

African urbanisation must be smart and sustainable for cities to be habitable far into the future

“The World Bank's latest report on African Cities states that improving conditions for people and businesses in Africa's cities is key to growth. The report further highlights that the continent needs more affordable, connected and liveable cities. This is certainly true to meet the immediate demand felt due to rapid populous migration to city centres or urban nodes. But governments and city planners across the continent cannot afford to focus on this narrow narrative alone,” says William Johnston, regional director, WSP, Structures, Africa.



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“To succeed in their planning and development efforts, there needs to be a split strategy and focus. The first focus will naturally be on securing much needed infrastructure and services to meet growing demand in the medium-term. Concurrent to this, however, significant focus also needs to be placed on future planned upgrades and/or new builds that will be smart, sustainable and thereby future proof in the long-term.”

“Designing and building a future proofed city that is both smart and sustainable covers the entire city infrastructure, where much of sustainable and smart design also relates to doing the basics better and less in silos. An integrated and holistic design of basic services must be considered upfront; everything from access to basic services – including water and sanitation, energy/ power, housing and transport – to intelligent systems that use internet access to leverage technology trends such as cloud computing, mobility, the internet of things (IoT), big data and automation, to provide smart services and functions for the city and its inhabitants,” continues Johnston.

Mindset change taking place

In this age of digital, a mindset change is rapidly taking place, with growing adoption of solutions to improve connectivity – through the roll-out of large-scale fibre or Wi-Fi projects. Based on this, markets are also seeing increased interest in offering services for the smart city that are underpinned by emerging disruptive technologies to drive improved service delivery and social change for the betterment of society and to increase sustainability.

Riaan Graham, sales director for Ruckus sub-Saharan Africa, agrees and indicates that the growth of connected devices and their potential impact is resulting in an increased awareness of the benefits that a smart city has to offer.

“There is significant movement towards embracing this new technology-rich ecosystem. However, this extends to beyond just dropping in technology and hoping for the best. A truly smart city is one that is focused on integrating technology to interconnect different governmental departments to create a single infrastructure that provides better service delivery, improved municipal services, infrastructure enhancements, and utilising real-time monitoring systems for the betterment of all citizens, to name just a few things. For me, this interconnectedness should exist seamlessly across at least the top six components to designing a smart city, including; smart energy, smart transport, smart data, smart infrastructure, smart mobility and smart IoT.”

Additionally, given how quickly IoT application has grown over the past few years, Graham believes that the adoption of IoT-lead initiatives will be a starting point for a number of African countries and regions towards smart city initiatives. “Part of this IoT drive is the connectivity that surrounds it. While mobile infrastructure in Africa is being continuously upgraded, Wi-Fi networks are being rolled out throughout the continent. There is already a growing reliance on this kind of connectivity, as it is aiding in the evolution of smart cities – where more services are being offered digitally than before.”

Transformative impact

There is no denying that technology continues to have a transformative impact on how we live and work today. However, it must be noted that establishing a smart city, takes a lot more than an intelligent city network, reliable connectivity, or clever applications.

Kaspersky Lab warns that there is a tremendous need for more awareness on the issue of cybersecurity in smart cities. Cities continue to get smarter and constantly incorporate new technologies into their infrastructure, but they cannot ignore the importance of cybersecurity.

Riaan Badenhorst, general manager, Kaspersky Lab Africa, says, “As the technology and networks become increasingly integrated, there is also the potential that this will expose more vulnerabilities in co-dependent systems that cybercriminals may look to target. In fact, in exploring security issues in smart city transport infrastructure, our research has proven that data gathered and processed by road sensors, as an example, can be dramatically compromised. Transport infrastructure in a modern megalopolis represents a very complicated system, containing different sorts of traffic and road sensors, cameras, and even smart traffic light systems. All the information gathered by these devices is delivered and analysed in real-time by the special city authorities. If the data is compromised it can cause millions in losses to the city.”

Multi-layered security needs to be considered

“As a result, multi-layered security for smart cities, that includes security of critical infrastructures, different types of terminals, mobile security and security for data centres needs to be considered – and in the planning phase. When it comes to city safety, it is essential to have profound testing before rolling out any critical infrastructure. For example, our experts can conduct penetration tests, give advice and provide data feeds on the most recent threats. Cyberattacks can therefore be planned for in the same way a city plans for earthquakes and floods – with a reliable, thorough system of prediction, prevention and response,” adds Badenhorst.

“The world around us is changing – and quickly. While digital and smarter technology is certainly becoming embedded in all aspects of the built environment, building a smart city is a complex and ambitious undertaking that requires a multi-disciplinary approach. Succeeding will take a broad set of stakeholders who are open minded and forward thinking enough to break the mould of the tried and tested and have the courage to make good design and investment decisions. And, starting with an integrated and holistically designed outlook of basic services - and integrating digital technology at this first level - offers keen avenues to address challenges and opportunities of urbanisation in the face of climate change, thereby making these environments innovatively smarter, more ergonomic, efficient and sustainable as the cities for Africa’s future,” concludes Johnston.

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