



OPINION

How a Canadian cleantech firm is bridging the digital divide in Africa

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CONTRIBUTED TO THE GLOBE AND MAIL
PUBLISHED 17 HOURS AGO

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Five years ago, a handful of software developers and engineers in Nairobi got together to hatch an ambitious plan to bring free, high-speed internet access to communities across East Africa. With a mix of naiveté and optimism, they started a company called BRCK and launched a public WiFi hotspot network that can be used by anyone, for free, with a laptop or smartphone.

The economic and social impacts, if BRCK is successful, will be huge. “Access to the internet transforms lives by expanding access to education and health care, increasing civic participation, growing businesses and boosting gender equality,” according to a 2018 report from Bloomberg New Energy Finance on the digital divide that persists in developing countries.

We take it for granted in North America and Europe, but for most Africans, high-speed internet access remains an unaffordable luxury. A recent report from social-media firm Hootsuite found that while 82 per cent of Africans use mobile phones – mostly for texting and talking – just 34 per cent are active internet users. That number drops to 27 per cent when looking at just East Africa, and to 12 per cent in Middle Africa.

BRCK aims to dramatically boost those numbers. The company’s long-term plan is to go after “frontier markets” that represent the world’s next three billion internet users, helped by the financial backing of internet pioneer Steve Case.

It’s a noble pursuit, but here’s the thing about frontier markets: They tend to lack reliable electricity infrastructure. Without electricity, most things don’t work. In BRCK’s home country of Kenya, for example, 44 per cent of the population is still not connected to the power grid. As the company’s chief technology officer Reg Orton put it, “Powering these hotspots will be crucial to make this a reality.”

To overcome this challenge, BRCK started working with Toronto-based Clear Blue Technologies Inc., one of the few Canadian cleantech companies making major inroads in Africa. Clear Blue designs “smart” power systems for off-grid, often remote environments. What this means is that it provides the controller that orchestrates how wind, solar and battery technologies work together to power a specific device, such as a WiFi router, street light or security camera in the middle of

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It also supplies the software that allows its systems to be monitored and controlled remotely through the web, making it easier to keep an eye on hard-to-reach equipment and get notifications if something goes wrong or gets vandalized.

“We spec and purchase the energy storage and generation components, too,” said Clear Blue’s co-founder and chief executive Miriam Tuerk, noting that the seven-year-old company made a strategic decision early on to focus on the off-grid market – a bet that’s beginning to pay off.

There’s no business case for conventional utilities to expand electricity infrastructure to low-density, high-poverty areas that offer little chance for a return on investment. “It’s easier for us to go into those markets,” Ms. Tuerk said. “Because we made the decision to go off grid, I don’t have to go through the power utilities to get this done. Our customers can completely bypass power utility infrastructure.”

BRCK tried out Clear Blue’s technology on 10 of its WiFi hotspots earlier this year. It was so impressed with the performance, it selected Clear Blue for a large-scale rollout across Africa that will see thousands of its hotspots equipped with the Toronto company’s off-grid power systems over the next five years.

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Clear Blue is pursuing similar opportunities in South America. Earlier this year, the company began work with Spanish telecom giant Telefonica and its Peruvian partner Mayu Telecommunications on a mission-critical network for a digitally isolated town deep in the Amazon rain forest.

Clear Blue supplied its technology for two locations as part of Telefonica’s “internet for all” program, which pledges to bring access to 100 million people in rural Latin America. These can be extremely remote locations. Equipment for the two sites had to be carried more than three hours by hand to the top of a mountain.

The Telefonica project represents huge potential for Clear Blue. However, nearly half of the company’s business this past year has come from Africa, including support for more than 1,000 solar-powered streetlights in Morocco and Nigeria and cellular base stations in Rwanda.

The company is getting a boost from its membership in the Telecom Infra Project, a

global initiative co-founded in 2016 by Facebook, Intel, Nokia, SK Telecom and Deutsche Telekom. A key project mission is to improve connectivity in remote areas of the world. Doing that, of course, requires the kind of flexible and adaptable power solutions that Clear Blue has proven capable of delivering.

Ms. Tuerk figures Africa will continue to represent about half of the company's business over the next few years, with North American sales representing the other half. "That's partly a deliberate strategy," she said. "I've been through too many market downturns to not have a diversified approach."

Tyler Hamilton works with cleantech companies from across Canada as an adviser with the non-profit MaRS Discovery District in Toronto.

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