Cambium Networks™

Soaring over the Digital Divide

> "Cambium devices offer us the opportunity to provide excellent service to the customers. Our network has great stability, higher bandwidth throughput and a broader coverage area. Our customers consider us the standard of performance."

MICHEL SCARAZZINI, NETWORK DIRECTOR, COMeSER
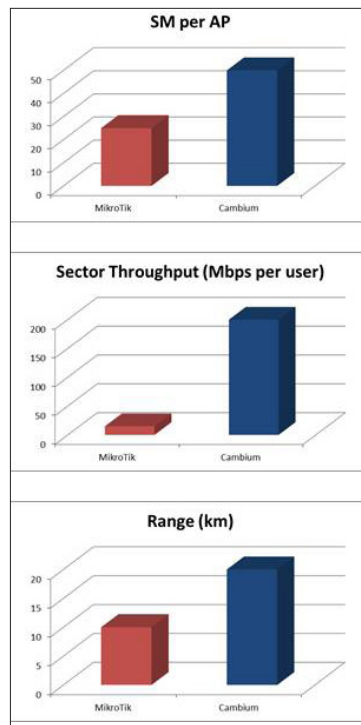
The Opportunity

The province of Parma in northern Italy had been long overlooked by national telecommunications providers and left thousands of people on the "unconnected" side of the digital divide. COMeSER was formed at the behest of the mayors of Fidenza and Busseto to provide connectivity for businesses, government agencies and residential customers in the area. Success at providing reliable service at attractive prices is driving the network to 7,000 subscribers - well past its original goal.

The Network & Performance

"Our mission is to overcome the digital divide," says Michel Scarazzini, Network Director, COMeSER. "We provide broadband Internet services in areas where the big players are not providing coverage." Using wireless broadband backhaul and access network solutions from Cambium Networks, COMeSER is able to tailor the network to meet the needs of each customer:

• Enterprise and Government – high throughput service with PTP 650 backhaul technology that provide up to 450 Mbps throughput

SM per AP

Sector Throughput (Mbps per user)

Range (km)

PROFILE - COMeSER

www.comeser.it

CHALLENGE

Connect business, government and residential locations outside the reach of traditional telecom operators.

SOLUTION

• Wireless point-to-point PTP 650 backhaul infrastructure

• Wireless PMP 450 access networks in urban locations

• Wireless ePMP access networks for low density rural locations

- Urban locations – high throughput and capacity where customers demand higher bandwidth options with PMP 450 access technology that operates in licensed or unlicensed bands

- Rural locations – provide 20 Mbps speeds for residential customers and 100 Mbps for business customers with ePMP™ wireless access

Frequency availability is an issue that affects all wireless users. "We had a lack of free frequencies in our sites," says Scarazzini, "so we needed to increase the bandwidth available in our access networks to serve an increasing number of customers while improving quality of service at the same time. Synchronization allows us to re-use frequencies and have high performance in a minimum amount of spectrum."

The Results

Scarazzini continues: "With Cambium we achieve results never seen before. With all the other suppliers we could not load more than 25 subscribers per access point, or deliver an aggregate of more than 15Mbps per sector (when several SMs are connected and not only a few ones) and with a distance limit of roughly 10 kilometers for the furthest subscriber. We can now serve customers up to 20 kilometers away from the access point delivering bandwidth of up to 20 Mbps per second each – and have 50 of them on an AP.

"Right now, our network has grown to 7,000 subscribers. More important, we are adding 100 subscribers per month, mainly with Cambium SMs."

ePMP Access Point connects a community

Mr. Scarazzini Adjusts an Antenna

PMP 450 Access Point

The Cost

"We started the network with low cost technology," says Scarazzini. "As demand grew, we exceeded the capacity of those systems. With Cambium, we have a low cost solution that is significantly more reliable and provides 10 times the bandwidth.

"Consider the investment approach that we had to take. Formerly we had to install dedicated point-to-point radio links, using up many frequencies. The great efficiency of the Cambium platform allows us to deliver symmetrical bandwidth profiles to business and corporate customers even when connected to an ordinary SM – this saves us hardware and installation costs.

"In the beginning, we started with low cost technology because we had limited budget. When our network started to be successful, the number of subscribers was growing together with the bandwidth required. Equipment performance no longer met our needs. We had numerous problems to fix, our OPEX was far too high and the equipment was constraining us from growing. It was clear to us that we had to choose a next generation technology like PMP 450 and ePMP in order to be competitive against xDSL technology. Cambium technology enabled us to improve spectral efficiency and reliability, and we are now focused on expanding the network and acquiring customers."

Next Steps

COMeSER continues to expand the network at a fast rate thanks to thousands of satisfied customers. When asked for suggestions on how others can build a network and have similar success, Scarazzini smiles and replies, "COMeSER is ISO 9001 certified to design, install and manage networks. Call me and we will do it for you."

Business and Residential Connectivity in Italy