



THE RIGHT FIT

Urban India is waiting for the magic matrix that will take it into the next decade

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IDEA HUB | RUPAK AGARWAL

BUILDING SMART FOR INDIA

With a target of 100 million homes by 2022 set by the government, innovation for faster construction is the need of the hour

THE 21ST CENTURY will undoubtedly be the century for smart cities. In the recent past there has been a huge buzz around the term 'smart cities' itself. So, what comes to your mind when you imagine a city of the future ten years from now?

There are over 80 smart cities. All municipalities are fully e-enabled. Transport is integrated and at the click of a button on your mobile you have the tickets for any mode of travel. Also at the click of a button, you can control any device at your home or office. Intelligent traffic lights, smart parking, 24X7 supply of electricity, ICT services, dual-use water – all of this and more. There is absolutely no load on the environment. Waste management and treatment are all decentralised in smaller pockets. The air is so fresh it feels like a perpetual holiday in northern Europe. Above all, every Indian has a house to live in. Take a moment here to close your

eyes and visualise this: an efficient, transparent, sustainable, inclusive, safe and competitive environment, right here in India. This can very well be the Indian 'smart city ecosystem' a decade or two from now.

'Smart' as a concept in housing and cities has been prevalent across the globe for over a decade now and various models have been around to define what qualifies as a smart city. Based on these models the number of smart cities across the globe today varies from about 25 to over 300. Back home, the Indian Prime Minister Narendra Modi has a vision for the development of 100 smart cities by 2022.

Smart is basic

The moment we hear the term 'smart city' various thoughts cross our mind: smart buildings, smart energy, smart telecom, smart water, smart governance, smart environment, smart traf-

fic management, smart transport, smart energy – the list is endless. What should we call smart in the Indian context? My view is to look at the definition of smart itself. Let's take housing as the starting point. Our PM has laid down a vision of 'Housing for All' by 2022. What does this mean? The recent NARDECO-KPMG study on Decoding Housing for All by 2022 talks about building an additional 100 million homes by 2022 of which 45 million are in urban areas alone.

Looking at this through a different lens, we have some fundamental issues that need to be addressed around the three key aspects of sanitation, power and transportation. Would you call something that cannot address basic problems 'smart'? What can be an Indian way of looking at smart technology in housing? Technology for us has to be two pronged – technology that helps us with rapid construction of economical and eco-friendly houses and technology that helps us build model cities that are centres of excellence, becoming benchmarks for easy replication across the country.

Between the global & the local

We are looking at various case studies from across the globe on what makes a city smart. Countries are offering help to make our cities smart, like the US promising help for Vizag, Ajmer and Allahabad; Japan for Varanasi; Singapore for the new capital of Andhra Pradesh and Barcelona for Delhi. New green and smart cities are being planned and developed even as I write this. What are some of the guidelines and checklists that will help housing be smart? How will cit-

ies qualify?

The recent draft Concept Note on Smart Cities released in December 2014 by the Ministry of Urban Development is quite an impressive document. It mentions how local bodies have to be engaged in the decision-making process but how the basic framework should be national. It clearly acknowledges that the unique character of existing cities should be retained.

FATE will guide Indian Smart Cities

I propose the concept of a buffet meal to define smart technology in housing. We can have a series of items like on a buffet spread that allows developers and city planners to pick and choose a minimum number of defined items from each of these buffet sections to qualify something as smart housing. The four main items can be: F= Fast construction, to meet the huge demand for housing; A = Affordable housing, to cater to the huge gap in this segment; T= Technology-enabled solutions for intelligent governance and improving the quality of life of citizens; and E= Environment-friendly for sustainability.

With the staggering target of constructing over 100 million homes to meet the government's 'Housing for All' call by 2022, faster construction has become a crying need. Much research and work is currently going on in this field and some technologies like Prefab, Rapid Wall, Modular Homes, Precast and Hybrid Construction are at various stages of evolution and adoption in the country. The Canadian government has recently offered to help with their wood-based technology. We have to encourage the use of technologies

E GOVERNANCE

- Fully automated municipal offices
- Integrated billing - electricity, water, gas
- e-Health, e-Education, e-Revenue
- Services integration online - driving license, passport, voter card, birth and death certificates

UTILITY SERVICES & SECURITY

- 24X7 electricity, telephony, ICT, dual water supply
- Remote control of energy - mobile devices
- Hotlines, panic buttons, electronic access cards, vehicle identification monitors, analytics enabled CCTV

TRAFFIC MANAGEMENT

- Traffic cameras - monitoring & control
- Intelligent traffic signals
- Smart parking
- Road weather information system

TRANSPORTATION

- Integrated public transport - metro/BRT/LRT/Monorails etc.
- Motor vehicles infra - ring road, bypass, underpass, elevated roads
- Infrastructure for walking & cycling
- Waterways

ENERGY USAGE

- Green buildings & transport
- LED lights, solar lighting, smart metering
- Alternate fuels - energy generation
- Smart grid electricity network

WATER RESOURCES

- Storm water drainage
- Rainwater harvesting
- Wastewater treatment
- Smart metering

WASTE MANAGEMENT

- Decentralised sewage system
- 100% recycling in sanitation
- Clean cities - "Swachh Bharat"
- Decentralised waste treatment
- Products based on recycled waste

ENVIRONMENT SUSTAINABILITY

- Improve air quality
- Reduce carbon emission
- Clean technology energy
- Large green parks

SMART TECHNOLOGY FOR INDIA SHOULD HELP WITH RAPID CONSTRUCTION OF AFFORDABLE, ECO-FRIENDLY HOUSES AND MODEL CITIES THAT CAN BE BENCHMARKS OF EXCELLENCE

that will help in faster construction, which should be the first component of the FATE buffet for defining a smart city in the Indian context.

In India, 95 percent of the demand in housing is in the affordable segment. Today, there is not much difference in the cost of construction of housing in the affordable and premium segments relative to land costs. Taxes and duties lead to almost 40 percent of basic material and labor cost and there is an urgent need to look at the affordable segment with a different lens. It means that affordability lies in the efficient amalgamation of Public Private People Partnership (PPPP). Financing in the affordable segment has tremendous potential and needs to be viewed as a new world of opportunity altogether.

The T for technology in 'FATE' remains the main attraction in this buffet. It is this area where most of the best-known work has happened across the globe over the last 10-15 years. We need to embrace the developments in e-governance, green buildings, traffic management automation, energy conserving appliances, safety and security monitoring systems and communications technology. A 24x7 utility service is another key component of being smart. The four broad areas mentioned under the technology vertical, as you can see, have numerous opportunities that can be outlined as areas from where items need to be chosen and picked. This can go a long way toward not only ameliorating urban governance problems but also improving the lifestyle of citizens.

The last one in my FATE model is 'E' for reducing the load on our environment. Questions to ask are - is the building green-certified, is there smart metering to reduce losses, are LED lights or solar lighting being

India will get **€1bn** from Germany for strengthening its power infrastructure

used, is a smart-grid electricity network in use? While over 90 percent of India currently has access to electricity, power availability remains a challenge. While the generation of electricity through alternate fuels and technologies will continue, can we take steps to conserve energy so as to improve universal access 24x7 and then call it smart?

Waste management is another important component. Ensuring recycling and treatment of waste at decentralised levels is also smart technology. Encouraging products based on recycled waste - the "Waste to Wealth" call of our PM - is indeed a component of 'smart'. The quality of life in any housing development or city is also largely impacted by the ambient air quality and availability of large green parks, besides initiatives taken to reduce the carbon footprint.

The smart cities initiative announced by the Narendra Modi government is gaining momentum in the country. We have various components to define smart technology in housing or a smart city. What we need now is a set of guidelines and, eventually, a policy on defining services for them to earn a "smart" tag. Eventually, for truly smart cities to develop we have to start from the basic building blocks: smarter houses, residential complexes, townships - all have to become smart. Multiple townships have to start dotting a smart city. In the end, people have to become smarter for any of this to work.

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