Telekom Austria's NGN frontiers

Walter Goldenits, CTO Telekom Austria TA AG, talks to InterComms about the company's NGN capabilities and strategy

Walter Goldenits -
Chief Technical Officer, Telekom Austria TA AG

Walter Goldenits was born in 1970. He completed studies in technical mathematics in Vienna and management training in St. Gallen. After starting his career as project leader at Landis&Gyr in 1996, Walter Goldenits went to mobilkom austria AG in 1998 and was officially appointed Head of the IT department in 2003. From 2007 to 2008 he took over the position of CTO at si.mobil, the second largest mobile communications operator in Slovenia and subsidiary of mobilkom austria AG. On September 1, 2008 Walter Goldenits took over the departments Network Planning and ICT at Telekom Austria TA AG. Walter Goldenits was appointed CTO of Telekom Austria TA AG as of January 1, 2009.

Q: What is the status of your NGN rollout, the fibre cities?

A: The Austrian fixed net copper infrastructure has been in place for the past 125 years and now we are beginning with a comprehensive re-engineering of this technology infrastructure, which will be pivotal for the 21st century. Telekom Austria has, therefore, given the go ahead for the implementation of the Next Generation Network (NGN). In an initial roll-out phase, the first "Fibre Cities", with high-speed glass-fibre broadband connections providing transmission rates of up to 1 Gbps, will be established as part of a pilot project for a total of 150,000 households and businesses.

If we take a look at the four "Fibre Cities", which represent an integral part of Telekom Austria's infrastructure programme, the timeline is as follows: in October 2009 we will start with the pilot project "Fibre City" in Villach, in the South of Austria, followed by the other three "Fibre Cities" in Klagenfurt and the two of Vienna's districts in 2010.

As to the underlying technology, we will opt for a hybrid network strategy in Villach, deploying FTTC at the switching centres connecting the DSLAMs via glass fibre and at the switching centres via copper lines (VDSL2). Starting from October 2009, high-speed broadband connections with transmission rates of up to 30 Mbps will be available for all 26,000 households in the pilot. For the FTTC roll-out, a total of 128 remote access units, so-called street cabinets, were installed. In 2010, the other three "Fibre Cities" will be realized: based on the FTTB/FTTH roll-out, a new breed of broadband lines offering speeds from 50 to 100 Mbps will be tested and tried in Klagenfurt as well as in Vienna's 15th and 19th districts.

Q: Can you outline your strategy?

A: As previously mentioned, Telekom Austria has started the largest modernisation project for its network infrastructure of the past two decades, introducing a new fixed net era. Telekom Austria will invest a total of EUR 1 billion in re-engineering its network infrastructure over the next 4 years.

The main driver behind this comprehensive IP-based upgrade of its entire network infrastructure is the significantly increased demand for higher bandwidths over the past few years. In particular, the proliferation of Web 2.0 technologies and video applications along with the convergence of telecommunication, IT and entertainment electronics are among the major triggers of Telekom Austria's next generation network program. The ultimate objective is to pave the way for both residential and business customers to use the high-bandwidth applications of the future.

The focus of these modernisation efforts is on the roll-out of the glass fibre technology, which enables a considerably higher data transfer than legacy broadband Internet. As part of the pilot projects, over 150,000 households in selected cities and municipalities of Austria will be offered the opportunity to access the quickest broadband network in the country. In rural areas, a total of 750,000 households will be connected to Telekom Austria's next generation network in the years to come.

The Next Generation Network rollout also includes the integration of the current existing telephone system into a state-of-the-art IP service platform, which will provide the base for a new breed of telecommunications services and convergent applications such as unified communication and voice over IP. Already starting from Q4 09, the first of the roughly 1,500 switching centres throughout Austria will ▶

be upgraded. In a second step, the entire Telekom Austria customer base will be gradually migrated to this new service platform over the next few years.

Q: How has this strategy evolved? Why are you realizing this modernisation project now?
A: The reasons are multi-faceted and certain conclusions can be drawn when looking back at the company's historical development. Everything began with the digitization and the creation of a single voice and data network platform combining the two previously separated voice and data networks. In the course of this IP migration, a series of new features were developed, the network was further expanded and consolidated and broadband made its first appearance in network architecture. Today, the long anticipated and awaited converge of voice and data services will be realized on an unprecedented scale, making the co-existence of separate networks completely obsolete. Thus, with the modernisation of the network architecture, we will create an "All-IP" network.

In addition to the above mentioned convergence of applications, a further important driver for this modernisation program is broadband, with demand for higher bandwidths growing exponentially in recent times. According to the IDC Multimedia Whitepaper 2009, the size of the digital universe reached 500 billion gigabits in 2008 and, according to Google, 4,000 new websites per second were registered throughout the past year. Therefore, we are rapidly moving towards the Exabyte realm, exceeding the billion gigabit mark.

This broadband evolution has been triggered off by a number of applications: In the residential segment these include multimedia services such as aonTV, YouTube, online gaming, HDTV and other 3D-TV services, online video libraries, photo sharing and online backup services – only to mention a few. The business segment shows a similar development: the rising demand for higher bandwidths is mainly due to video conferencing and cloud computing, with the trend going towards pure online-service-based applications. And this is just the beginning: Arthur D. Little anticipated that by 2015, average households will require download volumes of up to 50 Mbps and upload-capacities of 22 Mbps. Therefore,

transmission and throughput rates will take centre stage going forward, with glass fibre increasingly playing a pivotal role. From my point of view glass fibre is the technology which will fulfil the bandwidth requirements in the network. The technology itself is efficient, carrier grade and still in research. Moreover, glass fibre is an old acquaintance in our network backbone, where it has been successfully employed for years.

Q: Can you outline the status of the All IP network rollout?
A: Besides the realization of high-speed broadband connections, the current telephone system will be migrated to a state-of-the-art All IP service platform in the course of the Next Generation Network project. All 2.3 million Telekom Austria customers will be gradually connected to the new service platform, paving the way for a brand new breed of telecommunications services and convergent applications such as unified communication and voice over IP.

First of all, all switching centres will be equipped with so-called MSANs (Multi Service Access Nodes), which translate data from conventional telephone and ISDN lines into IP-jargon. In order to guarantee future-proof data transfer, the IP network will be extended to include all of Telekom Austria's switching centre locations. In addition, a soft switch technology will be put in place, which will enable the transmission of all voice-based services in future. Thus, the modernisation of the telephone network is laying the foundations for future service provision via glass fibre. For current users nothing changes throughout this infrastructure re-engineering process: Telekom Austria's customers will continue to be able to use their conventional terminals and telephones.

The modernisation of all 1,478 switching centres is scheduled to start in late autumn, while the digital OES telephone system will be gradually migrated to the new IP service platform in the years to come.

Q: What about VDSL in rural regions?
A: Besides the "Fibre Cities", more than 750,000 private households and businesses in rural areas will be provided with high-speed broadband connections offering transmission rates of up to 30 Mbps (VDSL). This is a

significant contribution Telekom Austria is making to bridging the digital gab between urban and rural areas by opening up new technological opportunities, while paving the way for innovative services such as e-health and e-education. The launch of the VDSL (Very High Speed Digital Subscriber Line) roll-out is scheduled for November 2009. VDSL is a high-speed, asymmetrical data transfer procedure for broadband Internet, which allows for significantly higher transmission rates than conventional ADSL broadband connections. By the first quarter 2010, municipalities encompassing roughly 350,000 households already will profit from these high-speed transmission rates.

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