Satellites bring broadband Internet to remote corners of Europe

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Fast Internet connections have made waiting for pages to download a distant memory for a rapidly increasing number of Europeans. But what about the millions who don't have access to cable or will never be able to get a fast connection through ADSL, or asymmetric digital subscriber line, because they live in a small mountain village, or in just the wrong spot 30 kilometers outside Milan?

Now, thanks to satellites, several companies offer fast Internet access to any corner of Europe, from the most remote town in western Russia to a yacht off the coast of Sicily.

ADSL, which is generally about 10 times as fast as a dial-up connection, uses existing copper wires, but to make it work, phone companies have to update their infrastructure. Switching stations, where the phone lines branch out to individual neighborhoods and then streets and eventually buildings, must be updated, and the final destination must not be more than about three kilometers away, or two miles, to guarantee fast Internet access.

That permanently cuts out 100 million of Europe's 238 million phone lines, said Arturo Artom, the chief executive and founder of Netsystem, a satellite Internet access company. Those 100 million lines are either too far from a switching station or in an area where it is not economically viable for a phone company to update its infrastructure.

The expansion of satellite Internet access is coinciding with an explosion in the use of broadband connections. Last year, 14 percent of West European households had broadband Internet access, compared with 8 percent in 2002, according to Forrester Research.

Forrester estimates that this year, 70 percent of households in Europe that have broadband Internet access use ADSL, and 27 percent use cable. The remaining 4 percent use other technologies, including satellite.

"Satellite Internet is a filler technology for when ADSL isn't available, but it has proven to be very successful in its niche market," said Ben Macklin, an analyst with eMarketer, a New York-based market research company.

Internet access through fiber optic cables — where Italy has one of the world leaders in that technology with e.Biscom — or along cable television wires is an alternative to ADSL, but this method also requires extensive infrastructure and will not reach people who live far from major cities and towns.

"ADSL has brought great benefits, but not everybody will be able to get it because of where they live, and that is where we come in," Artom of Netsystem said in an interview.

To keep costs low for itself and for the end user, Netsystem, like its European rivals, uses satellites only to send data from the Internet to clients' computers. To send data the other way — from the clients' computer to the Internet — a dial-up modem is used.

This does not slow down the connection significantly, since in an average Internet session most people will download about six times as much data from the Web as they send.

People without a fixed-line phone can use a cellphone to send the data to the Internet.

Netsystem has a commanding lead in Europe with 65,000 clients, mostly in Italy. An additional 50,000 get satellite Internet access through a Telecom Italia service that uses Netsystem's infrastructure. About 10,000 clients a month are being added in Italy through the Telecom Italia-Netsystem accord. Satellite Internet access through Telecom Italia costs about the same as ADSL.

Netsystem's European competitors include Netbysky in France, Bysky in the Netherlands and Deutsche Telekom in Germany. A U.S.-based company, DirectWay, is the world's biggest satellite Internet access company and

uses satellites to both send and receive data.

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Netsystem processes Web page requests from clients through a system of servers, routers and its own software. The information is then sent to a satellite owned by Astra and back to clients who receive it through a satellite dish, the same as those used to receive satellite television.

UMTS, the newest generation of cellphone technology, allows people to connect to the Internet at high speeds without the need for a fixed phone line. While Artom says this technology is complementary to satellite, some analysts are not so sure.

UMTS is "going to provide serious competition," said Macklin at eMarketer. "That competition is not right around the corner because the infrastructure is not there yet, but it will come."