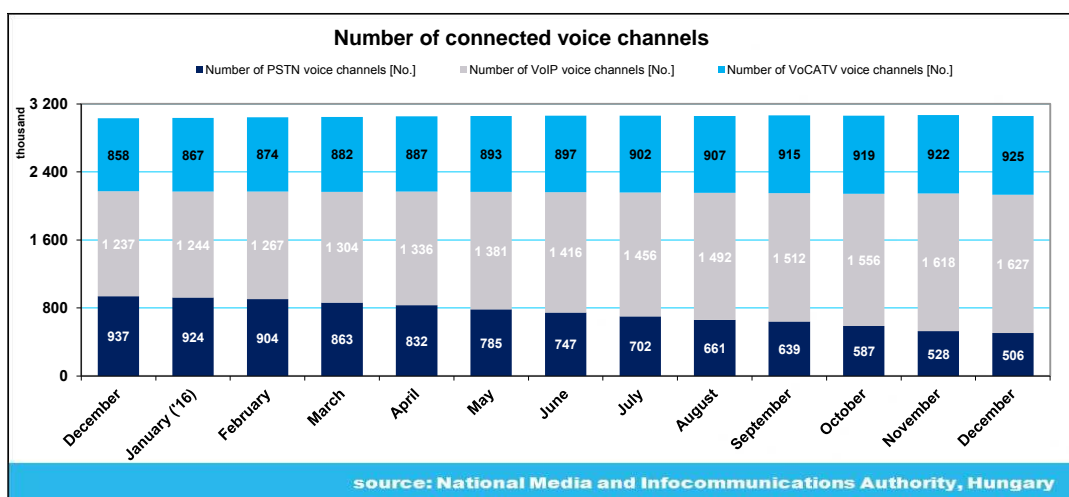


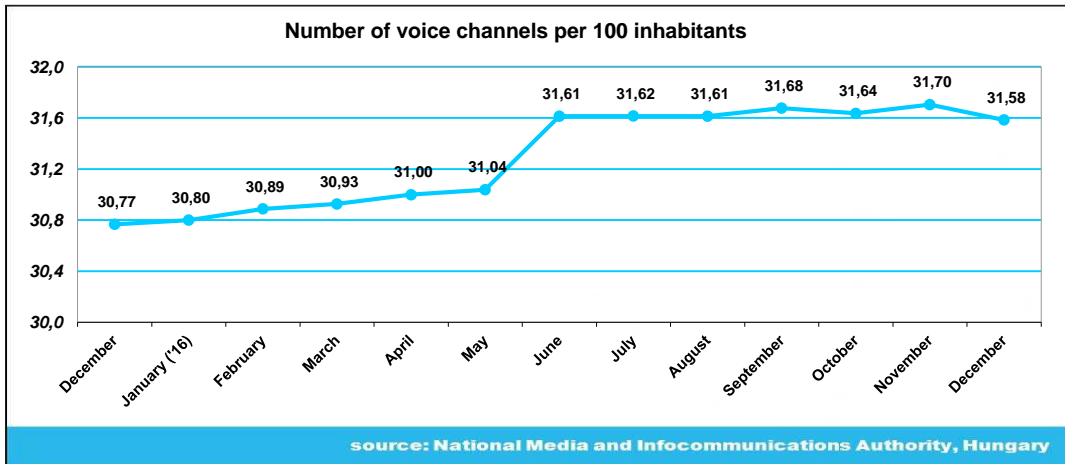
Flash report on landline services for December 2016

Data suppliers: Magyar Telekom Nyrt., Invitel Zrt., Invitech Megoldások Zrt., UPC Magyarország Kft., DIGI Kft., PR-TELEKOM Zrt, Tarr Kft, ViDaNet Zrt, PARISAT Kft

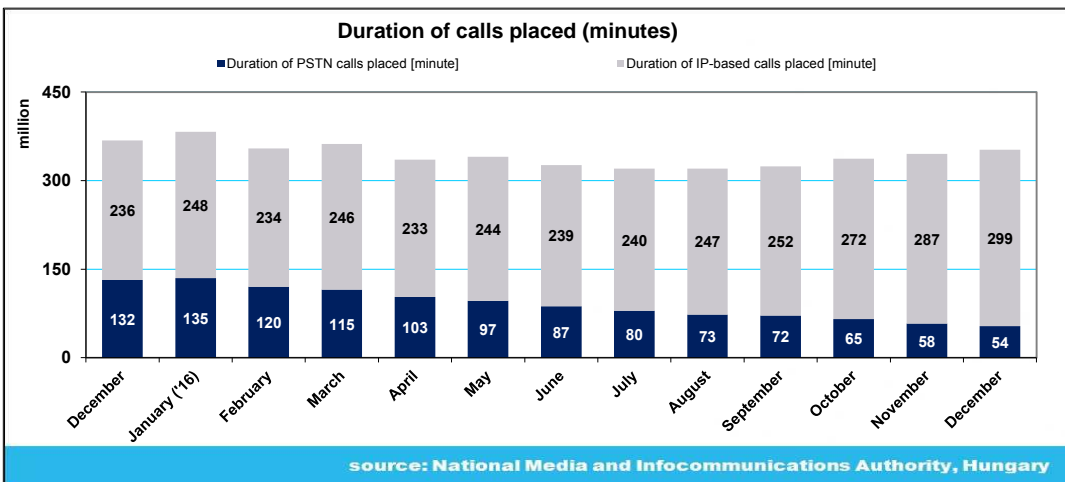
Summary data of landline (fixed) voice services		
Number of switched (PSTN) voice channels [No.]	506 071	Number of voice channels within conventional, twisted copper wire networks
Number of VoIP voice channels [No.]	1 626 606	Number of voice channels within IP-based (e.g.: xDSL, leased line, Ethernet, ATM, fibre-optic) networks
Number of VoCATV voice channels [No.]	924 663	Number of voice channels within cable television networks
Total number of voice channels (est.) [No.]	3 120 000	Includes estimates of PSTN, VoIP and VoCATV voice channels for the total market.
Number of voice channels per 100 inhabitants [No.]	31,58	As per the latest figures made available by the Central Statistical Office (KSH), Hungary has a population of 9,680,016.
Telephone penetration rate of households [%]	61,55%	Percentage refers to the number of voice channels versus number of households. According to the latest figures made available by the (KSH), the number of households is 4,114,669.
Duration of PSTN calls placed [minute]	53 588 288	The duration of calls with carrier selection is also included.
Duration of IP-based calls placed [minute]	298 609 139	Includes the duration of calls placed within VoIP and VoCATV networks.
Duration of calls placed per voice channel [minute]	115,2	Figure shows the total duration of calls placed in the period under review divided by the number of voice channels connected at the end of the period.
Number geographic numbers ported at the end of the month [No.]	846 524	Based on data obtained from the Central Reference Database since 1 January 2004.
Number of broadband Internet subscriptions		
Number of xDSL subscriptions [No.]	770 502	Based on data obtained from the above-mentioned market leader data suppliers, covering almost 98% of all xDSL subscriptions.
Number of subscriptions for broadband via cable [No.]	1 144 863	Based on data obtained from the above-mentioned market leader cable providers, covering 82,8% of all cable modem subscriptions.
Of which: number of broadband subscriptions via Docsis 3.0 [No.]	1 004 439	Number of cable modem subscriptions where the terminal equipment (modem) has been replaced.
Number of broadband subscriptions via FTTx [No.]	517 990	Based on data obtained from the above-mentioned service providers, covering 99% of all FTTx subscriptions.
Total number of fixed-access broadband subscriptions (est.) [No.]	2 687 000	Estimation pertaining to the total market. Includes estimates of xDSL, cable modem and FTTx subscriptions for the total market.



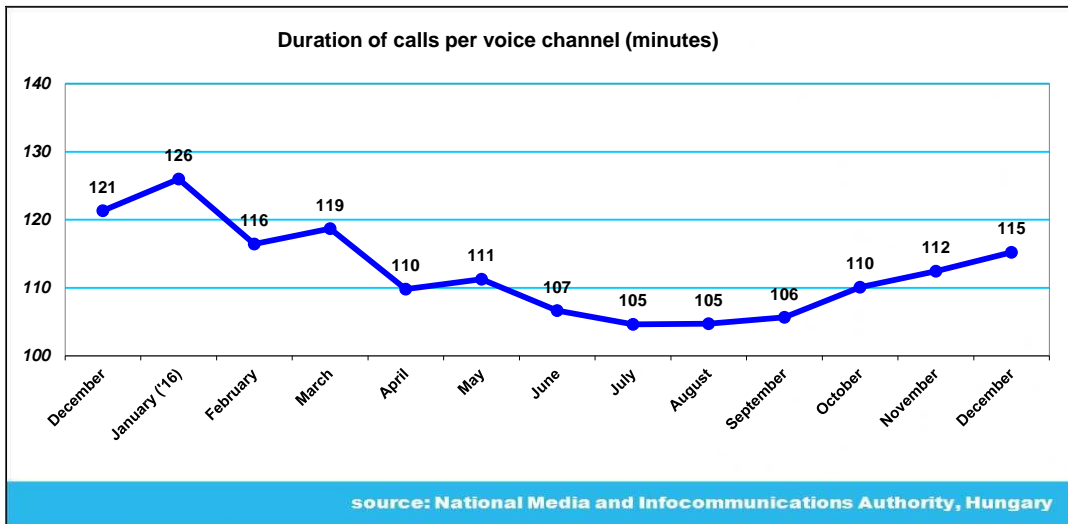
Note: based on data obtained from the above-referenced service providers, covering 98% of the landline voice market. (number of connected voice channels/number of population)*100



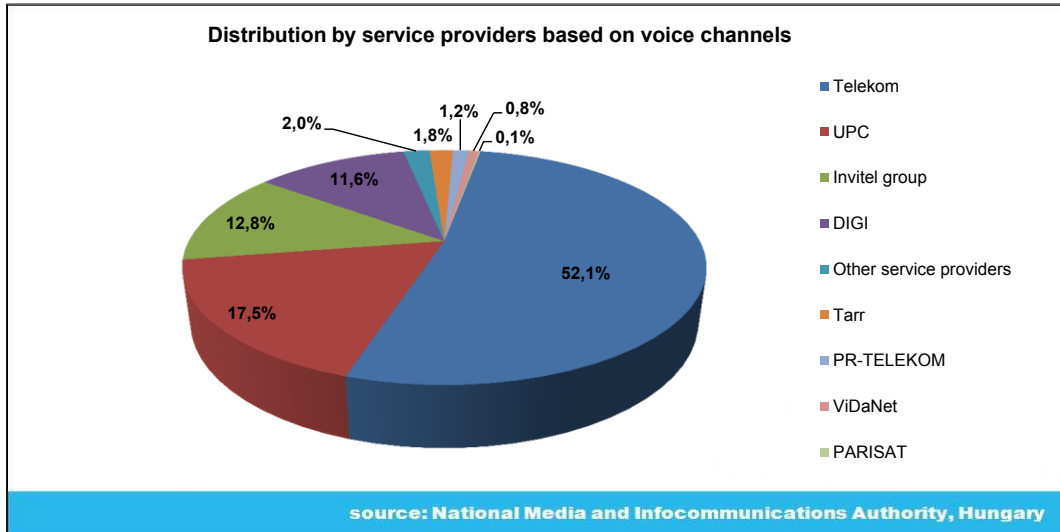
Note: based on data obtained from the above-referenced service providers, covering 98% of the landline voice market.



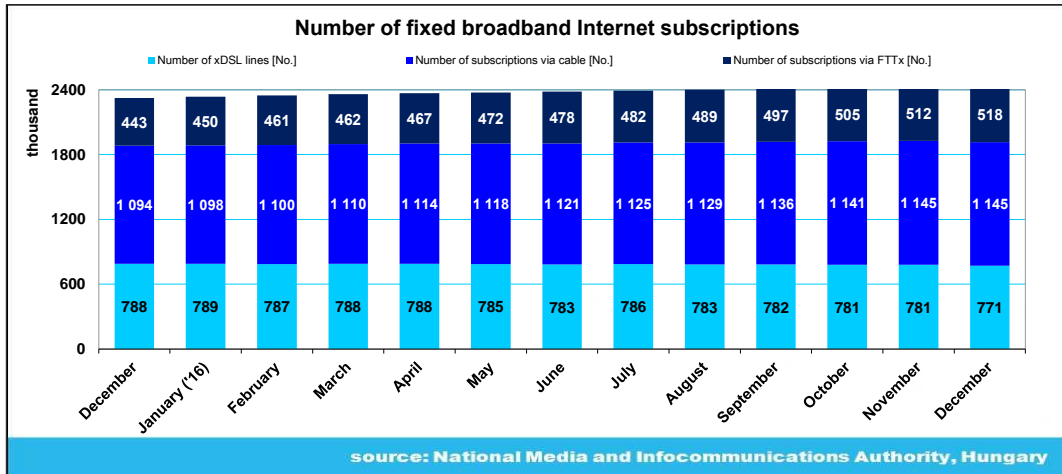
Note: based on data obtained from the above-referenced service providers, covering 98% of the landline voice market.



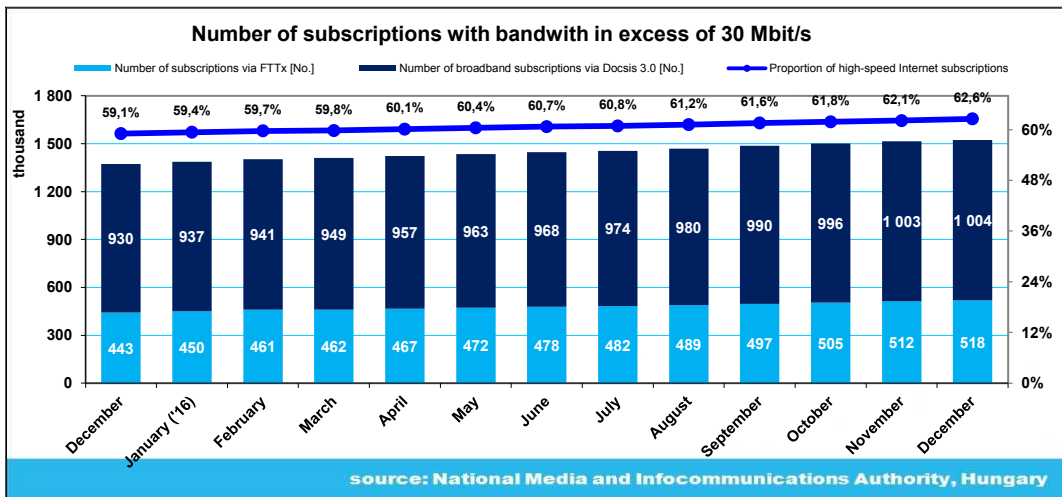
Note: based on data obtained from the above-referenced service providers, covering 98% of the landline voice market. (duration of calls placed / number of connected voice channels)



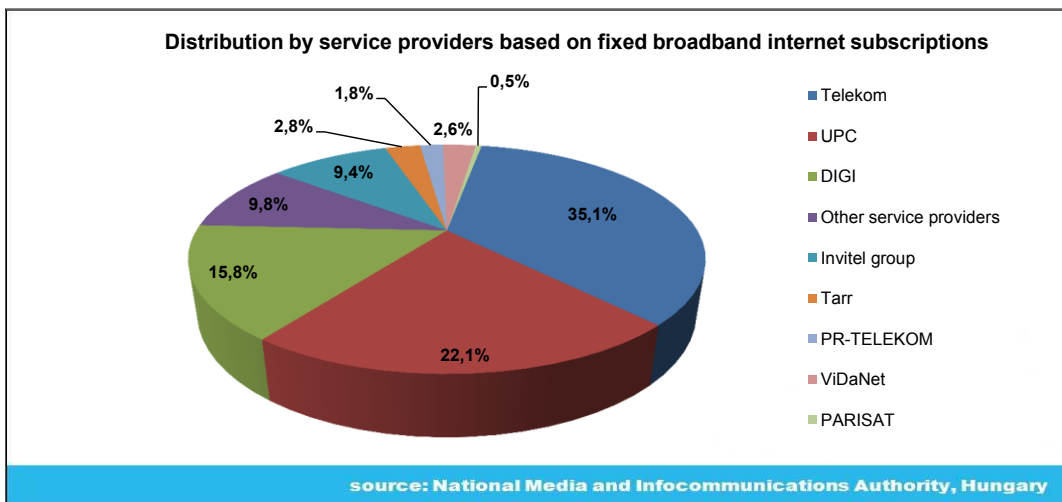
Note: The market shares were defined based on the total market's estimated values and technologically neutrally.



Note: based on data obtained from the above-referenced service providers that cover 92% of the fixed broadband market. Other (i.e. wireless) broadband technologies are excluded.



Note: based on data obtained from the above-referenced service providers that cover 95% of the fixed broadband market. The number of those subscriptions, where the network and the terminal equipment are capable over 30 Mbit/s access, the number of the actual high-speed subscriptions is significantly less than this. There are further more cca. 400 thousand subscriptions on DOCIS 3.0 networks, where in case of the terminal equipment (modem) change above 30 Mbit/s access could be reached.



Note: The market shares were defined based on the total market's estimated values and technologically neutrally.

Definition of terms used in the report:

<p>Number of switched (PSTN) voice channels: The number of connections suitable for voice transmission at the end of the examined period, linking subscriber access points with remote subscriber stages or local exchanges (including lines established by means of radio equipment and copper wire cables and the number of B Channel-specific ISDN main lines, but excluding connections established as part of a location-independent electronic telecommunication service, mobile telephone services, as well as voice transmission via CATV and IP-based networks). Lines used for public payphones are also considered voice channels. [number]</p>
<p>Number of VoIP voice channels: number of voice channels implemented on broadband (e.g.: xDSL, leased line, Ethernet, ATM, fibre-optic) networks. Subscriptions using IP-based networks and possessing geographic numbers as per the Hungarian Plan for National Identifiers should be considered. [number]</p>
<p>Number of VoCATV voice channels: number of voice channels implemented on networks with coaxial subscriber endpoints (cable television networks). [number]</p>
<p>Total number of connected voice channels: aggregate number of PSTN, VoIP, and VoCATV voice channels. [number]</p>
<p>Duration of IP-based calls placed: overall duration of calls placed by subscribers using the service provider's IP technologies (VoIP, VoCATV) in a given month [minutes]</p>
<p>Duration of PSTN calls placed: overall duration of calls placed by subscribers of the service provider in the given month. Traffic generated with carrier selection is also shown here. [minute]</p>
<p>Number of residential voice channels: Based on service provider records, the number of voice channels where the subscriber is a natural person. [number]</p>
<p>Number of customers using carrier selection: Number of active customers making use of carrier preselection and call by call carrier selection. Customers who have used some type of carrier selection minimum once in the given month are to be considered as active ones. [number]</p>
<p>xDSL: Technology applied on local loops, making metallic twisted wire pairs constructed as part of the traditional fixed telephone network suitable for high-speed digital data transmission. In current domestic practices, xDSL practically means ADSL (an acronym for Asymmetric Digital Subscriber Line). [number]</p>
<p>Cable modem: a modem, connected to networks with coaxial subscriber endpoints (coaxial HFC networks), which is able to send and receive digital signals within the CATV network. [number]</p>
<p>Number of broadband Internet subscriptions via Docsis 3.0: number of subscribers in CATV networks operating under the Docsis 3.0 standard. Refers to the number of subscribers where the replacement of terminal equipment (modem) has taken place. [number]</p>
<p>Number of broadband Internet subscriptions via FTTx: refers to the number of subscriptions for broadband via FTTH and FTTB. [number]</p>
<p>Number of broadband Internet subscriptions via FTTH: refers to the number of subscriptions where fibre reaches actual subscriber premises (home/office). [number]</p>
<p>Number of broadband Internet subscriptions via FTTB: refers to the number of subscriptions where fibre reaches the building of the subscriber, inside the building to the subscriber premises (home/office) copper cable forming a structured network. [number]</p>
<p>Geographic numbers: subscriber numbers used for landline telephone services. [number]</p>
<p>Estimate for the entire market: is based on expert estimation that refers to the National Media and Infocommunications Authority's other data collections and market research information concerning the market as a whole. [number]</p>