

Smart city dream should speak to SA context



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The implementation of smart city technologies of the future could reduce the resources required to address present development challenges in SA. Therefore, promises of **creating** smart cities should be carefully examined, given the realities of SA's cities and municipalities.

This is one of the key findings of a smart cities report compiled by the Council for Scientific and Industrial Research (CSIR), titled "Inclusive smart cities appropriate to the South African context – challenges and opportunities".

In the report, which will be released in the coming weeks, the CSIR assesses and interprets data on the smart cities landscape in SA, highlighting the challenges and opportunities of implementing smart city initiatives for local municipalities.

According to the report, smart city interventions could improve people's quality of life, boost a city's economy and contribute to reducing the environmental footprint of the city. However, a South African interpretation of the smart city concept needs to be informed by the South African context, it asserts.

It found that local municipalities are still grappling with several challenges in conceptualising and implementing smart city initiatives that respond appropriately to the country's challenges.

It notes that international perceptions of smart cities that bear no resemblance to South African cities create unrealistic smart city expectations, often based on generic models that may not be suitable to South African conditions. This results in much difficulty



in convincing some stakeholders of the need to consider the local context when identifying smart city interventions.

Furthermore, the report states smart cities are often presented as the “solution” to almost all the problems faced by local cities and municipalities, and yet many challenges could still remain or even arise from deployments, due to unique city requirements and unrealistic views of what a smart city should look like.

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“Would a smart city similar to international examples really benefit everybody in SA, including the poor, homeless, unemployed, and those without ready [access](#) to ICT and other technologies?” asks Tinus Kruger, research group leader: housing and urban studies research group at CSIR's Smart Places Cluster.

“The South African understanding of a smart city should be based on the principle of inclusivity. In essence, this means that a smart city initiative should ultimately benefit all people and all communities in the city and improve the well-being of the entire city. For this reason, partnerships and [collaboration](#) between all relevant stakeholders from the outset is key when developing a smart city.”

According to the report, a high-tech smart city may reduce the resources required to address present challenges in SA, and even reinforce inequalities and exclusion rather than address the needs of those living without basic services such as water, sanitation and electricity.

Another challenge that needs to be addressed by local municipalities is the improper use of various connected devices, and data collection initiatives in a smart city, which often raises practical and ethical concerns.

“This relates to, for instance, the competencies and processes needed to manage, analyse and safely store large data sets, the

ownership of the data, privacy and human rights issues,” notes Kruger.

South African smart city dream

In his State of the Nation Address in February, president Cyril Ramaphosa **spoke** about his vision of a smart South African city. He made reference to a new South African city driven solely by smart technologies that is taking shape in Lanseria, Gauteng.

This area, which he referred to as a truly post-apartheid city, will have 350 000 to half-a-million people who will call it home in the next decade, he said.

While smart city technologies could contribute to the creation of safer communities, improve communication between municipalities and residents, and support more effective, data-driven decision-making, Kruger believes the ultimate aim of Ramaphosa’s smart city vision needs to be well-defined and, more importantly, clearly communicated to manage expectations and secure support and commitment from all stakeholders.

“Is the main goal of his vision to showcase the country’s ability to build a new smart city with skyscrapers, founded on the technologies of the fourth industrial revolution? Or, is the purpose to provide effective, efficient and affordable shelter, amenities and services to all, including the poorest members of society?” Kruger asks.

“If the envisioned city is not planned and designed to respond to the local context, it could very well exacerbate the spatial dislocation that characterises South African cities and towns.”

In terms of comparing SA to international counterparts, the CSIR report notes that while there are many cities in the world that have progressed much further than South African cities when it comes to the implementation of smart city initiatives, this does not mean some South African cities have not started the process.

“Some cities have already implemented smart technologies; eg, Internet-connected sensors to remotely monitor water quality

and smart technologies utilised in the provision and distribution of electricity and health, safety and security technologies. It should be remembered that certain basic elements need to be in place to support smart initiatives, including municipal infrastructure, regular maintenance of the infrastructure, reliable electricity and water supply, and effective service delivery,” says Kruger.

These elements have to work together as part of a broader smart cities initiative, to create a smart city ecosystem, breaking silos and engaging a broader community of innovators, he adds.

“An inclusive smart city is a sustainable city that involves the interaction of a number of characteristics, including: being shaped by, and responding to the local context; it uses ICT as an enabler rather than a driver; it is co-produced by the community; and it embraces appropriate partnerships and innovation.” ■