The Idea and Practice of Smart Cities

India Smart City Mission

NITI Aayog

What is a Smart City?

➢A Smart City has-

    ➢basic infrastructure,

    ➢uses 'smart' solutions to make infrastructure and services better, and

    ➢relies on Area based development.

Objectives

➢ Provide basic infrastructure.

➢ Quality of life.

➢ Clean and sustainable environment.

➢ Apply Smart Solutions.

➢ Set examples to be replicated both within and outside the Smart City and catalyze the creation of similar Smart Cities.

Smart Cities Mission Strategy

➢ Pan-city initiative in which at least one Smart Solution is applied city-wide.

➢ Develop Areas step-by-step – three models of area-based developments –

  ➢ Retrofitting,

  ➢ Redevelopment,

  ➢ Greenfield

City wide Smart Solutions

E-Governance and Citizen Services

1. Public Information, Grievance Redressal
2. Electronic Service Delivery
3. Citizen Engagement
4. Citizens - City's Eyes and Ears
5. Video Crime Monitoring

Waste Management

6. Waste to Energy & fuel
7. Waste to Compost
8. Waste Water to be Treated
9. Recycling and Reduction of C&D Waste

Water Management

10. Smart Meters & Management
11. Leakage Identification, Preventive Maint.
12. Water Quality Monitoring

Energy Management

13. Smart Meters & Management
14. Renewable Sources of Energy
15. Energy Efficient & Green Buildings

Urban Mobility

16. Smart Parking
17. Intelligent Traffic Management
18. Integrated Multi-Modal Transport

Others

19. Tele-Medicine & Tele Education
20. Incubation/Trade Facilitation Centers
21. Skill Development Centers

Cities may add any number of smart solutions to the area based developments to make government funds cost effective.

What are 'smart solutions'

➤ Smart solutions are application of IT&C to municipal services and infrastructure to make them better.

➤ Examples –

 ➤ Smart water meters and billing systems,

 ➤ Remotely controlled automatic distribution valves,

 ➤ Real time, online systems of monitoring water quality,

 ➤ City-wide intelligent video surveillance network,

 ➤ Using mobile phones for cyber tour of worksites,

Area based Development Models

➢ **Retrofitting**

Development of an existing built area greater than 500 acres so as to achieve the objective of smart cities mission to make it more efficient and livable e.g. Local Area Development (Ahmedabad)

➢ **Redevelopment**

Replace existing built environment in an area of more than 50 acres and enable co-creation of a new layout, especially enhanced infrastructure, mixed land use and increased density e.g. Bhendi Bazar, Mumbai

➢ **Greenfield**

Develop a previously vacant area of more than 250 acres using innovative planning, plan financing and plan implementation tools with provision for affordable housing, especially for the poor e.g. New Town, Kolkotta, Naya Raipur, GIFT City.

Components of area-based development

➢ Holistic development of existing and new areas.
  ➢ One area catalyzes the development of other areas, and
  ➢ Sets an example for other cities.
➢ Quality of life in Areas meets citizens expectations and has
  ➢ Planned mixed land use,
  ➢ Housing, especially for the poor,
  ➢ Walkable localities – accessibility to parks, public transport,
  ➢ Preservation and development of open space,
  ➢ Public transport, last mile connectivity,
  ➢ Governance is citizen friendly and cost effective.

Smart City selection Process

➢ The city selection process is based on the idea of Cooperative and Competitive Federalism.

➢ Cities are diverse - Each city has to construct its idea and vision of a smart city that is aligned to its local context.

➢ The city selection process follows a Challenge method - two stages, in conjunct, to select cities.

  ➢ Stage – I : Intra-State city selection on objective criteria to identify cities to compete in stage-II.

  ➢ Stage – II: All India competition to select smart cities for multiple rounds of selection.

City Selection Criteria : Stage-II

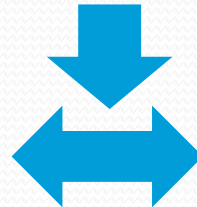The 100 short listed potential Smart Cities are selected through an inter-state competition

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The 100 selected cities prepare their Proposals for All India competition with capacity assistance

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Based on pre-defined Stage 2 criteria , the evaluation is done by national and international organisations

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Winners declared for Round – 1

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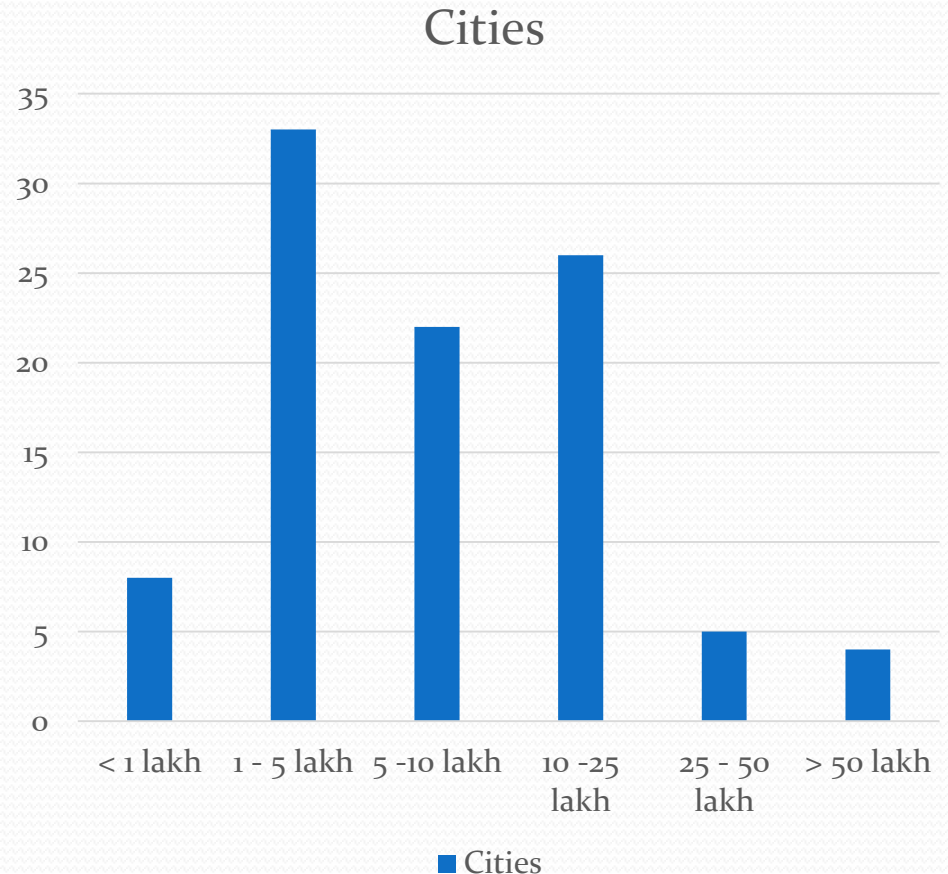Winners set-up SPV and start implementation. Preparation of DPRs, tenders etc.

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Non-Winners prepare to improve their proposal for Round - 2

Milestones

- 24th April 2015 :   Cabinet approves the Smart City
                                  Mission

- 25th June 2015 :   PM launches the Scheme

- Present   :   Stage I of implementation complete
                              Names of 98 Smart Cities announced
                              Stage II of competition has started

Stage 1 Results

- Convergence –
  - AMRUT – 96 cities
  - HRIDAY – 5 cities
  - Namami Gange – 5 cities

Cities

A bar chart titled "Cities" with the y-axis ranging from 0 to 35 (in increments of 5) and the following categories and approximate values:

- < 1 lakh: 8
- 1 - 5 lakh: 33
- 5 - 10 lakh: 22
- 10 - 25 lakh: 26
- 25 - 50 lakh: 5
- > 50 lakh: 4

Legend: Cities

Stage 1 – Intra-State Competition

Shortlisting of Cities by States based on scoring criteria

Sl. No.	Criteria	Marks
A	Existing Service Levels	25
B	Institutional Systems/ Capacities	15
C	Self Financing	30
D	Past Track Record and Reforms	30
	Total Score	100

Way Forward - Next Five Months

- **Stage-II** - Challenge round - 100 Cities prepare Smart City Proposals in consultation with citizens.

- Professional Consultants and External partners to give assistance.

- Regional Workshops planned over next 15 days (2nd, 7th and 11th September).

- Cities submit Smart City proposals by 15th December, 2015.

- Evaluation by Panel of Experts on set criteria.

- First round winners to be announced in January, 2016

Stage 2 – Criteria set

- Criteria to be used to evaluate Smart City Proposals in City Challenge

Sl. No.	Criteria	Marks
A	**City Level**	30
B	**Proposal Level**	70

All in all -Basic Approach

- Practical - a decent quality of life to the people, clean and sustainable environment and IT driven smart solutions.
- Elements -
  - core infrastructure (electricity and water supply, no garbage, waste water recycling, 10% from solar etc.)
  - Smart Solutions (smart metering, intelligent traffic management etc.)
  - Begin with a compact **area** in the city, extend to rest of city as well as other cities – catalysing effect.
- New model. Competition for selection.
- Twin messages – citizen contribution and private participation.

All in all - Architecture

- **Flexibility** – Three **Area** Models – Retrofitting, Redevelopment, Greenfield or mix thereof. Cities to choose. Minimum package of features essential.

- **Inclusive** – Pan City Smart Solution essential.

- **Implementing agency** – Special Purpose Vehicle – 50:50 Joint Venture of State Government and ULB. Initial paid up capital is Rs. 200 crore.

- **Financing** – GOI Rs. 100 crore every year for 5 years – matching by States. Innovative financing mechanisms necessary to mobilise private resources.

- **Convergence** – AMRUT, HRIDAY, Swachh Bharat, Housing for All, Digital India.

Involving other Ministries

- DeitY – IT connectivity, Electronic delivery of services, citizens engagement (MyGov)
- Home – video crime recording, city's eyes and ears
- MNRE- Waste to energy, solar, green buildings
- Ministry of Power – smart metering
- HUPA – Affordable housing, slum development
- Department of Land Resources – digitization of land records, GIS mapping

Others as per Smart City Proposals.

Key Challenges

- Citizen participation
- Mobilising finance – business model that gives comfort to lenders and investors
- City level capacity to implement – personnel with requisite expertise
- Support from ULB and State Government

Thank You