

Can Implementing Smart City Technologies Save the African Cities? – Part 2

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INTRODUCTION

In part I of this essay, “Can Implementing Smart City Technologies Save the African Cities? – Part I”, *International Journal of Computing and ICT Research (IJCIR)*, Vol. 10, Issue.1 pp 6-8. <http://www.ijcir.org/volume 10-issue 2/article 1.pdf>, I articulated the concept of *smart city*, defining what it takes for a city to qualify to be called a smart city. I then talked about the benefits of smart city technologies to the citizens of any city. Then I went ahead to look at the African city. I talked about the history of the African city and how this history helped in the formation of the characteristics of the African cities. The question I set myself to answer is “How can African city planners use these unique characteristics and any available technologies to improve the lives of citizens? In answering this question, I focused first at looking at the “needed technology list” as provided by Deakin and Al Wear in their article, “From Intelligent to Smart Cities”. In this article, they listed the following factors as “a must have” in order for a city to start moving towards a smart city designation:

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- The application of a wide range of electronic and digital technologies to communities and cities
- The use of ICT to transform life and working environments within the region
- The embedding of such ICTs in government systems
- The territorialisation of practices that brings ICTs and people together to enhance the innovation and knowledge that they offer.

My focus in this article is to show that African cities have a potential, and some are already on path, to becoming smart cities. Indeed a few like Johannesburg, Tshwane and Cape Town all in South Africa, Nairobi in Kenya, Accra in Ghana, Lagos and Abuja in Nigeria and Kigali in Rwanda. This potential and ingredients to propel more African cities to the rank of smart cities include :

- *the uniqueness of the African city*
- *the availability of the “must have” technologies to drive Improved resource management, rapid urbanization, economic benefits and Job Creation (Smart Cities of Africa, Forecast to 2030)*
- *needed expertise to implement the technologies and*
- *the mechanism, policies and enforcement needed to immense the citizens of the city into the technologies to make the experiences and benefits of all those involved positive and worthwhile.*

As pointed out earlier, many Africa cities already classified as smart cities and many others are on the path of acquiring these ingredients. There are growing signs that these necessary inputs are getting more achievable boosted by several factors. First, African has one of the fastest growing army of innovation-savvy young people interested and engaged in the current technological revolution. This youthful technological exuberance is bound to create applications that are geared to local environments and therefore more targeted. Second, Africa also has an estimated urban population growth of 50% within the next 30 years, youth with a technological drive, a built in advantage for technological growth. Third, there is a growing list of technology investors being drawn to African by these statistics including [Owusu, Y]:

- Mark Zuckerberg’s (Facebook CEO) visit to Nigeria to acquaint himself with the rising technology entrepreneurship and the evolving innovation ecosystem on the continent

- GV (formerly Google Ventures), Spark Capital (Boston), Learn Capital (San Francisco) and the Omidyar Network (San Francisco), and others,
- In 2013 and 2015, IBM opened research laboratories in Kenya and South Africa respectively, to develop and deploy smart applications to address inefficiencies in public procurement, energy management, financial inclusion, traffic congestion in Kenya and to cloud computing, Big Data and mobile technologies to power South Africa's urbanization, boost smart mining and facilitate innovative healthcare.
- In 2012, the African Development Bank (AfDB), in partnership with the governments of Spain and Denmark, launched the African Guarantee Fund (AGF). The AGF seeks to facilitate access to capital by African private investors, many of whom face hurdles raising capital from commercial banks, angel investors, venture capital firms and development finance institutions for big ticket businesses.

Lastly, there is a growing determination among African city administrators to quickly learn from each other, inspite of the enormous diffuctlies, the *mechanism, policies and enforcement needed to immense the citizens*. For example [Smart Africa]:

- In the most recent “2016 Transform Africa” conference in Kigali Rwanda, the focus on Smart Cities, 300 mayors of cities across Africa attended to showcase the components of their smart cities.
- Currently, the smart city initiative is backed by 11 African countries while more nations are expected to join.
- A number of cities are rolling out technology initiatives such as WiFi in public areas, including public transport vehicles, as well as cashless payment systems in public transport to speed up the development.

Are these good signs of the African cities matching to the coveted ranks of smart cities Of course there are problems as we outlined some of these in part I of this essay. What is needed is the determination and creation of a shared platform to help each other and the involvement of the private sector. Efforts to this end are beginning to show results. For example, one such effort is

the realization that the fastest and greatest force to achieving the coveted designation is to create a common ICT platform. This, according to Fredrik Jejdling, the head of Ericsson in the sub-Saharan Africa region, has led to a truly Networked Society in Africa to support and grow the needed technologies [Smart Africa].

In fact the beginning of such a Networked Society has already started with Ivory Coast, Gabon, Kenya, Mali, Uganda, Senegal, South Sudan, Chad, Angola, Rwanda and Burkina Faso on board.

REFERENCES

WIKIPEDIA. "Smart city". https://en.wikipedia.org/wiki/Smart_city#Characteristics

ENDA, "Characteristics of a Sustainable City - As seen by ENDA", in Senegal. <http://archive.rec.org/REC/Programs/SustainableCities/CharacteristicsAfrica.html>

MARIA E. FREIRE, SOMIK LALL, and DANNY LEIPZIGER. "Africa's Urbanization: Challenges and Opportunities". http://www.dannyleipziger.com/documents/GD_WP7.pdf

DEAKIN, MARK; AL WAER, HUSAM. "From Intelligent to Smart Cities". Journal of Intelligent Buildings International: From Intelligent Cities to Smart Cities. 3 (3). doi:10.1080/17508975.2011.586671.

Owusu, Y. in "Africa's growing tech hubs and smart cities", GREAT Insights Magazine - Volume 5, Issue 5. October/November 2016".

Smart Africa. "2016 Transform Africa to focus on Smart Cities". <https://smartafrica.org/?Imijiyi-ya-Afurika-igiye-kwigira-kuri-Kigali-muri-gahunda-ya-Smart-Africa>.

Smart Cities of Africa, Forecast to 2030, <http://www.wmcactionnews5.com/story/34281236/smart-cities-of-africa-forecast-to-2030>.