

Smart Cities – What's in it for Business?

October 2015



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Foreword



Alok B. Shriram

President, PHD Chamber of Commerce and Industry

I am pleased to learn that PHD Chamber of Commerce and Industry's **International Affairs Committee – Americas (North)** in association with **High Commission of Canada** is organizing a one day International Conference on “Smart Cities: Exploring New Business Opportunities”

The Ministry of Urban Development announced the names of Smart Cities on August 27th 2015, after the first stage of the competition. We understand and realise that this would usher the next wave of planned urbanisation in India and deliver much needed dynamism in the urban development cycle in India.

As each city is unique in terms of its economic, demography and priorities, the primary element of this smartness could be focussed on the unique economic lever of the city. With this unique economic lever its core PIVOT, the smartness of city could be built for a more inclusive and enduring outcome. However, this also presents an urgent need to focus on the economic activity of a city, as it is essential to harness the growth in urban population to enhance economic prosperity and quality of life.

In the backdrop of the recent development the PHD Chamber is organizing the International Conference on “Smart Cities: Exploring New Business Opportunities”. I am sure that this unique effort of PHD Chamber will make substantial difference to the vision given by the Government of India.

I wish the conference a grand success.



Deepak Pahwa

Chairman, International Affairs Committee (Americas) –
North, PHD Chamber of Commerce and Industry

It is a matter of great pleasure for PHD Chamber to organise an International Conference on “Smart Cities” in association with High Commission of Canada.

This is one of key initiatives that the central Government is keen to accomplish. While the discussions on Smart Cities are focusing on the overarching picture and the construct of the cities, however the PHD Chamber through this conference is exploring the new business opportunities that would be present for SME and MSME's.

I also take this opportunity to personally thank Mr Praphul Misra, Mr Vinod Chandiook and Grant Thornton for their outstanding support in convening this conference.

I am sure this conference would bring out some valuable insights for all the stakeholders.

Foreword



Kunal Sood

Partner, Grant Thornton India LLP

Implementation of the Smart City Mission of the Government of India is under process. While there has been no universally accepted definition for a smart city, the Smart City Mission's objective is to promote cities that provide core infrastructure and provide quality life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions. As part of the mission's strategy "it is necessary that all the city residents feel there is something in it for them also".

In the present context it is evident that urbanisation is driven by migration of people from rural areas for better employment opportunities and economic prospects . While provision of infrastructure is important to ensure quality of life, the sustainability of the economic driver of the city cannot be overemphasised. The Smart city programme with such a holistic approach and foresight is essential for the country. The programme should complement the local competitiveness factors that shall eventually sustain the prime reason for urbanization.

It is therefore essential that the core economic profile of the city should take center stage when planning a smart city, hence, "The PIVOT".

Grant Thornton is one of the world's leading organisations of independent assurance, tax and advisory firms. These firms help dynamic organisations unlock their potential for growth by providing meaningful actionable advise through a broad range of services. At Grant Thornton, we use insights, experience and instinct to look at things differently and solve complex issues for privately owned, publicly listed and public sector clients. We also publish thought leadership on a plethora of subjects to provide insights to our clients. To enable the stakeholders, to have a clear perspective of 'The Pivot' and the opportunities which may emerge out of the Pivotal Development Model of a Smart City this report on 'Smart Cities – What's in it for Business' is prepared by Grant Thornton India LLP.

We convey our sincere thanks to all the persons associated with the preparation of this report. Hope that you would find the report insightful and enriching.

Preface



Asgar Naqvi

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GOI Smart City Mission has considered city improvement (retrofitting), city renewal (redevelopment) and city extension (greenfield development) as strategic components of area-based development. Even when an urban planner designs the retrofitting plan/redevelopment plan of a city the focus remains, on addressing the requirements pertaining to adequate water supply, assured electricity supply, sanitation, including solid waste management, efficient urban mobility and public transport along with affordable housing. The process of retrofitting and redevelopment are generally in response to city growth which could be based on an organic growth model or an inorganic growth model.

It is noticed that in an effort to respond to the demands of the city standard plans are made and implemented. Due to this, all cities seem mirror images of each other and the same has led to the core economic activity or 'The Pivot' being ignored.

In this report we have tried to give an introduction to the Smart City concept, conventional developmental models and the pivotal developmental model. Our report aims to give the reader an understanding of the pivotal developmental model and at the same time discuss the various pivots.

The take away from this report, is that all stakeholders should work together to identify 'The Pivot' of their city, as it is the core economic activity of the city, makes business sense and affects multiple livelihoods in a city. All infrastructure up-gradation, skill development programs, institutional set up should therefore converge to support the pivot of the city.

In the process of drafting this report we have referred to secondary resources for data, had multiple interactions with members from the business community and also stakeholders from industry, MSME cluster, urban planning institutes.

Should you have any clarification in regards to 'The pivotal developmental model' or seek to undertake a study on identification of 'The Pivot' for your city; we shall be glad to work with you.

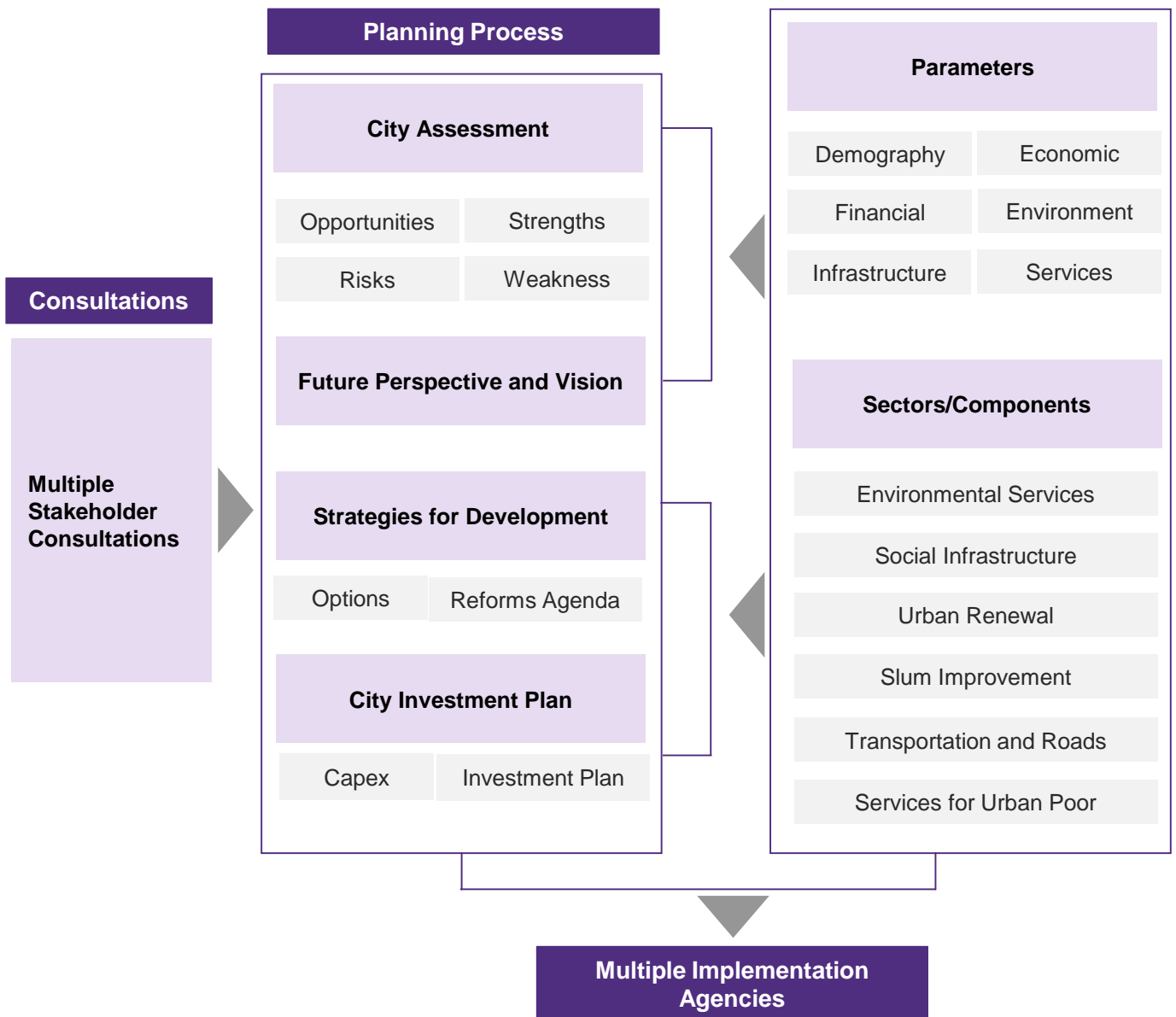
Hope you would find the report insightful and enriching. Please share your views on the report with the aforementioned contact

Management and Development Model of a City



City Development Model

Existing city development process across India involved preparation of city development plan and master plan. This plan laid a greater emphasis on the spatial aspects and regulations with a view to align the infrastructure of the city for its development. It adopted a resource based approach for the planning and development of the of the city with a vision to achieve social equity and sustainability.



City Development Model – Organic v/s Inorganic Growth

Organic Growth Model

- An existing agglomeration of people
- City services are planned as per the needs of the people

Challenges

- Many Indian cities are very old, makes it hard to initiate new developments without impacting daily lives of citizens
- Development of the city is always citizen focused, without holistically considering the impact on the industry
- City tend to develop mostly in the outer periphery

Examples

- Delhi
- Mumbai
- Varanasi
- Kolkata
- Chennai

Inorganic Growth Model

- An industry is first based out of the City
- Overall city develops as per the requirements of the industry

Challenges

- Most of the citizen needs are catered to after the industry has been established and industry has attracted a sizeable population
- Lacks holistic nature of planning for both citizens and industry
- Lack of focus leads to ancillary industries being set up much later in the city lifecycle

Examples

- Jamshedpur
- Pune
- Bangalore
- Gurgaon
- Hyderabad

Facilities in a city, have rarely been prioritised according to the economic needs of the city, hence the development has been erratic

Smart City - Overview



What is Smart City?

A 'smart city' is an urban region that is highly advanced in terms of overall infrastructure, sustainable real estate, communications and market viability. It is a city where information technology is the principal infrastructure and the basis for providing essential services to residents.

In a smart city, economic development and activity is sustainable and rationally incremental by virtue of being based on success-oriented market drivers such as supply and demand. They benefit everybody, including citizens, businesses, the government and the environment. Other terms that have been used for similar concepts include 'cyberville', 'digital city', 'electronic communities', 'flexicity', 'information city', 'intelligent city', 'knowledge-based city', 'MESH city', 'telecitey', 'teletopia', 'Ubiquitous city' and 'wired city'.

The concept of smart cities originated at the time when the entire world was facing one of the worst economic crises. In 2008, IBM began work on a 'smarter cities' concept as part of its Smarter Planet initiative. By the beginning of 2009, the concept had captivated the imagination of various nations across the globe.

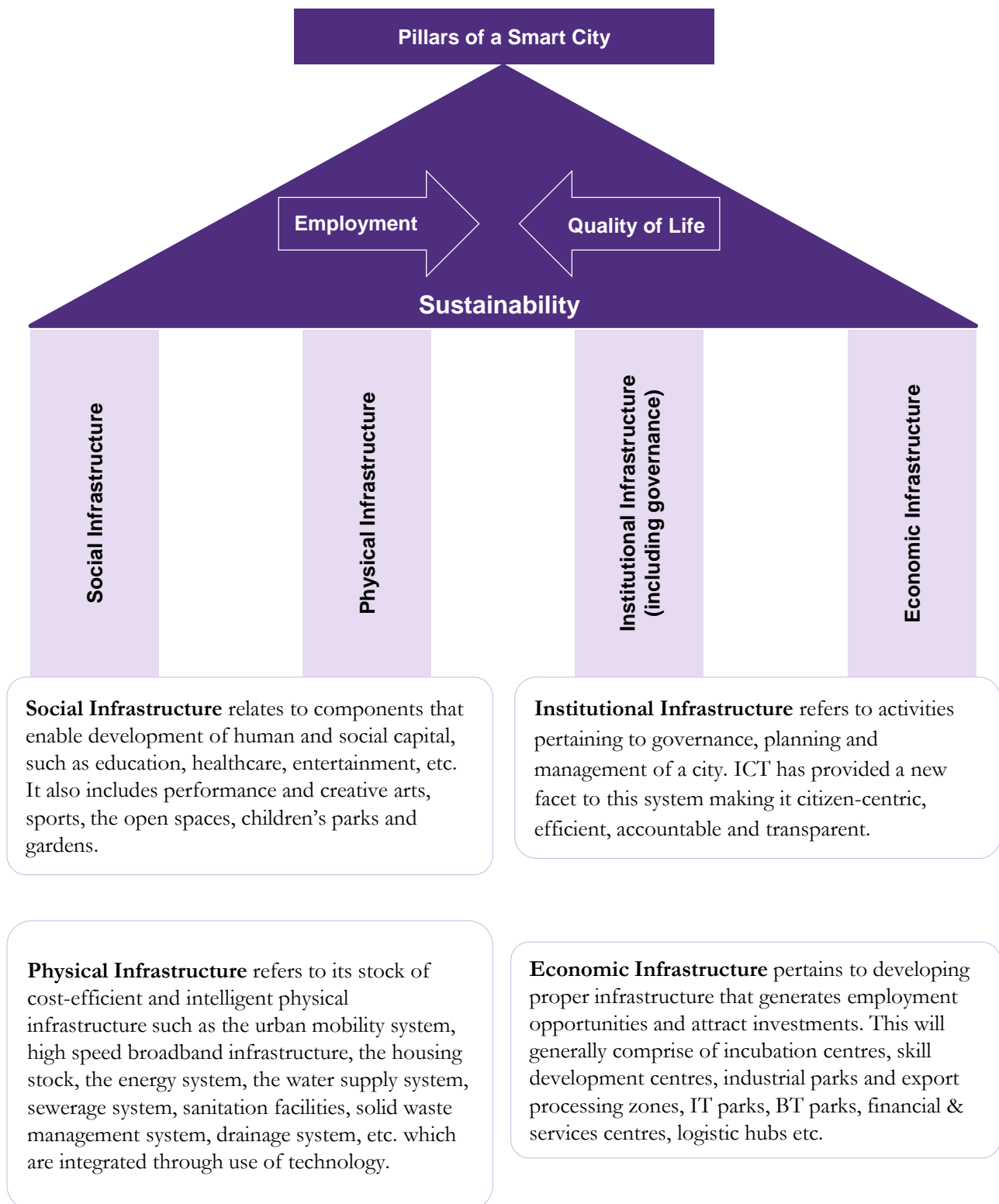
Various definitions of Smart City

- The UK Department of Business, Innovation and Skills considers smart cities a process rather than as a static outcome, in which increased citizen engagement, hard infrastructure, social capital and digital technologies make cities more livable, resilient and better able to respond to challenges
- The British Standards Institute defines it as “the effective integration of physical, digital and human systems in the built environment to deliver sustainable, prosperous and inclusive future of its citizens”
- Indian Government 2014's defines Smart City as: "Smart City offers sustainability in terms of economic activities and employment opportunities to a wide section of its residents, regardless of their level of education, skills or income levels"
- Smart Cities Council defined the Smart City as: "A smart city is one that has digital technology embedded across all city functions"
- IBM defines a smart city as “one that makes optimal use of all the interconnected information available today to better understand and control its operations and optimise the use of limited resources”

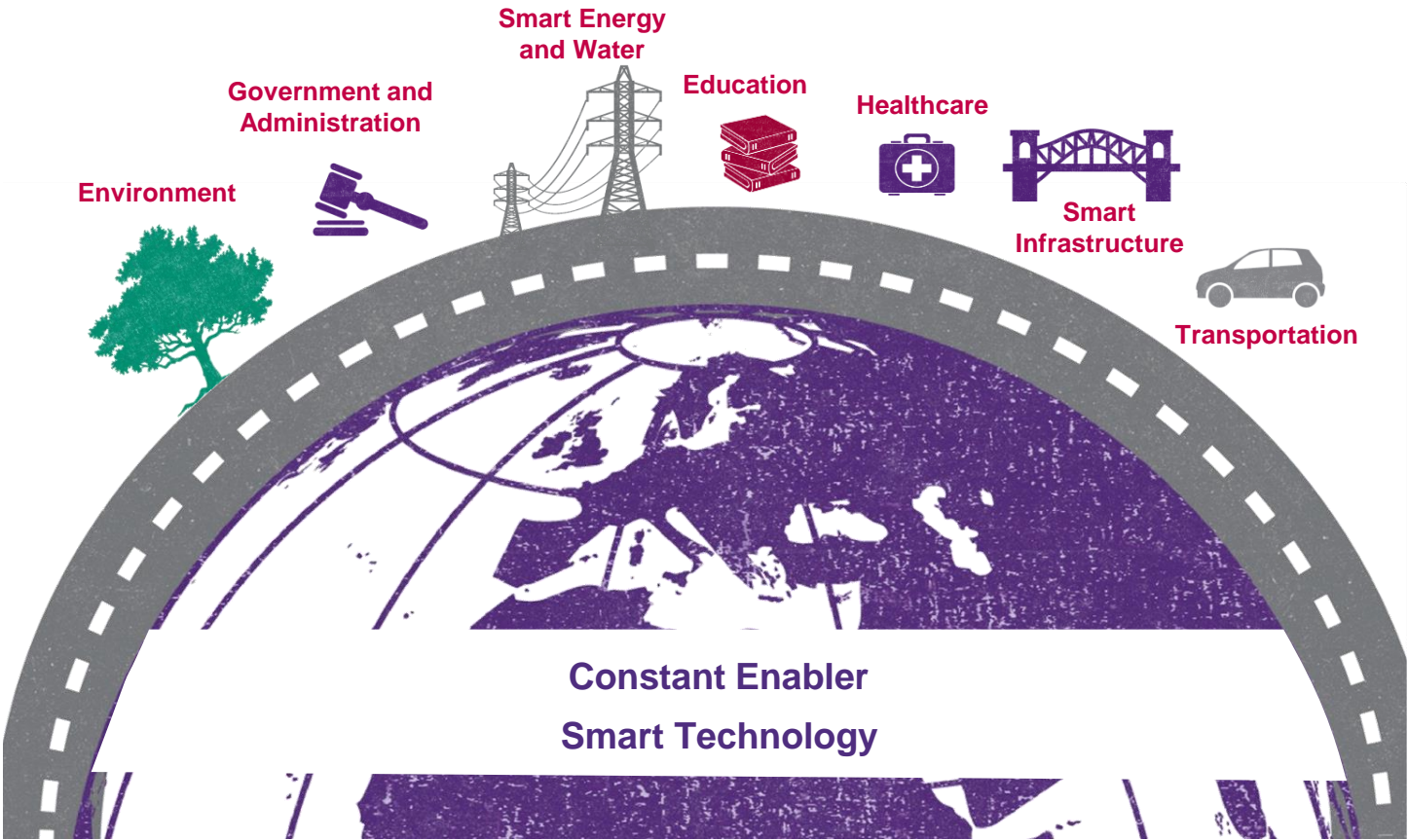


Approach being adopted by the Government of India

The term Smart Cities can be broadly used to describe cities that take a holistic approach towards infrastructure, operations and people.



Components of a Smart City



Smart Governance

Smart Governance includes political and active participation, citizenship services and the smart use of e-Government along with the use of new communication channels. e-Government can be considered as a concept that comprises of improving public governance and providing the provision of public services through the use of ICT (e-Government). This includes improving the consultation and decision-making processes, improving public policy making with the use of ICT and incorporating more critical agents throughout the process (e-Government).

Smart Citizen

The differentiating element between a digital city and a smart city is smart people in terms of their skills and educational levels, the quality of social interaction in terms of integration and public life along with their ability to open to the outside world.

Education

A key element in the development of cities is having a major presence of well-educated citizens in the city in addition to citizens adapting the educational offer, especially considering the changes the society is going through, due to globalisation and the advancement of new technologies. It is important to design digital development plans in classrooms that primarily focus on closing the digital divide, promoting the digital skills of teachers and incorporating the new generation of digital learning resources. Virtual education offers many benefits, such as reduced costs, flexible hours and greater interaction.

Smart Energy

The variable nature of power generation from renewable energy sources requires that networks, generation and consumption are connected in an efficient and intelligent way. Power supply has been governed by the consumption-oriented generation model. Since power would be generated increasingly from renewable energy sources in the future, it is necessary that we move to a model based on principles of smart power generation, smart power grids, smart storage, and smart consumption.

Smart Technology

Smart city technologies are being developed to address a range of issues, including energy management, water management, urban mobility, street lighting, and public safety. These innovations are underpinned by general developments in areas such as wireless communications, sensor networks, data analytics, and cloud computing.

Smart Mobility

Smart mobility aims to improve operational efficiency through linking traffic road information, the vehicle condition, real-time data acquisition and integration of urban traffic capacity, thus achieving smooth flow of traffic running with RFID automatic toll collection technology and other data gathering instruments.

Smart Infrastructure

Smart infrastructure designs will contain many small-scale, networked elements that serve a multitude of uses, rather than one single guiding purpose for their existence. For example urban community garden plots, provides food for urban dwellers as well as serves as storm water management systems. Cities will need to accurately measure current conditions, and model the future. Sensors and technological controls embedded within new and retrofitted urban designs could monitor existing conditions and provide real-time feedback in case modifications are needed.

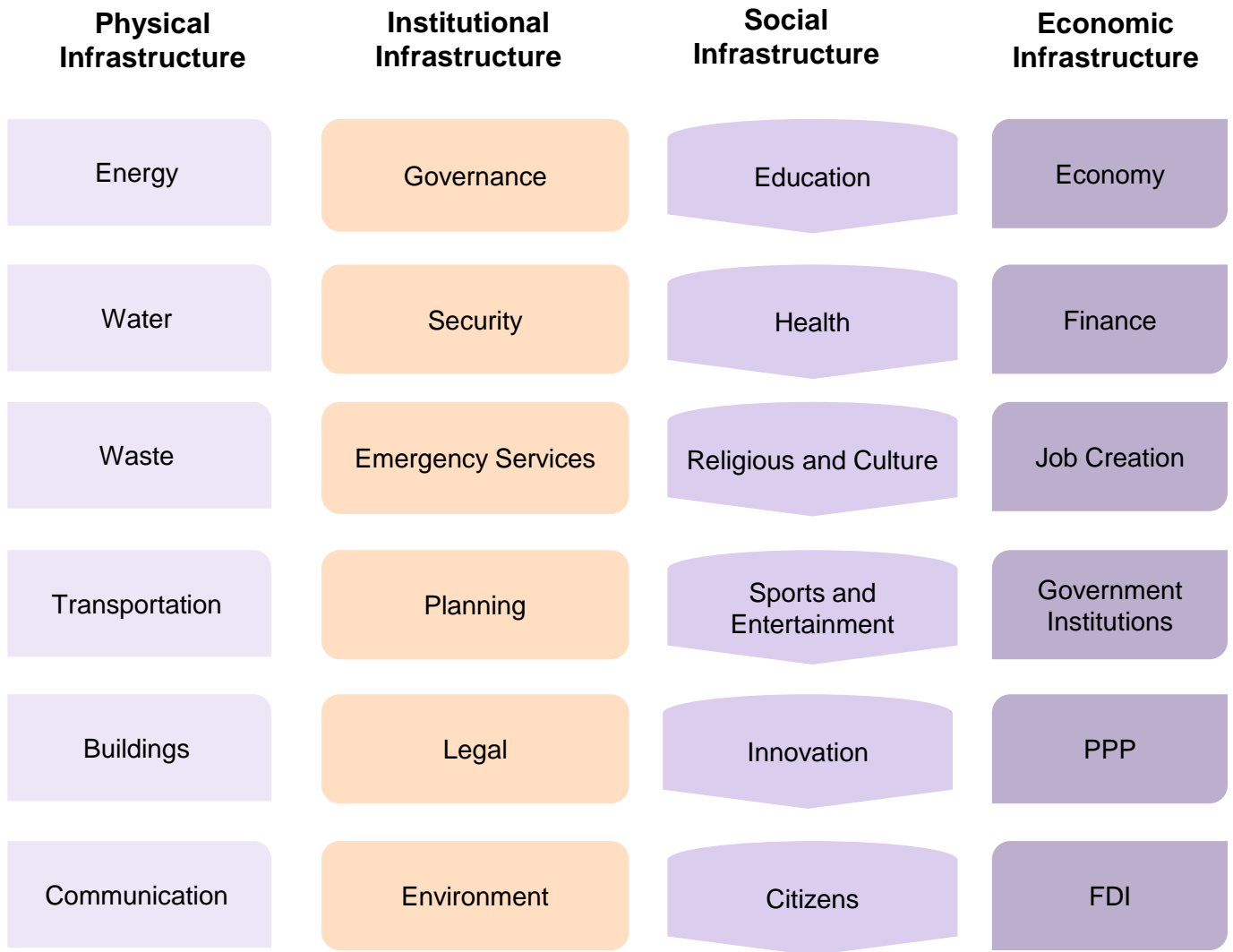
Smart Building

Smart buildings deliver useful building services that make occupants productive (e.g. illumination, thermal comfort, air quality, physical security, sanitation, and many more) at the lowest cost and environmental impact over the building lifecycle. Smart buildings are connected and responsive to the smart power grid, as they interact with building operators and occupants to empower them with the next level visibility and actionable information.

Smart Healthcare

Smart healthcare is the application of new technologies in ways that affect health care. These include, diagnosis monitoring patients, including the management of organisations involved in these activities. Use of new technologies would help citizens enjoy a number of online medical services, including key services such as requesting an appointment online or the possibility of having a digital record.

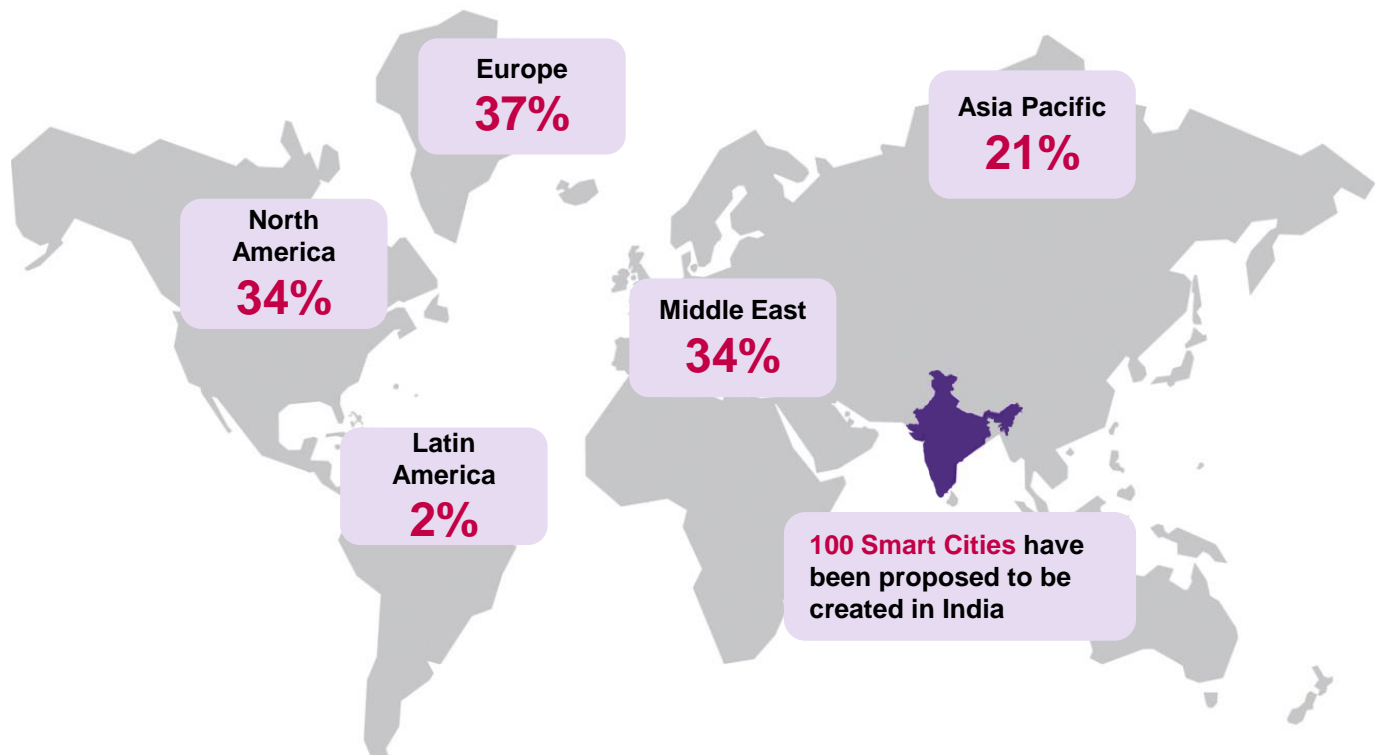
Smart City Frame Work



A smart city is a one that has sustainable economic growth and high standards of living. Investments in human and social capital, physical infrastructure such as transport, and social infrastructure like healthcare, education and recreation, are the usual hallmarks of such a city. It intelligently manages resources and uses Information and Communication Technology and technology platforms including automated sensor networks and data centres to make living efficient. In other words, a smart city has a mix of commercial (services and manufacturing), residential, social infrastructure, physical infrastructure and public utilities.

"Smart city is an instrumented, interconnected and intelligent city."
The city as a whole is greater than the sum of its parts

The need for Smart Cities?



With more than 60 percent of the world population expected to live in urban cities by 2025, urbanisation as a trend will have diverging impacts and influences on future personal lives and mobility. Rapid expansion of city borders, driven by increase in population and infrastructure development, would force city borders to expand outward and engulf the surrounding daughter cities to form mega cities, each with a population of more than 10 million. By 2023, there will be 30 mega cities globally, with 55 percent in developing economies of India, China, Russia and Latin America.

The explosive population growth and dynamic shift in urban sprawl, coupled with the economic growth of mega cities in the emerging economies, will pose a variety of opportunities for companies operating in different sectors. The mega cities from the emerging economies will become the largest markets for existing premium products and technologies, while their developed counterparts will witness a trend of sustainable measures. This will also lead to the evolution of smart cities with eight smart features, including Smart Economy, Smart Buildings, Smart Mobility, Smart Energy, Smart Information Communication and Technology, Smart Planning, Smart Citizen and Smart Governance.

Importance of Smart Cities : Smart cities will enable the following

- Enhancement of GDP
- Generate employment opportunities
- Improve quality of life in urban areas
- Reduction in the migration rate
- Attract Foreign Direct Investments (FDIs) in the country

Smart Cities : Indian Context

While the urban population of India accounts for approximately 31% of the total population, it contributes over 60% of India's GDP and it has been projected that it will account for nearly 75% of India's GDP. Thus Indian population is setting ground for becoming a knowledge based society.

Global experience have ascertained that a country's urbanisation up to 30% is relatively slow , however it picks up the speed thereafter till it reaches 60-65%. Thus taking a cue from this, India is at a transition point and needs to plan its urban areas well.

According to the Smart Cities Council, an industry body, the need for such cities arises from the fact that the rural population is migrating from rural to urban areas on a massive scale. By 2050, about 70 per cent of the global population would be living in cities and India is no exception. India will need about 500 new cities to accommodate the influx in its urban areas.

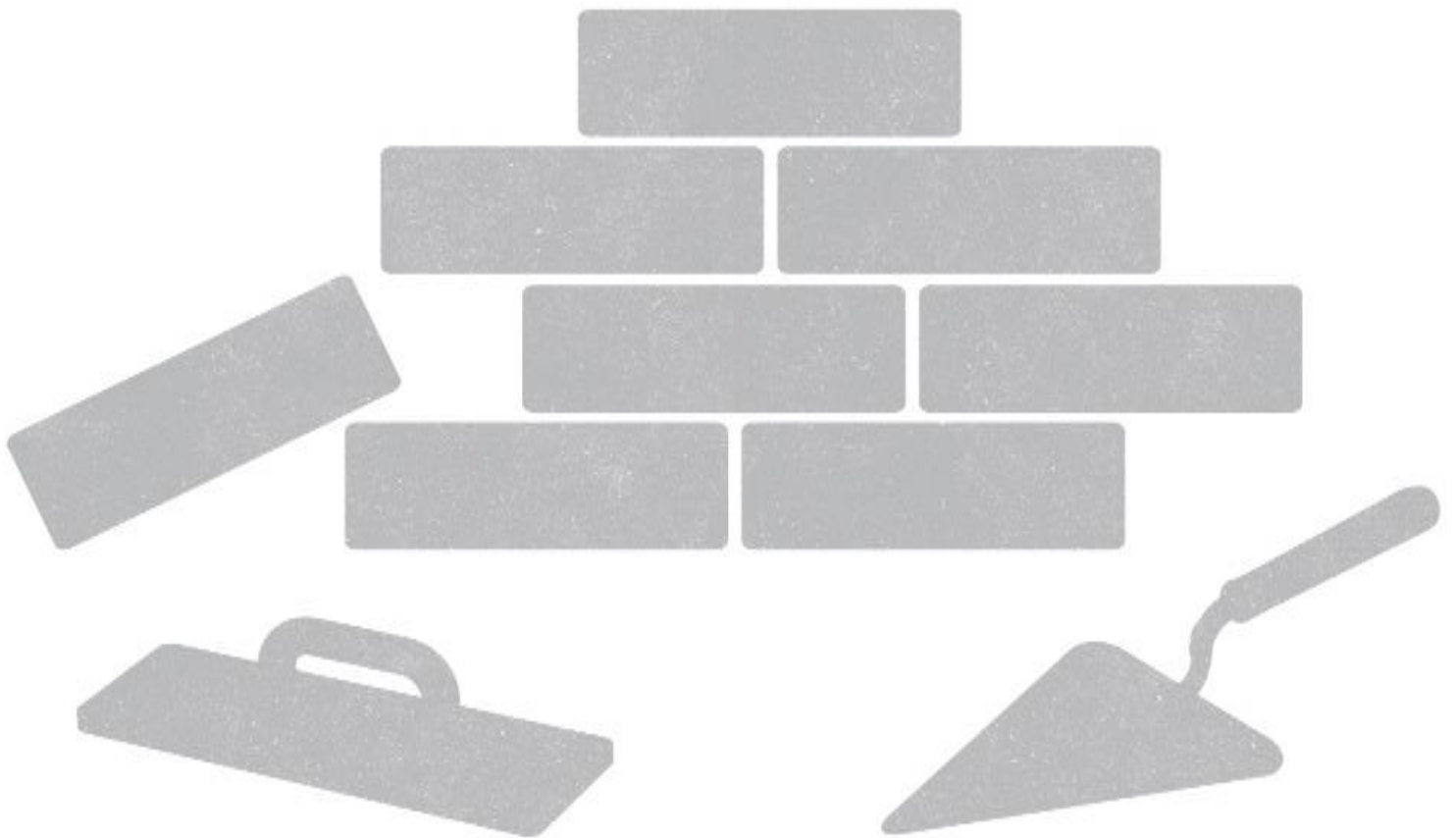
Currently cities face significant challenges with regards to increasing population, environment and regulatory requirements, declining tax bases and budget and burden on the existing civic infrastructure.

Recognising this high pace of urbanisation and movement of its citizens from smaller towns and villages to cities, Government of India has set aside INR 7,600 Crore (\$1.24 billion) for the creation of 100 Smart Cities.

Accordingly, it is proposed , to develop 100 cities as Smart Cities that may be chosen from amongst the following:

- One satellite city of each of the cities with a population of 4 million people or more (9 cities)
- Most of the cities in the population range of 1 – 4 million people (about 35 out of 44 cities)
- All State/UT Capitals, even if they have a population of less than one million (17 cities)
- Cities of tourist, religious and economic importance not included in above (10 cities)
- Cities in the 0.2 to 1.0 million population range (25 cities)

Customised Approach – Smartness in a City



Smartness in a City – City's Pivot

Economic Activity of a City

- Urban/semi-urban areas host bulk of the economic activity in India
- Each city is unique in character and development requirements
- Each city has a different focus in terms of its economic activity
- Each city has different requirements for its focal economic activity, even if two cities focus on a similar economic activity

Forms the PIVOT of the City

Traditional Approach

Smart City



Environment



Education



Healthcare



Government and Administration



Transportation



Smart Infrastructure



Smart Energy and Water

Constant Enabler

Smart Technology

v/s

PIVOT based Approach

Smartness in a City

Introduction of Need based Smart Facilities

- Which Infrastructure?
- Which Smart Technology?
- What type of Healthcare?
- Which aspects of Government and Administration?
- What kind of Education?

How?

Need Assessment to Identify Priorities

Holistic Stakeholder Consultations with Local Bodies, Industry, Labour, Civil Society, Educational Institutions, Healthcare Bodies

PIVOT

Indicative List of City Pivots

Agriculture	Manufacturing	Tourism	Logistics	Services	Governance
Fruits	Electronics	Recreation	Air	IT	UT's
Vegetables	Leather Products	Spiritual	Land	Financial	State Capitals
Grains	Handicrafts	Religious	Water	Healthcare	Safety & Security
Animal Rearing	Textile	Medical	Multimodal		



Agriculture Pivot

International Case Study – San Joaquin Valley

Key Facts and Issues:

- Annual value of agriculture production is USD 25 billion
- 450-mile stretch of mainly agricultural flatlands encased by mountains, provides about 40% of America's fresh produce
- Has an unemployment rate of about 14%
- Depleted groundwater reserves; and depletion of soil health
- Lesser land being used for Agriculture

Implemented Solutions:

- Starting of University of California Merced campus, with industry linkages and focus on Solar Energy, Biotech, Biofuels, Harvesting and Water Conservation
- Usage of smart drip technologies and micro irrigation for both irrigation and fertilisers
- Web-based irrigation management systems
- Drones for aerial mapping of stressed soil and plot irrigation

Potential Agriculture Pivot – Nashik

Key Facts and Issues:

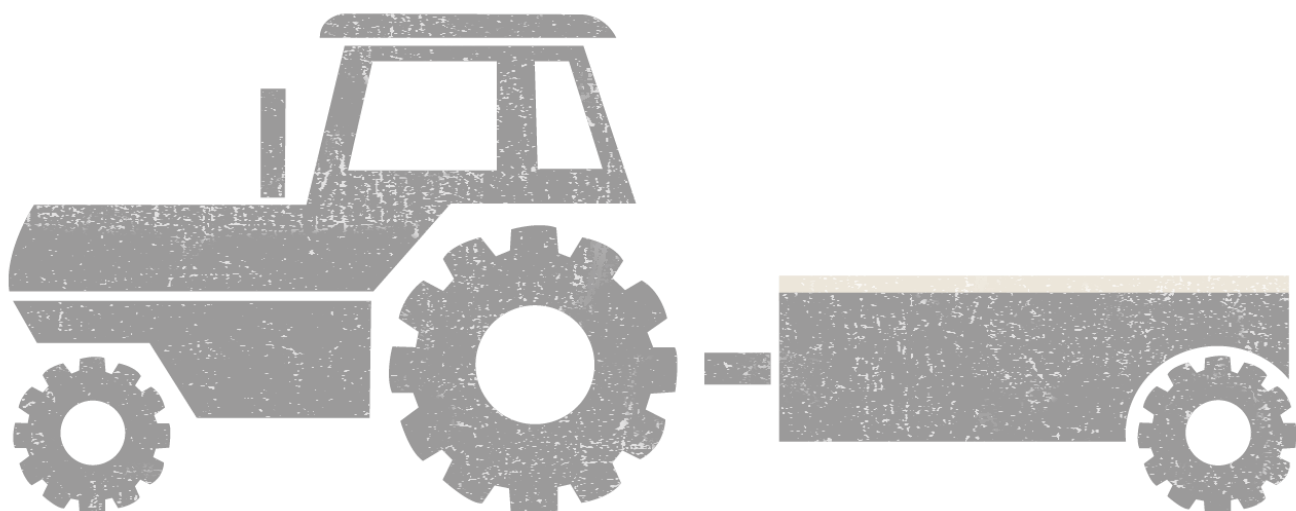
- Around 1.4 million MT production of grapes and 250 k MT production of mangoes
- Depletion of groundwater and wastage of energy
- Disconnect between planning for agriculture, energy and water
- Anticipated 100% increase in residential area, with 50% reduction in agricultural land
- Lack of world class research institutions

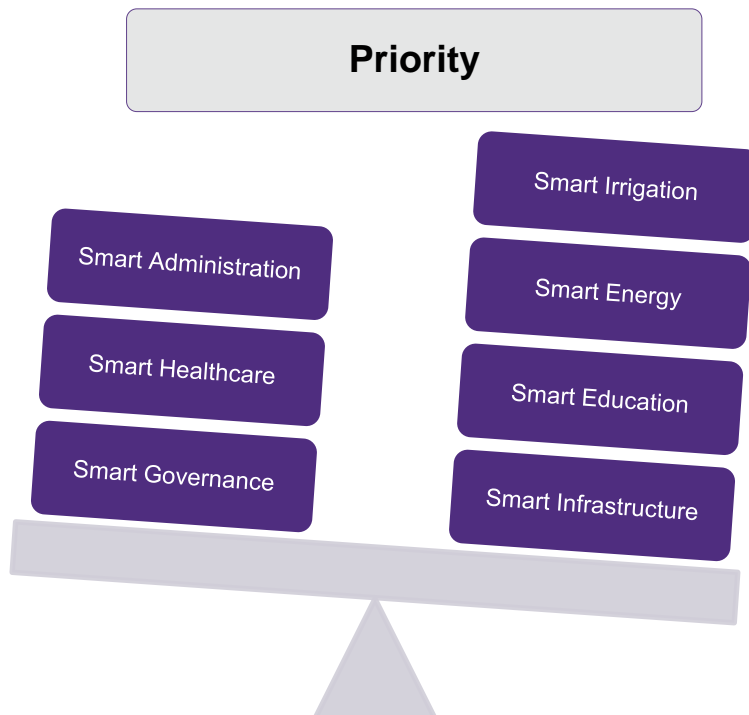
Possible Solutions:

- Re-use treated waste water for irrigation
- Reducing fuel consumption for agriculture production

Other India Cities with Agriculture Pivot:

- Shimla, Muzaffarpur, Malihabad





Key Takeaway

An inherent need to create solutions focused on Agriculture in Nashik

- Need for HAATs & Technology Bazaars
- Need for Smart Infrastructure to support Post Harvest Logistics
- Need for Smart Healthcare catering to needs of Agricultural Labour
- Need for Smart Education for training on Agricultural subjects

Manufacturing Pivot

International Case Study – Greater Houston

Key Facts and Issues:

- Total GDP of USD 462 Billion in 2015, manufacturing contributed 18.2% to the area's GDP, focused on heavy machinery, resins, synthetic rubber, chemicals
- Healthcare of workers is a major issue for the industry
- Rising energy costs
- Need more focus on research to stay globally competitive

Implemented Solutions:

- Installation of Smart Meters and automated grid distribution
- Real time reporting of status updates regarding the distribution infrastructure.
- World class institutions, conducting research on efficient manufacturing and training labour

Other India Cities with Manufacturing Pivot:

- Agra, Kanpur, Ludhiana, Jalandhar

Potential Manufacturing Pivot – Tirupur

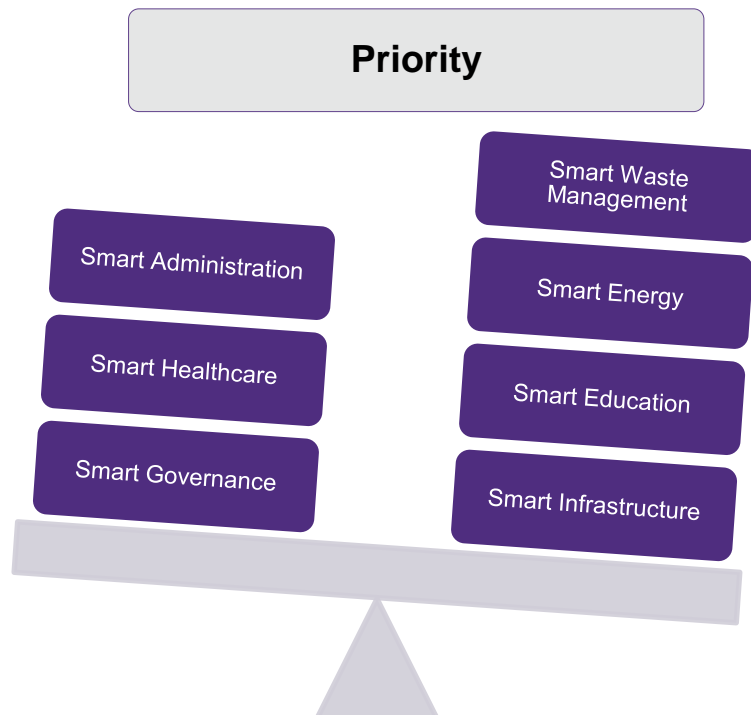
Key Facts and Issues:

- Accounts for 90% of India's cotton knitwear exports
- More than 3000 garment stitching units
- 15,000 tonnes of yarn consumed per month
- Struggling with water requirements for the industry
- Facing major environmental issues in the area
- Availability of electricity is also a major challenge
- Labour needs to be trained in modern manufacturing practices

Possible Solutions:

- Smart waste management
- Recycling waste water
- Smart energy solutions need to be implemented





Key Takeaway

To fuel sustainable growth in Tirupur, development needs to be focussed on the Manufacturing activities of the city

- **Need for Smart Energy systems**
- **Need for Smart Education focussed on Technical Education**
- **Need for Smart Infrastructure to support Logistics of Manufactured goods**
- **Need for Smart Waste Management to ensure minimal impact on Environment**

Logistics Pivot

International Case Study – Greater Memphis

Key Facts and Issues:

- Logistics provides USD 15 billion in economic output from the city and 20% of the entire regional employment
- Has world class freight infrastructure, including cargo airport, inland river port, five Class I – railroads and numerous highways
- 149.1 Million Sq. feet of warehousing space
- Rising fuel costs, and traffic congestion are some major issues

Implemented Solutions:

- 60 miles of bike lanes in the city
- Development of business incubation centres for logistics based industry
- Introduction of the unified development code, for involvement of neighbourhood in city development

Other India Cities with Logistics Pivot:

- Kundli, Chennai, Vishakhapatnam, Navi Mumbai, Port Blair

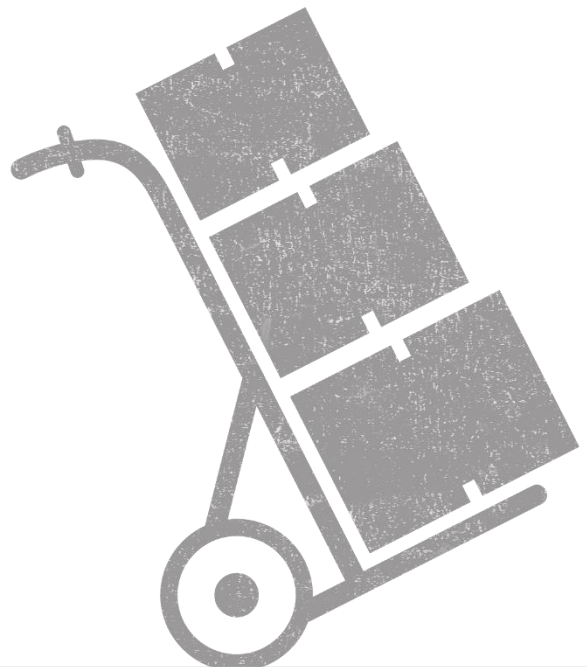
Potential Logistics Pivot – Mundra

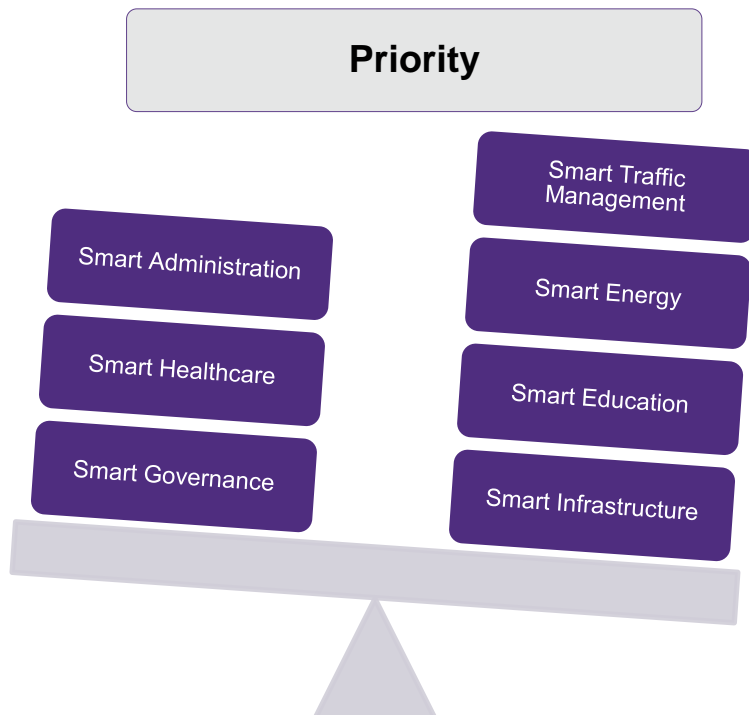
Key Facts and Issues:

- India's largest SEZ spread over 6456 Ha for Exim business
- FTWZ spread over 168 Ha for supply chain centres
- Multi-modal connectivity (Sea, Road, Rail & Air)
- 9240 MW thermal capacity, with 4475 ckm of transmission network
- Availability of intra port transport services, for all goods
- Environmental issues and lack of world class medical facilities

Possible Solutions:

- Environment friendly construction and manufacturing activities
- Development of medical facilities catering to health problems of logistics industry workers





Key Takeaway

More environmental and healthcare focus will help develop Mundra SEZ into a World Class logistics hub

- Need for Smart Traffic Management to control Logistics Traffic from congesting the city
- Need for Smart Education focussed on Technical Education for the Logistics Industry
- Need for Smart Infrastructure to support logistics

Tourism Pivot

International Case Study – London

Key Facts and Issues:

- Annual value of Tourism is over USD 21 billion
- One of the world's prominent cultural centre
- Major forms of tourism are leisure, business, cultural, historic and sports
- Over 17 million tourist visit annually

Implemented Solutions:

- Digital technology , art and design
- Smart ticketing schemes
- Encouraging of flexible working hours to ease congestion during London Olympics
- Wi-fi and open data access

Potential Logistics Pivot – Aurangabad

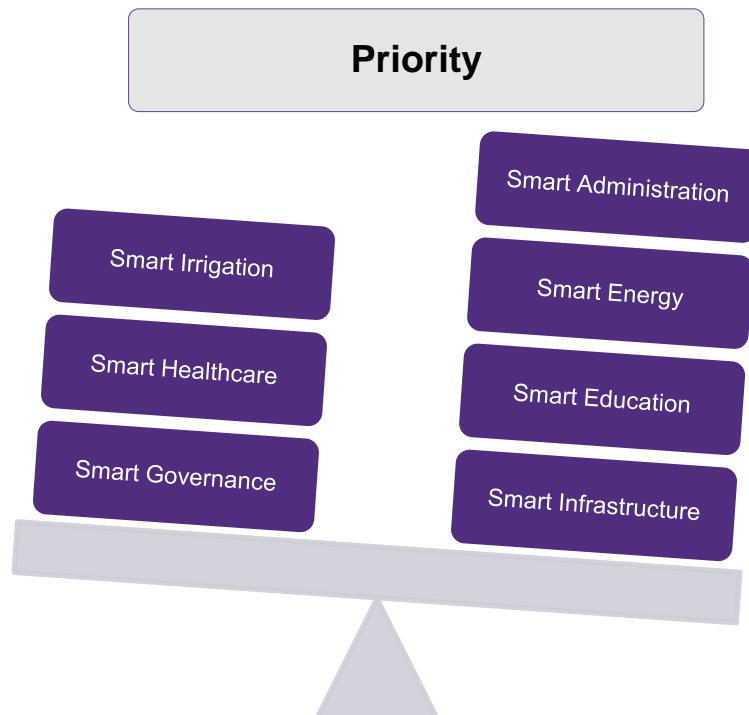
Key Facts and Issues:

- Considered as tourism capital of Maharashtra
- Gateway to renowned world heritage sites
- Rich heritage and cultural mix
- Large industrial centre
- Lack of core infrastructure, public transport, waste management

Possible Solutions:

- Well planned core infrastructure
- Skilled manpower
- Enhanced connectivity
- Digital tours





Key Takeaway

Solutions focussed on Tourism will assist in holistic development of Aurangabad

- **Need for Smart Education focussed on tourism based Technical Education**
- **Need for Smart Infrastructure to support movement of tourists**
- **Need for Smart Administration, to provide ease of access to Information and Tourism Support Mechanisms**

Services Pivot

International Case Study – New York

Key Facts and Issues:

- International hub for finance and commerce
- Home to most of Fortune 500 companies
- Home to more than 8 million
- Hosts over 55 million annual visitors

Implemented Solutions:

- Interactive programs - City 24/7
- City wide Wi-fi and hotspots
- Hudson Yard project –residential and commercial
- Traffic management system

Potential Logistics Pivot – Mumbai

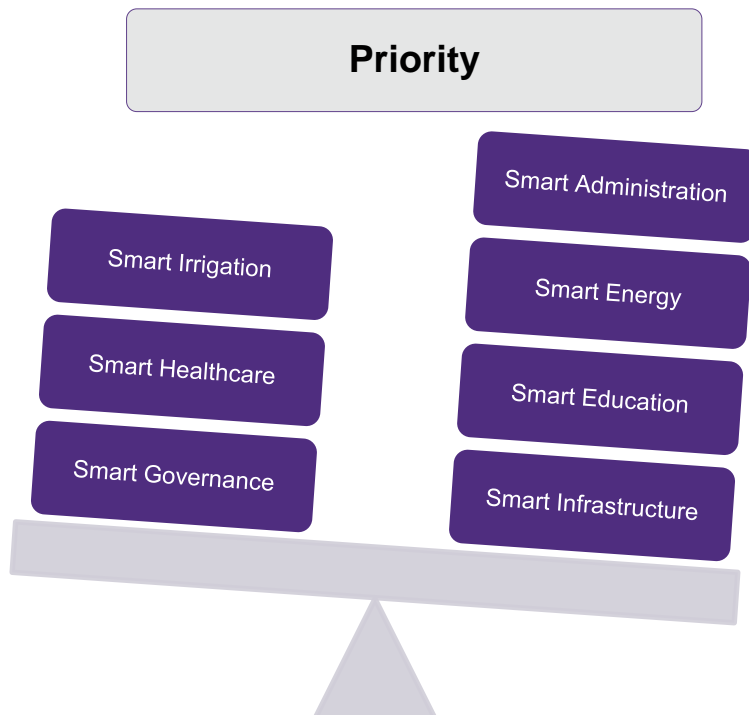
Key Facts and Issues:

- Mumbai is the financial capital of India
- Over 15 million residents and 2 million annual visitors
- Corporate offices of Banks, FIs, large Indian corporates and State Government offices
- Upcoming Smart CBDs like BKC, Nariman Point, Lower Parel,
- Traffic congestion, slums

Possible Solutions:

- Traffic management system
- Smart ticketing
- Waste management
- Development of sub-urban area





Key Takeaway

Solutions focussed ease of movement and employability of people in the Services Sector will help evolve Mumbai

- Need for Smart Education focussed on Services Education
- Need for Smart Infrastructure to support movement of working population across the city
- Need for Smart Administration for supporting Services Sector

Governance Pivot

International Case Study – Washington D.C

Key Facts and Issues:

- Capital city of the United States of America with over 600,000 residents
- The number of Government Jobs in July 2015 in the city were 236,000

Implemented Solutions:

- Launch of Open Government Directive to implement a bold vision for internet technologies to both enhance transparency and move beyond it
- Launch of dashboard to allow public monitoring of expenditure
- Innovations gallery that invite the public to submit innovative approaches that use new Internet technologies to enhance the openness of government
- Launch of application development Competition for citizens to develop Governance applications

Potential Logistics Pivot – Delhi

Key Facts and Issues:

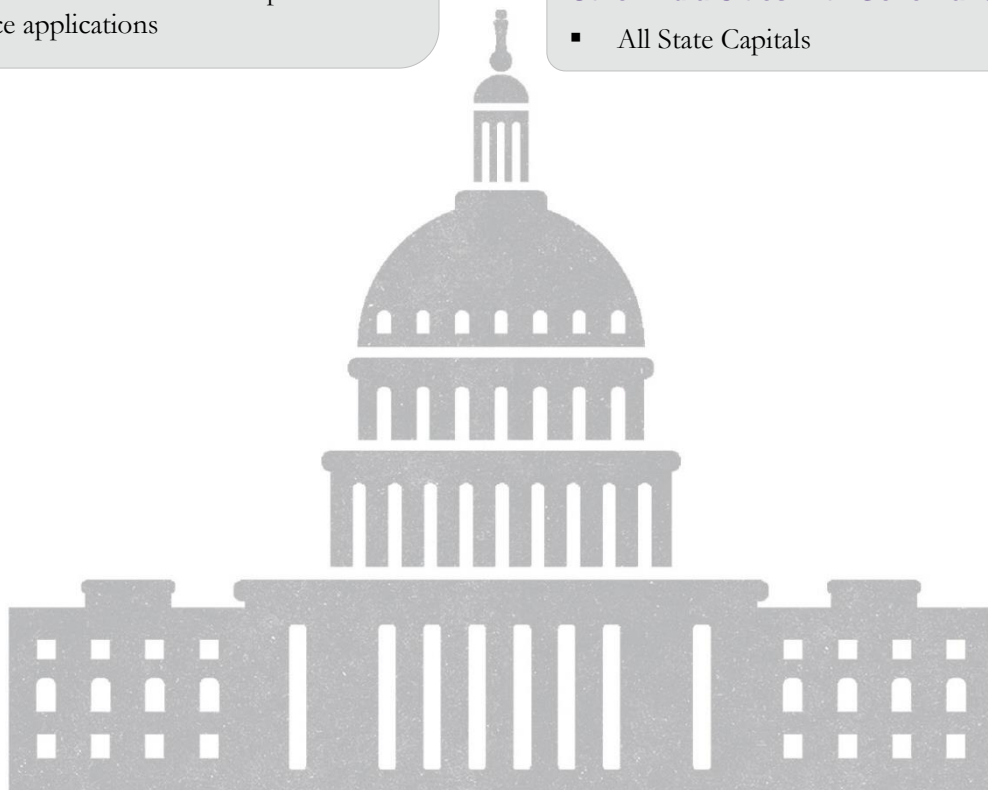
- Delhi faces major issues in terms of availing Government services, due to long waiting times etc.
- Citizen participation in Governance is limited
- Power supply and Transportation networks are not up to world class levels
- e-Applications of various services have already been introduced

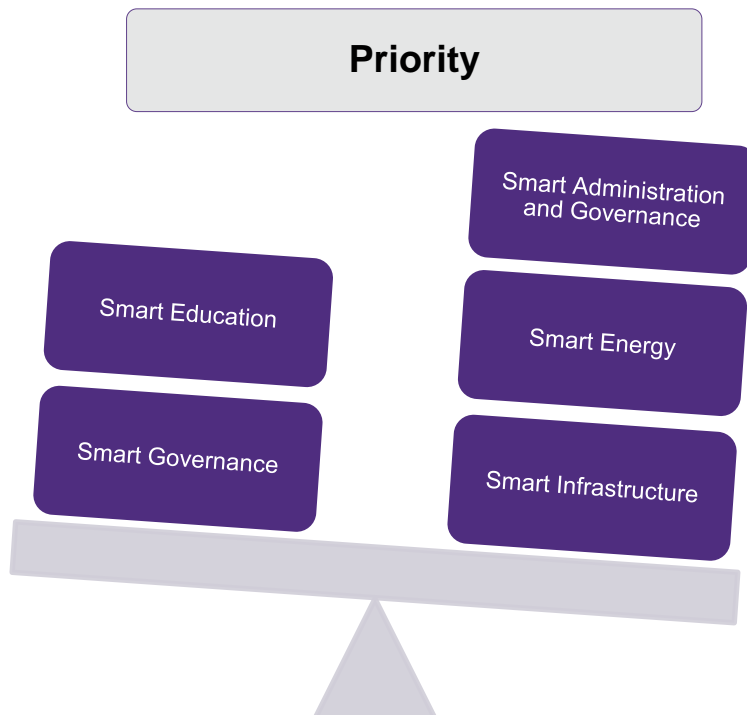
Possible Solutions:

- Launch of applications inviting citizens to participate in Governance
- Smart energy systems and power saving techniques for street lights etc.

Other India Cities with Governance Pivot:

- All State Capitals





Key Takeaway

Focus on ease of Citizen services will enable transformation of Delhi

- Need for Smart Energy systems
- Need for Administration to provide key citizen services
- Need for Governance to keep minimal manual intervention in government processes
- Need for Smart Infrastructure to enable easier travelling for citizens

Going Beyond – with PIVOT

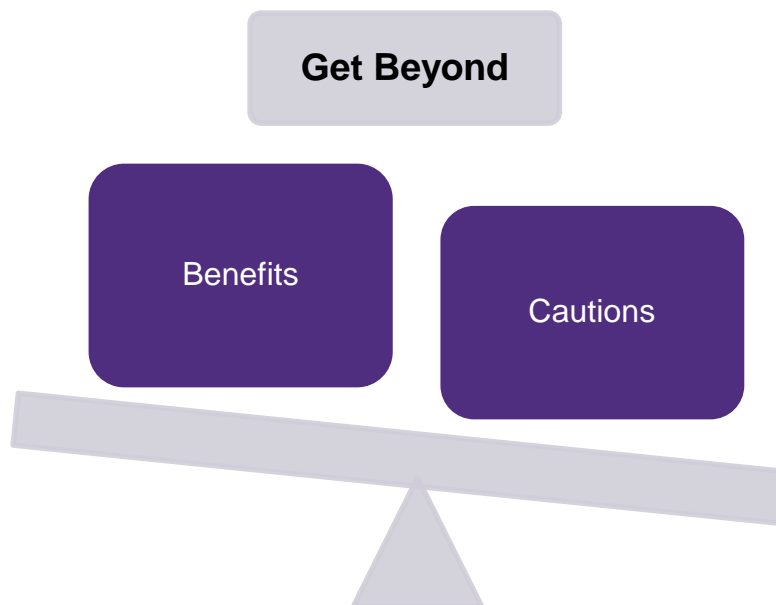


Key Benefits and Cautions

Key benefits

A focus on PIVOT's pertaining to Smart City Development is envisaged to have the following benefits:

- Foster focussed growth and development, while creating opportunities for further economic activity
- Provide increasing and innovative employment opportunities, while focussing on Skill Development in line with the Economic needs of a city
- Involving the lowest strata of people in the Economic Development process by adequately skilling them, thereby alleviating poverty
- Provide Environment friendly solutions particularly for the primary Economic activity of the city
- Provide Healthcare facilities focused on the needs generated by the Economic activity of the city
- It will also be pertinent to introduce the concept of Cross-Pivotisation, where the focus may be shifted to more than one PIVOT's
- Possibility of fund availability directly from the Private Sector in lieu of the perceived benefits



Cautions

It is also pertinent to highlight that it will be ideal not to over focus on the PIVOT concept. The requirement would be to take the following cautions:

- Need to be averse to over exploitation of the PIVOT of a city
- Need to focus on prioritisation based on the PIVOT and not completely ignoring other aspects of Smartness in a City
- Need to assess the environmental impact of initiatives introduced, before the implementation is started
- Need to curtail the process of urbanisation only for residential purposes

PIVOTed Growth Model

Challenges for Traditional Growth Models

Organic Growth Model

- Many Indian cities are very old, which makes it hard to initiate new developments without impacting daily life of citizens
- Development of the city is always citizen focused, without holistically considering the impact on industry
- City tend to develop mostly in the outer periphery
- Even though development of the city tends to be focused on citizen services, citizen participation in the development tends to be limited
- The economic benefits of the city's growth are not uniformly distributed across all citizens

Inorganic Growth Model

- Most of the citizen needs are catered to after the industry has been established and attracted a sizeable population
- Lacks holistic nature of planning for both citizens and industry
- Lack of focus leads to ancillary industries and other supporting institutions being set up much later in the city lifecycle
- Cities tend to grow in a haphazard manner
- Residential areas tend to come up at the expense of other economic activities of the city

Solutions through the PIVOTed Growth Model

PIVOTed Growth Model

- Enable prioritisation of the development of infrastructure as per the economic needs of the city
- Enable the channelising of smart efforts towards the economic activity of the city and also enable further catalysing of the economic activity
- Economic benefits from the development of city will percolate to the lowest strata of society, as they will be better equipped to take advantage of the increased focus on the economic activity
- Balance the needs of both the citizens and industry pertaining to Smart City initiatives

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At a Global level we have been working with the Embassies and High Commissions in India to bring in the International Best Practices and Business Opportunities.

Industrial Development, Health, Education & Skill development, Housing, Infrastructure, Agriculture & Agri-business and Digital India are the seven key thrust areas of the Chamber.

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Notes

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