



ASHOKA  
UNIVERSITY

Centre for  
Entrepreneurship

AIM SMART CITY ACCELERATOR

# WHITEPAPER

on

SMART CITIES AND STARTUPS –  
INNOVATIONS IN POLICY AND  
PRACTICE

DATE

By Centre for Entrepreneurship, Ashoka University



Microsoft



# Introduction

Aligning with the Indian government's goal to create 100 smart cities, AIM Smart City Accelerator was started in 2015 with a vision to support and scale startups that are building sustainable, inclusive and innovative solutions for smart cities. It is a 24 week-long program that supports startups that provide solutions for Smart Cities. It is being run in partnership with Ashoka University, Indian School of Business - Hyderabad, and Microsoft Accelerator. Being India's first dedicated smart city accelerator, it exclusively works with startups that are trying to make a difference by improving living spaces and conditions of people in the cities.

The AIM Smart City Accelerator is based on a foundational premise that the private sector, especially startups, have a crucial role to play in realizing the vision of the Smart City Mission. Indeed, smart city projects around the world, have not only relied on but have also been spearheaded by private investors, who have invested both resources and capabilities in designing smart solutions (1). Therefore, in furtherance with the objectives of AIM, it was considered imperative to undertake a dedicated study to understand the concerns and issues that startups face while interacting with various actors involved in implementing the Smart City Mission projects. The study was conducted through four different, but inter-related methodologies mentioned below:

- Review of secondary resources comprising of reports and papers prepared by government and non-government organizations, newspaper articles, etc.
- A Discussion was undertaken through a Roundtable, which brought together several stakeholders such as startups, government representatives, investors, and consultants to brainstorm.
- In-depth interviews with some of the participants of the Roundtable discussion.

An in-depth survey with various stakeholders from startups, private entities, system enablers, government functionaries, academia and civil society organizations working on smart city mission was taken to ensure wider engagement.

The study was divided into the following four segments to ensure an in-depth exploration of the same.

- The problems associated with working and dealing with the government in implementing smart city solutions

The presence of system integrators and the role they play

The funding challenges faced by startups looking to get involved in smart city mission

The challenges of developing not just smart cities, but cities that are inclusive and protects the rights of its citizens.

The study isn't just focused on understanding the concerns, it also provides suggestivesolutions and recommendations to overcome some of the challenges mentioned herein.

This paper acknowledges the contributions of Ms. Maansi Verma, founder of Maadhyam (a participatory policy-making initiative), MASH Project Foundation (a youth-led organisation, creating a global ecosystem for changemakers), and various stakeholders who participated in the study and shared their valuable insights.

(1) [https://niti.gov.in/writereaddata/files/document\\_publication/CSTEP%20Report%20Smart%20Cities%20Framework.pdf](https://niti.gov.in/writereaddata/files/document_publication/CSTEP%20Report%20Smart%20Cities%20Framework.pdf)

# Executive Summary

Globally and historically, cities have presented remarkable opportunities for the private sector to be involved in aspects beyond planning and designing, such that it provides solutions to deal with current and prospective problems. Private enterprises like IBM, CISCO, Siemens, Hitachi, Microsoft were among the first few players involved in providing intelligent and smart solutions. Furthermore, with constant advances in information technology, our cities have been moving from 'smart cities' to smarter cities', also leading to an increased involvement of the private sector.

When the government launched the Smart City Mission in India in 2015 - similar to the global scenario - the spotlight was on the private sector, not just to partner with the government to provide solutions but also to provide private sources of funding. This was because the government looked at Public-Private Partnership (PPP) models of collaboration. Though the Mission has various models of project implementation, ranging from greenfield projects to smart localized solutions, an inclination towards capex heavy projects has been observed. In such circumstances, the government tends to lean towards bigger and established players in the market instead of upcoming startups, even though the latter may provide innovative solutions. Therefore, despite seeing a culture of increased involvement by the private sector, startups struggle to make their presence felt.

Several startups were consulted for this Whitepaper, and it was found that many such startups face an entry barrier which may be difficult to surmount for most of them – tender processes that demand years of experience and turnover running into several thousand crores. Even if this barrier was somehow crossed, startups often experienced bureaucratic delays in implementation and funding. Very few startups have deep enough pockets to sustain themselves during such periods of delay. Hesitation from the government to adopt innovative solutions, especially ones which lead to greater transparency and accountability was also experienced. Venugopal Gupta, Director Accelerator Program, Toilet Board Coalition, pointed out that when it comes to providing amenities in the cities, the government needs to shed its 'beneficiary' approach and move towards a 'business' approach, in the absence of which it will be difficult to create a space where startups can grow sustainably.

Some startups, like Greenworms Ltd., which provides waste collection services to a municipality, the state government, and a public company in Kerala, has had a positive experience of working with the government. This, mostly owing to Mohammad Jamsheer's (of Greenworms Ltd.) tenacity to withstand the initial difficulties in navigating through the bureaucratic maze. Jamsheer points out that the government plays a dual role - that of a client and that of an enabler. In dealing with the government as a client, Jamsheer has had to face the usual challenges of fee delays, etc. but as an enabler, the government helped create channels through which his company could serve various communities. According to Venugopal the government plays an important role of a 'channel partner'. He highlights how the government can create an enabling environment for startups to provide their business directly to people in a responsible manner.

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(2) 'Smarter Cities' is a registered trademark of IBM

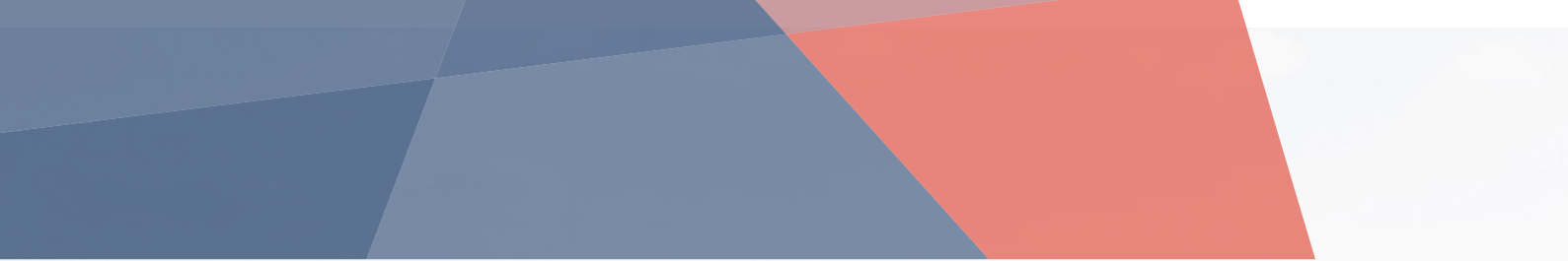
# Executive Summary

While this may be useful in cases where B2C services like sanitation are being offered, in several other instances, the role played by a startup is that of a player in the larger ecosystem. In such cases, startups have to rely on the 'system integrators. These are large players with deep pockets and strong connections who can participate in tender processes, pay the requisite fee, and then engage smaller players to design solutions. And this works for the government as well, because, given the current bureaucratic setup, government may not be able to completely do away with the tender process. And given the requirements of propriety and transparency, it may not want to risk critical projects in the hands of inexperienced startups, who are yet to prove their credibility. It has been suggested that this route cuts out the customer acquisition cost for startups and helps them in building a base. However, at the same time, too much dependence on system integrators could mean a loss of brand value and individuality of the startups.

Funding is another challenge which startups face, especially because given that they are directly providing services to the government, they may not be considered as a lucrative investment option by Venture Capitalists (VCs). VCs are wary of the uncertainties involved in working on government funded projects, especially if the project fee is the main source of revenue for the startup. It has been suggested that startups should consider working on models of providing solutions to the government which have a source of revenue independent of government fees. It is important to underline this fact because the way the Smart City Mission is designed, there is limited availability of funds from the government. As pointed out by Ms. Ira Singhal, IAS Officer, urban local bodies are disempowered and cash-starved, and may not be in the best position to implement solutions demanding a heavy investment of funds. Private investment in smart city sectors would further tip the scales in favor of large players.

Ms. Diksha Gehlot, Founder, LexIngenious, points out that it is indeed possible to look at alternate sources of funds like Social Impact Bonds or Development Impact Bonds. These have been used in India before and have led to a flow of funds in sectors which may not be commercially viable but are socially impactful. On similar lines, the government can be persuaded to look at allowing CSR investment in smaller non-profits and social enterprises. This could unlock private investment for startups designing smart city solutions in sectors like education, sanitation, environment, energy etc. For-profits startups can also be creative and explore options like microfinance funds from NBFCs.

It is also important to understand that smart cities bring with them the challenge of making the development truly inclusive and not just concentrated to a few. It has been a criticism that has stuck to the smart city mission since the beginning, and perhaps rightly so. A lot needs to be done to ensure an all-round reach of the benefits of the mission. On that front, development of human rights based standards and indicators have been recommended to monitor the smart city mission. Equally important is the need to ensure that use of technology to drive solutions protects the right to privacy of citizens and that adequate safeguards are built to guard the vast amount of personal data collected.





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# Chapter I

## WORKING WITH GOVERNMENT IN IMPLEMENTING SMART CITY SOLUTIONS

The Smart City Mission is a government-initiated program with various government departments involved at several levels. Though it may be envisaged as a program that will be implemented through an independent body, a Special Purpose Vehicle (3) to be set up in each Smart City, it will still operate within the framework and rules established by the government. Since interface with the government is unavoidable, many startups and other private players have faced several issues associated with the bureaucratic setup and ways of working.

At the outset, it is important to point out that the Smart City Mission Guidelines do not define what a 'Smart City' is (4). Instead, only strategies and focus areas are provided. These strategies could range from 'Retrofitting' (making an existing area more efficient and livable) to 'Greenfield' development (a vacant area is developed using smart solutions). An illustrative list of focus areas is provided which could range from E-Governance and citizen services to Energy Management and Urban Mobility. Hence each city is free to choose and work on the solutions that best suits the local requirements. But it could be pointed out that implementing smart solutions is perhaps the second step, the first being having a road map in place for the development of the city in the long run. It has been argued that **several cities do not have in place a 'Master Plan' or a 'Development Plan' which could provide requisite direction** and progress monitoring mechanism for any smart solution (5). For instance, research shows that Bhubhaneshwar did not even give exact details of the projects it will be implementing and yet has one of the largest budgets in the Mission (6).

Why is this important and why should Startups be concerned with it? During the Roundtable, it was pointed out by Amit Das, Founder of MedSamaan, that sometimes the government doesn't have a clear problem statement, which makes it difficult for a startup to come up with a solution. This, in turn, could be interpreted as the government not being cooperative in enabling startups to implement their ideas. Several respondents of our survey also pointed to a lack of clear policy and well-defined problem statements as reasons that lead to an inflexible approach to innovative solutions. One such response adequately captures this approach - 'the government agencies are too involved in fire-fighting the pressing challenges and smart city initiatives are considered luxurious.'



*It can be argued that in the absence of a comprehensive development plan for a city, the government may not be best placed to identify the problem areas for which smart solutions may be needed in order to develop the city towards a particular goal.*

This, in turn, could spur another problem which is of infrastructural constraint. Most smart solutions anywhere in the world would require the availability of supporting infrastructure, for instance, IT-based solutions may only work if the infrastructure for internet availability is provided (7). **It is important to plan for the challenges associated with scaling up infrastructure in the early stages.** Hence there arises a need for development plans with a vision. As per a response shared in our survey, it was pointed out that the confusion around objectives and approaches could have been handled well, had the government focused on creating a few model Smart Cities on priority.

But it seems like the government is cognizant of this issue. In the Smart City Mission guidelines, the government has provided for engagement of consulting firms and handholding agencies to aid in designing of the proposals and implementation of solutions. During the Roundtable as well, Hina Bhambari from Ernst and Young explained how her organization is involved in helping the government define problem statements and find the right partners for solutions. This could also be seen as another example of the private sector providing valuable services in bridging a gap. This underlines the need to have more clarity about the problems which require smart solutions. As pointed out by Ira Singhal, an IAS officer, it is important that startups reach out to government departments to understand the problems and ground realities before solutions are designed. She further argued that **in implementing any solution, the government needs to take into consideration, and strike a balance among the needs and requirements of different stakeholders,** which is not always an easy task.

During the Roundtable, it was suggested by Deep Bajaj, Founder of Pee Buddy, that it would help startups if there was a dedicated portal which could be used by different government departments to put out problem statements and invite solutions from startups in a transparent manner. It was suggested that – MyGov (8) – a portal for government-stakeholder interaction that already exists, could be used for inviting smart solutions from startups for smart city projects. Sandro Stephen, Regional Head of North India Operations at India Angel Network also suggested that the government should consider organizing hackathons not just to get startups to design solutions, but also spread awareness about the project among them.

### **Summary of the interview with Mohammad Jamsheer, Co-Founder, GreenWorms**

Jamsheer runs a Waste Management startup and has mostly worked with the local governments – a Municipality and a Panchayat; and a State government company – as a service provider.

His initial experience was difficult as it took him some time to understand the procedures involved in participating in the tender allocation process which has some terms and conditions, which are difficult for startups to fulfil. But now that he has been working with the government for more than two years, he has understood the process and hence, things have become easier for him. However, there have been circumstances when service provider fee was delayed by the government, sometimes even for months, leading to financial difficulties for his organisation. It mostly happened because of delays in clerical work, however, it also depends on the government and the concerned officials.

In his experience, these government bodies have not only acted as clients, but also as an enabler, for instance, by creating awareness of good waste management practices, promoting participatory models for waste management etc.



Bureaucratic delays owing to resistance from the government departments and officials towards implementing innovative solutions; lack of initiative and interest specifically in working with startups; difficulty in working one's way through the bureaucratic maze and the difficulty of getting information out of government offices are some of the other issues that were pointed out by startups in response to our surveys. But one of the biggest issues which came up, again and again, was the **high entry barrier for startups to enter into a contract with the government** to implement smart city solutions. These entry barriers take the form of tender terms and conditions which could require work experience of several years or turnover of several hundred crores. These conditions automatically tip the scale in favour of big and established private players and against startups (9). In our survey, many respondents pointed out that burdensome tender process; ill-designed RFPs; and tough eligibility criteria put MSMEs and startups out of the race from bidding for smart city projects.

*It was suggested by some of the respondents that the government should consider awarding tender not on the basis of money, but on the basis of innovative solutions that are relevant and sustainable. A specific push needs to be made to integrate startups in implementing smart city solutions.*

Venugopal Gupta, Director, Toilet Board Coalition, acknowledged that the government may not be in a position to completely do away with the tender process and other requirements because otherwise there may be questions of propriety and transparency which will arise. However, during the Roundtable, he stressed that the government can either play a controlling role where it dictates what needs to be done or it can play an enabling role, creating conducive conditions for startups to operate. This can happen when government becomes the channel partner between a startup and the community for which the solution is being designed. Mohammad Jamsheer had also specifically mentioned benefitting from this approach of the government. Veugopal suggested that perhaps the government could consider running test beds where pilot projects are given to startups, and if they manage to gain the trust of the government, they can get bigger projects. The thrust therefore needs to be on finding ways in which the government can facilitate entry of startups in the smart city projects.

The **complexities that arise out of various levels of the government being involved in the smart city project** is another issue that has been pointed out. It has been argued that vertical (among various levels of governments) and horizontal (among different schemes and government departments) coordination is needed to make the mission work. Additionally, **special attention needs to be paid towards empowering the urban local bodies (ULBs)** which need to be at the forefront of implementing smart city solutions. It was pointed out during the Roundtable that due to poor implementation of 73rd and 74th Constitutional Amendments (10) the ULBs have not been able to adequately perform their constitutional obligations. Research has also shown that excessive central government interference in implementation of projects and sanction of funds has meant that it hasn't been possible to complete the 'decentralization agenda' and truly empower the ULBs (11). Only once this is done, can higher order requirements of manpower capacities, and technical capabilities of ULBs be addressed (12). This is also important, since it will make ULBs ready to utilize technology centric tools to address problems. In our survey as well, some respondents pointed out to a **'lack of understanding' among the government officials of the benefits of technology and how the same can be implemented** to address real issues. Towards this end, a citizen driven participatory approach is needed which would ensure that solutions are reflective of the community's needs and requirements.

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The Special Purpose Vehicle is to be headed by a CEO and have nominees from Central Government, State Government and Urban Local Body on its Board

<https://smartnet.niua.org/sites/default/files/resources/smartcityguidelines.pdf>

<https://www.iifl.com/blogs/major-challenges-upcoming-smart-cities-india>

<http://www.cprindia.org/system/tdf/policy-briefs/SCM%20POLICY%20BRIEF%2028th%20Aug.pdf?file=1&type=node&id=7162&force=1>

<https://ubidots.com/blog/the-key-challenges-for-smart-cities/>

<https://www.mygov.in/>

<https://economictimes.indiatimes.com/small-biz/startups/smart-city-projects-slow-pace-of-work-forcing-startups-to-look-for-other-greener-pastures/articleshow/57800312.cms?from=mdr>

Through 73rd and 74th amendments, local self-governance was introduced in rural and urban areas through Panchayats and Municipalities which were empowered with certain constitutional roles and powers

CSTEP Report - [https://niti.gov.in/writereaddata/files/document\\_publication/CSTEP%20Report%20Smart%20Cities%20Framework.pdf](https://niti.gov.in/writereaddata/files/document_publication/CSTEP%20Report%20Smart%20Cities%20Framework.pdf)

<https://realty.economictimes.indiatimes.com/realty-check/the-top-10-implementation-challenges-for-smart-cities-in-india/776>

# Chapter II

## SYSTEM INTEGRATORS AND THEIR ROLE

A system integrator could mean an individual or organization identifying, analyzing, designing and deploying enterprise-wide complex IT solutions (13). It could also mean an organization and individual building systems from a variety of diverse components (14). Who or what a system integrator is and what role they play is contextual.

With respect to smart cities, it has been seen that historically established private sector players like IBM, Cisco, Microsoft, etc. have been instrumental in providing solutions. It has also been established that the current framework which favours capex heavy solutions coupled with stringent tendering requirements tends to create a space that only private sector players - with deep pockets, years of experience and sometimes, the right connections - can occupy. However, these players may not always have the most innovative solutions to real-world issues. It has been debated that several large companies struggle with innovations, especially of the kind which requires them to rethink their structures and business models (15)- and because of this, they have also been seen to play the role of system integrators.

*In context of the smart city mission, system integrators could mean people or organizations with resources, experience, and connections to successfully bid for tenders, use the right insights to deal with bureaucratic delays, and be open and willing to integrate startups in designing and providing solutions.*

It has been noticed that several startups, having burnt their fingers in bureaucratic processes and not being able to afford the long gestation period between tender allocation and revenue generation, have instead found it more lucrative to partner with system integrators that bid for government projects. Yet, some others have found that it may not be very prudent to invest all their resources in government projects (16). Hence, they also offer solutions to private players, as they wait for government projects to materialize. It has been argued that such coming together of startups and system integrators could be a win-win situation. **Companies bidding for projects could bring startups on board to differentiate their bid and make it potentially successful, on the other hand, startups could get a foot in the door and gain experience.**

But there may be issues involved, and the benefits associated may be uncertain. It has been pointed out by some respondents in our survey that the **lack of transparency around selection of vendors is a significant concern**. There is lack of clarity on financials and selection criteria, and the bidders are often be selected because of political connections as opposed to merit. Even though system integrators are shifting towards working with startups, as it allows faster delivery with lesser cost and brings down the client acquisition cost for the startups, several respondents mentioned that **system integrators may not always work to the advantage of the startups as they may continue to work with established players in order to meet their delivery requirements**. Some also mentioned that larger players would occupy space in larger cities, leaving the startups to operate in smaller ones. Another concern which was raised was that working with system integrators could lead to brand dilution for startups. It was pointed out that it is difficult for a startup to get noticed by a system integrator since it requires spending resources on outreach and marketing (17)

In our survey it was suggested that smart city mission should encourage involvement of MSMEs in providing solutions from 'concept to commissioning' in partnership with bigger entities. Some respondents mentioned that system integrators should keep an open mind about collaborating with startups. others suggested that the government could encourage system integrators with incentives to 'form startup consortiums for these projects (by) working out terms of engagement on fair terms' (18). In case the incentives don't work, the government could – as suggested by one of our respondents – mandate system integrators to partner with startups. This has also been followed as a policy before. The Government had issued a notification for PSUs to purchase 20% of their raw materials from MSMEs (19), but it was observed that the procurement only saw an uptick once it was made mandatory (20).



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- <https://www.techopedia.com/definition/2560/system-integrator-si>
  - <https://www.yourdictionary.com/systems-integrator>
  - <https://www.forbes.com/sites/tendayiviki/2018/11/04/why-large-companies-continue-to-struggle-with-innovation/#74bebf6267b4>
  - <https://economictimes.indiatimes.com/small-biz/startups/smart-city-projects-slow-pace-of-work-forcing-startups-to-look-for-other-greener-pastures/articleshow/57800312.cms?from=mdr>
  - ibid
  - ibid
  - <http://dcmsme.gov.in/notification.pdf>
  - <https://economictimes.indiatimes.com/small-biz/sme-sector/make-in-india-procurement-of-raw-materials-by-psus-from-msmes-doubles/articleshow/51008655.cms>

# Chapter III

## FUNDING ISSUES FOR STARTUPS IN SMART CITY PROJECTS

As per the Smart City Mission guidelines, the Central Government has committed to provide Rs.100 crore per city per year, with the state government / ULB contributing an equal amount (21). The guidelines acknowledge that this amount cannot be enough to implement the mission in its true import and hence it proposes two ways to augment these funds:

- Every smart city needs to converge the scheme with other schemes like Swachh Bharat Mission (22), AMRUT (Atal Mission for Rejuvenation and Urban Transformation) (23), and HRIDAY (National Heritage City Development and Augmentation Yojana) (24) to unlock funds available for these schemes
- Utilize other funding mechanisms like taxes and fee collected by ULBs; municipal bonds; tax increment; financing instruments to be issued by ULBs; access funds from National Investment and Infrastructure Fund (25); private sources of funds through PPP etc.

### SMART MONEY SMART CITIES

It was made clear that government sources of funds are to be utilized by SPV to improve its credit worthiness and to work towards creating a steady and sustainable revenue stream to be able to raise additional sources from the market and otherwise.

But a look at the following facts makes it clear that the funding of smart city projects remains a daunting challenge:

- By March 2018 (almost 3 years since the start of the Mission), only 1.83% of the funds released by the government had been utilized, with low spending being attributed to delays in setting up of SPV (on an average 12-18 months for every city) (26);
- If ULBs have to raise funds on their own, they will have to rely on property tax and other user charges as their sources of revenue. However, weak financial positioning of the ULBs has remained a cause of concern with an increasing dependence on funds from central and state governments (27). It has also been argued that ULBs in a weak financial position will further not be able to attract investment even if there is a growth potential (28)
- ULBs have tried to be innovative, for instance, the Pune Municipal Corporation issued Municipal Bonds, an experiment which seems to have worked (29), but in other instances, ULBs have tried to raise funds by increasing user charges and passing the burden to the citizens, who in some cases, have protested against increase in charge for amenities like water, electricity etc. (30)

Thus, it becomes clear that **with governments and ULBs struggling to raise and utilize funds meant for smart city mission projects, a startup trying to tap this limited source of funds may find itself facing many uncertainties.** Rahul Batra, Director of Yunus Social Business India, during the Roundtable, pointed out that early source of funding for startups is a concern and **Venture Capitalists are wary of investing in startups which rely on government funds** as sources of revenue since the timely realization of these funds has always been a challenge. He further suggested that the government should perhaps focus on pushing startups instead of providing funds; and startups should strive to find sources of revenue independent of any government funding that may come its way.

*In our survey also, several respondents complained of erratic flow of funds, or funds not being allocated in a transparent manner as per a pre-decided and publicly known timeline, and investors shying away from investing as a good return on investment cannot be envisaged with any certainty.*

Towards the end, Venugopal had suggested that **it's important that government moves away from a beneficiary approach when it comes to providing civic amenities and move towards a business approach,** since it is the only way to ensure that sustainable and scalable business models can be created for startups to flourish. This ties back to the idea of the government playing the role of an enabler and helping set up startups which charge for their services, with the government having no commercial interest in it. He further acknowledged that even though in certain situations some citizens will not be in a position to pay, they cannot be deprived of the basic services. In these cases, startups can be encouraged to have a mix of both beneficiary and business approach, where those who can pay for the services pay and others don't. As more people find value in these services, and choose to pay, economies of scale will kick in, making the service cheaper and more accessible to all.

### Summary of Interview with Deeksha Gehlot, Managing Counsel, LexIngenious

For any social startup, whether for-profit or non-profit, some activities need to be undertaken for the purpose of generating awareness about the solutions they are building, even if these activities are not revenue generating. VCs may not be interested in investing in such activities since they are mostly interested in the ones that make a profit. In such cases, we need to look at the funds dedicated to such activities - which are mindful of social impact metrics:

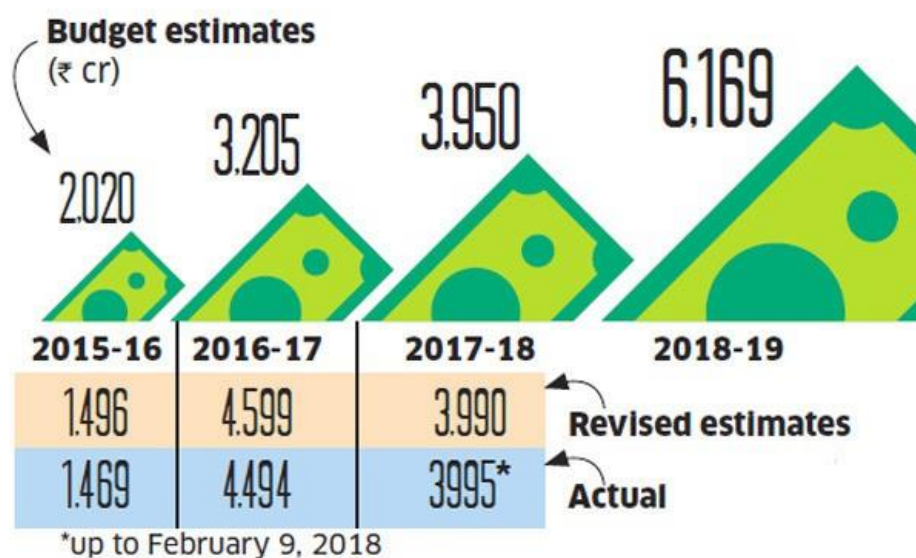
- **Alternate Investment Funds** – they are SEBI certified. The mandate is to use 75% on for-profit activities and 25% on non-profit activities.
- **Corporate Social Responsibility (CSR funds)** - New non-profits can't avail benefits right away, but as per the law, for a less than 3 years old non-profit to get CSR funds, the only requirement is of disclosure and there is no punishment as such. Such CSR funds can be used for awareness activities, however, there is a thin line between awareness and marketing activities and corporates will need to be mindful of that.
- **Micro-Finance** - Startups can also avail the micro-finance options from NBFCs which are registered by the RBI to avail smaller loans at lower interest rate.
- **Social Impact Bonds** - Fund based on outcome. How it works - there is a donor, an investor, an organization and an outcome evaluator. The investor invests in the organization, the organization implements, and the outcome evaluator evaluates the result, and based on the impact, the donor gives the money back to the investor. One successful example is of 'Educate Girls' in Western Rajasthan.

But there are not enough supporting regulations.

Another issue that has been observed is that of **funds flowing in some particular sectors only, with other sectors being starved of the same**. For instance, research has shown that as opposed to 79% of funds being allocated to large infrastructure projects like mass transit, fundamental necessities like water and sewerage only received 21% of the funds (31). This is particularly problematic because it has been found that for services like gas, water, electricity etc., revenue is much less than the cost incurred. The ratio of revenue to cost is as low as 0.25 for water supply. In the absence of adequate government funds and low revenue realization compared to cost, even startups operating in these sectors will find it difficult to exist. One of our respondents to the survey pointed out that in the waste management sector, not only is private finance difficult to come by but even the government funds are limited for projects like ‘waste to energy’ initiative and bio-gas plants compared to something like sorting facilities for dry waste.

Some other suggestions by the respondents to our survey include – the government awarding pilot projects with funding to startups, and specifically investing in startups solving issues which exist such that they are not high on government agenda, making sure that problems of the future could be addressed.

## Less money was allotted to smart cities in 2017-18 than in 2016-17



Source: <https://economictimes.indiatimes.com/news/economy/infrastructure/smart-cities-mission-is-still-very-much-a-work-in-progress-post-three-years-of-its-launch/articleshow/64523035.cms>

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- <http://swachhbharaturban.gov.in/>
- <http://amrut.gov.in/>
- <https://www.hridayindia.in/>
- <https://www.thehindubusinessline.com/opinion/columns/slate/all-you-wanted-to-know-about-niif/article26367277.ece>
- <https://scroll.in/article/908394/the-modi-years-how-close-is-india-to-getting-100-smart-cities>
- <https://www.thehindubusinessline.com/news/national/financial-position-of-municipalities-a-cause-for-concern/article10030593.ece>
- CSTEP report -
- [https://niti.gov.in/writereaddata/files/document\\_publication/CSTEP%20Report%20Smart%20Cities%20Framework.pdf](https://niti.gov.in/writereaddata/files/document_publication/CSTEP%20Report%20Smart%20Cities%20Framework.pdf)
- <https://scroll.in/article/841595/what-indias-cash-strapped-municipalities-can-learn-from-punes-new-revenue-formula>
- <https://timesofindia.indiatimes.com/city/jaipur/Smart-city-Public-resistance-a-big-hurdle/articleshow/51019944.cms>
- <https://www.downtoearth.org.in/news/urbanisation/smart-city-financing-laden-with-trouble-55799>

# Chapter IV

## ARE THE SMART CITIES ALSO INCLUSIVE AND RIGHTS RESPECTING?

The Smart City Mission has attracted its fair share of criticism for promoting development which may not be inclusive or sustainable. A report by Housing and Land Rights Network (HLRN) refers to the 'smart enclave scheme' where **development is concentrated to a limited area with the entire city having to bear the burden** for it and for it leading to, in several cases, expulsion of low-income groups to city peripheries – the report notes that in 2017, 32 evictions have been reported across 99 cities (32). Indeed research shows that out of the different strategies available for adoption in the smart city mission, Area Based Development (ABD) (33) alone has attracted 80% of the funds which covers only about 7% of the total area of the 99 Smart Cities selected so far, thus indicating that more than 90% of the area in these smart cities will have access to only 20% of the allotted funds (34). It has further been argued that even for such area-based development, **those parts of the cities have been chosen which are already better serviced, thereby increasing the striking inequalities already existing in our cities.**



Smart Cities for All

*This criticism was also made on the selection of smart cities, for example, an already well-serviced New Delhi Municipal Corporation region with a cash rich municipal body, housing most of the Members of Parliament, ministers, judges, bureaucrats was selected as a smart city, ignoring the areas falling under other municipalities, which were visibly in greater need of development and funds for their cash starved municipalities. (35)*

So, is the Smart City Mission about overall development which affects everyone or an additional level of developmental push for areas which are already relatively developed? It has been rightly argued that such **misplaced focus is likely to exacerbate inequalities rather than making cities more inclusive.** It has further been noticed that to make some pockets of areas more developed, ULBs have been raising user charges across the board which is leading to dissatisfaction among citizens. As an example, in HLRN's report it was noted that in Udaipur, residents resisted a planned 5-fold increase in user charges to fund development work which was only going to benefit 5% of the city area and about 20% of the population (36). In the same report, it was argued that the **mission guidelines itself do not provide for any human rights-based standards and monitoring indicators,** which could ensure that the projects benefit low-income and other disadvantaged groups.

In response to our survey, several respondents mentioned that, when more operational issues haven't been sorted out, sustainability and inclusivity are 'higher order goals' which haven't found their proper space in the discourse so far. 'People and (their) rights are not being considered' states one of the responses. Apart from inclusivity, transparency has also come up as a concern. One response states that the smart city project they were working on involved working on many digital applications which didn't advance inclusivity. However, when the startup proposed a solution which was designed around RTI and making all spending etc. open to public, the same was received with some resistance by the government.

Since smart cities are often seen to be deploying technology centric solutions and initiative which could be collecting a lot of information and data about citizens, there is a concern that these technologies could even be repurposed as surveillance tools (37). It has also been argued that **governments are finding themselves incapable of providing the services people need and are increasingly looking at technology companies to provide solutions without fully understanding the privacy and security implications of the same (38)**. It doesn't help that India currently doesn't have a comprehensive data protection law in place which would adequately safeguard the large amounts of data about citizens, which smart cities are likely to collect in order to provide the required solutions (39).

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[https://www.hlrn.org.in/documents/Smart\\_Cities\\_Report\\_2018.pdf](https://www.hlrn.org.in/documents/Smart_Cities_Report_2018.pdf)  
<http://amrut.gov.in/>  
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<https://scroll.in/article/841595/what-indias-cash-strapped-municipalities-can-learn-from-punes-new-revenue-formula>



# CONCLUSION AND RECOMMENDATIONS

In this Whitepaper, the interaction of startups with the smart city ecosystem – different levels of the government, bureaucracy, system integrators, community – and the related concerns have been explored particularly with the aim of proposing policy and practice changes which could improve the experiences associated with these interactions. The following are a number of initiatives that the government can undertake towards making it easier for startups to participate in smart city projects:

- **Problem statement definition, and an open and transparent process of bidding for solutions** - Having a dedicated portal for defining and sharing problem statements that each smart city is looking to solve and allowing startups to propose solutions for the same. In a Concept Paper prepared by the Ministry of Housing and Urban Affairs, a procedure has been proposed under SPIRIT initiative, which enables partnership with incubation centres; helps in defining problem statements in consultation with citizens and other stakeholders; invites innovative solutions from startups; chooses suitable solutions which are further refined and made commercially viable through an incubation and acceleration process; and either allows the same startups to implement the project or finds other vendors through a bidding process. As of now, the Ministry has invited comments on this Concept Paper, it remains to be seen whether these ideas will materialize.
- **Building an eco-system of relevant players** - It is important to build an eco-system which brings academic institutions, consultants, startups and the government together to devise solutions to problems related to smart city related problems.
- **Pilot projects for startups** – To encourage startups to participate in smart city projects and to help overcome the conditions associated with stringent tender requirements, the government could consider giving pilot projects (through a competition or bidding) with a set of deliverables and minimum funds to these startups. And upon realization of the deliverables, bigger projects could be offered to these startups.
- **Policy for incentives or mandatory involvement of startups** – While it has been observed that ULBs and system integrators may be willing to work with startups, the government could either consider offering some incentives for involvement of startups on fair terms of engagement, or mandatory involvement of MSMEs and startups in implementing smart city projects.
- **Opening up funding opportunities for startups** – It is important to rethink the business models around providing basic civic necessities in order to enable startups to operate as sustainable businesses. In such cases, the governments and ULBs should act as channel partners helping startups get access to communities which offer services to them in a commercially viable and responsible manner. Exploring funds like Alternate Investment Funds, Social Impact Bonds, and opening up the CSR sector to also cover smart city projects is a need of the hour, especially for startups solving social problems associated with smart cities like affordable housing, etc.

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