MORGENSTADT – BUILDING THE "CITY OF THE FUTURE"

Marketing Campaign. The GTAI "Germany. Smart Solutions. Smarter Business." campaign promotes smart solutions developed in Germany that provide answers to global megatrends. In this issue we take a closer look at urbanization.

By 2050, the global population will reach nine billion. More than two thirds of that figure will live in cities. In 1800, only three cities – London, Beijing, and Edo (now Tokyo) – were home to more than one million inhabitants. A hundred years later, the figure had risen to just 16. Today there are more than 440 such metropolises. There are now more "megacities" (cities with a population of more than 10 million) than there were cities with a population of more than one million just over a century ago. In less than three years' time, there will be around 26 megacities worldwide – of which 22 will be in developing and newly industrialized countries.

But the figures tell only half the story. The transformations being wrought in these cities are not purely local phenomena, but changes with far-reaching global implications. Radical patterns of economic migration, increased population density, and growth of informal communities – springing up across the globe as a by-product of the unrelenting march of urbanization – are posing new and difficult questions to a world in tumult. With these spikes in population come increased infrastructural demands in terms of water and energy provision, waste disposal and wastewater treatment, mobility and transport infrastructure, and general health.

According to the World Wildlife Fund's "Reinventing the City" study, USD 350 trillion needs to be spent on global urban infrastructure over the next 30 years – particularly in the world's small but fastest-growing cities and developing nations. Here there are any number of exotic-sounding names given to the ad-hoc global communities – to be found from Lagos to Lima – created by urbanization. Barraca. Barrio. Bidonville. Favela. Makoko. Pueblo. Joven. "Slum" is probably the best known of all of these, and the only one whose hard disyllabic tone conjures up the harsh reality it is intended to convey.

One billion people live in slums – according to the UN, a figure that is expected to double by 2030. Although the number of urban dwellers living in slum conditions dropped 10 percent to 37 percent for the period 1990 to 2005, rising urban population growth means that the number actually continues to grow (the urban populations of Africa and Asia are expected to grow by 85 percent and 38 percent respectively by 2030).

But might it not be the case that, paradoxically, the city represents the best hope for all of our futures? Indeed, the growth of cities and even of what German architect and theorist Thomas Sieverts has called *Zwischenstädte* ("in-between cities") represents an opportunity to address the problems of climate

Photos: rabbit75_fot/Fotolia; Ugurhan Betin/iStock

The *Morgenstadt* initiative aims to shape the complex future of sustainable cities.

change, dwindling natural energy resources, and economic migration.

According to UN-Habitat statistics, a total of 227 million people in the developing world moved out of slum conditions in the period 2000 to 2010 (meeting the Millennium Development slum target goal 10 years ahead of the agreed 2020 deadline). Slum-free urban centers are more productive, innovative, and environmentally friendly than their rural counterparts – and nowhere more so than in developing and emerging countries. The World Bank forecasts that up to 80 percent of economic growth in the developing world will take place in cities. Twenty-two percent of growth in urban populations will come from India and China alone.

Germany has long recognized the crucial importance of cities in safeguarding a sustainable and more prosperous future. The country is actively positioning itself as a leading provider of complete smart technology solutions for the world's cities. In March of this year, the German government adopted the CO_2-neutral, energy-efficient, and livable city of the future as the central theme of its High-Tech Strategy 2020. The Fraunhofer-Gesellschaft, Europe's largest applied research organization, has been charged with leading the *Morgenstadt* ("City of the Future") project, which aims to shape the complex future of sustainable cities.

Fraunhofer-Gesellschaft is establishing a network of global cities that demonstrate excellence in implementing smart urban solutions. The creation of this network will help to establish a rubric for global best practice while simultaneously solidifying links between industry, cities, and applied science. *Morgenstadt* prioritizes ecological sustainability and economic prosperity as the two key goals for the cities of the future – goals that can be best realized by recognizing the significance of cities as future markets for sustainable concepts of mobility, housing, communication, energy generation, production, and consumption.

According to Fraunhofer-Gesellschaft President Professor Hans-Jörg Bullinger, "Whoever is first to find the key to *Morgenstadt* – in other words, a systematic approach to redesigning existing and newly emerging cities that is sustainable and enhances the quality of life – will chart the way for what may be the largest future market of the next few decades." A number of leading international companies are in agreement. Siemens, for example, has bundled all of its urban solutions within its new "Infrastructure & Cities" division in order to service a market worth EUR 300 billion to the Munich-based concern (the company has also built the GBP 30 million global sustainable cities center of competence in London – see page 11).

Elsewhere, the German government's "Future Megacities" program is also furthering the development of energy- and climate-efficient structures in emerging megacities across the globe. The goal of the initiative – which has projects in China, Ethiopia, India, Iran, Morocco, Peru, South Africa, and Vietnam – is the creation of good and best sustainable urban development practices. These range from water and waste-management activities in Lima to developing an integrative urban and environmental planning framework in Ho Chi Minh City.

Whether in Hyderabad or Hamburg, German sustainable city activities – both public and private - have one thing in common: the intelligent deployment of information and communication technologies (ICT) in all aspects of urban life as the starting point for smart, sustainable cities. The American social scientist Kingsley Davis once wrote that "the hinterland of today's cities is the entire world" – meaning that urban populations have historically required external resources extending beyond their own city limits in order to flourish. Today, it might be more apt to speak of the hinterland of the entire world being tomorrow's cities.

Do cities represent the best hope for the world's future?

By treating the city as a "complete system" of connected networks (energy-efficient buildings, smart power grids, integrated mobility, and recycling concepts), projects like *Morgenstadt* and "Future Megacities" are helping cities and countries across the world respond to the challenges of urbanization. In overcoming these hurdles, they will finally be able to realize their economic and sustainable development vision. Tomorrow's cities are taking shape – with Germany's help.

→ MORE INFORMATION

Visit the "Smarter Business" website (www.gtai.de/smarter-business) for more information on "smart" activity in Germany.