

# The Italian Province of Brescia Embraces Broadband Technology to Bridge the Digital Divide

## Executive Summary

### CUSTOMER NAME

Province of Brescia, Italy

### INDUSTRY

Local Government

### BUSINESS CHALLENGES

- Help local businesses succeed against global competitors
- Extend the benefits of shared services to rural communities
- Prove the value of local government investment in ICT

### SOLUTIONS

- Innovative Cisco® wireless broadband technology brought to rural areas
- Government broadband strategy becomes a regional shared-services strategy
- A strategic value-case analysis quantifies the forecast impact of technology

### BUSINESS RESULTS

- Bridging the digital divide in 79 of the province's most underserved communities
- Shared services bring government closer to citizens and business
- Initial €2 million funding by local and regional government, matched by private sector, forecast to deliver positive impact worth €139 million in six years

The Province of Brescia, Italy, solved the dilemma of how to combine and extend its shared services and broadband government strategies to rural areas that conventional wisdom considered too uneconomic to be served by commercial operators. In working with the province, analysis by the Cisco Systems® Internet Business Solutions Group (IBSG) made clear the significant social and economic impact of the province's public/private partnership model and investment in broadband.

## BACKGROUND

It may be a myth, but the following nevertheless makes a good point: if the cost of a major broadband network infrastructure is about the same as three road junctions, a local government leader is likely to vote for the road junctions.

The problem is that while both politicians—and more importantly, voters—understand the benefits of an efficient road infrastructure, the positive impact of information and communications technology (ICT) is generally far less clear.

This is an issue well understood by government officials in the [province of Brescia](#), who have come up with a compelling way to ride the digital highway, as part of an initiative born from the need to support local business in the face of growing global competition.

Brescia is in northern Italy and is part of the region of Lombardy, which borders Switzerland. With a population of just over one million, the province is the third largest industrial area in the country, concentrating on mechanical and automotive engineering



Prepared by Cisco Systems, Inc.  
Internet Business Solutions Group

and machine tools. Its companies are typically small- and medium-sized businesses (SMBs), often family run.

### **BUSINESS CHALLENGES**

While Brescia's unemployment rate of just 3.5 percent compares favorably to the average of 4.7 percent in northern Italy, the provincial government was increasingly worried about the effects of global competition. Some companies were close to folding; others were investigating moving operations to countries with a much lower cost base, such as China.

"Brescia has a rich manufacturing tradition, but recently there has been a move away from a classic production operation to a more service-oriented business model," explains Raffaele Gareri, chief information officer and head of innovation for the Province of Brescia. "Companies' attempts to become more knowledge-based, however, were being severely compromised by the fact that more than half of the province does not have access to broadband connections."

Of the province's 206 municipalities, 144 comprise rural areas with populations of fewer than 5,000. This low population density, compounded by the fact that many villages are spread across mountainsides, meant that the province's attempts to encourage local telecommunications companies to provide the necessary connectivity proved unsuccessful.

Discussions with telcos about providing broadband connectivity to rural areas soon reached an impasse. The telcos explained that they had already considered the business case for such broadband but had ruled it out, emphasizing that mountainous geography that was "impossible to cable," combined with low population densities, meant that taking broadband to rural areas was not considered economic.

By 2004, Brescia was experiencing the frustration increasingly common to local governments in Europe: a lack of universal broadband connectivity was blocking attempts to scale the benefits of Internet-based communications and applications.

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**Raffaele Gareri, chief information officer and head of innovation  
Province of Brescia, Italy**

A few years earlier, the province had developed a business plan detailing the creation of intranet-based shared services, ranging from workforce optimization to electronic procurement. The province would offer those shared intranet services to those municipalities who were not able to implement their own solutions. Cisco IBSG had helped the province develop its plans by leading workshops and sharing various tools such as prioritization methodologies.

IBSG also provided the return on investment (ROI) model that was used to verify Brescia's initial business case, which showed a net present value of €8.1 million in five years. The actual value of shared services had subsequently been proven by rolling them out from the province's headquarters, in the city of Brescia, to municipal offices across its territory.

By extending its shared-services model, the province hoped not only to enjoy greater economies of scale in areas such as electronic procurement, but also to make available centrally developed tools and applications, such as employees directories or voice-over-IP, to other local government organizations—particularly the smaller ones—in the province.

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Province of Brescia, Italy**

## **SOLUTIONS**

During an information-gathering visit to America, organized by IBSG, a senior-level delegation from Brescia heard a presentation from [Cisco](#) about its overall wireless and mobile government strategies. Delegates also learned about the role ICT had in stimulating economic development during discussions with government officials from the U.S. cities of Los Angeles and San Jose, in California.

“Previously we had been focused on the benefits that ICT could bring to our own organization and interactions with citizens. Now we realized that the greater benefits lay in what ICT could do for the economic and social well-being of the entire region. We began to think about broadband as a shared service,” says Gareri.

With this vision came a belief that the role of local government was not to act as a commercial enterprise, but rather to work alongside the private sector, co-coordinating different interests and helping them to share a common focus.

The need to stimulate economic development while bridging a growing digital divide in rural communities spurred the province to create a new public/private partnership model. Cisco’s IBSG supported the province in the identification of possible partnerships models. The province would own the physical network infrastructure, but look to the private sector to operate it.

Brescia was again able to draw on IBSG’s expertise in developing its business case and making clear the benefits that broadband and other shared services would bring. A value-case analysis model was developed, based on socioeconomic data available in the province, which provided expected benefits based on realistic assumptions.

It is believed to be one of the first times that a local government has built a comprehensive framework for a value analysis, including not only expected economic development, but adding on that same framework the efficiency gains for the public administration and the effects of social inclusion. The results clearly showed that investing in ICT could be every bit as fruitful as investing in other types of infrastructures.

“Cisco IBSG has advised us at every step of our journey, helping us to understand the pros and cons of the public/private partnership model, right through to technical advice on how best to implement it,” observes Gareri.

The province contributed €0.8million from its own funds and secured €1.2 million from the region of Lombardy to develop a public wireless infrastructure initially covering the province’s top 79 municipalities. A public tender explored all technology options and resulted in a winning bid from Linkem, a service provider using Cisco’s mesh wireless technology.

## BUSINESS RESULTS

As with the private sector, ICT initiatives in local government are usually driven by departmental needs—for example, to streamline back-office operations or as part of a political agenda to support, say, healthcare or education. The real impact of the strategic value-case approach by Brescia was that it looked across all such initiatives and revealed their cumulative effect for the first time.

Not only did the investment benefit the local government, it also had a positive impact on the bigger picture, according to Corrado Ghirardeli, Alderman for innovation and ICT, who has championed the use of technology within the province. “Looking at the bigger picture, this investment is directly connected to the development of the economy and the social inclusion of the people within the territory it serves. The initial investment of €2 million, triggering investments from the private sector, could deliver a positive financial impact worth €139 million within six years.”

The impact of helping SMBs successfully compete by stimulating the development of new content and services by applications service providers has been key in achieving this financial return. By providing the means for business to cost-effectively connect with applications providers over fast links that are able to support voice, video, and data, new opportunities and markets are being created.

In broad terms, the financial impact over six years breaks down as follows:

Amount	Area
€27 million	<b>Unemployment benefits</b> saved by people not becoming unemployed and, thus, being eligible for benefits
€41 million	<b>Tax revenue</b> not generated by those people who lost their jobs
€39 million	<b>SMB productivity benefits</b> based on increased efficiencies for businesses having access to broadband-based Internet business solutions (e-commerce, intranet, electronic supply chain and procurement, and e-finance)
€30 million	<b>Public administration benefits</b> -(increased productivity and cost savings) through fully scaled regional shared public services including Intranet, e-procurement, Intranet connectivity to schools, and e-health
€2 million	<b>Revenue-sharing contribution from service provider</b> to the province
€139 million	<b>Total</b> (net-present value, six years)

In addition to the financial impact, the new infrastructure is helping the province push forward its plans to further develop and make widely available other shared services.

For example, electronic procurement originally focused on buying ICT equipment and supplies such as fax machines. Its success—not just in terms of price reduction but also in terms of driving quality higher—has led to plans to extend it to other categories of goods such as printing services, clothing suppliers for items such as police uniforms, and even gas and electricity.

The province is also benefiting from other initiatives, such as education. Some 10 years ago, the province provided e-mail and basic Internet connectivity for a number of schools. Hosting services for school Websites followed, along with a project allowing school administrators to go online to improve administration and interaction with government departments.

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Province of Brescia, Italy**

More recently, as part of a central government initiative, the province has worked with the nearby province of Milan to create a suite of online services supporting better communications between teachers, students, and their families. Services range from required book lists to facilities that offer grant-funding programs. Detailed information helps parents to understand the curriculum and its objectives, while another extranet service helps schools search for and hire temporary substitute teachers when schools are short on staff.

In addition to the new education initiatives, the new broadband highway will make developments in healthcare possible. Although the provincial government of Brescia is not responsible for healthcare, the network will allow general practitioners, hospitals, local health offices, and pharmacies to better communicate and interact, for example, through the transfer of digital images to help remote diagnosis.

“We aim to improve the development of online services across many sectors to demonstrate the opportunities and benefits that online services from our shared service center can bring to citizens and companies alike,” says Gareri.

### **NEXT STEPS**

The province’s mesh wireless network will be among the largest projects of its kind in Europe. The first phase of the infrastructure will connect all 79 municipalities to the mesh wireless network by the end of 2006, with fiber optics used to connect long-distance backbones. A second phase comprising 41 areas will follow soon after, with the remaining municipalities—which typically already have some form of broadband access—taking a more gradual approach if needed.

Users will be able to browse public-sector sites and services free of charge, but will contract with service providers for commercial Internet services. Basic access will be at up to 4 Mbps, with higher speeds of 6 or 8 Mbps with other service options available. Service providers, in turn, will return 15 percent of their revenue to the province to fund future investments.

Looking to the future, the province is developing plans to implement video conferencing and a low-cost, high-quality video surveillance system over the network, and is also testing voice-over-IP shared services.

While technology implementations take place, Brescia’s value-case innovative framework is being adopted by a number of additional local and regional governments in Italy and Europe.

**MORE INFORMATION**

The Cisco Internet Business Solutions Group (IBSG) is a global consulting team that helps customers transform their organizations by strategically applying business process innovation and advanced technologies. A unique combination of industry experience and business and technical knowledge enables IBSG consultants to serve as trusted advisers to many of the world's top organizations.

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