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Internet Potential Remains Untapped

SAM JACOBY | OCTOBER 19, 2007

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Part one in a two-part series on the Internet in Nicaragua.

MANAGUA – Anyone who comes to Nicaragua looking to escape from the wired world should look elsewhere. Though many of the country's roads are unpaved or in disrepair, the country's digital highways are built on one of the best telecommunication networks in Central America.

"It's likely that Nicaragua has the most modern and the densest broadband Internet carrier infrastructure in Central America," says Cornelio Hopmann, executive director of eNicaragua, an Internet policy institute based in Managua.

"I had my suspicions, but I was astonished by what we found,"Hoppman says, referring to his group's recent 1,000-page study detailing the current state of the national network.

"Look here," he says, pointing to a remote green-shaded block on a map of the North Atlantic Autonomous Region (RAAN). "This is one of the poorest regions in the country, and they have broadband even there."

In a country where more than half of the rural population goes without regular electricity, there are surprisingly few regions that do not have access to a high-speed broadband connection.

The eNicaragua study found that an astonishing 93% of the country's municipalities have the infrastructure necessary for a broadband fiber-optic or digital-radio link.

Credit goes largely to the cell phone network, which Enitel, the national telecommunications carrier, has been aggressively expanding in recent years. The quality of that extensive network could allow for affordable Internet in even the most underdeveloped and remote parts of the country.

"About 90% of the cell phone towers are connected by four strands of fiber (optic) cable," Hopmann says. "That's a huge amount of data, that's gigabytes and gigabytes."

He is quick to warn though, that having the capacity available for broadband Internet and actually putting it to use are two very different things. Cell phone traffic only occupies a small portion of the cables. The rest of the bandwidth remains unused.

"One of the biggest mistakes consultants and researchers make is to mix-up broadband

infrastructure availability with Internet availability," Hopmann says.

Though Nicaragua has very good network infrastructure, it is not typically being used to provide an online connection, he noted.

"Neither regulations nor the current telecommunication business models are adequate to exploit the favorable infrastructure situation," Hopmann says.

"See here," he says, gesturing towards another of the study's maps. "These regions have broadband infrastructure, but (the populations living there) access the Internet only through other means."

Hopmann said that nearly half of the municipalities studied by his group fall into this category. The typical Internet connection in those regions is being provided by a slow and expensive satellite-dish hookup, rather than the broadband infrastructure that's already in place.

No Free Rides

Jan Hetges is the director of "RedLibre" (FreeNet in English), a small nonprofit Internet service provider on the eastern side of Lake Nicaragua's OmetepeIsland. He splits a single satellite connection among a dozen or so clients, making use of opensource software and cheap off-the-shelf wireless components to keep costs down.

Unfortunately, commercial use of this wireless technology is tightly controlled by the Nicaraguan Institute of Telecommunications and Mail (TELCOR), the national regulatory institute for Internet.

"There are restrictions on the 2.4 GHz wireless band (the wavelength used by a typical wireless internet router),"Hetges says. "It costs around $2,000 per year, per link, to use commercially."

That expense makes the widely available technology commercially untenable for most small businesses, and has proved to be a death sentence to efforts to bring low-cost Internet to rural parts of the country.

Colin Maclay, the managing director of the BerkmanCenter for Internet and Technology at HarvardLawSchool, notes that in a developing country like Nicaragua, wireless can be an effective and powerful means of Internet distribution.

"I'd say, for quick low-cost installation and decent bandwidth, it's one of the best options. Cable and power lines offer interesting opportunities, but are perhaps less preferred in rural areas," he said in an e-mail message.

Internet and technology advocates in Nicaragua are well aware of the wireless possibilities.

"Technically speaking, we could mount an access point on every single cell phone tower and distribute Internet within a 15 or 30 kilometer radius," Hopmann shrugs. The access points would be directly tied into the national fiber-optic network and could bring cheap, lightning-fast access to anywhere with cell phone reception, which now covers much of the country.

Hetges is frustrated by the restrictive regulations that make that practical solution impossible on OmetepeIsland and in other areas.

"It's about keeping prices up," he says. "It's politics. Rob the people as much as you can. Provide crap service at really high prices."

He believes that the regulations serve only to protect the monopolies of the large telecommunication companies and stifle the expansion of cost-effective and universal access to the resources the digital world can provide.

"The network is good enough, sure, but the average family can't afford to use it," he says. "Even as is, people spend a ton of money on cell phones."

On Ometepe, there is a direct digital radio link to Rivas on the mainland, but it is controlled by Enitel and accessible only on the west side of the island. Everyone else, with the exception of RedLibre's clients, is left in digital darkness.

"Ometepe is a bad and a good example of what is going on," says Hopmann, who is not involved in the RedLibre project. "(Redlibre) is using wireless, but without the proper regulatory framework. They've shown it works, but the point is there is no established model of how RedLibre can cooperate with Enitel."

That lack of a constructive framework for Internet growth is crippling, and other small organizations have faced similar challenges.

Even as the institutional rate of Internet adoption increases in Nicaragua, with most banks, utility companies and other service providers now offering online billing and other services, much of the nation is being left behind.

"You can't just wire a poor country," Harvard's Maclay says. "It's everything from service, to literacy, systems like credit card access, the regulatory environment – there's no silver bullet."

Next: Despite challenges, the Nicaraguan online community is growing rapidly.

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