Smart City Namma Bengaluru

Powered by Technology

### *Suggestions to BBMP by*

Introduction:

Bengaluru city otherwise known as the Silicon Valley of India is home to some of the largest IT companies in the world. Over 400 of the fortune 500 companies have an office in Bengaluru. In the year 2015, Bengaluru was seen as an emerging growth market (Jashnani 2015) having more potential than what is already met, especially with regards to the consumer markets.

Bengaluru possesses some of the largest skilled workforce in the country; it has highly educated youths constituting 40 percent of the urban educated voters. Currently, Bengaluru contributes over 60% to Karnataka's GDP and over 66% to taxes. Largest number of R& D labs, over 375, Banks with 3rd largest quantum of deposits and Bangalore is Startup Capital of India – 1,200 to 1,500 startup companies registering in Bangalore

The largest attraction towards the city comes from its high economic growth rate and its skilled workforce. It has the highest per capita income among metros and the largest number of R&D labs.

The Foundations of a Smart City:

B.PAC and C-SMART believe that every smart city rests on certain foundations. We believe that a smart city is inclusive of a range of factors but it rests on five pillars, mobility, safety, cleanliness, environment friendly design and a cultural vibrancy. Only with a combination of all five do we believe that a city can achieve the potential to be a smart city. The suggestions for smart cities are taken from these five pillars and further explained in the infograph below:
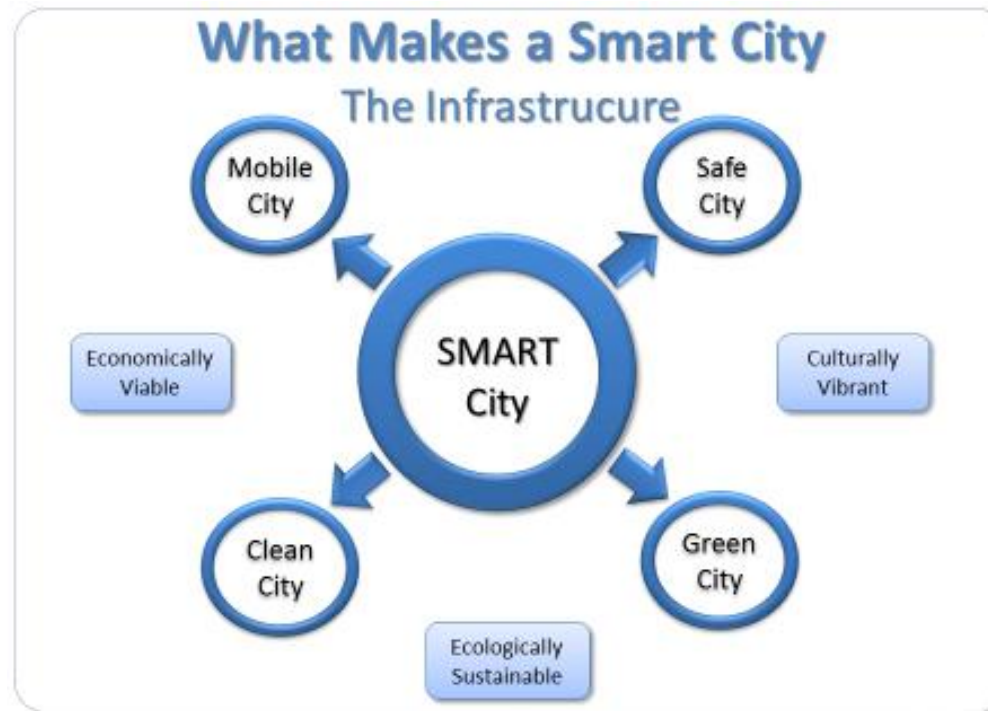
Below are the findings from the perception survey conducted by B.PAC during 2015:

(About 10,000 respondents were interviewed face to face, across the city during May – June 2015 to understand citizen's perceptions on various services delivered by BBMP)

- Citizens are mainly concerned about Solid Waste Management, Roads, Bus shelters, Parks & playgrounds, Health and Lakes as the top 6 issues in the order of priority
- The differences in perception on service level satisfaction on various service parameters across income groups, gender and occupation was not vastly different
- Amongst all Zones, South, West and Yelahanka Zones citizens were most positive about various services delivered by BBMP and citizens from Mahadevapura, Dasarahalli and R.R. Nagar Zones were most dissatisfied
- Citizens were less keen to respond on construction related issues, building byelaws and maintenance related issues
- Peripheral areas require greater investment in Infrastructure and Civic Amenities.
- The average person on the street does not seem to share the same level of concern as several informed citizens active in the civic space
- It is likely that relative economic prosperity gives the citizens a sense of wellbeing which masks the dissatisfaction with the level of BBMP services
- Some of the responses relating to citizens experiences of their interactions with the BBMP may suggest that their interactions maybe infrequent/limited

Bengaluru city has positively responded and citizens are actively participating in programs such as Cycle Day, Bus Day, Treeathon, water conservation drives, RWH & waste segregation etc..

Smart City Namma Bengaluru:

Priorities	Potential Implementable Solutions

Mobility
1. Namma Metro
2. Suburban Rail service
3. Feeder Bus services
4. Parking
5. Walkable areas
6. Intelligent Transport System
	Namma Metro –
	  1. Developing 250 Kms of Metro corridor connecting city end to end
	Suburban Rail service –
	  2. Implementation of much awaited suburban rail services connecting the periphery of the city
	Feeder Bus services –
	  3. Connecting Metro stations, Railway stations, Bus stations with adequate no of feeder busses to provide last mile connective to commuter
	Parking –
	  4. Identifying key locations in dense areas and create paid parking lots to encourage use of public transport and walking.
	Walkable areas –
	  5. Further expansion of Tender SURE roads with good footpath to encourage pedestrians to walk and cycle.
	Intelligent Transport System –
	  6. Unified ticketing system integration, ICT enabled systems to track the public transport vehicles.
	  7. Upgrading the technology in TMC to monitor the vehicular flow across the city.

Cleanliness & Hygiene	Solid Waste Management –
1. Solid Waste Management 2. Construction & Debris Management 3. Waste Water Management **4.** Sanitation	1. Strict Enforcement of waste segregation, 2. Monitoring of compliance of waste management & disposal rules by Bulk waste generators 3. Door to door Collection of wet & dry waste for non-bulk waste generators 4. Decentralize processing of wet & garden/leaf waste to compost or bio gas 5. Adequate infrastructure including CCTV installations at garbage transfer points (No Garbage on Ground & No visual Pollution) 6. Strict Enforcement of Single use Plastic Ban in the city 7. Waste to energy plants 8. Effective functioning of Dry waste collection centers with monitoring by CCTV Cameras 9. ICT based monitoring system 10. Creation of scientific landfills for reject wastes 11. A comphrensive time bound scientific plan for dealing with mixed waste in the existing landfills **Construction & Debris Management** – 1. Strict Enforcement of the C & D rules. 2. Monitoring of vehicles which carries C&D waste to designated location through ICT enabled system. **Waste Water Management**- 1. Setting up Sewage Treatment Plants(STP) at strategic locations and develop a system of using recycled water for industrial consumption,

	2. Installing CCTV's at strategic locations to monitor the dumping of waste in the fresh water bodies **Sanitation –** 1. Public Toilets to be expanded and should also target areas with lack of access to toilet facilities. Areas housing urban poor should be the primary focus.
Sustainability & Green 1. Alternate energy 2. Water supply, conservation & lake rejunivation and maintenance 3. Air Quality 4. Public Open spaces	**Alternate Energy –** 1. Incentivizing Roof Top Solar systems in the city across commercial & residential, Business & Industrial parks 2. Encouraging to switch to LED bulbs and Off – grid connections **Water supply –** 1. Providing 24*7 water supply across the City 2. Reducing unaccounted for Water from current 40% of total 1320 MLD of water 3. Increasing the billing & collection efficiency **Water Conservation-** 1. Meso Rain Water Harvesting project for rejunivation of water table across the city. 2. Mandatory RWH systems in commercial & residential establishments **Lake rejuvenation and maintenance** 1. Fencing the lake boundary 2. Arresting the waste water entering the lake 3. Sewage Treatment Plant 4. Lake rejuvenation to restore water body

	3. A renewed focus on the lakes and their protection in the city.
	Air Quality –
	4. CNG Autos & private Buses, CNG Buses by BMTC& KSRTC,
	5. Incentivize carpooling,
	6. Encourage electric Vehicles through incentivizing purchase of vehicles
	7. Setting up of Air Quality monitoring system across city wth open data platform to monitor and systematically reduce the PM10, PM25 & NOx level in the city
	Public Open Spaces-
	1. Development of Nala parks, Treeathons to promote urban forestry, the protection of already existing parks
Safety & Security 　1. Gender & age related crimes	**Gender & age Related Crimes-** 2. City wide integrated response system through IT enabled systems. 3. LED street lighting system across the city & bus stops thereby ensuring a well-lit city. 4. Panic buttons at junctions, bus stops & public transport 5. Heat maps & advisories on crime prone areas in the city to be well communicated with citizens on a open data platform
Cultural & Heritage	**Cultural & Heritage –** 1. A heritage policy for the city 2. Identification and listing of heritage sites/structures in the city for their protection and conservation. 3. Developing old markets like K R Market, Russel Market as a heritage site

Conclusion:

We believe that by having these foundations strong, the city can have more opportunities to grow further and continue to be the leader in innovation. As Bengaluru is the Silicon Valley of India, many of our ideas focus on technological advancement to improve the quality of citizens lives; the increase of CCTV cameras in police stations and public transport, public wi-fi facilities in stations, safety alarms in buses, better sewage treatment plants and sustainable energy development, can help the city truly become a smart city.

As highlighted in the Smart Cities Mission Guidelines, we urge you to develop a comprehensive Area based development plan & Pan city plan covering the priorities mentioned above.

The above list of priorities mentions needs to be full integrated with Govt of India's initiatives such as Swachha Bharath Mission(SBM), Atal Mission for Rejuvenation and Urban Transformation(AMRUT), Make in India, Startup India, Pradhan Mantri Awas Yojana (PMAY) and other programs including Govt of Karnataka's.