



## Nokia Operator Wireless LAN Solution

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# Public wireless data – the demand is booming



As globalization grows, more professionals are travelling on business, creating a fast expanding need for remote broadband access to data. Often, the amount of time business people spend travelling is longer than the purpose of their journey, resulting in lower productivity.

This can be frustrating. Even with the fastest laptop, time can be wasted when out and about because of lack of effective access to the Internet or company intranet. Corporate laptop users need fast access to download large files and to synchronize their e-mails quickly.

## Increasing efficiency on the move

Business professionals now anticipate high-speed, mobile broadband access that is as quick and easy to use when travelling as it is in the office. All these users need wireless LAN access and they need it in public places, wherever they happen to be.

The Nokia Operator Wireless LAN solution brings broadband access to the laptop in places where demand will be at its highest. These so-called hotspots include airports, convention centers, coffee shops, hotels and meeting rooms. With secure 11 Mbit/s access built in to their laptops, professionals can make the most of their time while waiting for flights, or between meetings, or during quiet moments at their hotel.

For property owners, the rapid rise of public wireless LAN technology opens up new possibilities for generating extra income and finding powerful new ways to promote their services to customers with the buying power that can make a difference.







## High potential, broad appeal

Already, public wireless LAN is big business and one of the hottest topics among telecommunications professionals. The growth of mobile broadband access services is set to explode and here's the evidence:

- Today, there are 120 million laptops in existence. By 2006, 180 million new laptops will be shipped
- In 2006 it is expected that 75% of all new laptops will be delivered with integrated Wireless LAN facilities. This is in addition to the 60 million wireless LAN network interface cards that it is estimated will be sold to existing laptop users over the next three years.
- The number of PDA users in 2002 is 25 million. By 2008 there will be more than 90 million
- In 2002 there are estimated to be just over 5,000 wireless LAN hotspots in existence. This figure is expected to balloon to a staggering 151,000 hotspots in 2008
- In Europe alone, it is predicted that there will be more than 28 million public wireless LAN users by 2007

Sources: ARC Group, Gartner Dataquest, Pioneer Consulting and Nokia

Such hard evidence is difficult to dispute. Public wireless LAN is undoubtedly one of the fastest growing communications segments yet seen. Few other businesses come even close to these levels of expansion. This is why public wireless LAN appeals so much to a wide range of players in the supply chain. Yet it is the property owner that will gain the highest profile and some of the greatest benefits.

Forward-thinking property owners looking to win new business today and make their premises attractive to business travelers in the long term, are adopting public wireless LAN to complement their core business.

## Providing access where it counts

When building a public wireless LAN, a number of access zones are typically created to give business travelers continuous access to their corporate e-mail and other services.

**Hotels** – Business travelers make full use of their hotel stay by getting broadband access in the lobby, restaurant, cafeteria, rooms or business centre.

**Airport lounges** – Waiting for a flight becomes efficient working time, not a tedious bore. Airports offer considerable potential traffic and have good publicity value.

## Business parks and campus areas –

Mobile broadband access made available to roaming users and those with no access to a corporate network or other networks. A public wireless LAN can also be deployed at trade shows and other similar events.

## Corporate buildings and meeting rooms –

Visiting laptop users with a wireless LAN terminal obtain broadband access in meeting rooms and other shared venues.

**Coffee shops** – While taking a 20 minute break in a busy schedule, the business user synchronizes e-mail and downloads new files needed for the next meeting – all over a relaxing cup of coffee.

## Exhibition and convention centres –

delegates away from their offices attending exhibitions or conferences, can stay in touch with their customers, while exhibitors can access the information they need to show visitors the latest information on their products and services.



## Public wireless LAN – new opportunities for property owners

For owners of facilities such as airports, conference centres and hotels, there are major benefits of offering a public wireless LAN service. With public wireless LAN, owners have an opportunity to improve the service they offer to their biggest spending customers, the travelling business person.

### **Meeting the demands of valuable customers**

The growing demand for wireless data access will soon mean that owners not offering a public wireless LAN service will be seen as not being fully committed to the needs of business travelers. In contrast, those that are among the first to offer wireless LAN access will be seen as progressive and in tune with their customers' needs. It attracts new customers and increases the loyalty of key customers.

### **A powerful promotional tool**

As well providing an extra service to customers, a property owner can use a public wireless LAN network to promote other facilities. When a user logs on to the service, the first thing seen is a web page, called a landing page, sent to the laptop's browser by the public wireless LAN system. These landing pages can be used to advertise specific services that the property offers its visitors.

To promote different aspects of the property owner's business, landing pages can be different for each access point. Different services in the business centre or restaurant can be promoted depending on where the user accesses the public wireless LAN network.

Landing pages and other pages provided by the property owner can be free to view, but once the user starts to access other internet sites, then he is asked to authenticate and will be billed accordingly.





## Other benefits

In some instances, depending on the business model that the public wireless LAN provider and property owner agree, there may be some additional income from the facility. This may come from rental fees for using the site to revenue sharing with the operator.

A further benefit that many property owners see is the use of the Operator Wireless LAN by their own staff. The convenience, low cost and speed of access can often boost working efficiency in many areas, from the office to maintenance procedures.

## Public wireless LAN – easy to implement

Installing a public wireless LAN network is quick and simple, with no major disruptions or inconvenience for staff or customers. Nokia Operator Wireless LAN Access Points are small and unobtrusive and can be installed behind ceilings or blend into their surroundings. This is a key strength of the design of the Nokia A036 Wireless LAN Access Point.

The Access point also has superior radio-frequency performance and a fully balanced RF link budget, which avoids the need for external antennas. Installation

is fast and requires minimal on-site work. Each unit needs less than 5W of electrical power, which is provided over the Ethernet connection. Cabling work is therefore kept to a minimum – only a simple 10/100Mbit/s Ethernet connection from each access point to the telecom equipment room.

Remote management from the operator's existing Nokia Network Management system allows access points to be software-upgraded to support new Nokia Operator Wireless LAN system features, as well as to manage faults, alarms, performance, security and configuration with minimal site visits.

## Promoting the service

Unlike GSM mobile phone services that are available everywhere, wireless LAN is a local area technology. Public wireless LAN users cannot assume they have access wherever they are – they need to be told the service is available locally. Promoting the service will often take the form of signs and advertisements in local media.

Also, because the access points that provide the Wireless LAN cover a cell size of around 50 metres, they must be installed to cover areas where business subscribers would be able to work. For example, in hotels this means lobby areas, the business center and congress area as well as the hotel room area.



# Telecom operators offer all round capabilities

Property owners are not in the business of running telecommunications networks. Their best interests are served by selecting a single vendor for all the services and equipment involved. One company to install, run and maintain the public wireless LAN service on their behalf.

This single point of contact will cut administration costs and help to ensure that the installation project and all subsequent dealings run as efficiently as possible.

The company best positioned for this single supplier route is the telecommunications operator.

## Integrated benefits

With the Nokia Operator Wireless LAN solution, telecom operators can use their existing infrastructure for billing, customer care and subscriber provisioning. For existing telecom operator subscribers, this brings the convenience of getting only one bill for all mobile services, whether voice, data over GPRS or data over the public wireless LAN. Such convenience

is highly attractive and a further reason for choosing a public wireless LAN system from a telecom operator.

Additionally, the operator is in a powerful position to promote its public wireless LAN facilities through its existing promotional channels and using its strong branding position with corporate buyers.

## Managing all aspects of the service

Telecom operators are ideally suited to this type of project as they are highly experienced in all the stages needed. They can make a proper site survey, minimising the number of site visits, particularly important in a hotel. They are also accustomed to producing a professionally designed network, providing top quality service for users. From site survey to final site acceptance, operators have all the necessary skills.

Telecom operators can also configure and upgrade the network remotely, as well as manage faults from a distance, keeping the number of site visits to a minimum.

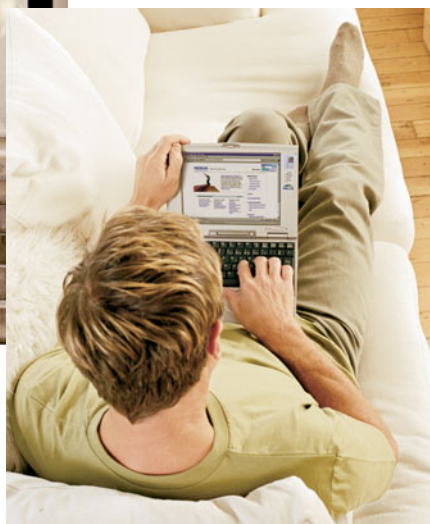
## The importance of roaming

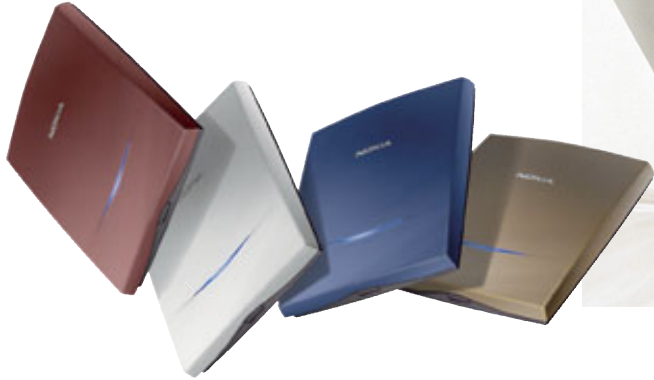
Furthermore, because hotels, airports and conference centres will have visitors from all over the country and from other countries, it is important to have a public wireless LAN service that users can access as soon as they arrive. Telecom operators are in an ideal position to ensure roaming between other international and national operators as they have ready access to more than 25,000 existing international roaming agreements created for GSM users.

With the Nokia Operator Wireless LAN solution, users have a choice of authentication mechanisms, including SMS and username/password systems provided by vouchers and scratch cards for prepaid use. Meanwhile, SIM authentication and username/password authentication is available for post paid subscribers.

Pre-paid is a highly convenient method of gaining access for temporary users or non-subscribers. Typically, this is provided by disposable cards sold by the property owner and which have panels that are scratched to reveal a username and password for authentication. A card may provide one day's or one week's unlimited access for a fixed cost.

Telecom operators are clearly best placed as providers of public wireless LAN services, a fact that is borne out by estimates of the market shares of public wireless LAN deals globally in the future. Pioneer Consulting, for example, estimates that in 2008, fixed and mobile operators will take nearly half of all public wireless LAN service revenues, far exceeding the predicted market share of any other type of provider.





## Public wireless LAN the Nokia way

Nokia realizes that to make this type of wireless LAN service a success, it must be attractive to the owners of buildings in which it will be installed. That is why we have made our solution into what we believe is the easiest and most convenient to implement.

### Visually unobtrusive, minimally disruptive

At the heart of the Nokia system is the Nokia A036 Access Point, a small, unobtrusive and visually attractive product designed for installation in all types of building. An internal antenna contributes to its neat and stylish looks and it can even be painted to blend in with the décor.

Disruption is kept to a minimum during installation by ensuring that contractors need spend only a short time on-site. The Nokia A036 avoids time consuming and expensive power cabling by using Power over Ethernet, receiving its power over the same line it uses to connect to the equipment room

The Nokia A036 also provides the maximum output power defined by the international wireless LAN standards, giving better coverage, a better quality of service for end-users and fewer access points needed in the building.

Subscribers with a monthly subscription from an operator, as well as those who prefer pre-paid or one-time subscriptions, such as SMS, scratch cards or credit cards, can all use the service. The system is also compatible with all available wireless LAN cards, ensuring the largest number of people can use the service.

### Security built in for all users

The Nokia Operator Wireless LAN solution uses a combination of security measures to ensure that user data is fully protected. These measures include secure SIM card authentication; SSL encrypted login pages to increase security in access zones; enhanced wireless LAN security protocols; patented access zone privacy to prevent unauthorised access to data held in a laptop's shared folders; and Virtual Private Networks (VPN).

In wireless LAN networks, VPNs create virtual tunnels for secure communications. A VPN is a private data network that uses the public telecommunications infrastructure, maintaining privacy with tunnelling protocols and security procedures.

Most corporate users have a VPN application in their laptop. Nokia infrastructure has been tested with the market-leading VPN demonstrating that the wireless LAN connection works readily with third-party applications.

With a Nokia Wireless LAN solution installed and operated by an experienced mobile operator, today's property owners can have a facility that enhances the service they offer to their customers. With the Nokia Operator Wireless LAN solution, property owners have the edge in meeting the sophisticated data access demands of business users.



Nokia Networks  
P.O. Box 300  
FIN-00045 NOKIA GROUP, Finland  
Phone: +358 (0) 7180 08000  
[www.nokia.com](http://www.nokia.com)

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