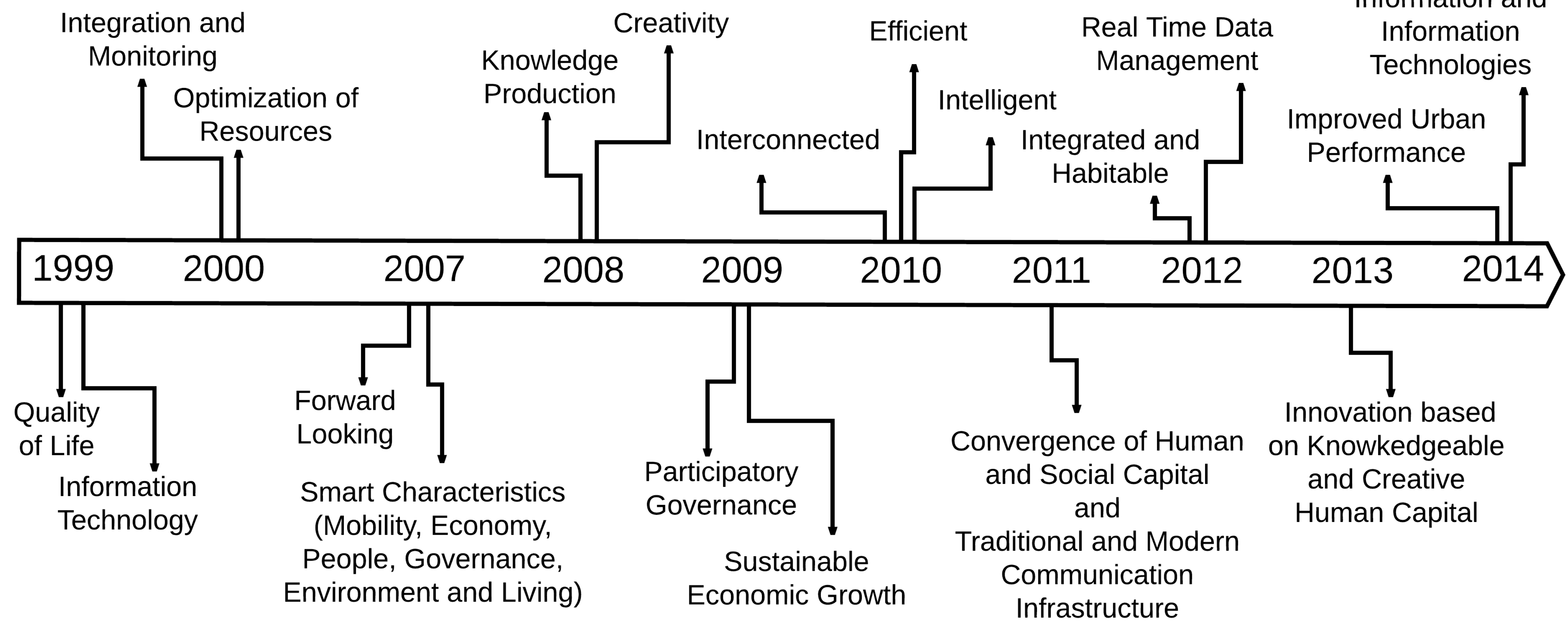


Source: Smart Cities Council (2015).

Evolution of Smart City Definitions



Sources: Mahizhnan (1999); Hall (2000); Giffinger et al. (2007); Hollands (2008); Harrison et al. (2010); Toppeta (2010); Washburn et al. (2010); Komninos (2011); Chourabi et al. (2012); Kourtit (2012); Zyglaris (2013); Marsal-Llacuna (2014); and Vito Albino (2015).

TRADITIONAL ← INDIAN CITY → SMART

TRADITIONAL	INDIAN CITY	SMART
Unplanned and Disorganized	PLANNING	Coordinated, Holistic and Sustainable
Poorly Interconnected	INFRASTRUCTURE	Highly Systematic
Minimal / Limited	CITIZEN PARTICIPATION	Two-way Communication between Government and People
Isolated, Unsystematic and Fragmented	SOLUTION PROVIDED	Centrally Planned, Deployed across City Departments and Projects
Ineffective Management and Increased Costs	RESOURCE UTILIZATION AND COSTS	Optimal Resource Utilization with Cost-Effective technologies
High level	TRAFFIC CONGESTION AND POLLUTION	Improved Traffic Management and Low Pollution
Negligible Sharing and Poor Coordination	DATA SHARING AND COORDINATION BETWEEN GOVERNMENT DEPARTMENTS	Improved Sharing and better Coordination

Indian Smart City Framework



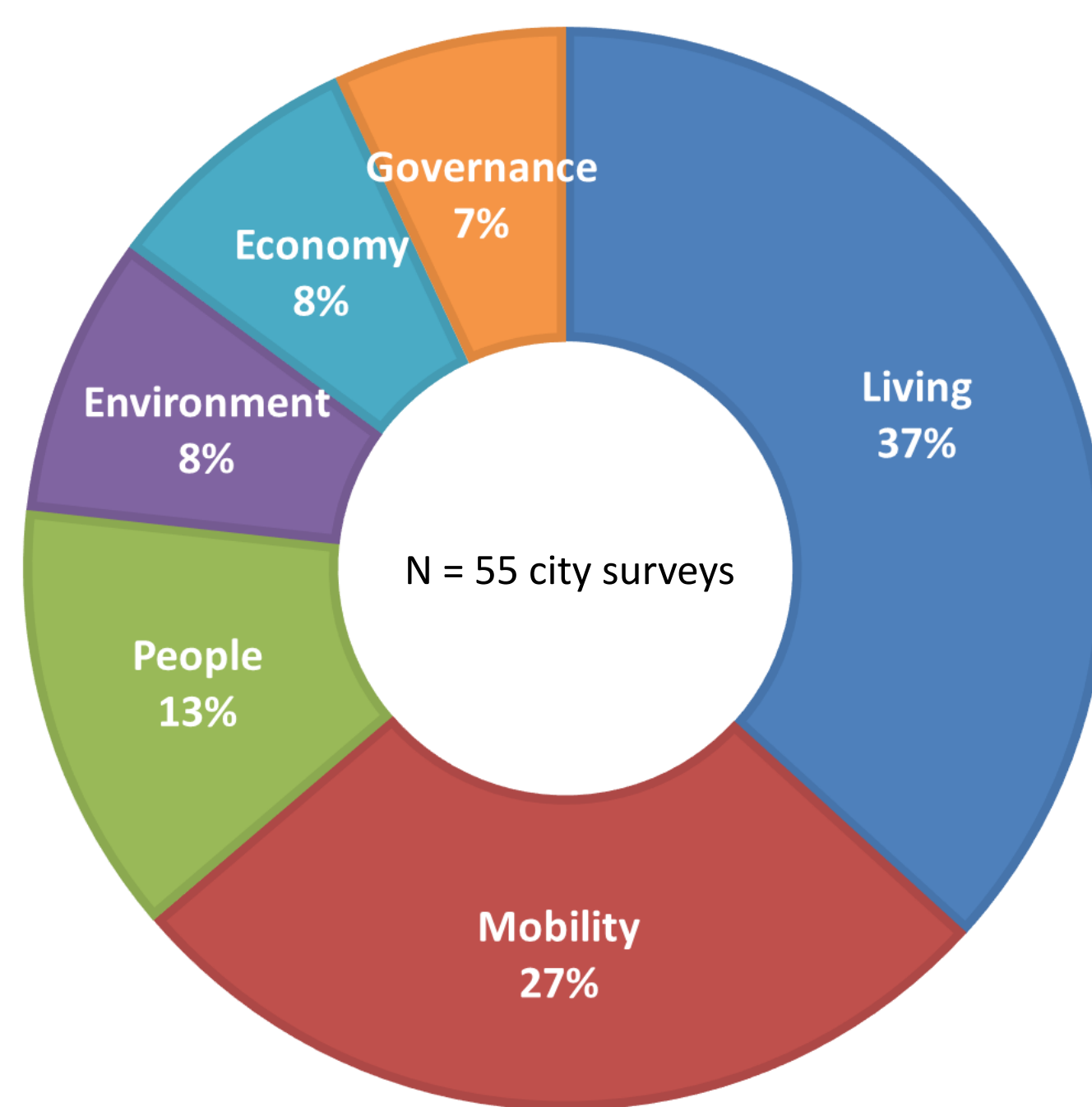
Source: UK Trade and Investment (2015).

Rankings of Smart Cities

- Giffinger et al. (2007) developed a ranking system based on the idea of a Smart City having 6 key components: Economy, Environment, Governance, Mobility, Living and People
- Smart Governance and Smart People played an important role in the top 10 smart cities in Europe (Giffinger et al., 2007)
- Cohen (2014) developed a ranking system along similar lines and ranked the cities in North America, Latin America, Asia Pacific and Europe
- The top 10 cities in all four regions highlighted the importance of a Smart Economy and Smart People

Indian Smart City

- 98 Smart Cities are planned in India (MoUD, 2015)
- The purpose of these cities is to provide a decent quality of life for citizens through critical infrastructure
- The diagram below provides an indication of what Indian citizens consider to be priority areas for Smart City development
- To date, 33 out of 98 Smart City proposals have been approved for funding from Central Government of India

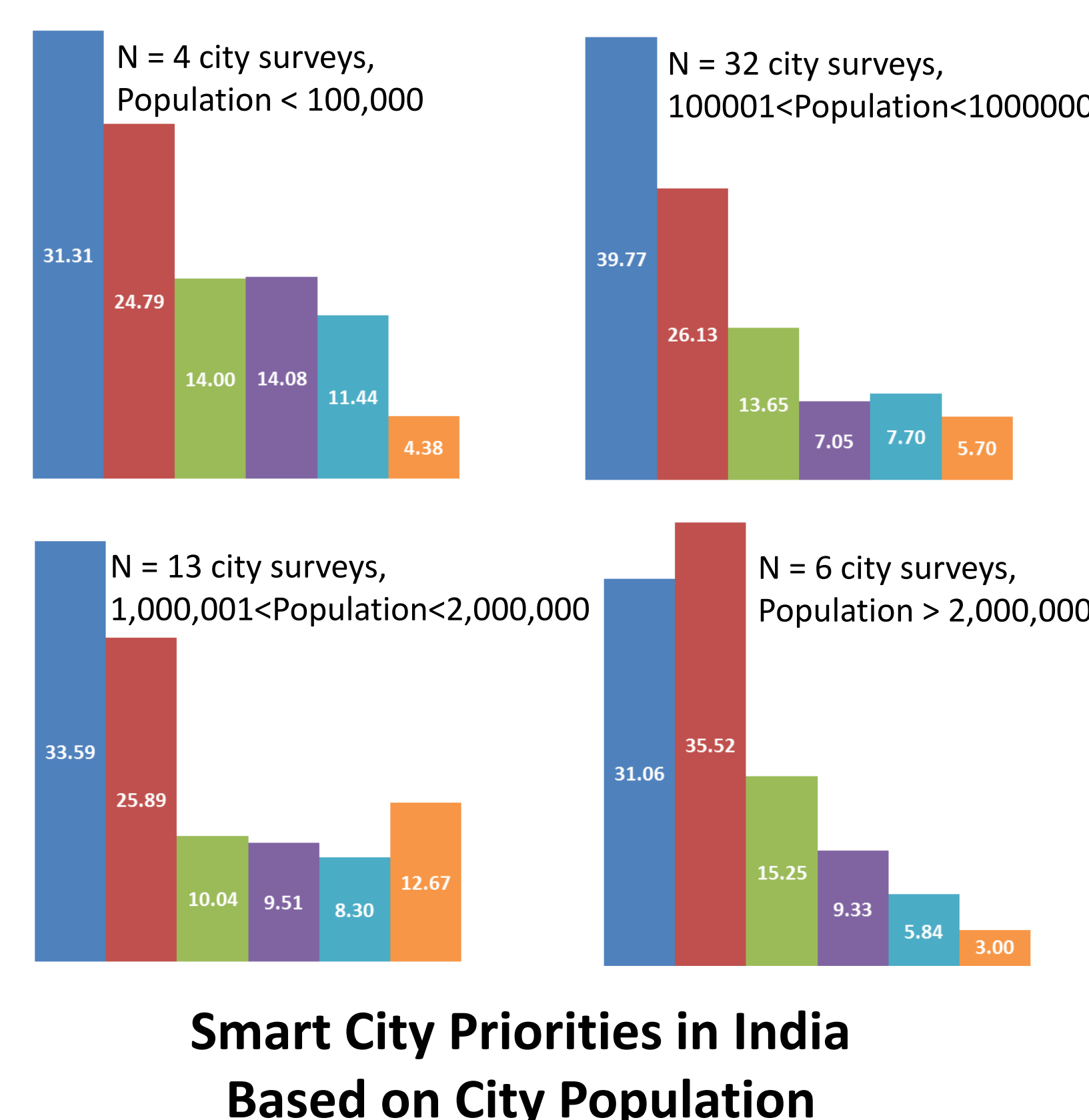


Smart City Priorities in India

Should existing Smart City ranking systems be tailored to the Indian context?

Sub-Areas included in adjacent 6 core components

Living	Housing, Solid Waste Management and Disposal, Storm Water Drainage, Water Supply, Power Supply, IT Connectivity, Disaster and Emergency Management, Public Toilets, Slum Upgradation
Mobility	Road Connectivity, Parking and Traffic Management
People	Health, Education and Safety, Facilities for Physically Challenged and Senior Citizens
Environment	Pollution Control Measures, Renewable Sources of Energy, Conservation and Management of Open Spaces and Lakes
Economy	Employment and Livelihood, Skill Development, New Business Initiatives
Governance	E-governance and Grievance Redressal



Smart City Priorities in India Based on City Population

References:

Mahizhnan, A. (1999). Smart Cities: The Singapore Case. *Cities*, 16(1), 13–18.

Cohen, B. (2014). The Smartest Cities in the World 2015: Methodology. From <http://www.fastcoexist.com/3038818/the-smartest-cities-in-the-world-2015-methodology>

Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Pichler-Milanovic, N. and Meijers, E. (2007). Smart Cities: Ranking of European Medium-Sized Cities. Vienna, Austria. Centre of Regional Science (SRF), Vienna University of Technology.

Chourabi, H., Walker, T., Gal-Garcia, J., Mellouli, S., Nahon, K., Pardo, T. and Scholl, H. (2012). *Understanding Smart Cities: An Integrative Framework* Paper presented at the 45th Hawaii International Conference on System Sciences.

Hall, R. (2000). *The vision of a smart city*. Paper presented at the 2nd International Life Extension Technology Workshop, Paris, France.

Harrison, C., Eckman, B., Hamilton, R., Hartwick, P., Kalagnanam, J., Paraszczak, J. and Williams, P. (2010). Foundations for Smarter Cities. *IBM Journal of Research and Development*, 54(4).

Hollands, R. (2008). Will the real smart city please stand up? *City*, 12(3), 303-320.

Kourtit, P. (2012). Smart Cities in the Innovation Age. *Innovation: The European Journal of Social Science Research*, 25(2), 93-95.

Marsal-Llacuna, J. and Mele'ndez-Frigola, J. (2014). Lessons in urban monitoring taken from sustainable and livable cities to better address the Smart Cities initiative. *Technological Forecasting and Social Change*.

Ministry of Urban Development (2015). Smart City: Mission Statement and Guidelines. Delhi, India: Government of India.

Komninos, N. (2011). Intelligent Cities: Variable Geometries of Spatial Intelligence. *Intelligent Buildings International*, 3(3), 172-188.

Natural Resources Defense Council. What are smarter cities? From <http://smartercities.nrdc.org/about>

Zyglaris, S. (2013). Smart City Reference Model: Assisting Planners to Conceptualize the Building of Smart City Innovation Ecosystems. *Journal of the Knowledge Economy*, 4(2), 217-231.

Smart Cities Council (2015). Smart Cities Readiness Guide.

Toppeta, D. (2010). The Smart City Vision: How Innovation and ICT Can Build Smart, "Livable", Sustainable Cities. *The Innovation Knowledge Foundation*.

UK Trade and Investment (2015). India's Smart City Programme. UK.

Albino, V. and Danglicco, R. (2015). Smart Cities: Definitions, Dimensions, Performance, and Initiatives. *Journal of Urban Technologies*.

Washburn, D., Sindhuj, J., Balouras, S., Dines, R., Hayes, N. and Nelson, L. (2010). Helping CIOs Understand "Smart City" Initiatives: Defining the Smart City, Its Drivers, and the Role of the CIO. Cambridge, MA: Forrester Research, Inc.