strategic plan.

8.0 Cross departmental issues impacting the implementation and other cross functional issues

Implementation of this strategy requires certain performance requirements from other departments. These include the following:

8.1 Cross Departmental Issues Impacting the Implementation

Sl. No.	Department	Requirement from Department	Consequence of Non-Performance by the Department
1.	Space	Release of spectrum in the 2.5 –2.69 GHz and 3.4 – 3.6 GHz band	Shortage of spectrum for 4G services like super high speed data and video streaming
2.	I & B	Migration to digital broadcasting and release of spectrum in the 700MHz band	Shortage of spectrum for mobile broadband services in this most efficient and cost-effective band which requires one-third the capital investment compared to other bands like 2.3 GHz band
3.	Home	A-Develop a comprehensive system for telecom network security with clear guidelines for requirements from foreign and domestic vendors of equipment	Hurdles in roll-out and expansion of telecom networks
		B- Implement a simplified system for subscriber verification	Security risks and inconvenience to consumers
		C- Develop an automated system of lawful interception & monitoring	Security risk and invasion of privacy
4	Finance (Expenditure)	Agree to the spending of USOF money already available in a non-lapsable fund	Delay in funding and implementation of USOF schemes

8.2 Other Cross Functional Issues

8.2.1 Environmental issues - The present usage of generators for powering the telecom equipments and towers is not only wasteful but also costly and environmentally hazardous. The people in rural areas, living without electricity face a huge challenge in charging their mobile phones, laptop computers etc. thereby, increasing the 'Digital Divide'. Therefore, there is an urgent need to develop and market solar powered handsets, devices and equipments, to enable the people living in remote rural areas to participate in the

Telecom and IT revolution taking place in the country and the world. Similarly, early development and standardization of universal chargers for mobile phones would lead to huge saving of scarce resources. A clear policy is also needed for safe disposal of e-waste, generated due to proliferation of new mobile handsets and their short life cycle and quick obsolescence.

8.2.2. Social issues – Telecom infrastructure is indeed the vehicle for convergence of IT & broadcasting. With the convergence of phones, computers, TV etc., this sector has become a vital instrument for the spread of education, information, entertainment and empowerment of masses by giving them access, information and networking opportunities. Therefore, in times to come, a holistic approach to various policy options would be necessary.

8.2.3 Health issues – It has been reported that the radiation from active part of telecom infrastructure and long term usage of mobile phones is a potential health hazard

9 Monitoring & Review Arrangements

Responsibility for monitoring and review of various policy options proposed in the strategic plan have been detailed in the Implementation Plan. The strategic plan is to be monitored primarily by the DoT.