STATISTICAL REFLECTIONS

14 March 2018

Telecommunications, internet, television services, 4th quarter 2017

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In the 4th quarter of 2017 mobile phone subscription came close to 11.8 million of which the proportion of monthly plan subscriptions continued to increase. More than four fifth of phone conversation time was initiated from mobile phones. Mobile network data traffic exceeded the previous year's data by 82%. By the end of 2017's 4th quarter the number of internet subscriptions increased to almost 9.5 million of which 69% were mobile internet subscriptions. The number of television subscriptions surpassed 3.7 million, of which nearly three quarters consisted of digital subscription packages.

Sales revenue and staff number figures of the information and communication section

According to preliminary data in the 4th quarter of 2017 **sales revenue** of enterprises with 5 or more employees, enlisted in the information and communication section¹, was HUF 928 billion which – at current prices – was 17% more than in 2016's same period. Enterprises in the telecommunications division – carrying a 32% weight in the section – achieved a HUF 298 billion sales revenue, 5.6% higher year on year. The combined sales revenue of all information technology and information service activity oriented enterprises (HUF 403 billion) increased by 14%, publishing activities – having a share of 9.2% of sales revenue – increased by 21%, motion picture, video and television programme production, sound recording and music publishing activities programming and broadcasting activities increased by 64%.

Enterprises enlisted in the information and communication section achieved a 3137 billion HUF sales revenue in 2017, representing 3.8% of the national economy's total sales revenue. Sales revenue of enterprises of the telecommunications division was 1174 billion HUF, which increased by 11% year on year. The realised sales revenue in the information technology and information service division was 1249 billion HUF, 8.5% more than in 2016.

In October – December 2017 **staff number**² 7in the information and communication section was 76 thousand, 2.5% more year on year. In the information technology and information service division (50 thou-

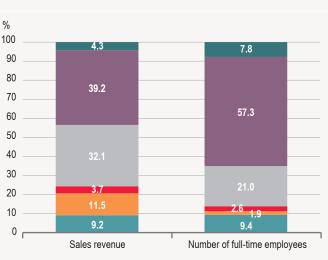
sand staff) worked 2.8% more people, in the telecommunications division (16 thousand staff) worked 5.2% more people than a year earlier.

In 2017 in the information and communication section the number of full-time employees (76 thousand) grew by 2.2%. In the information technology and information service division, considered the largest employer within the section (49 thousand people) employment figures increased by 2.7%, in the telecommunications division by 3.4%.

In the 4th quarter of 2017 monthly **average gross earnings** per fulltime employee in the section (531 thousand HUF) increased by 8.4% in one year and surpassed by 204 thousand HUF the national economy's average. Within it monthly average income in the telecommunications division was 514 thousand HUF, 3.5% higher year on year. Monthly average gross earnings in the publishing division were the lowest (471 thousand HUF) representing 89% of the sector's average.

In 2017 monthly gross earnings in the information and communication section increased by 6.4% year on year, we measured the greatest increase in the publishing division (20%).

Figure 1



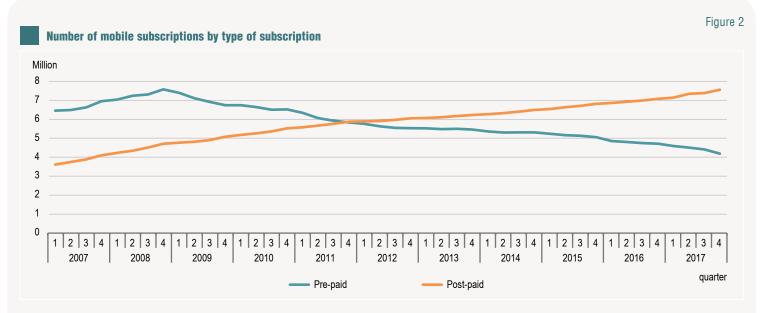
Distribution of sales revenue and staff number figures in the information and communication section by divisions in the 4th quarter of 2017

Publishing activities

- Motion picture, video and television programme production, sound
- recording and music publishing activities
 Programming and broadcasting activities
- Telecommunications
- Computer programming, consultancy and related activities
- Information service activities

¹ According to TEÁOR'08 (NACE Rev 2), information and communication (section J) includes publishing activities (division 58), motion picture, video and television programme production, sound recording and music publishing activities (division 59), programming and broadcasting activities (division 60), telecommunications (division 61), computer programming, consultancy and related activities (division 62) and information service activities (division 63).

² According to data of the Institutional Labour Statistics, full-time employees at enterprises employing at least 5 people.



Telecommunications

At the end of the 4th quarter of 2017 **mobile phone subscription numbers** were 11.8 million, the stock diminished by 32 thousand (0.3%) in one year. Within the total stock monthly subscriptions increased by 475 thousand (6.7%) coming near to 7.6 million. At the beginning of 2017 an official decree³ regarding prepaid subscriptions control came into effect regulating compulsory data reconciliation with subscribers. As a result the number of prepaid subscriptions further decreased (by 507 thousand) – although this did not cause a break in the timeline - their proportion (36%) declined by 4.2 percentage year on year.

The continuous increase of monthly subscriptions is mainly due to the fact that besides new subscribers some prepaid subscription customers are switching to monthly plans at their given service providers. In many cases price per minute for monthly – post-paid type – packages are lower and data traffic is also provided for users.

In the 4th quarter of 2007, 62% of the 11 million mobile phone subscriptions were prepaid. Ever since up until the 4th quarter of 2017 post-paid subscriptions grew by 3.4 million, a quarterly average growth of 1.5% as opposed to prepaid subscriptions. Last time prepaid subscription numbers exceeded the post-paid ones within mobile phone total subscriptions was in the 3rd quarter of 2011, which continually declined since 2008.

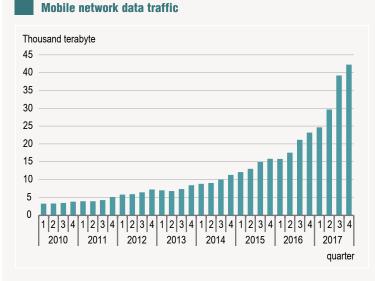
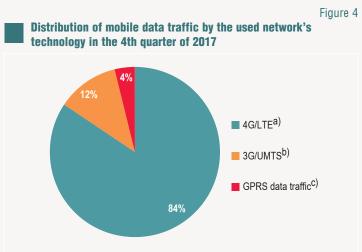


Figure 3

With the spread of combined service packages and monthly subscriptions, mobile data subscription numbers are continuously growing as well. In the 4th quarter of 2017 data traffic (42 thousand terabyte) increased by 82% compared to the previous year. Spread of 4G technology is indicated by the fact that 84% of all data traffic has been realised through the 4G/LTE system⁴.



a) 4G/LTE (Long Term Evolution): fourth generation mobile phone technology.

 b) 3G/UMTS (Universal Mobile Telephone Services): third generation mobile communications, it is a procedure for data transmission through extensive, bidirectional radio communication.

c) GPRS (General Packet Radio Service): packet data transfer.

In 2017 data traffic of mobile networks reached 136 thousand terabyte, surpassing by 75% the previous year's data. The continuous data traffic increase is the result of network infrastructure development and spreading of internet capable mobile technological devices.

In the 4th quarter of 2017 number of sent SMSs increased to 485 million, MMSs to 6.3 million, the former surpassed by 4.5% and the latter by 12% the 2016 4th quarter figures.

In 2017 as a whole the number of SMSs grew by 5.3%, the number of MMSs by 14% compared to the previous year.

In October-December 2017, 1.9 billion calls have been initiated from mobile networks, 1.4% less year on year. Total time spent on mobile calls (5.5 billion minutes) increased by 2.2%. Duration of calls initiated in own network – carrying the largest share of 55% in total calls – decreased by

³ NMHH Decree 1/2017. (I. 11.) modifying NMHH Decree 2/2015. (III. 30.) on the Detailed Rules of Electronic Communications Subscriber Agreements.
 ⁴ 4G/LTE (Long Term Evolution): fourth generation mobile communication technology.

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1.9%. Primarily the scarcely occurring international calls' duration increased – by 50% – partly due to reduced roaming charges.

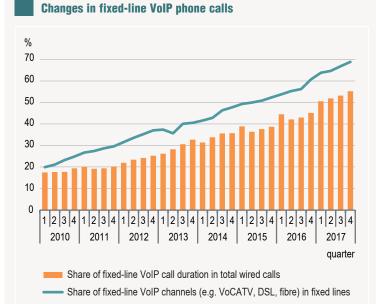
7.9 billion mobile calls have been initiated in 2017, their number decreased by 0.6% compared to 2016. In 2017 duration of calls initiated from mobile networks surpassed 22 billion minutes, a 4.2% increase year on year.

Number of calls per mobile subscription (165 calls) decreased in the 4th quarter of 2017 by 2 compared to the base period. 472 minute conversation time came by one subscription in average, corresponding to a **daily average call length of 5.1 minutes**.

The 3.1 million **fixed main lines**⁵ were by the end of 2017's 4th quarter 1.1% less year on year. VoIP voice channels (cable TV respectively broadband, fixed services) proportion in fixed main lines total was 69%, surpassing by 8 percentage points the 2016 4th quarter data. Number of fixed lines per 100 inhabitants (32 lines) basically remained unchanged.

85% of connected fixed lines were individual, 15% business, 0.6% were public and other main lines $^{6}\!\!.$

Figure 5

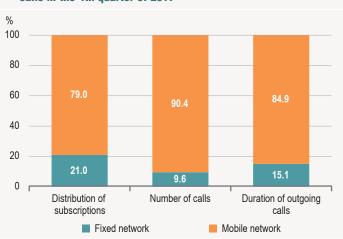


In October-December 2017 calls initiated from fixed main lines were 14% less and their duration was 7.9% shorter than in the 4th quarter of 2016. 71% of fixed main line calls were initiated from individual lines, 28% from business lines. Time spent on fixed line calls was distributed in 88–12% proportion between individual and business calls. Average call times initiated by individual subscribers (5.9 min.) surpassed by 3.9 min. the call times initiated from fixed business lines⁷. Calls per an individual fixed line (55 calls) and per one business line (127 calls) decreased in average by 8 each, compared to the base period.

Proportion of VoIP-type calls (49%) increased by 8.9% among all calls within one year. 55% of conversations' cumulated total time was VoIP-based⁸.

In 2017 – continuing a several years long decline – calls initiated from fixed main lines fell back by 9.6%, their duration declined by 5.1% compared to 2016.

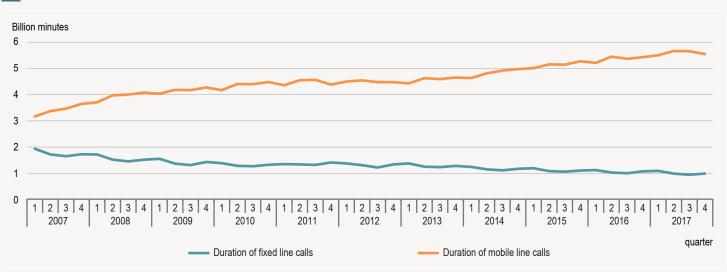
In the 3rd quarter of 2005 duration of mobile calls (2.5 billion min.) surpassed for the first time the duration of fixed line calls (by 166 million min.). In the period between the 4th quarter of 2007 and the 4th quarter of 2017 the duration of calls initiated from mobile phones increased quarterly on average by 1.1% while duration of calls initiated from fixed lines decreased on average by 1.4%.



Distribution of significant data on fixed line and mobile phone calls in the 4th quarter of 2017

Figure 7

Figure 6



Duration of calls initiated

5 The publication represents fixed main lines (including cable television channels and VoIP service providers) and the combined number of ISDN channels.

6.7 Based on data collection No. 1707 – titled Interim data of telecommunication services and carried out by the Ministry of National Development (NFM) – in the National Statistical Data Collection Programme (OSAP).
8 Produces of the VED based fixed cells (arrived eight in the interim interi

⁸ Partly or fully VoIP-based fixed calls (realized via the internet or other, also IP-based data networks).

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Figure 8

Due to spreading of packages often containing free calls within network and significant free time allotments subscribers made fewer fixed line calls but talked longer (4.8 min.) than on mobile (2.9 min). In October-December 2017 the number of phone calls per fixed main line (without internet calls) was 66, 10 calls less year on year. Time spent on calls initiated from fixed main lines represented 15% of total call time.

In the 4th quarter of 2017 – based on preliminary data – net telecommunication sales revenue of the observed telecommunication providers (216 billion HUF) increased by 1.2% year on year. Net sales revenue coming from mobile telecommunication services – representing the largest weight (50%) – stagnated compared to the 4th quarter of 2016.

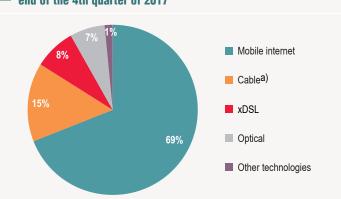
Net telecommunications sales revenue at current prices increased by 1.6% in the whole year of 2017, within it sales revenue of mobile telecommunication services were behind by 1.1% compared to 2016.

Internet

The dynamic expansion of the internet market continued, **subscription** numbers were close to 9.5 million by the end of the 4th quarter of 2017, surpassing by 5.4% the previous year's data. The market concentration is high: more than 96% of subscriptions were provided by 10 providers. 80% of internet subscriptions were individual, 20% were business contracts, the proportion of the former decreased by 1 percentage point, and the latter increased in the same proportion year on year.

The 2 million internet-subscriptions from the end of the 1st quarter of 2008 increased by the end of the 4th quarter of 2017 by 7.5 million, meaning a quarterly 4.1% growth on average. Within it the number of mobile internet subscriptions grew on a larger scale, quarterly by 7.4% on average, in consequence from the 1st quarter of 2012 these represented the larger part of the internet subscriptions.

The providers' rapid adaptation to technological changes, the mobile phones' spreading and the continuous price competition stands behind the dynamic growth going on for years.

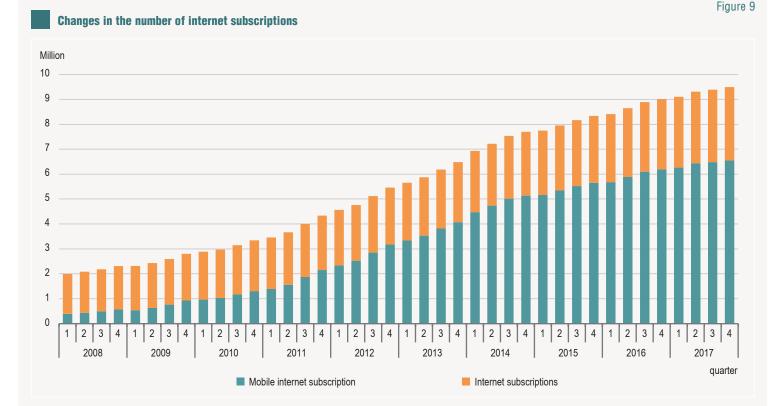


a) Modems fitted to the cable television network are suitable for starting and receiving digital signals.

The wireless segment grew by 5.7% at the end of the 4th quarter of 2017 year on year, mainly as a result of the 5.7% increase of the more and more affordable mobile internet subscriptions. 69% of total internet subscriptions were represented by mobile internet.

At the end of the 4th quarter of 2017 fixed internet subscriptions stock (2.8 million) exceeded by 4.7% the base period's data. Within it the most significant technology, – carrying a 50% proportion – are cable network subscriptions, their number increased by 4.0%, optical network subscriptions grew by 19%, while xDSL subscriptions lessened by 3.4%. Within internet subscriptions the joint proportion of xDSL, optical, cable network subscriptions (29%) remained unchanged in one year.

At the end of the 4th quarter of 2017 download traffic (581 thousand terabyte) and upload traffic (248 thousand terabyte) increased by 29%,



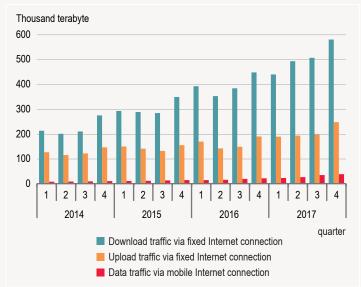
Distribution of internet subscriptions by type of technology at the end of the 4th quarter of 2017

Figure 11

respectively 30%, while mobile internet traffic (39 thousand terabyte) increased by 72% in one year.

In the whole year of 2017 mobile internet traffic surpassed by 68% the data of 2016.





* Based on data collection No. 1994 – titled Interim data of internet and television services and carried out by the Ministry of National Development (NFM) – in the National Statistical Data Collection Programme (OSAP).

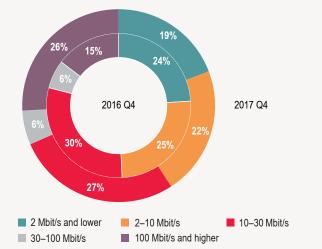
At the end of 2017's 4th quarter 19% of fixed main line subscriptions were in the under 2 Mbit/s guaranteed bandwidth segment, 28% were in the 10 and 30 Mbit/s guaranteed bandwidth segment⁹. The exceptionally high speed guaranteeing segments (30 Mbit/s at least) contained 32% of subscriptions.

In 2017 a qualitative development occurred in the field of fixed internet: subscriptions moved by 12 percentage points toward the exceptionally high speed offering segments.



Changes in net sales revenues from internet subscriptions

Distribution of fixed internet subscriptions by guaranteed bandwidth



In the 4th quarter of 2017 internet services net **sales revenue** was 58 billion HUF, 15% more at current prices year on year. The change in sales revenue significantly surpassed the subscription number increase. 46% of internet services sales revenue came from mobile internet subscriptions, which exceeded by 33% the October-December 2016 data. Out of internet subscriptions net sales revenue the broadband, fixed internet services (cable tv, optical and xDSL subscriptions combined) represented a 47% proportion (27 billion HUF), 4.4 percentage points less year on year.

In the 1st quarter of 2008 a 34 billion HUF net sales revenue originated from internet subscriptions, which increased by the 4th quarter of 2017 by 24 billion HUF, quarterly by 1.4% on average. Within it the smaller proportion carrying mobile internet access sales revenue grew on a quarterly average by 5.4%.

In the whole of 2017 the 221 billion HUF net sales revenue originating from internet services increased on current prices by 13% year on year. Sales revenue from mobile internet access surpassed on current prices by 28% the 2016 data.

Figure 12

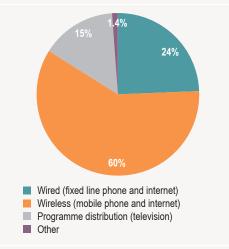
⁹ Based on data collection No. 1994 – titled Interim data of internet and television services and carried out by the Ministry of National Development (NFM) – in the National Statistical Data Collection Programme (OSAP).

Television services

Television **subscriptions**¹⁰ number exceeded 3.7 million at the end of the 4th quarter of 2017, out of which 74% were digital packages. More than two thirds of the packages – 2.5 million subscriptions – reached the customers by fixed line signal transmission network, their number increased by 2.8% year on year. Out of this the proportion connected to cable tv network (HFC) was 71%, while the ones connected to IPTV transmission capable network represented 18%. The number of subscriptions using broadcast signal transmission technology was 1.2 million.

Figure 13

Distribution of net sales revenues of the ten largest companies in the telecommunication section from telecommunication services, 4th quarter of 2017*



* Based on data collection No. 1957 – titled Data related to the financial management of organizations carrying out communication activities and carried out by the Ministry of National Development (NFM) – in the National Statistical Data Collection Program (OSAP).

At the end of December 2017, 52% (1.9 million) of television services subscriptions were triple-play subscriptions (containing tv, fixed line voice as well as internet services) their number increased by 9.8% compared to the previous year. The significant 31% proportion carrying single-play

(containing television services only) subscriptions came close to 1.2 million. Dual-play subscriptions (tv and fixed line voice services respectively tv and internet services combined), represented 17% of total subscriptions, their number decreased by 5.6% in one year.

In October-December 2017 television transmission time (10 million hours) increasing by 6.4% year on year.

In the whole of 2017 television transmission time exceeded 42 million hours, increasing by 3.1% compared to the previous year.

In October-December 2017 total net sales revenue coming from telecommunication activities of the 10 largest and determinant service providers working in the telecommunications division increased on current price by 1.3% year on year. This consisted of wireless (mobile phone and internet) services in 60%, further 24% of fixed telecommunications (phone and internet), and 15% of broadcasting (television) services.

Methodological notes

Midyear data cannot be considered final, these can change - due to quarterly corrections - during the year. In the Statistical Classification of Economic Activities in the European Community (abbreviation in Hungarian: TEÁOR'08; in English: NACE Rev.2) internet service doesn't appear as individual activity however it has to be reported. This is the reason why the basis of our list of respondents is made up by the register of telecommunication service providers published on the National Media and Infocommunications Authority's homepage. Reference year's respondents are assigned according to September previous year's state of the register. We used unrounded values for the calculation of dynamic relative numbers. Sum of partial data may differ from total amounts due to rounding. Data referring to fixed telecommunications slightly differ from each other (under 1.0%) as they come from different sources (OSAP 1639 *Telecommunications* and broadcasting performances, OSAP NFM 1707 Midyear data of telecommunication activities). Comparability of 2014 and 2015 data originating from OSAP 1639 Telecommunications and broadcasting performances, OSAP NFM 1707 Midyear data of telecommunication activities is limited due to the enlargement of respondents' circle. Respondents included in the OSAP NFM 1994 Midyear data of internet and television services data collection represent approximately a 99% coverage in the television services market. Comparability of 2015's data coming from television services database is limited as a result of the respondents' circle enlargement.

¹⁰ Based on data collection No. 1994 – titled Interim data of internet and television services and carried out by the Ministry of National Development (NFM) – in the National Statistical Data Collection Programme (OSAP).

Further information, data (links): <u>Tables</u> <u>Tables (STADAT)</u> <u>Methodology</u>

> Contact details: <u>kommunikacio@ksh.hu</u> <u>Contact us!</u> Telephone: +36 1 345 6789 <u>www.ksh.hu</u>

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