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LEADER IN 2G AND 3G

Vodafone Romania is the largest mobile operator in Romania, with 48% of the market. It has a GSM mobile network and has recently introduced 3G services. Vodafone Romania provides mobile services to 8 million users, accounting for 35% of the country's total population.

TWO NETWORKS, TWICE THE HEADACHES

When Vodafone Romania began to offer 3G services, they did so by implementing a separate network, exclusively for 3G. The 2G network used TDM-based MSC core network switches and the 3G network was based on ATM. As both the 2G and 3G networks grew, the network soon had numerous network elements (NEs), which had to be individually managed. This required a large amount of work for O&M and therefore exerted great pressure on human resources.

In addition, the individual network elements had a relatively small capacity and could not meet the rapid growth of users, requiring continual expansion. This network architecture necessitated establishing a large number of small CN offices, each of which required expenditure on site rental, power, and local personnel. The overall result was a high level of CAPEX and OPEX.

ONE NETWORK FOR GROWTH AND LOW COSTS

To provide for future growth and to meet the demands for new services, while reducing operating expenses, Vodafone Romania decided to move to an All-IP core network architecture. This also would provide a platform to allow them to offer fixed-mobile convergence (FMC) services.

From January to April 2007, Vodafone Romania tested the CN solution provided by Huawei. The solution passed the strict testing on 643 items. In September 2007, Vodafone signed the project contract with Huawei to supply a 2G/3G integrated All-IP mobile softswitch network to support both the visited mobile services switching centers (VMSC) and the tandem mobile-services switching centers (TMSC).

The completed network was characterized by a more flexible networking model. The sixteen 2G MSC servers, two 3G MSC servers, and two transit layer gateway mobile-services switching centers (GMSCs) of the former network were integrated into six 2G/3G MSC servers and two standby MSC servers. This integration of the original independent 2G and 3G networks into a unified CN, greatly simplified the network architecture and enhanced the network performance.

The All-IP mobile softswitches of Huawei are based on the 3GPP R4 architecture, conforming to the GSM/EDGE and 3GPP R99 WCDMA standards, which helped Vodafone Romania transform the traditional TDM network into an IP network, which can interconnect with an IMS network in the future.

To create a secure and reliable network, Huawei also provided a dual-homed solution. When a server fails, the standby server takes over the services promptly, ensuring uninterrupted network operation.

SIMPLIFICATION BRINGS SERVICE AND COST BENEFITS

During the deployment, Vodafone Romania did not need to upgrade the RNC/BSC, which helped reduce investment. Extensive planning and detailed procedures ensured that the cutovers did not affect the services of the existing network.

The completed network is characterized by a more flexible networking model. The centralized management and unified O&M of the network help reduce OPEX. Moreover, the unified CN minimizes the overlapping duties of the 2G MSCs and 3G MSCs and thus enhances the efficiency and quality of the network transmission.

With All-IP based mobile softswitches, Vodafone Romania succeeded in transforming its traditional TDM network into an All-IP network. As a result, the transmission efficiency increased and the network met the requirement of being able to support FMC services. Recently, based on this set of CN systems, Huawei has provided Vodafone with the innovative MediaX system, a multi-party multimedia conference system for the fixed-mobile converged network that can provide new services to enterprise users.

The network transformation not only helped Vodafone Romania complete the evolution to an All-IP network but also paved the way for the operator's migration to IMS in the future. By virtue of the advanced network architecture and clear evolution plans, the mobile softswitches of Huawei can support the 3rd Generation Partnership Project (3GPP) R5/R6 and interconnect with an IMS network, which protects the operator's investment.

FOCUS ON NEW SERVICES, NOT OPERATIONS

In April 2008, Huawei helped Vodafone Romania complete all cutovers for the project. Thanks to Huawei's advanced technologies and extensive engineering experience, Vodafone Romania presented an "Excellence Diploma" to Huawei for its performance during the project "Evolve CS Core Network to IP based R4". A senior manager of Vodafone Romania noted that: "We are very pleased with the responsiveness and professionalism of the Huawei team. The outstanding result for this project is why we awarded them the Excellence Diploma."

The new Huawei solution has helped Vodafone Romania achieve a significant transformation to an All-IP network, and greatly reduced OPEX while allowing it to add new services and protect its long-term investment.