



URBAN CURRENT

Smart cities

"Cities have a way to go before they can be considered geniuses, but they're getting smart pretty fast", writes Michael Totty (*Wall Street Journal*, 4/17/17 "The Rise of the Smart City.")

He continues "... mayors and other officials in cities across the country have begun to draw on the reams of data at their disposal – about income, burglaries, traffic, fires, illnesses, parking citations, and more – to tackle many of the problems of urban life. Whether it's making it easier for residents to find parking places, or guiding health inspectors to high-risk restaurants, or giving smoke alarms to the households that are most likely to suffer fatal fires, big data technologies are beginning to transform the way cities work."

According to Frost & Sullivan, the global smart cities market is projected to reach US\$1.56 trillion by 2020. With rapid urbanization and ageing populations, cities are facing increasing strain on infrastructure, transportation, energy and healthcare resources. To address these challenges, governments are embracing the concept of the smart city applying new technologies to improve sustainability, livability and quality of life for citizens.

From experimenting with small wagon-like robots to carry packages in San Francisco to the New Orleans Fire Department tracking smoke detector distribution to sensor-equipped asthma inhalers in Louisville to parking assistance in Kansas City, metropolises are demonstrating their creativity.

Market research firm Juniper Research (Basingstoke, UK) recently crowned Singapore the smartest city on earth. "They ranked cities by an array of factors including their adoption of smart grid technologies, intelligent lighting, the use of information technology to improve traffic, WiFi access points, smart phone penetration, and the app landscape.", writes Brian Buntz in a piece, "The World's Five Smartest Cities," *ioti.com*. 5/18/16.

Singapore is leveraging one of the highest

mobile and broadband penetration rates in the world. Its centerpiece is a smart nation platform that brings together data from a nationwide sensor network. Ready-made above ground (AG) boxes are being deployed to supply power and connectivity to sensors, reducing the need for unnecessary groundwork.

Also, 98% of government services are accessible online, and an in-house Digital Government Services team has rolled out several citizen-centric mobile apps for transport, health, and municipal services.

Barcelona has more than 100 active smart city projects ranging from smart traffic lights, telecare services and electric cars to ubiquitous public WiFi.

Smart LED streetlamps activate only when movement is detected, producing 30% energy savings and are equipped with sensors to collect data from the environment. Over 70,000 elderly and disabled are connected to the city's Telecare service that proactively checks on residents. Sensors monitor rain and humidity to determine how much water is needed to irrigate parks. Municipal smart bins monitor waste levels and are cleared only when they are full, optimizing waste collection operations.

"**Copenhagen** is considered the greenest capital city in the world, is a centre for clean technology innovation and is committed to being carbon neutral by 2025", Tan Wee Kwang informs in a piece, "Top Smart Cities." Since 1995, Copenhagen has reduced carbon emissions by 50%. One billion DKK have been invested in bike lanes and super cycle highways. Every day 45% of residents bike to work or school. An intelligent traffic management system optimizes traffic flow and remedies road congestions, while a dynamic RFID-based road pricing system is used to nudge citizens towards green transportation.

Copenhagen sends less than 2% of its waste to landfills. Half of the waste is recycled and most of the waste is used to generate heat for the city's district heating network.

To address **London's** chronic congestion woes, the city has implemented congestion charging through number plate recognition, smart parking systems, and intelligent traffic lights that prioritize public transport. One of the tech hubs of the world, London fares well regarding broadband availability.

In **Seoul**, online electric vehicle technology (OLEV) was successfully developed and deployed – allowing electric public buses to be charged as they move across road surfaces.

For the disabled and elderly, U-healthcare service provides telehealth check-ups and medical consultation through remote-controlled medical equipment and smart devices.

Helsinki pilots its smart city projects through its Smart Kalasatama district, a city innovation platform where new solutions can be developed and tested in a living urban environment. Agile development and co-creation are core concepts in Kalasatama – residents are testers and initiators of smart services and new technology.

San Francisco is one of the first cities in North America to adopt smart-city technology. The city initiative enables residents to locate parking spots. It also has one of the highest densities of LEED-certified buildings in the U.S.

All of this is man's genius at work. Created in God's image, we have incredible imagination and ability to create things that make our lives easier. As human effort to make cities more livable advances at break-neck speed, one thing remains unsolved: the darkness of the human heart. In a world of high tech, high touch is more meaningful and more powerful than ever. Our personal, loving God, loving people through us, one life at a time, has never been more important or impacting.

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