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# How many tech writers does it take to set up a wi-fi network?

**In rural Italy, it all depends on the ladder, the snow and the 16th-century monastery**

Bernhard Warner

Setting up a home wireless network can be a maddening affair. Particularly when you're standing in the garden halfway up a ladder aiming a street-sign-sized satellite dish at a distant medieval hilltop village while your partner-in-crime shouts the fluctuating signal readings flashing on his computer screen from the window of a restored 16th-century monastery.

Don't you just hate these moments?

This was the scene a few weeks back in the normally quiet hamlet of Sant'Ippolito in the central Italian region of Le Marche. My neighbour, [Michael Eldridge](#), long removed from the streets of South London (Streatham, to be exact), had found a local tech outfit in a nearby village with a too-good-to-be-true wireless broadband technology that promised to connect our remote houses with the outside world.

To establish the initial connection, we were told to aim the dish at the village of Gualdo, located crucially *just under* 5km from where we stood. Fine, we could see Gualdo, but it was difficult to make out on the horizon our target – an antenna pumping out a 5.5GHz data signal. If the diamond shaped dish was just one degree off the mark, we'd lose the signal entirely. I cursed every muscle spasm in my outstretched arms.

Not surprisingly, it was slow going. We repeatedly guessed wrong, aiming the dish at phantom antennae. From a distance of (just under) 5km, only cranes and the flood lights from the football ground could be easily spotted amid the ancient towers of the town. The rest was guesswork. But we finally managed a weak, yet consistent signal. I went back to Rome encouraged. Eldridge stayed on the job, employing the local Mr Fix-it, Pino. And, after a few days of repeated attempts, and just before the first spring snowstorm of the year, he Skyped me with the triumphant news. "Broadband Bernie," he said, exhausted.

Our initial failures were not our fault: the Gualdo antenna wasn't functioning. Improbably, we were picking up a signal from San Ginesio, a hilltop village 5km beyond Gualdo. Even the technicians were surprised we picked up the more distant signal. The Hiper-LAN technology they deploy claims to have a line of sight range of 15 to 20km to generate a consistent data connection, but nobody thought it would be possible with two villages of mobile-mad Italians between us and the San Ginesio antenna 10km away.

Beaming broadband signals to dishes fixed to houses is the only way to get a decent net connection in rural Italy. Whether it be WiMax or WiBro or Hiper-LAN or UMTS or HSDPA, putting rural Europe on the broadband map means the solution will inevitably come from the sky. And almost certainly the providers will not be the former state-run telecoms monopolies which have little interest serving the scattered few beyond the cities and the suburbs – no matter how many times we plead.

In sparsely populated Sant'Ippolito, smack up against the Apennines, we were well aware that it would require some futuristic technology to get us connected. Telecom Italia won't run a high-speed cable anywhere near us, which is why Fidoka (<http://www.fidoka.it>), a small tech firm in San Ginesio, a few valleys away, invested in this wireless technology called "Hiper-LAN" – think powerful WiMax but utilising an uncongested part of the radio spectrum.

Fidoka had no choice – it's tough for any business to offer web design and anti-virus protection services if they cannot get online. Fidoka stumbled into the internet service provider business out of pure frustration with Telecom Italia, forcing it to investigate alternative technologies to simple dial-up in order to survive.



The first efforts to find a signal were accompanied by snow

In September 2005 came the big breakthrough. The Italian military freed up for the public spectrum space once used solely for radar purposes. Fidoka and other rural Italian ISPs modelled their approach on the pioneering Israeli tech firm, [Alvarion](#), which was harnessing these dense segments of the radio spectrum to send and receive data across long distances. Fidoka invested in equipment made by the Poles and Lithuanians and hired some technicians to scale water towers and campaniles in various surrounding villages to mount antennae and set up a regional network. Thanks to Fidoka, formerly unwired communities – including schools, businesses and those of us who come out from the city for quiet weekends but still would like to catch up on emails or Skype home – now can surf at speeds of up to 3.1Mbps. Not blazing fast, but we'll take it.

On the strength of the broadband business, Fidoka has nearly doubled its staff in the past year – to seven full-time employees. “Our intention was to focus on web design, security and out-sourcing, but without the net we couldn't do much. Now, this is our core business,” said Francesco Maria Compagnucci, one of Fidoka's founders.

This is a breakthrough moment for me as well. I'm sending this story to my editor from the garden in Sant'Ippolito, not far from where, a few weeks back, I balanced a satellite dish over my head while standing atop a ladder. My Marchigiani neighbours, a collection of farmers and shepherds, are toiling in these ancient fields to either side of me. And now I am too.

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