Wireless Broadband in Central and Eastern Europe

The Company

Founded in 2004, WiMAX Telecom AG* is a leading cross-border wireless access operator in Europe. The company, with headquarters in Switzerland and offices in Austria, Germany (company name Inquam Broadband), Croatia and Slovakia, currently has at least 42 MHz of 3.5 GHz spectrum in Austria, Croatia, Germany, Slovakia, and Switzerland. WiMAX deployments have been launched in Austria and Slovakia and plans are underway to launch commercial service in Croatia in June 2008. Deployments in Germany and Switzerland will follow. In addition to offering broadband services in countries in which they already hold licenses, WiMAX Telecom has a strategic interest in gaining access to licenses and expanding their networks into other Central and Eastern European countries.

Today’s deployment includes a total of 140 WiMAX base stations, covering population of about 500,000 in Austria and about 1 million in Slovakia. With over 13,000 subscribers, WiMAX Telecom is well on its way to establishing a strong foothold in the broadband wireless access market in these two countries.

WiMAX Broadband Services Offered

WiMAX Telecom offers wireless broadband access and VoIP services to residential, SOHO, and SMB customers in urban, suburban, and rural environments. Its current customer base is approximately 95% residential. The company also provides wholesale access to its existing WiMAX network for ISPs and will work with these providers to jointly expand network coverage.

Services offerings include:

- Fixed and nomadic broadband internet access with various data rate options (e.g. 1024 kbps/256 kbps, 2048 kbps/512 kbps) with volume-based or flat rate pricing
- Voice services (VoIP) with number portability and quality of service (QoS)
- Value-added services such as e-mail addresses, aliases, and e-mail space
- Installation and configuration services

* www.wimax-telecom.net
For occasional users, hourly or daily subscriptions will become available with the mobile WiMAX network. For regular users, 3, 12, 24 month and unlimited contract terms are possible. Typical service plans offered in Austria are €15 to €20 per month for 15 Gigabytes and €25 to €30 per month for 30 Gigabytes.

The End-to-End Network

The network for the Austria deployment is shown below. WiMAX base stations are backhauled primarily with Ethernet/IP microwave point-to-point links. Regional and central PoPs (Point of Presence) are connected via leased Ethernet lines, dark fibre, and occasionally high capacity microwave links. The core network uses multiprotocol label switching (MPLS) and is based on carrier-class Cisco routers and switches. The entire network supports quality of service (QoS) for PSTN like VoIP, making it directly comparable to typical fixed telephony services.

There are four data centers, two in Vienna, one in Bratislava and one in Zagreb. These are all interconnected via redundant high capacity leased lines or dark fibre. All main ISP services as well as BSS/OSS are hosted in Vienna. International IP upstream is centralized in Vienna and local peerings exist in Bratislava and Zagreb.

The capacity of the current WiMAX network in Austria can support 30,000 subscribers. Slovakia’s network can support 40,000 subscribers. With 56 MHz of available spectrum in each of these countries, capacity can be increased to several hundred thousand subscribers by simply adding more channels and sectors to the existing base stations.
End user terminals are either Alvarion outdoor-mounted units with high gain antennas or, where signal levels are sufficient, Alvarion indoor self-installed modems or PCMCIA cards.

**Market Opportunity and Vision**

DSL penetration in Austria has leveled off at about 20% (based on population). In Slovakia and Croatia it is currently around 8%, and is expected to reach Western European levels (20-30%) in the next 2-3 years. WiMAX Telecom expects to capitalize on this pent-up demand for fixed broadband services in these two countries.

Penetration for mobile broadband is already 8% in Austria and under 1% in Slovakia and Croatia. WiMAX Telecom plans to roll out mobile services beginning in Croatia this year. Growth in this market segment, like that of mobile voice services, is expected to approach 100% of population over the next several years. With a time to market advantage, WiMAX Telecom is well-positioned to gain significant share of the mobile internet market. Market dynamics are similar in other Central and Eastern European countries, which are the focus for WiMAX Telecom’s long term growth strategy.

A summary of WiMAX Telecom expansion plans for their WiMAX network and services include:

- Roll out of a 350 base station network with 802.16e-2005 based WiMAX equipment for fixed and mobile services in Croatia in 2008 and 2009
- Implementation of Mobile WiMAX networks in all countries where WiMAX Telecom currently has spectrum licenses
- Expand user terminal options to include smaller form factors for portable and mobile usage
- Implement multicast and broadcast mobile TV services with support of personalized advertisement
- Pursue opportunities for gaining access to spectrum licenses in other Central and Eastern European countries either through acquisition or partnership arrangements

Growth strategy for WiMAX Telecom AG includes expansion into Central and Eastern European countries where existing fixed telecommunications infrastructure is antiquated or limited and broadband penetration is lower than in other mature markets.
For a typical outdoor CPE installation example please follow the link:  

Typical installation of a WiMAX subscriber terminal on a single family home

PC Card for Laptop users

Customer Experience

Best Service Provider  
WIMAX World Boston, Oct 2006

Finalist Best WiMAX Product/Service  

Best Commercial Deployment  
WIMAX World Vienna, May 2007

Notice and Disclaimer

Copyright 2008 WiMAX Forum®. All rights reserved. June 2008

The WiMAX Forum® has endeavored to provide information in this operator study that is current and accurate as of the Release Date shown above but it does not warrant that all information is complete and error-free. All information is therefore presented on an "AS-IS" basis, without warranty of any kind, and disclaims all implied warranties relating to the information and to the study. The WiMAX Forum may update or revise this study in its sole discretion and without notice, but does not undertake to do so. Unless otherwise stated, opinions and viewpoints are those of the WiMAX Forum and may not necessarily reflect the opinions or viewpoints of an individual member.