

IPTV and the copper connection

by Ziaedin Chahabadi, CEO and Chairman of the Executive Board, Keymile AG

IPTV, *Internet Protocol TV*, is spreading across the globe, driven by the telcos' need to compete with the cable companies and ISPs that are invading their traditional voice service market. IPTV lets telephone companies using DSL, *digital subscriber line*, technology on their existing copper-cabled networks distribute video programming and provide broadcast TV, VoD, *video on demand*, as well as a series of other IPTV-based services. IPTV gives the telcos a chance to compete in the market and re-build their ARPU.



Ziaedin Chahabadi is the CEO and Chairman of the Executive Board of the Keymile AG group. He held the same position at Datentechnik until its merger with Ascom Transmission in 2002 created the Keymile group. Previously, Dr Chahabadi served as a member of the Executive board of the Quante group. Dr Chahabadi was also one of the founding members and Head of the Technology section and Deputy Managing Director of ke Kommunikations-Elektronik GmbH, and headed the Department of Transmission Technology at Kabelmetal Electro GmbH in Hanover, an Alcatel subsidiary.

Ziaedin Chahabadi earned his doctorate at the University of Hanover in high-frequency engineering.

IPTV, *Internet Protocol TV*, has arrived and will continue to spread across the globe. For fixed line providers this technology brings the promise of new revenue streams at a time when traditional revenues are declining, barriers for entry to the market are crumbling, new players are emerging and existing players are becoming more aggressive on price and delivery of new services.

The combination of regulatory changes and the introduction of disruptive technologies has caused tremendous uncertainty for traditional fixed line providers. Cable operators have been quick to launch free or flat rate VoIP, *Voice over Internet Protocol*.

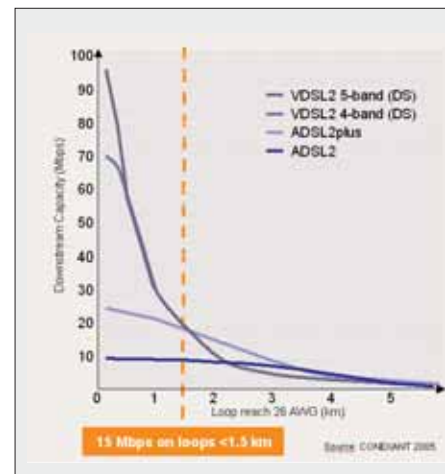
Aggressive and agile players such as Skype, alongside traditional ISPs (Internet service providers), have also entered the market, and even mobile operators are making life difficult by providing cheaper calls and launching an array of attractive 3G and GSM, *Global System for Mobile Communications*, services.

IPTV is touted as the golden child, the salvation, of the fixed line operator, providing a treasure chest of new consumer services such as TV broadcast, video on demand, VoD, time-shifted TV, personal video recorder, PVR, audio broadcast and all flavours of Internet access, which have the potential to significantly increase ARPU, *average revenue per user*, for operators.

For telecom operators the new opportunities do not come without a requirement for network and operational changes. In order for providers to be successful with IPTV services, they will have to overhaul their existing network architectures to enable a much greater amount of bandwidth, flexibility, quality of service and differentiation.

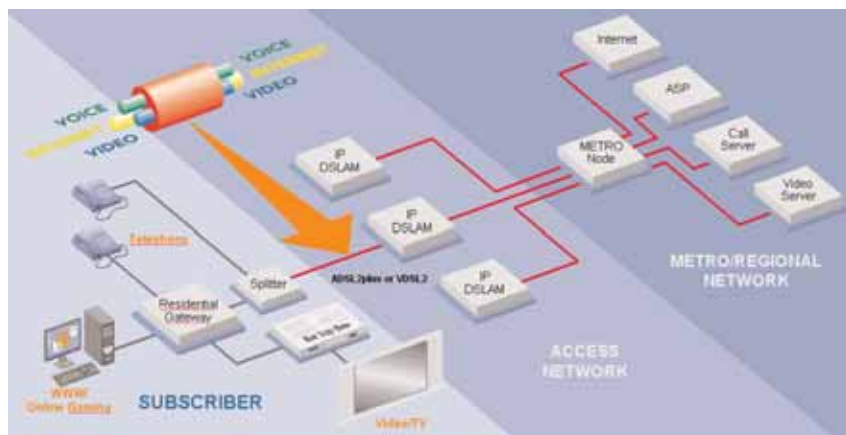
It is estimated that to deliver IPTV the minimum downstream bandwidth required per user will be 20Mbit/s. To deliver this bandwidth over copper, physics dictates that the DSLAM, *Digital Subscriber Line Access Multiplexer*, must be in relatively close proximity to the end user; the magic distance is calculated to be 1.5km or less. Many industry experts

believe that this is a conservative bandwidth figure; they believe that a minimum of 50 Mbps downstream may be needed.

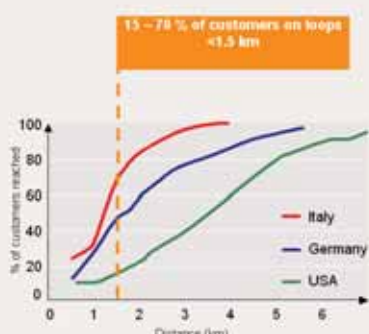


So the question begs to be asked: Does a long-term copper solution exist? The answer is yes, it does. A successful copper solution requires operators to deploy a distributed access model that makes use of a widespread deployment of IP based DSLAMs. This move towards distributed access has

decreased the size of the POPs, *point-of-presence*, a network access point) used. This, in turn, has increased the demand for small to mid-sized DSLAM products, for installation in fibre-fed street cabinets or underground locations, which bring the access points closer to the end-user.



DSL, *digital subscriber lines*, especially ADSL2+ and VDSL2 that multiply the velocity of DSL and can deliver IPTV and other data intensive services, is becoming the dominant delivery technology. According to analyst firm Datamonitor, DSL household penetration across Western Europe and North America reached an average of 16 per cent in 2004. DSL penetration is expected to almost double to reach an average of 31 per cent by 2008. For the delivery of high quality IPTV and other triple play services, operators will need IP DSLAM nodes that are able to support concurrently more than 20Mbit/s bandwidth per user.



Another critical element for operators is to select access equipment that is OPEX optimised, has low operating expense, with capabilities to support a full set of IPTV features as well as converged support of business critical legacy services. By selecting equipment that allows for OSS, *oper-*

ational support system, integration and extensive remote management functionality, including pre-loop qualification, fault management and double ended line testing, *DELT*, operators can significantly reduce their OPEX.

However, IP DSLAMs alone are not enough - analysts predict that 20-50 per cent of users will stay with POTS, *plain old telephone services*, and ISDN, *Integrated Services Digital Network*. Therefore, it is essential that operators deploy multiservice access platforms that have the capabilities to support classic telephony services, leased lines and profitable legacy services in addition to innovative IPTV and other triple play services.

IPTV is the service that bears the most potential for an increase in ARPU, *average revenue per user*, for operators. A report by TDG Research estimates that global IPTV revenue will top US\$17 billion by 2010. In the rush to deliver services, network access is an area that is often overlooked by operators, however network access remains the critical foundation for service capability and performance as well as the control of operating expense. ■

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