

EXECUTIVE SUMMARY

Department of Electronics and Information Technology (DeitY) in the Ministry of Communications and Information Technology is responsible for formulation, implementation and review of national policies in the field of Information Technology, Electronics and Internet (all matters other than licensing of Internet Service Provider). The Vision of the Department is e-Development of India as the engine for transition into a developed nation and an empowered society. The Mission is to promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of the Electronics, IT & ITeS industries, **enhancing India's role in Internet Governance**, adopting a multipronged approach that includes development of human resources, promoting **R&D and** innovation, enhancing efficiency through digital services and ensuring a secure cyber space..

The objectives of DeitY are as under:

- **e-Government:** Providing e-infrastructure for delivery of e-services
- **e-Industry:** Promotion of electronics hardware manufacturing and IT-ITeS industry
- **e-Innovation / R&D:** Implementation of R&D Framework - Enabling creation of Innovation/ R&D Infrastructure in emerging areas of ICT&E/Establishment of mechanism for R&D translation
- **e-Learning:** Providing support for development of e-Skills and Knowledge network
- **e-Security:** Securing India's cyber space
- **e-Inclusion:** Promoting the use of ICT for more inclusive growth

In order to operationalise the objectives of the Department, schemes are formulated and implemented by the Department. The schemes are implemented directly by the Department and through the organizations/institutions under its jurisdiction. To make the technology robust and state-of-the-art, collaboration of the academia and the private/public sector is also obtained. The Department has two Attached Offices, four Statutory Organizations and seven Autonomous Societies besides three Section 25 companies under its control to carry out the business allocated to the Department.

Chapter I of this document highlights the functions of the Department, organizational set up and major schemes/programmes being implemented by the Department. Chapter II depicts the schemes/programmes of the Department, financial outlays, physical outputs, projected outcomes, etc. for the financial year 2014-15; Chapter III details the reforms measures and policy initiatives; Chapter IV reviews past performance of the schemes/programmes; Chapter V portrays financial analysis of various schemes/programmes; and Chapter VI reviews the performance of Statutory and Autonomous Bodies.

Overview

Given the above objective, the key initiatives and achievements are as follows:-

Software and Services Sector

The sector is estimated to aggregate revenues of USD 118 billion in 2013-14 with the IT software and services sector (excluding hardware) accounting for over USD 105 billion of revenues. During this period, direct employment is expected to reach 3.1 million, an addition of 166000 employees, while indirect job creation is estimated at 10 million. As a proportion of national GDP, the sector revenues have grown from 1.2 per cent in FY1998 to nearly 8.1 per cent in 2013-14.

Export revenue (excluding hardware) are estimated to gross USD 86 billion in FY2013-14, growing by 13.1% over FY 2012-13 and contributing nearly 82% of the total IT-BPM revenues (excluding hardware), employing over 2.46 million employees. A combination of solutions around disruptive technologies such as SMAC, artificial intelligence, platforms, embedded systems etc have become the life-force of the industry.

IT services exports is expected to be the fastest growing segment in FY 2013-14, generating exports of USD 52 billion, driven by collaboration, communication, business intelligence projects, and integration of SMAC services with traditional offerings. During FY 2013-14, BPM exports is likely to be a USD 20 billion industry in itself – emergence of BPaaS/cloud based services and analytics leading to strategic shifts in traditional service lines with increased focus on non-linear growth, platforms and analytics. Software products and ER&D segment achieved a double-digit growth rate of 11% over FY 2012-13 and is estimated to generate exports of US\$ 14.2 billion in FY 2013-14. The domain specific solutions focusing on convergence, customization, efficiencies and localization, M2M technology and newer technologies around SMAC are playing a significant role in driving growth of ER&D and software products. With over 3,000 firms, India is emerging as a hotbed for software products with SMAC and a supportive ecosystem creating successful stories.

While US continues to be a largest geographic market for India, accounting for 62 per cent, the highlight for the year was revival in demand from Europe, which grew at 14% in FY 2014. BFSI continues to be the largest vertical segment, accounting for over 41% of industry exports; however, emerging verticals such as retail, healthcare, utilities, travel & transportation and media are estimated to grow faster. These verticals account for about 25% share in total IT-BPM exports.

Domestic IT-BPM revenue (excluding hardware) is expected to grow at 9.6% to gross INR 1147 billion in 2013-14. The domestic IT services growth is likely to be at 9.7% as large enterprises exhibit cautious spending pattern; driven by technology upgrades in BFSI, telecom and State Governments, and compliance MIS investments. The domestic BPM services growth is estimated at 11.9% in FY 2013-14 boosted by demand from select customers reverting to outsourcing business processes, especially from the BFSI, automotive and retail sectors. Domestic software products is estimated at 9.5% due to increased demand for vertical-specific and

SMAC-based solutions. With the advent of cloud, the next opportunity is India's 47 million SMBs – who are able to rapidly bridging the technology adoption gap.

Electronics/IT Hardware Manufacturing Industry

It has been estimated that demand of electronics products and systems in India would grow to about USD 400 Billion by 2020. At the conventional rate of growth of domestic production, it would only be possible to meet demand of about USD 100 Billion by 2020. The Government attaches high priority to electronics & IT hardware manufacturing. It has the potential to generate domestic wealth and employment, apart from enabling cyber-secure ecosystem.

There have been some efforts for rapid growth of the electronics (including telecom) hardware manufacturing sector in the past like 100% FDI permitted under automatic route, no Industrial license requirement, payment of technical know-how fee and royalty for technology transfer under automatic route. However, these efforts have not led to a substantial impact; partly because of India is a signatory to the Information Technology Agreement (ITA-1) that has resulted in a zero duty regime on import of the goods covered under the Agreement. India has also executed Free Trade Agreements (FTAs) and Preferential Trade Agreements (PTA) with several countries/ trading blocks, which has enabled zero duty import of items not covered under ITA. Other factors hampering the growth of electronics includes lack of reliable power, high cost of finance, poor logistics & infrastructure, weak components manufacturing base, lack of targeted & proactive R&D in collaboration with industry etc.

The Union Cabinet has approved the National Policy on Electronics (NPE) 2012 on October 25, 2012. With the vision “To create a globally competitive electronics design and manufacturing industry to meet the country's needs and serve the international market”.

The policy is expected to create an indigenous manufacturing eco-system for electronics in the country. It will foster the manufacturing of indigenously designed and manufactured chips creating a more cyber secure ecosystem in the country. The increased development and manufacturing in the sector will lead to greater economic growth through more manufacturing and consequently greater employment in the sector. ESDM is of strategic importance as well.

To achieve these objectives, the policy proposes various strategies. The numbers of initiatives have been taken in line with the objective outlined in the NPE. It is an endeavour to consolidate the growth and brand of “Electronics India” and build on the foundation of new policy initiatives announced by the Government. The initiatives in brief are mentioned under the title **Digital India Programme- Promotion of Electronics Manufacturing.**

National Policy on Information Technology (NPIT) – 2012

Looking into the changing dynamics of the ICT sector and also to give a fresh impetus to the the sector Government of India has approved the National Policy on Information technology, 2012. The principal policy objectives of the IT Policy is to optimally leverage our existing and evolving ICT infrastructure and capabilities to meet the growing need for high quality social sector services like education, health, skill development, welfare or benefit programmes, e-government services, economic services like banking, insurance, transportation and logistics, and other societal needs like entertainment, communications, social media, information dissemination, etc. Another major objective is to use ICT capabilities to enhance competitiveness and efficiency in manufacturing across the board and in key infrastructure sectors like power. Other policy objectives include leveraging the mushrooming demand for products and services in these and other areas to foster innovation, catalyze manufacturing, encourage relevant R&D through academic institutions and industry and create a range of products and services that not only meet domestic needs but also address global demand as a logical extension of the IT and IT- Enabled Services (ITES) industry. Under the National IT policy, 2012 IT-ITES market is targeted to grow to 300 bn USD by 2020.

Digital India Programme

Government of India has approved the 'Digital India' programme with the vision to transform India into a digitally empowered society and knowledge economy. Digital India is an umbrella programme that covers multiple Government Ministries and Departments. It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that each of them can be implemented as part of a larger goal. Each individual element stands on its own, but is also part of the entire Government. Digital India is implemented by the entire Government and being coordinated by the Department of Electronics & Information Technology (DeitY).

The vision of Digital India is centred on three key areas, viz., (i) Infrastructure as a Utility to Every Citizen (ii) Governance and Services on Demand and (iii) Digital Empowerment of Citizens. Digital India aims to provide the much needed thrust to the nine pillars of growth areas, viz., (i) Broadband Highways (ii) Universal Access to Phones (iii) Public Internet Access Programme (iv) e-Governance – Reforming Government through Technology (v) e-Kranti - Electronic Delivery of Services (vi) Information for All (vii) Electronics Manufacturing (viii) IT for Jobs and (ix) Early Harvest Programmes.

The progress of various projects under the nine pillars is summarised below:

Pillar 1: Broadband Highways

NOFN project is likely to be completed in a phased manner as follows. In phase-I, 50000 Gram Panchayats would be covered by the end of current financial year. In Phase-II, additional 1,00,000 Gram Panchayats would be connected by the end of next financial year. In Phase-III, additional 1,00,000 Gram Panchayats would be connected by 31.12.2016.

National Information Infrastructure is proposed to be established to provide high speed connectivity to Government offices and institutions at state, district, block and panchayat levels.

Pillar 2: Universal Access to Mobile Connectivity

There are around 55,619 villages in the country that do not have mobile coverage. As part of the comprehensive development plan for North East, providing mobile coverage to uncovered villages has been initiated. Mobile coverage to remaining uncovered villages would be provided in a phased manner. Preparation of DPR for Himalayan States (J&K, Himachal Pradesh and Uttarakhand) is targeted in the current financial year.

Pillar 3: Public Internet Access Programme

Common Services Centre 2.0 scheme has been proposed to establish one common services centre in each of the 2,50,000 Panchayats in the country.

Pillar 4: e-Governance – Reforming Government through Technology

DeitY has prepared the Government Process Reengineering (GPR) guidelines to facilitate Government Departments in undertaking GPR and shared it with DARPG for finalization and circulation to all Central Ministries/ Departments and States/UTs.

Pillar 5: e-Kranti (NeGP 2.0) – Electronic delivery of services

The DCN on e-Kranti has been revised to align it with the Digital India Programme. It has been circulated for Inter-Ministerial consultation on 16th September 2014. The comments received from various Ministries/ Departments have been appropriately incorporated. The final Cabinet Note on e-Kranti would be placed before the Cabinet for approval after taking the approval of MCIT.

Pillar 6: Information for All

Online messaging to citizens on special occasions/ programmes has been facilitated through email and SMS platform. My Gov.in, a platform for citizen engagement in governance, has been implemented as a medium to exchange ideas/ suggestions with the Government. It facilitates two way communications between citizens and Government to bring in good governance.

Pillar 7: Electronics Manufacturing – Target NET ZERO Imports

Several initiatives have been taken under Digital India Programme to promote electronics Hardware Manufacturing in the country as mentioned under the title **Digital India Programme- Promotion of Electronics Manufacturing**.

Pillar 8: IT for Jobs

The Administrative Approval for implementation of the '**North East BPO Promotion Scheme (NEBPS)**' under **Digital India Programme**, to incentivize establishment of 5,000 seats with capital support in the form of Viability Gap Funding (VGF), with an outlay of Rs. 50 crore (Rupees fifty crore only) for remaining period of 12th Five Year Plan i.e. 31.03.2017 in North East Region (NER) has been issued on 30th January 2015. *The Software Technology Parks of India (STPI) shall be the Nodal Agency for implementation of the NEBPS.*

Pillar 9: Early Harvest Programmes

Some components of Early Harvest Programmes like Government greetings to be e-Greetings, IT platform for messages, SMS based weather information, disaster alerts have been already made operational. The work on other components like Biometric attendance, Secure email within the government, Standardise government email design, Wi-Fi in All Universities, School Books to be eBooks, Public Wi-Fi hotspots etc. has also begun. The beta version for Lost and Found Portal is also ready.

National e-Governance Plan (NeGP)

National e-Governance Plan (NeGP) was approved by the Government on 18th May, 2006 with a common vision, implementation methodology and management structure. It comprises 31 Mission Mode Projects (MMPs) having a singular mission to make all Government services accessible to the common person in his/her locality, through efficient, transparent and reliable mechanisms. 24 out of the 31 Mission Mode Projects (MMPs) under National e-Governance Plan (NeGP) are live and delivering 222 out of the 252 envisaged services.

Major Schemes / Projects under NeGP:

State Data Centers (SDCs): 23 SDCs have been made operational and SDCs in 1 state are under Implementation. 18 states are utilizing more than 50% of the SDC infrastructure.

State Wide Area Networks (SWANs): SWAN proposals from 34 states/UTs have been approved and the SWANs in 34 states have been made operational. 26 states/UTs have been integrated using NKN. 29 states/UTs are utilizing more than 60% of bandwidth of the existing link capacity.

Common Services Centers (CSCs): The CSCs are ICT enabled kiosks with broadband connectivity to provide various Government, private and social services at the doorstep of the citizens. 139,168 CSCs have been rolled out covering 36 states/UTs.

e- District: e-District services have been launched in 305 non-pilot districts of the country. 35 states/UTs have signed the contract with the selected State Project Management Unit (SPMU) Agencies. 100% District e-Governance Societies (DeGS) have been formed in 30 states / UTs and DeGS has been formed in total 631 districts across the country. 469 e-District Project Managers (eDPMs) have been selected across 31 states/UTs. 23 states/UTs have selected the System Integrators for state-wide rollout of the project.

Mobile Governance: The Mobile Seva project with enhanced infrastructure and services was dedicated to the nation on 23rd December 2013. The infrastructure for Mobile Seva has been enhanced with data centre (DC) in Shastri Park, New Delhi, and disaster recovery (DR) in Pune. 1470 Government departments and agencies at central, state and local levels have been integrated with the Mobile Seva platform. For Pull SMS services, short code 166 / 51969 and long code 9223166166 have been

operationalised. The total number of Push SMS transactions has crossed 253 crores. The total number of services available to citizens and businesses over Pull SMS has reached 389. On the Mobile Seva AppStore, a total of 313 live m-apps have been developed and hosted. To strengthen DeitY's mission to m-enable government departments and agencies across the nation, another project –“m-Enablement of Government Departments through Mobile Seva”, was approved in June 2014 for 36 months.

Capacity Building Scheme: The CBMC facilitated the appointment of 261 professionals in 36 states & UTs and various orientation programmes for them.

A Knowledge Management collaboration portal with an active community of more than 1100 members is currently being managed at www.mynegp.com. It is an active forum for discussions, information sharing and announcements and is engaging the community of SeMTs, e-Governance practitioners (Government officers) and NeGD employees. Various training programs, workshops and meets have been regularly conducted under Capacity Building scheme e.g.

- Leadership Meets for Ministers/MLAs and senior government officials.
- Specialized Training for e-Governance Programme(STeP) of courses in e-Governance specifically in the areas like government process reengineering, business models & PPP, project management, regulatory framework for e-Governance, technology management etc.
- Thematic Workshops to share best practices and to create a platform for cross-learning. NeGD has also conducted 5 domain specific thematic workshops namely capacity building & change management, technology management, RFP toolkit, Detailed Project Report (DPR) preparation & evaluation and Cyber Security.
- Chief Information Officers (CIO) program for Chief Information Officers from central line ministries and states.

State Portal, State Service Delivery Gateway (SSDG) & Electronic Forms:

23 states/UTs have gone live with 459 services. DPRs and funding have been approved for 33 states/UTs in the country and a total amount of Rs. 217.74 crores have been released to the states/UTs. Out of these states/UTs, 31 states/UTs have already floated RFPs for selection of the implementing agency (IA) for the project.

GI Cloud (MeghRaj): The first National Cloud by NIC has been launched on 4th February 2014. National Cloud is a state-of-the-art secured government Cloud set up by NIC providing services over the ICT Infrastructure spanning its National Data Centers. The Cloud Services available are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS) and Storage as a Service (STaaS). 61 departments are already using the services of National Cloud. Setting up of Cloud Management Office has already been approved and preparation of RFP for the same is under progress. Two states have already implemented cloud solution, while 4 states are in advanced stage of Cloud implementation.

Rapid Replication of Applications: The “Rapid Replication Roll-out Initiative” is a unique initiative which leverages sharing of infrastructure and rapid replication of successful applications across states. The initiative requires customization of successful

applications as per the seeker state's requirements and then hosting this application either at the giver state SDC or seeker state SDC. The proposals of 5 applications were approved by DeitY.

The implementation status of 5 applications is as follows:

- XLN- Implemented in Chhattisgarh, Himachal Pradesh, Kerala and Karnataka
- ePass- Implemented in Tripura, HP and Karnataka, application ready to be launched in Jharkhand (date of launch awaited from the Govt. of Jharkhand)
- eHospital: Phase - I implemented in 3 hospitals of Karnataka (Jayanagar Hospital, KC Hospital and Sanjay Gandhi Hospital)
- Meeseva: Implementation in progress in Assam, HP and Bihar
- HRMS: Data digitization in progress, application customization completed, implementation to be done after completion of Data Digitization

e-Bharat: A total of 45 projects with a total outlay of Rs. 675.89 crore have been considered under e-Bharat scheme for funding assistance. 39 projects amounting to Rs. 484.37 crore have been approved. Funds for 33 projects have been released to the implementing agencies in various states/UTs. DeitY has identified some projects which may be considered as national initiatives as they are cross cutting in nature. DeitY has also identified projects which may be considered as pilot projects for national Mission Mode Projects. DeitY has approved 6 projects under rapid replication initiative, namely, 2 projects of ePASS, XLN, eHospital, eHRMS and Mee Seva. 4 applications have been identified to be developed as products which will be made available on the e-Gov Appstore for implementation in other states.

Localisation Projects Management Framework (LPMF): Localisation Projects Management Framework (LPMF) project envisages to make Government services available to the citizens in their own languages. Four e-Governance awareness workshops were conducted for MMP leaders for dissemination of information about LPMF. Four training programmes were conducted for System Integrators and Consultants. A portal <http://localization.gov.in> was launched on 18th Feb 2014 for dissemination of information and providing basic localization tools and services. Crawling of content and development of translation memories to enable automated localization of User Interfaces (also known as surface localization) for web portals under seven MMPs viz. Health, PDS, Passport, Agriculture, Road Transport, e-District and Education MMPs have been completed. Localization of the additional 15 web portals under another 7 MMPs is under process. Over 10,000 tools and resources have been downloaded since launch of the portal on 18th February, 2014. The tools for internal localization and sending SMS alerts have been provided to Agriculture MMP for <http://farmer.gov.in> portal. <http://it.maharashtra.gov.in> has been successfully localized by members of the Marathi department of DIT, Govt. of Maharashtra using the LPMF.

The Electronic Delivery of Services (EDS) Bill, 2011

The Electronic Delivery of Services (EDS) Bill 2011 was introduced in the Lok Sabha on 27th December 2011. The Bill was referred to the Parliament Standing Committee on Information Technology on 5th January 2012. The Committee has submitted its Report to Lok Sabha (laid in Rajya Sabha) on 30th August 2012. The Bill has been approved by the Cabinet on 18th March 2013 and has to be introduced in the Parliament as per established procedure. Ministry of Law and Justice, Government of India has suggested to

DeitY that in view of the stand taken by Ministry of Law and Justice not to make references to a legislation which is not in existence or which is yet to be enacted, the proposed Electronic Delivery of Services Bill, 2013 should await enactment of the Right of Citizens for Time Bound Delivery of Goods and Services and Redressal of Grievances Bill, 2011 (now renamed as “Right to Services and Grievances Bill, 2014).

Department of Electronics & Information Technology (DeitY), in the meanwhile, has proposed to seek Cabinet Approval for introduction of EDS Bill, 2015 in the Parliament which would mandate provisioning all public services compulsorily through electronic means. A Draft Note for the Cabinet in this regard is currently under inter-ministerial consultations.

National Knowledge Network (NKN)

In March 2010 the CCI approved the establishment of the National Knowledge Network (NKN) at an outlay of Rs.5990 Crore, to be implemented by NIC over a period of 10 years.

Objective:

The objective of the NKN is to inter-connect all knowledge institutions across the country through high speed data communication network to encourage sharing of resources and collaborative research. These would cover about 1500 Institutions comprising of all Universities, Institutions of Higher Learning, and Research.

The **salient features** of the NKN are:

- a) Establishing an ultra-high-speed national information network for the country.
- b) Connecting all major knowledge institutions (Universities & Research Institutions) for knowledge creation, collation and dissemination.
- c) Connecting the Indian knowledge institutions to the International knowledge community for knowledge sharing.
- d) Enabling sectoral virtual networks in various application areas (Agriculture, Health, Education, E-governance and Grid Computing).
- e) Setting up a platform for development of new processes and technologies based on high bandwidth and low latency networks.
- f) Enabling a test-bed for network and securing technology development for the country.
- g) Link to Global Networks to collaborate with the research communities across the globe.

A high speed data communication network would be established, which would interconnect Institutions of higher learning, and research. NKN will facilitate creation, acquisition and sharing of Knowledge resources among the large participating Institutions; collaborative research; countrywide classrooms (CWCR) etc. and help the country to evolve as Knowledge Society.

Cyber Security

With the growing use of information technology in all walks of life, threats to cyberspace have become one of the most serious economic and national security challenges for our country and the world at large. The Cyber space, being borderless and anonymous, is exploited by malicious actors and adversaries for carrying out malicious activities in the cyber space. Security of cyber space has become an important part of national agenda all over the globe. Cyber Security is one of the key components envisaged for the success of the ambitious “Digital India” programme of the Government.

Cyber Security requirements are quite dynamic and change with the threat environment. Accordingly, Government is taking appropriate measures to address these threats by way of an integrated approach with a series of legal, technical and administrative steps to effectively deal with the issue of cyber security in the country and to ensure that necessary systems are in place to address the growing threat of cyber attacks.

The Cyber Security programme aims at building a secure and resilient cyberspace for citizens, businesses and Government and is implemented by way of targeted actions in six focus areas during the XII plan period: (a) Enabling Legal Framework, (b) Security Policy, Compliance and Assurance, (c) Security R&D, (d) Security Incident – Early Warning and Response, (e) Security awareness, skill development and training and (f) Collaboration.

To meet the dynamically changing requirements of Cyber Security, actions have been taken to continue and strengthen the earlier initiatives and put in place new initiatives consistent with emerging threats and evolving technology scenario.

Electronics/IT Hardware Manufacturing

Promotion of IT/ITeS Industry (Erstwhile Software Technology Parks of India)

Software Technology Parks of India was established and registered as an Autonomous Society under the Societies Registration Act 1860, under the Department of Electronics and Information Technology, Ministry of Communications and Information Technology, Government of India on 5th June 1991 with an objective to

implement STP/EHTP Scheme, set-up and manage infrastructure facilities and provide other services like technology assessment and professional training.

REGULATORY ROLE (STP and EHTP schemes):

In an effort to achieve its primary objective of promotion and development and export of software and software services, STPI has been implementing the Software Technology Parks (STP) scheme for promoting software & Information Technology service companies and Electronic Hardware Technology Park Scheme (EHTP) for Electronic hardware industry. These schemes have been widely successful and the exports made by the units registered under them have grown manifold over the years. As on 31.12.2014, more than 3,300 units were operating under STP scheme and more than 80 units were operating under EHTP scheme. During the FY 2014-15 (till December 2014), export from STP units was Rs. 1,97,690 Cr.(estimated) and from EHTP units was Rs.3,523 Cr. (estimated).

STP and EHTP schemes are ongoing schemes but the income tax benefit under Section-10A of Income Tax Act were available till 31/3/2011. The units under the STP and EHTP regimes continue to avail the exemptions from custom/excise duties, Central Sales Tax reimbursement and other benefits.

HIGH SPEED DATA-COMMUNICATION FACILITY:

One of STPI's remarkable contributions to the software-exporting sector is provision of High-Speed Data Communication (HSDC) services. SoftNET, the state-of-the-art HSDC network, designed and developed by STPI is available to software exporters at competitive prices.

STPI provides the following HSDC services through its network:

1. International private Leased Line Circuits
2. Soft point services
3. VSAT services
4. Collocation services

- **SoftPOINT**

The SoftPOINT service is the provisioning of "International Private Leased Circuit" (IPLC). IPLC's are digital circuits available for international data communications, which are used for data transmission, communication etc. Secure and exclusive to the user, IPLC's are ideal for companies that have high volume of international data transmission.

- **SoftLINK**

SoftLink is a service offering Internet access on a shared and dedicated basis. The service was launched to cater to the rising demands of the industry for better quality and committed services. Today SoftLink services enjoy a large customer base amongst STPI's datacom services. The total bandwidth sold during FY 2014-15 (till December 2014) was around 1375 E1.

- **Last Mile Connectivity (Local Loop)**

STPI has set up its own digital Microwave networks using Point-to-Point and Point-to-Multipoint microwave networks, which cater to the primary needs of the STPI units. With the addition of Point-to-Point radio networks, the network was further strengthened enabling the delivery of 2 Mbps, NxE1 links over the last mile under the STPI's overall control.

INCUBATION FACILITY FOR SMEs AND ENTREPRENEURS:

STPI has already setup 53 centres across the country and few more STPI centres are in-principle approved which are in different stages of implementation. STPI has facilitated regional development by uniform dispersal of STP units across secondary cities and thereby increasing employment opportunities in those regions. STPI has created basic infrastructural support in the form of *Business Incubators* with state of art facilities with Plug & Play facilities for start-up companies. These incubation services enable small and medium enterprises to set up operations at minimal fixed costs with low start-up investment, thereby encouraging entrepreneurship and creating jobs.

CREATION OF INCUBATION SPACE AND INFRASTRUCTURE:

STPI is planning to construct incubation and infrastructure facility across the country to promote and dispersal of IT/ITES industry in Tier-II and Tier-III cities. To fulfill the requirement approximately 1 lakhs sq.ft. Build-up area shall be created across the country at the estimated cost of around 45 Cr.

Digital India Programme- Promotion of Electronics Manufacturing

Under the Digital India programme of the new Government, the Government has laid down the roadmap to transform India into a digitally empowered society and knowledge economy. One of the pillars of this programme is promotion of electronics manufacturing.

Earlier, the Government had approved the National Policy on Electronics (NPE) 2012 on October 25, 2012 with the vision “To create a globally competitive electronics design and manufacturing industry to meet the country’s needs and serve the international market”.

The following initiatives are being taken to develop the electronics manufacturing in the country are mentioned below:

1. Modified Special Incentive Package Scheme (M-SIPS) provides financial incentives to offset disability and attract investments in the sector.
2. Policy for providing preference to domestically manufactured electronic products in Government procurement is under implementation.
3. Electronics Manufacturing Clusters (EMC) Scheme provides financial assistance for creating world-class infrastructure for electronics manufacturing units.
4. The Union Cabinet on December 10, 2014 has approved the “Electronics Development Fund Policy” for promotion of R&D and IP Generation in the area of Electronics System Design and Manufacturing. The notification no. 8(9)/2011-IPHW dated 6th January, 2015 on EDF Policy was published in the Gazette of India, Extraordinary in Part-I Section-I on 9th January, 2015. The objective of the EDF policy is to support Daughter Funds including Early Stage Angel Funds and Venture Funds in the area of Electronics System Design and Manufacturing, Nano-electronics and IT.
5. Under the Focus Product Scheme of the Foreign Trade Policy, exports of listed electronic products are entitled to duty credit scrip equivalent to 2% / 5% of FOB value of exports.
6. Tariff Structure has been rationalized to promote indigenous manufacturing of electronic items.
7. Mandatory compliance to safety standards has been notified for identified Electronic Products with the objective to curb import of sub-standard and unsafe electronics goods.
8. A Scheme for skill development of 90,000 persons in the ESDM sector has been approved to provide human resource for ESDM industry.

9. Government has approved setting up of two semiconductor wafer fabrication (FAB) manufacturing facilities in India.
10. The 'Scheme to enhance the number of PhDs in the Electronic System Design and Manufacturing (ESDM) and IT/IT Enabled Services (ITES) sectors has been approved. 3000 PhDs are proposed to be supported under the Scheme.
11. To promote Innovation, IP, R&D and commercialization of products, etc. in the ESDM sector by providing funding support to an Industry, for doing collaborative research with an Academic Institute in the priority areas with a timeline of not more than two years, a proposal submitted by Global Innovation and Technology Alliance (GITA) has been approved.
12. Taken steps for the development and implementation of the Indian Conditional Access System (CAS) to promote indigenous manufacturing of Set Top Box (STB) for Cable / DTH TV, keeping in view the huge indigenous requirement on account of roadmap for digitalization of the broadcasting sector.
13. An Electropreneur park providing Incubation for development of ESDM sector which will contribute IP creation and Product Development in the sector.
14. A new initiative has been taken to recognize the achievements of successful industry by presentation of National Awards in the Electronics System Design and Manufacturing (ESDM) sector, to encourage entrepreneurs and to encourage new investments and innovation in the sector.
15. To promote scientific and technological research in Medical Electronics sector in India a proposal submitted by Biotechnology Industry Research Assistance Council (BIRAC) has been approved with the aim to fund a portfolio of Indian led pilot projects that seems to target innovations in the multi-disciplinary areas comprising of electronics, engineering, medical devices, healthcare, software, algorithms and information technology.
16. National Centre of Excellence in Large Area Flexible Electronics is being set up in IIT Kanpur with the objectives to promote R&D; Manufacturing; Ecosystems; Entrepreneurship; International Partnerships and Human Resources and develop prototypes in collaboration with industry for commercialization.
17. To strengthen the conformity assessment infrastructure, DeitY notified "Scheme for setting up / up-gradation of Electronic product testing / Quality Control Laboratories" on 25th August 2013. The objective of the scheme is to encourage setting up testing facilities by Central / State / Academic Institutions which will be used for evaluating goods under the "Electronics and Information Technology Goods (Compulsory Registration Order, 2012).
18. A project for Setting up of Incubation center for development of ESDM industry at a total estimated cost of Rs. 47.10 crore including a Grant In- Aid of Rs 22.10 Crore from Department of Electronics and Information Technology and contribution of Rs. 25 crore by State Govt. of Bihar has been approved. The project will be implemented by Indian Institute of Technology (IIT-Patna).

Free and Open Source Software

Department of Electronics & Information Technology (DeitY) has taken many initiatives for promoting and fostering the adoption of Free & Open Source Software (FOSS) in view of various inherent advantages like increasing interoperability, developing local capacity/ industry, reducing costs, conserving foreign exchange, achieving vendor independence, enabling localization and reducing piracy/copyright infringements. Deployment of Bharat Operating Systems Solutions (BOSS) in the country has progressed further in the areas of e-government, e-governance and education. Tamil Nadu Government has issued an Order for use of BOSS Linux as one of the Mandatory Operating Systems in all Government Departments. Under the Free laptop scheme, BOSS Linux has been deployed in around 16.68 lakh laptops.

Digital Preservation

Digital Preservation addresses the long term storage and access of digital data (born digital as well as reformatted digital) in the midst of technological obsolescence in terms of storage, file formats, operating systems, software etc.

The Centre of Excellence for Digital Preservation project was initiated to conduct Research & Development in the area of Digital Preservation, Develop tools and technologies, Develop domain specific standards and test-beds in various domains, create awareness through conferences etc.

Green Computing

ICT Technologies have an important role to play in reducing the energy consumption and thereby reducing carbon emissions, in many sectors of economy. Aim of the Green Computing initiative was twofold, use of ICT for attaining energy efficiency and reducing carbon footprint in every walk of life.

The project “Development of ICT Technologies for Smart Buildings with Low Carbon Emissions” was initiated to design, develop and deploy lighting control, HVAC control and air quality control in buildings.

Bioinformatics

Bioinformatics Initiative of DeitY has the objective to foster Bioinformatics research with an aim to improve human health and longevity and catalyse development of better yield, stress tolerant and pest resistant crop varieties. The road map for this is to identify DNA sequences responsible for various genetic and other common diseases like cardiac problems, cancer, diabetes etc and target for designing new and effective therapies. It is anticipated that the results of findings of the DNA sequence etc. will decide the medical and pharmaceutical research for the coming decades. In addition to Human Genome, research is also going on in the areas related to plant and animal Genomes with an endeavour to have better breeds and greater productivity. Under this Initiative 3 Centres of Excellence (COE) have been set up for Bioinformatics research for drug discovery, 5 COE for Agri-bioinformatics have been set up for crop improvement, disease detection and pest control, a Bioinformatics Resource and Application Facility (BRAAF)

with grid enabled nationwide access of bioinformatics tools and resources have been set up and Novel Software tools, algorithms and databases generated and Novel Drug molecules have been initiated for malaria, cancer, Leishmania. Also, Bio-informatics is a major application area for National Supercomputing Mission.

National Programme on Perception Engineering (NPPE)

National Programme on Perception Engineering Initiative focuses on research in human perception/ cognitive processes for application development. Domains addressed include Education, Health, Brain Research, Artificial Sensing and Disability etc. This field is inter-disciplinary in nature requiring collaboration between engineering scientists, psychologists, neuro-biologists and medical professionals. Cross fertilization of ideas from different fields have the potential to lead to fundamental breakthroughs and innovations. A number of cross-disciplinary multi-institutional research activities have been initiated on various themes. Researchers of diverse backgrounds from various organizations (Electrical Engineering, Computer Science, Cognitive Science and Neuro-Sciences) have collaborated together to build the broad framework of activity in the field of Perception Engineering. Phase I of the program has been concluded recently and a Phase II Launched with focus on TOT/ Product Development/ Field deployment/ patent filing and outreach efforts of research.

R&D Strategic Framework

ICT&E R&D and Innovation Framework 2013 has been formulated to harmonize the ongoing R&D efforts and to give a strategic direction and focus for an inclusive vibrant and sustainable eco-system for R&D and innovation involving Government, Industry and Academia to find solutions for the growing societal needs and challenges.

Supercomputing

Keeping in view the world wide technology trends and growing requirement in in the country in the domains of cutting edge R&D, the Government decided to provide impetus to Supercomputing in the 12th Plan. The proposal on National Supercomputing Mission, to be jointly implemented by DeitY and DST, to enhance supercomputing capacity and capability in the country is off the anvil and is presently in the advanced stages of approval process.

Indian Languages Technologies

People are most comfortable interacting with human/ machines in their own languages. “Technology Development for Indian Language” programme of DeitY is working towards “Digital Unite and Knowledge for All” to facilitate such an interaction with computers in the local languages, thus bridging the digital divide. It is involved in activities related to Research & Development, Proliferation and Standardization of Language Technologies for Indian languages so that people can use and get benefits of Information-Communication Technologies in their own languages.

Machine Aided Translation Systems for English to Indian Languages (Hindi, Bengali, Marathi, Malayalam, Punjabi, Odia, Tamil and Urdu) and for 8 pairs of Indian Languages to Indian Languages in the tourism domain have been made available for public use apart from making available Software tools & fonts in 22 constitutionally recognized Indian Languages freely to the general public. Monolingual Search Engines for Tourism Domain for five Indian Languages have been released for public use. Browser Plug-in of Text to Speech (TTS) for Mozilla Firefox Browser in 7 Indian Languages namely Hindi, Bengali, Marathi, Tamil, Telugu, Malayalam and Gujarati languages & Optical Character Recognition systems for Assamese, Urdu, Punjabi, Hindi, Bangla, Malayalam, Gurumukhi, Telugu and Kannada languages have been made available through TDIL Data Centre.

Promoting Innovation and R&D in Electronics

Electronics Systems Development & Application Division

The Electronics Systems Development & Application Division is promoting technology development and applications in Industrial Electronics for various industrial and economic/service sectors covering Power Electronics, Intelligent Transportation Systems, Automation Systems for process industries, Agri-Electronics, Electronics Personal Safety Devices/Systems etc.

The Division undertakes R&D proposals for financial support with the objectives of enhancement of country’s research, design & application capabilities in emerging technologies, creation of cutting edge technology and products by supporting R&D cycle, from the proof of concept to technology transfer, demonstration of application of emerging technologies and assist industry including MSME sector by making available cost-effective and state-of-art technologies.

Nanotechnology Development Programme:

Nanotechnology is a revolutionary technology and a key economic driver for the twenty-first century. Nanotechnology promises significant social benefits, including enhancements in medical diagnosis and treatment, more efficient energy sources, lighter, better agricultural output, stronger and cheaper materials and electronic products and cleaner and cheaper water. Nanotechnology is the collective term for a range of technologies, techniques and processes involving the manipulation of matter at the molecular (groups of atoms) level, systems that typically possess at least one physical dimension in the range 1-100 nanometres. Such systems may possess

entirely new physical and chemical characteristics, resulting in properties that are neither well described by those of a single molecule of the substance, nor by those of the bulk material. This often results in new, exciting and different characteristics that can generate a vast array of novel products.

DeitY's Nanotechnology Development Programme plans to create infrastructure for research in nanoelectronics and nanometrology at the national level and also to fund small & medium level research projects in specific areas such as nanomaterials, nanodevices, carbon nano tubes (CNT), nanosystems etc. Broadly, the funding in this interdisciplinary area can be categorized into broad research areas namely (i) Fundamental Research (ii) Nanodevice concept and architecture (iii) Synthesis and processing (iv) Application of Nanomaterials (v) Design and architectures for nanocomputers (vi) Microelectronic devices and solid state nanoelectronic devices (vii) Algorithm and software for nanocomputers and other areas.

Microelectronics Development Division:

The phenomenal growth of the microelectronics technology in the last few decades has facilitated the remarkable success of information and telecommunication technology. Microelectronics is playing a pivotal role in global economic growth through its capacity to make available products at lower costs and more & more efficiently.

Recognizing the importance of Microelectronics, National Policy on Electronics of DeitY has identified Microelectronics and related areas including manpower development as one of its thrust area. One of the main objectives of the National Policy on Electronics is to build on the emerging chip design and embedded software industry to achieve global leadership in VLSI, Chip Design and other frontier areas. Without a sustained support by the Government to R&D in Microelectronics, the vision to transform India into a global hub for Electronics System Design and Manufacturing (ESDM) will be difficult to achieve.

DeitY supports R&D in microelectronics through its 'Microelectronics Development Programme'. The thrust of Microelectronics Development Programme has been to develop-core R&D capabilities, technologies and trained manpower in the country and use it as a catalyst for development of overall Semiconductor Industry in the country.

R&D in IT

To carry out competitive R&D in the cutting edge research and technology areas of electronics & IT is of key strategic importance for the economic and societal advancement of a nation in the 21st century information age. Following three major schemes are being implemented, in DeitY under R&D in IT Programme, towards developing a vibrant R&D and innovation ecosystem in the country:

- a. Technology Development Council Projects (Incl. ITRA)

b. Centre for Development of Advanced Computing (C-DAC)

Technology Development Council (TDC) has nucleated various developmental and promotional programs in the department from its inception and has been responsive to changing technological development needs. The prime objective of TDC is to promote and support research, design, development, engineering and innovation in the area of IT & Electronics. Under the TDC scheme a number of activities of national and international importance are being pursued which include (a) IT in Emerging Area (b) High Performance Computing (c) Bioinformatics initiative, (d) Digital Preservation, (e) National Programme on Perception Engineering (NPPE), (f) Information Technology Research Academy (ITRA) programme, (g) Free & Open Source Software (FOSS), (h) Green Computing, (i) Technology Incubation and Development of Entrepreneurs (TIDE), (j) Multiplier Grant Scheme (MGS), (k) enhancing Intellectual Property Rights (IPR) portfolio, (l) Technology Translation, and (m) Electronics Systems and Applications Development.

C-DAC is a premier scientific society of DeitY and it is carrying out cutting edge R&D in the various domains of Electronics & IT having national and international importance. Its thematic areas of current focus include (a) High Performance Computing/ Supercomputing and Grid Computing, (b) Indian Language Technologies, (c) Cyber Security, (d) Professional Electronics covering VLSI Technologies, Power Systems Technologies, Intelligent Transport Systems, (e) Health Informatics, (f) Software Technologies covering Free & Open Source Technologies and e-Governance Applications, and (g) Education Technologies covering e-Learning and intelligent Class Rooms.

Supercomputing has emerged as the 4th Paradigm for cutting edge S&T research and accordingly special thrust has been provided to the capacity and capability building in Supercomputing in the 12th Five Year Plan (2012-17). In pursuance of this agenda, the “**National Supercomputing Mission (NSM): Building Capacity & Capability**”, with an outlay of ` 4500 Crores over a period of seven (7) years has been evolved, as a national effort, which is to be jointly steered and implemented by DST and DeitY, Government of India.

e-Learning

e-Learning is the learning facilitated and supported by Information and Communication Technologies (ICT). E-Learning is an effective tool for quality and lifelong education to learners. It is one of the thrust areas identified by DeitY for imparting education using educational tools and communication media. Advances in digital electronics have made e-learning possible because digital data can be - accessed randomly; retrieved fast; manipulated; less storage space requirement etc. These digital tools can be effectively used to enrich the courseware content with multimedia features – Audio, video, graphics, 3D-animation etc. This results in better visualization and understanding and hence, retention of the subject would be in a better way.

Advancements in ICT have made possible the availability of quality education on 24x7 basis to millions of people in a cost effective manner. The use of ICT in education has opened the doors for “anytime, anywhere” learning. Supplementing the formal way of education with E-Learning tools/content and use of ICT in formal education is important to facilitate enhanced learning environment; especially when there is large gap in demand and supply of quality content and educators. The broad objective is to develop tools and technologies to promote e-learning. The Department has been financially supporting R&D projects in the area of e-Learning at various academic educational institutes, R&D Labs etc.

E-Infra

E-Infrastructure comprises of network connectivity, digital infrastructure, tools, facilities and resources for advanced collaboration including integration of various technologies such as physical infrastructure like Information Technology Investment Regions(ITIR)s, Internet, broadband, computing, bandwidth provisioning, data storage, grid based resource sharing, cloud computing to name a few. Providing e-infrastructure for differently abled is an important aspect of the work. E-Infrastructure in Department of Electronics and IT, has been dealing with issues, policies, projects, programmes and schemes related to development and implementation of e-infrastructure facilities in the country. The programs and projects in furtherance of Universal Accessibility Policy approved by the Cabinet in October 2013 is important responsibility of this Division.

National Digital Library Cell

Libraries are the storehouse of knowledge as they maintain the book and other knowledge resource available - mostly in printed form. However, with the advent of digital technology and Internet connectivity, the library scenario is changing fast. Data available in physical form can be preserved digitally in Digital Library. Digital Libraries have the ability to enhance access to information and knowledge through Internet connectivity.

Department of Information Technology has identified Digital Library as one of the thrust areas. As part of this, copyright free books, manuscripts, and theses etc. have been digitized. Most of the digitized data has been web enabled on Digital Library of India web site -<http://www.new.dli.ernet.in> and <http://www.dli.gov.in>.

The following are the outcome of the Digital Library Initiatives:

1. Foster and Strengthen learning skills- moving from collection centric approach to learner centric approach.
2. Strengthen country's identity by digital preserving the National Cultural Heritage and Intellectual output.
3. Utilize country's resources more effectively
4. Bridge barriers of time and space for knowledge retrieving.