

Solar Powered Kiosks charging phones in Rwanda

By [Sophie Eastaugh](#), for CNN September 23, 2019

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Photos: Africa's solar start-ups

Power of the sun – Solar energy innovator Henri Nyakarundi with his portable mobile charging kiosk in Rwanda.

Story highlights

- Mobile solar-powered kiosks can charge up to 30 cell phones at a time
- Though 70% of Rwandas have a mobile phone, only 18% have electricity
- New model will bring wifi and intranet to rural communities

(*CNN*)Henri Nyakarundi never wanted a job.

Born to refugee parents from Rwanda, he grew up in Burundi until civil war again forced the family to move on. Relocating to the US, Nyakarundi studied computer science at Georgia State University and by 19 had founded his first start up.

"I was not a job type of guy," laughed the entrepreneur. "I think it's my personality, I've always liked to make my own decisions."

Yet his product -- a solar-powered mobile kiosk that charges cell phones and connects communities -- aims to create thousands of jobs across Africa.

It has received numerous energy innovation awards and grants from the likes of Microsoft.

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Solar kiosk franchisee, Jeanne Marie Uhiriwe, on the streets of Kigali, Rwanda

"My vision is to create at least 50,000 to 100,000 micro businesses across Africa," Nyakarundi told CNN.

"It's doable. You're looking at a population that's going to double in the next 25 to 30 years."

The idea

Returning to Rwanda or Burundi for holidays, Nyakarundi noticed that while many people had cell phones they often struggled to charge them.

In Rwanda, [industry analysis estimates](#) that roughly 70% of the population have a cell phone, yet only 18% have access to electricity, [according to the World Bank](#).

Sketching the first design on a piece of paper, the entrepreneur devised a solar-powered kiosk that can be towed by bicycle and provides simultaneous charging for up to 80 phones.

Business in a box

His company, [African Renewable Energy Distributor \(ARED\)](#), operates under a micro-franchising system that leases the kiosks to agents.

Micro franchisees earn money from mobile charging and selling add-ons such as mobile credit, government certificates and prepaid electricity.

Women and those with disabilities are the most vulnerable group in Africa, especially in business.

"It's a business in a box," said Nyakarundi, who moved back to Rwanda in 2012 once his prototype was ready. "I was looking to do something that would not only solve a problem but also had a social impact by creating micro businesses for people."

There are currently 25 kiosks operating in Rwanda, many in rural areas where the population is dependent on cell phones to communicate and send money.

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But after four years of carefully testing his business model, Nyakarundi said he is now ready to seriously scale up. He plans to have between 600 and 800 kiosks in place by the next two years.

Free opportunity

To run them, Nyakarundi says he looks for people who desperately lack employment opportunities.

The agents make just a \$100 down payment followed by \$200 in installments to lease their kiosk from ARED. From that, the company says existing vendors are making between 30,000 to 85,000 Rwandan francs (\$38-\$107) a month -- enough to pay rent and feed a family.

But strikingly, for micro franchisees who are women or have disabilities, the opportunity is absolutely free.



Sembemba Jean Pierre

"They are the most vulnerable group in Africa, especially in business," said Nyakarundi. "Women don't have access to funding the way men do, and people with disabilities have even less opportunity."

Sembemba Jean Pierre suffers from a disability. He had to remove his child from school because he wasn't earning enough as a watch repairman. Thanks to the kiosk, his son is back in education and Pierre dreams of owning a house.

"I could go a whole day without getting someone to repair the watch for," Pierre told CNN by email through a translator. "Now I am at least assured of daily income -- my family don't sleep hungry anymore."

Prospective agents must be at least 25 years of age and have two letters of recommendation from leaders in their community -- paperwork that is enough to deter "the bad apples", according to Nyakarundi.

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Crucial role

This system means that choosing the right micro franchisees is vital, because they are the gateway to the company's revenue.

"When we offer a free opportunity, it becomes very important to have strong monitoring and evaluation. If they make money, we make money. So we want to make sure that people are not performing get replaced immediately."

A for-profit business, ARED makes a small amount of commission (roughly 1%) from the micro franchisee's sales while the bulk of its revenue comes from advertising on the side of the kiosks.

But a new prototype set to roll out this autumn will create even more revenue opportunities. ARED has developed a "smart kiosk" that will offer wifi, local intranet and data collection from its users.

Smart kiosk

"We're moving from a basic sort of kiosk to more of a technology company," said Nyakarundi.

"A lot of people don't utilize their smart phone because they can't afford internet. Why not build our own intranet -- our own network of content on the kiosk to serve our community?"

Customers will be able to access the intranet for free, while advertisers will pay to submit surveys or collect data. Wifi will be available at a small charge.

"We can monetize this in so many ways now that we have a digital platform," said Nyakarundi. "The goal was to maximize revenue without having to collect it from the micro franchisee. It can be a win-win situation for all of us."

With this technology in place, Nkyarundi has also developed software that will monitor and communicate with each kiosk -- setting the company up for the expansion he dreams of.