International Journal of Town Planning and Management
eISSN: 2456-5253
Vol. 3: Issue 2
www.journalspub.com

A Comparative Analysis of World Best Smart Cities – A Case Study

*Jemish Lathiya**
SMAID, New Vallabh Vidyanagar, Gujarat, India

ABSTRACT

Smart city is an emerging concept. This concept is being used all over the world with different nomenclatures context & meanings. A smart city is a city that is well planned, and it provides the cost-efficient services, environmental efficiency, and technological sound services for the welfare of the citizens. Smart solutions can be helpful in controlling the ever increasing population in the cities.

Keywords: smart building, smart city, smart economy, smart energy, smart environment, smart governance, smart living, smart mobility, smart people

***Corresponding Author**
E-mail: jemishsmaid@gmail.com

ORIGIN OF SMART 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.

Fig. 1.

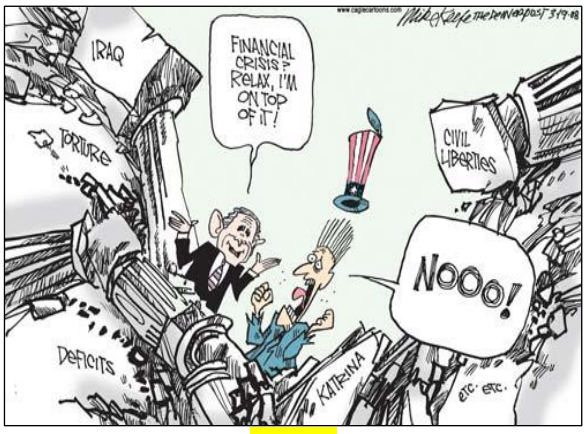


Fig. 2.

DEFINITION OF SMART CITY

"A **smart city** is an innovative city that uses information and communication technologies (**ICTs**) and other means to:

- **Improve** the **quality of life** of its citizens.
- **Ensure tangible economic growth** such as higher standards of living and **employment opportunities** for its citizens.
- **Improve** the **well-being** of its citizens including healthcare, welfare, physical safety and education.
- Establish an **environmentally responsible and sustainable approach** which "meets the needs of

today without sacrificing the needs of future generations".

- **Streamline** the **physical infrastructure** based services such as transportation (mobility), water, utilities (energy), telecommunications, and manufacturing sectors.
- **Reinforce prevention and handling** functionality for natural and man-made disasters including the ability to address the **impacts of climate change**.
- Provide an effective and **well-balanced regulatory, compliance and governance** mechanisms with appropriate and equitable policies and processes in a standardized manner.
- **Optimally** utilizes the **resources.**

EVOLUTION OF CONCEPT FOR CITIES (FIGURE 3)

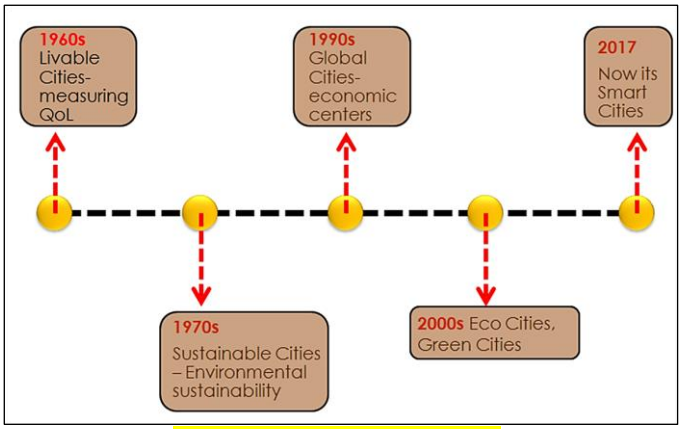


Fig. 3. *Evolution of cities.*

STAKEHOLDERS FOR SMART CITIES

- Municipalities and city administration (including different departments).
- Urban planners
- National and regional governments.
- City services companies and utility providers.
- ICT companies (Telecom operators, start-ups, software companies)
- NGOs
- Multilateral Organizations
- Industry associations
- Academia and scientific community
- Citizens and citizen organizations
- Standardization Bodies

COMPONENT OF SMART CITIES (FIGURE 4)

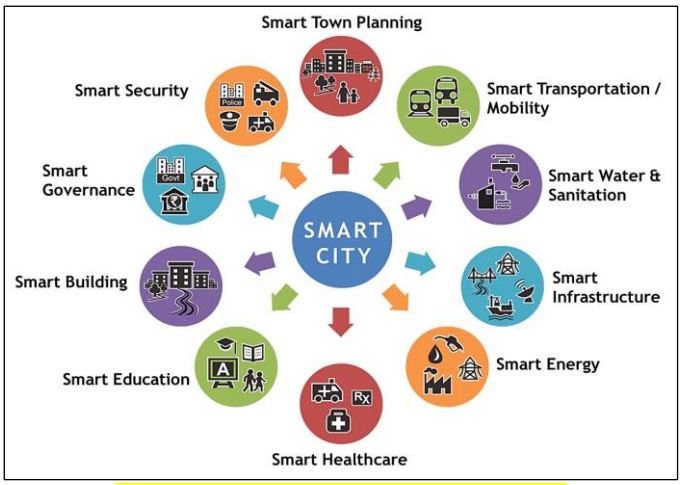


Fig. 4. *Components of smart cities.*

BENCHMARK FOR SMART CITIES

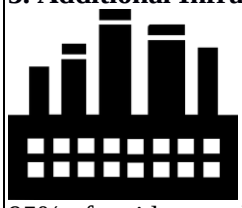
1. Transportation time:

Maximum travel time 30 minutes in small & medium size cities and 45 Minutes in metropolitan areas and High frequency mass transport within 800 meters (10-15 minute walking distance).

2. Footpath:

Continuous unobstructed footpath of minimum 2 meter wide on either side of all streets.

3. Additional Infrastructure:



95% of residences should have retail outlets, parks, primary schools & recreational areas within 400 meters walking distance.

4. Water Management:

- 24x7 water 100% household,
- 100% households should be connected to waste water network, and 100% households are covered by daily door-step solid waste collection system.
- No water logging incidents in a year.

5. Bicycle tracks:

Dedicated and physically segregation of bicycle tracks on all streets with carriageway more than 10 meters.

6. Electricity Supply

- 24 x 7 supply of electricity.
- 100% metering of electricity supply.
- 100% recovery of cost.
- 100% of the city has Wi-Fi connectivity & 100 Mbps internet speed.

7. Medical Facility:

30 minutes emergency response time for patients.

8. Geospatial Information System (GIS) Services

- Integration of Disaster Rescue Information
- Map Navigation
- Integrated GIS for air pollution data
- Integrated GIS for real time traffic
- Noise data

WORLD'S BEST SMART CITIES

1. COPENHAGEN (Denmark)

- Led the Siemens Green City Index for Europe.
- One of the lowest carbon footprints/capita in the world (less than two tons/capita). Aspire to achieve carbon neutrality by 2025.
- All new buildings to be carbon neutral (green building).
- Approximately 40% of all commutes are conducted by bike.
- The city also recently collaborated with MIT to develop a smart bike equipped with sensors to deliver to provide real-time info to not only the rider but also to administrators for open data aggregation on issues of air contamination and traffic congestion.

2. AMSTERDAM

- 67% of all trips are done by cycling or walking.
- First bike sharing project in the world was occurred in Amsterdam decades ago.

3. VIENNA

- The "Citizen Solar Power Plant" being developed with a goal of obtaining 50% of their energy from renewable sources by 2030.
- Testing out a range of electric mobility solutions from expanding their charging network from 103 to 440 stations by 2015.
- Residents are sharing vehicle with neighbors.

4. BARCELONA

- Bike-sharing project with more than 6,000 bikes.
- Using various sensors for noise and air contamination to traffic congestion and even waste management.
- The life expectancy in Barcelona is among the highest of cities (approx 83 years).

5. PARIS

- The city has more than 20,000 bikes for sharing.
- 5% reduction in vehicle congestion in the city.
- Paris' ecosystem was rated 11th best in the world**.**

6. STOCKHOLM (Sweden)

- About 40% of its land mass is dedicated to green space.
- Rated 2nd in Siemens Green City Index.
- Citizens are also amongst the highest per capita users of the Stockholm Metro system.
- Aspires to become carbon neutral, by 2025.
- Endeavour to boast about its 800 kilometers of cycling paths.
- Received top marks for its commitment to digital governance.
- Scored 1st amongst cities for its commitment to data privacy and security for citizens.

7. LONDON

- Earned 1st place in the smart economy category and it has long been considered the financial capital of Europe.
- The greenest and smartest building of Europe is located in the city, e.g., The Crystal, built by Siemens.

8. HAMBURG (Germany)

- 2nd largest city in Germany and the 1st of two to make the top 10 ranking this year.
- Awarded the European Green Capital designation in 2011.
- Wide scale transformation is taking place at 157 hectares, Hafen City (Harbor City) which is Europe's largest urban regeneration project.

Great Cities don't just happen:
They are made!

REFERENCES

[1] "Good, Better, Best", The City of Copenhagen's Bicycle Strategy 2011-2025, The Technical & Environmental Administration.
[2] "City of Copenhagen", Municipal Plan 2015.
[3] "Cycle Policy", City of Copenhagen.
[4] "Integrated Action plan – Report Process & Guidelines for smart cities"- Humburg City, 20 December, 2013.
[5] H. Giermann. *Vincent Callebaut's-2050 Vision of Paris as a "Smart City*. 2015.
[6] B.N. Tandel. *Government policies for Waste management in Smart Cities*. Environmental Engineering Section, Department of Civil Engineering, S. V. National Institute of Technology, Surat.
[7] "Climate Plan-2025", City of Copenhagen.
[8] "Copenhagen official website".
[9] "Stockholm official website".

BIOGRAPHY

Ar. Jemish Lathiya, Principal architect and Urban Planner at Anam Architects based on Surat and Assistant professor, SMAID, New V.V.Nagar. From Graduation from IPSA, Rajkot and Post Graduation from APIED, with complete commitment to Sustainable Architecture and Planning. Ar. Jemish Lathiya has designed many Residential, Educational Campus and Experts in Resort Design. His Works includes large Public Infrastructure and involve in Making Smart Cities.