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Consultation on the couch: In Uganda, young doctors are driving digitalization in healthcare

Germany's health minister recently presented a new digitalization strategy for the country. Uganda is already showing how it can work: The company Rocket Health offers diagnoses over the phone as well as a mobile laboratory and pharmacy service. The founders see this as a way to provide better health care despite a shortage of doctors.

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This article appears as part of our series on sustainable development goals and tech-based solutions from Africa, which we are discussing with an African-German community.

You don't drive through Kampala, you squeeze. The traffic in Uganda's capital city is a chaotic knot of cars surrounded by swarms of motorcycles. Most of them are so-called boda bodas, twin-engine taxis. Some passengers can be chauffeured sitting side-saddle, others squeeze behind the driver with luggage or small children, and very few wear a helmet. Road markings are rarely recognizable and frequently ignored. Drivers use every gap they can to get where they're going and avoid potholes.

Chancy Lwebuga is relieved that he doesn't have to drive into town. "I'm an hour away from the nearest lab," he says as he sits on the couch in his living room. The 58-year-old moves slowly and with difficulty. He has severe kidney disease. "My doctor says that I need a transplant before my 60th birthday," he says. Tomorrow he has a dialysis session, so today he needs his current blood results. For that, Lwebuga doesn't even have to get up from his couch.

Taking blood on the sofa

He has been a customer of the digital health company [Rocket Health](#) for a year. It offers telemedical consultations and a mobile pharmacy and laboratory service. "A phone call or a short message is enough, and an employee is on the way to me," he explains.



Employee Ivan Ainemaani receives the order and packs everything that he needs.

Like all of the company's field technicians, Ivan Ainemaani is a trained medical professional. "I used to work as a nurse in a hospital," he says. However, traveling to see patients at home or in their office is "more interesting" and also pays better. He and 30 colleagues are on the move in and around the headquarters in Kampala and the branch office in Gayaza, administering vaccinations, delivering medicines and collecting laboratory samples. The mobile service fee is 5,000 shillings (about €1.25).

Ainemaani draws blood, labels the tubes, stows them in his cool box and then measures his patient's blood pressure. "The blood pressure is normal. You'll receive your kidney results by email from our laboratory," he says.



Ivan Ainemaani listens to the patient before drawing blood in his living room



Patient Chancy Lwebuga does not have to leave his couch for the blood test



Ainemaani labels the blood samples for the laboratory



The nurse makes his way back with the laboratory sample

This service costs a total of 70,000 shillings (just under €18). This is quite affordable for the [growing urban middle class in Uganda](#). "The price is even a bit lower than the laboratory I used before," says Lwebuga, who worked for the tax office before his illness. So there's no reason to make the strenuous journey to the lab--and risk catching an infection on the way.

With the motorcycle to the laboratory

With the blood sample safely stowed, Ainemaani gets back on his motorbike. Given Kampala's high rate of traffic accidents, he says, "we have all completed special safety training and wear protective clothing," including helmets. The company is already discussing the use of drones for deliveries that don't require skilled workers.

Back at headquarters, Ainemaani gives the sample to the lab and enters all the information into the database. Laboratory technician Sharon Okose gets to work. "On average, it takes us two to four hours to send the patient his result," she says. In addition to blood values, tests for tropical diseases such as malaria or typhoid are particularly common.



Sharon Okose in the lab

Rocket Health currently has 127 full-time employees and 102 part-time employees. It all started around ten years ago with a small team of young doctors. They were driven by the ambition to build something new, their interest in technology, and the desire to improve healthcare in their home country, says co-founder John Mark Bwanika. "Back then, every patient still had to come to a medical facility to get even simple information. They had to struggle through traffic and sometimes had to queue for a long time for an appointment that actually only lasted 5-10 minutes."

Using telemedicine to overcome a doctor shortage

The founders had seen how the use of [digital technologies](#) had made everyday life easier in banking and other areas, so they had clear ideas of what they wanted to do. They financed the start with their own funds, initially forming a company called [The Medical Concierge Group](#), focusing on telemedicine with a call center for advice and simple diagnoses. The group sees telemedicine as an important tool to help deal with the country's acute shortage of doctors: According to the [World Health Organization, there are 1.54 doctors for every 10,000 inhabitants](#) in Uganda compared to 45.18 in Germany.

Telemedicine enables doctors to look after a larger number of patients each day, regardless of where they live, emphasizes Bwanika, who is not only a licensed doctor but also has a master's degree in eHealth. Medical professionals live and work mainly in the urban centers, while Ugandans in the provinces sometimes "do not see a doctor in their entire lives," he says, but telemedicine can help. "In this way, people in the deepest provinces can even reach a specialist."

"Is this service always available, or do customers have to spend a lot of time on hold?"

Nour Trabelsi, member of the 100Eyes community in Tunisia.

Bwanika walks from his office past the laboratory and the pharmacy to the call center, where the service team sits shoulder to shoulder with trained doctors. There are 34 who are permanently employed here. They work around the clock in two daily shifts. Customers can send a short message to request a callback.

All patient data at a glance

All important information is arranged on a dashboard on the doctors' screens: How many patients have been waiting for a telephone consultation and for how long, whose laboratory results need to be discussed, which chronic patients are due for check-up calls and new prescriptions. Emergencies have priority, of course, but otherwise calls are returned in chronological order. "The waiting time is on average no longer than 20 minutes," says doctor Arthur Atyam. With one click he has access to all electronic patient files.



"When it's busy, each of us handles around 40 patients." Arthur Atyam, general practitioner.

Atyam has been with the company since late 2020, having previously worked at a private clinic in Kampala. It was the potential of telemedicine that attracted him - being able to help more people. Patients don't need a smartphone or even data credit to access the service; they can ask for a callback via simple text message. They can get medical advice easily and for 10,000 shillings (around €2.50), a fraction of what a traditional consultation costs.

Because access is easier and less expensive, patients contact a doctor more readily and receive appropriate advice or treatment sooner, Atyam says. This also applies to patients who fear stigmatization, for example because of a sexually transmitted disease, he notes. Patients with chronic conditions can also be monitored more effectively by telephone, he says.

"How can poorer citizens, who make up the majority of the population, afford this service?"

Robert Katiriko, member of the 100eyes community from Tanzania.

Atyam, a general practitioner, was initially hired for a project focused on his home region in northern Uganda. "There are only a few health centers there, and it's a long way to the nearest hospital," he says. With consultations over the phone, he was able to help many people who simply needed the right information. "We have a lot of myths that I've been able to debunk," he says. He also explained how to prevent infections after a boy's circumcision and helped ensure that a malnourished child received appropriate food. "People often turned on the loudspeaker so that everyone listened, could ask questions and benefited from the consultation," Atyam recalls.

However, that was part of a temporary project that the company undertook for research purposes—with external funding. The day-to-day business looks different. Since the company was founded, over 150,000 customers have used one of the digital services, and 65% of them have health insurance. But insured patients are a minority among Uganda's almost 46 million citizens. Uganda is one of the poorest countries in the world, and [studies have shown](#) that the health system lacks equity: Poor Ugandans rely on free treatments in the public clinics, and they receive fewer services than they need.

Rocket Health is part of the private healthcare sector used by the growing middle class. However, the telemedicine service "helps to decongest the hospitals, so that only the people that need to go there, go there," Bwanika emphasizes. In addition, more serious cases are prevented because people can get answers more quickly, he says. "If you want healthcare to be health care and not sick care, you want to deal with things before they become bad." Rocket Health helps support the overall system, he emphasizes. "The government will never have enough resources to build as many physical facilities as we all need. And so if the private sector is supporting the efforts of the Ministry of Health and the government to be able to meet the healthcare needs of the population, that's a big plus."

Limits of telemedicine

Doctors like Atyam receive ongoing training from Rocket Health to help them provide the best possible care remotely. Telemedicine does not yet play a role in medical school, with curricula focused on traditional consultations. "The older generation of physicians is still very skeptical," says the 30-year-old.

And consultations over the phone do have their limitations, he adds. The doctors at the call center have access to a list of all medical facilities in Uganda. In emergencies or when a physical examination is necessary, they can recommend the

nearest clinic, or an appropriately specialized one, directly to callers. All calls are recorded and stored in the system, which serves as a legal safeguard as well as quality control.



Quality control takes place in Rocket Health's open-plan office.

The employees responsible for quality control sit in the open-plan office opposite the call center. Lilian Claire Nabirye is one of them. "We don't have access to sensitive patient data here, of course," she explains. Each team can only access the data that is necessary for their work. "And of course we're not medical professionals," she adds. While doctors review diagnoses and patient records every month, Nabirye focuses on customer satisfaction. For example, she evaluates how empathetic the doctors were and whether they gave patients enough time to describe their symptoms. She follows standardized checklists and, if in doubt, discusses the issue with the doctor or recommends further training.

Monitoring: checking the quality of service

The time factor is also important in every customer contact, says Nabirye, who also evaluates the company's other employees in addition to the doctors. "I can track everything in real time," she explains: When orders arrive, how long they take to process, when they are delivered. She points to the screen of her laptop: "Here, for example, a customer is already waiting two hours for his medication. That's way too long." With just two clicks, she recognizes the reason: The medicine is currently out of stock. Nabirye says she will let the patient know.

“What role does technology play in this solution?”

Aishatu Ella-John, 100eyes Community member from Nigeria.

All the systems, for doctors, lab and pharmacy professionals, are linked and have been gradually developed over the years by a dedicated tech team. Telemedicine and eHealth were new concepts at the beginning, not just in Uganda but worldwide, says co-founder Bwanika. "So we had to decide whether to adopt a system from a U.S. or European hospital, whether we could afford it, whether it would even work in our context." Being patient, he says, was the right decision. Today, he says, his company has a "pretty mature" system.

Data protection was also something they had to develop themselves. "When we started, there was no legislation here in Uganda, so we followed international standards," Bwanika says. For example, all sensitive data is stored on servers at corporate headquarters and encrypted. It is an ongoing process to stay up to date, Bwanika emphasizes. Among other things, he is currently looking into the possible use of artificial intelligence to simplify and optimize some processes.



Co-Founder John Mark Bwanika

A big difference between African and European countries, he says, is that in Europe regulations and laws are usually enacted before action is taken. In Uganda, on the other hand, "a lot of things happen here that then inform potential regulations or policies. I feel that is a smarter way of doing it because you have more practical evidence" about what works and what doesn't.

Bwanika has ambitious plans for the company, as well as the capital to back them. After growing by leaps and bounds during the COVID-19 pandemic, the founders were able to raise over \$5 million to expand into other countries in East Africa. Other digital health services already exist there, but not an integrated one that combines telemedicine with lab and pharmacy services. "Our vision is to grow into a pan-African company, to become the leading digital health service and telemedicine provider on the continent," Bwanika says. Telemedicine will be "mainstream" in the not-too-distant future, he says.



Residential area between banana fields in Gayaza

The founders are also expanding closer to home. A year ago, they opened a clinic in Gayaza, about 17 kilometers away from Kampala. A day after he visited Lwebuga, Ainemaani starts out on his motorcycle from there with a delivery of medicines to a customer. "It would be great if we could extend our entire service to the whole of Uganda," he says, because then people in rural regions, where the need is great but there are far fewer laboratories and pharmacies, would also benefit.

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