

The digital Pony Express

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For a few seconds every day, a school building in rural Cambodia with no electricity, running water, telephone lines, or cell phones becomes an Internet hotspot.

The school, outfitted with one computer powered by solar panels on the roof, is part of a network of 15 similarly equipped schools, medical clinics, and offices in the northeastern Cambodian province of Ratanakiri, in a country where 75 percent of the population lives outside the realm of phone lines and electrical power infrastructure. Thanks to a system developed by a Cambridge-based company called First Mile Solutions, villages without so much as a paved road can now make a great leap across the digital divide.

"You might call this a digital Pony Express," said Amir Alexander Hasson, president and cofounder of First Mile Solutions. A graduate of MIT's Sloan School of Management, he and Rich Fletcher, an MIT Media Lab alumnus specializing in low-cost wireless electronics and sensors, started their six-person company in 2002.

Funded in part by the World Bank, the Asian Development Bank, and an NGO called American Assistance for Cambodia, First Mile's initial project in Ratanakiri depends on a cadre of "Internet Motomen"--a fleet of local taximen who drive their cherry-red Honda motorcycles from village to village. On the back of each bike is mounted a gray metal box with an antenna and a Wi-Fi chip inside; as the bikes pass each site in the network, the chip downloads and uploads data, which are relayed between the computers inside the building and the box. The Motoman then proceeds to the next village, where the same digital exchange takes place, and then the next, and the next, ultimately ending the loop in an urban hub, where the uploaded e-mails and information can be transmitted via satellite to the rest of the world.

"There are 2 billion-plus people who lack access to basic, affordable communication systems," said Hasson, whose company has now begun more ambitious projects--including Web-based voicemail and real-time Internet connections--in Costa Rica, India, and Rwanda. The more than 50 Cambodian villages in the pilot project receive free service, but Hasson hopes to create a profitable digital revolution while providing e-mail and phone service to the unwired for less than \$1 a month. "What we've done so far is prove that this technology works, and it can support a profit-generating service," said Hasson. "Now, we have to determine whether it can be scaled economically for millions of people." ■