

## TV white spaces beneficiary story: Mawingu Agent Benson Maina, Nanyuki, Kenya

*Mawingu White Spaces Broadband Project*



**Mr. Benson Maina** is a Mawingu agent – selling low-cost Internet access and cellphone and other device charging to his rural community. Opened in November 2013, Mr. Maina’s business is located 17 kilometers from the town of Nanyuki in Kenya, and about 200 kilometers from the nation’s capital, Nairobi. Mr. Maina’s shop is part of a TV white spaces pilot called the Mawingu White Spaces Broadband Project, and is testing the commercial feasibility of low-cost hubs offering access to Internet and technological services and devices in rural Africa.

The solar-powered container (the lab is actually housed in a shipping container) is the first in what could become a network of containers and other shops across rural Kenya, and hopefully Africa, to provide access to the Internet, electricity to charge devices, and technological expertise and guidance from tech-savvy Mawingu agents such as Mr. Maina. The services are free of charge as the pilot tests the concept; the long-term plan is to charge a very affordable fee for use of all containers throughout the network. Each container will be strategically located to encourage the optimum number of visits from the surrounding community.



*Benson Maina holds a TV white spaces antenna in front of the Mawingu White Spaces Broadband pilot container near Nanyuki, Kenya. The pilot offers the public access to Wi-Fi, devices and services free of charge.*

*Photo credit: Georgina Goodwin*

“Living here for the last 10 years, I have seen people suffering. If I wanted to know about something in high school, I had to buy a newspaper, but I didn’t have money,” Mr. Maina said. “Mawingu has had a huge impact on the community already. Having access to Internet and technology is life-changing – and it’s the way to alleviate poverty. People in the area will begin having incomes as a result of information obtained from the Internet. In a few years, this area will be different than the rest of the country; we will be icons for what’s to come.”



*Students conduct research at the Mawingu White Spaces Broadband pilot container*  
*Photo credit: Georgina Goodwin*

One of Mr. Maina’s first clients, James, is a nearby farmer who wanted to know about government farming regulations and chemical treatments that wouldn’t harm his crops. Mr. Maina’s clients include many more farmers and small business owners, like Steven, who came to the Mawingu container to learn about computer software. After researching software solutions online and with help from Mr. Maina, Steven started a prosperous business installing and repairing commercial and residential software in Nanyuki and other towns. Job seekers like Diana, a teacher who was unemployed for a year, use the Mawingu container to research and apply for jobs and communicate with

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prospective employers. Mr. Maina helped Diana find teaching opportunities online which led to the teaching position she now holds at Doldol Secondary School. Teachers and students are also frequent clients, researching lesson plans and assignments.

“People come to the Mawingu container multiple times a week for a variety of reasons,” said Mr. Maina. “Healthcare is an important use case. One of my clients was a child whose family member had symptoms of malaria. The child researched the possible causes of illness to help determine whether to visit the doctor. Other times, children will learn how to do something on a computer at the container, and then they’ll go home and teach their parents what they learned.”

By offering affordable access to broadband and devices in rural areas without Internet or even electricity, people avoid time-consuming, tiring trips of many kilometers – often traveled by foot – to expensive Internet cafes where they spend their savings checking emails, researching job opportunities and looking for other information.

Mawingu hopes to be a center for trade and a hub for commerce by transforming the traditional, inefficient and expensive marketplace trading routines. Rather than traveling to city center markets to sell goods, Mawingu offers merchants the opportunity to generate awareness and attract customers to visit the merchants, as well as work with neighboring vendors to form cooperatives. Internet access takes the burden of travel, time and transportation funds off the merchants and allows more time for goods production. Connectivity also enables expansion of product distribution to new markets.

Mawingu is part of Microsoft’s 4Afrika initiative to improve global competitiveness in Africa. In collaboration with the government of Kenya’s Ministry of Information and Communications and Indigo Telecom Ltd., the pilot delivers low-cost wireless broadband access to previously unserved locations near Nanyuki, Kenya. The wireless technology used in the pilot is called dynamic spectrum access, which enables wireless devices to opportunistically tap into unused radio spectrum to establish broadband connections. The project in Kenya uses these technologies to create broadband connections over the unused portions of wireless spectrum in the television frequency band – so-called “TV white spaces.”

The initial installation near Nanyuki currently includes eight customer locations: Male Primary School, Male Secondary School, Gakawa Secondary School, Laikipia County Government Office, Laikipia Public Library, the Red Cross office near Nanyuki, the Burguret Dispensary healthcare clinic (operations to begin soon), and the first Mawingu charging and bandwidth agent, Mr. Maina. Employees at the Laikipia County Government Office will soon be enjoying Office 365 accounts. The students are taking advantage of Windows Multipoint Server ICT labs. In early 2014, an additional 33 end user locations will be added to the network, including several more schools, Mawingu agents, and businesses in the area. The network is featuring white space radios manufactured by Adaptrum and 6Harmonics.

Providing broadband to rural areas of Kenya is critical to driving prosperity in rural areas, as well as Africa as a whole. It gives students – both children and adults – a new way to experience learning, and rural communities the ability to connect to the world, improving opportunities for economic development via e-commerce and small business growth.