

## A move to smart cities: Uganda's desired future

By Oscord Mark Otile\*

On Tuesday, April 28, 2020, Parliament of Uganda approved the creation of 15 new cities. Accordingly, 10 of the cities should have begun operations on July 1, 2020. A careful analysis of the existing designated urban areas and cities that have been recently created reveals that they fall below the “smart cities” mark. The term “Smart City,” is a concept that was devised at the advent of the internet. Smart cities are a measure of how well a city uses technology to address its problems and challenges and is striving to use digital technologies to create enduring and safe communities and to provide more opportunities for the city dwellers.<sup>1</sup>

Smart cities use different types of electronic Internet of things (IoT) sensors to collect data. Insights gained from that data are used to manage assets, resources and services efficiently; in return, that data is used to improve the operations across the city<sup>2</sup>. This includes data collected from citizens, devices, buildings and assets that are then processed and analyzed to monitor and manage traffic and transportation systems, power plants, utilities, water supply networks, waste, crime detection<sup>3</sup>, information systems, schools, libraries, hospitals, and other community services.<sup>4</sup> Therefore, the smart city concept integrates information and communication technology (ICT), and various physical devices connected to the IoT network to optimize the efficiency of city operations and services and connect to citizens.<sup>5</sup>

Smart city technology allows city officials to interact directly with both community and city infrastructure and to monitor what is happening in

the city and how the city is evolving. ICT is used to enhance quality, performance and interactivity of urban services, to reduce costs and resource consumption and to increase contact between citizens and government. Each Smart city can develop appropriate applications to manage urban flows and allow for real-time responses. A smart city may, therefore, be more prepared to respond to challenges than one with a simple “transactional” relationship with its citizens.

In the developed world, cities such as London, New York, Paris, Tokyo, Reykjavik, Copenhagen, Berlin, Amsterdam, Singapore and Hong Kong among others have fast adopted the idea of smart cities. Other examples on the African continent that are already implementing the idea of smart cities include Nairobi and Cape Town. Nairobi, the capital of Kenya won the title of Most Intelligent City in Africa in 2014, 2015 and 2019. Cape Town on the other hand blossoms as one of the best places to do business in the continent as the South African government continuously implements thoughtful planning and cutting edge technology to attract businesses and improve the lives of its citizens.<sup>6</sup> These cities have been using ICT to tackle social and governmental challenges to improve lives in urban areas.

In Uganda, the term “Smart Cities” or “smart local governments” is seldom talked about in the management of cities and local governments. Kampala City Council Authority (KCCA), that had been the only city in Uganda until July 1, 2020, when 15 more regional cities were created has been implementing the concept of smart cities, although not on a grand scale compared to other cities in the developed world. Most of the challenges that most of the urban areas that Uganda has been

\* Oscord Mark Otile is a Research Officer at ACODE working under the Local Government Councils’ Scorecard Initiative (LGSCI) - a social accountability initiative that seeks to deepen local governance by strengthening political accountability and empower citizens to demand for better delivery of public goods and services.

struggling with include managing of public transport; local revenue assessment and collection; limited interaction between urban authorities and citizens; high dependence on paperwork; high cost of doing business due to red tape and bureaucracy; licensing of businesses; manual land transactions; holding physical meetings; relying on physical documentation; disjointed business clusters and related institutions among others. Thus, the creation of more cities creates an opportunity where the transactions of the cities and interactions with citizens can be transformed by ICT.

There is an existing legal, policy and institutional framework that can be exploited by stakeholders to create these cities that can use ICT to transform life and working environments for urban authorities and other stakeholders that they interact with. Some of these frameworks include the Constitution (1995); Access to Information Act, 2005; the Data Protection and Privacy Act, 2019; Electronic Government Regulations, 2014; Government of Uganda Website standards and Guide, 2014; Government of Uganda Social Media guide, 2013; Guidelines for E-Waste Management in Uganda, 2016; The ICT Policy for Uganda, 2014; The National E-Government Policy Framework, 2011; The Computer Misuse Act, 2011; The Electronic Transactions Regulations, 2013; and E-Government Regulations, 2014 among others. The smart cities are resonating with the 'Digital Uganda Vision' which seeks to empower Ugandan citizens to achieve the goals of universal inclusion, sustainable development, economic progress and poverty eradication. This is envisaged to be achieved through digital innovation combining initiatives across multiple sectors. This vision will also electronically deliver a variety of government and private services in various fields such as education, health, agriculture, social security, banking, justice, communication etc. With such a vision, the new cities should be able to embed digital technology across all city functions.

## Why smart cities?

It is estimated that 54% of people worldwide live in cities, a proportion that's expected to reach 66% by 2050. Combined with the overall population growth, urbanization will most likely add another 2.5 billion people to cities over the next three decades<sup>7</sup>. Therefore, environmental, social, and economic sustainability is a must to keep pace with this rapid expansion that is taxing our cities' resources.

The desire for smart cities is further driven by several benefits associated with smart cities. For instance, the cities' administration and management gain more citizen engagement and optimizes operations through real-time data intelligence and intra-agency collaboration and improved daily life

of citizens through city services. Smart cities offer visibility into real-time city data for improving mobility, connectivity, and safety services; ease of doing business; increase in locally generated revenue; reduction in the cost of doing business; businesses drive new revenue streams and economic development by enhancing awareness of customer activity and behaviour; and for developers and vendors, the application development of city data helps the city to improve operational efficiencies, engage citizens, and boost economic viability.

## Way forward

While it is a good thing to be identified as a city, it is another to live the dream of the cities that we have envisioned; and if the strategy<sup>8</sup> that government of Uganda had while creating these cities are to be realized, then the city managers have to draw experience from what other developed cities around the world have done. Some of the recommendations on what our regional cities should do include, but not limited to the following:

Our cities should invest in smart city projects. According to recent research by International Data Corporation (IDC) cities such as Singapore, New York, Tokyo and London had each planned to invest more than \$ 1 billion on smart city planning in 2019.<sup>9</sup> Our cities should tap into the existing pool of talented young people for product development and other information technology (IT) innovations.

As these cities grow in size, the maintenance of a strong and thriving city centre calls for more inward and outward movement of increasingly large volumes of commuters, tourists and shoppers among others; all benefiting from the economies and necessities of a central location. Public transport would be best suited to easily meet this mass access need as compared with private cars. Our cities ought to adopt policies and strategies to encourage a smooth transition of transferring urban travellers from private vehicles to public transport and non-motorised transport such as riding bicycles.

Cities should develop and build interactive online communication platforms such as Web portals and social media platforms to encourage feedback from citizens on the different services provided by the city administration. There is a need to adopt the use of mobile technology solutions for both smartphone and low-end mobile users to facilitate business transactions which can be facilitated by free access to Wi-Fi in all parts of the city.

To facilitate smart payments, regional cities should automate revenue administration, collection & reporting. Urban authorities are quite familiar with the challenges of revenue collection such as under-

declaration, manual receipts, revenue leakages and prohibitive costs involved in local revenue administration. An automated system will go a long way in addressing such challenges in the cities.

Smart Permits – cities should consider automation of construction plans and permit processes. This should go a long way in making it faster for clients to get their plans approved and also solve the problem of illegal structures in the cities.

Beyond the use of technology to solve challenges, the different regional city administrations need to note that our environment is also under stress.

The newly created cities should, therefore, have deliberate plans and support actions to reduce emissions. Cities should build resilience and decrease vulnerability to the adverse effects of climate change. Planting trees in the city centres will greatly mitigate the adverse effects of the carbon emissions from the many cars that will be plying their root in the city centres daily.

In conclusion, the new cities should consider a transition to smart governance, smart energy, smart building, smart mobility, smart infrastructure, smart technology, smart healthcare and smart citizen.

## Endnotes

- 1 HEREMobility. (n.d.). Singapore Smart City: A Holistic Transformation. Retrieved August 14, 2020, from HEREMobility: <https://mobility.here.com/learn/smart-city-initiatives/singapore-smart-city-holistic-transformation>.
- 2 Lai, Chun Sing; Jia, Youwei; Dong, Zhekang; Wang, Dongxiao; Tao, Yingshan; Lai, Qi Hong; Wong, Richard T. K.; Zobaa, Ahmed F.; Wu, Ruiheng; Lai, Loi Lei (17 August 2020). "A Review of Technical Standards for Smart Cities". *Clean Technologies*. 2 (3): 290–310. doi:10.3390/cleantechnol2030019.
- 3 Connected Vehicles in Smart Cities: The Future of Transportation Published by interestingengineering.com on 16 November 2018, retrieved on 4 April 2019.
- 4 Connected Vehicles in Smart Cities: The Future of Transportation Published by interestingengineering.com on 16 November 2018, retrieved on 4 April 2019.
- 5 Peris-Ortiz, Marta; Bennett, Dag R.; Yábar, Diana Pérez-Bustamante (2016). *Sustainable Smart Cities: Creating Spaces for Technological, Social and Business Development*. Springer. ISBN 9783319408958.
- 6 Veras, O. (2017, April 10). Smart cities in Africa: Nairobi and Cape Town. Retrieved August 15, 2020, from How We Made It in Africa: <https://www.howwemadeitinafrica.com/smart-cities-africa-nairobi-cape-town/58209/>
- 7 <https://www.un.org/development/desa/en/news/population/world-population-prospects-2017.html>
- 8 The Government of Uganda had a deliberate strategy when creating the 15 cities; that the cities will be a platform for socio-economic transformation to spur organized urban development and to deliver quality services for the well-being of the people who live and work in the cities.
- 9 <https://www.cio.com/article/3339543/singapore-to-spend-us1-billion-in-smart-city-initiative-during-2019.html>

---

Advocates Coalition for Development and Environment (ACODE), Plot 96 Kanjokya Street, P. O. Box 29836, Kampala, Tel: +256312812150, Email: [library@acode-u.org](mailto:library@acode-u.org). ACODE work is supported by generous donations and grants from bilateral donors and charitable foundations. Readers can reproduce or use of this publication for academic or charitable purposes or for purposes of informing public policy. As copyright holder, ACODE requests due acknowledgement. The views presented in this article are those of the author(s) and do not necessarily represent the views of ACODE. This and other ACODE local governance articles are available from [www.acode-u.org](http://www.acode-u.org).