THE VEOLIA INSTITUTE REVIEW - *FACTS REPORTS N°22* - Water, Waste & Energy: Prospects for essential services in Africa

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AFRICAN SMART CITIES IN 2030

Sénamé Koffi Agbodjinou
Architect and anthropologist, founder of the HubCité project

Working session at WoeLab - ©Woelabs

Sénamé Koffi Agbodjinou is an architect and anthropologist who graduated from the Paris-La Villette College of Architecture and the School for Advanced Studies in Social Sciences in Paris. In 2010, he set up a research platform, *L'Africaine d'Architecture*, as a way to develop his neo-vernacular smart city concept. His HubCité project is a network of spaces promoting technological innovations (WoeLabs) that help local people take back ownership of their neighborhoods and design their own solutions. The project opened in Lomé, Togo, in 2012, bringing the concept to life. Sénamé Koffi Agbodjinou has been a fellow of the Ashoka network of social entrepreneurs since 2016.

Rejecting Western smart cities, which he feels are too top-down and remote from people's real needs, Sénamé Koffi Agbodjinou is a champion of the neo-vernacular African city. This alternative vision of the smart city, inspired by traditional societies and the organic ways they work through peer-to-peer exchanges at the village level, proposes a city that is horizontal and distributed. A city designed for and by residents at the local level making free use of new technologies as they see fit. A real-life application of this urban utopia can be found in Lomé where the HubCité project applies the principles of the neo-vernacular African city at the neighborhood level. HubCité exists to help people participate in how their city is designed and operated thanks to a network of technology innovation spaces, WoeLabs, that are dedicated to ultra-local urban projects. Each space serves a given area and supplies, on site, the resources that city-dwellers need to develop solutions that respond to their real needs, including waste collection, energy and 3D printing.

You advocate the concept of a neo-vernacular African city rather than a smart city modeled on the approach used in the West. Can you tell us more about this concept?

Sénamé Koffi Agbodjinou: The concept of the neo-vernacular African city that I have developed is based on a simple proposition: allow residents to design and construct their city themselves. This involves delegating some of the planners' and policy-makers' prerogatives to the people who actually bring the city to life. In reality, this is what mostly already happens in modern-day Africa, where there many spontaneous urban areas that are sometimes more dynamic than officially regulated and planned urban areas. The aim is to delegate this planning power to residents, to officially incorporate this spontaneous urbanism and provide it with the means to become more professional and ensure that the movement does not fall into a sort of anarchy.
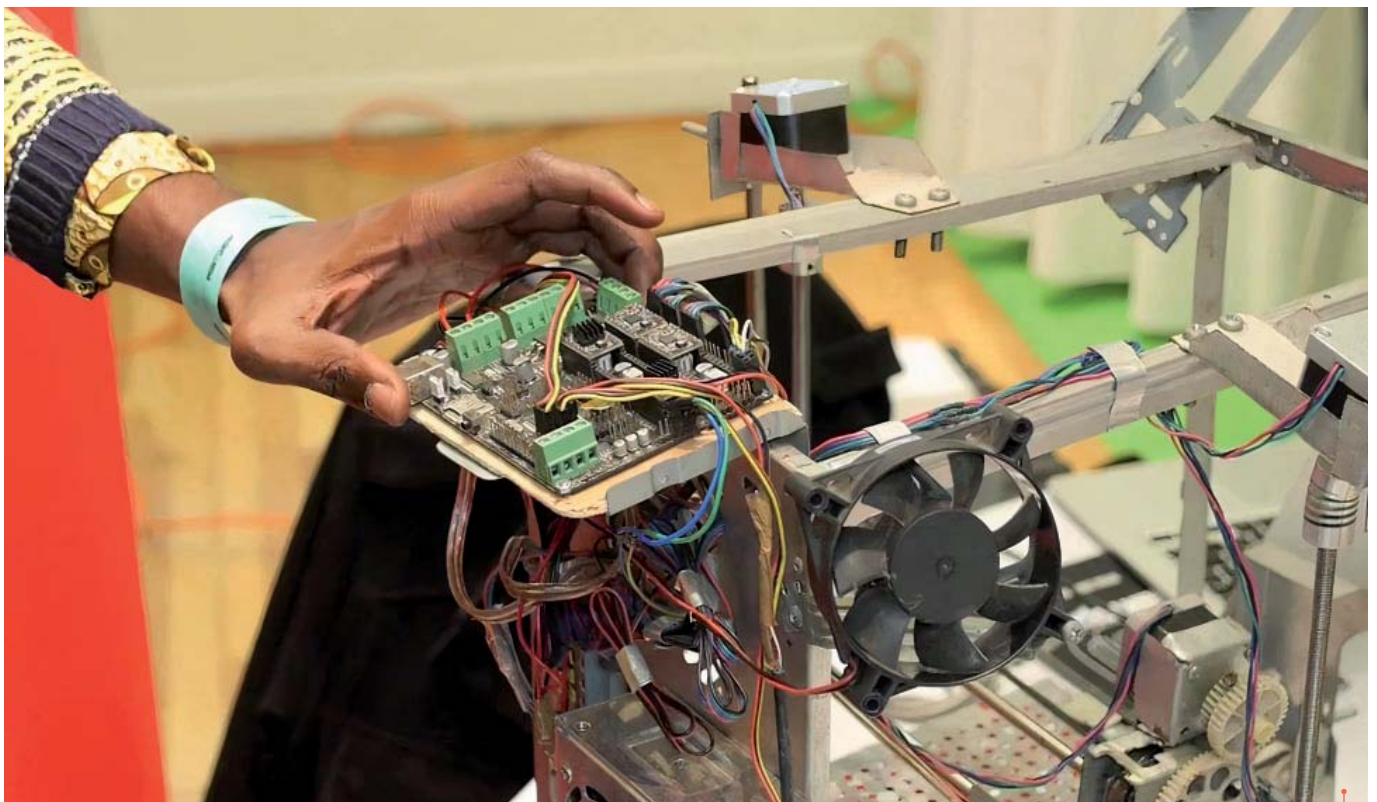
At the moment, smart cities do not exploit all the potential of new technologies because they do not put them in residents' hands to ensure that they truly serve local people's needs. Smart cities are primarily designed by and for companies from Silicon Valley. The smart city concept that I advocate is an alternative vision that seeks to genuinely make tech available to residents, to give them the freedom to think up initiatives to create their own city. The idea is to devise a far more distributed system, along the lines of Africa's traditional societies and villages.

How can African villages be an inspiration for building smart cities in Africa?

SKA: When I talk about the model of the African village, it's actually a form of shorthand. I'm referencing so-called primitive traditional societies. These societies were made up of members whose aim was to find common solutions to their common problems. The group was already a form of technology, probably the first of all and precursor to the augmented human. These group-based societies developed complex systems and organic social structures that made it possible for the group to function.

But these so-called primitive societies struggled as towns and cities grew larger. The organic traditional systems, based on peer-to-peer relationships and exchanges and relying on oral accounting systems ("I know what I owe you and what I must give to you"), were not designed to regulate group life on the scale of a city. Monopolies and governing institutions emerged to administer societies that were now operating on a larger scale. But these governing mechanisms, which made sense during the period when cities were expanding, are now often obsolete because the technologies available to us today make large-scale organic societies possible.

If we chose to use new technologies to support systems that are more distributed, using traditional societies as a model, I'm convinced they would be far more ethically sound and of genuine use to the city and society. A lot of people involved with open source movements have come to similar conclusions, based on what is known as

Wafate, a 3D printer made from computer waste at WoeLab - ©Woelabs

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Collecting plastic waste - ©Woelabs

the archipelago model: several communities within a city organize locally and autonomously using their own resources along with cross-cutting technologies so they can connect to each other and develop in a coherent manner. By combining these new technologies with traditional organic systems, we can invent new societies and new ways to make cities livable.

How can this form of smart city be built on the ground?

SKA: The HubCité project we've developed is the concrete, operational expression of the desire to construct a neo-vernacular African smart city. It exists to give residents the resources to build their city themselves thanks to a network of technology innovation spaces, WoeLabs, that are dedicated to ultra-local urban projects. These spaces are open to local residents. They serve as incubators for local people and provide them with resources to help them design and produce technologies that tackle the real local problems they have to deal with. Since HubCité started in 2012, we have opened two 650-square-meter WoeLabs, which were actually Africa's very first fab labs.

WoeLabs serve as incubators for local people and provide them with resources to help them design and produce technologies that tackle the real local problems they have to deal with

To make sure that each space is as relevant and effective as possible, we thought up a dense network of labs operating every one or two kilometers. The idea is that each lab incubates and develops services exclusively for its local area, such as managing waste collection within a radius of one kilometer, producing energy for use within the same radius, and so on. And as more of these labs are created across a territory, this territory will become "smart" by definition: with labs that produce smart citizens, and people with the tools to develop solutions that suit their environment.

A large number of fab labs promoting technological innovation have emerged in Africa in recent years. HubCité is a pioneer of this movement: WoeLab is older than 90% of the labs that have since sprung up. Two of the principles underpinning the WoeLabs are also very innovative. First, they are multi-disciplinary spaces, not simply places were people go to do a spot of DIY. They need to support projects created on site from the initial idea through to development and any scaling up. They should also offer social support, training, and so on. Everything is designed to help people using the spaces to achieve their full potential. They are close in spirit to the "third places" that have started to appear in recent years. And the spaces must be genuinely of service to the city, and help to fabricate solutions designed for it. Every project has to be conceived with the goal of solving local urban problems.

Our project did not set out to create a lab because of the technology, but to serve a territory and create a unique citizen community.

What solutions for access to services are people at the WoeLabs in Lomé devising?

SKA: The WoeLabs model is meant to be very focused on essential services. Every lab is created to be both a waste bank for its local area and a source of energy producing enough for everything within its scope of activity. In practical terms, we've managed to set up a plastic waste bank at both the labs in Lomé. HubCitizens who live in the area around the lab can visit and sign up and we'll then collect plastic waste from their homes. We issue them with a bin, low tech right now but we hope to use connected bins eventually. People put their plastic waste in the bin and when it's full they phone the lab and a member can collect it the same day because the labs cover only a small radius. The waste is then sorted and sold to specialist operators for recovery. Every bin a HubCitizen fills earns them points that can be used on the HubCité platform. These points are a gateway to an alternative economy, where wealth comes from the services you offer the city: sorting its waste, helping in city vegetable gardens, offering free training in the labs, and so on. All these services earn you points, which you then trade with other HubCitizens.

What do you think the African city will look like a decade from now?

SKA: If we believe the demographic projections from leading international organizations, the future of the city is African: in 20 years' time, the five largest megacities will all be in Africa. My belief is that if these new forms of cities, these metropolized regions, continue to follow the current dynamic and its fascination with the Western urban model, then they will considerably and dramatically hasten the Anthropocene.

But if African societies can create new ways to live in the urban sphere, refusing to allow social structures to be swept away by technology and reappropriating the organic traditional systems they have abandoned, if they manage to reverse the trend and use technology to foster social structures, then Africa will stand as a beacon for the rest of humanity.

What direction will the cities of Africa take? It's hard to predict because Africa's city-dwellers are paradoxical: on the one hand they're massively eager consumers of all that's new, which sometimes stops them from questioning the current development model, but they're also still very close to the land and they cultivate very strong social ties. It's this last point that convinces me that another urban model is possible for Africa.