

MTS: The Ethernet Backhaul Difference



Sergey Zlobin and Oleg Larionov, of MTS, chat with Tellabs' Aleksandr Paulichek and Petri Markkanen

Russian operator taps Tellabs Mobile Solutions to improve economics and flexibility of its 3G mobile backhaul network.

By Joan Engebretson

Russian network operator Mobile TeleSystems (MTS) has big plans for its 3G mobile network based on HSPA radio technology. The network, which ultimately will cover virtually all of Russia as well as several neighboring countries, will support speeds as high as 21 Mb/s, enabling it to serve as the only broadband connection for many MTS customers.

MTS is not alone in addressing the mobile broadband market, however. Offering attractive pricing and services is key to retaining their competitive position.

To help achieve that goal, the company has chosen the Tellabs® 8600 Managed Edge System to drive IP-based backhaul throughout a large part of its network. MTS

estimates that the move has enabled the company to save about 40% on its access and aggregation costs—a number that will climb to 50% when the company moves both fixed and mobile traffic onto the network.

Moving to IP/Ethernet Backhaul

“Our main mission is to provide the best customer experience,” says Oleg Larionov, director of the transport network department for the corporate center MTS Group. “What we’re trying to highlight and to show by our advertising and our services is that we deliver the best services, the best speeds and the best product.”

MTS was founded in 1993 by a group of investors that included Moscow fixed-line operator MGTS, along with Deutsche Telecom and Siemens. Since then, the company has grown organically and through acquisitions. The company now offers service throughout Russia and many of the former Soviet Union republics, with subscribers topping 100 million.

The MTS 3G network, which is about 60% deployed, covers Russia, Uzbekistan, Belarus and Armenia. In addition, the company is trying to get a 3G license for Ukraine.

In large parts of MTS’s service area, fixed broadband penetration is quite low. As of 2010, only 9.6% of the Russian

population had mobile broadband, compared to 38% in Western Europe. MTS is projecting strong penetration for its mobile broadband service due to the comparatively low fixed broadband penetration in its serving area.

To achieve that goal, the company must offer service that is comparable with fixed offerings. MTS chose to deploy HSPA+ because it was impressed by the technology's strong track record and support from other mobile operators. MTS saw HSPA+ as the next step in the evolution of the globally trusted GSM technology.

As MTS planned its transition from earlier-generation mobile technology based on GPRS and EDGE, it faced a decision on how to evolve its backhaul network as well. That 2G network used TDM and ATM technology for backhaul, but it was expensive, and costs would only increase further as more traffic traversed the new 3G network. MTS needed a new approach to backhaul.

Tellabs had previously supplied SDH and PDH equipment to MTS. But when it came to the MTS 3G backhaul network, Tellabs proposed MTS to move toward transport based on IP and Ethernet.

"They explained how we could save operating expenses and capital expenses at the same time," recalls Larionov. The main driver behind these savings, Larionov says, was the ability of IP to multiplex traffic, thereby maximizing the amount of data that the backhaul network could carry.

Moving forward, MTS expects to see substantial traffic growth on its 3G network—an increase of more than 120% by 2015. Customers are expected to increasingly use the network to support bandwidth-intensive applications such as video and web applications, Larionov explains.

"More flexible, less expensive mobile backhaul bandwidth is needed to meet that demand," he adds.

MTS has a policy against using only a single vendor to supply a specific type of equipment. Accordingly, Tellabs was one of several vendors chosen to support the MTS 3G backhaul network. Tellabs equipment will comprise approximately one-third of that network.

Deploying the Network

MTS enlisted Intracom Svyaz, an international telecommunications systems vendor, to manage the deployment of the Tellabs 8600 system. MTS, Intracom Svyaz and Tellabs worked together closely on the deployment.

Both Intracom Svyaz and Tellabs went the extra mile in one of the initial rollout cities, where the backhaul network had to be deployed from scratch in a very short time frame.

"Tellabs and Intracom Svyaz did a great job—they met all the deadlines and brought all of the equipment on line on time," says Larionov. "The focus of the organizations helped us meet our deadline."

The MTS 3G backhaul network was planned in 3 phases. The first of these is now complete, and the second phase is roughly 75% complete. The entire project should be finished by the end of 2012. When fully deployed, the network will include thousands of Tellabs 8600 nodes. Based on MTS's experience to date, the company expects to see significant operational savings from using the Tellabs 8600 system.

"We gain operational flexibility," says Sergey Y. Zlobin, head of section for the transport network department at MTS. "The Tellabs 8600 system is versatile and provides good link utilization and flexibility with regard to different traffic types."

Larionov estimates that MTS has reduced its cost-per-bit by at least 40% by moving to the Tellabs 8600

platform compared with previous approaches.

But although the move from SDH to IP/Ethernet was a big one in terms of network efficiency, it did not create substantial new training requirements for operations personnel. The reason: the Tellabs 8600 system is managed by the Tellabs® 8000 Intelligent Network Manager, a system with which MTS operations personnel were already familiar, after having managed

Tellabs SDH equipment.

"When personnel are educated on traditional equipment, it takes time to move," says Larionov. "Because the Tellabs 8600 platform is based on the Tellabs management system, the migration path was easier."

MTS expects to see further operational savings beginning next year, when it plans to begin using the Tellabs 8600 backhaul network to also support the company's fixed line business. Larionov believes this will allow MTS's cost-per-bit to decline even further, halving costs in comparison to a traditional network approach based on TDM. Reducing network costs while keeping operational expenses in check places MTS in a strong position to win new broadband business across its many markets. ■



"The Tellabs 8600 provides flexibility [to handle] different traffic types."

— Sergey Y. Zlobin, head of section for the transport network department at MTS

ATM: Asynchronous Transfer Mode

EDGE: Enhanced Data Rates for GSM Evolution

GPRS: General Packet Radio Service

GSM: Global System for Mobile Communications

HSPA: High-Speed Packet Access

PDH: Plesiochronous Digital Hierarchy

SDH: Synchronous Digital Hierarchy

TDM: Time Division Multiplexing