

PING

Inside Nairobi, the Next Palo Alto?



Programmers are catering to the 10 million cellphones in Kenya.

Jacob Wire/European Pressphoto Agency

By G. Pascal Zachary

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IN the republic of innovation, life is unfair. A relatively small number of places — all in wealthy countries or in China and India — create nearly every important technological advance.

Other places must be content with technologies made by others. Yet people in these areas are dreaming of more.

Consider Wilfred Mworira, a 22-year-old engineering student and freelance code writer in Nairobi, Kenya. In the four weeks leading up to Apple's much-anticipated release of a new iPhone on July 11, Mr. Mworira created an application for the phone that shows where events in Nairobi are happening and allows people to add details about them.

Mr. Mworira's desire to develop an application for the iPhone is not unusual: many designers around the world are writing programs for the device. But his location posed some daunting obstacles: the iPhone doesn't work in Nairobi, and Mr. Mworira doesn't even own one. He wrote his program on an iPhone simulator.

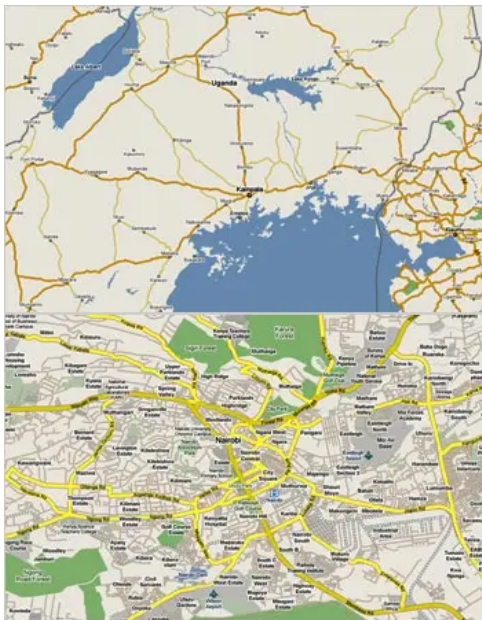
"Even if I don't have an iPhone," Mr. Mworira says defiantly, "I can still have a world market for my work."

Nairobi's challenges are many. Internet use is relatively expensive and slow. Power failures are common. The city also lacks a world-class technical university. Mr. Mworira's professors don't offer lessons in the latest computer languages; he must learn them on his own.

Political instability can be a problem, too. Earlier this year, Kenya suffered widespread violence after its disputed national election. For weeks, work in Nairobi came to a halt.

“If you have a bright idea in Nairobi, you can’t just turn it around,” says Laura Frederick, an American working on an online payment system in the city.

Still, Nairobi is home to a digital brew that invites optimism about its chances for creating unusual innovations. The city has relatively few wired phone lines or networked personal computers, so mobile phones are the essential digital tool. Four times as many people have them as have bank accounts. Text messages are far more popular than e-mail. Safaricom, the dominant mobile provider, offers a service called M-pesa that lets customers send money with text messages. Nokia sells brand-new phones here for as little as \$33.



Google has mapped Nairobi and wants to add similar detail for other African cities.

While engineers in the United States lavish attention on expensive phones that boast laptoplike features, in Kenya there are 10 million low-end phones. Millions more are used elsewhere in Africa. Enhancements to such basic phones can be experimented with cheaply in Nairobi, and because designers are weaned on narrow bandwidth, they are comfortable writing compact programs suited to puny devices.

“Applications are heavy in America,” says Michael Wakahe, a Nairobi code writer. “Here we have to make them light,” because simpler hardware requires smaller programs. These can have advantages in wireless systems.

The distinctive digital experience in Nairobi inspires confidence in its youthful community of programmers, bloggers and Web enthusiasts. Over the past year, about 600 people in Nairobi most under 25 have coalesced into a group called Skunk Works, sharing ideas

and encouraging new businesses. In June, it held an all-day workshop that included sessions on using the Android phone operating system from Google, developing applications for digital maps and creating content for mobile phones.

“Possibilities are opening up for us,” says Josiah Mugambi, one of the group’s organizers.

The prospect of marrying low-end mobile phones with the Internet is earning Nairobi notice from outsiders, who wonder whether the city might emerge as a test-bed for tomorrow’s technologies. One intriguing possibility is broadcasting local television programs on mobile phones.

In Nairobi’s highest-profile validation, Google opened a development office here last September. “Africa is a huge long-term market for us,” Eric E. Schmidt, Google’s chief executive, said by e-mail. “We have to start by helping people get online, and the creativity of the people will take care of the rest.”

Google hired seven recent university graduates, who digitally mapped the streets and structures of Nairobi for Google Maps. The company is now doing the same for other African cities. A leading Nairobi television broadcaster, NTV, has made a deal to present whole episodes of its programs on YouTube, a Google property.

Google plans to hire more people in Nairobi and is recruiting staff in half a dozen other African cities. In Nairobi, Google chose a veteran of the city’s Internet-access industry to lead its office. The company assigned two Americans here; like the presidential candidate Barack Obama, each is the child of a Kenyan and an American.

The company’s presence has raised ambitions. “When I interview people for jobs in this office,” explains Chris Kiagiri, a Google technology officer in Nairobi, “I ask them, ‘What would you like to see Google do in this market that it has not attempted anywhere else in the world?’”

“A lot of people assume Google is trying to replicate in Africa what it has done elsewhere,” adds Mr. Kiagiri, who transferred last year from Google’s head office in California. “Sure, we want to bring existing products into this market. But we also want to organize information locally in a way we haven’t done elsewhere.”

To be truly creative in a technological backwater is to defeat geography. Even as powerful a technological force as Google might not succeed. But dreaming of greatness, Kenyans are pushing Google to expand into completely new areas.

One local programmer, Timothy Mbugua, wants Google to enhance its communication backbone so he can use it to build a money-transfer business that would charge lower rates than existing services. While it sounds daunting, Mr. Mbugua explains, “I’m only saying to

Google, ‘This is what I need from you in order to execute my idea.’”

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