I. STATE, DEVELOPMENT AND PROSPECTS OF THE ELECTRONIC COMMUNICATIONS MARKET

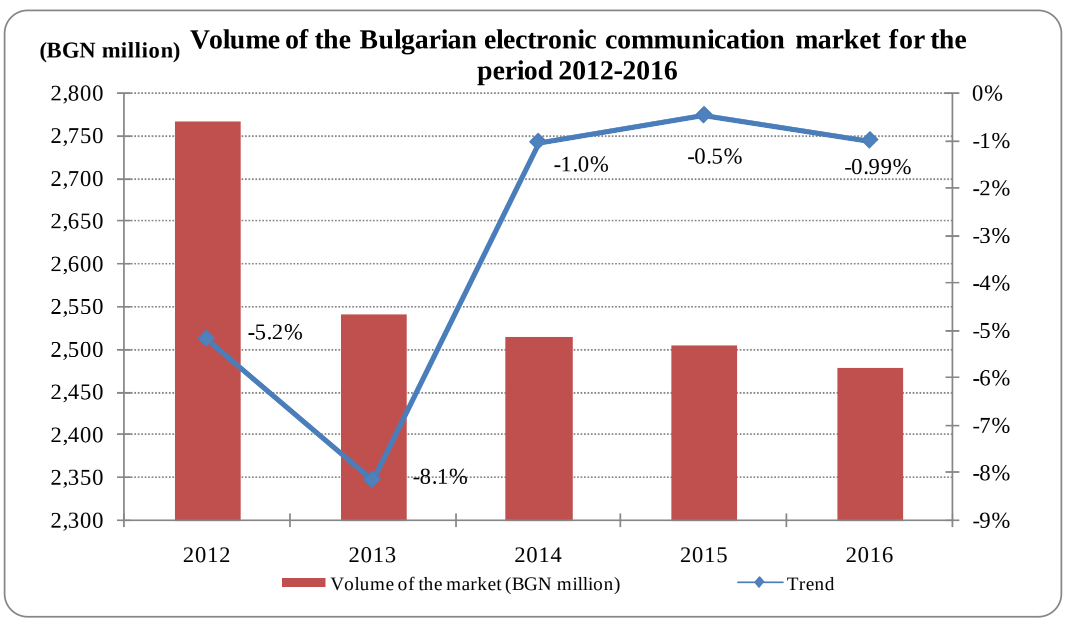
1. Volume and structure of the Bulgarian electronic communications market

1.1. Market volume

According to the data from the CRC register, as of 31.12.2016, 1134 undertakings were registered at CRC with the intention to provide public electronic communications. Pursuant to Art. 5 of the General requirements for the provision of public electronic communications, information from total 1040[1] (91.6%) undertakings has been received.

In 2016, 856 undertakings performed their activity, including 21 undertakings which as of 31.12.2016 suspended their activity on providing public electronic communications and have been removed from the CRC register. In comparison to the previous reporting period, in 2016 there was a decrease both in the number of undertakings registered at CRC for providing public electronic communications (by 2.4%) and in the number of undertakings with real activity during the year (decrease by 4.04%). This reflected on the total market volume, which amounted to BGN 2.480 billion[2] in 2016, decreasing by 0.99% as compared to 2015.

Fig. 1 presents the dynamics in the electronic communications market volume in the country for the period 2012 – 2016.



***Note:** The data had been updated for 2015.*

***Source**:* Data submitted to CRC

Fig. 1

[1]The data is based on the information submitted to CRC as of 12.05.2017
[2] Including incomes from undertakings, discontinued operations in 2016

The decrease in the total volume of the electronic communications market reflects on its share in the total GDP[3] of Bulgaria reporting a decrease by 0.2 percentage points (2.7% for 2016 compared to 2.9% for 2015).

1.2. Market structure

Information on revenue from the provision of public electronic communications in Bulgaria by segments determined according to the type of services for the period 2014-2016, is provided in Table 1.

Table 1

Structure of the public electronic communications market in Bulgaria by type of the provided services for the period 2014 – 2016

Public electronic communications services	Year		
	2014	2015 [1]	2016
	(BGN million)		
1. Voice telephony services	1 373,179	1 131,441	886,146
1.1. Fixed voice service through geographic number from the NNP, Carrier Selection service and public payphones	203,340	174,305	155,866
1.2. Mobile voice service through numbers from the NNP	1 157,208	942,830	718,521
1.3. Other voice servises[2]	12,631	14,305	11,759
2. Leased lines services	34,830	31,896	26,597
3. Data transfer and/or Internet access services	369,048	403,357	472,308
4. Transmission and/or distribution of radio and TV programmes services	259,575	244,415	254,535
5. Bundled services	424,703	643,483	784,505
6. Other services[3]	54,971	50,121	55,756
TOTAL	**2 516,307**	**2 504,713**	**2 479,847**

[1] The data for 2015 has been updated

[2] Includes revenue from carrying out VoIP (voice IP service where no NNP numbers (geographic or non-geographic) are used, the service quality is not quarantied and the user must use/have Internet assess through the respective device – computer/telephone)

[3]The segment includes revenues from the provision of duct network access, satellite systems access service, shared use including provision of towers, masts, dark fibre, co-location services other than those provided for interconnection and other services

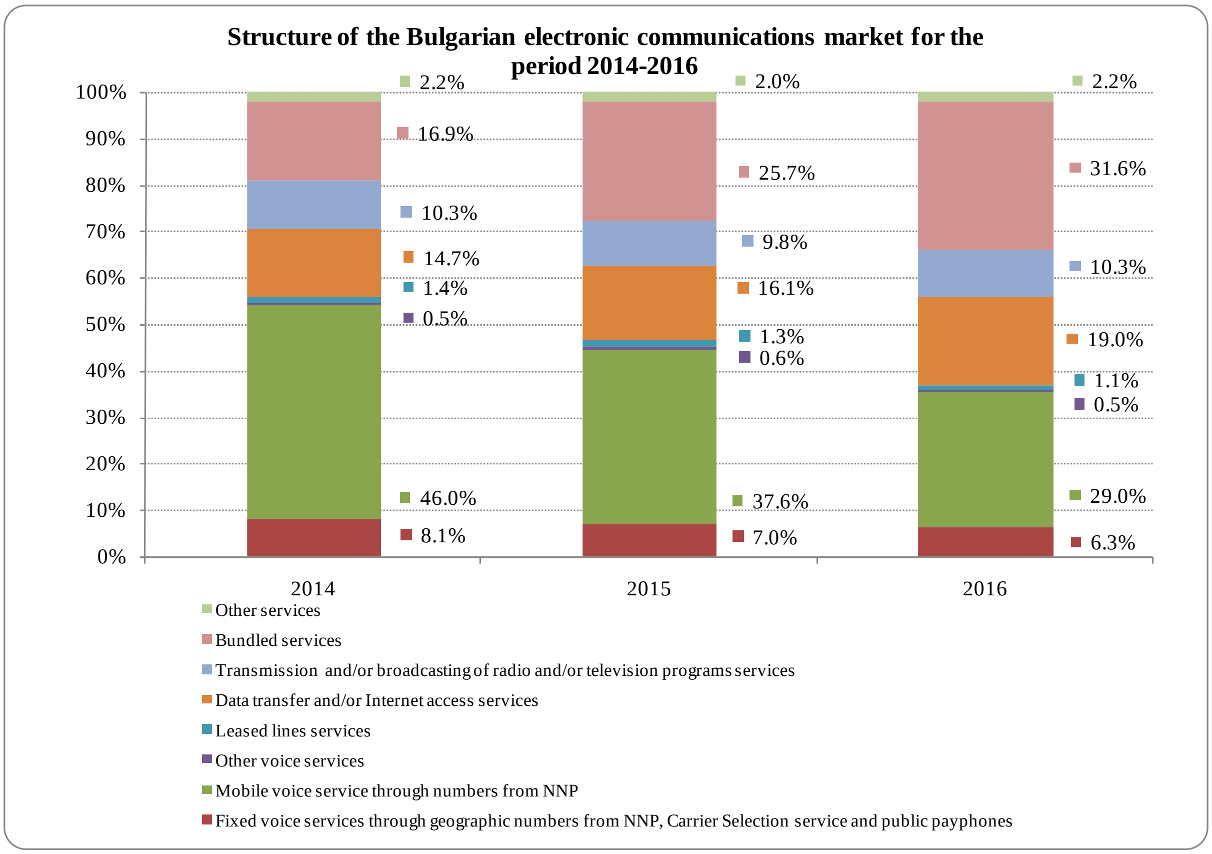
Source: Data submitted to CRC

In 2016, the total volume of the electronic communications market[4] in Bulgaria was determined mainly by revenue from voice services, bundled services and data transfer and/or Internet access services.

[3]Calculated at current prices. Source:NSI: http://www.nsi.bg/bg/content/2206/%D0%B1%D0%B2%D0%BF-%D0%BF%D1%80%D0%BE%D0%B8%D0%B7%D0%B2%D0%BE%D0%B4%D1%81%D1%82%D0%B2%D0%B5%D0%BD-%D0%BC%D0%B5%D1%82%D0%BE%D0%B4-%D0%BD%D0%B0%D1%86%D0%B8%D0%BE%D0%BD%D0%B0%D0%BB%D0%BD%D0%BE-%D0%BD%D0%B8%D0%B2%D0%BE

The share of voice telephony services (fixed, mobile and other voice services) in the total volume of the public electronic communications in 2016 reported decrease by 9.4 percentage points as compared to 2015. Despite that the above services were again with the highest relative share – 35.7%. The share of revenue from bundled services provision in the total market volume follows this of the voice telephony services increasing by 5.9 percentage points as compared to 2015 and reaches 31.6%. The services for data transfer and/or Internet access are on the third place and represent 19% of the total market volume. The relative share of revenue from this market segment in the market structure increased by 2.9 percentage points as compared to 2015.

The change in the relative shares of the revenue from electronic communications services in the structure of the electronic communications market for the period 2014-2016 is shown on Figure 2.



Source: Data submitted to CRC

Fig. 2

As compared to the previous year, in 2016 four market segments registered a growth, namely:

[4] Formed by revenues from services provided standalone and by revenues from bundled services (installation fees and monthly subscription)

- ✓ ”Data transfer and/or Internet access“ - 17.1%. This growth is mainly due to “the provision of Internet access” service, the revenue of which increased by 19.7%, particularly, the growth of the revenue from provision of mobile Internet;

- ✓ In 2016 “Transmission and/or distribution of radio and TV programmes services” registered a growth by 4.1%, which was a result of the considerable increase in the revenue (over 6 times) from the provision of the retail IPTV services;

- ✓ ”Bundled services” increased by 21.9%. It was due to both the considerable increase in the revenue from quadruple-play service (by more than 4 times as compared to 2015), and increase in (by 24.6% as compared to 2015) the revenue from double-play service;

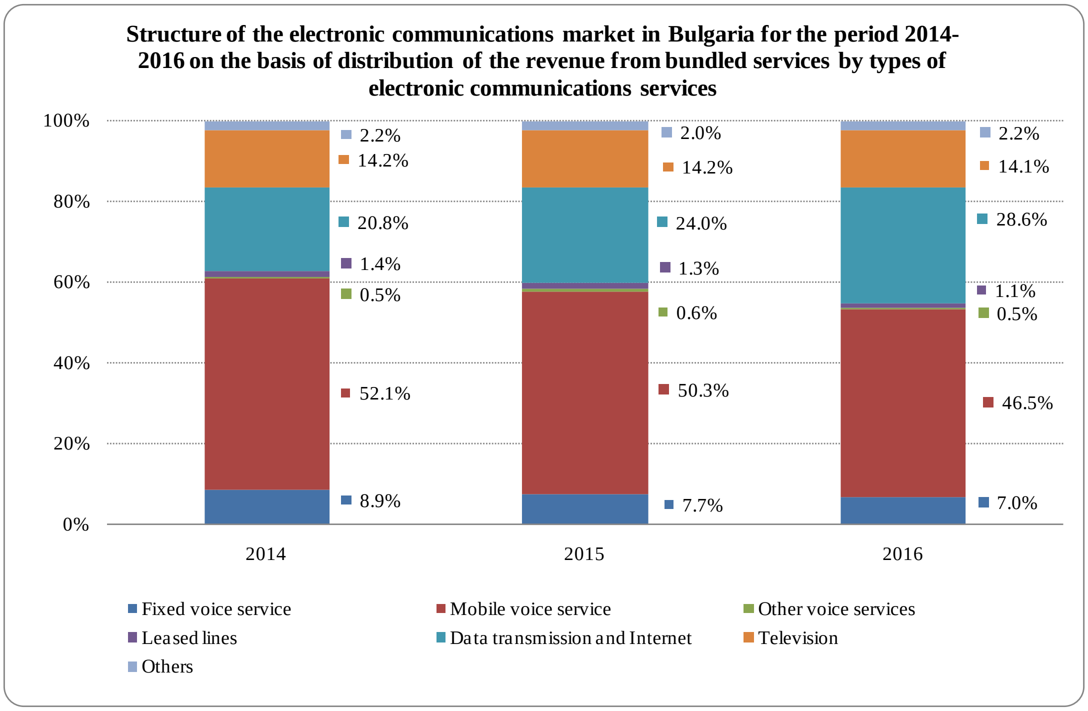
- ✓ ”Other services” registered a growth of 11.2%. The main increase here was from”the provision of access to duct network“service which revenue increased by 21.2% as compared to 2015. The revenue from other services included in this segment also registered a growth, respectively, by 5.6% for the revenue from the service ”access to satellite systems” and by 3.8% for revenue from other forms of sharing, including the provision of towers, masts, dark fibres, etc.

The following segments reported a considerable drop in their volume during the reported period:

- ✓ For a consecutive year ”Voice telephony service” segment reported a drop by 21.7% in absolute terms, as the most considerable decrease by 23.8% was for the mobile voice service;

- ✓ In 2016,”Leased lines services”continued to record a decrease which amounted to 16.6%, mainly due to a drop in the revenue from retail leased lines.

In the recent years the influence of the bundled services and their share in the total market volume has been increased. At the same time, the use of the standalone services decreases. With a view to this fact, in order to be able to show the revenue generated by the different types of electronic communications services, more specifically, Fig. 3 represents the distribution of the revenue from bundled services by types of electronic communications services.



Source: Data submitted to CRC

Fig. 3

The data shows that in the case of such distribution, the segment ”Voice telephony services” (fixed voice service, mobile voice service and other voice services) reports a drop by 7.6 percentage points in total (for the period 2014 – 2016), although it occupies the first share place in the total market volume. The segment”Data transmission and Internet“takes the second place in importance, its share increases by 7.8 percentage points for the three-year period. The main reason for the increase is the growth in revenues from mobile access to Internet, which has increased more than 3 times for the period 2014-2016. The third place in that distribution is for the segment “Transmission and/or broadcasting of radio and/or television programs services”, which revenue in 2016 accounts 14.1% of the total market volume.

Investments

In 2016, 452 undertakings (457 in 2015) invested in building and maintenance of public electronic networks BGN 479 million out of the planned BGN 503 million in 2015, which shows that the investments planned by the undertakings were realized at 95%.

In 2016, BGN 149 million were invested in fixed networks for provision of electronic communication services, as BGN 56 million of them (BGN 4 million more than in 2015) were invested in next generation access networks (NGA). In 2016 the number of undertakings, realized investments in next generation access networks increased by 80% as compared to 2015 (175 undertakings in 2016 in comparison to 97 undertakings in 2015). This has had an impact on the growth of the share of NGA network investments in the total investment volume, which was 11.7% in 2016 compared to 9.9% in 2015.

In 2016 the investments in mobile networks were 47.6% of the total investments of the undertakings, which reported a growth of 2.6 percentage points for one-year period. In 2017 the operators plan to invest in their mobile networks BGN 198 million.

2. Voice telephony services

In 2016, the total volume of the revenue earned from the services included in the Voice telephony services segment amounted to BGN 886.1 million, as a drop by 21.7% was reported as compared to the previous year. For another year, a steady downward trend in the volume of the revenue from voice telephony services provided as standalone non-bundled services is observed.

In the scope of the Voice telephony services segment the following services are included: fixed telephony service through geographic numbers from the National Numbering Plan (NNP), access to public telephony service through Carrier Selection service, telephony services via public payphones, mobile voice service through numbers from the NNP (including Short Message Service (SMS) and Multimedia Messaging Service (MMS)) and other voice services. Revenue from other voice services position is gained from the provision of VoIP[5], from the provision of voice service through commercial representation, from web-based incoming voice services, etc.

Table 2 presents summarised information on the segment under review in 2016, namely: the number of undertakings providing services in this market segment, number of their subscribers/lines using voice telephony services, as well as the revenue from the services provided.

Table 2

Number of undertakings, subscribers/lines and revenue by type of voice telephony services provided in 2016

Name of service	Number of undertakings providing the service as of 31.12.2016	Number of subscribers/lines as of 31.12.2016		Revenue (in BGN million excl.VAT)[2]
		Total[1]	Including bundled service subscribers	
1. Fixed voice service	///	///	///	**155,866**
1.1. Fixed voice service through numbers from the NNP and through Carrier Selection service	26	1 435 327*	547 701	155,117
1.2. Telephony service through public payphones	3	7 593**	///	0,749
2. Mobile voice service through numbers from the NNP	4	8 973 869	4 166 966	**718,521**
3. Other voice services	29	///	///	**11,759**
Total		///	///	**886,146**

[1] Including bundled service subscribers
[2] Excluding revenue from bundled service
*Number of lines of fixed voice telephony service subscribers
**Number of public payphones/telephone booths
Note: The symbol /// used in this table and in the document means that the information is confidential or not applicable to the indicated parameter

Source: Data submitted to CRC

[5]Voice IP service where no NNP numbers are used, the quality of service is not guaranteed and the user must use/have Internet access through the respective device – computer/telephone.

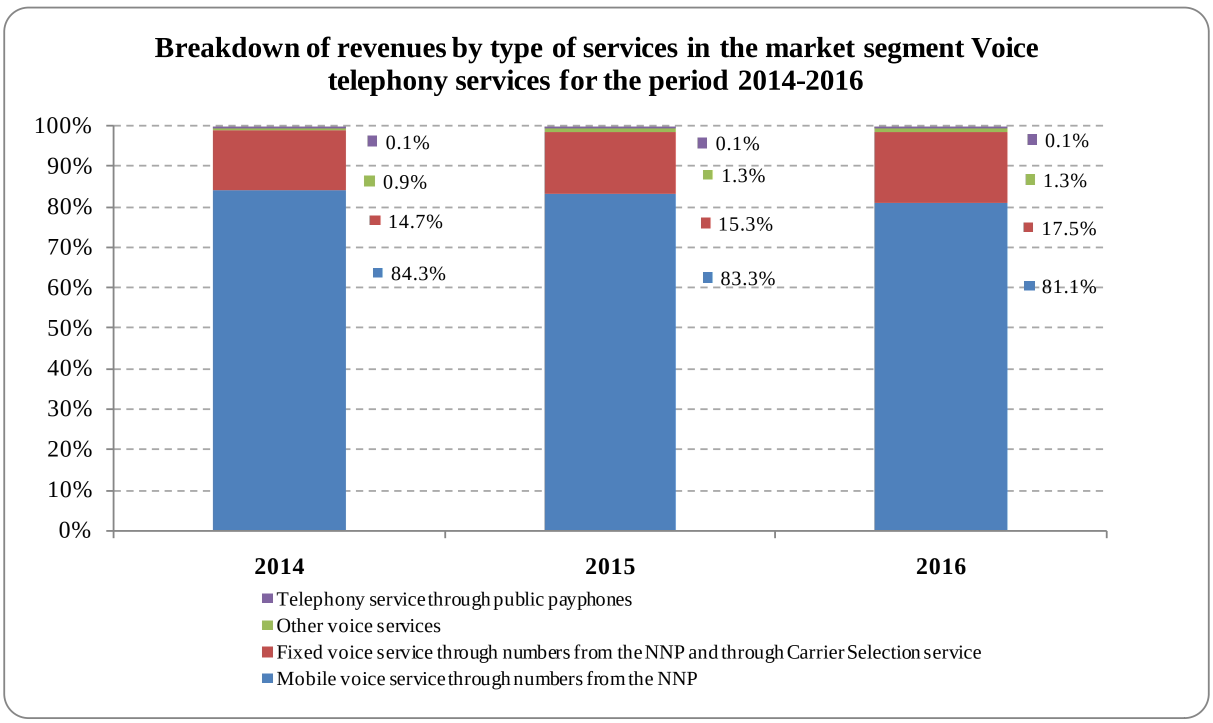
In 2016, the total number of undertakings declared activity on providing fixed telephony service did not changed as compared to 2015 and was 26. The number of the undertakings whose services are part of the group “Mobile voice service through numbers from the NNP” remains also unchanged.

The number of undertakings providing telephone service through public payphones/telephone booths and other voice services reported decrease as follows:

- the number of undertakings providing telephone service through public payphones/telephone booths reduced by 2 as compared to 2015 and their current number is 3, including the “Bulgarian Telecommunications Company” EAD (BTC);
- the number of undertakings providing the services included in the group”Other voice services” reduced to 29 compared to 34 active undertakings in the previous year.

In 2016, drop in the revenue from all services included in the”Voice telephony services” segment was observed, as the most considerable decrease was reported for the volume of revenue from the mobile telephony service – 23.8%. In the revenue from the Fixed telephony service through numbers from the NNP and Carrier Selection service the decrease was 10.6%.

Fig. 4 shows the distribution of revenue from the different services in the segment volume for the period 2014 – 2016.



Source: Data submitted to CRC

Fig. 4

In 2016, the breakdown of revenue by types of services in the market segment Voice telephony services did not change. The revenue from the Mobile telephony service hold the highest share (81.1%) in the segment, followed by the revenue from the Fixed voice service through numbers from the NNP and through Carrier Selection service (17.5%). For yet another year the share from the revenue from public payphones remains unchanged (0.1%), the share of the revenue from provision of other telephony services did not changed also (1.3%). As a result, the reduction by 2.2 percentage points in the share of the revenue from the Mobile telephony service leads to the respective increase in the share of the revenue from the Fixed voice service through numbers from the NNP and through Carrier Selection service.

Data for Bundled services shows that the reduction in the number of the subscribers of a standalone mobile telephone service is at the expense of the growth of bundled services subscribers, while the reduction in the number of the fixed telephony lines is both general and regarding bundled services.

2.1. Fixed voice telephony services

Market players

At the end of 2016 the total number of the undertakings authorised by CRC to provide access to Fixed telephony service through geographic numbers and access to public telephony service through Carrier Selection service was 28. Nine undertakings which had declared their intention to provide public electronic communications by resale of Fixed telephony service through secondary submitted numbers were registered. One of these undertakings – Comtech Bulgaria EOOD declared activity during the year.

Twenty-three undertakings declared an activity on provision of access of Fixed telephony service to end users, as two of them started the provision of the service in 2016 (Telekabel AD – through individually assigned scarce resource – geographic numbers and Comtech EOOD – through secondary submitted numbers). Two of these 23 undertakings which provided during the year access to Fixed telephony service with geographic numbers, also provided access to public telephony service through Carrier Selection service (Gold Telecom Bulgaria AD and East Telecommunication Company AD).

Three of the authorised undertakings provided only wholesale services and generated revenue from wholesale services (transit and access to the interconnection services), related to the provision of Fixed telephony service. As a result, the number of the active in 2016 undertakings on the market of Fixed telephony service was 26.

Development of the Fixed voice telephony service segment

In 2016, there was no change in the development trend of the Fixed telephony service segment. Declining consumer interest in the Fixed telephony service resulted in decrease of consumption, whereat this market segment was characterized by decline in the values of all key parameters as follows:

- Decline in the total number of the fixed telephony lines (including the number of subscribers of Carrier Selection service), caused by a decrease in the consumption of the service;
- Decline in the total volume of revenue from provision of Fixed telephony service[6], due to the reduced consumption of the service, the inclusion of a significant amount of telephone traffic (number of minutes) in the end-users' monthly subscriptions and also to the

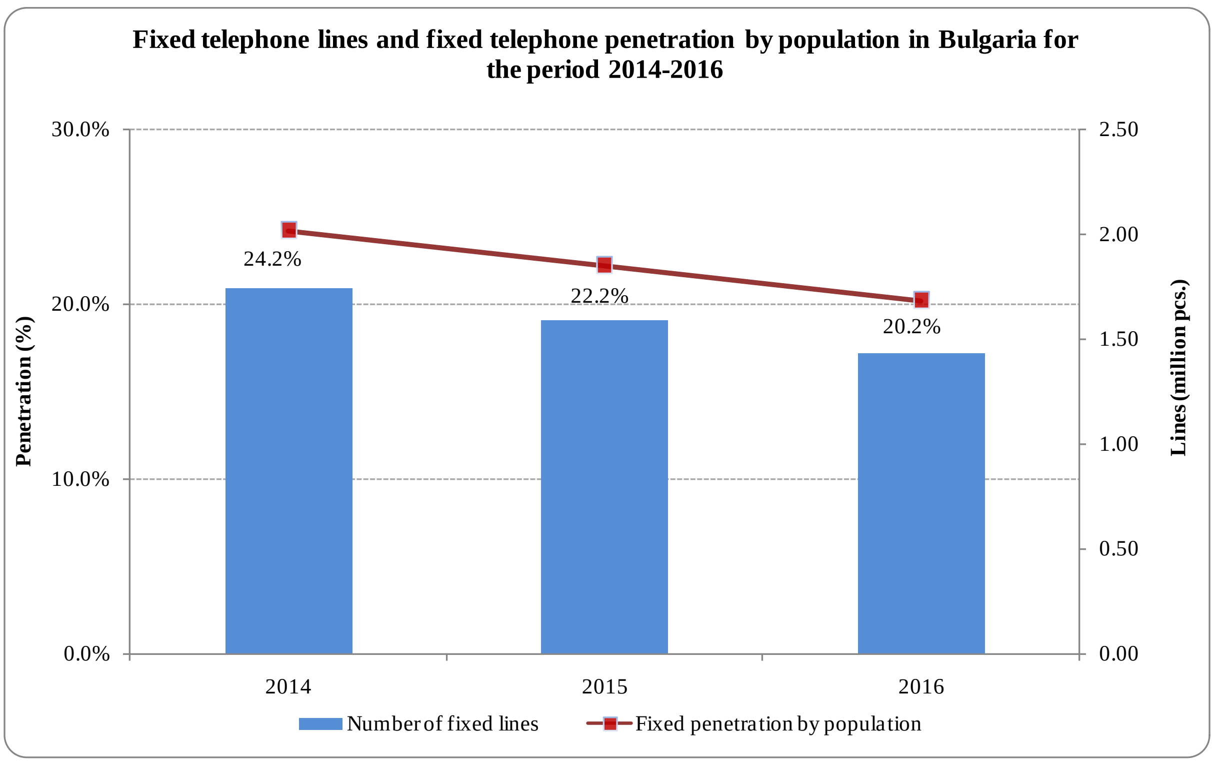
[6]Excluding revenue from installation fees and monthly subscriptions for bundled services with fixed telephony service included.

decrease in the revenue from access to public telephony services through Carrier Selection service and access to public telephony services through public payphones and telephone booths;

- Decline in the volume of the outgoing traffic (volume of generated minutes) originated by subscribers[7] from telephone calls including the Carrier Selection service.

Telephone lines of fixed telephony service subscribers

The information submitted by the undertakings related to their activity on provision of end users' access to the fixed telephony service in 2016 indicates that for yet another year there was a decrease in the number of fixed telephone lines. In 2016 the decline was by 9.6% as compared to 2015, which is 0.6 percentage points more than the decline in 2015 compared to 2014 (9.0%). It is mainly due to decrease in the number of fixed telephone lines of the incumbent by 12.2%. The alternative undertakings also reported a decline in the number of fixed telephone lines by 5.1%, compared to 2.4% decrease in the previous year. The market share of the incumbent, calculated on the basis of the number of fixed telephone lines at the end of 2016 amounted to 61.9%, which is a decrease of 1.8 percentage points as compared to the previous year. Fig. 5 presents information on the variation in the number of the fixed telephone lines and the fixed telephone penetration by population for a three-year period.



Source: Data submitted to CRC

Fig. 5

[7]Including the traffic originated by subscribers of fixed telephony service, including Carrier Selection service, as well as the voice traffic from public payphones.

As a result of the decline in the total number of fixed telephone lines, the value of the fixed penetration by population indicator also decreased in 2016 and reached 20.2%[8].

In the Carrier Selection service a decrease was traditionally reported in the number of the subscribers, as well as a considerable cut down in the consumption of the service. As of 31.12.2016 the share of the subscribers using the service was only 0.001% of the total number of the subscribers of fixed telephony service[9].

Consumption (traffic) of fixed telephony service

The annual decrease in the number of fixed telephony service subscribers as expected resulted in decrease in the total consumption of the service. In 2016 the volume of the outgoing traffic (measured in minutes), originated by the users[10] in the national (local and long-distance calls, calls to mobile networks and non-geographic numbers) and international calls amounted to 996.4 million minutes and decreased by 15.9% in comparison to 2015 – for comparison, the decrease in the previous one-year term was by 14.4%. The consumption of the Carrier Selection service reported a considerable drop, as the volume of the traffic gained by the use of the service decreased by 46.0% as compared to 2015 and its share in the total volume of the telephone traffic, realized by the fixed telephony service subscribers was only 0.004%.

In 2016, the structure of the consumption, regarding the calls direction, did not changed significantly as compared to the previous years. Fig. 6 presents the breakdown of the total volume of the traffic, originated by fixed networks[11].

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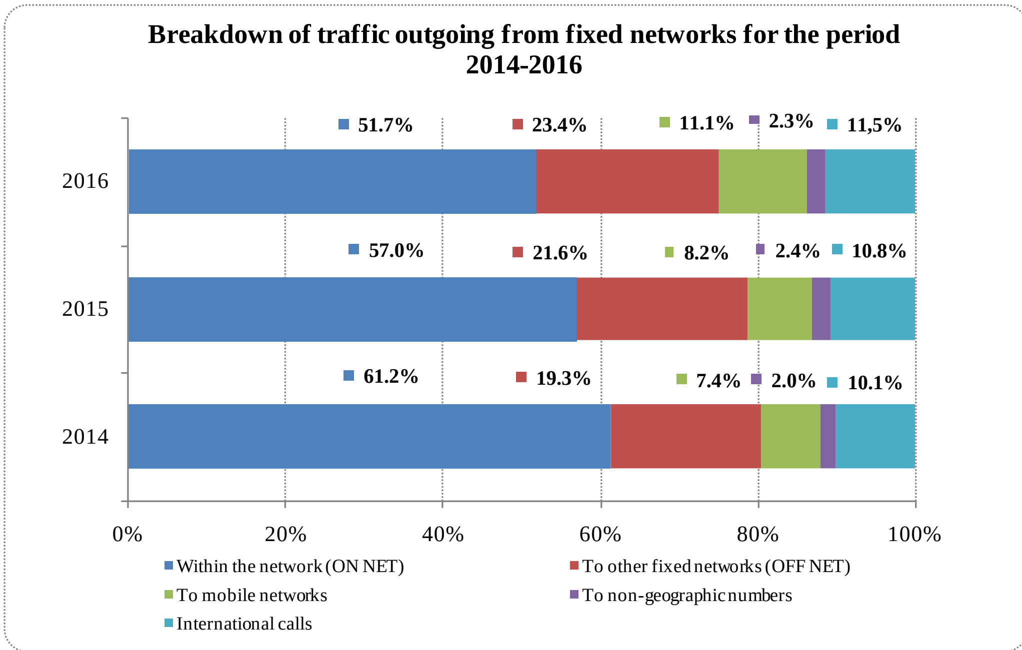
[8] Fixed density by population indicator is calculated as the ratio between the total number of active telephone lines as of 31.12.2016 and the number of the country's population as of 31.12.2016 according to NSI (National Statistical Institute) data (Population by districts, municipalities, place of residence and sex: http://www.nsi.bg/bg/node/2972)

[9] For the total number of subscribers of fixed telephony service/fixed telephone lines see the Table 2.

[10] Including the traffic originated by subscribers of fixed telephony service, including Carrier Selection service, as well as the voice traffic from public payphones.

[11] Including the traffic, originated by fixed telephony service subscribers with geographic numbers from NNP, the traffic from subscribers of the Carrier Selection service and the traffic from public payphones and telephone booths.



***Source**: Data submitted to CRC*

Fig. 6

As in the previous years, the major part of the total traffic originated in 2016 was formed by the traffic within the network (on net). However, in absolute value, the decrease in volume compared to the previous year is highest for this type of traffic - by 23.8%. In 2016 a growth of the originated traffic from fixed to mobile numbers was reported – by 14.4%, as 57.5% of the total volume of this traffic was from consumption, included in the subscriptions. According to the data submitted by the undertakings providing fixed telephony services, in 2016, 77.8% of the total traffic (996.4 million minutes), originated by the fixed telephony service subscribers were minutes, included in the monthly subscriptions. The annual decrease in consumption of fixed telephony service results in decrease in the volume of revenue generated by the service, while increase in the share of the traffic, included in the monthly subscriptions, influences on the breakdown of the revenue from fixed telephony service.

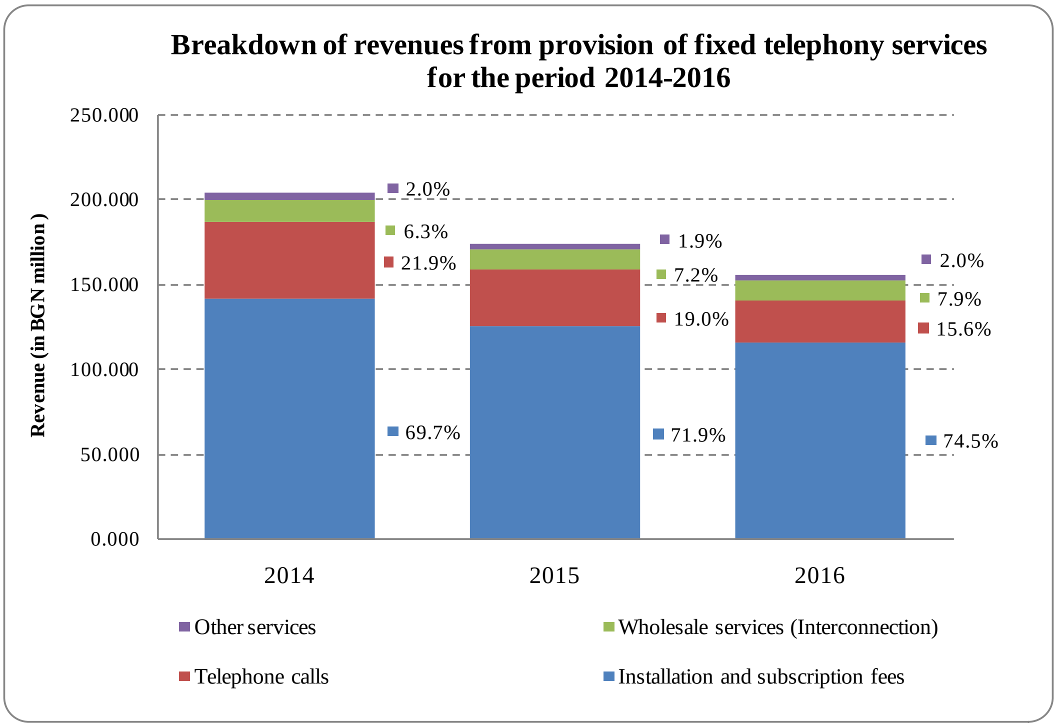
Revenue from fixed telephony service

In 2016, the revenue from the provision of standalone fixed telephony service[12] (not included in a bundle service) amounted to BGN 155.9 million, and the trend of decrease remained steady for the yet another year. Decrease in the volume of the revenue as compared to 2015 was by 10.6%, juxtaposed to the decrease by 14.3% for the previous one-year period. In 2016 the market share of the incumbent calculated on the basis of revenue from provision of fixed telephony service amounted to 87.5%, registering a minimal increase by 0.7 percentage points compared to the level from the previous year (86.8%).

As it is evident on Fig. 7, during the period 2014 – 2016, a considerable share of about

[12] Not including the revenue from monthly subscriptions and installation fees for fixed telephony service included in a bundle with other electronic communications services. Including revenue from the Carrier Selection service and revenue from calls through public payphones and telephone booths.

70% of the revenue from provision of fixed telephony service is formed by the revenue from installation and subscription fees (revenue from access on retail level). The share of these revenue increases every year at the expense of the share of revenues from telephone traffic generated outside the consumption included in the subscriptions. In 2016 compared to 2015 the relative share of that type of revenue reported an increase by 2.6 percentage points toward the growth by 2.2 percentage points for the previous one-year period.



Source: Data submitted to CRC

Fig. 7

In absolute value, the revenue generated from access to fixed telephony service (installation and subscription fees) reported a drop by 7.3%, which compared to the drop of the revenue from telephone calls by 26.5%, resulted in increase in the share of access revenue in the total breakdown of the revenue. A decrease was reported in the volume of revenue from wholesale services (including interconnection services – origination, termination, transit and access to the interconnection services), but it was only by 1.7% compared to the previous period and thus resulted in increase of their relative share in the total breakdown of the revenue (by 0.7 percentage points). The largest share in the volume of the revenue from interconnection was formed by the termination service – 48.7%, followed by the transit service - 42.5%. In 2016 in comparison to 2015 a growth in the revenue from the termination service amounted to 21.6% was reported. The withdrawal of the price regulation for termination of incoming international calls from non-EU/EEA[13] countries, as well as the increased volume of terminated international traffic, mainly from EU/EEA countries, also contributed to the growth of termination revenue.

[13] The CRC Decision No 356/23.06.2016.

Public payphones

According to data submitted by the undertakings, at the end of 2016 the number of public payphones and telephone booths throughout the country amounted to 7593 and a new considerable drop compared to the previous year (by 12.1%) was reported. The traffic volume also decreased by 20.6%. Generally, the volume of the traffic, the revenue and the number of operative public payphones and telephone booths are entirely formed by the BTC's activity under the obligations to provide universal service.

2.2. Mobile voice telephony service

Market players

In 2016, the number of the undertakings providing public mobile voice telephony service in Bulgaria was 4 and remained unchanged as compared to the previous year. The players on this market segment are: Mobiltel EAD (Mobiltel), Telenor Bulgaria EAD (Telenor), BTC and Max Telecom OOD (Max Telecom). Mobiltel continues to play a leading role in provision of the service – the undertaking owns the largest market share in the segment, both by number of subscribers (39.68%), and the amount of revenue generated during the year (39.41%), followed by Telenor and BTC with a market share of 33.44% and 26.86% respectively related to the number of subscribers and 30.82% and 29.74% respectively related to the revenue.

Although in 2016 there were changes in the market shares of the three major players on the mobile voice telephony service market - Mobiltel[14], Telenor[15] and BTC[16] (Max Telecom participation in the segment is only symbolic[17]), they did not result in any rearrangement of their position in the segment.

Development of the mobile voice telephony services segment

In 2016, the strong competition between the three major mobile undertakings (Mobiltel, Telenor and BTC) continued, as the segment was characterised by the following:

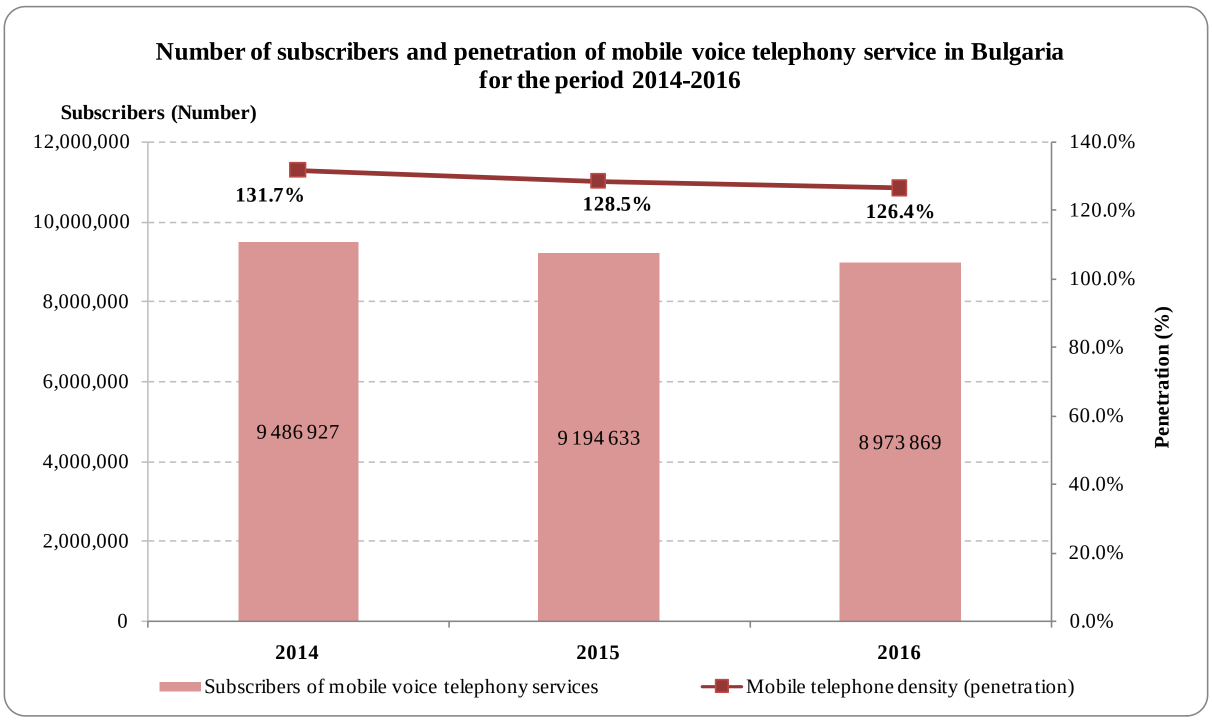
- decline in the number of subscribers of a mobile voice telephony service in result of outflow mainly of the users used prepaid SIM cards service;
- decline in amount of revenue from standalone provision of mobile voice telephony service, due to both increasing the number of subscribers, used this service bundled with other electronic communications services, and the steady upward trend in the volume of free-of-charge minutes spoken out of own network (off-net);
- growth in the minutes actually spoken by subscribers of Bulgarian undertakings abroad as a result of the consumer-friendly regulation, undertaken in recent years by the European Commission regarding the prices for roaming calls within the EU;

[14] In 2016 the relative share of Mobiltel calculated on the basis of number of subscribers decreased for one-year period by 1.2 percentage points, while the one calculated on the basis of revenue - by 1.4 percentage points.
[15] In 2016 the relative share of Telenor calculated on the basis of number of subscribers decreased for one-year period by 0.2 percentage points, while the one calculated on the basis of revenue increased by 2.4 percentage points.
[16] In 2016 the relative share of BTC calculated on the basis of number of subscribers increased for one-year period by 1.4 percentage points, while the one calculated on the basis of revenue decreased by 1.0 percentage point.
[17] In 2016 the relative share Max telecom calculated on the basis of number of subscribers decreased for one-year period by 0.01 percentage point, while the one calculated on the basis of revenue increased by 0.04 percentage points.

- increase in wholesale revenue (interconnection) for a second consecutive year mainly due to the increase in the volume of the terminated traffic contributed by the lowest wholesale termination rates on individual mobile networks imposed by CRC Decision No. 135/14.02.2013 and Decision No. 585/24.11.2016 and due to the withdrawal of the price regulation for traffic terminated from non-EU/EEA-calling networks.

Subscribers of mobile voice telephony service

As of 31.12.2016, the number of subscribers of mobile voice telephony service (number of unique SIM cards) amounted to 8 973 869 and dropped by 2.4% as compared to 2015 (as of 31.12.2015 the subscribers' number is 9 194 633). According to CRC data, the abovementioned decrease in the past year was mainly due to the outflow from the prepaid mobile telephony service (drop by 9.8%) and slightly due to drop in the number of post-paid subscribers (by 0.2%). The following Fig. 8 presents information on the number of subscribers of mobile voice telephony service and the penetration (mobile telephone density) of the service in the population for the period 2014 – 2016.[18]



***Source**: Data submitted to CRC*

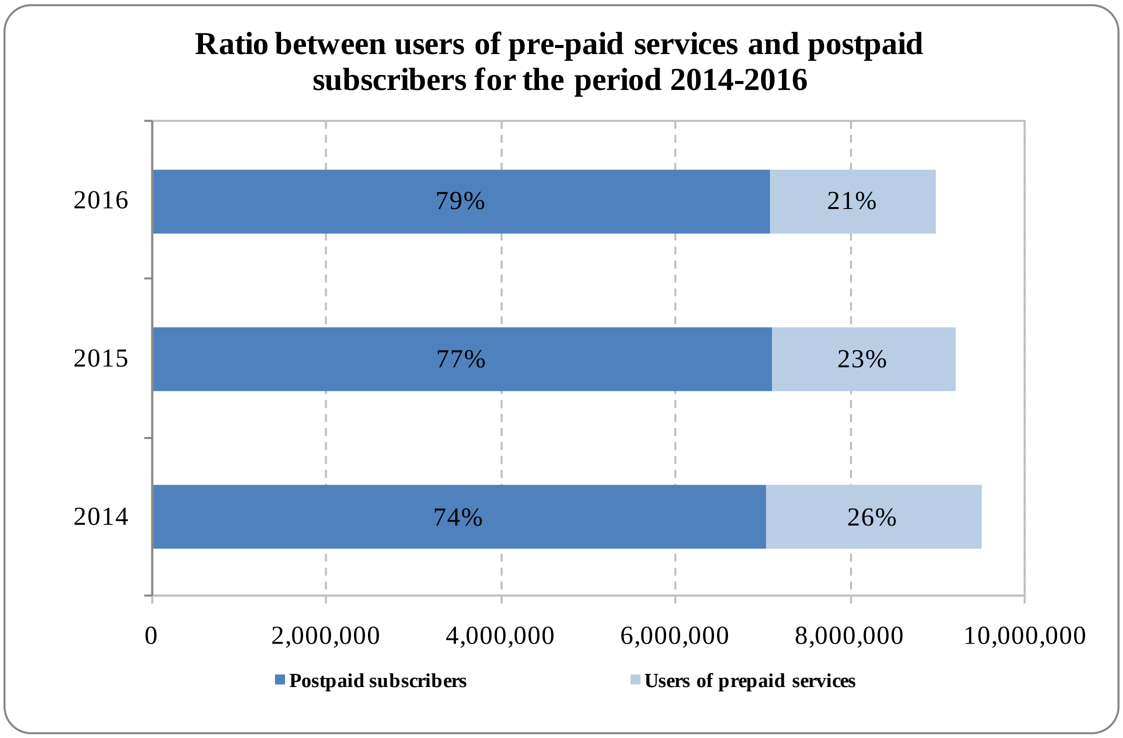
Fig. 8

In 2016, there was a delay in the trend of drop in the number of subscribers of mobile voice telephony service, data from Fig.8 shows that mobile telephone density indicator decreased by 2.1 percentage points for the past year and reached 126.4%.

The following Fig. 9 presents data on the ratio between users of prepaid services and

[18] Mobile telephone density indicator was calculated as a ratio between the number of subscribers of mobile voice telephony service as of 31.12.2016 and the number of population as of 31.12.2016 according to NSI data (Population by districts, municipalities, place of residence and sex: http://www.nsi.bg/bg/node/2972).

post-paid subscribers. It is evident that the share of the post-paid subscribers continued to increase at the expense of the share of the users of prepaid services which decreased to 21% in 2016.



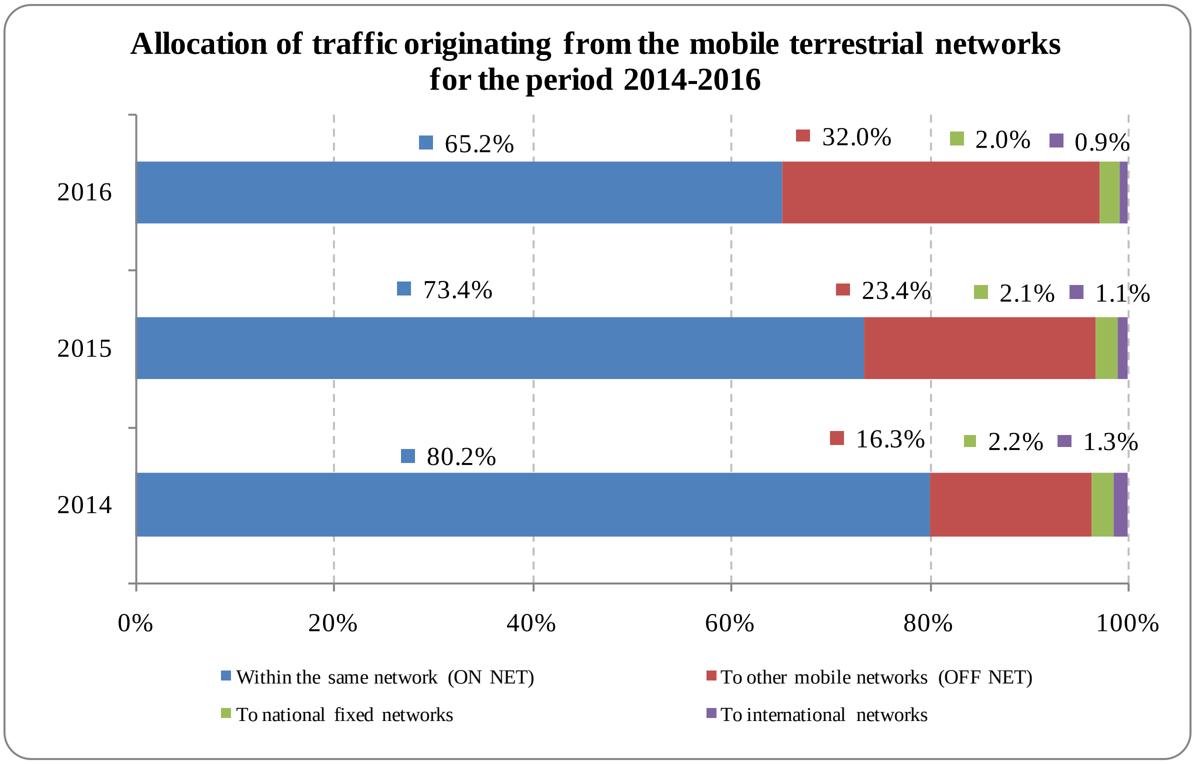
Source: Data submitted to CRC

Fig. 9

The period of validity of the call minutes, SMS and MB Internet included in a prepaid mobile subscription, introduced by the mobile undertakings in the recent years may be determined as a possible reason for the steady trend of decrease in the number and relative share of the prepaid cards (as shown on the Fig. 9). This period of validity largely makes the use of a prepaid card closer to a monthly subscription and makes it unprofitable for consumers.

Consumption (traffic) of mobile voice telephony service

In 2016, the share of the on-net traffic again was the largest (65.2%) in the total volume of the retail traffic originated on the mobile networks in the country. However, as it is evident on the following figure, it continued to decrease and for the period 2014 – 2016 the registered drop of its share was to the amount of 15 percentage points. In absolute value (number minutes) the on-net traffic cut down by 11.9% for the same period.



***Source**:* Data submitted to CRC

Fig. 10

The share of both traffic to fixed networks in the country and traffic to international networks remains almost unchanged for the period 2014 – 2016. (Fig. 10).

The reported drop in the share of on-net traffic is due to the increase in the share of the off-net traffic originated to other mobile networks in the country. In 2016 the off-net calls occupied 32% of the total traffic originated in mobile networks in the country and registered a growth of 15.7 percentage points for the period 2014 – 2016. In absolute value, for the specified period, an increase by 112.8% (slightly over 2 times) in the off-net traffic was reported. The observed growth in off net consumption was due to strong competition on the mobile voice telephony service market and the resulting benefits for the end users who have not only a specified volume of minutes for on-net calls but also more favourable terms for calls out of own network.

Short multimedia and text messages

In 2016, for another year, a decrease in the number of sent short text (SMS) and multimedia (MMS) messages was registered. In 2016 the sent SMS amounted to 558 million (drop by 24.3% as compared to 2015), while the sent MMS were 4.8 million (8.7% less than 2015).

Revenue from mobile voice telephony service

In 2016, the revenue from standalone provision of mobile telephony service (out of a bundle with other electronic communications services) amounted to BGN 718.5 million and for another year they registered a drop compared to the previous year (a drop of 23.79% as compared to 2015). The data, available to CRC shows that, this downward trend in the revenue from standalone provision of mobile telephony service in the recent years has been provoked by a drop in retail revenue due to a number of factors, the most important of which are the following:

- steady downward trend in the total number of mobile telephony service subscribers in the country (5.4% for the period 2014 – 2016) and the continuous increase in the share of consumers, who use the service bundled with other electronic communications services[19] (from 20% as at the end of 2014 to 46% as at the end of 2016). Only for the past year, the share of subscribers using bundled mobile telephony service increased by 13 percentage points. This trend very negatively influenced the revenue from installation fees and monthly subscription from standalone provision of mobile telephony service, which dropped by 44.0% in 2016 as compared to 2015 (for comparison - revenue from monthly subscription and installation fees from use of bundled mobile telephony service in 2016 amounted to BGN 435.1 million and registered a growth of 37.24% as compared to 2015);

- the strong competition between the players on the mobile telephony service market in the country results in offering of more and more favourable offers to the consumers (subscriptions/prepaid tariff plans), in which the undertakings include a great volume of minutes for both on net calls and off net calls. As a result, in 2016 the volume of the consumed minutes for calls to other mobile networks in the country, included in the price of the subscription plan, increased by 51.6%, and within the last three years – by 2.6 times (155% growth of the call minutes to other mobile networks in the country, included in the price of the subscription plan in 2016 as compared to 2014);

- the international price roaming regulation within EU countries is favourable for the users, but influences negatively the retail market revenue from mobile telephony service. The total drop in revenue from calls, SMS and MMS in roaming in 2016 as compared to 2015 amounted to 39%, while the number of used minutes by subscribers of Bulgarian undertakings abroad increased by 72.9%, and the number of incoming calls increased by 44.7%. Although this regulation was concerning SMS and MMS in roaming, they reported drop in consumption for the specified period by 10.7% and 5.6% respectively.

Against the background of declining retail revenue and the imposed by CRC lower wholesale termination rates in mobile networks[20], in 2016, for the second consecutive year a growth in the revenue from wholesale services (interconnection) was observed. For 2016 this growth amounted to 34.8% (for comparison, the reported growth in 2015 was 24.4% compared to 2014) and was mainly due to a considerable increase (38.9%) in the terminated traffic[21] in the mobile networks in 2016 as compared to the previous year. It should be noted, that the withdrawal of the price regulation for traffic termination from non-EU/EEA networks in 2016,

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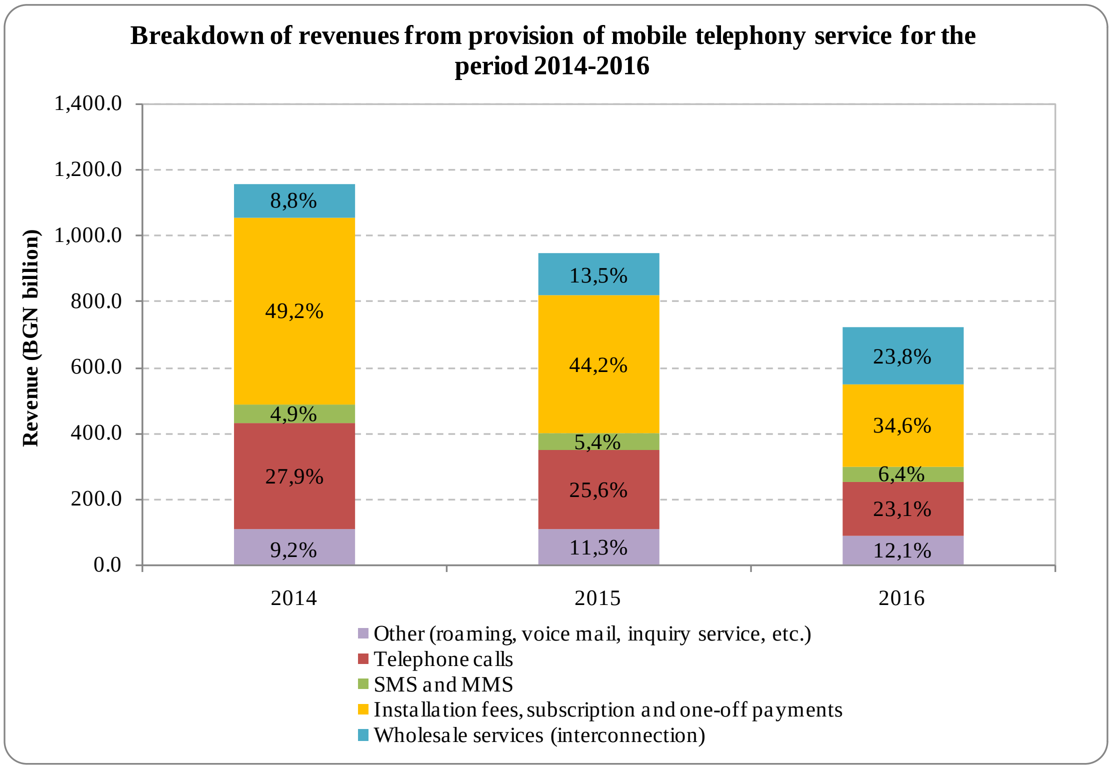
19 The revenues from bundled services with mobile telephony service (from installation fees and monthly subscription) are reported in Bundled services segment.

20 Applied respectively since 01.01.2015 according to the CRC's Decision No 135/14.02.2013 and since 01.12.2016 according to the CRC's Decision No 585/24.11.2016.

21 Ttraffic terminated from other mobile networks in the country, from fixed networks in the country and from networks outside the country.

also contributed the increase in the wholesale revenue.

The following figure presents the breakdown (structure) of revenue from mobile telephony service by years for the period 2014-2016. As it is evident from the data presented, the observed downward trend in the total volume of retail revenue and reported growth in wholesale revenue resulted in change of the segment structure in 2016, the share of revenue from the wholesale services increased to 23.8% and they displace from the second to the third place the revenue from voice telephony (23.1%).



Source: Data submitted to CRC

Fig. 11

Data on Fig.11 shows that the determinative role of the revenue from monthly subscription and installation fees is maintained in 2016 and they continue to occupy the largest share in the segment (34.6%), although the presence of steady downward trend in their share. In 2016 there was a slight increase both in the share of the revenue from SMS and MMS (by 1 percentage point) and in the share of revenue from other services (by 0.8 percentage points).

3. Leased lines services

The downward trend in the Leased lines, including international leased lines, segment that has been observed in the recent years, maintained in 2016. On the basis of the information from the undertakings provided the service, CRC reported that the revenue from leased lines decreased by 25.7% and reached BGN 20.74 million[22]. The reported drop in 2016 is twice as high as in 2015 as compared to 2014.

Table 3 presents summarised information on the number of undertakings, providing the leased lines service, as well as the amount of the revenue received by them.

Table 3

Number of undertakings, number of lines and revenue by types of leased lines in 2016

Service	Number of undertakings providing services in 2016	Number of leased lines as of 31.12.2016	Revenue in 2016 (in BGN million excl. VAT)
1. Wholesale leased lines	**21**	**3 437**	**13,037**
1.1. National leased lines	19	3 165	8,836
1.2. International leased lines	9	272	4,201
2. Retail leased lines	**10**	**2 974**	**7,700**
Total	**23**	///	**20,736**

Source: Data submitted to CRC

Market players

As of 31.12.2016, the total number of undertakings, registered at CRC and notified their intention to provide leased lines service, including international leased lines was 93, as 9 of them were new undertakings[23]. Five undertakings[24], from the register at the end of 2015, in 2016 declared cease from intentions to provide the service. At the end of 2016, 23 undertakings[25] were active in the Leased lines market segment, eight[26]of which provided the service on both – the retail and the wholesale market. Nine undertakings[27] provided international leased lines.

Development of Leased lines service segment

The shrinkage trend in the leased lines market segment observed the recent years remained in 2016. The reason was in the increased demand for innovative access products

[22]Including revenue from national wholesale and retail leased lines and the revenue from international leased lines – only revenue from their national sections

[23] "AT.NET" EOOD, "BG TELECOM" EOOD, "BORIANA" EOOD, "VASILEVO SAPORT SARVISIZ" EOOD, "POYNT TU POYNT TREYD" OOD, "ROKADA INVEST" OOD, "TATA COMMUNICATIONS (IRELAND) LIMITED", "TV DELTA INZHENERING" EOOD, and "TRI EY HAB" EOOD.

[24] "BORYANA-SABA HRISTOVA" ET, "GIGABIT" EOOD, "GLOBAL COMMUNICATIONS" AD, "ECT" AD and "TRANZIT BOLKAN TELEKOM"OOD.

[25] "BLIZOO MEDIA & BROADBRAND" EAD, "BULGARTEL" EAD, "BTC" EAD, "VESTITEL BG" AD, "GLOBAL COMMUNICATION NET" AD, "GTS TELECOM CRL", "NBI SISTEMI" EOOD, "ENDZHALSOFT" OOD, ET "ENDZHALSOFT – ANGEL GAROV", "COOLBOX" AD, "MOBILTEL" EAD, "NETERA" EOOD, "NET IS SAT" OOD, "NOVATEL" EOOD, "PLADI COMPUTERS" OOD, "PRONET TELECOM" OOD, "ROKADA INVEST" OOD, "SOFIA COMMUNICATIONS" EAD, "TELEKABEL" AD, "TELENOR BULGARIA" EAD, "TELIA CARRIER BULGARIA" EOOD (old "TELIA SONERA INTERNATIONAL CARRIER BULGARIA" EOOD) "TELNET" OOD, and "TURK TELECOM INTERNATIONAL BG" EOOD.

[26]"BLIZOO MEDIA & BROADBRAND" EAD, „BTC" EAD, „VESTITEL BG" AD, „COOLBOX" AD „MOBILTEL" EAD, "NETERA" EOOD, "SOFIA COMMUNICATIONS" EAD, and "TELNET" OOD.

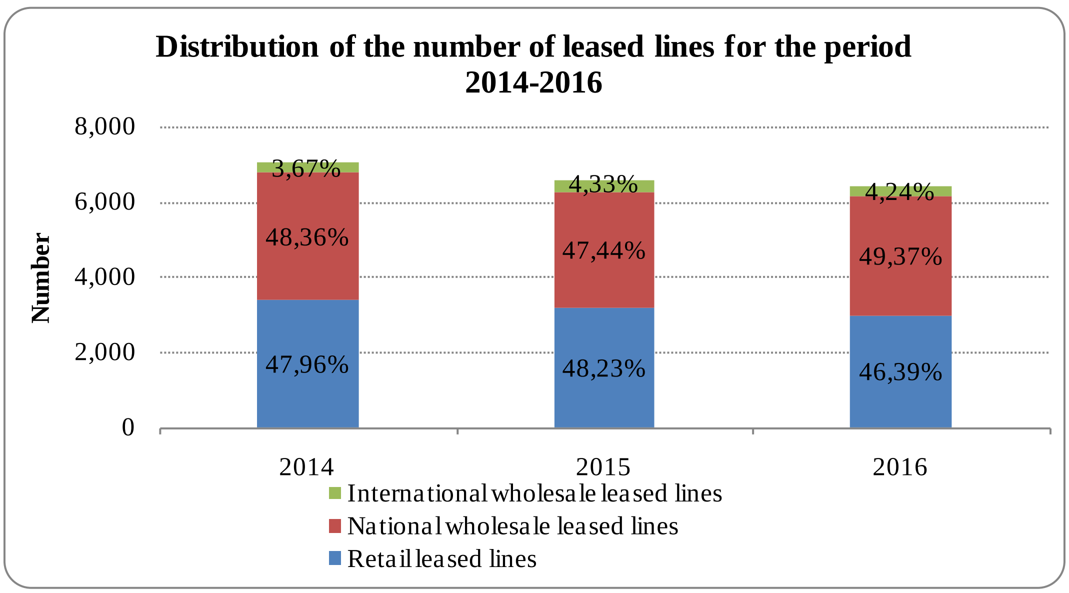
[27]„BLIZOO MEDIA & BROADBRAND" EAD, „BULGARTEL" EAD, "BTC" EAD, "VESTITEL BG" AD, "GTS TELECOM CRL", "MOBILTEL" EAD, "NOVATEL" EOOD, "TELIA CARRIER BULGARIA" EOOD (old "TELIA SONERA INTERNATIONAL CARRIER BULGARIA" EOOD) and "TURK TELECOM INTERNATIONAL BG" EOOD

providing all the functionalities of the “leased line” service at higher-speed and at relatively lower costs which meet the specific requirements of each individual client. Decline in users’ interest results in decline in consumption and may explain the reported drop in the following main indicators:

- number of leased lines, especially traditional leased lines. This decline is more evident in retail lines, although 212 new lines were launched within the year;
- total volume of revenue from leased lines due to both the reduced number of lines and the migration trend which have been observed recently towards higher-speed and lower-price lines with alternative interface as compared to the traditional ones;
- migration to alternative and more user-friendly products and services resulting from the rapid development of technologies.

Number of wholesale and retail leased lines

In 2016, the total number of wholesale and retail leased lines provided by the undertakings decreased by 2.2% as compared to the previous year. The drop was due to the decrease by 5.9% of the number of retail leased lines provided. A slight growth by 1.3% of the number of wholesale leased lines was reported due to the growth of 1.8% in the number of national wholesale leased lines.



***Source**:* Data submitted to CRC

Fig. 12

In 2016, the market segment structure remained analogous to the preceding two years (Fig. 12). The share of retail leased lines in the total volume in 2016 was almost identical to the one in 2015 as a drop by 1.8 percentage points was reported. This drop resulted in increase by almost 2 percentage points of the share of wholesale national leased lines.

Fig. 13 and Fig. 14 present the distribution of the number of the wholesale and retail leased lines provided for the period 2014 – 2016 according to the interface type.

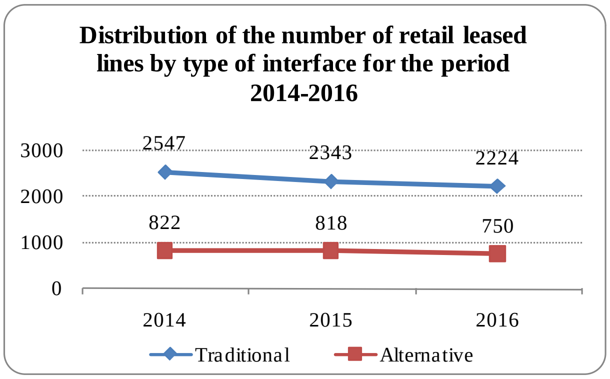


Fig. 13

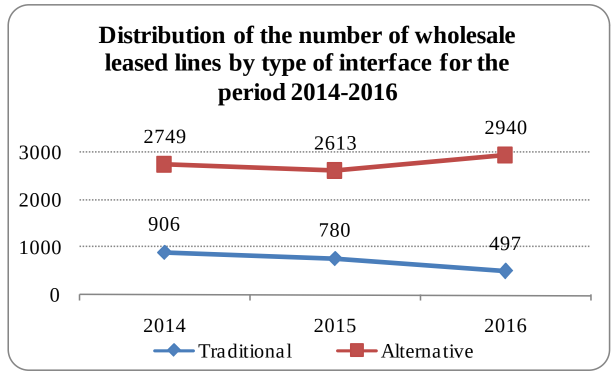


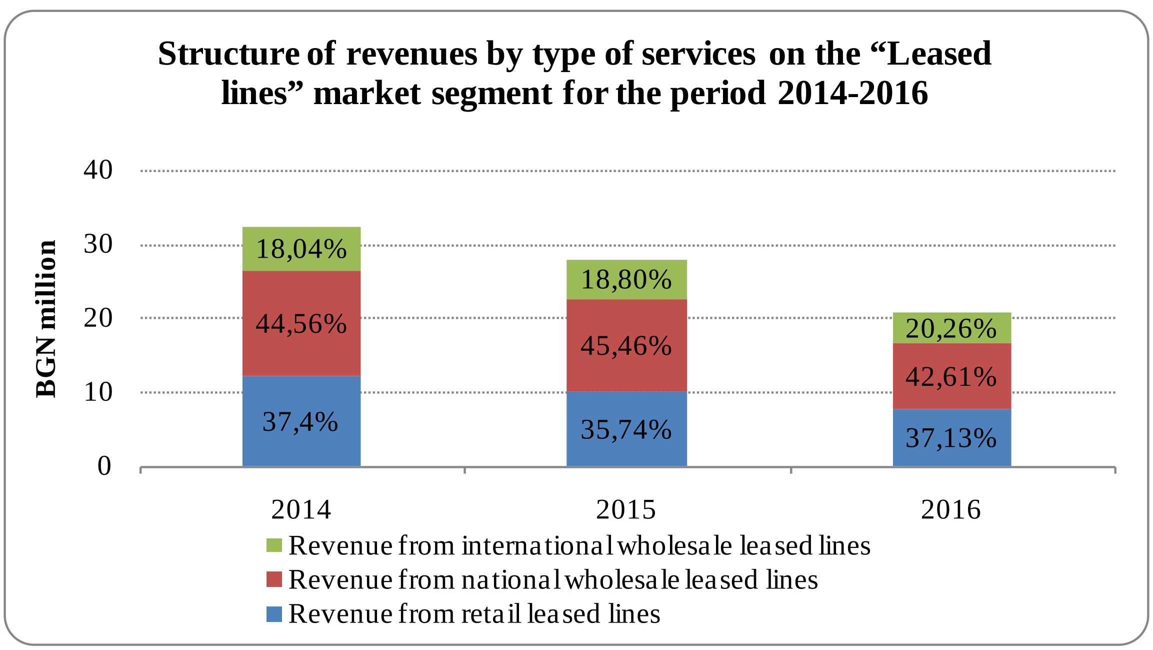
Fig. 14

***Source**:* Data submitted to CRC

As it is evident from the data, the trend for gradual decrease in the number of retail leased lines affects both the number of traditional lines, where a decline by 5.1% was reported in the period 2015-2016 and the number of alternative lines (decline by 8.3%). Due to significant number of wholesale alternative leased lines, their growth of 12.5% succeeds in neutralization of drastic decrease in the number of wholesale traditional lines, by 36.3%. As a result, in 2016 as compared to 2015 a slight increase by 1.3% in the number of wholesale lines was observed.

Revenue from leased lines

Fig.15 presents the structure of revenue from providing leased lines service (wholesale and retail) for the period 2014 – 2016.



***Source**:* Data submitted to CRC

Fig. 15

As it is evident from the data presented on Fig. 15, a considerable decrease in the total volume of revenue of Leased lines market segments is observed. Reasons for the tangible drop in the revenue are both the decreasing number of retail leased lines in result of declined users' interest and the difference in price levels between traditional and alternative wholesale and retail leased lines. Within the one-year reporting period in absolute values decrease of the revenue is commensurable for both retail leased lines (by 22.8%) and wholesale leased lines (27.3%) (30.3% decrease in national lines and 19.9% in international ones, respectively).

4. Data transfer and Internet access

The upward trend in development of Internet access and data transfer services in the country in recent years maintained in 2016. In 2016 the total volume of the revenue generated by the services, included in data transfer and Internet access segment amounted to BGN 472.308 million, reporting a growth of 17.1% as compared to the previous year.

Table 4 presents summarised information on the number of undertakings which provided services in this market segment in 2016, on the number of their subscribers/users, as well as on the amount of the generated revenue.

Table 4

Number of undertakings, subscribers/users and revenue by type of Internet access and data transfer services provided in 2016

Service	Number of undertakings providing the service in 2016	Number of subscribers/users as of 31.12.2016		Revenue in 2016 (in BGN million excl.VAT)[2]
		Total[1]	including bundled services subscribers	
1. Internet access and data transfer services (retail)	**648**	///	///	**429,001**
1.1. Internet access[3], including	**641**	6 681 963	4 498 570	**382,336**
1.1.1. fixed	**641**	1 700 705	785 491	**182,217**
1.1.2. mobile[4]	**6**	5 014 310	3 746 131	**200,119**
1.2. Data transfer services	**60**	///	///	**46,444**
1.3. Other services (hosting, e-mail, etc.)	**17**	///	///	**0,221**
2. Wholesale services	**109**	///	///	**43,307**
2.1. Provision of capacity for Internet connectivity (Peering and Transit)	**87**	///	///	**31,571**
2.2. Data transfer services	**15**	///	///	**4,292**
2.3. Wholesale provision of Internet access via next generation access networks (NGA)	**35**	///	///	**6,019**
2.4. Other wholesale services	**6**	///	///	**1,425**
Total	**674**	**///**	**///**	**472,308**

[1]Including bundled services subscribers

[2]Excl.revenue from bundled services

[3]The data on the total number of subscribers and revenue from Internet access is based on the data received by CRC from 91.7% of the registered undertakings.

[4]Mobile access via data cards or modems, bundled services with mobile Internet access included (included subscribers of data transfer bundles, purchased in addition to voice plans via 3G and 4G UMTS/HSPA+/LTE mobile networks.

Source: Data submitted to CRC

Market players

As of 31.12.2016, the total number of undertakings registered by CRC for their intention to provide data transfer and/or Internet access services was 923 or 2 more than the previous year. The number of active undertakings providing Internet access and data transfer services was 674[28], reporting a decrease by 19 undertakings as compared to 2015. The undertakings providing retail services decreased by 17 to 648 for a one-year period, while these providing wholesale services remained unchanged as compared to the end of 2015 – 109.

Development of Data transfer and Internet access segment

In 2016, no change was observed in the development trend of Data transfer and Internet access segment, reporting again the following:

- increase in the number of subscribers mainly due to the growth in the number of subscribers with mobile Internet access, as well as the number of subscribers using bundled services (with included fixed and/or mobile access);
- increase in the share of subscribers using fixed high-speed and ultra high-speed access within the total number of subscribers using fixed Internet access[29], as a result of migration to NGA networks;
- growth in the total volume of revenue from the segment mainly due to the increase in the revenue from Internet access[30].

Subscribers of Internet access services

In 2016, the upward trend in the number of Internet access services subscribers in the country maintained. As of 31.12.2016 the total number of subscribers of retail Internet services (fixed and mobile Internet access) amounted to 6 681 963 registering an increase by 10.3% as compared to the end of 2015. The number of the Bundled services subscribers (with included fixed and mobile Internet access) also have increased in the last year by 12% and reached 4 498 570. The relative share of the Bundled services subscribers in the total number of subscribers using Internet access services was 67.3%, as compared to the previous year it increased by almost 1 percentage point.

The number of fixed Internet access subscribers (including Bundled services) continued its steady growth rate. For the past year the number of subscribers increased by 5.1% and reached 1 700 705[31]. The share of the fixed internet access subscribers in the total number of subscribers of Internet access continued to decrease to 25.5%, as a drop of 1.3 percentage points was reported for the one-year period.

The decline of the share of fixed Internet access subscribers was at the expense of the steady increase in the share of mobile access subscribers, which at the end of 2016 occupied 75% of the total number of subscribers of retail Internet access.

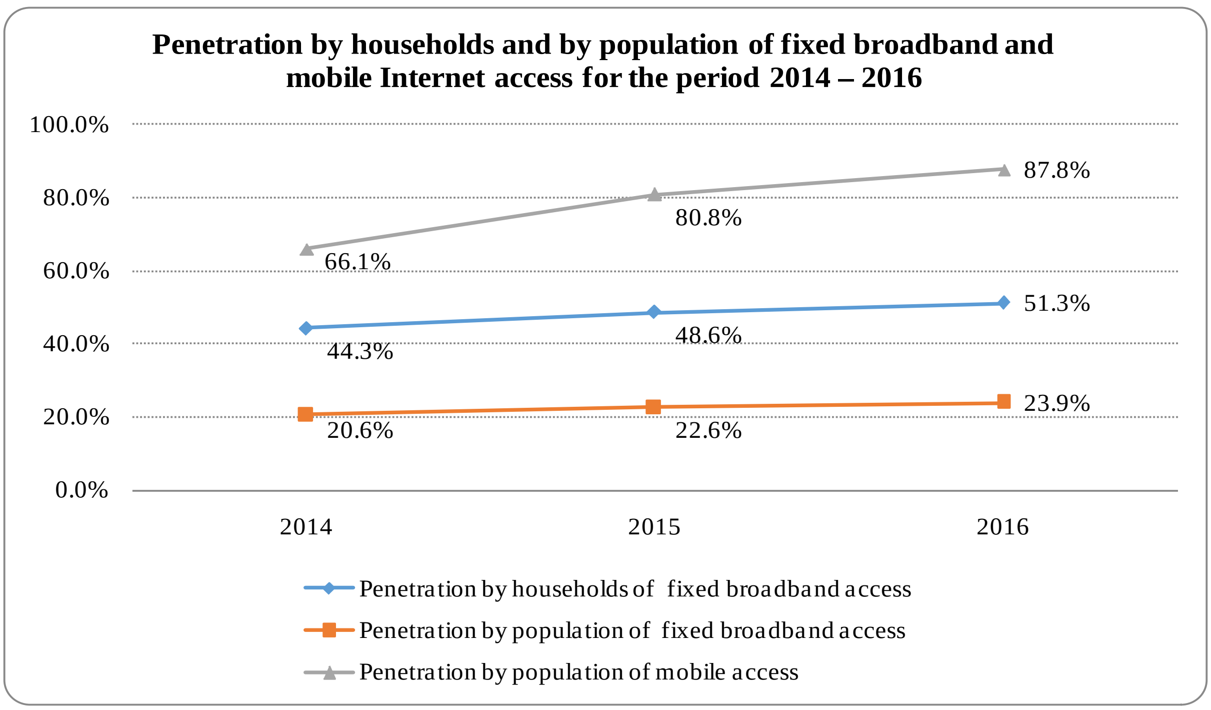
[28] Including undertakings that notified CRC for suspension of their activity in 2016 and having declared revenue during the year.
[29] See Fig. 18.
[30] Not including revenues from installation fees and monthly subscription from bundled services, including Internet access service.
[31] Including subscribers of ADSL, LAN, RLAN, CATV, FTTx, satellite access, fixed access via mobile network, as well as users of retail access via leased lines and specially organized access.

In 2016, the number of subscribers using mobile Internet access[32] services, increased by 12.5% compared to the previous year and reached 5 014 310.

This growth is mainly due to the rise by 15% compared to the data from 2015 of the number of subscribers of bundled services with mobile Internet access included, as at the end of 2016 their number reached 3 746 131. The subscribers using mobile Internet via data cards and/or modems also maintained their growth rate and reached 1 268 179 (increase by 5.9% compared to the end of 2015).

In 2016, mobile Internet access via LTE technology, except by the players started their activity in 2014[33] and 2015[34], was offered by the three major mobile operators ("MOBILTEL" EAD, "TELENOR BULGARIA" EAD and BTC) and thus the number of undertakings providing LTE, increased to six. As a result, the number of LTE subscribers for the past year registered an increase over 84 times and as of 31.12.2016 it was 1.67 million. The share of LTE subscribers represented 33% of mobile Internet subscribers in the country, compared to 0.5% in 2015.

Fig. 16[35] presents the penetration[36] of fixed broadband access by population and households[37] and mobile access[38] by population for the period 2014 – 2016.



***Source**:* Data submitted to CRC

Fig. 16

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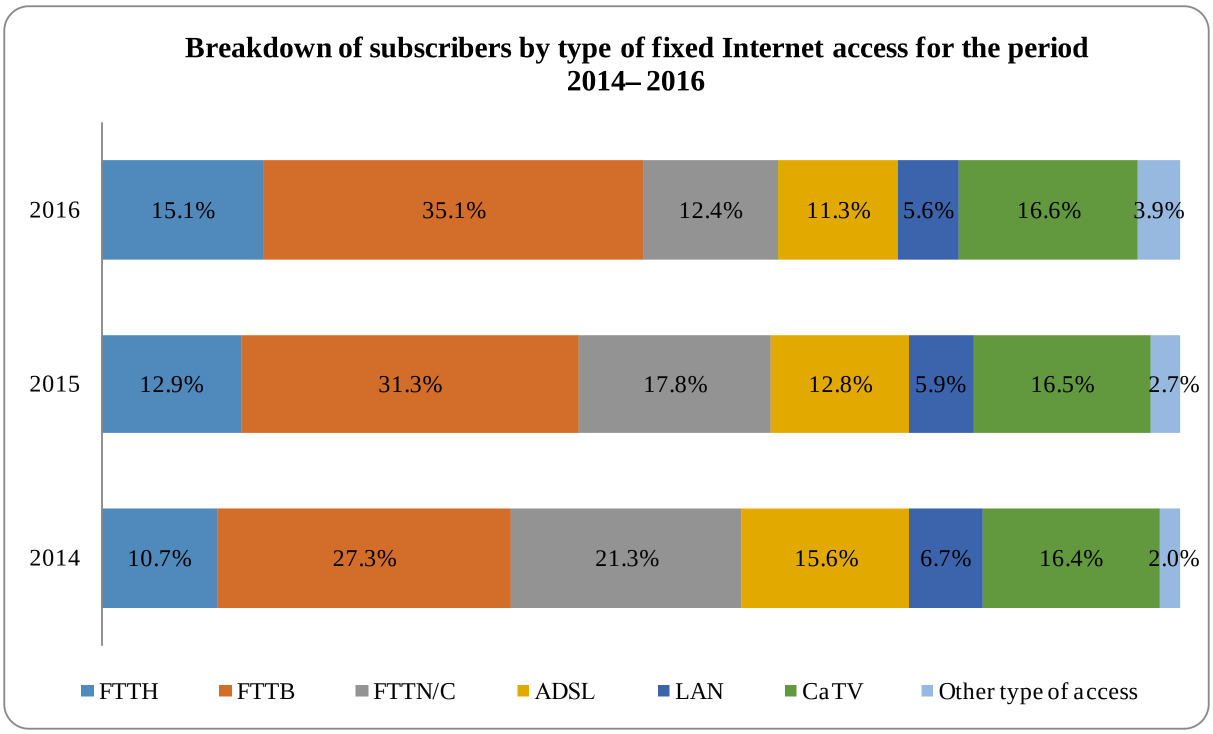
[32] Standalone service via data cards or modems, add-ons data package (purchased in addition to voice service), subscribers of bundled services with mobile Internet access included via 3G and 4G UMTS/HSPA+/LTE mobile networks.
[33] "MAX TELECOM" OOD
[34] "BULSATCOM" EAD and "BLIZOO MEDIA & BROADBRAND" EAD (via "MAX TELECOM" network)
[35] Data for 2015 have been updated.
[36] This indicator was calculated on the basis of NSI data for the number of population in the country as of 31.12.2014, 31.12.2015 and as of 31.12.2016 and 2011 census data for the number of households.
[37] For the calculation the number of residential subscribers at the end of the relevant year has been used.
[38] These include: subscribers of bundled services with mobile Internet access included, data cards or modems subscribers of add-ons data package, as well as subscribers of standard mobile Internet access provided without an additional subscription.

At the end of 2016 the penetration of fixed broadband access by households in the country reached 51.3% compared to 48.6% at the end of the year before. The value of the penetration of fixed broadband access based on population indicator increased by 1.3 percentage points and As of 31.12.2016 reached 23.9%. As a result of the considerable increase in the number of mobile Internet access subscribers, the indicator "penetration of mobile Internet access by population" also reported a growth by 6.9 percentage points compared to 2015, while for the period 2014-2016 this growth was over 21 percentage points.

The breakdown of subscribers by type of fixed Internet access for the period 2014–2016[39] is shown on Fig. 17.



***Source**:* Data submitted to CRC

Fig. 17

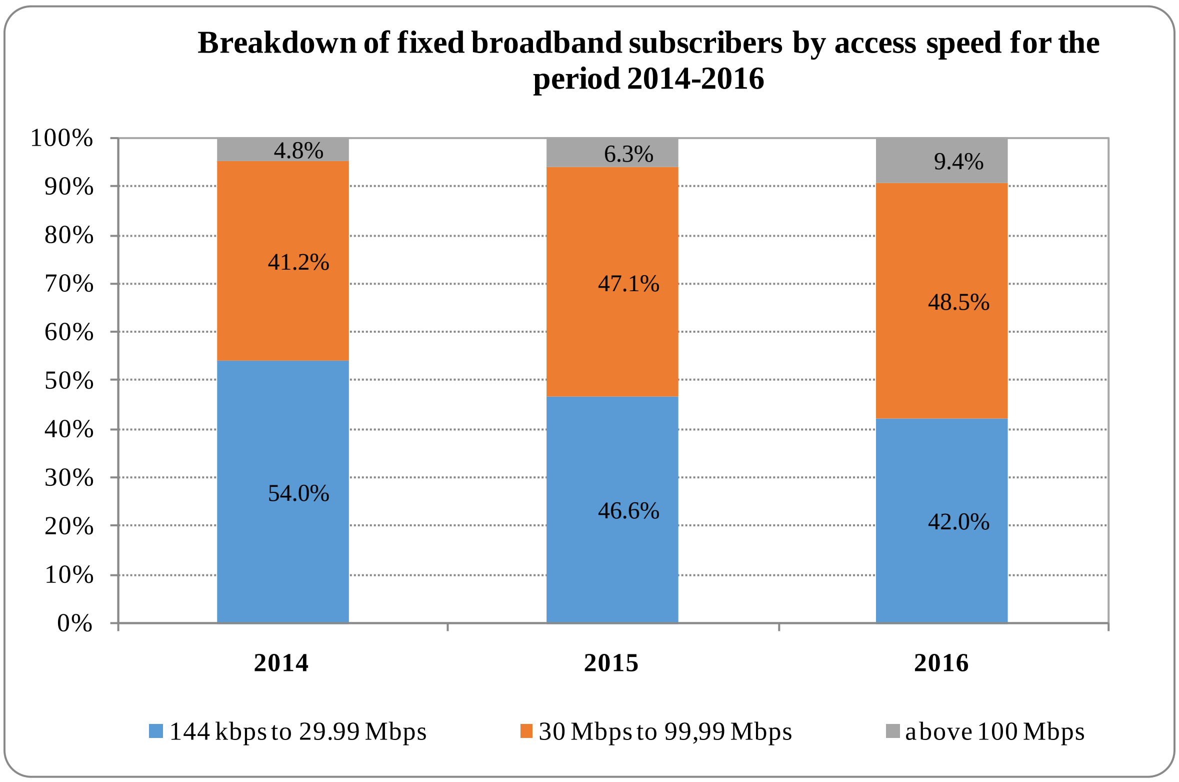
At the end of 2016 the major part of subscribers of fixed Internet access in Bulgaria used access via fibre-optical networks (FTTH, FTTB and FTTN/C) – 62.6%, as for the period 2014-2016 a growth of 21% in absolute items was reported or slightly over 3 percentage points in relative terms.

The share of CATV access subscribers (based on transmission and/or distribution of radio and TV programmes networks and DOCSIS standard) ranks next, which remained relatively steady during the period 2014-2016. At the end of 2016, 88.4% of the CATV subscribers use the DOCSIS 3.0 protocol, where the maximum speed to the subscriber may reach up to 200 Mbps, while at the end of 2014 the subscribers using DOCSIS 3.0 were 60.3% of the CATV users. The downward trend in the subscribers of ADSL access provided only by BTC continued in 2016 as

[39] Data for 2015 have been updated

well. Compared to the end of the year before the subscribers of ADSL access decreased by 7.4%, and for the period 2014-2016 the drop was by 17.1%. Migration of subscribers of BTC using ADSL access to access via fibre-optical networks remained the same in 2016, as for a one-year period an increase by 29% of the BTC subscribers using fibre-optical networks was reported. In 2016 the number of LAN access subscribers also continued to decrease and for the period 2014-2016 there was a reduction by 4.7% or of 1 percentage point in the relative share of the subscribers in the total market structure as this reduction was mainly at the expense of the increase in the share of optical connectivity subscribers. The other types of access (RLAN, fixed access via mobile networks, Dial-up access, and satellite network access) hold an insignificant share (total 3.9%) in the total number of subscribers.

At the end of 2016 the subscribers of fixed broadband access using high-speed access via NGA[40], reached 76.9% of the total number of subscribers of fixed broadband access. An increase by 5.4 percentage points compared to the end of 2015 was registered. The upward development of the broadband access via NGA networks has a positive role on the speed of the offered Internet services. The following chart presents the breakdown of the number of fixed broadband access subscribers depending on the international download speed for the three-year period 2014– 2016[41].



***Source*:** Data submitted to CRC

Fig. 18

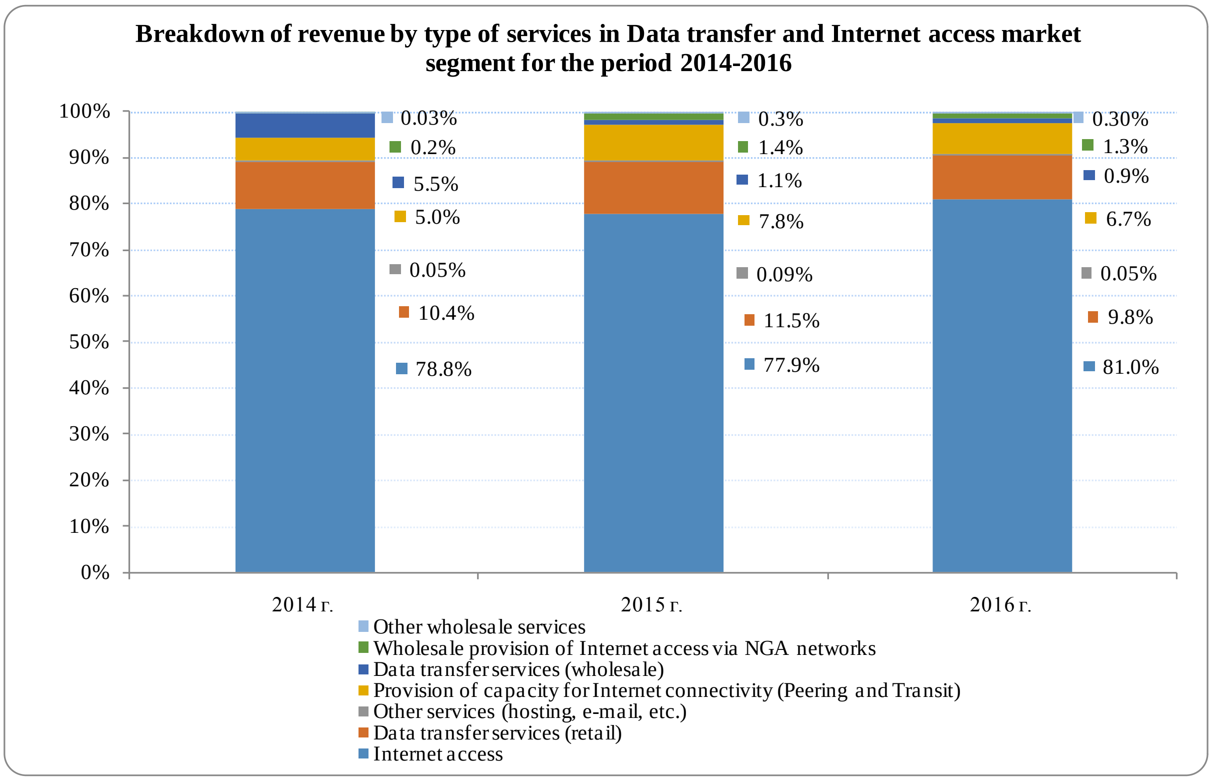
[40]Including optical (FTTB and FTTH), hybrid fibre-optical (FTTN/C with minimum speed of 30 Mbps), cable networks on the DOCSIS 3.0 standard, LAN and RLAN access with minimum speed of 30 Mbps, as well as fixed access via mobile networks with minimum speed of 30 Mbps.

[41] Not including subscribers using narrowband access due to their negligible number (0.01% of the total number of subscribers).

As a result of the increasing number of subscribers using optical connectivity and DOCSIS 3.0 cable access protocol, the number of the subscribers using Internet access with minimum speed of 30 Mbps grew. At the end of 2016 almost a half of the subscribers of fixed broadband access used high-speed access with international download speed from 30 Mbps to 99.99 Mbps, as their relative share increased totally by over 7 percentage points compared to the data for 2014. The highest growth was observed in the users of ultra-high-speed access (over 100 Mbps), which have increased more than twice for the period 2014-2016 and as of 31.12.2016 they numbered almost 160 thousand.

Revenue from data transfer and Internet access

In 2016, compared to 2015 a significant growth (by 17.1%) in the revenues[42] from data transfer and Internet access services was reported as they reached BGN 472.308 million. The increase was mainly in the retail services segment, where the growth was 18.8% and the revenues were BGN 429 million. The revenues from wholesale services amounted to BGN 43.307 million reporting a growth of 2.1% compared to the year before. Fig. 19 presents the breakdown of revenues generated for the period 2014– 2016[43]



***Source**: Data submitted to CRC*

Fig. 19

[42] Including revenues from standalone provided services for retail fixed and mobile Internet access, retail data transfer services and wholesale services (capacity for Internet connectivity, wholesale access services, wholesale provision of Internet access via next generation access networks (NGA), wholesale data transfer services).

[43]Data for 2015 have been updated

In 2016, there were not any considerable changes in the revenues structure of the segment and it remained relatively stable. The revenues from retail Internet access services held the highest relative share (81.0%), which reached BGN 382.336 million reporting growth of 21.7% in absolute value as compared to 2015. This increase is as a result of the revenues from both fixed and mobile Internet access, with reported growth of 12.5% and 31.6% respectively compared to the previous year.

5. Transmission and/or distribution of radio and TV programmes services

In 2016, the volume of the transmission and/or distribution of radio and TV programmes services market segment amounted to BGN 254.535 million, registering a growth of 4% compared to 2015.

Summarized information on the number of undertakings providing services for transmission and/or distribution of radio and TV programmes, on the number of their subscribers/users and the amount of revenue generated from them, along with the structure of the segment, is presented in Table 5 and on Fig. 20 below:

Table 5

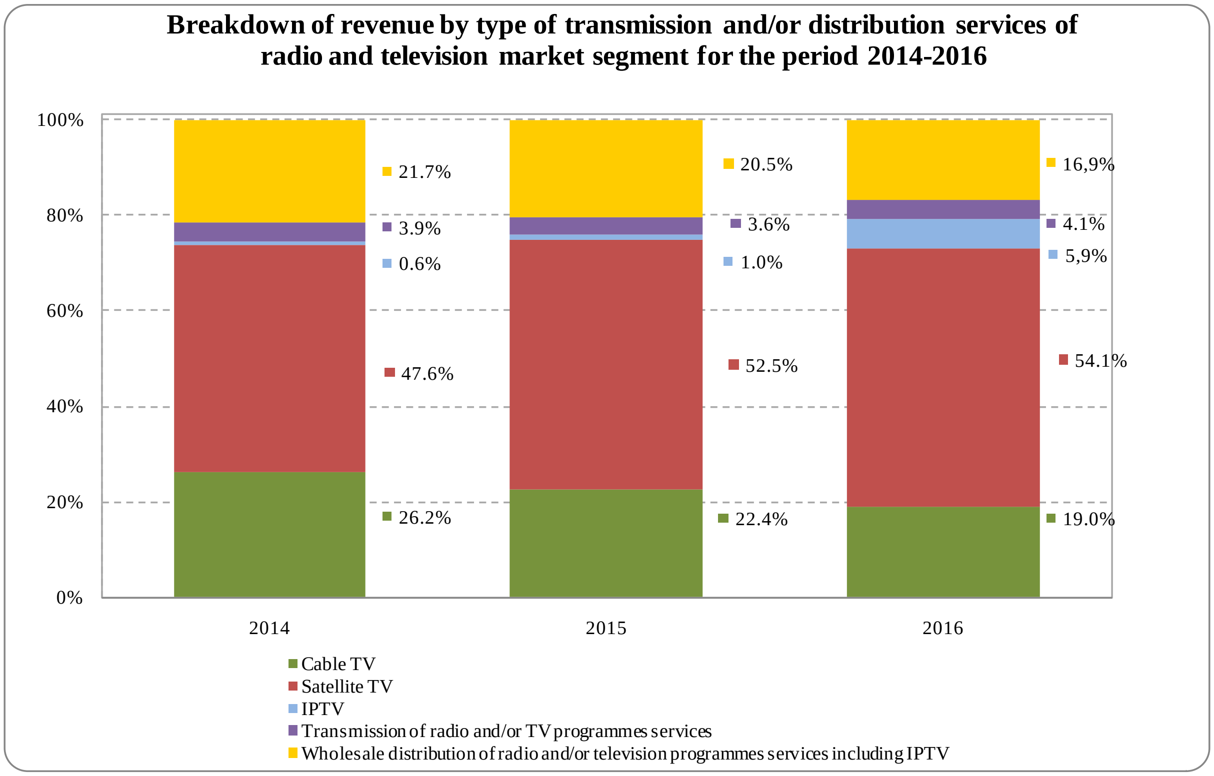
Number of undertakings, number of subscribers/users and revenue by type of transmission and/or distribution of radio and TV programmes services in the segment provided in 2016

Services	Number of undertakings provided the service in 2016	Number of subscribers/users as of 31.12.2016		Revenue in 2016 (in BGN million excl.VAT)[2]
		Total[1]	including bundled services subscribers	
1. Retail distribution of radio and TV programmes[3]	**267**	**1 826 575**	**766 122**	**201,195**
1.1. Cable TV	243	606 717	323 396	48,420
1.2. Satellite television	3	933 101	201 521	137,650
1.3. IPTV	28	286 757	241 205	15,125
2. Terrestrial broadcasting of radio and TV programmes[4]	**67**	///	///	///
3. Transmission/distribution of radio and/or television programmes	**15**	**134**	**///**	**53,340**
3.1. Transmission of radio and TV programmes services	6	44	///	10,400
3.2. Distribution of radio and TV programmes services, including wholesale IPTV provided to other undertakings	10	90	///	42,940
Total	**///**	**///**	**///**	**254,535**

[1]Including bundled services subscribers
[2]Excl.revenue from bundled services
[3] Data on the total number of the subscribers and revenue from distribution of retail radio and television programmes services are based on information received from 92.4% of the registered undertakings.
[4] One of the undertakings registered by CRC for the provision of the service has not submitted an activity report for 2016.

Source: Data submitted to CRC

According to the data submitted by the undertakings in 2016 there was a growth of revenue from three of the services in the segment – retail IP-television (over 6 times), satellite TV (7.3%)[44] and wholesale transmission services of radio- and television programmes (17.9%). The other two services in the segment registered a decline in revenue, respectively by 11.5% from cable TV and by 14.5% from distribution of radio and TV programmes, including wholesale IPTV.



***Source**: Data submitted to CRC*

Fig. 20

In 2016, the largest share of the total volume of the segment (79%) continued to be occupied by the revenue from the provision of retail distribution of radio and TV programmes services (Fig. 20): cable TV, satellite TV and IPTV. While in 2015 the share of the revenue from provision of IP-television was the lowest, in 2016 it overtook the share of revenue from provision of wholesale services for transmission of radio and TV programmes, which although the reported growth for a one-year period, has already occupied the last place with 4.1%.

Development of Transmission and/or distribution of radio and TV programmes services segment

In 2016, the following changes in the transmission and/or distribution of radio and TV programmes services segment were registered as compared to 2015:

[44] The volume of the market segment "Transmission and/or distribution of radio and television programmes services" covers only the revenues from standalone cable TV, satellite TV and IP-television (television, provided out of bundled services). The revenues from the provision of bundled services with television are included in the volume of the market segment "Bundled services".

- growth in the total volume of the segment, as a result of the increase in revenue from retail IP-television and from wholesale services for transmission of radio and TV programmes;

- increase in the number of retail subscribers, as for consecutive year this growth is mainly due to the increase in the number of IPTV subscribers, as a result of which the penetration of the TV service among the households increased;

- increase in consumption of bundled services with retail television included;

- decline in the number of users of wholesale services for transmission and/or distribution of radio and TV programmes.

5.1. Retail distribution of radio and TV programmes

Market players

In 2016, the number of the undertakings providing retail distribution of radio and television programmes services continued to decrease compared to 2015 and reached 267[45] (Table 5).

As of 31.12.2016, the total number of undertakings registered at the CRC for the provision of cable television was 326, as the number of undertakings that actually provided this service amounted to 243 (decrease by 29 as compared to 2015). For yet another year, the number of cable operators decreased as a result of competitive pressure exerted by market players providing satellite television and IP-television.

In 2016, the number of cable operators providing digital TV to their subscribers decreased in absolute items to 175 compared to 2015, but it increased in relative terms by 1 percentage point, which represents 73% of the total number of cable operators operating in 2016. For comparison, this share was 72% in the previous year and 66% in 2014.

As of 31.12.2016, the number of undertakings providing satellite television in Bulgaria remained three: BULSATCOM EAD, BTC and MOBILTEL EAD.

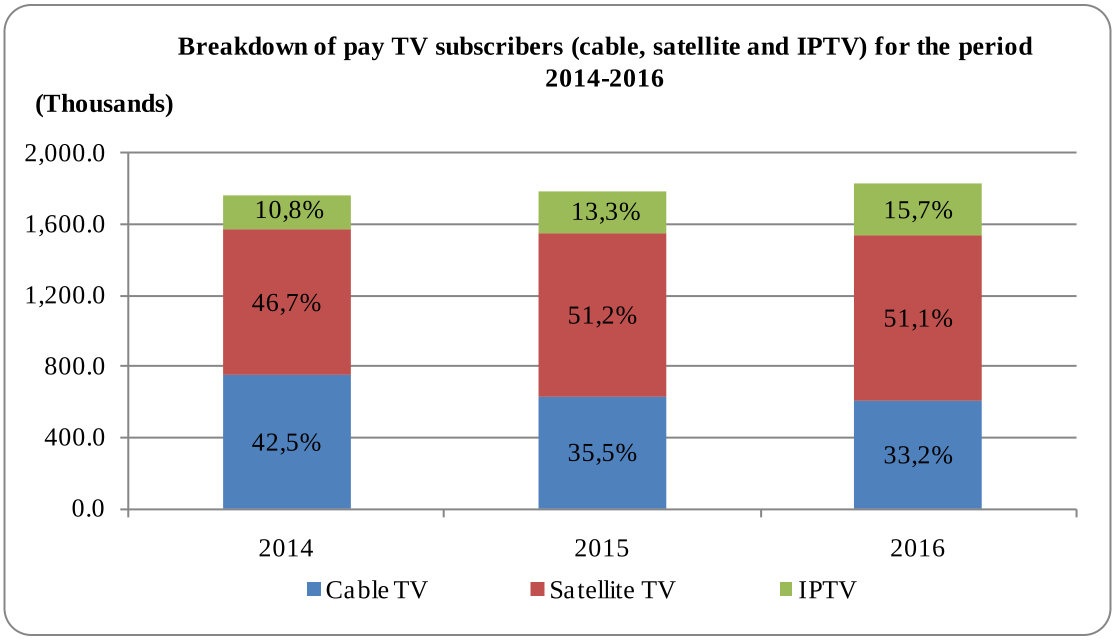
As of 31.12.2016, 130 undertakings registered their intention to provide IPTV, as the number of actually provided this service increased by 1 undertaking compared to 2015 and reached 28. Another 4 undertakings declared their intention to start offering this service in 2017.

Subscribers of retail distribution of radio and television programmes services

For the period 2014 – 2016, the number of subscribers of pay TV retail services increased by 3.7% and reached 1.83 million subscribers[46]. For the last year, the monitored growth of the indicator in terms of percentages was twice higher than for the previous one-year period, reaching 2.4%.

[45] Including undertakings that have notified the CRC for cessation of their activity in 2016 and have declared revenues during the year.

[46] Including bundled services subscribers which were 766 122 as of 31.12.2016.



***Source**:* Data submitted to CRC

Fig. 21

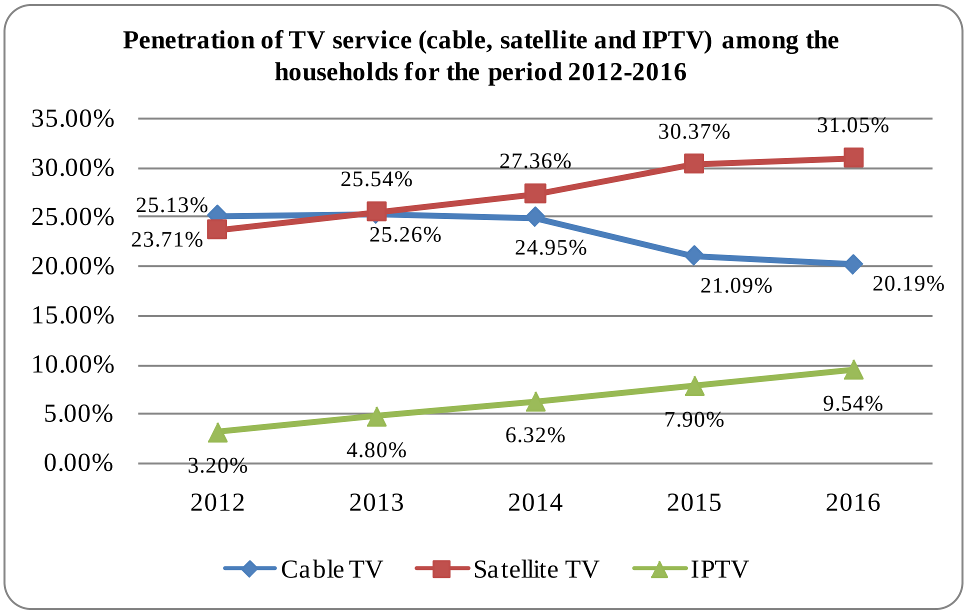
For another year the most considerable increase was observed in the number of subscribers of IP-television. In 2016, as compared to the previous year, the indicator's growth was 20.8%, as of 31.12.2016 the share of IPTV subscribers reached 15.7% of the total number of subscribers of pay TV in the country (Fig. 21). For a fourth consecutive year, however, the growth rate decreased, which indicated that inter-platform competition in the segment intensified regarding the quality and diversity of services offered.

The number of the satellite television subscribers also registered an increase, but considerably slighter than the pervious one-year period – by only 2.2%. At the end of 2016 the share of the satellite television subscribers in the total number of subscribers of pay TV in the country remained unchanged compared to the previous year and amounted to 51.1%.

Data submitted to CRC show that the number of cable TV subscribers registered a drop by 4.3% for one-year period. The share of cable TV subscribers in the total number of subscribers of pay TV amounted to 33.2% and took a place after satellite television subscribers' share.

The increase in the total number of subscribers of pay TV reflected insignificantly on the penetration[47] among the households, which reached 60.8% as of 31.12.2016 (for comparison, at the end of 2015 this indicator was 59.4%). The highest growth was registered in the penetration rate of IPTV (1.6 percentage points) compared to 2015, as its share at the end of 2016 amounted to 9.5% followed by the share of satellite television (31%) increasing by 0.7 percentage points compared to 2015. Cable TV penetration rate dropped by almost 1 percentage point compared to the previous year, as at the end of 2016 its share was 20.2% (Fig. 22).

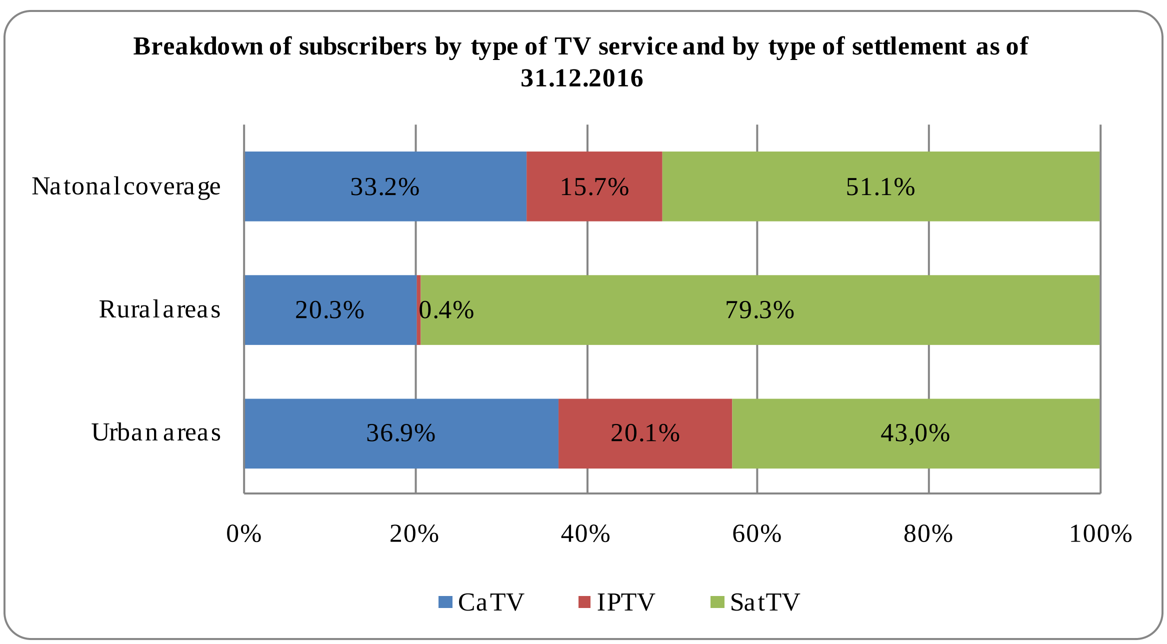
[47]The indicator was calculated as the ratio between the number of users of pay TV as of 31.12.2016 and the number of households taken from the last official census of NSI, conducted in 2011 (3 005 589 – ordinary households).



Source: Data submitted to CRC

Fig. 22

Fig. 23 presents the structure of pay TV subscribers by type of the settlement in which this service was used as of 31.12.2016.

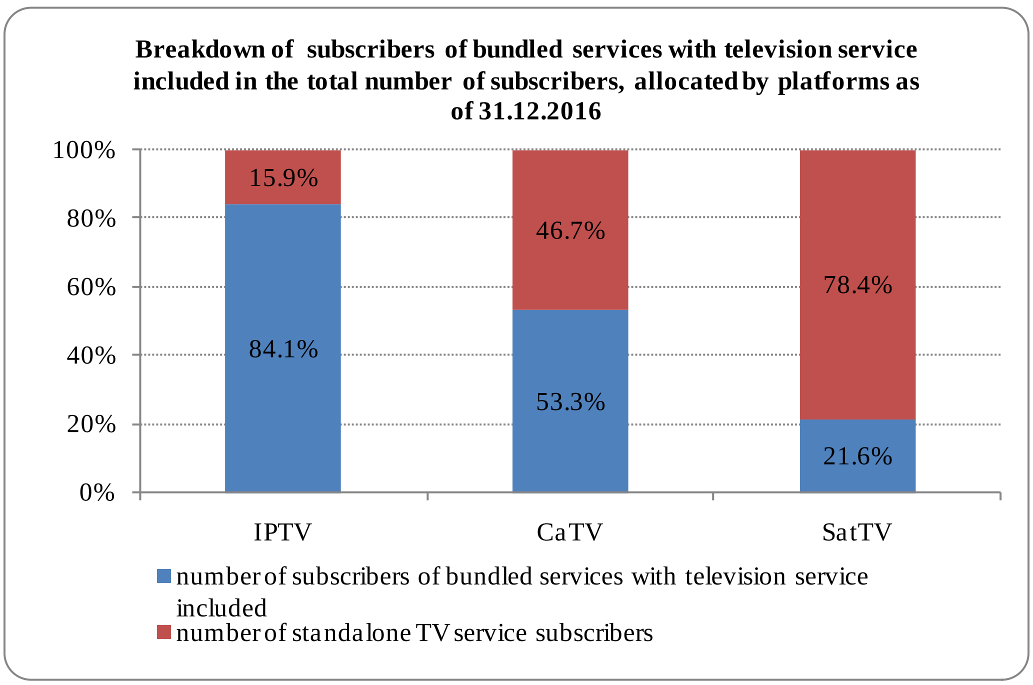


Source: Data submitted to CRC

Fig. 23

For the third consecutive year, the breakdown of subscribers by type of TV service used in the cities and villages, as well as at national level remained almost unchanged. As evident from Fig.23, the distribution of the users of pay TV (cable, satellite and IP-television) in the urban and rural areas is uneven and does not correspond to their distribution at national level. While cable operators and IPTV providers focused their efforts mainly to attract customers in the urban areas (99.4% of IPTV subscribers and 86.3% of cable TV subscribers are in the urban areas), due to the expected higher return on their investments in building infrastructure to the end user, given the advantage of satellite technology, providing wireless access to the subscriber at national level, the possibilities for attracting subscribers for satellite TV both in urban and rural areas are limited only by customer preferences. In many rural areas where there is no coaxial or fibre-optical network built, the only alternative for pay TV access is the satellite television, thus the share of the subscribers of this television platform in rural areas is much higher than the shares of the other two platforms.

The number of subscribers of bundled services with television service included increases annually, as for the period 2014 – 2016 the reported growth was 7.3%. The following chart (Fig. 24) shows the share of subscribers of bundled services with television service included in the total number of subscribers, allocated by platforms as of 31.12.2016.



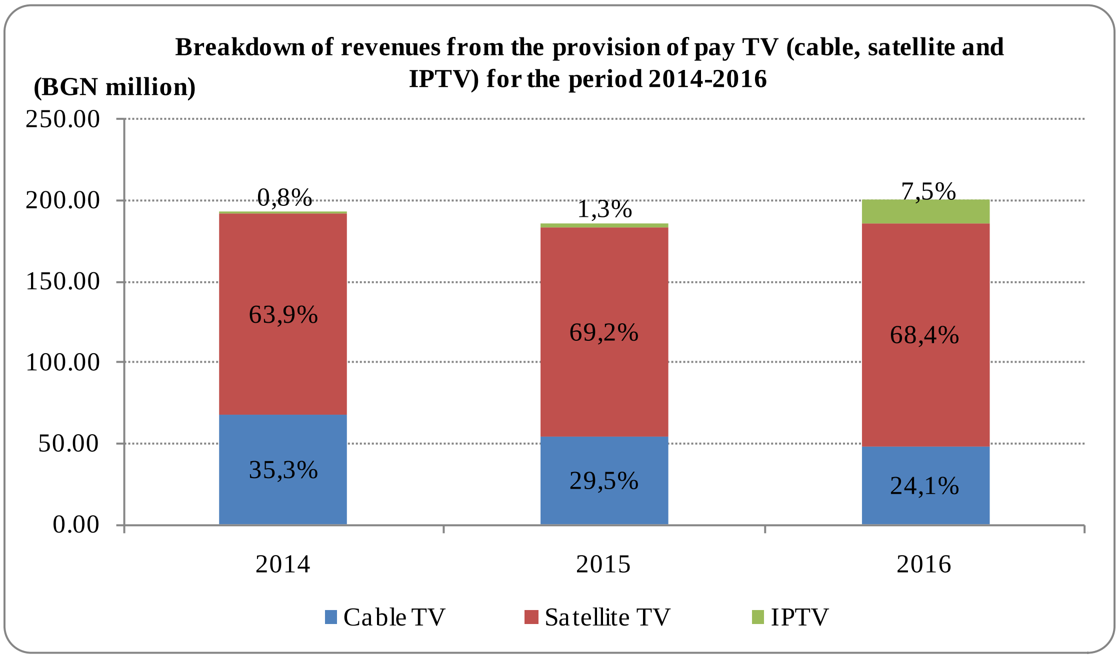
***Source**:* Data submitted to CRC

Fig. 24

The chart above shows that the number of bundled services subscribers with IP-television included constitutes 84% of the total number of subscribers of IP television. This share decreased as compared to the previous year by almost 10 percentage points, as a result of growth in the number of subscribers of standalone IP television more than 3 times. For the same period, the share of bundled services subscribers with cable television included increased by 1.5 percentage points reaching 53.3%, while the share of bundled services subscribers with satellite television included – decreased by 1 percentage point to 21.6%.

Revenue from retail distribution of radio and television programmes services

The volume of total revenue generated from subscribers of pay TV in 2016 amounted to BGN 201.195 million, and increased by 8.5% compared to 2015. This growth ceased the downward trend in total revenue from pay TV observed during the previous two years.



***Source**:* Data submitted to CRC

Fig. 25

The growth in the total volume of the pay TV market in Bulgaria was due to the considerable increase in revenue from the provision of IPTV compared to 2015 – over 6 times, as well as the increase in revenue from satellite television by 7.3%, as compared to 2015.

The reported growth in revenue was mainly due to an increase in the number of subscribers using standalone IPTV service. For another consecutive year, the volume of the revenue from satellite television also showed an upward trend. In 2016, an increase by 7.3% was recorded as compared to the previous year, as the share of the revenue from satellite television continued to be the largest in the total volume of the revenue from pay TV in the country and amounted to 68.4% (Fig. 25). The decrease in revenue from provision of cable television continued, although with lower growth rate. In 2016 it decreased by 11.5%, compared to 2015, while for the previous one-year period a drop by almost 20% was registered.

5.2. Wholesale transmission and/or distribution of radio and TV programmes and IPTV

In 2016, the total number of undertakings providing wholesale transmission and/or distribution of radio and TV programmes services and wholesale IPTV was 15.

Detailed information on the number of undertakings providing in 2016 wholesale transmission and/or distribution of radio and TV programmes services, on the number of service users and on the amount of revenue generated by them, as well as on the market structure of the above-mentioned services, is presented in Table 6 and on Fig. 26 below:

Table 6

Number of undertakings, number of subscribers/users and revenue from the provision of wholesale transmission and/or distribution of radio and television programmes services, including wholesale IPTV in 2016

Types of wholesale transmission and distribution of radio and/or television programs services	Number of undertakings provided the service in 2016	Number of subscribers/users as of 31.12.2016	Revenue from the service in 2016 (in BGN million excl.VAT)
1.1. Transmission of radio and/or television programmes, including:	**6**	**44**	**10,400**
1.1.1. Terrestrial transmission	1	///	
1.1.2. Satellite transmission	4		
1.1.3. Other type of transmission	2	20	0,049
1.2. Distribution of radio and/or television programmes, incl. wholesale IPTV provided to other undertakings, including:	**10**	**90**	**42,940**
1.2.1. Terrestrial broadcasting	7	48	38,272
1.2.2. Satellite broadcasting	1	///	
1.2.3. Other type of distribution of radio and/or television programmes, including wholesale IPTV	3		
Total	**15**	**134**	**53,340**

Source: Data submitted to CRC

In 2016 the number of undertakings providing transmission of radio and television programmes services was 6. The number of the users of these services decreased by 8% compared to 2015.

Compared to 2015 the number of undertakings providing distribution of radio and television programmes services including wholesale IPTV decreased by 1 and the undertakings reached 10, as the users of these type of service decreased by 11% for a one-year period. The number of undertakings providing wholesale IPTV services in 2016, remained unchanged – 3[48].

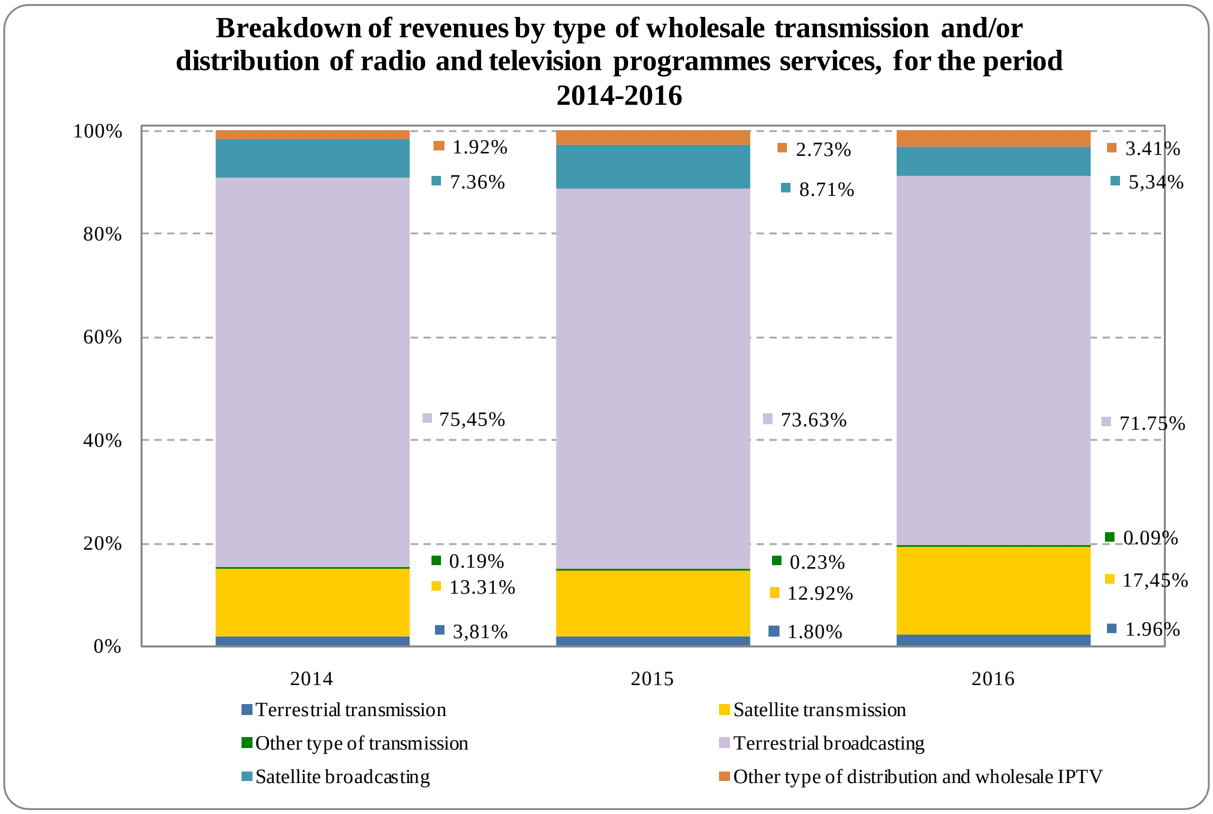
The revenue generated from the provision of wholesale transmission and distribution of radio and television programmes, including wholesale IPTV services, in 2016 amounted to BGN 53.340 million and reported a decrease by 9.6% compared to the previous year.

This decline was a result of reported in 2016 reduction of revenue from provision of terrestrial transmission (by 1.3%), other type of transmission (optical) (by 63%), terrestrial broadcasting (by 12%) and satellite broadcasting (by 44.5%). In the revenue generated from provision of satellite transmission and other type of broadcasting (cable) of radio and/or television programmes, including wholesale IPTV service, an increase respectively by 22% and by 13% was observed compared to 2015, but due to their relatively low share (20.8%) in the total

[48]"MITKO.COM" EOOD, "NETERRA COMMUNICATIONS" EOOD and "VIORA INTERAKTIV" OOD

volume of revenue from wholesale services, their growth failed to offset the reported decrease in the revenue of the above-mentioned wholesale services.

In general, revenue from transmission (satellite, radio and optical) of radio and TV programmes services increased by almost 18% compared to 2015 and in wholesale services for distribution of radio and TV programmes a drop by 14.5% was observed.



Source: Data submitted to CRC

Fig. 26

From the data on Fig. 26 is evident that in 2016 the largest share of the total volume of revenue from provision of wholesale services for transmission and distribution of radio and television programmes continued to be occupied by the terrestrial radio broadcasting – 71.75%, and the smallest share (0.09%) was occupied by wholesale provision of other types of transmission (optical) of radio and television programmes.

5.3. Terrestrial broadcasting – VHF broadcasting

At the end of 2016, 63 undertakings were registered at the CRC to provide services for terrestrial broadcasting of radio programmes. 62 of them submitted a report on their activity during the year, as 60 of these undertakings were active.

As of 31.12.2016 two undertakings were with national coverage – Bulgarian National Radio (BNR) and "Darik Radio" AD, while the undertakings with local coverage which actually provided services for terrestrial broadcasting of radio programmes in 2016 were 58, representing 92% of the total number of the undertakings having registration for this type of service as of 31.12.2016.

6. Bundled services

In 2016 the total volume of revenue generated from bundled services[49] reached BGN 784.5 million registering a growth of 21.9% compared to the previous year.

During this period 94 from the undertakings registered at the CRC providing bundled services, 6 undertakings less than 2015. Most of them (89 undertakings or 96.7%) provided bundled service with television and fixed Internet access included.

Subscribers of bundled services

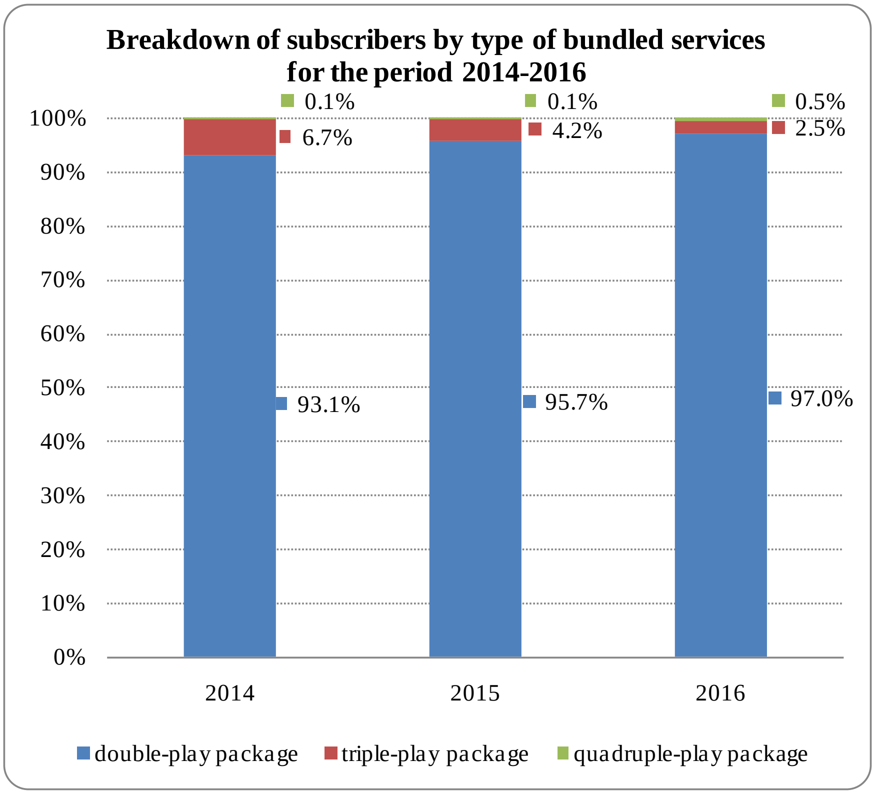
According to the data submitted by the undertakings providing public electronic communications in Bulgaria, the number of subscribers of bundled services at the end of 2016 increased compared to the previous year by 29.1% and reached 4.92 million.

The growth observed in the number of subscribers of bundled services has an impact on the indicator "penetration by population"[50], which in 2016 (as well as in 2015) increased by over 16 percentage points for a one-year period and reached 69.3%. This indicates that more than 2/3 of the population in the country used more than one electronic communication service.

The breakdown of subscribers by type of bundled services according to the number of electronic communications services included, in Bulgaria is presented on Fig. 27.

[49] The 2016 questionnaires changed the scope of "bundled services"definition – under"bundled services"should be taken into account retail offers on monthly basis with two or more of the following services included: (1) Fixed broadband Internet access, (2) Fixed voice service, (3) Mobile voice service, (4) Mobile broadband Internet access and (5) Pay TV. So called "Pure", "Combination of tied and tying services" and "Mixed" bundles should be considered as bundled services.

[50] The indicator is calculated as a ratio between the number of subscribers of bundled services provided by the undertakings and the Bulgarian population based on the data as of 31.12.2016 of NSI (Population by districts, municipalities, place of residence and sex): http://www.nsi.bg/bg/node/2972

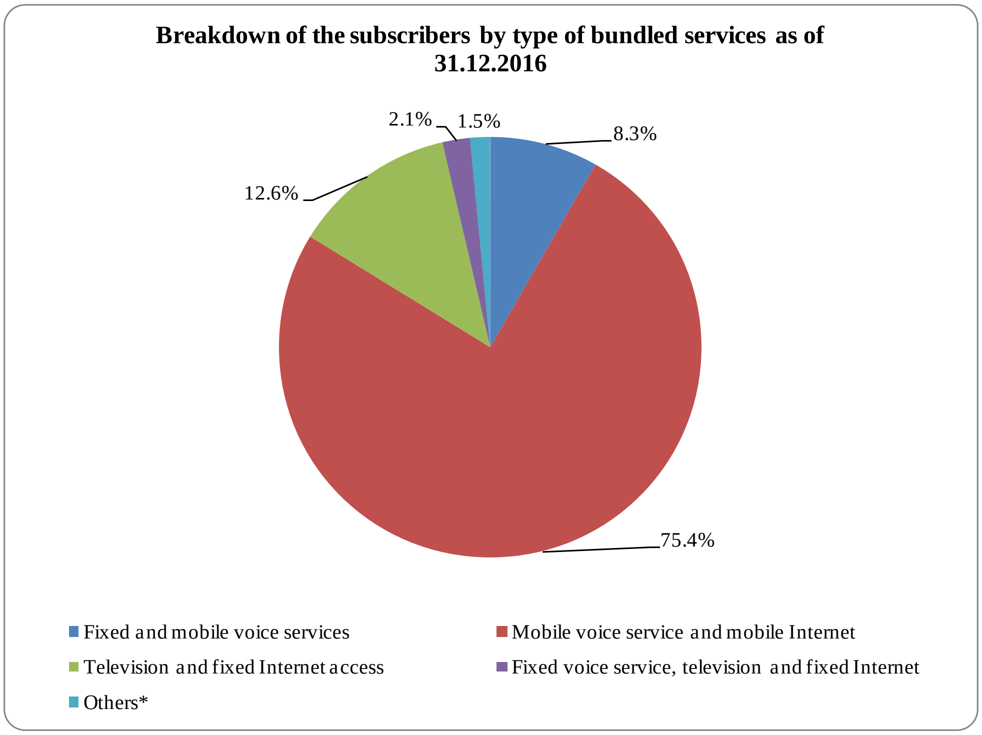


***Source**: Data submitted to CRC*

Fig. 27

As is evident from the data presented on Fig. 27, the share of the bundles including two electronic communications services (double-play bundles), increased every past year and in 2016 reached 97% of the total number of subscribers of bundled services. Although it was insignificant (0.5% of the total number of subscribers of bundled services), the share of subscribers of bundled services using quadruple-play bundles which include four electronic communications services in different combinations also increased in the monitoring period. It should be noted, however, that the quadruple-play bundles subscribers reported the most significant growth (nearly 8 times) in the period 2014-2016. This growth was mainly due to the increased offering of quadruple services with television access included by one of undertakings and to the redirection of the consumption of the double-play and triple-play bundles with mobile service included (mobile voice or mobile Internet access) to quadruple services. The increase of the share of double-play and quadruple-play bundles was at the expense of decreasing of the share of triple-play ones, which for the period 2014-2016 dropped by 4.3 percentage points or by 31% in absolute values.

Fig. 28 presents the breakdown of subscribers by the most preferred bundled services in 2016.



Note: In Others, the subscribers of bundled services, the share of which does not exceed 2% in the total number of subscribers of bundled services are included.

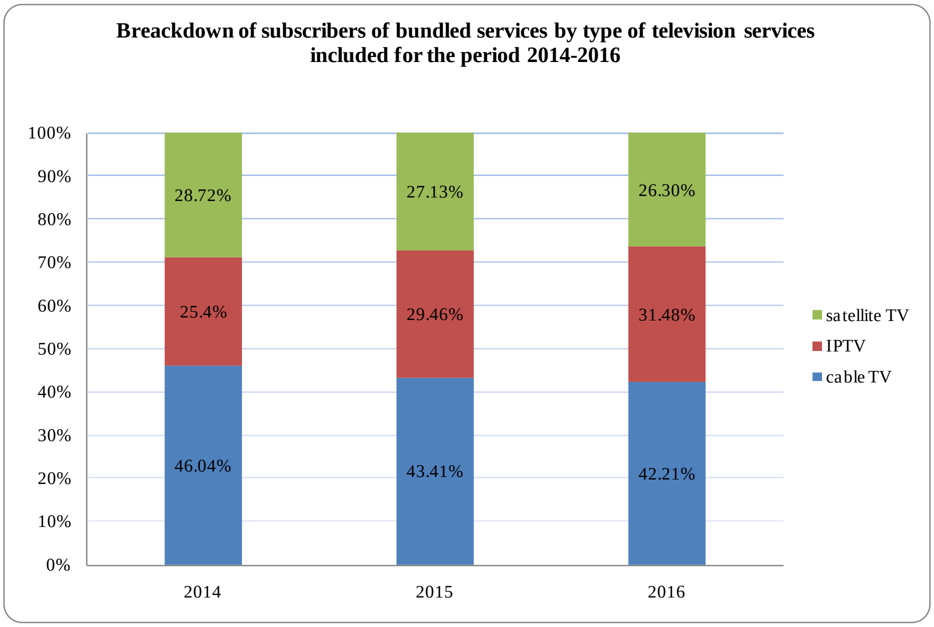
***Source**:* Data submitted to CRC

Fig. 28

As it is evident from the data presented on Fig.28, “Mobile voice service and mobile Internet access” (75.4%), “Television and fixed Internet access” (12.6%), and “Fixed voice service and mobile voice service” (8.3%) are the bundled services which were the most preferred by the subscribers in 2016 and in the previous six years, as well.

The number of subscribers of the most widely used bundled service – “Mobile voice service and mobile Internet access”, increased by 42.1% compared to 2015 and reached 3 710 585 at the end of 2016. The number of subscribers of the second most used bundle (“Television and fixed Internet access”), reached 618 594, as for a one-year period reported a growth of 4%. “Fixed voice service and mobile voice service” bundle was used by 409 609 subscribers and the increase in 2016 was by 3.6% compared to the data from 2015.

Fig. 29 presents the breakdown of subscribers of bundled services according the type of television services included.



Source: Data submitted to CRC

Fig. 29

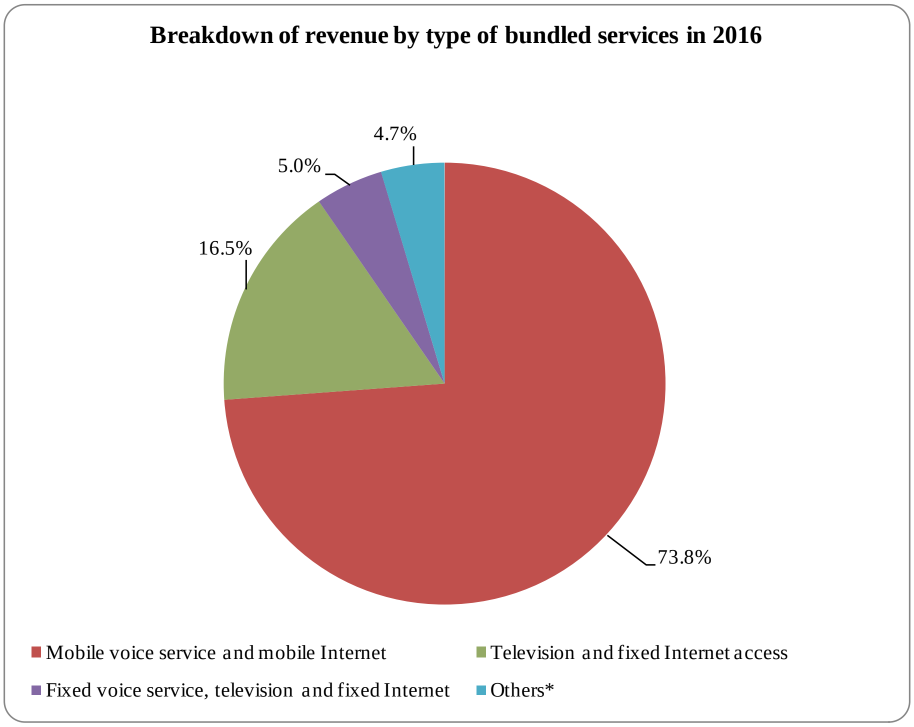
In 2016 the downward trend in the relative share of subscribers of bundled services with cable TV and satellite TV in the total number of subscribers of bundled services continued respectively by 1.2 percentage points and by 0.83 percentage points, which compared to the data from the previous year, in absolute items was an decrease of 4588 subscribers and 3453 subscribers respectively. The share of subscribers of bundles with IPTV continued to grow, and as compared to 2015 it increased by 2.02 percentage points reaching 31.5%. In absolute items, for a one-year period a growth in the subscribers of bundled services with IPTV to the amount of 18.6 thousand was reported.

Revenue from bundled services

Double-play bundles continued to hold the largest share (93.7%) in the total volume of the revenue from bundled services, as it is shown in Table 1. In absolute items, a growth of nearly 25% was reported, and by 2 percentage points in relative terms as compared to the data from 2015. It should be noted, that the growth rate of these revenues slowed down and in 2016 it was more than twice as low as the growth rate in the previous period (2015 compared to 2014). The share of the revenue from triple-play bundles continued to decrease in 2016 (by 2.4 percentage points), as a drop of 15.1% in absolute items was reported.

The decline in the growth rate of revenue from double-play bundles and drop in the revenues from triple-play bundles are as a result of reorientation of the users to use a combination of four electronic communications services, which revenue growth was over four times for a one-year period. Despite reported considerable increase, the share of the revenue from quadruple-play bundles in the total volume of revenue from bundled services was negligible small - only 0.6%.

Fig. 30 presents the breakdown of revenue by type of the most used bundled services in 2016.



Note: In Others, the revenue from bundled services, the share of which does not exceed 2% in the total revenue from bundled services is included

***Source**: Data submitted to CRC*

Fig. 30

The share of revenue from double-play bundle service with Mobile and Fixed voice service included, has been recording steady decline since 2011, as of the moment this share is 1.9%. Due to its small relative share in the total volume of revenue from bundled services, it is included in "Others" on Fig.30. In 2016 the share of the revenue from double-play bundled service with mobile voice service and mobile Internet access included, increased compared to 2015 by 8.5 percentage points and reached 73.8% from the total volume of the segment, and the reported growth of revenue in absolute items was 37.8%. The next in the increase of revenue was"Fixed voice and television"bundled service which reported a growth of 9.1% compared to 2015, but although this growth, the share of revenue from this bundle in the total revenue registered a drop by nearly 2 percentage points. The revenue from "Fixed voice service, television and fixed Internet" bundle reported decrease for a one-year period both in the relative share which it occupies in the total volume of the segment dropping by 1.6 percentage points to 5%, and in absolute items – by 7.7%, as well.

For some bundled services (triple-play and quadruple-play bundled services with mobile service (voice or Internet access) included), which are not presented on Fig.30, there was a considerable increase (at least 2 times) in revenue in 2016 compared to 2015, but this growth did not significantly contribute to the increase of the share of these bundles in the total volume of revenue generated in the segment in 2016.

The data presented above, both for subscribers and for revenue, shows a clear trend in enhancing the users‘preferences for using bundled services, especially these with mobile voice service and/or mobile Internet access included. The flexibility that the undertakings offer to their users in diversity of bundled electronic communications services according to their individual preferences will favour the development of the segment and contribute the undertakings’ effort to improve the quality of the services.

7. Prospects for the development of the Bulgarian electronic communications market

The development of the electronic communications market in Bulgaria is in line with the European market and it is expected the so far observed trends to further deepen. Internet access has been outlined as a basic driver for the development of the telecommunication market. The consumer demand changing and the reorientation to mobility and use of Internet access, determined by the need for connectivity everywhere and at any time, leads to new challenges for the undertakings. In order to meet the increasing consumer demands for fast and not interrupted Internet connection, the undertakings will have to continue to invest in next generation access networks, so as to improve the quality and to strive to develop and offer innovations such as hybrid services (a combination between traditional electronic communications services and machine – machine communication and related content). As a result it is expected that:

- the growth rate of mobile Internet access subscribers shall significantly exceed that of the fixed access subscribers, and the LTE networks development and their extending coverage by the established undertakings on the mobile market will increase the competition in this market segment towards offering new and diverse services;

- the building and deploying of next generation access networks shall continue given their capabilities to deliver high definition content (video or TV), to support high-speed applications, as well as to provide the undertakings with symmetrical broadband connections at competitive prices;

- the voice services segment shall not change in relation to the observed development so far - downward trend in the number of users and revenue from standalone provision of voice telephone services is expected to continue under the impact of the growth in the number of consumers using the service bundled with other electronic communications services, the migration of users from fixed voice to mobile voice service, as well as the increased use of OTT services;

- the entry of BULSATCOM EAD on the mobile telephone service market in 2017 is expected to strengthen the competition between the market players, given the wide range of electronic communications services which the undertaking is providing currently and its ability to offer them bundled with mobile telephone service;

- the traditional television shall lose more of its position at the expense of personalized television services, offered via Internet or connected devices;

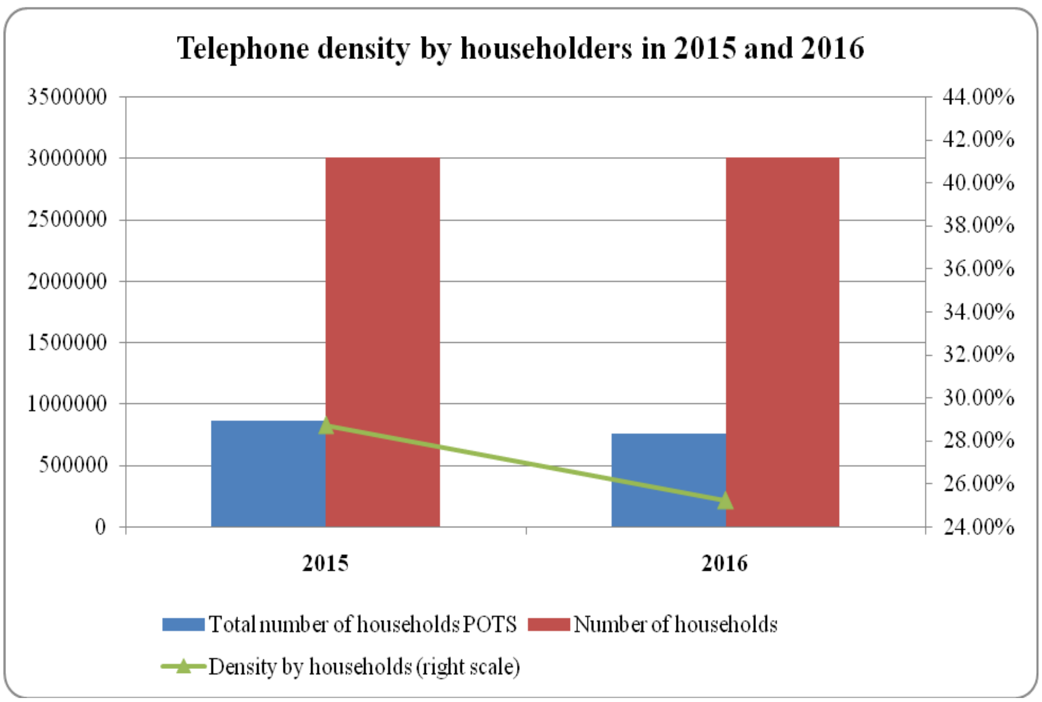
- the launch of the first Bulgarian geostationary communications satellite shall impact on the wholesale market segment “Transmission and/or distribution of radio and/or TV programmes” due to the abilities for provision of ultra HD television, digital radio and capacity for providers of radio and television programmes.

8. Provision of the universal service

8.1. Degree of satisfaction from the universal service provision

As of 31.12.2016, BTC EAD - the undertaking obliged to provide a universal service[51], ensured 82% coverage measured by the number of territorial units. Compared to 2015 an inconsiderable drop in the coverage (by 0.24%) was registered, due to the faster rate of reduction of territorial units in which fixed telephony service was provided, compared to the rate of reduction of the number of settlements as of 31.12.2016. The coverage mentioned includes settlements and settlement formations (resorts, etc.), which are included in the Unified Classification of Administrative-Territorial and Territorial Units.

In 2016, the telephone density by households[52] registered a decrease by 3.49 percentage points compared to the previous year, as a result of the steady downtrend in the total number of BTC residential subscribers as of 31.12.2016. BTC ensured access and provided public telephone services to nearly 12% less subscribers compared to the previous year.



Source*:* Data submitted to CRC

Fig. 31

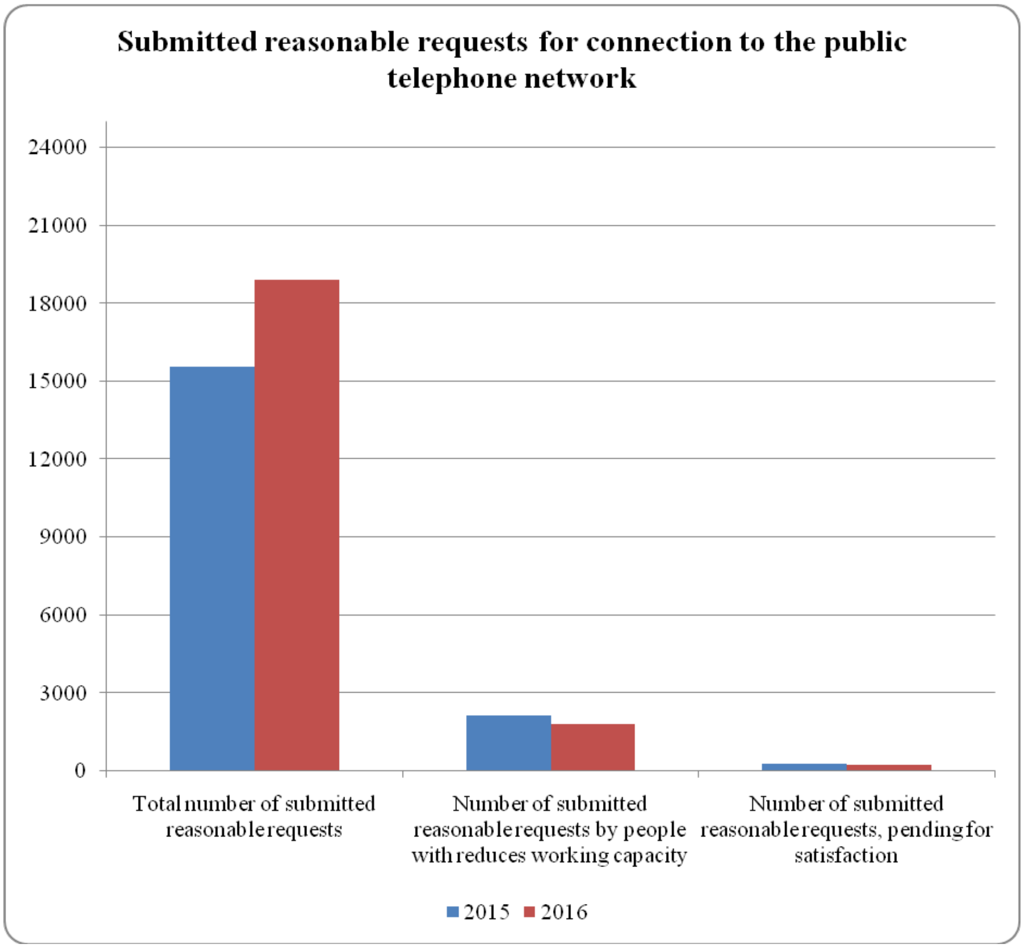
[51] Pursuant to § 7 of Law on Electronic Communications

[52] ”The density by households“ indicator is measured by dividing the total number of residential lines by the number of households in the country based on data from NSI

8.2. Analysis of the provision of the universal service

8.2.1. Access to and provision of the universal service

As evident from Fig. 32 below, at the end of 2016, the total number of submitted reasonable requests for connection increased by 21.4% compared to the previous year. Despite all, in 2016, a decrease in the number of submitted reasonable requests for connection filed by people with disabilities continued to be registered, but the drop rate declined[53], as the submitted reasonable requests for connection were by 6.2 percentage points less compared to the previous year.



Source: Data submitted to CRC

Fig. 32

In 2016, the percentage of the requests for connection pending for satisfaction decreased by 2.3 percentage points, due to the striving of the undertaking to attract new subscribers. The share of the rejected requests for connection compared to the total number of the submitted requests was 19.94%, as the major reason was the discontinued interest by the customers (57.12% of rejects).

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53 Drop in the values of the pointed indicator for 2015 compared to 2014 was 21%, while for 2016 г. compared to 2015 was 14.8%, which is a decrease of the downward rate by 6.2 percentage points.

BTC performed its obligation to ensure free-of-charge calls to emergency numbers, as in 2016 their share amounted to 0.4% of the total volume of calls to national numbers.

8.2.2. Access to public payphones

According to the criteria stipulated in Ordinance No 6[54], BTC is obliged to ensure a sufficient[55] number of public payphones (PPs).

Table 8 presents data about the performance of the obligation to provide a sufficient number of public payphones in 2016:

Table 7

Population	Number of municipalities	Sufficient number of public payphones
below 500 residents	1940	1940
from 500 to 1500 residents	1031	1315
over 1500 residents	477	3663
Total:	**3448**	**6918**

Source: BTC

In 2016, the steady trend of reduction in the number of public payphones owned by BTC continued. The decline in the number of PPs in 2016 was considerable – 12%. As in 2015, in 2016 the implementation of criteria for a sufficient number of public payphones installed in municipalities with over 1500 residents exceeded considerably the minimum number required by Ordinance No. 6. In the remaining categories municipalities, the criteria for a sufficient number of public payphones were not met.

The number of public payphones, property of BTC, whose qualitative characteristics include facilities for users with impaired hearing and for users with none or impaired eyesight, also registered a decrease of 16.9% compared to the previous year. As of 31.12.2016, these PPs reached 66.2% of the total number of public payphones in the country. Part of them provide a textual or other type of connection for people with impaired hearing or speech and are accessible for users in wheelchairs by being installed in suitable locations. In 2016 deterioration in the quality parameter of the PPs provided was observed, as the number of functional payphones was by 0.7 percentage points less compared to the previous year.

Free calls to the national emergency numbers and the European emergency call number 112 can be made from all public payphones.

[54] Ordinance No 6 of 13 March 2008 on universal service under the Law on Electronic Communications (title amnd. SG, issue 77 of 9 October 2012)

[55] A sufficient number of public payphones is considered to be present when there is at least 1 public payphone and/or 1 public access point for voice telephone services available in municipalities with up to 500 residents; att least 1 public payphone and/or 1 public access point for voice telephone services per 500 residents in municipalities with more than 500 residents, and at least 1 public payphone and/or 1 public access point for voice telephone services per 1500 residents in municipalities with more than 1500 residents.

8.2.3. Ensuring telephone directory and provision of enquiry services

In compliance with LEC and with relation to the provisions of Art. 6 of Ordinance No. 5[56], the undertaking obliged to provide the universal service must issue at least one telephone directory in printed and/or electronic form. In 2016, by its Decision No.198/24.03.2016, CRC approved BTC's proposal[57] for the release of a public telephone directory for 2016 in an electronic form. The telephone directory is available at the undertaking's official website[58].

In compliance with its obligation to provide information for the numbers included in the comprehensive telephone directory during the year, BTC provides end users with a 24-hour telephone directory enquire service through number 11 800.

In 2016 a 24.5% decrease in the number of calls, ensuring the enquiry services and 16.7% decline in the number of free-of-charge calls to emergency numbers was observed.

8.2.4. Affordability of tariffs of the universal service

In performing the obligation to provide price packages within the scope of universal service at affordable prices[59], in 2016 BTC continued to offer, with no change in prices and conditions, the price packages intended for users: with low income (”Limited“plan, as named by BTC); with over 90% impaired work capacity or capacity for social adaptation (“Handicap 160” and “Handicap 300”plan, as named by BTC); with over 50% impaired work capacity or capacity for social adaptation (“Handicap 300”, plan, as named by BTC); people admitted to social or health institutions (“Social and health institutions” plan, as named by BTC).

As of 31.12.2016 the subscribers of price packages within the scope of universal service increased by 4.9% compared to those of 2015. The chart below presents the dynamics of change in the number of subscribers of price packages within the scope of universal service for 2015 and 2016, as the number of subscribers using price packages for people with special needs was not included, because it amounted to only 0.02% of the total number of subscribers of price packages within the scope of universal service.

[56] Ordinance No. 5 of 13.12.2007 on the terms and procedure for release of telephone directories,including working with database, their transfer and use, as well as for carrying out telephone enquire services
[57] Letter, Ref.No. 04-04-66/ 10.03.2016
[58] http://www.vivacom.bg/online/cgi-bin/wpd.cgi?temp=home.html&ls=0;
[59] Stipulated in the Methodology for determining prices and price packages for the universal service adopted with Decree No.2544 of 25.10.2008 of the Council of Ministers, prom. SG, issue 94 of 31.10.2008.

Source: Data submitted to CRC

Fig. 33

The number of consumers of price packages for people with low income and price packages for people with disabilities increased in 2016 г. compared to the previous year, by 4.8% and 5% respectively.

8.3. Quality of the universal service

The Quality of Service parameters of the universal service provision are stipulated in Ordinance No. 6[60], as the target values of the parameters were adopted by Decision No. 345/31.03.2011of the CRC and are publicly available at CRC's official website[61].

According to the data submitted by BTC, in 2016 the undertaking reported fulfilment of all indices, as quality higher than the target values for the universal service was achieved in the following index groups:

- Time for initial service provision;
- Fault percentage per subscriber line;
- Time for remedy of the fastest 80% and 95% of valid requests for failures of the subscriber lines;
- Call set-up time (response) for calls via operator services;
- Percentage of complaints concerning the correctness of bills.

[60] Ordinance No.6 of 13 on universal service under the Law on Electronic Communications (title amend. SG, issue 77 of 9 October 2012)
[61] http://www.crc.bg/section.php?id=904&lang=bg

8.4. Compensation of net costs accrued due to the universal service provision

In 2016 BTC did not submit to the CRC a request for compensation of unfair burden from the universal service provision within the statutory period 30.06.2016. Thus, during the last year, the amount of the net expenditures was not calculated and it was not established whether these expenditures leaded to the unfair burden of the incumbent undertaking. Taking into account the absence of request for compensation of unfair burden from the universal service provision, the activity of the Fund for compensation of the universal service did not start and no funds were deposited.

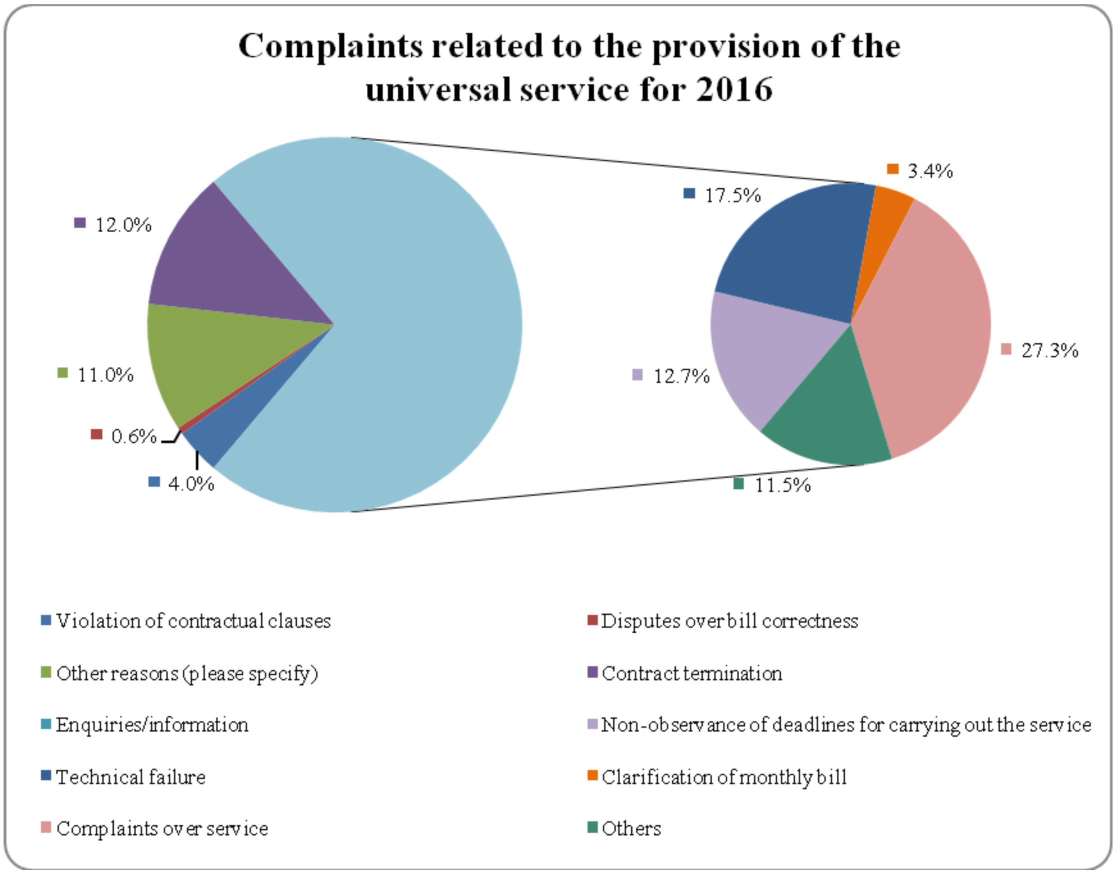
8.5. Complaints and complaint resolutions

According to the General Conditions governing the relations between BTC and the end users, the undertaking provides the possibility that users individually track and control their costs through:

- provision of detailed bills free-of-charge[62];
- free-of-charge selective limitation of outgoing calls;
- deferred payment when connecting to public telephone networks.

In 2016, the number of complaints filed against the undertaking regarding the provision of the universal service was 36.2% less than in 2015. The most often complaints disputed technical failures, bill correctness, contract termination and enquiries /information. The causes for filing complaints are illustrated on Fig. 34:

[62] The content of the itemized bill is defined in Art. 260, Para.3 of the LEC



Source: Data submitted to CRC

Fig. 34

The percentage of complaints regarding technical failure was 17.56% in the total number of complaints which is an increase by 5.53 percentage points as compared to 2015. At the same time, the share of complaints for contract termination compared to the total number of complaints was 14.4 % and registered a decrease by 3.05 percentage points compared to the same indicator for the previous year.

In 2016 BTC responded to 97% of the complaints within the regulatory deadline of 30 days, as the percentage of the unsatisfied complaints amounted to 61% of the total number of complaints filed.

8.6. The universal service outlook

The provision of a universal service aims to prevent the social exclusion by ensuring access to basic and essential telecommunication services for residents in the outermost regions or the most vulnerable groups of households. With regard to this, the prospects for development of the universal service are directly related to the social policy conducted for each period under consideration and particularly to annual update of poverty threshold in the country. Increase in the poverty line by 5%[63] for 2016 in comparison to 2015 reflects in increase of the number of request for connection and the number of consumer of price packages for people with low income, as a part of the universal service scope.

[63] Decree No. 296 of 30.10.2015 of the Council of Ministers on determination of the poverty line in the country for 2016.