



Wireless Public Internet Access

Wireless mesh networks extend access and expand opportunities within communities

For many people, accessing the Internet and its vast information resources is taken for granted; it has become just another integral part of their life made possible by the availability of broadband access. They use it for reading news, doing research, communicating with friends and colleagues, business applications, and even shopping. It seems almost inconceivable not to have it. But what if it weren't available to you? What if you couldn't afford it? What would that mean to you personally? As a member of the community, how would the lack of broadband access affect your city or town?

Inconceivable or not, many people still do not have broadband access to the Internet, either because they cannot afford it or the service is too expensive for a service provider to reach them using traditional wire or cable based technologies. The impact is significant and increases with time. Educational opportunities for students are limited to those resources available at schools and libraries. Access to career development and job placement resources are limited. Business opportunities that leverage the Internet and information technologies are constrained. For communities, this can result in



a population that is increasingly out of step with the needs of an information-driven economy.

Many municipalities are now looking to overcome the complexity and high cost of the wired world by deploying wireless mesh networks to empower their communities. Civic leaders are turning to wireless networks to foster a new wave of economic development by extending access to the Internet for:

- Providing public access from virtually anywhere
- Promoting economic development and attracting new investment in the community
- Improving access to city services
- Addressing the "Digital Divide" issue within the community

Ubiquitous access

Along with the ability to connect to the Internet from anywhere in the community, your public access network can provide ubiquitous access to government services. Schools, community groups, trades people, visitors, taxpayers and even remote municipal employees can easily access government resources from anywhere in the community.

In addition to public access, BelAir Networks wireless mesh products can support Public Safety and Public Works networks, as shown in Figure 1. For example, crystal clear voice service allows you to save on cellular costs by establishing your own Voice over Internet Protocol (VoIP) network for civic employees. These

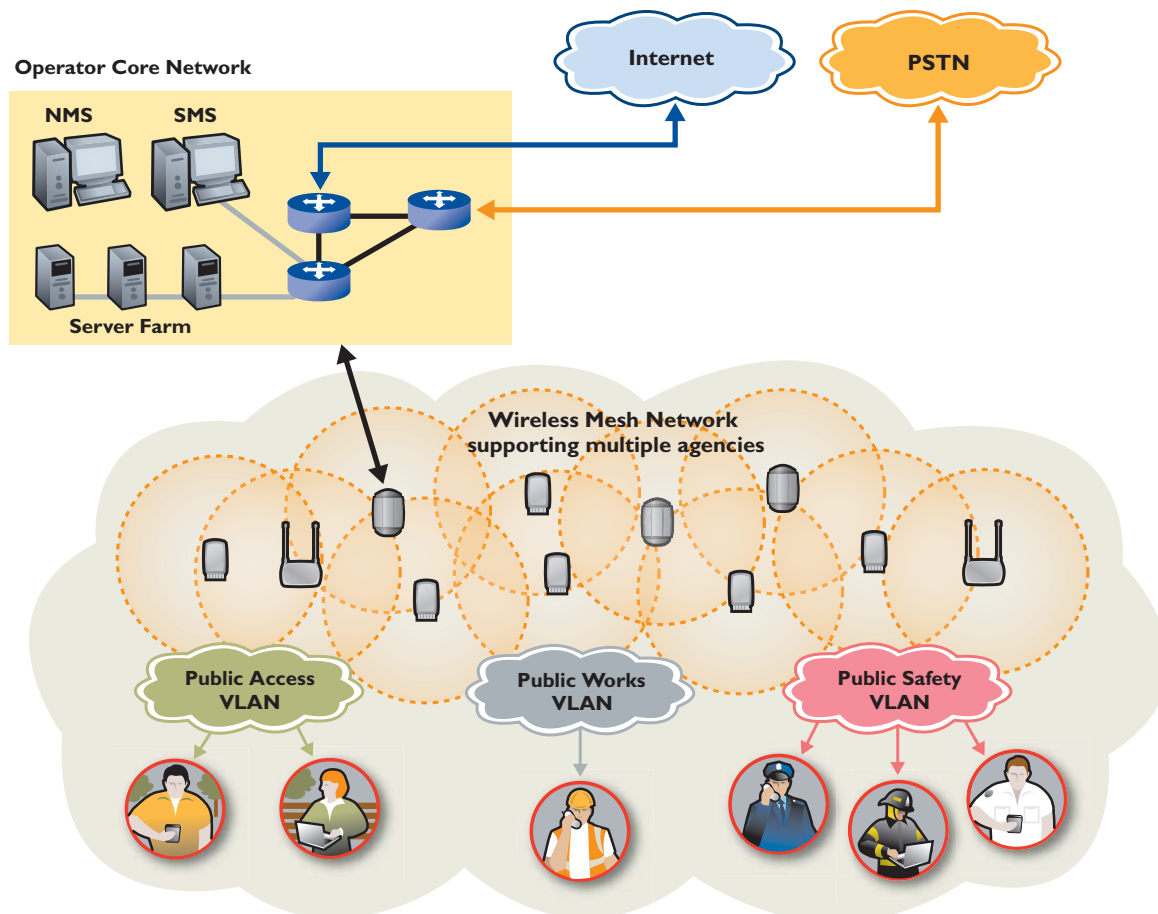
capabilities significantly increase the value of the network to the community, and make a lot of economic sense.

The ideal public access network

BelAir Networks wireless mesh architecture provides carrier-grade performance, which means you get the convenience of wireless plus the same high level of availability and reliability that you have come to expect from traditional land-based telecommunications.

It also means the network provides Quality of Service (QoS), including the industry's lowest latency rate, with minimal jitter, to support voice services and bandwidth intensive applications such as video and multimedia.

Figure 1: A BelAir wireless mesh network provides dependable public access delivering high-speed broadband to residents, visitors and businesses while supporting municipal workers and public safety personnel.



There are a myriad of services and applications that a municipal network can provide – but at the heart of the BelAir Networks wireless mesh architecture is an ideal solution for creating a reliable public access network that scales to support cities and municipalities, including local businesses, school campuses, traffic corridors, and neighborhoods.

The BelAir Networks family of products

No two communities are the same and engineering the right network for optimum coverage often requires a combination of single-, dual- and multi-radio nodes. BelAir Networks offers the only complete family of wireless mesh products, so you can build a solution that suits your community, whether it is for a downtown core or a metro-wide network.

You can also start with a downtown core, and easily build-out to encompass neighborhoods, business parks, school zones, etc. BelAir's unique switched mesh architecture allows true network scalability, where a single network can grow up to 16,000 nodes and 250,000 users. Municipalities can easily deploy networks in several stages, broadening coverage as needed.

BelAir equipment is easy to install and can be mounted on buildings, poles, cables, towers, and rooftops. Field proven in over 150 deployments around the world, BelAir's products are made to withstand harsh outdoor conditions.

Standards-based solution with high-speed mobility

BelAir Networks standards-based wireless mesh solution supports virtually all wireless-enabled client devices (laptops, PDAs, mobile phones, etc.) “out-of-the-box” and provides vehicle-speed client handoff capabilities of less than 100 milliseconds. With this level of seamless mobility, subscribers can now

maintain access to applications and broadband Internet access while mobile – so they remain connected, as they travel from home to downtown, stroll along a shopping avenue or a park, or move throughout a business district.

Also, because it is a non-proprietary solution, operators are free to leverage their existing infrastructure and select best of class routing products and subscriber management software to build their networks without restrictions.

Carrier-grade performance and scalability

BelAir Networks switched mesh architecture is a key element in delivering greater bandwidth and higher performance. Leveraging standard carrier-grade router platforms, along with QoS tagging and classification capabilities, applications are able to be transported across the wireless mesh networks with little to no latency.

Carrier-grade resiliency provides for self-healing capabilities in the event of a link failure. Mission-critical applications are not affected during a link failure because they are rerouted to the next best alternative path, thus ensuring their transmission through the wireless mesh network.

Flexible subscriber management

The BelAir BelView Network Management System (BelView NMS) is fully compatible with any Subscriber Management System (SMS) and allows network operators to easily configure, monitor, and manage a complete wireless network. Both user and node information is stored within BelView NMS. This means that users are free to move throughout the wireless mesh without disruption or loss of service and, in the event of a link failure, all traffic will be

automatically re-routed to the next best path. Since BelView NMS is compatible with any SMS, centralized subscriber services can be allocated and maintained, and subscriber network usage and fee schedules can be tracked.

Wireless mesh network security

A vital component to any wireless mesh network is providing end-to-end, comprehensive network security. Because mission-critical applications require a robust, low latency network, security is paramount in ensuring that there is no disruption to the network through unauthorized user access or network hackers. BelAir Networks unique wireless mesh architecture delivers a tri-level security strategy that addresses the user, infrastructure, and management layers of the network.

BelAir wireless mesh networks leverage standards-based methods (802.1x, Web Authentication, WEP, WPA1 [TKIP] and WPA2 [AES] encryption) for end user authenticating, authorizing, and accounting – preventing unauthorized access to the network. BelView Network Management System uses SSH, SSL and SNMPv3 standards for encrypted management and network administration log-in to ensure that only authorized personnel gain access to network devices and configuration files.

The BelAir advantage

BelAir Networks has proven to be an industry leader in providing mission-critical wireless mesh networks across the globe. BelAir's cost-effective solutions deliver the highest capacity per square mile, on average 15 times the capacity of the competition – up to 240 Mbps of capacity per square mile!

Reliable, high-performance solutions make BelAir Networks the wireless company of choice for delivering carrier-grade voice, data and video services – with seamless mobility – supporting all types of users, leaving no one behind.

The ability to deliver true broadband service and mobility creates a sustainable competitive advantage for your community as residents, business people, municipal workers, and tourists can access important information resources from anywhere in the city.



Copyright © 2006 BelAir Networks
Specifications may vary by region.

To find out more, contact BelAir Networks:
info@belairnetworks.com
sales@belairnetworks.com
1-877-BelAir | (1-877-235-2471)
1-613-254-7070
www.belairnetworks.com

BDMA00040-A01