CLASS NOTES
SMART CITY PROJECT

- Urban population explosion, needs of modern comfort and aspirational pressure have turned the cities into unmanageable monsters.
- Cities were never on the priority of the government's development agenda because policies were governed by the dictum that "India lives in its villages"
- Previous government's urban renewal mission which invested $20 billion in 65 select cities during 2005-14.
- The urban development ministry is yet to announce a definition & guidelines for Indian smart cities.
- Urban development secretary, says smart cities will roughly encompass "e-governance, 24x7 supply of utility services like water & power, universal broadband connectivity, and super-fast public transport".
- The govt launched its flagship "100 Smart Cities Mission" on June 25, 2015, & announced the first list of 20 cities in January 2016.
- It then offered a special fast-track window for 23 cities that were rejected in the first round to upgrade their proposals, out of which, 13 cities were selected on May 24, 2016. In the second round, 27 more smart cities were announced in September 2016.
- A total of 45 cities have participated in the third round of Smart City challenge, of which 30 will be selected to be developed as smart cities. The names of 30 new cities will take the total smart cities count to 90.
- Smart city' is a city equipped with basic infrastructure to give a decent quality of life, a clean and sustainable environment through application of some smart solutions.
- Creating smart cities would entail development of basic infrastructure like adequate water supply, electricity supply, sustainable sanitation and solid waste management mechanism, efficient urban mobility, affordable housing and ensuring robust IT connectivity and e-governance.

STRATEGY

- The strategic components of area-based development (ABD) in the Smart Cities Mission (SCM) are city improvement (retrofitting), city renewal (redevelopment) & city extension (Greenfield development), along with a pan-city initiative in which smart solutions are applied covering larger parts of the city.
- Retrofitting : – Identify an area of more than 500 acres & prepare a plan to make it more efficient & livable with citizens' participation (Connaught Place in Delhi, Bhendi Bazar in Mumbai).
- Greenfield : – Introduce smart solutions in an area of 250 acres by using innovative planning (land pooling/land reconstitution in Outer Delhi, GIFT city in Gujarat)
- Redevelopment : – Replace existing built-up area (50 acres) & prepare a new layout plan with enhanced infrastructure by way of mixed land use (Kidwai Nagar in Delhi).
- Pan-city development : – Use technology, information & data to make existing city-wide infrastructure & services better.
- For example, initiating waste water recycling & smart metering which can make a substantial contribution to better water management in the city.

MODEL

- The govt does not prescribe any particular model to be adopted by the Smart Cities. The approach is not 'one-size-fits-all'.
- Each city has to formulate its own concept, vision, mission & plan (proposal) for a Smart City that is appropriate to its local context, resources and levels of ambition.
- Cities prepare Smart City Proposals (SCPs) using the principles of strategic planning process & the proposals contain area-based development plans & pan-city initiatives.
- Preparing SCPs is a collaborative effort because the objectives & funds of all govt departments, parastatals & private agencies are taken into consideration.
- The citizens participate during the process of preparing the SCPs. As the task of preparing the SCPs is quite challenging, the States/ULBs seek technical assistance by either hiring consulting firms or engaging with handholding agencies.

HOW THE SMART CITIES WERE SELECTED ?

- Centre asked state govts to shortlist the potential smart cities
- State/UTs announce the list of smart cities.
- Each potential smart city, prepares proposal assisted by, a consultant & an external agency.
- Proposals are submitted & evaluated by a panel of experts
- The MoUD announces names of the selected cities
- Selected cities set up SPV & start implementation of their SCP.

WHAT IS THE SPECIAL PURPOSE VEHICLE ?

- A Special Purpose Vehicle (SPV), also known as a Special Purpose Entity (SPE), is a legal entity created by a parent company to isolate financial risk, manage specific assets, or achieve particular financial objectives.

- SPVs are essentially separate companies with their own legal status and distinct asset/liability structures, often used in complex financial transactions like securitization.

ROLE OF SPECIAL PURPOSE VEHICLE

- The implementation of the SCM at the city level is done by a Special Purpose Vehicle (SPV) created for the purpose.
- The SPV plans, appraises, approves, releases funds, implements, manages, monitors and evaluate the Smart City projects.
- Each smart city has a SPV headed by a full time CEO & has nominees of Central govt, state govt & ULB on its Board.

FINANCE

- The SCM is operated as a Centrally Sponsored Scheme (CSS) & the Central Government proposes to give Rs 48,000 crores over five years, with an average Rs 100 crore per city per year.
- As States/ULBs have to contribute a matching amount, total amount likely to be allocated for Smart Cities development will be about Rs one lakh crore.
- The project cost of each SCPs varies depending upon the level of ambition, model & capacity to execute & repay.
- The funds from the Centre & the matching contribution by the States/ULB will meet only a part of the project cost.
- Balance funds are expected to be mobilised from private sector through public-private partnerships (PPPs).
- Smart cities technology is a global market, estimated to be worth $1.7 trillion, & India has just opened the floodgates for this.
- But before India brings in smart technology, it should know what to do with it.

1. How does it build new cities & repair groaning urban settlements to provide decent housing & clean water to all?
2. How does it manage the growing mountains of garbage, treat sewage & do something as basic as breathing without inhaling toxins?
3. Can technology alone fix what institutionalised governance, planning and engineering have destroyed over decades?

- The answer is complicated. Yes, technology is needed.
- A centralised data system might help city authorities analyse and predict possible infrastructure failures like power outage or flooding.
- But do cities have the capacity to prepare effective mitigation plans that will work in their local context? Will they have real resources like engineers, fire fighters, public health facilities and staff to execute and implement their plans? Do cities have the required political and financial autonomy? Who will they prioritise—vocal residents of posh colonies or humble sufferers of middle-class localities?
- Our experience with the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) has not been very encouraging.
- Cities made mobility plans using data generated by smart technologies & highlighted the need for pedestrian-centric infrastructure.
- But when it came to seeking investments, all made an un-smart pitch for developing infrastructure that impedes pedestrians.
- The government's agenda & most so-called smart city projects currently underway in India are some sort of abbreviation of UAE's Masdar City, which is the first smart city of the world, initially slated to be completed by 2015.
- But Masdar is turning out to be too expensive even for the oil-rich nation, with the project deadline extended to 2025 & many smart features being dropped to cut cost.
- Masdar's $22 billion cost to house 50,000 people is a ridiculous development model for India which needs to fix habitat for its existing 377 million city dwellers and prepare for another 300 million likely to be added in the next 20 years.
- Even if the financing is worked out by a private-public partnership model, smart cities in India are not going to be cities at all, but commercial, residential or industrial enclaves, feeding upon adjacent cities.
- They can at best be described as the culmination of the elitist & exclusionary gated community concept, which is reducing the world further into refined, high-end enclaves surrounded by vast slums, where e-governance & broadband connectivity are of little immediate relevance.
- A country like India, which is still just one-third urbanised & where half the population of its two biggest cities officially lives in slums or illegal settlements, cannot prioritise exclusionary urbanisation.
- The country needs to reinvent the very idea of urban growth.
- Indian cities have been failed by their planners, engineers and governments & their collective desire to copy London, Tokyo or Masdar.
- Today, smart thinking will require finding a new measure of liveability that will work for the Indian situation, where the cost of growth is unaffordable for most.
- We need smart creativity where technology meets street-smart Indian and builds upon highly compact, mixed-use & pedestrian-friendly designs of our traditional cities.
- For example, our cities do not have underground sewerage to speak of and have been using septic tanks or open drains for sewage management. So

can we get technology to treat sewage in these septic tanks and channels instead of getting a technology to drill expensive sewerage lines?

- Empower cities and their people with not just smart policies and digital management systems but with the mandate, the means & the creativity to implement them.
- The 100 smart cities emerging on India's urban horizon attempt to converge the latest technological developments of the 21st century to create controlled & efficiently administered environments.
- These would represent the best of urban practices. Compactness, eco-friendly gestures and intelligently run administrations are some of their hallmarks.
- There is a lot of smartness in urban spaces, which can contribute to smarter cities.
- When a neighbourhood is economically productive, has creative space-saving arrangements which combine living and working activities, when it creates collective infrastructure on its own & uses in house skills for construction activities, then surely it can be considered fairly intelligent.
- Mumbai is full of such neighbourhoods, with the most celebrated one being Dharavi.
- Unfortunately, many such neighbourhoods are not seen to be valid, let alone smart or intelligent. Since they emerge outside the planned city, with developed real estate where people hold only occupancy rights, they are shabbily treated by the administration.
- Consequently, they see a decline in civic infrastructure and the dynamic and intelligent arrangements they embody are never acknowledged.
- The city they are attached to depends on them for cheap labour & services without giving back much in return.
- Sometimes the creation of a new city is predicated on the efforts, services & hard work of people living in these unacknowledged spaces.
- Our fear is that the 100 smart cities slated to be created in the coming years may be surrounded by as many smarter neighbourhoods which will continue to be treated as illegitimate, inconvenient, shadowy, but necessary.
- We just need a bit of confidence to validate the smartness already embodied in them
- Using local skills & resources for their physical creation, validating occupancy rights, reducing the gap between living & working activities are examples of simple codes that can be written into their programme to generate a thousand more such cities—but at a fraction of a cost!
- Cities which have digitised their land records have certainly made life easier for the urban poor.
- Now, companies like Cisco and IBM & Tata Consultancy Services and L&T are getting into the fray on a much bigger scale. However, the introduction of IT in such services presupposes certain factors.
- It assumes that all citizens have access to the Internet—or can even hire such services for a nominal fee, as happens with online applications for passports.
- When six out of 10 Mumbaikars, who are better off than most of their fellow urban residents, live in slums, such assumptions prove untenable.
- Nearly 80% of the urban development that will spring up on either side of the freight corridor is in Rajasthan and Gujarat.
- In neither state can the rural population be considered ready to join the ranks of the IT-enabled.
- On the contrary, the north-west of the country, witnessing one of the biggest urbanisations the world has ever seen in terms of population, might only heighten the disparity between urban and rural if skilled people migrate there from other cities, leaving locals high & dry.
- A smart city is not simply a city where people are technologically networked, but one which is livable and inclusive.
- Otherwise, we will be faced with what the architect Charles Correa remarked about his home town, but is applicable elsewhere: "It is a great city, but a terrible place!"
- At the Urban Age meeting in Delhi , where global experts debated how urban governance could be improved, the last session was provocatively titled "Can cities get smarter?"
- Harsh Mander cited how the urban poor often prefer to sleep on traffic intersections, at great danger to their lives, because the traffic fumes ward off the mosquitoes.
- He made a simple suggestion: all schools, which lie unused for 18 hours a day, could be turned into dormitories at night for street children, of whom he estimated there were 50,000 in the capital.
- Another instance of true smartness would be the provision of water and toilets throughout a city, which would make a tremendous difference to people's health.
- These services, along with bathing facilities, could bear a nominal charge, and rid our cities of the scourge of open defecation.
- Yet another would be the restrictions on cars and the promotion of public transport.

SOLUTIONS

- Promoting new towns & cities as growth centres to decongest city centres has never worked beyond yielding initial political mileage.
- Instead it resulted in massive economic and social costs. It justifies allocating scarce public funds into

creating exclusive, gated economic zones in urban periphery equipped with high-grade infrastructure subsidised by tax breaks.

- Urban renewal of city centres, has been elitist & destructive to existing economic & social systems. This dubious idea, pushed by powerful lobbies to increase the floor area ratio (FAR/FSI), promotes high rise-high density buildings through associated instruments such as transfer of development rights
- It transfers valuable economic space & public infrastructure, socially created by an economy dominated by small trade & manufacture, to the elite, who are otherwise unable to locate more centrally.
- Urban renewal almost always destroys this economy that provides almost all of employment & economic value addition.
- Arguments for additional FSI-centred, high rise-high density areas are erroneous on at least three grounds. It assumes a single economic core, when Indian cities & many elsewhere are multinodal.
- It is premised on a singular big business-dominated economy as a growth driver, when our cities have a well-diversified economy, adding both jobs and economic value.
- Transfer of development rights is premised on large plot sizes housing large corporate firms, in complete contrast to ground realities.
- These points, especially the last one, underline the intents of a dangerous social engineering.
- Despite well-intentioned efforts of activists & academics towards proper rehabilitation & resettlement via housing, displaced groups never regain what earlier worked for them as social, economic &, most important, political space
- Emphasising marginality of those displaced only strengthens those who lobby for such displacement. Witness the veritable industry of NGOs built on the agenda of such displacement & urban renewal & increasingly to manage the political backlash.
- It is not clear if extensive reuse of material & recycling technologies can substantially soften the blow, when currently most waste material ends up as some form of landfill, affecting productive agricultural land.
- Disturbing our existing mixed-land-use city centres, which are vital economic nodes of low rise high density buildings, will disperse populations into a wide area, resulting in massive traffic jams, spikes in fuel costs and pollution, as these people travel to central areas
- As influential lobby groups, they will demand expensive expressways, which, in effect, will give rise to even bigger traffic jams.
- In such a scenario, real economic efficiency plummets, while posing environmental crises.
- Smart technology can never be assumed to be socially neutral. It has to be posed in the intensely political questions of: who benefits, who decides, & on whose behalf? It has to relate to an existing economy and conserve what already works. Witness the difficulties in creating new jobs.
- Special economic zones are hardly contributing to employment & employment schemes have serious problems, if they already are not a spectacular failure.
- A social-economic technology has to be "spatialised".
- For instance, there are significant opportunities in the existing low-rise, high-density areas.
- It is important that the "smart" technology is conceived to be incrementally developed & in pluralistic ways to respond to the people affected by them, & complex city systems.

ETHICAL EDUCATION FOR URBAN PROFESSIONALS

- How were Western nations able to transform their cities? Why did Western cities not get mired in a vicious downward spiral of unsustainable urbanisation & economic stagnation?
- These are difficult questions to answer. However, one thing is certain: an array of specialised new professions, such as city planning, urban design, public health, environmental engineering, city management and transportation planning, had to be invented and put in charge to manage the transition.
- Inventing new professions meant demarcating and establishing new domains of knowledge pertaining to cities, undertaking research to find solutions to urban problems, establishing professional institutions to create and manage new professional identities and, most important of all, training professionals to go out there and tackle real and urgent problems.
- Training professionals requires equipping students with specialised knowledge & development of their intellectual, technical, communication and collaborative skills. This is well understood and accepted.
- However, it is often forgotten that professionals are truly effective only when they are profoundly motivated by a sense of purpose that reaches beyond themselves & when they are able to bring their ethical sense to bear on their work.
- Successful management of India's urban transformation depends crucially on our ability to train professionals who are driven by a deep desire to use their knowledge to improve human wellbeing & who are able to use their ethical compasses to guide themselves
- The only way of imparting an ethical education is to immerse students in an institutional culture that allows them to exercise their ethical faculties; an institutional culture where ethical issues are not

presented as settled norms merely to be followed but presented as dilemmas to be debated and discussed; an institutional culture that encourages students to think their own stands through; an institutional culture that respects them regardless of the answers they come up with; an institutional culture that provides them with role models of teachers themselves grappling with ethical dilemmas.

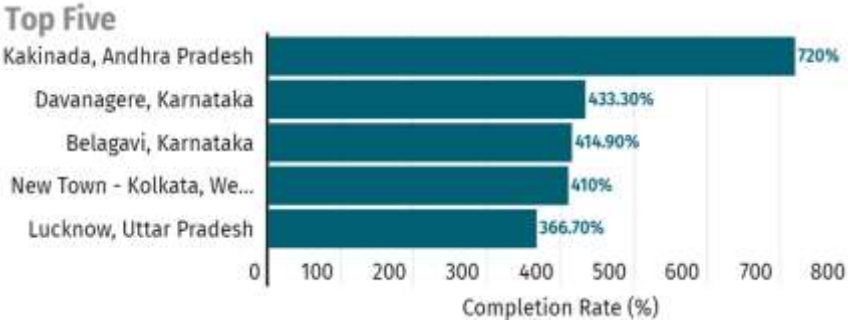
- The only way of imparting a deep and abiding sense of purpose in students is to provide opportunities for students to make a difference.
- When they grow up, will have the confidence and sense of purpose to try and change the world.
- India's urban population was 27.8% in 2001 & is projected to increase to 38.2% by 2026.
- Census 2011 put the figure at 31.6%. Unless new cities were developed to accommodate the burgeoning masses, the existing cities would soon become unlivable

THE STATUS REPORT

- Smart Cities Mission is aimed at providing core infrastructure, a clean and sustainable environment and a decent quality of life to their citizens through the application of 'smart solutions'
- Over four rounds of competition from January 2016 to June 2018, 100 Smart Cities were selected.
- As per the data presented by the Ministry of Housing and Urban Affairs to the Lok Sabha, as on 7 July 2023, work orders have been issued by 100 Smart Cities in 7,978 projects, of which 5,909 projects (74%) have been completed.
- The govt has released ₹73,454 crore for 100 Smart Cities of which ₹66,023 crore (90%) has been utilised.
- The total cost of the projects under SCM comes to ₹1,79,228.99 crore
- As per SCM Guidelines, govt will provide financial support to the extent of ₹48,000 crore over five years i.e., on an average ₹100 crore per city per year.
- An equal amount on a matching basis will be contributed by the State government/Urban Local Body (ULB).
- Apart from these sources, around ₹42,028 crore (21%) has been proposed from convergence with other Missions, ₹41,022 crore (21%) from Public-Private Partnership (PPP), around ₹9,843 crore (4.8%) from loans, ₹2,644 crore (1.3%) from own resources and remaining from other sources.
- According to the Centre for Policy Research of the cities with the highest proportion of project costs completed, less than 30% of completed costs came from the government of India and States indicating a greater reliance on other sources like convergence and Public-Private Partnerships.
- According to IndiaSpend Since 2015, only 34 cities have been able to meet their targets under the Smart Cities Mission while the remaining 66 are yet to complete work.
- The Smart Cities Mission was originally supposed to conclude by 2020 and was extended to June 2023 due to disruptions during the Covid-19 pandemic.
- It has now been extended till June 2024 due to incomplete works. Despite the extensions, the programme has seen slow progress.
- The Parliamentary Standing Committee on Housing & Urban Affairs, in its report in March 2023, noted that 68% (5,343 out of 7,821) of projects were completed under the Smart Cities Mission (SCM).
- The city-wise numbers show that the Mission still has a long way to go. Some cities reported excess projects being implemented while others were yet to complete the originally planned projects.
- There is no proper definition for a smart city.
- Other countries have at least defined it in some form.
- Our transportation model for instance is totally borrowed from the western model," said Mahalaya Chatterjee, Professor of Urban Economics at the University of Calcutta.
- There is a serious need to define what a smart city is in the Indian context. The way Europeans view it and Americans view smart cities are poles apart, she added.
- While it is not mandatory to have a smart city paradigm, there is a case for India to have specialised economic zones & cities with particular specialities.
- The Mission is actually a pilot study, using a test-learn-scale approach to understand how certain projects could be implemented in cities.
- Technology or ICT [Information and Communication Technologies] component has been given importance in smart cities and it is helping bring about a collaborative approach with multiple stakeholders, with transparency and accountability
- According to Sivasubramaniam Jayaraman, National Lead - at the Chennai-based think tank Institute for Transport and Development Policy (ITDP), state governments need to play a strong role in identifying the need for Special Economic Zones or new cities "with specific purposes such as attracting investments & creating jobs".
- If a city has whatever is needed to attract investments, create jobs, and offer basic dignity of life for citizens living, working and playing, then that becomes a Smart City.
- Sixty six of the 100 'Smart Cities' are yet to meet their physical targets eight years after the flagship scheme
- In a response to an RTI filed by IndiaSpend, the ministry issued a clarification that, as of May 17, 2023, there were 7,847 projects for which orders were issued of which 5,732 have been completed--a revised progress rate of 73%.

- Of the 34 cities which completed their targets, 17 saw a completion rate of more than 200%--that is, they had completed at least double the number of projects originally planned. Seventeen others saw a completion rate between 100% and 200%.
- Kakinada in Andhra Pradesh recorded the highest rate--it completed 72 projects against the 10 that were originally planned. Aligarh recorded a 100% rate, completing all its 32 planned projects.
- A deep dive into the data showed 22 cities to have completed less than 25% of the projects and 19 other cities completed 25-50% of the projects.

Top 5 & Bottom 5 Cities By Performance On Smart City Projects



- Of the 66 cities which are yet to see results, 25 cities completed more than half the projects originally planned.
- "Completing more projects than planned indicates projects outside the ambit of SCM would also have been included in the whole thing, indicating resource mis-allocation.
- The projects have to be very specific & not everything can be resolved by using technology
- Amaravati, which is currently the de-facto capital of Andhra Pradesh, saw zero projects being completed (of 42) despite an infusion of a combined sum of Rs 976 crore from both Union and the state govt.
- While funds see 88% utilisation, cities struggle to complete projects
- The scheme works on a formula of 50:50 fund matching with an SPV [Special Purpose Vehicle, which is a subsidiary company] being operationalised to plan, approve, implement and evaluate the progress in each city.
- Of the total pledged financial support, Rs 37,410.43 crore had already been provided by the Union govt as of March 2023, government data show, of which 88.4% (Rs 33,074.4 crore) has been utilised by the states.

Performing & Non-Performing Cities

- Eleven states reported a fund utilisation rate of more than 90% of the Union government funds, with the highest being reported by Jharkhand (98.7%), followed by Rajasthan (95%) and Karnataka (93.7%). Assam & Mizoram reported the lowest utilisation rate at 70% and 68%, respectively.
- Amongst the Union territories, Lakshadweep reported the lowest fund utilisation with only 24% of the funds being utilised, as against Delhi and Jammu & Kashmir which reported more than 80% use of the funds disbursed by the Union government.
- Despite the utilisation of Union government funds, work on smart cities has not been able to progress due to multiple roadblocks.
- There is an irony that many of our cities don't have enough capital to meet their infrastructure & service delivery requirements on the one hand. But on the other hand, they are left with unspent funds at the end of the year
- Long-drawn timelines to conceive projects, obtain vendors, and to execute works in a time-bound manner as challenges that remain, as the Mission gets extended for an year more to meet the targets.

- The SPVs can change the projects when they do not seem relevant to the needs of the cities; they have been given everything, delays are very common in any infrastructure projects, the stakeholder coordination is one of the important factors"
- States' contribution to Smart Cities Mission has been lesser than the Union govt's
- The states' cumulative contribution to the SCM, between the years 2015 to 2022, was Rs 32,149.14 crore against the Union government's contribution of Rs 36,561.16 crore--a deficit of Rs 4,481.82 crore.
- Barring Assam, all states in the northeast reported a significantly low contribution of the state governments, impacting the progress of the Mission. Odisha, Kerala, Jharkhand and Haryana reported zero deficit.
- Experts attribute the slow progress of work and lesser contribution by their state governments, in smart cities in the northeast to lower levels of industrialisation, a difference in priorities and the structure of their economy, given the topography.
- They however seem to be showing much enthusiasm in micro-projects such as bicycle adoption for commute, especially Agartala
- Amongst the UTs, which are centrally administered, Jammu and Kashmir (including Ladakh) and Puducherry saw a significant difference between the funds provided by the Union government and the contributions made by the local administration.
- While the trends in expenditure by the smart cities and the associated state support suggest more room for improvement, experts feel the Mission should be assessed on other parameters.
- The scheme ideally ought to be assessed on the outcomes of the proposals made originally. We need to compare the goals and targets laid out in the smart city proposals submitted by cities with what was achieved against them, and at what cost" noted Viswanathan.
- "Each city has different needs and capabilities and thus cannot be evaluated on a single set of parameters"
- Smart solutions are fine but who is benefiting from it should also be assessed. Technical interventions have to be practical as well. In addition, there should be an assessment made if the powers of a Smart City SPV to implement are overlapping those of the local municipal body

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