

How African online retail will grow to the next level

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Africa is exploding right now. Digital infrastructure is really gaining traction. More people can shop online than ever before, so the big challenge Africa's online retail customers want answered now is, "How do I get my parcel delivered to my home, town or village?"

Charl Fouche, COO of AfriGIS, says over 495 million Africans are online, they will create \$155 billion in economic value by 2025, but something as simple as a valid address stands in the way of their contribution and the companies that would serve them.



Charl Fouche, COO of AfriGIS

“Addresses seem straightforward but even in developed economies, where people have high levels of education and literacy, they can struggle with multiple address formats, multiple postal codes, multiple spellings and many other discrepancies,” he says. “Sometimes they lack data altogether or there is a lack of international standards application. At other times they lack or have poorly maintain databases and lists, experience changing formats, new construction developments, language differences, or poor physical infrastructure. There are still more challenges, such as a variety of naming conventions for different regions, including province, county, and state. These all complicate an already difficult environment, particularly for multinationals venturing into new markets. Africa is the next online retail harvest, but companies first have to figure out how to crack the delivery nut.”

Quality geospatial data goes the last mile

In many cases in Africa address data does exist in one form or another. It's part of a field called geospatial analysis. The problem is that address data is usually incomplete, poorly maintained, and in a variety of formats, which makes it exceptionally difficult to incorporate into efficient business processes. The result is that it's expensive to take care of what's called “the last mile” in online retail, delivering actual packages to people's homes and places of work.

“If you can't do that, you can't do business, it's that simple. Businesses need the data in standardised structures, they need complete data they can trust, and they need to complement the basic address data with enriched data so they can make better business decisions about how to serve the people who live there,” says Fouche. “You have to know with certainty that every address you have actually exists, what the borders of a property are and where the entrances are, the borders of suburbs, counties, provinces, districts, municipalities, and other demarcated boundaries. That's how businesses plan delivery routes, logistics, the infrastructure they put in place to serve the communities, how they ascribe business risk for things like loans, short and long-term insurance, and many other operational activities.

“You can imagine how big the job is to get all of that data together for an entire country. Now imagine doing it for more than 21,000 towns and 490,000 suburbs across the whole of Africa. It's a monumental project. We've been in this business for more than 25 years and it still took all of our experts from South Africa, Bangladesh and Ireland two years to create a repeatable, reliable, and robust process to provide regular updates.”

International collaboration

The international team of data scientists at AfriGIS systematically set about overcoming the challenge. They gathered data from a variety of government and other sources. They integrated it into a database that adheres to international geospatial address standards then linked it to administrative structures such as country, provincial, county, state and other

boundaries. The biggest challenge has been gathering and cleaning the administrative data levels beneath those layers, the districts, suburbs, and street level data.

“It has been a massive undertaking, but we have applied unique IDs to each address so that we can track it throughout the process and ensure we maintain the standard, regardless of the format it enters the system in or how it gets used,” says Fouche. “We merged many data sets and created structure, linking the data to standard and accepted formats that companies such as couriers, banks, and financial services typically use. Standard APIs make the data accessible to anyone who needs to use it and quarterly releases keep it up to date. It has been a highly complex task, but we’ve removed all the complexity for the companies that need to use the data to do business, open new markets, and create competitive advantage.”

Getting to the next level

The next step, says Fouche, is adding points of interest and other information for people to overlay on the base data. It is also building out town and village boundaries and understanding the topographical distribution of the population.

“Knowing the topographical population density is important because it informs a lot of business decisions,” he says. “We currently used mathematical algorithms to estimate population densities because there is no other data available. This is not a perfect solution, but it is the best solution out there today. And, using the estimates, we have started to fill in the actual data.”

Fouche says that creating the database required considerable collaboration with industry peers.

“There is a lot of work that goes into getting this right and it takes a lot of experts collaborating to ensure the success of a project of this scope,” he says. “We’ve been part of the international geospatial community since the beginning, but, at the end of the day, customers don’t care about that. They care about using an API for a simple database lookup so they can get their work done. That’s what it’s all about.”

About AfriGIS

AfriGIS is the leading Geospatial Information Science company in Southern Africa that specialises in location-sensitive data and solutions. It provides customers across the board with a suite of web-based tools and APIs to connect to, enhance, and enrich their own data with location intelligence, insights, and trusted data. The organisation was founded in 1997 and celebrates 25 years in business this year. It is a level 1-certified broad-based black economic empowerment (B-BBEE) business, with more than 100 employees, in Pretoria, Durban and Cape Town in South Africa, Dublin in Ireland, and Dhaka in Bangladesh.

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