LEADING THE DIGITAL ERA



BEST NETWORK



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In order to keep a sustainable business and major revenue streams in a very complex telecommunication environment, as well as proactively influence the market trends with new business opportunities, MKT is aiming to keep the technology leadership position and ensure growth through service improvement and innovation by continuously developing its infrastructure.

Development of the infrastructure and investment in the technology should encompass the following objectives/trends: broadband performance, integrated service delivery platforms, efficiency and quality leadership, self-service enablers, Cloud concept and "virtual" infrastructure, cost-efficiency, flexibility and responsiveness reduced time-to-market, as well as competence development.

During 2016, we made significant steps towards the achievement of our goals with the development of the telecommunications network, service platforms and supporting systems.

In order to ensure high quality Broad Band (BB) performance, BB market and technology leadership, MKT is continuously investing in fixed and mobile access development. At the end of 2016, capacity was installed for more than 147,000 homes passed or 26.1% MKT network households' coverage with FTTH was reached. A significant improvement was also achieved in LTE rollout, reaching 60% territory coverage and 80% population coverage.

Alongside the extensive mobile BB access rollout, during 2016, a strong focus was put on the network quality, which is confirmed by the P3 "Best in Test" certificate which represents an internationally recognized acknowledgement for mobile network quality, as well as by the National Report for Network Quality Parameters prepared by the Agency.

The growth of BB access and the continuous traffic increase are supported with the further development of the IP Core and the transport network as a cornerstone of all services. In 2016, the implementation of the IP Core & Transport Network Modernization" project started, which includes modernization, reorganization and extension of all IP Core Network elements, Transport and Aggregation systems. MKT managed to install a full DWDM network and finalize the IP Core implementation in one half of territory of Macedonia. After the successful Proof of Concept, an initial migration of services was performed. In the mobile segment, SW upgrade of MGW and SGSN were performed in order to extend the support of MSS and EPC. Additional PGW/GGSN and MSC-BC SW

DEVELOPMENT AND MODERNIZATION OF THE NETWORK **INFRASTRUCTURE FOR** AN IMPECCABLE CONNECTION

upgrades are planned and will be conducted in Q1 2017. In this timeframe, the CUDB project for upgrade of HLR/FNR and HSS-EPC on a joint CUDB platform was started and will continue in 2017.

Also project for improvement of transport network redundancy based on building redundancy of all major cities based on 3 sided physical and logical path protection, creation of smaller protection rings by implementing new fiber optical routes between major sites and introduction of 2 sided network redundancy on all other IP Core sites as started.

The increased mobile Internet traffic. is also supported with the modernization of the backhaul solutions for mobile base stations through fibre connections or radio links.

In terms of the Service Platforms, during 2016, the IPTV server platform was upgraded and the IPTV storage was replaced and extended with a higher capacity for deploying new VoD (Video on Demand) assets. The project for IPTV Headend enhancement and extension was based on replacing encoders with HD capabilities and implementing a new management system. A new OTT TV platform was implemented and, for the first time, a new service was launched for the Magenta customers to provide a better customer TV experience. The implementation of a Single Sign-on (SSO) system was finished, providing a possibility to the MKT customers to log in with a single ID and password and gain access to connected systems. A Hybrid Access Solution was implemented, which aggregates the bandwidth of both DSL and LTE transmission links and creates a single, powerful broadband pipe between the network service node and customer's Broadband CPE.

A new SMS GW was implemented and a migration of content providers was performed. Also, during 2016, the Starhome platform for Inbound Roaming management was fully upgraded. Furthermore, improvement of the existing payment services and features, as well as integration of a new bank as an issuer and acquirer with the mobile payment platform, was performed.

NEW SYSTEMS FOR A **GREATER EFFICIENCY AND** TOP SERVICE

In order to provide higher efficiency, better flexibility and fast response in the provisioning, fault clearance and other processes in technology domain, we: finalized the implementation of the New Generation OSS, Broad Band Service Assurance (BBSA), and Trouble Ticketing (TT) extension.

