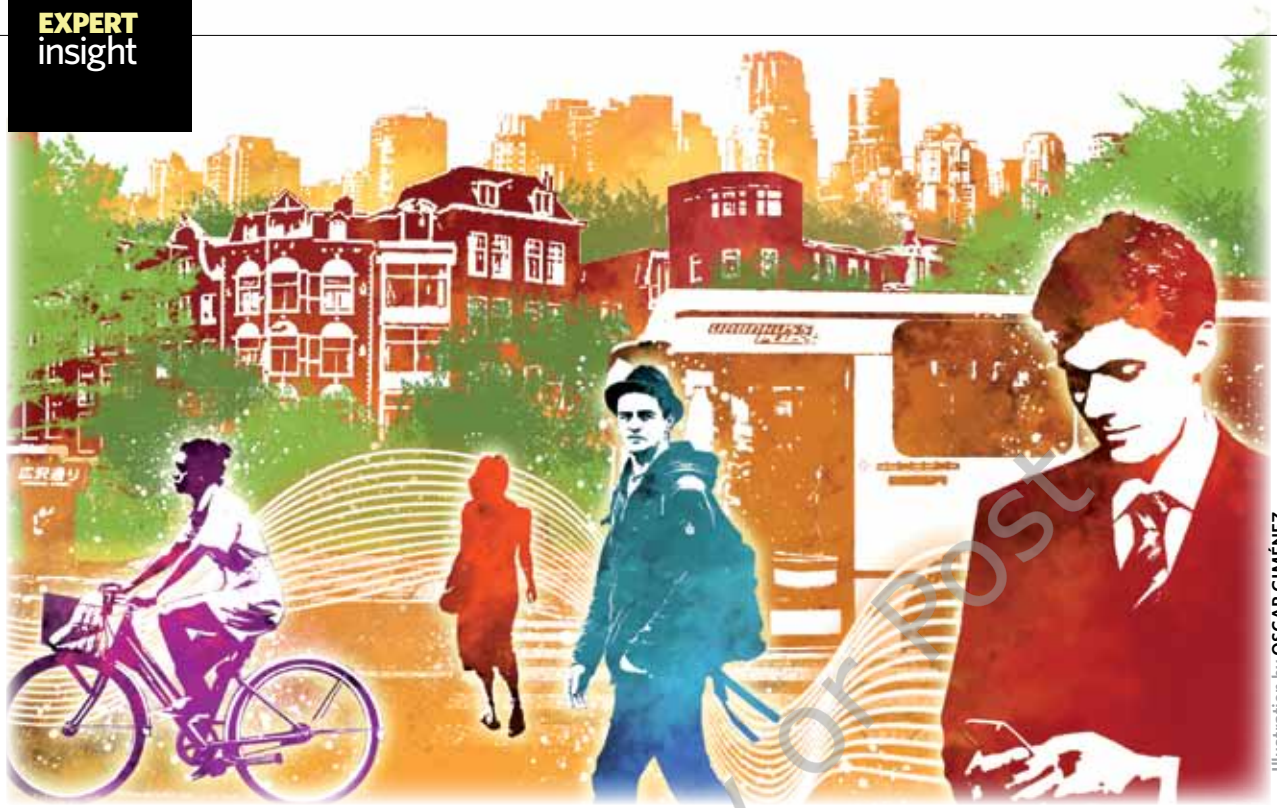


Illustration by OSCAR GIMÉNEZ

OPPORTUNITIES FOR URBAN DEVELOPMENT

Smart Cities, Sustainable Progress

By JUAN M. BARRIONUEVO, PASCUAL BERRONE and JOAN E. RICART

In the wake of the devastating floods and mudslides that hit Rio de Janeiro in April 2010, the city resolved to develop a $14 million intelligent operations center equipped with the latest technology in disaster management and response. It can control the city's traffic flow and public transit systems, and handle power outages. Its alert system includes mobile, e-mail and instant messaging services, to provide residents and emergency services with real-time status reports.

Rio de Janeiro is one of a growing number of metropolises using new technology and intelligent resources to streamline their everyday operations and improve the quality of life for their citizens.

These so-called smart cities offer huge opportunities for businesses to partner with public authorities, who are eager to tap the private sector's expertise in systems design and strategic management.

At IESE's Center for Globalization and Strategy, we have been studying various urban development models around the world. This article highlights some of our early findings and the key implications for public and private sectors alike regarding the future development of smart cities.

What Is a Smart City?

Being a smart city means using all available technology and resources in an intelligent and coordinated manner to develop urban centers that are at once integrated, habitable and sustainable.

Drawing on the urban development model of the IESE Cities in Motion project, we have

identified five types of capital that contribute toward a city's intelligence:

- economic (GDP, sector strength, international transactions, foreign investment);
- human (talent, innovation, creativity, education);
- social (traditions, habits, religions, families);
- environmental (energy policies, waste and water management, landscape);
- institutional (civic engagement, administrative authority, elections).

These are the lifeblood of the modern urban system, and can be nurtured through strategies targeting *innovation, social cohesion, sustainability* and *connectivity*. See **Exhibit 1**.

Failure to adapt to the new urban reality could be disastrous for cities facing unprecedented demographic, economic, social and environmental pressures.

The United Nations has predicted that the world's urban population will grow by 75 percent by 2050. This mass migration to the cities will increase the number of densely populated areas, further complicating urban mobility and putting even greater strain on public services.

The McKinsey Global Institute concurs, pointing out that, with up to 65 percent of global GDP growth soon to be concentrated in the world's 600 largest cities, associated problems such as income inequality, mass unemployment, illiteracy, social conflict and ghettos will be exacerbated.

Such rapid urbanization also has an environmental impact. While cities occupy a mere 2 percent of the planet, they already account for 60 percent to 80 percent of energy consumption, and 75 percent of carbon dioxide emissions. Increased traffic, pollution, waste and energy costs will no doubt continue to present a growing threat to human health and sustainability.

EXECUTIVE SUMMARY

With urbanization on the rise globally, failure to adapt to the new urban reality could be disastrous for cities facing unprecedented demographic, economic, social and environmental challenges. Development models are needed to transform such challenges into opportunities. The authors outline the strategic planning methodologies needed to create smart cities – sustainable, innovative, connected and socially cohesive places that enhance the quality of urban life. And when it comes to transforming cities, the private sector has plenty to contribute.

Sustainable Ecosystems

Against such a backdrop, the major challenge for urban authorities is to build cities that can function as habitable and sustainable ecosystems. The cities that are able to pull this off will almost certainly lead the way in attracting investment, talent, tourism and employment opportunities.

The smart city concept covers a broad cross-section of strategies and measures designed to enhance the quality of urban life, the provision and management of public services, and long-term sustainability.

After all, a city's vitality and reputation depend on a whole host of factors, including communications technology, disaster and waste management, access to clean drinking water, green areas, public transportation, health, education and public safety.

The key, therefore, to developing smart cities is to integrate all of these components in one holistic vision, thereby boosting management efficiencies – an area in which the private sector has much to contribute.

For newly built business hubs like Songdo in South Korea, designing such a tightly integrated system is relatively easy, as there are virtually no limits – beyond the usual financial restraints – to what urban planners can dream up. Conversely, the transformation of conventional cities presents far greater challenges.

Most smart projects that have emerged in recent years focus primarily on information and communications technology (ICT) and sustainability, which is understandable, given the scope and scale of the business opportunities on offer. According to the consulting firm IDC, the income generated by ICT used in smart city projects may hit $57 billion by 2014.

Nevertheless, we must not forget that ICT is only a means to an end – which is ultimately to measurably improve people's quality of life.

Progress By Planning

With the global urban space expected to grow exponentially in the coming decades, cities will need to streamline their strategic and scenario-planning processes. Only then will they be able to think up new ways to innovate, and identify opportunities and priorities for future development.

This means developing a flexible, participatory process with a defined goal: to design a sustainable action plan that gives uniqueness and visibility to the metropolis.

But just as two companies will have different recipes for success, each city must forge its own development model that tackles, in a systematic way, the unique set of challenges and opportunities that it faces – all of which presupposes a veritable sea change in the way city authorities operate.

Amazingly, many cities still employ urban planning methods that fail to monitor whether goals are actually being met or not.

Indeed, most cities don't do strategic planning at all. Instead, they tend to deal with issues as and when they arise, rather than adopting an integrated, holistic approach. They remain fixated on taking an industrial approach to urban planning, rooted in a bygone reality. Furthermore, they constantly run up against brick walls erected by government bodies, which are more interested in protecting their own power bases.

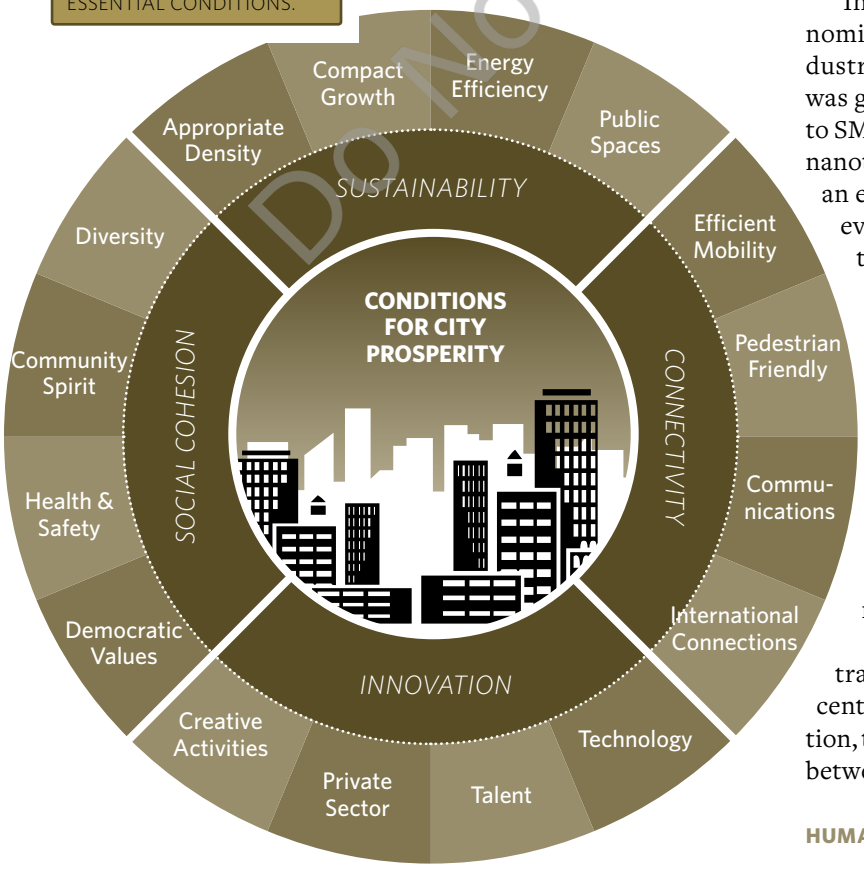
Large cities must take a longer view, make greater use of innovation to improve the efficiency and sustainability of their services, improve communications and engage local residents in their projects.

To do that, cities need to develop smart governance systems that take all these factors into account. Only by doing so will they become sustainable places, with long-term strategic projects developed in partnership with the private sector and local citizens.

When drawing up a long-term strategy, the city must take into account the full spectrum of its constituent elements. We propose a three-step process, beginning by diagnosing the situation, then developing a strategic plan and finally taking action. See **Exhibit 2**.

The Path to Prosperity EXHIBIT 1

A GOOD MODEL FOR URBAN DEVELOPMENT SHOULD PROVIDE THESE ESSENTIAL CONDITIONS.



Analyze the Key Areas

ICT has opened up whole new dimensions to urban development. However, as we already mentioned, there is more to smart cities than just ICT.

City authorities must try to take into account *all* the various factors that create value and bring success to the city, both at the local and international level. This diagnosis should be based on a thorough analysis of the following factors, including but not limited to technology.

ECONOMICS. This encompasses all the factors that contribute toward a city's economic development, including local development frameworks, transition plans, business strategies, formation of industrial clusters, and the presence of innovation and entrepreneurship.

In the strategic plan drawn up for the economic development of the South Korean industrial center of Suwon, the new economy was given prominence. By extending finance to SMEs specializing in IT, biotechnology and nanotechnology, the city's authorities created an economic landscape in which two out of every three companies now operate in high tech.

A similar approach has enabled Eindhoven to establish itself as the Netherlands' technological capital. The city decided to stake its future on R&D and innovation. Since then, leading companies from a broad range of sectors – automotive, design, food and nutrition, technology and medicine – have flocked there. This boost to the local economy has yielded a steady stream of new projects.

Countless similar examples demonstrate that urban development in the 21st century can stimulate recovery and revitalization, thanks largely to the partnerships formed between the public and private sectors.

HUMAN RESOURCES. The main objective of any