Networks and technologies

Also in 2009, Telefónica O2 operated the largest fixed and mobile telecommunications network in the territory of the Czech Republic.

Investments in the mobile networks were directed mainly at a comprehensive upgrade of the next generation network (3G), increasing of data transmission speeds, modernisation of the GSM network technology and on adding extra capacities to accommodate the growing voice and data traffic. The new generation mobile network based on the UMTS/HSPA technology was expanded to cover not only Prague and Brno, as it had been until now, but also all other regional capitals. All BTS with UMTS capability in Prague and Brno were fitted with HSDPA technology, which boosts the data transmission speed to up to 3.6 Mb/s. The number of BTS in the UMTS network grew to 1,364 by the end of 2009, compared to 927 at the end of 2008. The coverage of the population increased significantly – from 16.5% in 2008 to 26.6% at the end of 2009. The CDMA network for broadband data services was also expanded – albeit at a smaller scale: 11 new BTS were added and their number at the end of 2009 reached 466, which gave 90.4% coverage of the population, compared to 89.8% in the previous year. Data traffic carried in mobile networks increased dramatically – at peak times it reached three times the volume in 2008. Tracking this trend, investments were made to add extra transmission capability in the networks.

Simultaneously to the 3G network roll-out, locations receiving the new technology also went through an upgrade of the 2nd generation GSM network technology. Further increases in the volumes of voice traffic and the need to connect new developments (residential, commercial and industrial) resulted in 288 new BTS being added in 2008. Their total number as at the end of the year reached 4,783. The coverage of the population was 98.9%. During 2009, more than 32 thousand non-configuration orders were carried out in the mobile network, up 85% compared to the previous period. These orders provide for network capacity and quality during the implementation of a new network technology and at the time of traffic density changes, as well as in response to the needs of providing for qualitative parameters of the network.

In the area of fixed networks, a substantial part of all investments went into the development of broadband internet and IPTV. To accommodate demand, the capacity of access points was strengthened, as were the capacities of transmission lines in the IP/MPLS backbone network. The number of ADSL access points reached 2,402, compared to 2,257 in 2008. In 2009, a total of 133 IP DSLAMs were commissioned, which made O_2 TV available in all 2,196 locations. In the first quarter of 2009, as a result of the process of upgrading the nominal ADSL connection speeds, the speeds of 8 Mb/s and 16 Mb/s were added. The total installed port capacity grew to 976,700, which translates into a year-on-year increase of 8.6%. The share of access ports installed on IP DSLAM equipment for O_2 TV increased to 56% as at the end of 2009, compared to 51% as at the end of 2008. A total of 757,079 ports were occupied at the end of 2009 (up 13.9% on the previous year).

The access network continued to be expanded, especially to accommodate the demand for connectivity from new customers in newly built residential, commercial and industrial developments. The access network consisted of metallic cables spanning the whole territory of the country, with the addition of optical cables and radio relay systems. As at the end of 2009, the total length of metallic cables was 303.4 thousand km (up 2.4 thousand km on the previous year). The optical network capacity continued to increase, driven by the growing volume of traffic generated by broadband customers, demand for connectivity from corporate customers and, in selected cases, also by the need to connect newly developed areas. The total length

of optical cables, including those laid in conduit systems reached 31,204 km at the end of the year, compared to 30,785 km in 2008. The total length of optical cables reached 975,802 km (up 29,069 km on the previous year).

Investments in voice technology were of a largely maintenance character in 2009, as the traffic in the voice network was flat and did not call for extra capacity. In addition to two international and six transit exchanges, a total of 138 HOST exchanges and 2,384 Remote Subscriber Units (RSU) were operational in the fixed telephone network at the end of 2009.

As part of the implementation of a regional management model, network sections of Telefónica O2 in the Czech Republic and in Slovakia were joined in June 2009 into one organisation, which allows for better utilisation of resources and knowledge of both divisions, and for the harmonisation of technologies of both countries.