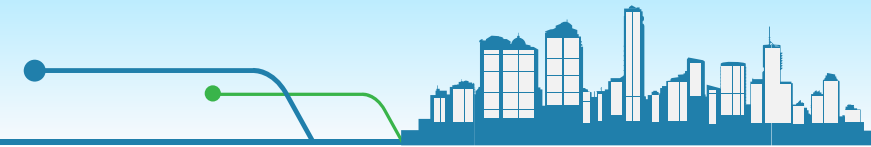




Data led Metamorphosis of Cities

Bipin Pradeep Kumar (Bipin@Gaia.in)

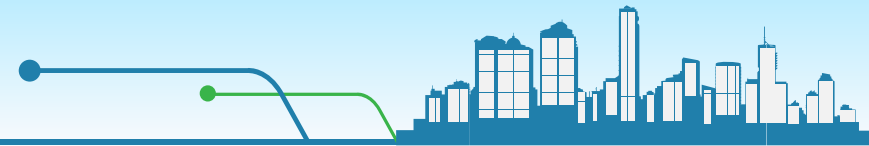


Harappan Civilisation 3300 BC- 1900 BC

- Grid layout
- Excellent drainage and sanitation

Cant help notice that 5000 years later in India, all people still don't have the kind of engineering an planning



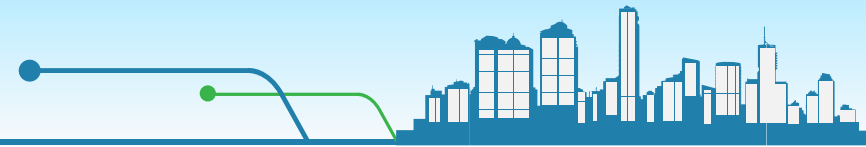


2560 BC- 1900 BC

- Aligned with astronomically significant events – solstices and equinoxes

Engineering for the next life



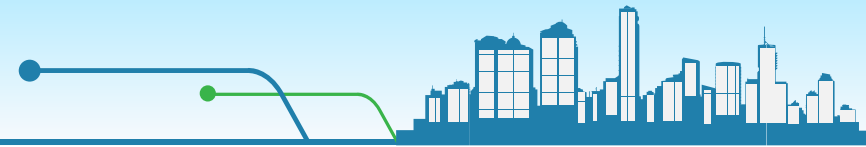


2000 BC- 250 AD

- Influenced by Astrology, Cosmology, Geomancy
- Construction in accordance with the orbits of stars

Divine association



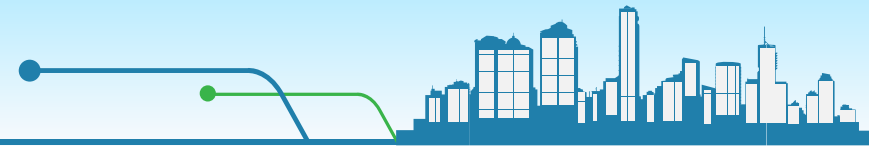


100 BC- 250 AD

- View of the Avenue of the Dead and the Pyramid of the Sun, from the Pyramid of the Moon

Supernatural



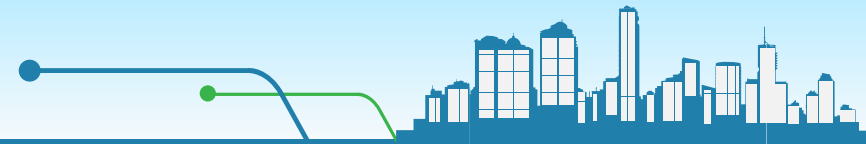


100 BC- 600 AD

- Open Spaces promoting public engagement
- Acropolis

Open debate, dialogue, social engagement
Philosophical enquiry
Wisdom and Meaning





27BC- 395 AD

- Open Spaces, public engagement
- The Forum

Open debate, dialogue, social engagement
Philosophical enquiry



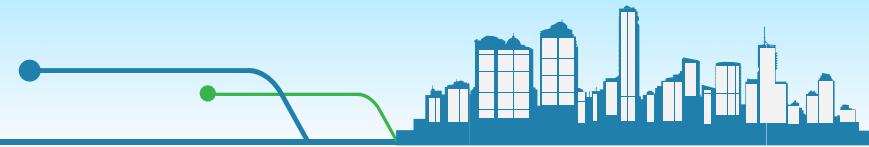
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Represented the best of their time



From

Drainage and
Sanitation

To

Divinity and
Astronomy

To

Supernatural and
Cosmology

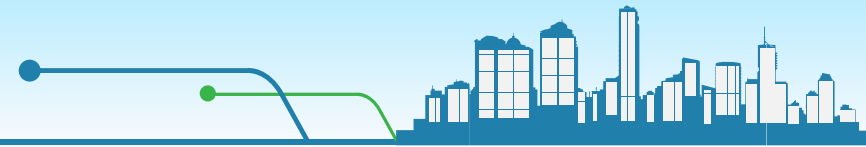
To

Debate and
dialogue

To

Introspection
and meaning

They all left their respective legacies in urban planning and engineering, by representing the best of knowledge, methods, material and technology available to them in their time and characterising the society they lived in.



The ability to:

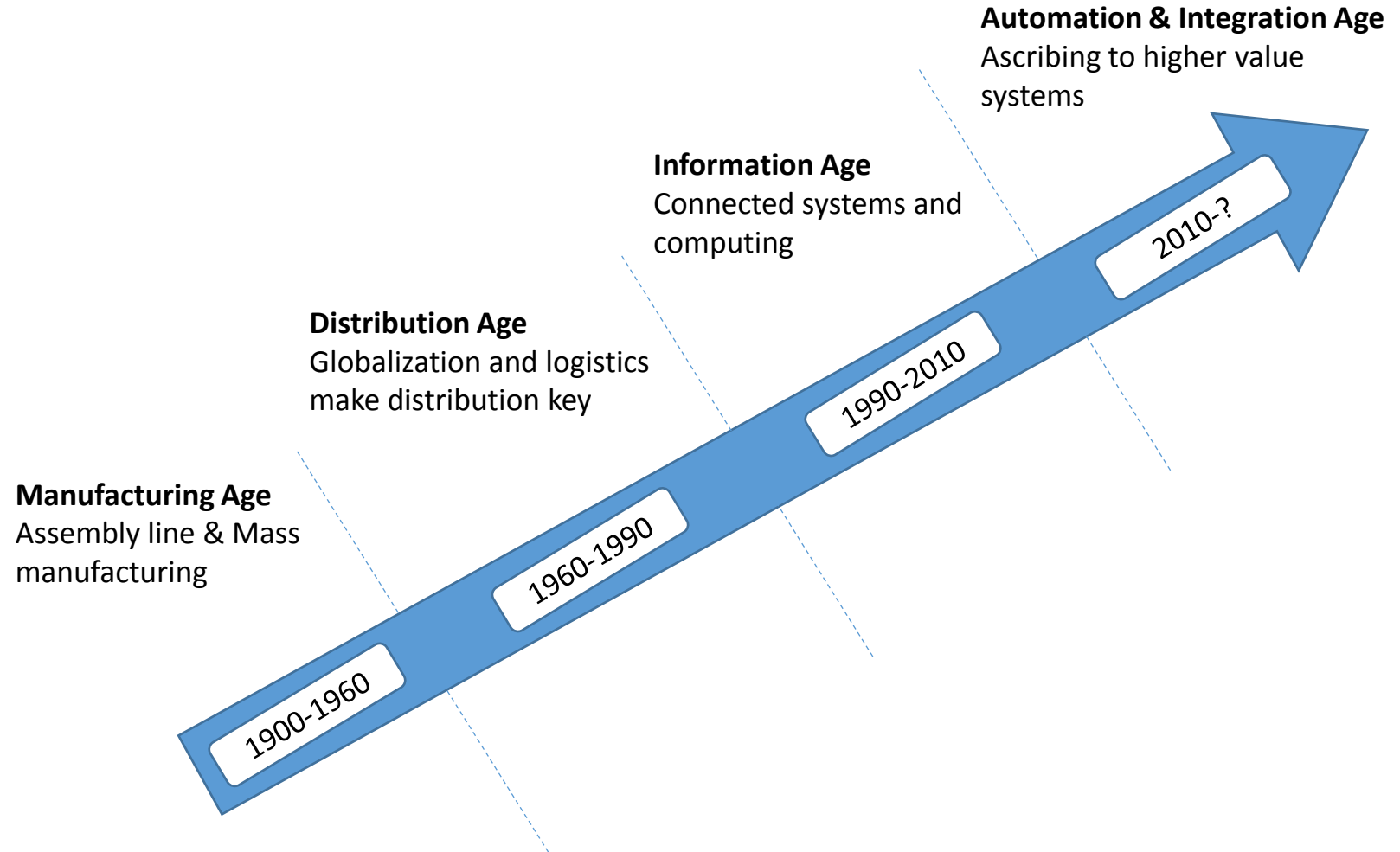
- gather data from almost every area of city functions,
- applying social, cultural and operational data

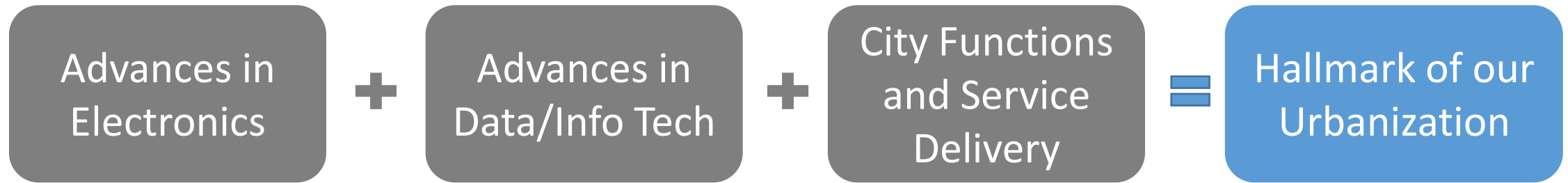
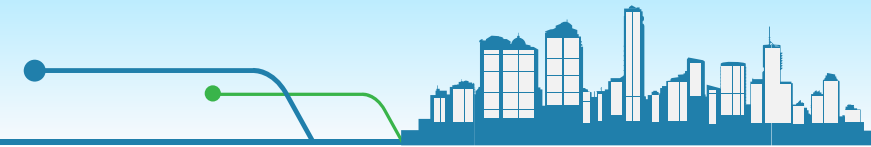
Following it with:

- Deep insights through analytics and predictions
- Dynamically adjusting systems
- Applying New materials

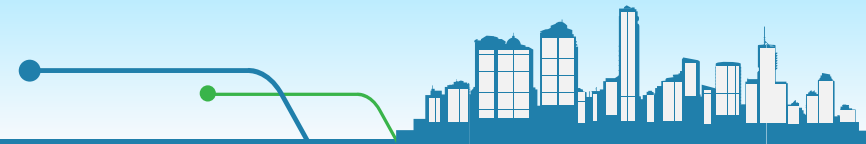
Creating

- Automation to significantly advanced degrees
- Mature forms of service delivery
- Intelligent systems





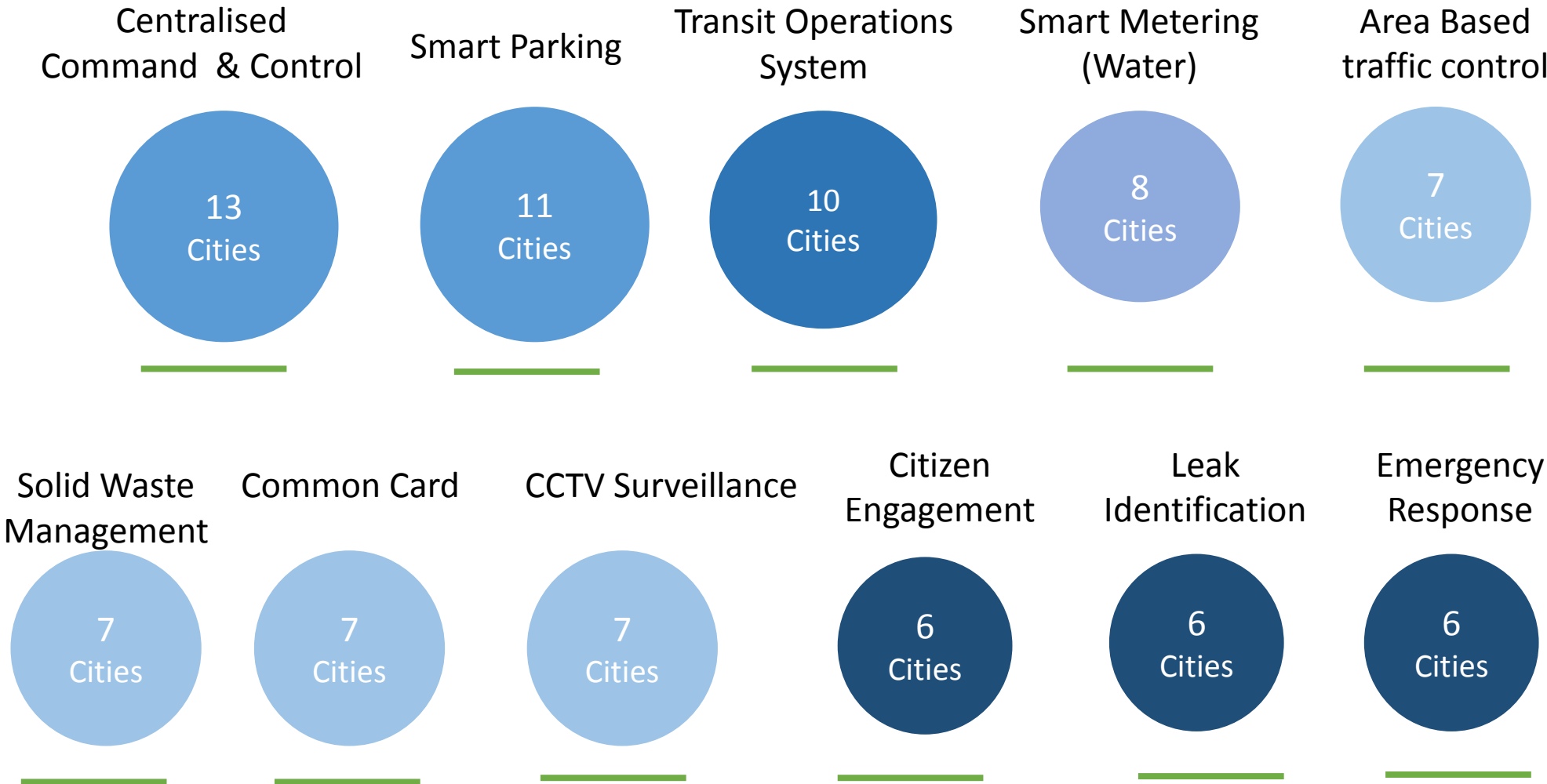
Our Legacy in Urban Design / Urbanisation?



The Creep



Top 11 Pan City Solutions identified by the 20 Smart Cities

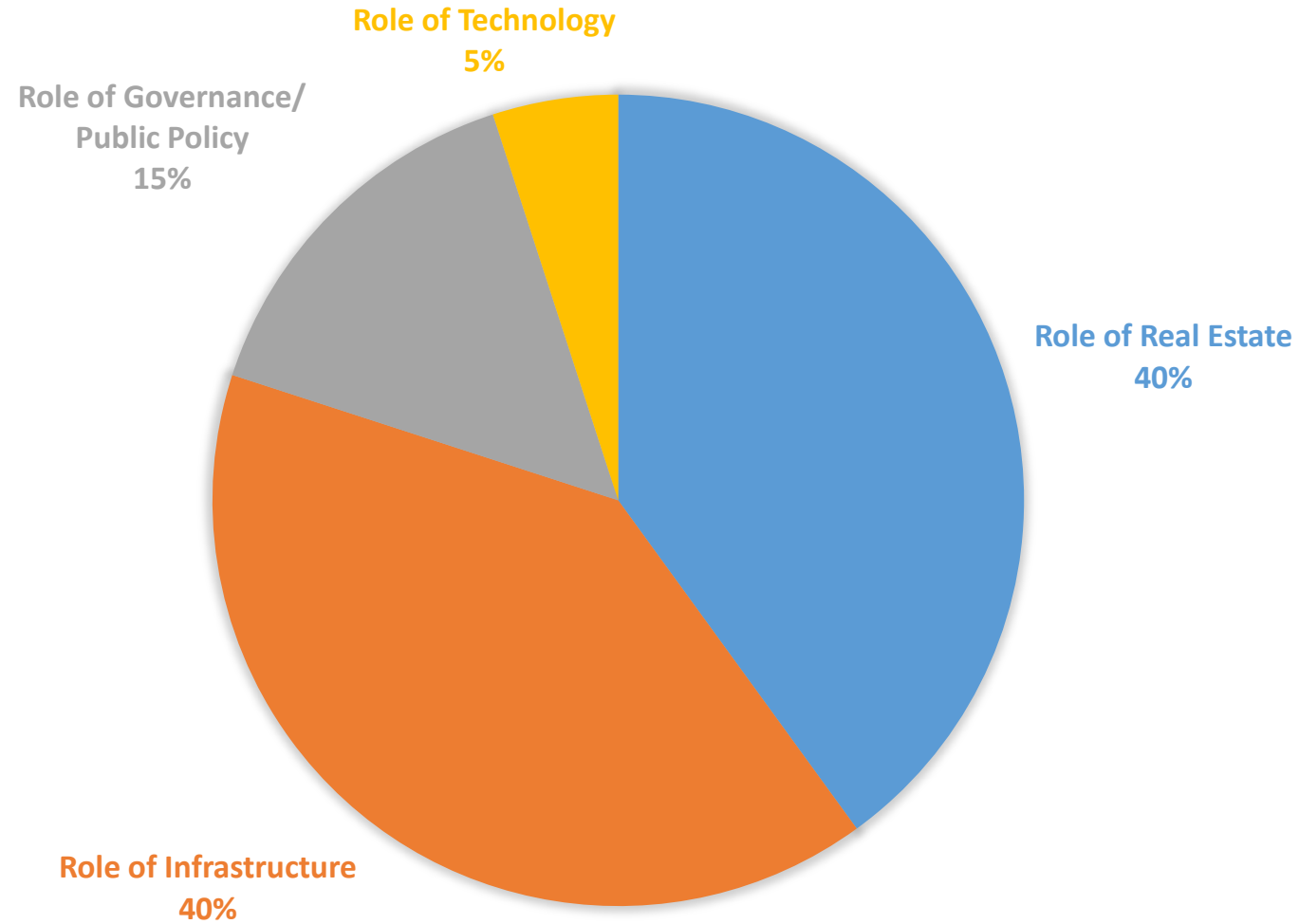


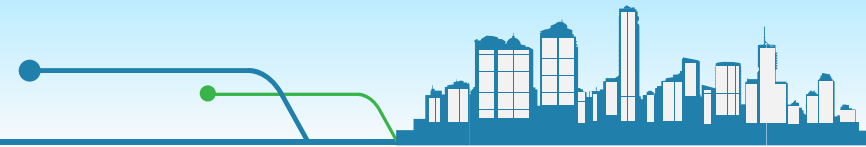
A total of 81



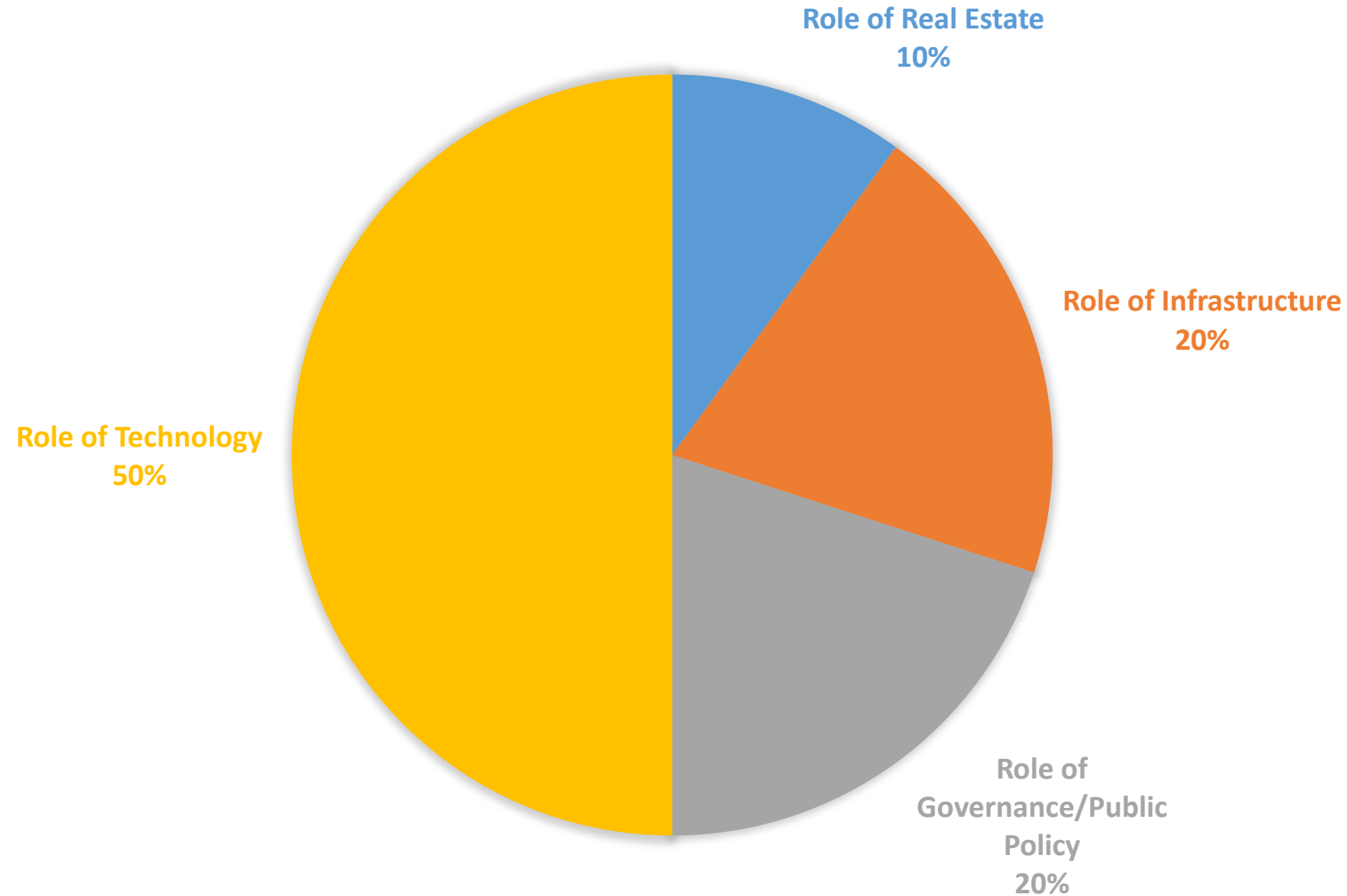


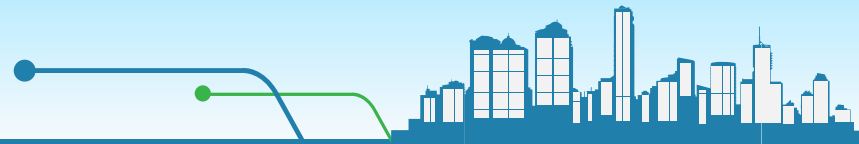
CONTRIBUTION TO A SMART CITY



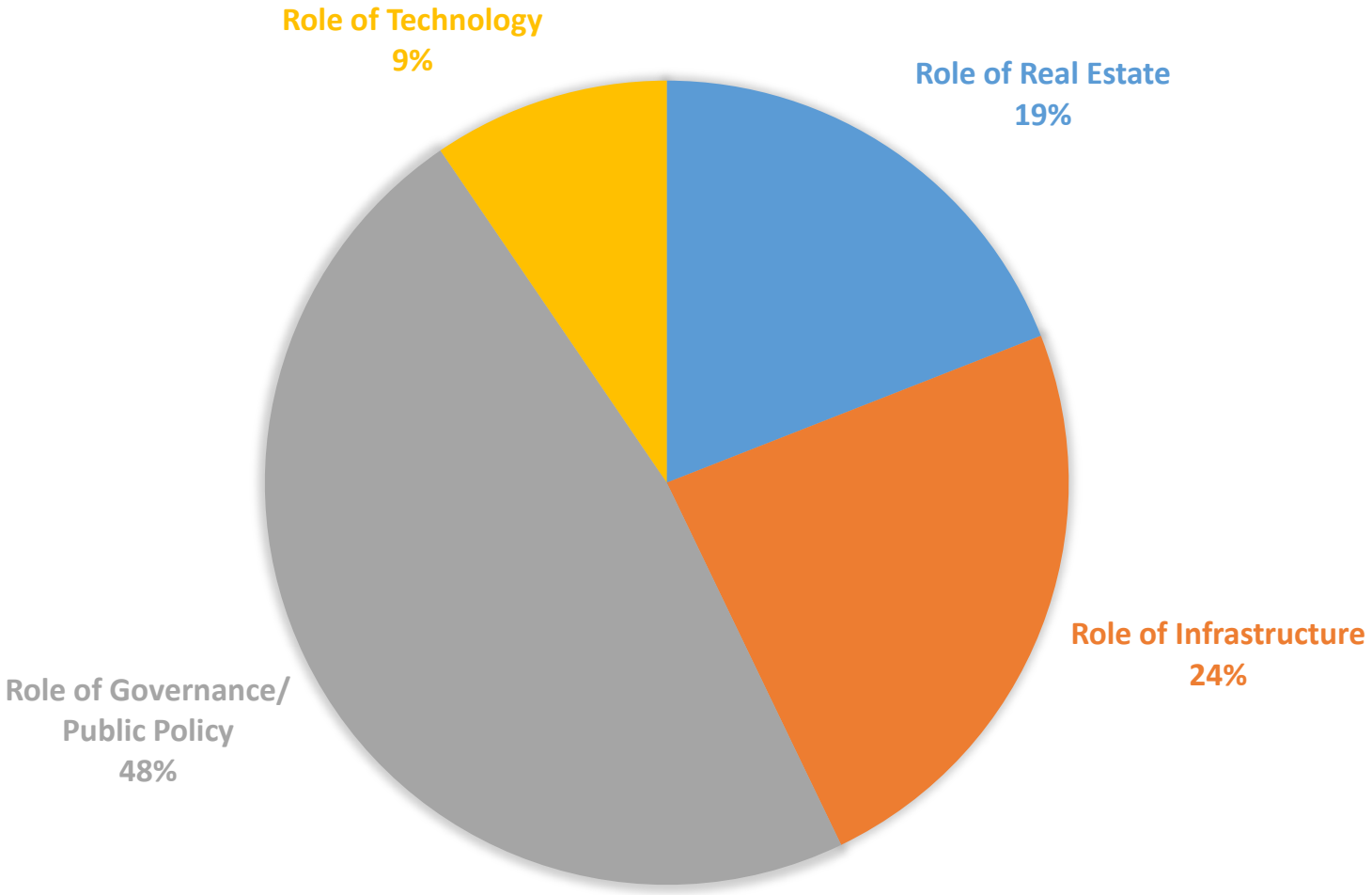


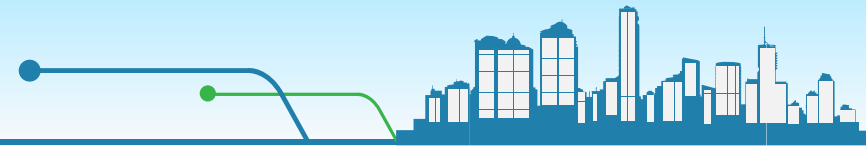
CONTRIBUTION TO A SMART CITY



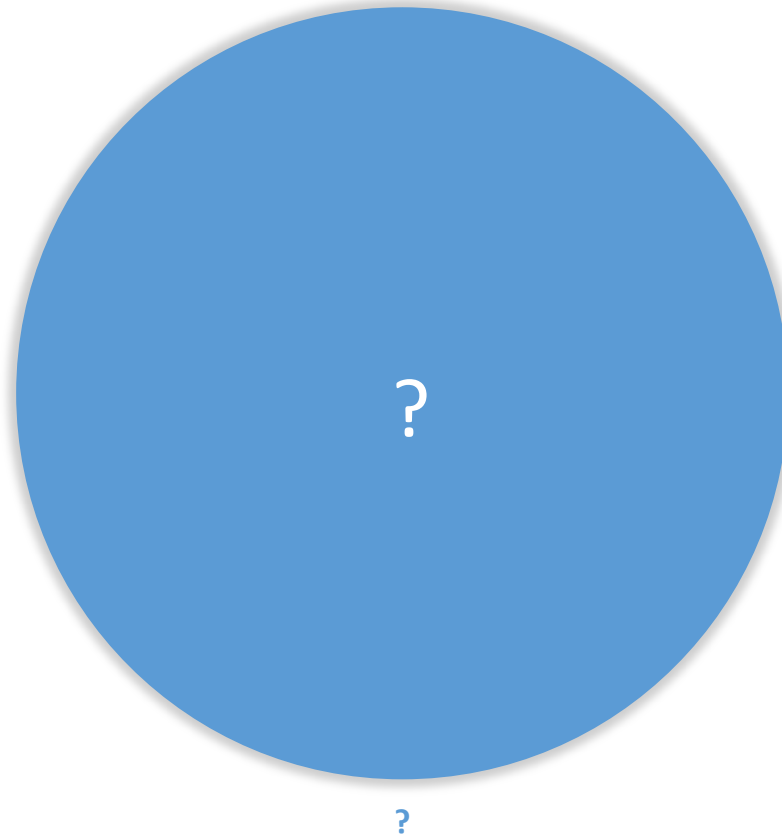


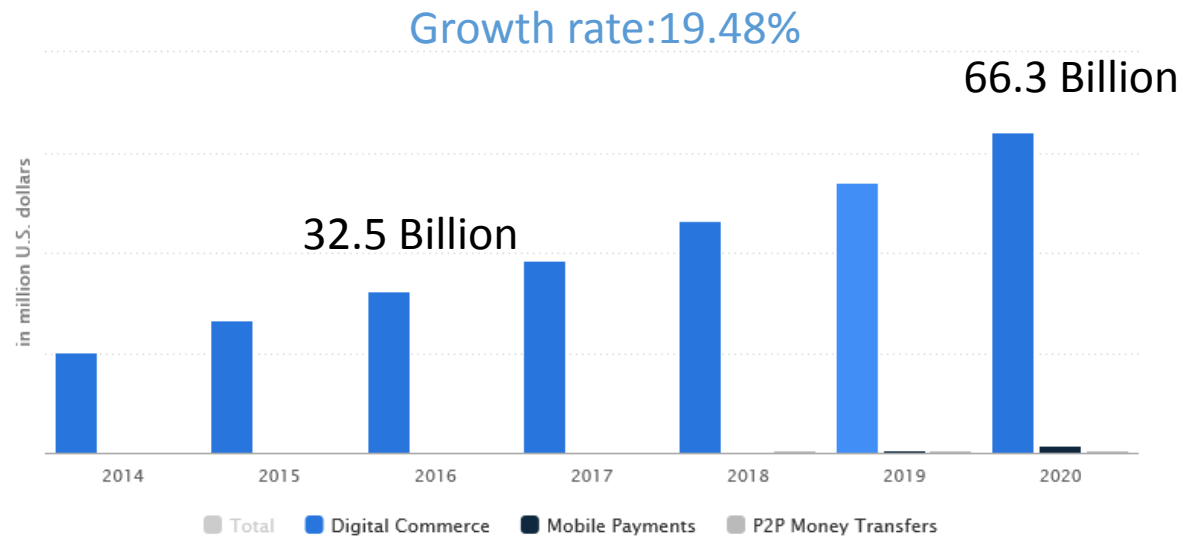
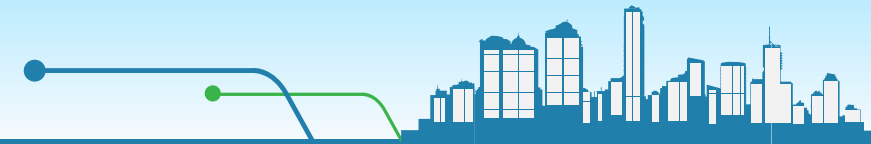
CONTRIBUTION TO A SMART CITY





COMPOSITION





Source: Statista 2015

How many Indians have credit cards?

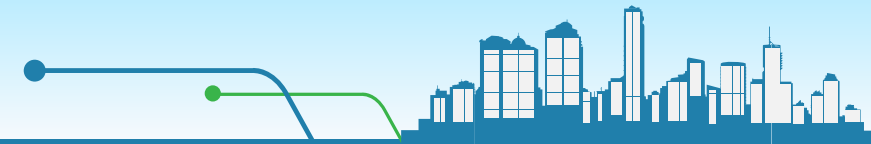
1.6%

21 Million (out of 1.31 Billion)

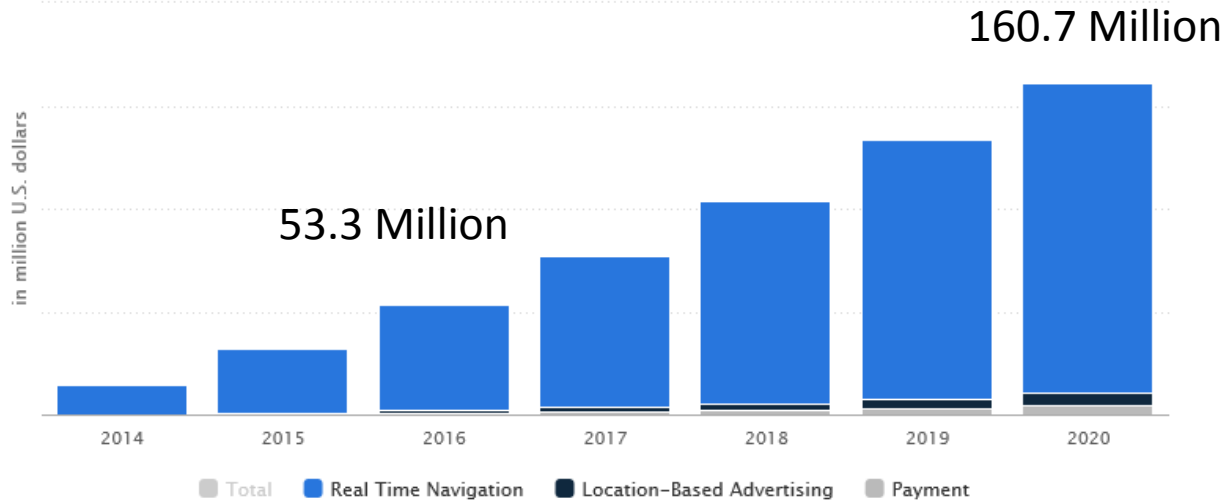
How many Indians have mobile wallets

7.6%

100 Million (out of 1.31 Billion)



Growth rate: 31.79%

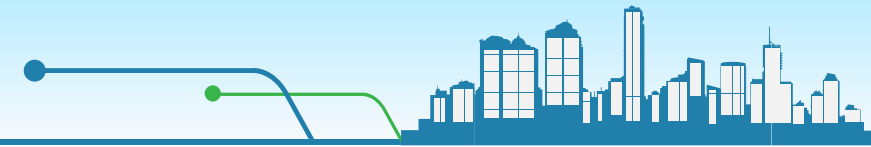


Source: Statista 2015

How many Indians use digital navigation services?

5.2%

60 Million (out of 314 million smartphone users out of 1.31 Billion)



12 thematic areas

1. [Educational Technologies](#)
2. [Energy Technologies](#)
3. [Environment](#)
4. [Food and Agriculture](#)
5. [Global challenge issues](#)
6. [Habitat](#)
7. [Information & Communication Technologies](#)
8. [Infrastructure](#)
9. [Materials & Manufacturing Technologies](#)
10. [Medical science & Health Care](#)
11. [Transportation](#)
12. [Water Technologies](#)

Efforts toward Standardisation in ICT/IoT for Smart Cities



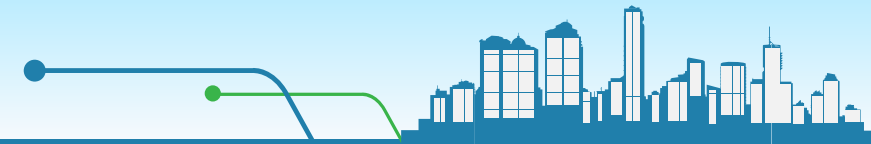
TSDSI

TEC, DOT

BIS

IoT4SCTF
(DeitY)

TRAI



TEC, DOT (Work in Progress)

1. Reference framework for Indian Smart cities
2. (Technical Specification of) Smart City Data Model
3. (General Characteristics of) Sensors, Devices and Communication systems for Indian Cities
4. (General characteristics of) City Planning & Assistance Tools
5. (Technical Specification of) Cloud for Smart Cities

TSDSI (Initial version completed)

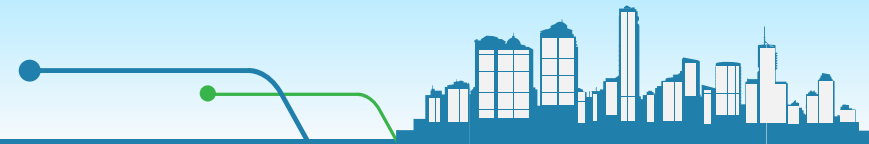
1. Overview of Smart Cities and Use Cases
2. IoT Use case identification in 10 verticals

BIS (Commenced)

1. Smart City Proposals Review & identifying pain points and gap areas (ICT).
2. ICT Reference Architecture & Framework for Smart Infrastructure
3. Communication Architecture

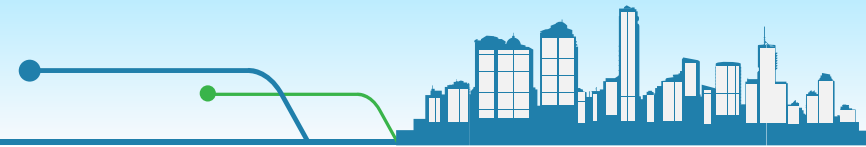
IoT4SCTF (In Progress)

1. Use Case Analysis
2. Reference Architecture
3. RFP Guidelines



“We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction.”

Bill Gates



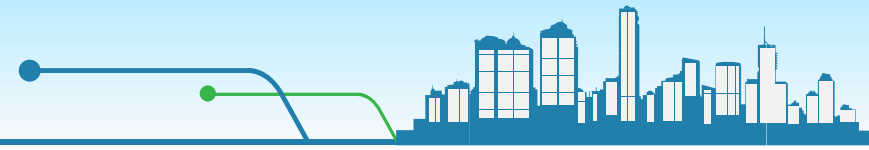
2024 AD

Mars Colonisation

- Greenfield!!
- A New Smart Planet!!

Can we Engineer for India in time?





Ideas??
Participate or Contribute??

Bipin@Gaia.in
+91 90040 63096