

Rural Spain benefits from radical Internet solution

Outlying areas of Spain are to get broadband Internet access after a partnership of leading companies develops an innovative and cost effective solution

Background

Rural Spain, like many other non-urban parts of Europe, is very limited in terms of providing broadband Internet access to business and home users. DSL or cable connectivity is very scarce outside major cities, and people and businesses in rural areas still have to rely mostly on slow dial up access, with no short term prospect of benefiting from the rollout of broadband services from service providers.

The high costs normally involved in serving small towns and outlying regions with high speed access mean that such areas face an indefinite wait, perhaps of many years, before telecoms companies reach them with fixed line services. This time lag clearly risks the development of a two tier society of metropolitan 'those with' versus rural 'those without'.

A solution to this problem is now underway thanks to funding that has been made available by the European Union to aid the development of remote areas. In Spain, this funding has led to a radical and highly cost effective solution that, following successful pilots, is now extending across a wide area.

Challenge

When Spanish broadband service provider Neo-Sky was given a contract to supply high speed Internet connectivity to rural Spain, it was clear from the start that the expense of cabling such a wide area was going to be totally impractical and uneconomic. An imaginative substitute for fixed line infrastructure would need to be found.

"Our challenge was to provide these rural areas with the same quality of service enjoyed by our fixed line customers," says Eduardo Dragan-Jevremovitch, Business Development Director with Neo-Sky.

Following discussions with Satlynx, a satellite communications provider, it was clear that satellite technology would be at least part of the solution, being both immediate and able to deliver connectivity to anywhere. But distributing broadband connectivity to multiple businesses in each area would clearly require something extra.





“Simply connecting the biggest business in the area to the Internet via satellite was not enough, as smaller businesses in the surrounding area would not necessarily be able to afford their own satellite receiving equipment,” explains Simon van den Dries, Satlynx Sales Manager in Spain. “Cost effectiveness in rural areas is key,” he adds, “as businesses in those areas tend not to be particularly wealthy.”

Solution

It was decided that a combination of satellite and wireless technology would provide the ideal solution. Following a selection process, Cisco Systems was selected to form a three way partnership, bringing its leading edge Cisco Aironet wireless technology to the party.

“What really counted, in addition to the technology, was Cisco’s experience of delivering leading edge wireless solutions, which was much greater than other contenders,” said Dragan-Jevremovitch

Initially two pilot areas were selected - Somiedo in Asturias, in north west Spain, and Molina de Aragon, about 100 miles due east of Madrid. The partnership’s mission was to bring together satellite and wireless technology to enable Internet access on a cost effective basis. The pilot had to be successful enough to allow Neo-Sky to go on to provide flat rate and always-on Internet access across the rest of Spain’s outlying regions, bringing them the same benefits currently enjoyed by major metropolitan areas.

From the start, it was clear that this would be no straightforward task. “The main challenge lay in combining two quite different technologies - satellite and wireless - with their completely different standards,” says Rafael Pérez, Manager Area Sales SMB with Cisco Systems Spain. “These pilots would be the first time these technologies had been combined successfully in Europe,” he adds.

The unique solution brought together two emerging technologies in the form of the Wi-Fi (802.11b) wireless standard and broadband satellite (BBI) Internet access. Satlynx beams down a signal that is picked up by an antenna, with connections on the ground to multiple destinations provided by Cisco’s Aironet 350 wireless solution. Broadband access is thus deliverable by Neo-Sky, working in conjunction with local authorities, to businesses equipped with a mixture of desktop and laptop clients.

The Cisco Aironet solution enabled the delivery of Internet access to a wide range of destinations in each of the pilot areas, including the town hall, various museums, libraries and schools, ranging from 200 metres to 500 metres apart.

“Cisco’s engineers and service providers, in conjunction with Sky-Neo’s account manager, worked on the project and brought a high level of skill with them to make it happen,” says Pérez. “They knew what they were doing and overcame any problems that came up.”

The satellite link is able to provide download speeds of up to 8Mbps, with users receiving data at 256Kbps and sending at 128Kbps. The solution, as planned, allows rural Internet users to enjoy the benefits of broadband Internet access at a cost similar to ordinary DSL Internet access.

Van den Dries believes Cisco successfully fulfilled its role in the project for one main reason: “Because from a technology point of view, Cisco Aironet is the best available product on the market. There was also a role for someone to promote the project to secure its success. Cisco provided that as well.”

Results

The three partners, having completed the two trials, believe the country now has more than 8,000 areas that could benefit, some 70 per cent of which have no DSL access at all. Evaluation and implementation of this next stage is currently ongoing.

The solution has helped the areas it has been rolled out in by allowing them to bypass what would have been a long wait for fixed line access. Pérez says “In the normal course of events, it would have taken years for this level of connectivity to filter down to the level of areas like this.”





The service's first wave of beneficiaries has been schools, hospitals, local governments and libraries. The second, says Pérez, will be small businesses, and ultimately residential Internet users.

A number of successful applications have so far been developed to take advantage of the new technology. Schools and colleges, for example, can now give pupils high speed access to rich multimedia web sites, such as those about museums and art galleries. They are also benefitting from the same email facilities as pupils in major cities.

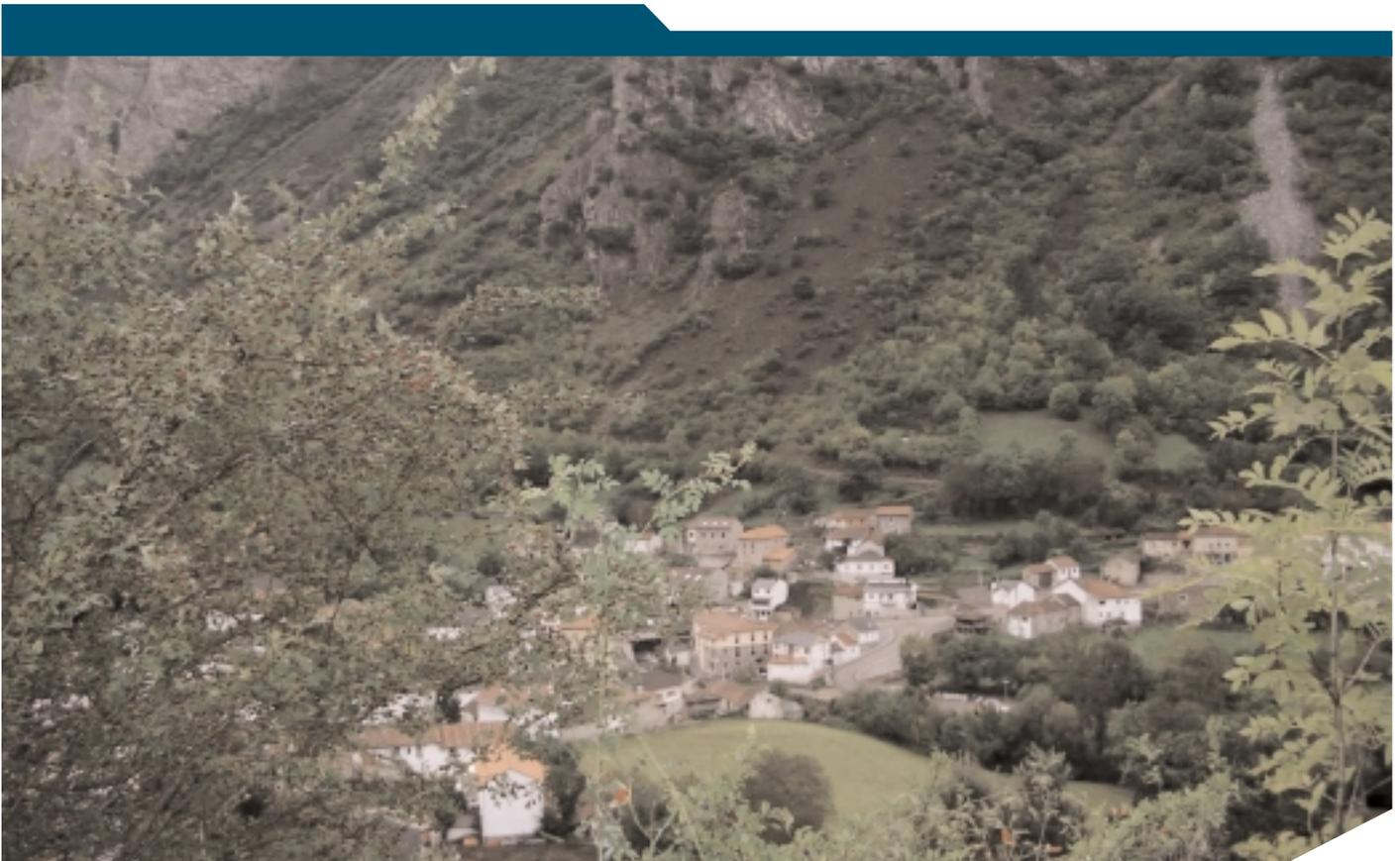
Pérez says the benefits have been wide ranging. "At a social level museums and libraries are getting connected, and are able to reach out to all sectors of the community. Remote health facilities are also benefiting. They are able to serve older people better who perhaps cannot get into larger towns so easily. The intention is that small businesses will benefit too, such as independent hotels and other tourist destinations. Full details, including pictures of holiday cottages for rental, can now be distributed anywhere."

Somiedo's tourism industry in particular has benefited from broadband access. It constitutes around 30 per cent of the area's economy, and serves around 100,000 visitors a year. Livestock farming makes up the bulk of the rest of the local

economy, and this industry too has noticed measurable gains. It is now possible to keep databases on the movement of cattle throughout the region, noting when all animals were born, bred and sold.

Another important aspect of ensuring that full benefit is derived from the new technology is ensuring that everyone in the community is able to use it. Courses have been given to familiarise people with what broadband Internet access can deliver. Children are receiving extra tuition in schools to ensure that they too are aware of how they can gain. Local English teacher Carmen Del Pozo commented "I now have the challenge of learning to use the Internet myself so that I can keep up with my students." She said that another educational benefit was e-learning for pupils who do not now have to leave the village to further their studies.

The country's Ministry of Science and Technology has lent the community a number of laptop computers to be used by people in the area. Families in Somiedo are starting to use PCs in the town hall and libraries to set up 'net meetings' with relatives all over Spain and other parts of the world. Those with relatives in South America, for example, will now be able to communicate with them in a more sophisticated and personalised way than before.





Importantly for all organisations and people involved, pricing for these broadband services is extremely competitive, says Pérez. "People shouldn't be punished for living in rural areas," he believes.

Somiedo's Mayor Belarmino Fernandez is delighted with the results of the pilot, commenting "Cisco's wireless technology and the broadband Internet access it enables has had a positive impact at all levels within the local community. We look forward to exploring all sort of new ways in which we can use the technology in addition to the many applications that have already changed our lives for the better. No longer does our remote location isolate us from the wider world."

Next steps

Geographical boundaries can easily hold back remote areas from the true benefits of today's web-enabled world. Without always-on, flat rate Internet access, these areas are dependent on traditional dial up access, with its slow download speeds and inflexible access.

Any solution to this problem must:

- Be competitive in terms of end user pricing with DSL
- Avoid the need for costly local cabling infrastructure
- Involve low cost deployment right down to the final consumer
- Be satisfactory to local government
- Share the performance of similar metropolitan solutions
- Be easy to implement and manage

What Cisco offers:

Cisco's Aironet wireless LAN technology, used with satellite services, is a leading edge way for high performance connectivity to be made available to any location regardless of distance from major urban centres. It avoids the prohibitively high cost of wired connectivity where no broadband connection exists or is expected to exist for some time.



Corporate Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters

Cisco Systems Europe
11 Rue Camille Desmoulins
92782 Issy-les-Moulineaux
Cedex 9
France
www-europe.cisco.com
Tel: 33 1 58 04 60 00
Fax: 33 1 58 04 61 00

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters

Cisco Systems, Inc.
Capital Tower
168 Robinson Road
#22-01 to #29-01
Singapore 068912
www.cisco.com
Tel: +65 317 7777
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco.com Web site at www.cisco.com/go/offices.

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic
Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy
Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal
Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden
Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

El pueblo de Pola de Somiedo accede a Internet con el satélite

La localidad supera los problemas de acceso a la Red de las zonas rurales sin conexión

MAYTE GALÁN

“Por primera vez, Pola de Somiedo recibe una tecnología al mismo tiempo que cualquier zona urbana”, afirma rotundo el alcalde de esta localidad, Belarmino Fernández.

A Pola de Somiedo el teléfono llegó tarde, a mediados de la década de 1990. Y no lo hizo a través de un cable telefónico normal sino que la conexión se hacía vía radio, con teléfonos TRAC. El sistema era tan lento —23 veces más que en las grandes ciudades— que la conexión a Internet era prácticamente imposible. Ahora, el Ayuntamiento, la escuela, el museo y el telecentro de esta pequeña localidad asturiana de 1.700 habitantes ya accede a Internet de banda ancha gracias a una conexión vía satélite.

El proyecto, que ha sido desarrollado por Neo-Sky, Cisco Systems y el satélite Astra.

Los usuarios finales se conectan con tecnología inalámbrica, evitando cableados o infraestructuras adicionales. Así, el sistema permite matar dos pájaros de un tiro: evitaría el problema que supone cablear los 16.000 pueblos rurales y, de paso, podría terminar con los problemas de acceso a la red de los más de 270.000 teléfonos TRAC que se calcula existen en España. Y con banda ancha.

Pero, de momento, no está previsto que el sistema llegue a los ciudadanos sino más bien a las empresas, por su elevado coste de instalación.

El sistema de Pola de Somiedo ha costado 5.000 euros (unas 850.000 pesetas). Consta de dos antenas.

Una para la comunicación con el satélite y otra que distribuye la señal por la zona hasta las tarjetas antenas instaladas en cada uno de los ordenadores, lo que permite poder acceder a la conexión desde cualquier punto.

Además, el sistema permite la posibilidad de conectar hasta 40 ordenadores diferentes en una única estación; lo que rebajaría el precio de instalación considerablemente, aunque con ello también se reduciría la velocidad de conexión a la red.

Para solventar el tema de los elevados costes, existe la posibilidad de solicitar una subvención regional o estatal que sufragaría hasta el 100% del total.

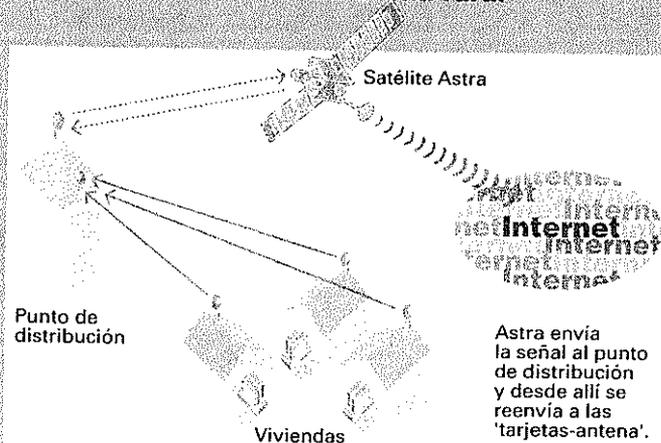
Las otorgan el programa Artes de la Agencia Espacial Europea (ESA), la Unión Europea (UE) o el Ministerio de Ciencia y Tecnología (MICYT).

La tarifa mensual es de 42 euros, más una cuota de alta de 60 euros y otra de instalación de 240 euros. El servicio es idéntico al que ofrece el ADSL actual: la misma veloci-



Antena instalada en el ayuntamiento de Somiedo.

Cómo funciona la banda ancha rural



Fuente: Neo-Sky.

EL PAÍS

dad con tarifa plana y sin horarios.

No es la única experiencia de este tipo; Zaragoza Intranet Provincial (ZIP) busca

crear una red que llegue a toda la zona rural para incorporar tanta al sector público como al privado a la sociedad de la información.

Telefónica, obligada a sustituir antes de 2004 los teléfonos TRAC

M. G.

Un millón de personas en España están fuera de la Aldea Global. Son todas las que carecen de acceso a Internet. Sus hogares están provistos de líneas telefónicas analógicas que hacen que la transmisión de datos sea un proceso casi eterno. Se trata de teléfonos rurales de acceso celular (TRAC). El Ministerio de Ciencia y Tecnología ha previsto en la Ley de Servicios de la Sociedad de la Información (LSSICE) el cambio de estas líneas por otras que incluyan suficiente velocidad para acceder a Internet de forma

funcional, además de soluciones tecnológicas eficientes que puedan aumentar sus prestaciones sin necesidad de ser cambiadas. La sustitución tendrá que estar completada antes de 2004. Para llevarla a cabo, Telefónica contará con la ayuda financiera de los Fondos Europeos de Desarrollo regional (Feder). En diciembre de 2003, Telefónica tendrá que haber sustituido el 70% de estas líneas. Para ello ha publicado un concurso al que deben concurrir las empresas que sean capaces de instalar sistemas que cumplan con los requisitos. El Gobierno considera que la tecnología de conexión por radio LMDS es la más apropiada