M2M Policy, Synergy & Guidelines of Ministry of Urban Development

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M2M Policy

Background

- M2M and IoT to be predominant users of Telecom Network.
- Machines will require more Telecom Resources than humans
- M2M to be a significant source of revenue for TSPs.
- Crucial role of M2M in socio-economic development of the country.
- Success of initiatives- Smart Cities, Digital India, Make In India etc largely dependent on increased M2M use.

DoT Initiative on M2M

- **DoT has come out with a National Policy on M2M last year**
- **National Telecom M2M Roadmap released on 12-05-2015**

Telecom as underlying Infrastructure

Policy & Regulatory Highlights of Roadmap

- **Mechanism for Registration of MSP (M2M Service Provider)**
  - ❖ Accountability for Telecom Infrastructure usage.
  - ❖ For resolution of interface issues with Telecom service provider, KYC, security and encryption (lawful interception at TSP level).
  - ❖ Mechanism to be similar to existing OSP (Other Service Provider) guidelines with modifications as required for M2M
  - ❖ To be governed by DoT guidelines and respective regulations of the Industry vertical as well.

- **KYC Norms for M2M**
  - ❖ Who is the end user ?
  - ❖ No need to fill up too many forms by the user
  - ❖ Onus for maintaining and making available customer & machine details on MSP.
  - ❖ Existing requirement of Tele-verification in activation process done away for M2M

Policy & Regulatory Highlights of Roadmap

- **M2M SIMs in Permanent International Roaming state**
  - ❖ Single Point of Contact required by LEAs
  - ❖ Traceability & Interception not possible in such connections due to non-fulfillment of KYC norms
  - ❖ Foreign SIMs not to be permitted in M2M devices used in the country.
  - ❖ Reasonable notice period to be provided to such manufacturers to have necessary commercial arrangements with Indian TSPs
  - ❖ Based on M2M SIM usage mechanism of Brazil & China.

- **Soft, Embedded & Virtual SIMS in M2M**
  - ❖ Over the Air updation of TSP Profile and IMSI possible in such SIMS
  - ❖ Will enable change of TSP without physical SIM replacement
  - ❖ Will cater to the requirement of Indian SIMs in imported M2M devices.
  - ❖ Fulfillment of KYC requirement in case of SIM transfer to other users
  - ❖ Encouragement in roadmap for usage of such SIMS in M2M devices with flexibility to choose technology as per future technological advancements.

Policy & Regulatory Highlights of Roadmap

- **Data Security Aspects of M2M**

❖ **M2M data within telecom operator's domain:**

✓ Existing security & encryption related regulation in licenses & IT Act governing current data services to be adhered to.

❖ **M2M data within M2M service provider's domain**:

✓ M2M security framework closely interlinked to interface and architecture standards- being developed by TEC

✓ Standards in conjunction with IT Act governing current data services to be followed

❖ **Security at sensor/ device level**:

✓ Only genuine IMEIs to be used in M2M devices, Gateways and other network elements

Policy & Regulatory Highlights of Roadmap

- **Health/ Safety Regulations and environmental guidelines:**
  - ❖ Standard levels of SAR- Specific Absorption Rate, CE, Radiation norms for mobile handsets to be adhered to in Wireless elements of M2M
  - ❖ M2M devices to have lower power consumption and to meet highest energy ratings of relevant standardization bodies.
  - ❖ Use of bio-degradable material to be encouraged.

- **Location and connectivity Guidelines:**
  - ❖ Use of Internet protocol (IP) mandatory on network side of M2M to enable adoption of common standards.
  - ❖ All M2M Gateways and application servers, servicing customers in India, to be mandatorily located in India.

Policy & Regulatory Highlights of Roadmap

- **Spectrum Requirement in M2M:**

❖ Delicensing of frequency bands 24-24.25 GHz, 76-77 GHz, 77-81 GHz for vehicular radar.

❖ Import license for short distance and small power output devices.

❖ Defining frequency range for PLC in M2M.

- **Specific Numbering Plan for M2M:**

❖ TEC engaged in its finalization.

- **Roaming issues in M2M**

❖ Target of no Inter-operator or intra-operator roaming charges.

❖ To be referred to TRAI for recommendations.

Other Highlights of Roadmaps

- **SUPPORTING "*MAKE IN INDIA*" THROUGH M2M ADOPTION:**

❖ **Preference to Indigenous Products and Services through PMA**

❖ **Creating Test Bed Facilities:**

✓ existing facilities of TEC to be upgraded and fine-tuned

✓ Additional testing facilities to be added in PPP mode as per the industry requirements.

❖ **M2M Products Certification**

✓ Testing of vertical specific functionality to be in domain expert preview.

✓ Communication components covering all modems, wired or wireless, standalone or embedded to be certified by telecom agencies.

✓ Existing facilities of TEC to be upgraded and fine-tuned to meet requirements.

✓ Additional facilities to be added in terms of additional Conformity Assessment Bodies (CAB) and Certifying Bodies (CB) as per the industry requirements.

❖ **M2M Pilots: To be undertaken through C-DoT & COI**

❖ **Encouraging Entrepreneurs and Startups**

Other Highlights of Roadmaps

❖ **Capacity Building:**

✓ Focus on skill development, develop suitable course content, M2M demonstration centers for trainees and other stakeholders.

❖ **Center of Innovation**

✓ To develop model Experimental M2M Network.

✓ To implement pilot projects which can showcase the technology

✓ New application developments in the field of M2M as well as the porting legacy applications.

✓ Capacity building in collaboration with IITs, IISc, NITs & other organizations

✓ Closely work with various global and Indian M2M Standards organization protecting overall interest of all stakeholders.

✓ To collaborate with all international bodies in this field so that India is able to establish a lead role in M2M related international policies and standards.

✓ Promotion of Research & Development (R&D) and IPR creation.

❖ **To evolve M2M MVNO**

DoT Initiatives on Synergy

NTP-2012: Objectives: Para 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 utilization of their resources and strengths in building a robust and secure telecom and information infrastructure.*

Relevance of Synergy among DoT Organizations

Organization	Primary Activity
BSNL/MTNL	Provision of Telecom Services
BBNL	Telecom infrastructure provider
ITI	Manufacturer of telecom products
TCIL	Consultancy organization for telecom projects in India and abroad
C-DoT	Telecom Research and Development
TEC	Advices the Government on technology and policy issues as well as providing technical support to the PSUs.

New Efforts on Synergy (Constitution of Core Committee)

- Decided to look into the issue of Synergy afresh
- Examine all issues related to synergy and not just the issue of placement of orders on nomination basis
- Prepare a '**Strategic Plan**'
- Proposal approved at the level of Hon'ble Minister
- Formation of 'Core Committee' in DoT vide 30-1/2015-SU dated 12th January 2016

General Terms of Reference of Core Committee

1. Possibility of synergy among similar organizations like BSNL & MTNL for operations, ITI & C-DoT for R&D and manufacturing, TCIL as common consultant for all.

2. Operational synergy between MTNL & BSNL in NCR region for mobile business and other similar cases like in Mumbai/Maharashtra region.

General Terms of Reference of Core Committee

3. Identification of common business areas by BSNL & MTNL and development of common business plans, to avoid duplication of efforts, cut costs and to facilitate single window services to customers

4. Optimum utilization of spare equipments available with MTNL and BSNL.

5. Examine the issues involved in synergy like licensing, spectrum sharing arrangements, IUC, taxation, contractual agreements with others etc.

General Terms of Reference of Core Committee

6. Uniformity of technical standards for products and services and their acceptability across all organizations.

7. Possibility of evolving Capex/Revenue sharing models among the organizations for long term viability.

General Terms of Reference of Core Committee

8. Optimum utilization and monetization of land and buildings held by different organizations for meeting own requirements as well as those of other organizations.

9. Efficient usage of manpower resources available with different organizations by working out a mechanism for inter-organizational deployment as per requirements.

Activity Schedule for Preparing 'Strategic Plan'

Sr.No	Activity	Tentative Time Frame
1.	Inviting nominations, formation of core committee and its first meeting	2 weeks
2.	Finalizing the detailed Terms of Reference (TOR)	4 weeks
3.	Based on above TOR, formation of one or more working groups to work on the TOR	2 weeks
4.	Discussions, deliberations and submission of inputs by the working groups	4 weeks
5.	Deliberations and discussions by core committee with all stakeholders, including meetings, presentations to the CMDs/Boards of the different organizations, for building consensus on actionable points	8 weeks
6.	Drafting, editing and finalization of the Strategic Plan	4 weeks
	Total expected time	**24 weeks**

Constitution of Working Groups

- Formation of 5 working groups to study different areas of synergy
- Submit WG reports to Core Committee for making the 'Strategic Plan'

Sr. No.	Name of Working Group	Lead Organization	Co-lead Organization
1.	Human Resources Development	BSNL	BBNL/MTNL
2.	Technology Development & Manufacturing Roadmap	CDoT	TEC / ITI
3.	Policy & Regulation	DoT	BSNL / MTNL
4.	Operational Synergy	BSNL	BBNL/MTNL
5.	Business Promotion	TCIL	MTNL

Meetings Held

- The first meeting of the Core Committee was conducted on 12th January 2016 to discuss the action plan.

- The coordination meetings by DoT with members of Core Committee and/or working groups were conducted on 15/02/2016, 18/03/2016, 27/04/2016 & 14/06/2016.

- A format was also circulated to all organizations to list out their "**Expectations and Deliverables**" from/towards other organizations.

- All organizations reported the issues faced by them. Accordingly the **Terms of Reference (ToR)** of working groups (WGs) was decided.

Study of Issues Faced by Different Organizations

- **MTNL**
  - Operational Synergy with BSNL for various telecom services and resolution of various issues in this regard
  - Procurement of equipments and services jointly with BSNL at competitive prices
  - Gainful utilization of space lying vacant in different organizations.
    - Many PSUs are hiring space from private parties despite having space in another PSU. E.g. MTNL gave the example of MTL, which has created a huge office space in Mauritius, where TCIL is also operating. TCIL, instead of hiring space from MTL, has hired office space from another entity.

Issues Faced by Different Organizations

- **BBNL**
  - BBNL has laid out the fiber cables across the country there are maintenance issues between BSNL & BBNL.
  - BBNL being a new organization has lot of requirement for staff but BSNL & MTNL are unable to provide the same.
  - BBNL has huge requirement of training of people but unable to utilize the BSNL/MTNL training infrastructure

Issues Faced by Different Organizations

- **TEC**
  - TEC is developing the specifications for telecom products but these are not mandatorily followed by BSNL/MTNL
  - TEC can take a lead in creating the technology vision and then work in coordination with other organizations e.g. C-DoT can design the product based on the specifications, ITI can make the prototype & do production also, BSNL/MTNL can do the deployment, TCIL can provide consultancy etc.
  - TEC is not getting adequate cooperation from the field units of BSNL at the time of making standards at international forums

Issues Faced by Different Organizations

- **BSNL**
  - In present circumstances, activities of BSNL are guided by the need to increase profitability and synergy with other organizations should take this need into consideration.
  - BSNL is following the tendering procedures for award of work to get best prices in a transparent manner and while forming synergy among organizations this aspect should be taken into consideration.

Issues Faced by Different Organizations

- **ITI**
  - ITI has lot of manufacturing infrastructure but it is not utilized for meeting the needs of the PSUs, especially BSNL & MTNL
  - ITI is unable to participate in many BSNL tenders due to restrictive clauses.
  - ITI wants orders to be placed by other organizations on nomination basis.
  - ITI wants to work out a permanent arrangement with C-DoT for research, prototype development and production on a long term basis rather than on a case to case basis.

Issues Faced by Different Organizations

- **TCIL**
  - TCIL is mostly providing consultancy and working as a system integrator for most domestic and global organizations. For this it has to approach many private organizations for tie-ups due to inadequate support / interest from the other PSUs like BSNL, MTNL etc.
  - TCIL wants to route international projects of the PSUs through itself so that it can become eligible for bidding in larger projects floated by international organizations.

Issues Faced by Different Organizations

- **C-DoT**
  - C-DoT mentioned that it is not getting due importance from the other organizations. E.g. when TEC is drafting specifications, C-DoT experts are not invited to the meetings.
  - C-DoT mentioned that there is a need to work closely with BSNL/MTNL, ITI & TEC for development, production and adoption of new technologies, which was not happening.

Summary of Recommendations

Summary of Recommendations

Effective Utilization of Human Resources

1. Inter-organization transfer/deputation not feasible at present due to existing guidelines of DPE
   - Create a sub-working group to examine the DPE guidelines & instructions in depth.
   - Relaxation of guidelines / instructions, if required, may be taken up with DPE separately.

2. BSNL has proposed to create a common web-based platform to integrate the training programmes by different PSUs.
   - Single platform to manage trainings by all organizations
   - Applicants can apply directly through the website to the concerned institute

Summary of Recommendations

Optimum utilization of vacant spaces in land and buildings

1. All organizations to develop a mechanism for sharing their Land and building infrastructure so that these are made available to all organizations for official & residential uses on favourable terms and conditions

2. Development of a “Unified Information Portal” for all the Organizations to share information on vacant land and building space

Summary of Recommendations

Standards and Certifications

1. TEC may review GRs/IRs (as per requirements of user organizations in near future) with active assistance coming from other members.
   - Tenders floated by user organizations should mandatorily ask for product compliance against TEC standards

2. All organizations should enhance their competitiveness through implementation of international quality practices
   - Standardization and Improvisation of manufacturing process in ITI, CMMI compliance in C-DOT etc.

Summary of Recommendations

Standards and Certifications

3. All organizations should proactively participate and contribute in the National Working Groups' meetings at TEC to assist it in reflecting Indian needs in International Standardization bodies like ITU, 3GPP etc.

4. TEC can be involved in product testing and its certification so as to maintain key network objectives like interoperability, security etc.

Summary of Recommendations

Standards and Certifications

5. TEC to take up the development of standards for 'Smart Infrastructure' and take a lead in creating the technology and solutions roadmap, which will be followed by the other organizations.

6. All organizations should ensure that indigenous products designed / developed by C-DOT & Manufactured by ITI conform to global standards for deployment by user organizations viz. BSNL, MTNL & BBNL.

Summary of Recommendations

Nomination Policy

1. Nomination basis only in exceptional circumstances.

- Need to develop a nomination policy by identifying the exceptional circumstances -
  - e.g. indigenous solution, sole solution provider, quantum of value addition, strong R&D base, long term product support, holding IPR, 100% government owned organization etc.

- Award of contracts on nomination basis only when these criteria are met

Summary of Recommendations

Nomination Policy

2. An alternative to the nomination policy is sharing of revenues and expenses on a proportionate basis.

   - All organizations will have to develop a framework for proper accounting of the revenues and expenses against each project.
   - The organizations can sign an MOU among themselves to share these revenues and expenses.
   - This arrangement can also be extended for the field trial of new technologies.

Summary of Recommendations

Promoting 'Make in India'

1. C-DOT & ITI should focus on development of products where security of telecom products is of prime concern.
   - All user organizations viz. BSNL, MTNL and BBNL should give preference to procurement of such products.

2. To encourage our PSUs to produce locally. This calls for a policy of reservation for our PSUs for local production & a similar action by other ministries as well.

Summary of Recommendations

Promoting 'Make in India'

3. The Telecom Finance Corporation (TFC) being set up by the DoT may also consider funding research & development of products exclusively for telecom use, through a separate fund, if needed.
   - All PSUs (as well as private TSPs) may be mandated to contribute compulsorily towards this objective.
   - Selection of products/projects to be funded may be made by an empowered committee of all stakeholders through an open and transparent process
   - This will encourage all the organizations to invest in R&D, which will facilitate creation of local products.

4. There exists a PMA (Preferential Market Access) policy for Government Procurement. All organizations should provide and take the benefits available under this policy for their procurements from each other, especially C-DoT & ITI.

Summary of Recommendations

General Recommendations

1. All organizations may explore the possibility of having rate contracts for different products supplied by their organizations. E.g ITI can have rate contracts for specialized products manufactured by them and still used by other organizations. A mechanism has to be developed for such a system to work.

2. Successful field trials of new products should automatically qualify them for bidding in open tenders floated by user organizations.

Summary of Recommendations

General Recommendations

3. C-DoT and ITI, as well as other organizations, should endeavour to create detailed concept papers for each product or solution available with them for the benefit of all other organizations for designing solutions and marketing the products/solutions.

4. The financial terms of engagement among the PSUs can be liberalized, eg. Waiver of PBG, EMD, provision for mobilization advances etc., especially in those projects where the contract is executed exclusively by a PSU.

Summary of Recommendations

General Recommendations

5. An MOU is in place between C-DoT and TCIL for mutual co-operation for various products and technology areas. All organizations may strive to enter into MOUs among themselves for their needs.

6. C-DoT may prepare concept papers and the application scenarios for the top five technology areas indentified on the lines of the GPON concept paper. Same exercise can be carried out for all products for the benefit of all organizations. This will help all organizations in their procurement plans.

Summary of Recommendations

General Recommendations

7. TCIL will give preference to products and services of C-DoT and other PSUs in such tenders where it is feasible, especially in overseas projects. TCIL shall utilize the manpower of C-DoT and other PSUs on deputation for the specific projects.

8. All the organizations to agree in principle not to file legal cases against each other. They are to resolve their differences through mutual dialogue or with the intervention of DoT wherever required.

Summary of Recommendations

Smart Infrastructure business

1. Formation of a core group for creating a "Roadmap for Smart Infrastructure" with active participation from all members.

2. Formation of dedicated teams in all organizations and develop some solutions for smart cities.

3. All the PSUs to cooperate extensively to jointly address the smartcity projects of the central/state governments.
   - They may form a consortium / sign MOU among themselves for jointly bidding for the projects.
   - BSNL can leverage their widespread telecom network & field offices network to take up the role of lead organization in the consortium of PSUs for bidding in smart city projects.

Summary of Recommendations

Smart Infrastructure business

4. C-DoT and ITI can together build smart solutions to be used by other organizations.

5. ITI also has regional marketing offices throughout the country and they can interact with the state governments for acquiring business. ITI can do it jointly in association with BSNL.

6. ITI and C-DoT can together create a '**Smart Solutions Experience Centre**' in Bangalore to demonstrate different solutions to prospective customers.

7. TCIL has vast experience in the telecom domain (network rollout, civil, electrical etc.), which are all components of Smart infrastructure rollout solutions. TCIL can provide the consultancy to all the other organizations and also market the solutions in other countries.

Synergy Implementation Mechanism

Implementation Mechanism

(Mechanism of Engagement among Organizations)

1. Formation of Synergy Unit in DoT –

- To deals with all synergy issues among the organizations.
- Different PSUs can be under different supervisory units in the DoT as it is happening at present. However, there will be issues which will require coordination among the PSUs falling within the ambit of multiple supervisory units. In such a case there will be need for one nodal unit in DoT to deal with all such issues of the PSUs.
- We may call this unit as '**Synergy Unit**'

Implementation Mechanism

(Mechanism of Engagement among Organizations)

2. To set up Permanent working groups/Committees at different levels

- ✓ To sort out the synergy issues among the organizations.
- ✓ Function with the coordination by 'Synergy Unit' of DoT

1. Working Groups (Constitution & Role)

- ✓ The existing working groups with the concerned lead/co-lead organization may continue as a permanent arrangement.
- ✓ The individual working groups may conduct at least one meeting every 2 months.
- ✓ One representative from DoT will attend each meeting
- ✓ Proposals given in the meeting can be taken up by the '**Synergy Unit**' in DoT for facilitating their implementation.

Implementation Mechanism

(Mechanism of Engagement among Organizations)

2. Steering Committee (Constitution and Role)

For coordination and resolution of issues among the organizations -

- ✓Proposed to consist of senior officers / Board level officers of the organizations.
- ✓May also have the concerned SAG/HAG level officers of the nodal wings of the PSUs in DoT.
- ✓The meetings may be held “quarterly”.
- ✓The ‘Synergy Unit’ may function as the Secretariat for organizing the meetings of this committee.
- ✓**This Committee may be chaired by Member(S), DoT and Co-Chaired by AS(T), DoT.**

Implementation Mechanism

(Mechanism of Engagement among Organizations)

Role of Steering Committee

- All the issues related to the different working groups
- User organizations (BSNL, MTNL, BBNL) – Sharing of Business plans / Annual procurement plans
- Non-user organizations (C-DOT/ TEC/ ITI/ DoT/TCIL) – Annual Action Plans, future strategies, suggestions, technical trends/roadmaps etc. for the benefit and feedback of user organizations.
- All organizations - inputs for preparation of Annual Action Plans, upcoming tenders for fine tuning of eligibility conditions to give preference to synergy partners and ensuring compliance to TEC standards (wherever they are available).
- To explore synergies in various government flagship projects e.g. Digital India, Smart Cities etc., projects for rural areas and still uncovered areas

Implementation Mechanism

(Mechanism of Engagement among Organizations)

3. Apex Committee (Constitution & Role)

- ✓ This committee may be chaired by Secretary(T), DoT
- ✓ Committee will meet only on need basis, when there are issues among the organizations requiring intervention at the highest level.

Implementation Mechanism

(Other Forms of Engagement among Organizations)

1. Corpus Fund

- Presently funds are given by DoT to different organizations under different head
- Organizations use these funds or paying each other against different projects.
- Proposed to create a corpus fund in DoT from which withdrawal and replenishment can be done by Synergy members for different projects (e.g. against capex or working capital requirements).
- DoT may develop a mechanism/process for creating this corpus fund and its utilization by different organizations for executing projects.

Implementation Mechanism

(Other Forms of Engagement among Organizations)

2. Roadmaps

- All organizations should strive to prepare a roadmap for their major activities, preferably a 1-year and a 3-year roadmap. This will help all the organizations to prepare for their activities in advance.

  - ✓ USOF – A roadmap for projects
  - ✓ USOF/BBNL/BSNL/MTNL – Procurement roadmap
  - ✓ C-DoT – Technology roadmap
  - ✓ ITI – Manufacturing roadmap
  - ✓ TEC – Standards roadmap

3. Seminars

- All PSUs will try to conduct seminars, conferences and workshops periodically for inter-organizational exchange of knowledge and expertise.

Smart Infrastructure Business Opportunity

First Business Opportunity
(Synergy for New Business Opportunities in Development of Smart Cities & Smart Infrastructure)

- In the Smart Cities Mission of Govt. of India, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and deployment of "**Smart Solutions**".

Big business opportunity for all organizations to work together in synergy

Core Infrastructure Elements to be Addressed in the Smart City Mission

1. Adequate water supply
2. Assured electricity supply
3. Sanitation, including solid waste management
4. Efficient urban mobility and public transport
5. Affordable housing, especially for the poor
6. Robust IT connectivity and digitalization
7. Good governance, especially e-Governance and citizen participation
8. Sustainable environment
9. Safety and security of citizens, particularly women, children and the elderly and
10. Health and education.

Different agencies involved in the 'Smart City' Mission & Role of PSUs

- M/o Urban Development:
  - The entire mission is led by the Ministry of Urban Development, Government of India.
  - MoUD is using a competition based method to select cities for funding and using a strategy of area-based development
  - *States and Urban Local Bodies (ULBs) will play a key supportive role in the development of Smart Cities.*

PSUs will have to deal with States/ULBs

Different agencies involved in the 'Smart City' Mission & Role of PSUs

- Consultants:
  - Very little indigenous expertise available with the states and the ULBs.
  - To assist the state governments and ULBs, the M/o Urban Development has appointed consultants in every state.
  - *The States have the option of appointing a consultant from outside the panel by following transparent and fair procedures as per State financial rules.*

PSUs will have to play role of consultants – TCIL

Different agencies involved in the 'Smart City' Mission & Role of PSUs

- Handholding agencies:
  - During the preparation of the Smart Cities Mission, a number of foreign Governments have offered to provide Technical Assistance (TA) support.
  - Additionally, other external organizations / bilateral and multilateral institutions have offered support, e.g. World Bank, ADB, JICA, USTDA, AFD, KfW, DFID, UN Habitat, UNIDO, etc.
  - Such organizations, which have experience in the field of Smart City development, can also extend support to the States/UTs as hand-holding agencies in preparing the proposals and the MoUD will assist in tying up the arrangements.

PSUs will have to showcase their expertise – TCIL (consultancy & foreign projects), ITI (Experience center, Solutions), C-DoT (R&D and solutions), BSNL/MTNL /BBNL (Network Expertise)

Different agencies involved in the 'Smart City' Mission & Role of PSUs

- SPVs (Special Purpose Vehicles):
  - City level implementation will be done by a Special Purpose Vehicle (SPV) created for the purpose.
  - The SPV will plan, appraise, approve, release funds, implement, manage, operate, monitor and evaluate the Smart City development projects.
  - Each smart city will have a SPV which will be headed by a full time CEO and have nominees of Central Government, State Government and ULB on its Board.

PSUs will have to "jointly" address the tenders floated by the SPVs

Different agencies involved in the 'Smart City' Mission & Role of PSUs

- Mission Monitoring Agencies :
  - **National Level** - An Apex Committee (AC), headed by the Secretary, MoUD and representatives of related Ministries
  - **State Level** – Headed by Chief Secretary with representatives of State Government Departments
  - **City Level** – Smart City Advisory forum convened by CEO of the SPV

DoT can play a key role at the National level, if the PSUs are able to showcase their expertise in the Smart City Mission

Isolated Initiatives by PSUs for Creation of Smart Infrastructure

- BSNL has signed an MOU with the Ministry of Urban Development for vehicle tracking and monitoring system.
- ITI is diversifying into providing ICT solutions, undertaking turnkey projects and the recent foray into the Smart Infrastructure business
- TCIL has tied up with ZTE, China for the Smart City business and also participating in tenders floated by different state governments.
- C-DoT is in the process of developing a standards based interoperable platform for IoT/M2M applications

Examples of Tenders Floated by States/SPVs

Sl. No.	Tender/RFP floated by Municipal Corporation / State	Description
1	Bhopal Smart City Corporation Limited	Intelligent Street Pole
		Implementation & operation of mobile and web based integrated citizen services
2	Udaipur	Lighting & Signage for Historic Bazaars
		Control & Command Centre buildings in Town Hall campus
3	Ahmedabad	Development of Integrated Group Housing Facilities
		Open Loop Smart Card Common City Payment System
4	Chandigarh	Smart Grid (Power Distribution)
5	Goa	Smart Street Light/LED Light

Thank You