A N N U A L R E P O R T

OF

THE COMMUNICATIONS REGULATION COMMISSION

2 0 0 7

CONTENTS

I. LEGAL AND REGULATORY FRAMEWORK

The new EU Legal and Regulatory Framework (2002) was transposed in the Bulgarian legal system by the adoption of the Law on Electronic Communications (LEC) (promulgated, SG, No. 41/22.05.2007, as amended, SG, No. 109/2007 and SG, No. 43/2008) which supersedes the Telecommunications Act (TA) effective till that time. By the adoption of the LEC Bulgaria harmonized its national legislation in the sector with Community law, guaranteeing thereby that the country pursues an electronic communications policy conforming to the goals and the regulatory principles of Community policy as laid down in Regulatory Framework 2002.

The following five directives form the basis of the EU Regulatory Framework 2002:

- Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services and on the principles of competition law ("Framework Directive");
- Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (Access Directive);
- Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorization of electronic communications networks and services ("Authorization Directive");
- Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services ("Universal Service Directive");
- Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector ("Directive on privacy and electronic communications").

In the EU Regulatory Framework 2002, the focus of regulatory mechanisms is shifted from encouraging competition on the single market and promoting investment in fast developing technology towards ensuring sustainable competition in the electronic communications market and establishing rules to respond to convergence trends in the electronic communications networks and services, media, and information technology.

Regulatory Framework 2002 aims to introduce harmonized rules, applicable across the Community, and to eliminate all barriers to effective competition and the provision of quality and diverse services for the benefit of users.

The main principles, laid down in the LEC, include transparency, publicity and consultation in the relationship between the commission and the undertakings providing electronic communications.

The technological neutrality principle has been laid down to account for the dynamic convergence of networks and services.

In line with Regulatory Framework 2002, the LEC introduces ex-ante regulation of the markets of electronic communications networks and/or services aiming at ensuring competition development and implementation of competition law principles. The main aspects of ex-ante regulation in the sector, in accordance with the principles of competition law, include:

- Effective market competition should be developed on the basis of ex-ante regulation in accordance with the specific sector regulation and with the principles of competition law. This new approach requires the Communications Regulation Commission (CRC) first to analyze certain markets of electronic communications networks and/or services and then decide on the basis of the results whether regulatory intervention is needed on that market;

- A new term “an undertaking with significant market power” is introduced. It takes account of the state of play on today’s more complex and more dynamic market and is aligned with the competition law concept of dominance;
- A procedure to be used by CRC to analyze in accordance with competition law principles the markets of products and services within the electronic communications sector, which are subject to ex-ante regulation, has been provided;
- In order to make a smooth transition from Regulatory Framework 1988 to Regulatory Framework 2002, the obligations imposed on undertakings with significant market power pursuant to TA (repealed) remain in force until the development of the relevant market is analyzed and evaluated in accordance with the LEC.
- The procedures for consultations and enhanced transparency in market analyses are defined in a more precise manner.

In analyzing the relevant markets of electronic communications networks and/or services, CRC should work in close consultation with the national competition authority – the Commission for Protection of Competition (CPC). Cooperation between these two bodies aims at enabling them to exercise their statutory powers in a coordinated manner and at creating opportunities for uniform and consistent application of national and European electronic communications and competition law.

The LEC establishes the following background for development of the electronic communications market:

- Non-discrimination of undertakings and creating conditions for entry in the markets of electronic communications and/or services;
- Encouraging investment in infrastructure and promoting innovations;
- Control for efficient use of scare resources;
- Ensuring all users have equal access to electronic communications services;
- Ensuring all users have access to a minimum set of services by imposing an obligation to provide universal service;
- Ensuring protection of personal data and users’ privacy in electronic communications;
- Introducing more effective procedures for dispute resolution between undertakings;
- Streamlining the regulations for provision of electronic communications.

The secondary legislation, provided for in the LEC, is an important instrument for application of the Law. The following acts of secondary legislation were drafted and adopted in 2007:

1. Tariff of the charges collected by CRC pursuant to the LEC;
2. Regulation on the provision of electronic communications for private needs by means of radio equipment using frequency spectrum which does not need to be individually assigned;
3. List of the public electronic communications networks and/or services the provision of which is subject to general requirements;
4. Technical requirements for the operation of electronic communications networks of the fixed radio service and associated facilities;
5. Technical requirements for the provision of electronic communications through radio equipment of the amateur radio service;
6. Technical requirements for the operation of electronic communications networks of the mobile radio service and associated facilities;
7. Technical requirements to the operation of terrestrial mobile networks and associated facilities;
8. Technical requirements for the operation of electronic communications networks of the broadcasting radio service and associated facilities;
9. Technical requirements for the operation of electronic communication networks of the fixed-satellite and mobile-satellite radio service and associated facilities;

10. Functional specifications for mobile number portability.

The following implementing regulations of the LEC were drafted throughout the year:

1. Regulatory policy for the management of the radio frequency spectrum
2. Regulatory policy for the use of numbers, addresses, and names for the provision of electronic communications;
3. Rules for the terms and procedure of transferring authorizations for use of individually assigned scarce resource;
4. Methodology for the terms and procedure of relevant markets definition, analysis and assessment, and criteria for designating undertakings with significant market power;
5. General requirements for the provision of electronic communications according to the type of electronic communications networks;
6. Ordinance on assignment rules and the procedures for primary and secondary assignment, reservation and withdrawal of numbers, addresses, and names. Authorization forms for use of individually assigned scarce resource – numbers and radiofrequency spectrum;
7. Ordinance on the requirements to and the quality parameters of universal service, on the special measures for disabled users and on the procedure for designation of undertakings to provide public electronic communications networks and/or services, and on imposing an obligation to provide universal service;
8. Ordinance on the terms and procedure of providing access and interconnection;
9. Ordinance on the terms and procedure of delivery or destruction of things confiscated in favour of the state pursuant to the LEC;
10. Ordinance on general rules for access to and interconnection of the networks of postal operators providing universal postal service or part thereof;
11. Tariff of charges collected by CRC pursuant to the Law on Postal Services and the Law for the Electronic Document and the Electronic Signature.
12. Rules for the terms and procedure of provision of the carrier selection service;
13. Rules for the terms and procedure of provision and use of the calling line identification and the connected line identification network functions;
14. Rules for the terms and procedure to be complied with by the undertakings providing public telephone services when transferring end-users location data and subscribers data to the emergency call centres in case of emergency calls.
15. List of radio equipment using frequency bands harmonized throughout the EU and electronic communications terminal equipment

II. CONDITION, DEVELOPMENT AND PROSPECTS OF THE ELECTRONIC COMMUNICATIONS MARKET

1. Global development of the electronic communications sector

Volume and growth of the sector

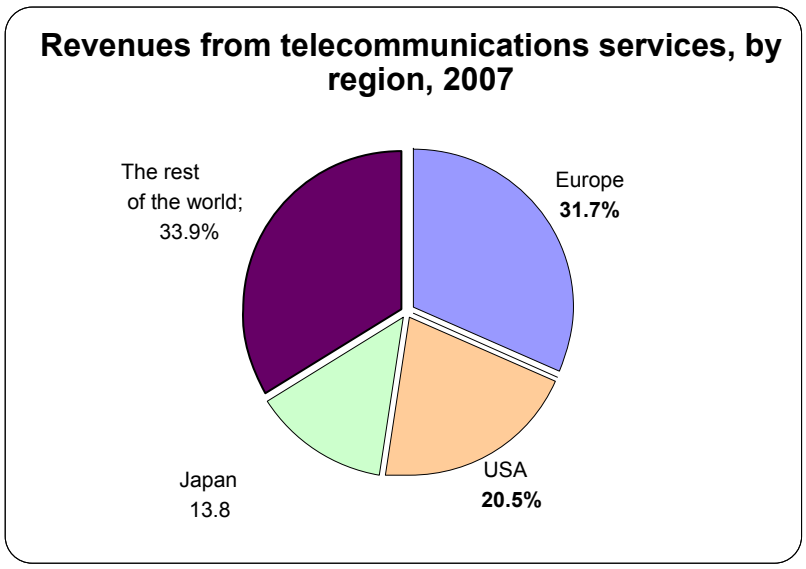
In 2007, the global electronic communications sector keeps the trend of its dynamic development. Different research organizations publish data on the sector's volume. Their statistics and forecasts differ because of the different methodologies and definitions they apply to evaluate the sector. According to the European Information Technology Observatory **(**EITO), total 2007 revenues from electronic communications amount to USD 1.5 trillion,

going up by 2.8% compared to 2006.[1] Insight Research Corp. estimates increase of the total 2007 revenues from telecommunications by 6.6 % against 2006, to USD 1.33 trillion.[2]

For 2008, EITO projects slowdown of sector growth to an annual average of 2.4% reaching the level of USD 1.56 trillion. Insight Research Corp. also predicts slowing down of the growth in the global telecommunications market to 5.9 % in 2008, expecting global revenues from these services to reach USD 1.56 by 2010, going up at a rate of 5.4 % per year.

Total revenues from electronic communications services in the EU are estimated at USD 467 bn against USD 450 bn in 2006 г.[3]

The markets of Japan, the USA and Europe show the weakest growth for the past year. Despite that, they still generate about 2/3 of total revenues from electronic communications services (Figure 1).



Source: *EITO*

Figure 1

In the next years, the markets in Latin America, the Middle East, and Africa are expected to have greater growth potential, given the comparatively low penetration of services, underdeveloped infrastructure and weaker competition in these regions.

Fixed telephony

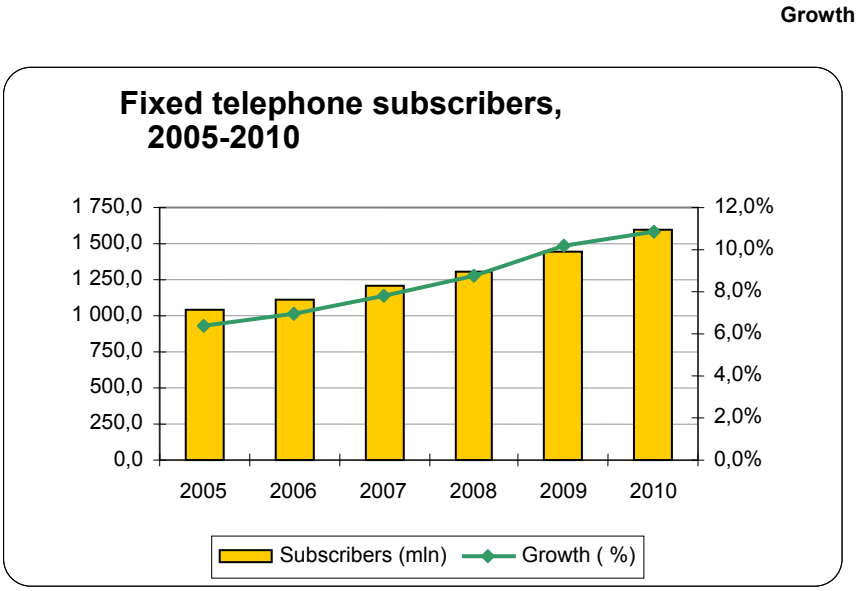
In the past few years, fixed telephony revenues are on a steady downward trend as a result of the strong competition from alternative voice transmission technologies. Users increasingly tend to switch from traditional to IP-based telephony because of lower costs and to go mobile attracted by convenience and additional services options. In 2007, the fixed telephony market volume is estimated at USD 339 bn on revenue basis and is expected to sink to USD 273 bn by 2011.[4] In Europe, revenues from fixed telephony are 5% down on the previous year to USD 111.8 bn[5].

The falling prices of fixed telephone services put strong pressure on incumbent operators (who generate the basic part of their revenues from traditional telephony) to look for new sources of revenue. In order to survive in an environment of keen competition and migrating users, the incumbents change their offers, as well as their communication with

[1] Source: EITO, http://www.eito.com
[2] Source: The Insight Research Corp., http://www.insight-corp.com
[3] Source: EITO, http://www.eito.com
[4] Source: The Economist Intelligence Unit, http://www.eiu.com
[5] Source: European Information Technology Observatory (EITO), http://www.eito.com

customers. Some of them minimize their costs by focusing on the provision of infrastructure to big corporate clients and transferring the servicing of millions of end-users to companies specialised in communication with specific customer segments. Others direct their efforts to the provision of new services, including content, to end users – IP television, music, online games, etc. Many incumbents launch bundled services; besides the popular Double Play fixed telephony + Internet access service, Triple Play and Quadruple Play are now offered in some countries.

This fact accounts for growth in total fixed telephone subscribers to 1.204 bn people worldwide in 2007. Their number will go further up to 1.601 bn in 2010 (Figure 2)[6]



Source: *Datamonitor*

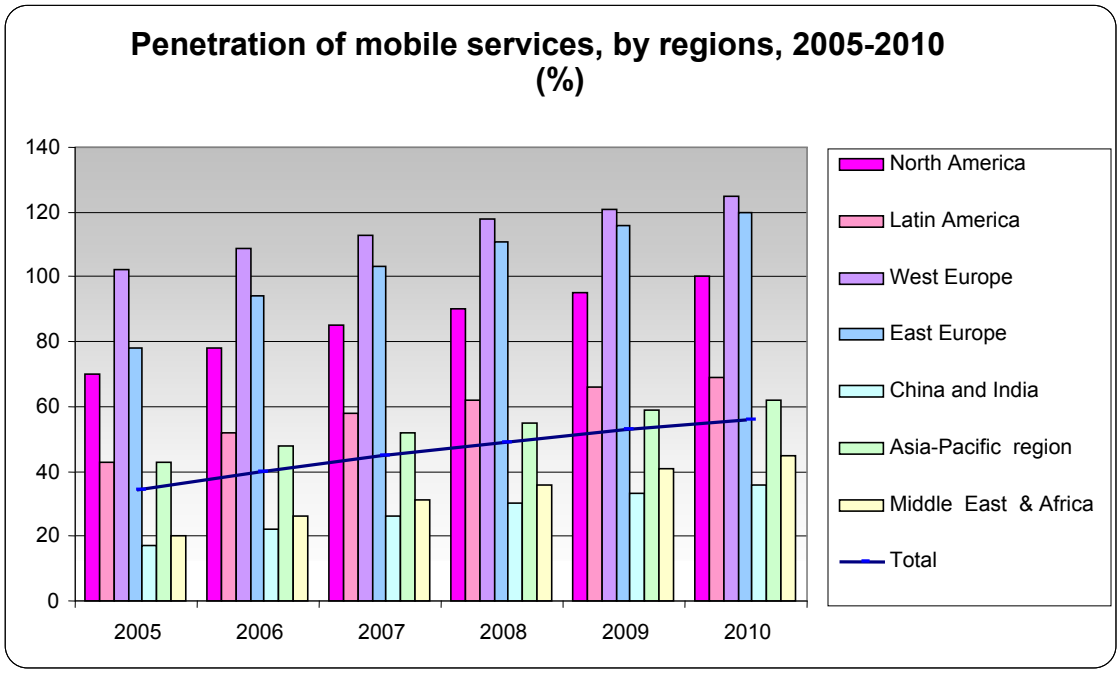
Figure 2

Incumbent operators, in particular in the European market, face increasing competition from alternative undertakings. July 2007 EU market data show growing significance of alternative undertakings: 29.8% of users prefer the services of alternative providers for their international calls, and 13.5% – for their national calls. The breakdown by Member States shows that leaders in terms of the number of alternative operator subscribers are the Netherlands and Finland (45% use the services of alternative providers for their international calls), Austria (44.9%), and Sweden (42.5%) .[7]

Mobile communications

Mobile communications remain a highly dynamic sector. At the end of 2007, subscribers of such services stand at 3.3 bn people worldwide, 33% up on the end of 2006.[8] The global penetration rate of mobile communications is estimated at 49% and is expected to go above the 50% limit in early 2008 (Figure 3).

[6] Source: Datamonitor, http://www.datamonitor.com
[7] Progress report on the single European electronic communications market 2007 (13th report), data as of 01.10.2007.
[8] Wireless Intelligence GSM Association statistics Q4 2007, http://www.gsmworld.com



Source: *Ovum*

Figure 3

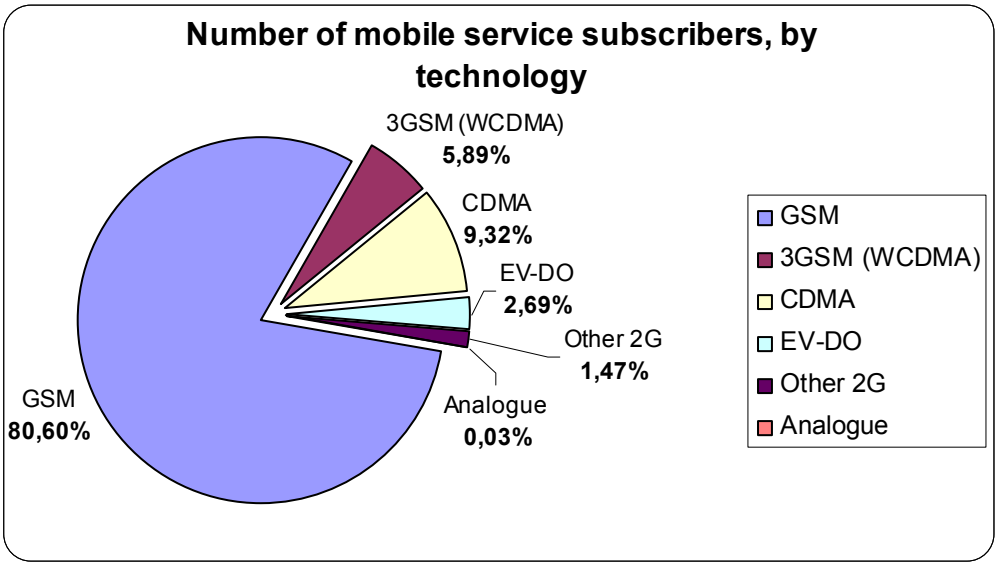
China (529 mln), the USA (252 mln) and India (236 mln) lead in the absolute number of users. However, in contrast to the USA, where the mobile services penetration rate stands at 80%, in India and China mobile services subscribers account respectively for 20 and 40% of the population. In the EU, subscribers stand at 553.46 mln and the average market penetration rate of mobile services is 111.8 %. In some countries, the penetration rate peaks to about 150% (Luxemburg – 152%, Italy – 148%, and Lithuania – 144%).[9]

GSM is still the most commonly used mobile communications technology with over 2.6 bn subscribers, accounting for 80.6% of total mobile services subscribers. While growth in the number of GSM subscribers slows down because of migration to third generation services, in 2007 there is increase of 24% or 520 mln of new subscribers. The second worldwide prevailing technology with 310 mln subscribers (9.3% of total subscribers) is the second-generation CDMA prevalent mainly in North and South America and East Asia.

At the end of 2007, subscribers of third generation GSM-based technologies (known as 3GSM and comprising UMTS, HSPA, UMTD-TDD and FOMA) are almost 200 mln in number, registering growth of over 100% against the end of 2006.

Another widespread third generation CDMA-based technology – EV_DO, also registers high growth in the number of subscribers to almost 90 mln. The total share of third generation service subscribers worldwide stands at 8.5% (Figure 4).

[9] Progress report on the single European electronic communications market 2007 (13th report), data as of 01.10.2007.



Source: *Wireless Intelligence*

Figure 4

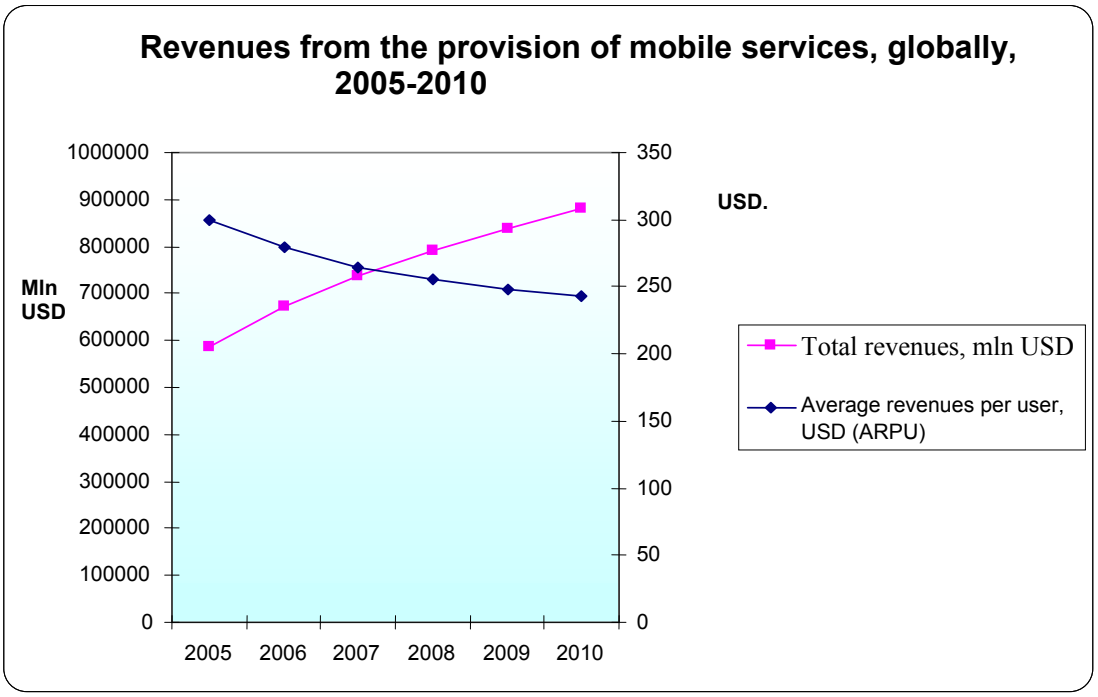
In the EU, third generation mobile services (3G) are now offered in all Member States by 86 operators. In 2007, the number of 3G services subscribers is 96% up to 88 mln people (20% of total EU mobile services subscribers)[10]. In Europe, Luxemburg and Ireland lead in the penetration rate of 3G services (respectively 29% and 28 % of all mobile services subscribers in these countries use 3G networks), as well as Italy and Portugal.[11]

In 2007, the share of pre-paid services users is 60% worldwide.[12] In the EU, the percentage is similar – 61%, and remains very high in some countries like Malta and Italy, respectively at 91% and 89%.[13]

Global revenues from the provision of mobile services stand at USD 789 bn in 2007.[14] In the EU countries, revenues from mobile services are 3.8% up in 2007 to USD 213 bn.[15]

Because of the lower prices of mobile services and the higher number of subscribers, the average revenues per user (ARPU) are going down in all big markets (Figure 5). In a global perspective, ARPU from data transfer are on an upward trend while ARPU from voice services are moving downwards. According to Research and Markets analysts, in 2007 the average per minute voice call prices are down by 15-20% worldwide and the ARPU from the provision of voice services have decreased by 10%. On the other hand, the revenues from data transfer are notably up. According to Pyramid Research analysts, they amount to USD 150 bn at the end of 2007 and are expected to double by 2012, influencing the relative share of average revenues from data transfer in total ARPU, which will go up from 19% in 2007 to 29% in 2012. Contributive of higher revenues is also the usage of third generation mobile technologies.

[10] Source: IDATE, PAC, and EITO
[11] Progress report on the single European electronic communications market 2007 (13th report), data as of 01.10.2007.
[12] Source Paul Budde Communication Pty Ltd, http://www.budde.com.au
[13] Progress report on the single European electronic communications market 2007 (13th report), data as of 01.10.2007.
[14] Source Pyramid Research, http://www.pyr.com
[15] Forecast in the Progress report on the single European electronic communications market 2007 (13th report).



Source: *Ovum* **Figure 5**

In the past three years, the share of SMS in the revenues from data transfer increases. Portio Research project 2007 revenues from SMS at USD 52.5 bn and expect them to go up to USD 67 bn in 2012 г. In 2007, total SMS sent are 2.4 trillion[16] and are expected to reach 3.7 trillion by 2012.[17]

In many countries, mobile operators invest in services for provision of specific content, using the higher capacity of data transfer lines. Very fast growth in revenues is registered by the GPS services for user location identification and associated provision of additional navigation or reference information. ABI Research estimates total 2007 revenues generated by this segment at USD 515 mln. This amount is expected to increase to USD 13.3 bn by 2013.

Mobile television also registers fast growth. Juniper Research estimate total 2007 revenues from mobile television (both broadcasted and in a dataflow format) at almost 2 mln USD and expects them to go up to USD 16 bn by 2012.

The wide service provision opportunities opened up by the continuously enhancing capacity of mobile connection and the technical advancement of cell phones cause a large number of the operators, who own mobile networks, to lease a portion of their free capacity to companies that do not have their own infrastructure but retail mobile services to end users, a.k.a. mobile virtual network operators (MVNO). These operators are gaining importance worldwide as providers of services to consumers, as show the growing revenues and increasing number of subscribers of virtual operators. In 2007, worldwide revenues generated by a total of over 300 MVNO in 37 countries stand at USD 38 bn, 150% up on 2006. They are expected to increase to USD 82 bn in 2010.[18] On the other hand, in 2007 total MVNO subscribers reached 3% of total mobile services subscribers (almost 100 mln people). Their number is expected to move up to 126 mln at the end of 2011 г.[19]

International roaming services

[16] Source: Informa Telecoms & Media, http://www.informatm.com
[17] Source: Portio Research, http://www.portioresearch.com
[18] Source: Juniper Research, http://www.juniperresearch.com
[19] Source: Paul Budde Communication Pty Ltd,, и Research and Markets, http://www.researchandmarkets.com/

On 27 June 2007, the European Parliament and the Council of the European Union adopted Regulation (EC) No. 717/2007 on roaming on public mobile telephone networks within the Community to ensure that users of public mobile telephone networks when travelling within the Community do not pay excessive prices for Community-wide roaming services when making calls and receiving calls.

Since the Regulation was brought into force, users' costs for roaming within the Community have dropped by about 60%. The price of outgoing calls has decreased on average from €1.10 per minute to €0.49 per minute. The price of incoming calls has dropped from €0.58 per minute to €0.24 per minute.[20] Rates are expected to continue downwards owing to the further decreases of imposed cap prices for voice roaming services, laid down in the Regulation.

With a few exceptions, the Eurotariff introduced by the Regulation has been accepted smoothly by the mobile operators across the Community and by the end of September 2007 over 400 mln citizens of the EU have made use of it.

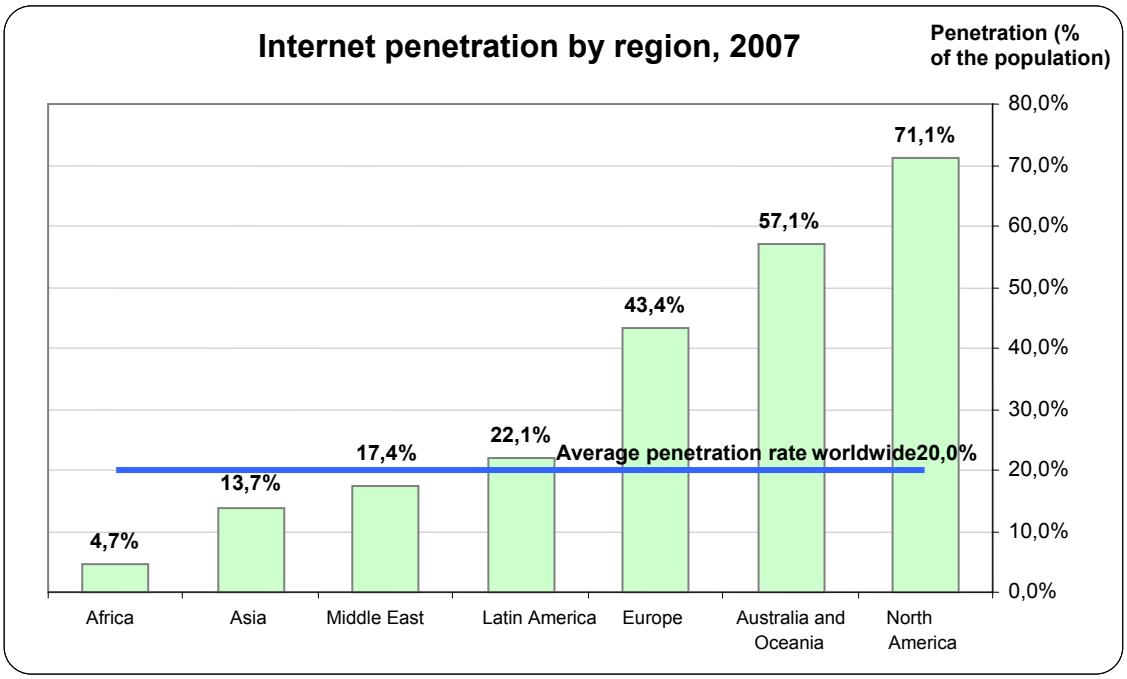
Consultations on the introduction of price caps for data roaming across the EU are expected to continue in 2008[21].

Internet

According to Internet World Stats data, at the end of 2007 Internet users worldwide stand at 1.319 bn people, accounting for 20% of the world population.[22]

The number of Internet users is over 30% up on 2006, the highest growth registered in the Middle East (where the number of users is over 70% up), Latin America (41% up), Asia, and Africa (respectively 32% and 37% up). In Europe, Internet users have increased by 11.4% to 348 mln people and in the EU alone – by 13.9% to 273 mln people.

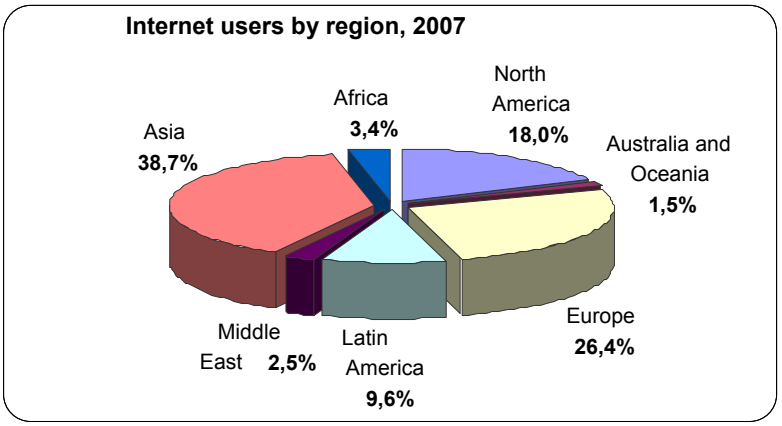
North America (71.1%), Australia and Oceania (57.1%), and Europe (43.4%) lead in terms of the number of Internet users. The lowest Internet penetration rate is registered in Africa where only 4.7% of the population use the World Wide Web (Figure 6).



Source: *Internet World Stats* **Figure 6**

[20] Source: Progress report on the single European electronic communications market 2007 (13th report).
[21] Source: Progress report on the single European electronic communications market 2007 (13th report).
[22] Internet World Stats, http://www.internetworldstats.com

Asia (exclusive of the Middle East), accounting for over 38% of the people who have access to the world wide web, is the world leader in terms of the relative share of Internet users, followed by Europe with 26.4% and North America with 18% (Figure 7).



Source: *Internet World Stats*

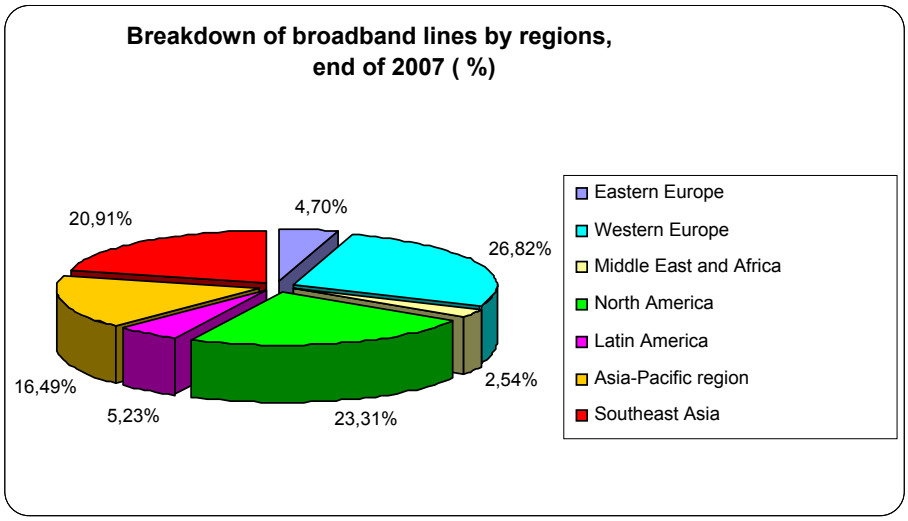
Figure 7

Internet World Stats projects that in the next three years the number of Internet users will reach 1.65 bn people. The Asia-Pacific region looks to be a growth leader, with almost 50% of Internet users worldwide expected to live in this part of the world by 2012.[23]

Broadband access

At the end of 2007, the total number of broadband lines worldwide stands at 349.98, which is 24.3% growth for the year, and broadband penetration rate is 6.1%.[24]

In terms of geographical distribution and development, the share of Eastern Europe is 0.9% up year on year. Western Europe remains the region with the highest number of broadband connections – 26.82% of total lines worldwide or 93.8 mln lines (Figure 8).



Source: *Point Topic*

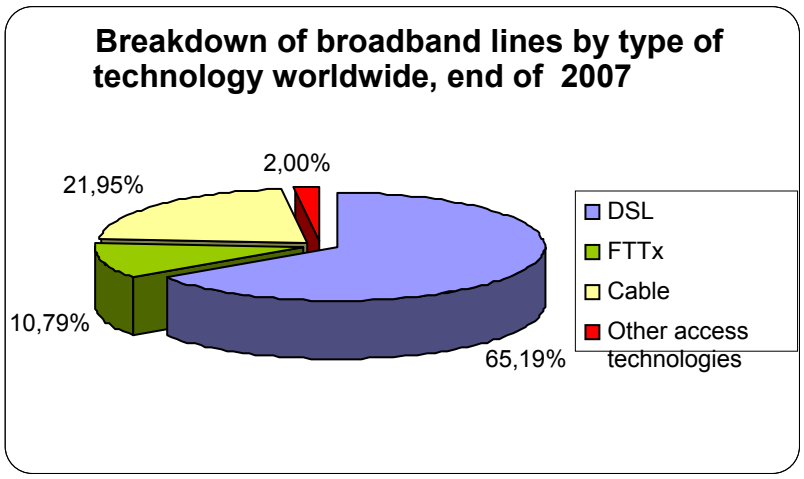
Figure 8

Over 26 mln broadband connections are built in the EU countries in 2007. At the end of the reference period, the broadband lines in the EU are almost 99 million, with the

[23] Source eMarketer, http://www.emarketer.com
[24] Point Topic World Broadband Statistics, Q4 2007, http://www.point-topic.com

penetration rate of this type of access varying significantly from country to country. The total broadband penetration rate in the EU Member States is 20% against 15.7% in 2006.[25]

xDSL is still the dominant broadband Internet access technology worldwide, accounting for over 65% of total broadband lines. Cable broadband Internet lines, which are a leading technology in the USA, Canada and South Korea, account for almost 22% of total connections, and optical fibre lines, which are popular in Japan and South Korea, account for 10.79% (Figure 9).



Source: *Point Topic*

Figure 9.

In the EU, the dominant technology for broadband Internet access remains xDSL (79.9%), followed by cable networks (15.3%) and optical fibre networks (1.3%), the latter prevailing in the Scandinavian countries, the Netherlands, and Italy.

At the end of 2007, the number of WiMAX networks, which provide broadband Internet access as well as voice services, IPTV, video and audio on demand, and other services, stands at 1.7 mln, generating revenues at USD 1 bn.[26] According to WiMAXCounts data, the number of subscribers will be going up at a high pace to 14.9 mln at the end of 2009, 55 mln at the end of 2012, and 127 mln at the end of 2014. To date, the Asia-Pacific region accounts for the highest number of WiMAX services users, owing to the large number of the population and the emerging economies in that part of the world. Regions like Eastern Europe and Latin America have potential to adopt the technology because of the low penetration rate of broadband access. In developed regions (for example Western Europe) WiMAX is adopted at a slower pace because of the high penetration rates of other technologies for provision of broadband services.

Voice over Internet Protocol (VoIP)

The upward trend in the use of Voice over Internet Protocol services persists in 2007. Internet telephony is attractive and the number of users is steady up because of the cheap and even free international calls, on one part, and the higher penetration rate of broadband Internet access, on the other part. According to Infonetics Research data, at year-end the number of VoIP subscribers worldwide stands at 80 mln and is expected to go up to 267 mln in 2012.[27] In Europe, the number of VoIP subscribers is 28.9 mln people, France leading in terms of the penetration rate with 34% of households nationally using VoIP networks.[28]

[25] Preparing Europe's digital future i2010 Mid-Term Review SEC(2008) 470
[26] Maravedis WiMAXCounts Quarterly Report March 2008, http://www.wimaxcounts.com
[27] Source: Abi Research, http:// www.abiresearch.com
[28] Source: TeleGeography, http://www.telegeography.com

Software VoIP clients are becoming increasingly popular, offering free PC-to-PC call options and paid calls to fixed or mobile networks. At end of 2007, the number of registered users of the most popular VoIP software "Skype" stands at 276.3 mln people, generating over 41.1 bn minutes of free PC-to-PC calls and more than 5.8 bn minutes of paid PC-to-phone calls. 2007 revenues from Skype services stand at USD 381.8 bn.[29]

2. Development outlook of the global electronic communications market

Building high-speed network architectures, accessible anytime anywhere, will remain a key priority for the undertakings providing electronic communications. The smooth transition from fixed telecommunication network services to their mobile platform equivalents is expected to persist. The higher mobility of users and the increased capacity of wireless connections are expected to push up the demand for mobile services and applications. According to Insight Research Corp., until 2010 the revenues from mobile services provided through broadband wireless networks will increase at a rate of 61% average per year. The provision of specific mobile content on user demand – geographic and navigation services, audio and video on demand, exchange of files and other information between users, Internet Protocol TV (IPTV), services provided through virtual social networks, etc., will become a major source of revenues for the undertakings, generating revenues from USD 20 bn in 2007 to USD 64 bn in 2012.[30]

The tendency of gradual approximation and blending of telecommunications, information technologies and electronic media is expected to enhance in the next years, bringing about convergence of different types of infrastructure, services and terminal equipment. The Internet Protocol (IP) standard, enabling the transmission of any type of information in a digital form (voice, video, text, etc.) through practically any type of medium, is coming in strong as an interconnection technology. The tendency is to make the Next Generation Networks (NGN) the basis of the future All IP Networks (AIPN) that enable high flexibility of network resource planning, higher quality control of provided content and optimum use of network capacity. AIPN are expected to be wireless technologies united in the 4G standard – such are all Pre-4G networks like WiMAX, WiBro, GAN, etc., which are implemented commercially on the global markets. The universality, enabled by the Internet Protocol, will contribute for higher convergence of provided services and for uniting all types of communications in an integrated IP-based network. This, however, is expected to become a fact later in the future and Forester Research projects that full migration of fixed telephony to VoIP technology will not be seen before 2020.

Bundled services, which are the first steps towards communications convergence, will become increasingly popular applications. In early 2007, bundled services subscribers account for 13% of the EU population, Greece leading in terms of penetration rate with 35.6% of the population using such services. In Great Britain, Denmark, Austria, Spain, and France the penetration rate is within the range of 12-16%. Internet access is included in the bundled services used by 70.6% of all bundled services subscribers across the European Union. It is followed by fixed voice services included in the packages of 67.6% of all subscribers, television (25%), and mobile telephony services (17.6%).[31]

Other more important development prospects of the global telecommunications market in 2008, in addition to convergence and the bundling of services trend[32], include:

[29] According to official data by eBay Inc., owner of Skype Ltd.
[30] Source: Juniper Research, http://www.juniperresearch.com
[31] Source: Progress report on the single European electronic communications market 2007 (13th report).
[32] Source: a survey of leading telecommunications sector analysts conducted by Arc Chart, http://www.arcchart.com, and IDC, http://www.idc.com

Strong coming in of the WiMAX technologies, which will not be viewed only as a step to fourth generation mobile communications but as a real alternative to the so-called "last mile". Over one billion of consumers worldwide use only mobile services. To date, the WiMAX technology is the only reliable broadband Internet access for them. In 2008, big WiMAX projects are expected to be implemented in countries like Mexico, Brazil, and Russia, which have underdeveloped telephone network that impedes the penetration of xDSL broadband Internet access.

The release of radiofrequency spectrum as a step to the development of networks for high-speed wireless data transmission – the transition from analogue to digital television and radio broadcasting and the associated release of radiofrequency spectrum (the so-called "digital dividend") will make it possible to reallocate this spectrum for new services. There are at least three categories of broadband services for which the digital dividend spectrum would be very appropriate – broadband wireless communications, additional terrestrial broadcasting and mobile multimedia applications. This will contribute for the supply of newer wireless services of higher quality to the users.

Mobile streaming services (services provided in a data flow format) - given the increasing capacity of mobile networks for data transfer and the fast penetration of the HSDPA technology, mobile services for the provision of audio and video content in a data flow format are expected to hold much favour. This makes mobile television (Mobile TV) increasingly popular and the first personal mobile equipment for mobile high-resolution digital television (Mobile HDTV) is expected to appear on the market soon.

Internet-Protocol-based video surveillance services (IP Surveillance). These are expected to gain popularity in a short time because of their flexibility, effectiveness and low price. As they can be offered to users of both mobile and fixed services, many operators will begin to provide video surveillance options to their clients.

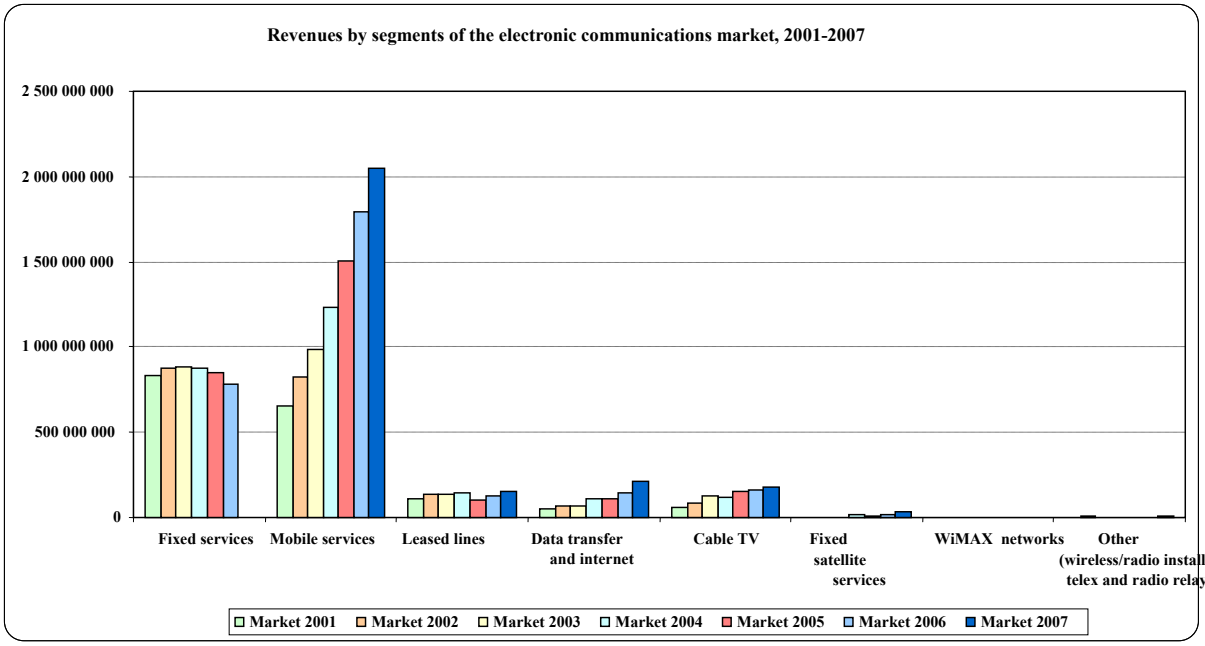
3. Bulgarian electronic communications market

Volume and structure of the market

In 2007, the volume of the electronic communications market, which comprises the market segments of fixed services, mobile services, leased lines, data transfer and Internet access, cable TV, fixed satellite networks, WiMAX networks and other electronic communications networks and/or services, amounts to BGN 3.355 bn or EUR 1.716 bn, 11% up on the previous year. By comparison, the increase in 2006 on 2005 and in 2005 on 2004 is 10%, which shows that in the past few years the Bulgarian electronic communications market develops at a relatively smooth pace. Market volume accounts for about 6% of national GDP and for a second year its growth is slower than the growth of national GDP (which in 2007 is 15%[33] up on 2006).

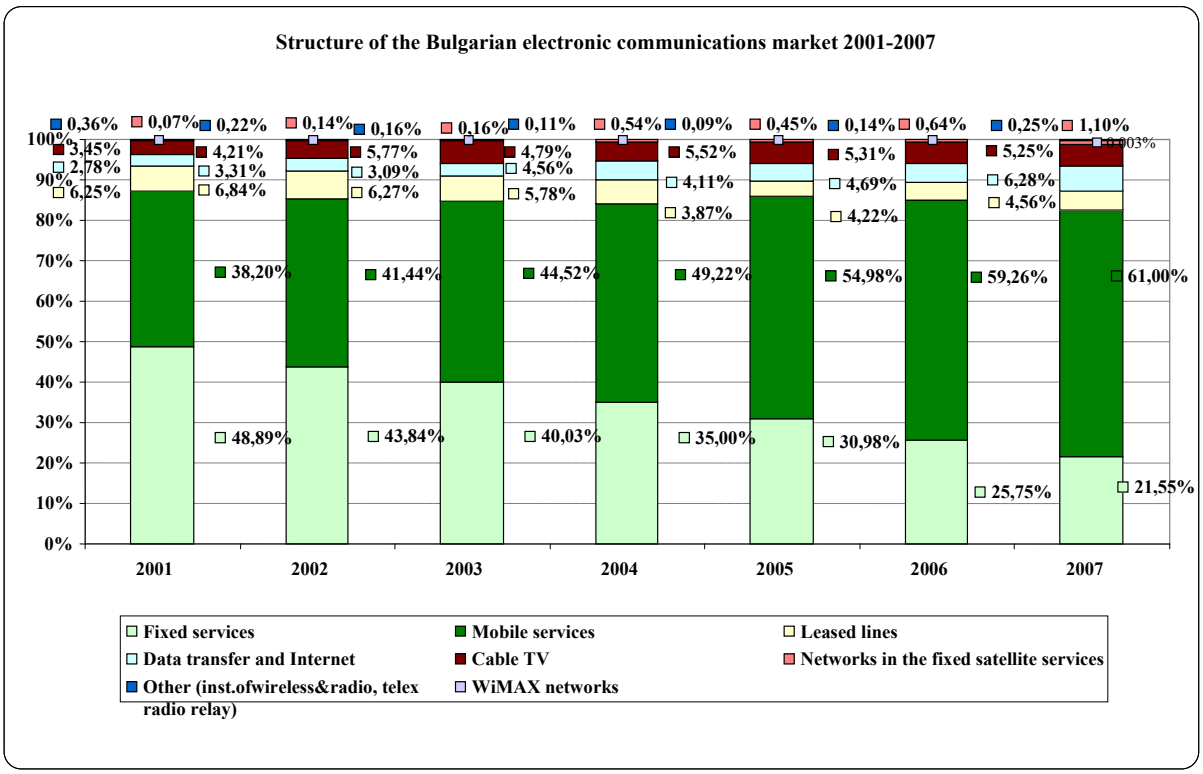
Figure 10 presents the dynamics of revenues by segments, figure 11 illustrates the structural dynamics of the electronic communications market, and figure 12 gives the growth in the national electronic communications market over the period 2001-2007.

[33] Nominal growth based on current prices (real GDP growth for t he same period is 6.2%). Source: National Statistical Institute, www.nsi.bg



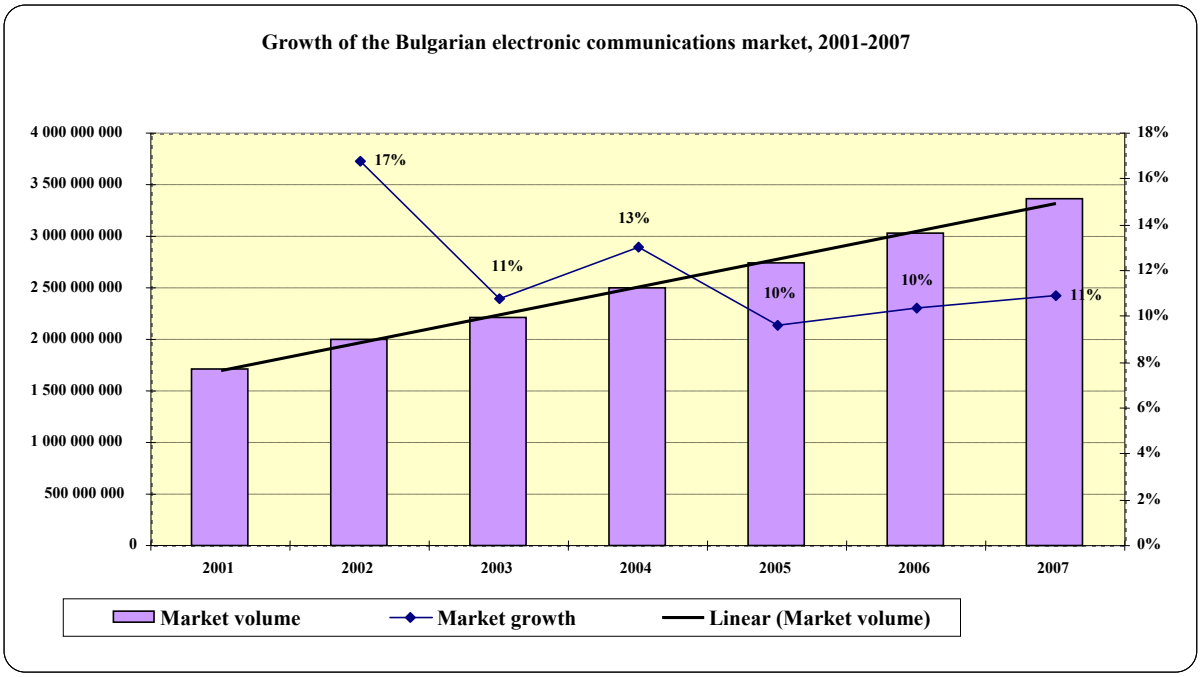
Source: *CRC*

Figure 10



Source: *CRC*

Figure 11



Source: *CRC*

Figure 12

The market analysis highlights the following development trends, registered on the electronic communications market in the past few years:

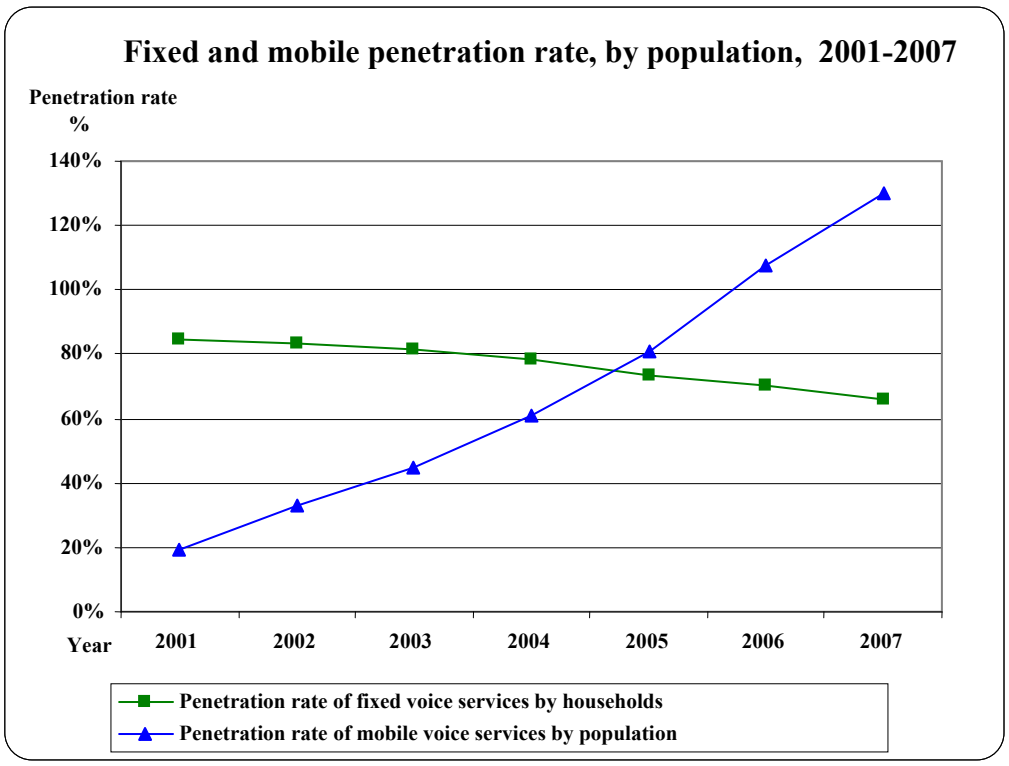
- In 2007, all market segments except Fixed Services register growth on 2006 both in absolute and in relative terms. Fixed satellite networks lead in terms of growth with 91% and cable TV ranks at the bottom with 10%;
- In 2007, the share of revenues from mobile services is 2 percentage points up year-on-year and the share of fixed services is down by 4 percentage points (Figure 11);
- Leased lines register some dynamics: in 2004 revenues go up by 4%, then down by 27% in 2005 and move up by 20% in 2006 and 2007;
- After a slowdown in 2004 and 2005, growth in the revenues from data transfer and Internet is 26% up in 2006 and 49% up in 2007;
- The provision of services through point-to-multipoint WiMAX-based networks was launched in 2007. The revenues from the segment account for only 0.003% of total earnings from electronic communications.

In 2007, the Bulgarian mobile networks and services segment remained highly dynamic in an environment of keen competition and market saturation. The revenues from this market segment are 14% up in absolute terms and account for more than half (61%) of total earnings from electronic communications nationally. The high growth and significant relative share of the segment are attributable, on one part, to a persisting upward trend in the number of users shifting from fixed to mobile voice services and, on the other part, to the multitude of aggressive promotions during the year, targeted at new customers, in particular in the pre-paid services segment.

Despite the presence of 18 active alternative undertakings on the market of fixed telephony networks and services, in 2007 the relative share of BTC AD's revenues from these services remains high (96.54%), indicating that effective market competition is still absent. The share of the revenues from fixed networks and fixed telephony services in total market volume decreases by 7% in absolute terms and by 4 percentage points in relative terms compared to the previous year. This is attributable to a decrease in BTC AD's earnings, which cannot be offset by growth in the revenues generated by the alternative undertakings (4%).

The lower earnings from fixed telephony networks and services are attributable to the depopulation of small settlements, the shift to mobile operators, which offer wider range and higher flexibility of services, the provision of services by VoIP suppliers, the increasingly popular free real time PC-to-PC voice transmission over Internet with software applications like "Skype", as well as to the fact that alternative undertakings still have limited access to incumbent operator's subscribers. In 2007, seven operators[34] provide the carrier selection service in its call-by-call option and only one of them (ORBITEL EAD) provides furthermore carrier pre-selection. Overall, in 2007 less than 1% of BTC AD's subscribers used the carrier selection service. At the end of 2007, eight alternative undertakings provide bundled services, including fixed voice services[35]: NEXCOM BULGARIA EAD, NET IS SAT OOD, MOBILTEL EAD, VESTITEL BG AD, EUROCOM CABLE MANAGEMENT BULGARIA EOOD, CABLETEL EAD, COSMO BULGARIA MOBILE EAD, AND TRANS TELECOM EAD. Thus, subscribers pay less for the package than for the separate services and receive faster servicing.

Figure 13 presents the recent trend of fixed to mobile substitution expressed by the dynamics of fixed and mobile penetration indicators. Mobile services become increasingly popular with Bulgarian users, causing smooth decline in the use of fixed services, and at the end of 2007 the number of subscribers reported by mobile operators is higher than the population of the country, depended mainly by the growing number of users having more than one SIM card, in particular for pre-paid services.



Source: *CRC*

Figure 13

Two new individual licenses for provision of telecommunications services through telecommunications networks, related to the provision of the "leased line" service, were issued in 2007. The revenues from leased lines are 20% up on the previous year, accounted for by the higher number of alternative undertakings on the market (12 in 2007 against 10 in

[34] ITD NETWORK AD, BTC-NET EOOD, GOLD TELECOM BULGARIA AD, NEXCOM BULGARIA EAD, ORBITEL EAD, SPECTRUM NET AD and TRANS TELECOM EAD

[35] The bundled services provided by alternative undertakings are discussed in detail in item 2.4.

2006) and by growth in the earnings of the incumbent BTC AD. The relative share of the former monopolist in the structure of this market segment is over 90%, almost 3 percentage points down on 2006, and the share of alternative undertakings is up to almost 8%.

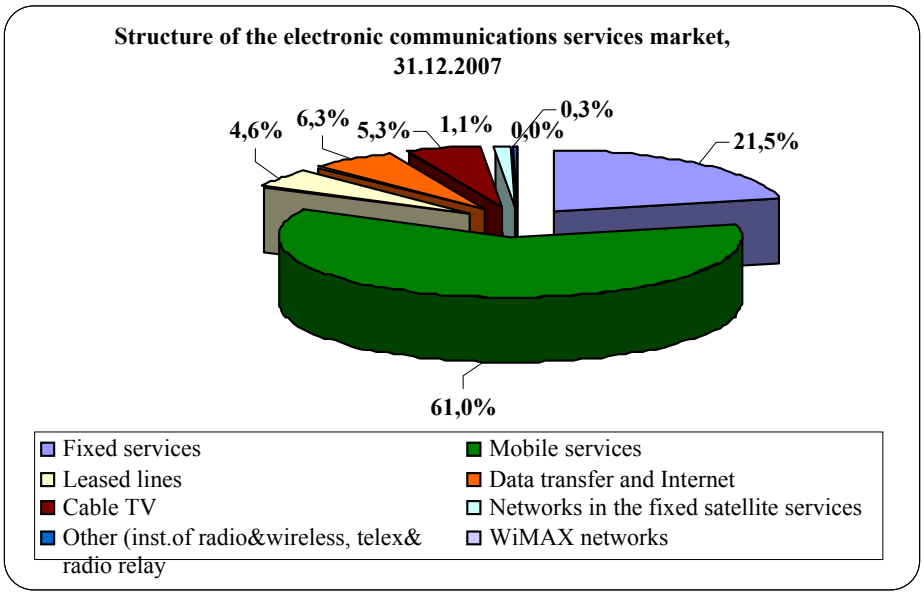
At the end of 2007, there are 27 new operators (9 are registered pursuant to TA (repealed) and 18 have submitted notifications pursuant to the LEC) providing public electronic communications through cable networks for transmission and/or distribution of radio and TV programs. Sixteen certificates supplementing the geographical coverage of operators registered under a General License are issued. Registered operators have submitted 14 notifications (pursuant to the LEC) for supplemental geographical coverage. Sixty-eight registrations have been cancelled. According to an expert estimate by CRC, in 2007 the volume of total revenues from cable networks stands at almost BGN 177 mln, about 10% up on 2006. The main part of revenues still comes from distribution of radio and television programs, the share of which is 4% up on 2006 to 85%, whereas the share of encoded programs is almost the same, at about 1% of the revenues of the operators providing services through cable networks, who have submitted information to CRC. In addition to the packages of radio and television programs, the operators providing services through cable networks offer or intend to offer bundled services such as Double Play (cable TV + Internet access and/or cable TV + voice transmission), Triple Play (cable TV + Internet access + voice transmission), encoded programs, data transfer, HDTV (a digital TV standard supporting a format, which enables higher broadcasting quality and higher resolution compared to the traditional analogue or standard digital TV), as well as video on demand.

The volume of the market segment of fixed satellite networks, based on revenues from provided services, is 2.2 times up on 2006 to BGN 36.89 mln. CRC has cancelled the license of one of the eleven operators holding individual license No. 112 (TRANS TELECOM EAD) and has not issued licenses to new operators after the LEC came into force. New operators have not submitted notifications for the provision of public electronic communications service during the year and the number of providers of this service (4) remains the same. The high growth in volume at BGN 20.2 mln, reported for the market segment of fixed satellite networks for the past year, is attributable to a 2.5 times growth in revenues from the provision of satellite digital TV and radio services to end users, to BGN 29.4 mln in 2007. This significant increase of BGN 17.8 mln in absolute terms on the earnings from this service generated in the previous year has pushed up the relative share of revenues from digital TV and radio in the total volume of the market segment, which stands at 79.81% in 2007, almost 10 percentage points up on the previous year.

In 2007, the volume of the market segment of data transfer and services for provision of Internet access is almost BGN 211 mln, 49% up on the previous year. The number of ADSL services subscribers has doubled. According to CRC data, at year-end the penetration rate of broadband services in Bulgaria is 7.6% but the country still ranks at the bottom among the EU countries on this indicator.

Four operators have started to provide services through point-to-multipoint WiMAX-based networks. To date, the revenues from the segment account for a negligible share in total earnings from the electronic communications market but are expected to increase. Future development implies active looking for a market niche in the provision of mobile or fixed voice services and broadband Internet access.

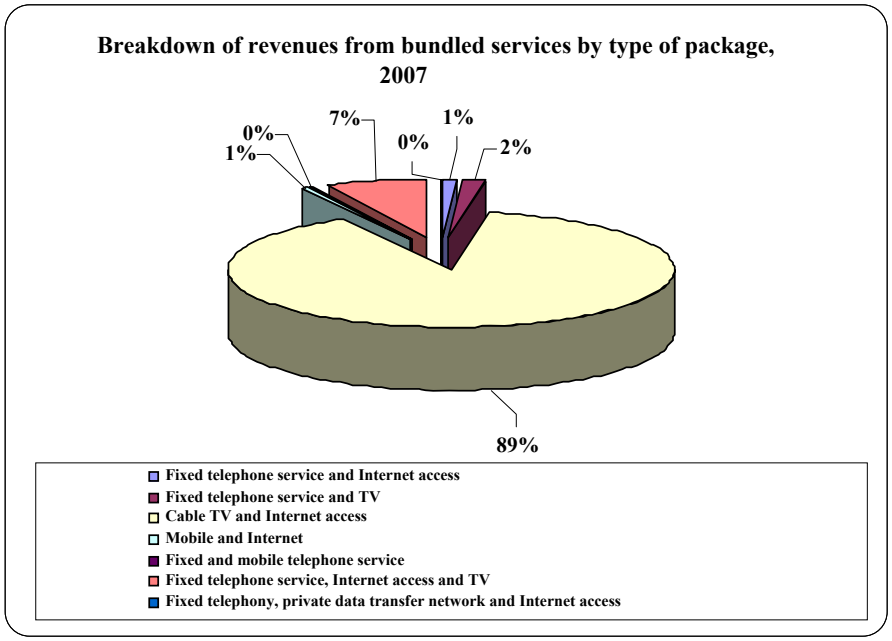
In 2007, the supply of the so-called bundled services in Bulgaria intensified. Despite that, their relative share in total market volume stands below 1% (Figure 14).



Source: *CRC*

Figure 14

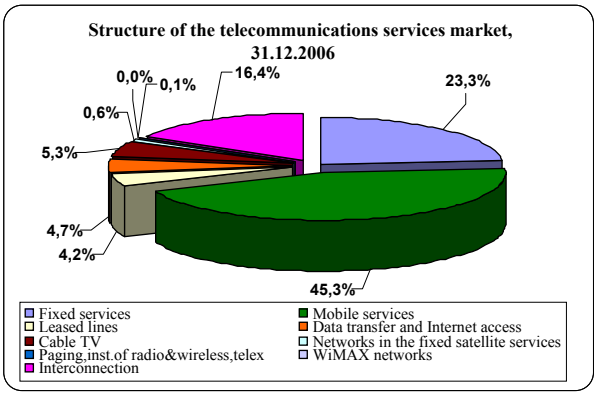
The Double Play "Cable TV+ Internet access" package accounts for the highest relative share (about 90%) of revenues from bundled services. The Triple Play service (fixed telephone + Internet access + TV) accounts for 7% of total revenues from such services.

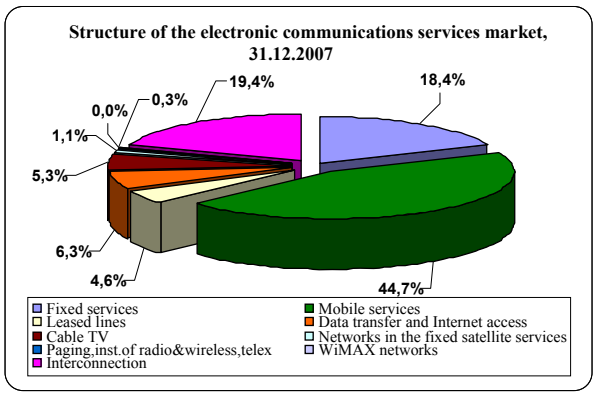


Source: *CRC*

Figure 15

The figures below present the segment of interconnection in the general structure of the electronic communications market.





Note: The volume of the interconnection segment is estimated taking into account: revenues from physical implementation of interconnection (ports, lines and points of connection); termination of traffic (originated by other fixed/mobile operators and WiMAX networks in Bulgaria and abroad, including SMS and MMS traffic), carrier selection, transit traffic, and collocation.

Source: *CRC*

Figure 16 **Figure 17**

While the revenues from interconnection have increased in volume by 32%, their share in the overall market structure is only 3 percentage points up on 2006. The data confirm the recent trend of higher traffic volumes being terminated in mobile networks. In increasingly rare cases calls that originate from fixed network are terminated in mobiles and vice versa.

Investment in the construction and maintenance of networks and development of services, reported by the operators providing electronic communications, amounts to about 1053 mln BGN. The increase of 29% on 2006 is attributable mainly to the higher volume of investment in the data transfer and Internet access segment. 2008 investment in the sector is projected at over BGN 724 mln.

4. Development outlook of the Bulgarian electronic communications market

While effective competition is absent in certain market segments (for example, fixed voice telephony and unbundled access), in other markets, such as mobile services, cable TV, retail broadband Internet access and services offered through fixed satellite networks, alternative undertakings are livening up, pushing up the supply of telecommunications services and tending to invest in hi-tech networks towards convergence and provision of integrated services. On the other hand, since 2007 the regulatory activity is based on the principles of the EU regulatory Framework 2002 and the adopted LEC, which is a necessary precondition for higher investment and stronger competition in the next years.

A serious challenge to the regulator poses the expected growing share of bundled services in the revenues of the operators providing electronic communications. In addition to the increasingly popular Double Play and Triple Play packages of the cable operators, the operators of networks for data transfer are expected to launch similar services including Internet access, VoIP telephony, and IP TV. In 2008, mobile operators are expected to come in strong as providers of fixed voice telephony. The convergence of fixed and mobile networks and services is a fact since the autumn of 2007 when COSMO BULGARIA MOBILE EAD launched Office Zone.

The introduction of mobile number portability in the first half of 2008 is expected to push up competition as operators will make efforts to keep their subscribers and to win over new ones from their direct competitors. Another impetus to an environment of effective

competition could be CRC's decision[36], by which the RADIOTELECOMMUNICATION COMPANY EOOD (operating as an analogue mobile operator under the trade name MOBIKOM) is allowed to digitalize its analogue NMT network by implementing the CDMA technology in the 450 MHz frequency range.

In 2008, strong competition is expected from operators, which have built WiMAX-based point-to-multipoint networks and provide to their customers broadband Internet access as well as mobile and fixed services, including package offers. Besides the four operators, which have launched commercial offering of high-speed wireless networks, a fifth one is expected to start doing business in 2008 – CARRIER BG OOD.

The shift to a digital format of broadcasting, transmitting and receiving TV signals is also a trend that will influence the market in the next years. On one part, cable and fibre operators already offer packages of digital TV programs, and on the other hand, a Plan for the introduction of digital terrestrial TV radio broadcasting (DVB-T) in the Republic of Bulgaria has been adopted.[37] According to this plan, by 2012 all analogue TV broadcasting equipment should be decommissioned.

[36] CRC Decision No. 1406/22.11.2007.
[37] Approved with Protocol No. 5 of the Council of Ministers on 31.01.2008.

III. ELECTRONIC COMMUNICATIONS NETWORKS AND SERVICES

1. Fixed telephony networks and provision of fixed voice telephone services

1.1. Players on the fixed telephony market

The revenues from fixed voice telephone services have taken a permanent downward trend in the past four years. This is attributable to a number of reasons: consumption is shrinking because users shift to mobile services of wider choice and flexibility; fixed telephony prices are going down because of the stronger competition of the alternative undertakings providing publicly available telephone services through fixed network.

Operators providing the fixed telephone service "access to voice telephone service", including through the "carrier selection" service.

The LEC, which supersedes TA, took effect in 2007. It replaces the exiting regime of individual licensing for the provision of public electronic communications using scarce resource – radiofrequency spectrum and numbers from the National Numbering Plan, with an authorization regime.

At year-end, CRC granted a right of use for individually assigned scarce resource – numbers, to GLOBAL COMMUNICATION NET EAD. Thus by 31.12.2007, the number of the alternative undertakings to BTC AD, entitled to provide publicly available telephone services through fixed network, increased to 21. Nine operators hold 116A licenses for provision of telecommunications through public fixed telecommunications network and provision of fixed voice telephone service. Two operators hold 116B licenses for provision of telecommunications through public telecommunications network, in relation to the provision of the service "access to voice telephone service through carrier selection". Ten operators are licensed under both types of licenses (116A and 116B). Over the same period, one new interconnection agreement was signed between BTC AD and an alternative operator providing fixed voice telephone service, and 13 interconnection agreements were signed between alternative undertakings.

Table 1

Data-sheet on alternative undertakings licensed to provide fixed telephone service and access to voice telephone service through carrier selection, 2003-2007

					Name of operator	*Licenses under 116 A*	*Licenses under 116 Б*
As of 31.12.2007	*As of 31.12.2006*	*As of 31.12.2005*	*As of 31.12.2004*	*As of 31.12.2003*	GLOBALTECH BULGARIA EOOD/CABLETEL EAD*	√	x/√
					EASTERN TELECOMMUNICATIONS COMPANY AD	√	√
					NEXCOM BULGARIA EAD	√	√
					NETPLUS OOD	√	√
					ORBITEL EAD	√	√
					BULGARIA TELECOM NET AD	√	x
					VESTITEL BG AD	√	√
					SPECTRUM NET AD	√	√
					TELECOM PARTNERS NETWORK AD	√	x
					TRANS TELECOM EAD	√	√
					EUROCOM CABLE MANAGEMENT BULGARIA EOOD	√**	x
					GOLD TELECOM BULGARIA AD	x	√
					ITD NETWORK AD	√	√
					COSMO BULGARIA MOBILE EAD	√	√

	Name of operator	Licenses under 116 А	Licenses under 116 Б
	MOBILTEL EAD	√	x
	NET IS SAT OOD	√	x
	NOVO EOOD	√	x
	SKAT TV OOD	√	x
	TELECOM 1 OOD	√	x
	BTC-NET EOOD	x	√
	GLOBAL COMMUNICATIONS NET EAD***	√	x

**By CRC Decision No. 88/20.012005 the license under 116A is transferred to Cabletel EAD.*

** The license under 116A is issued to the operator in 2004.*

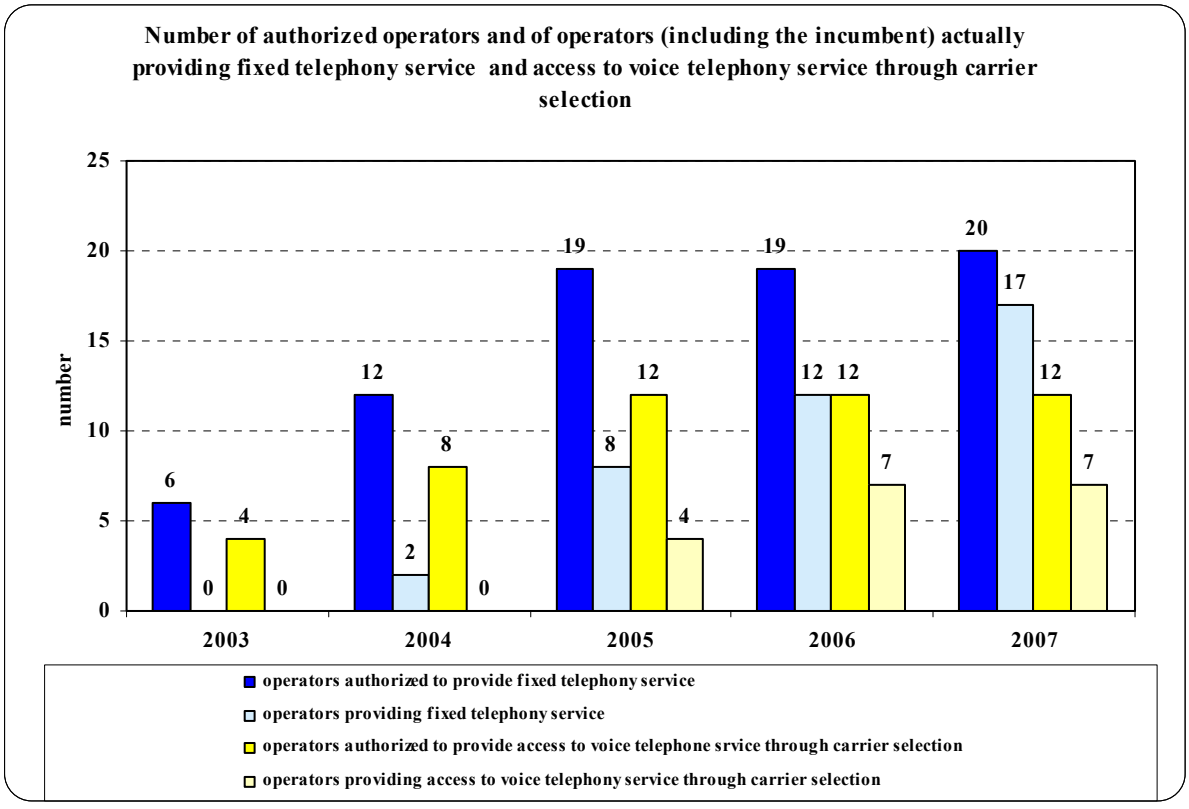
**** By CRC Decision No. 1277/10 October 2007 the operator is granted the right of use for individually assigned scarce resource – numbers on the condition of compliance with the type 116A individual license*

Source: *CRC*

At year-end, the operators entitled to provide fixed voice telephone service (including the incumbent) and access to voice telephone service through carrier selection are 22 in number. Of these, the actually operational players on the market of publicly available telephone services provided through fixed network are 19.

The activity, carried out by alternative undertakings, has national coverage – the territory of the Republic of Bulgaria, the same as the coverage of the license held by BTC AD.

Figure 18 presents information about the number of licensed operators actually providing publicly available telephone services through fixed network and access to publicly available telephone services through carrier selection in the period 2003-2007.



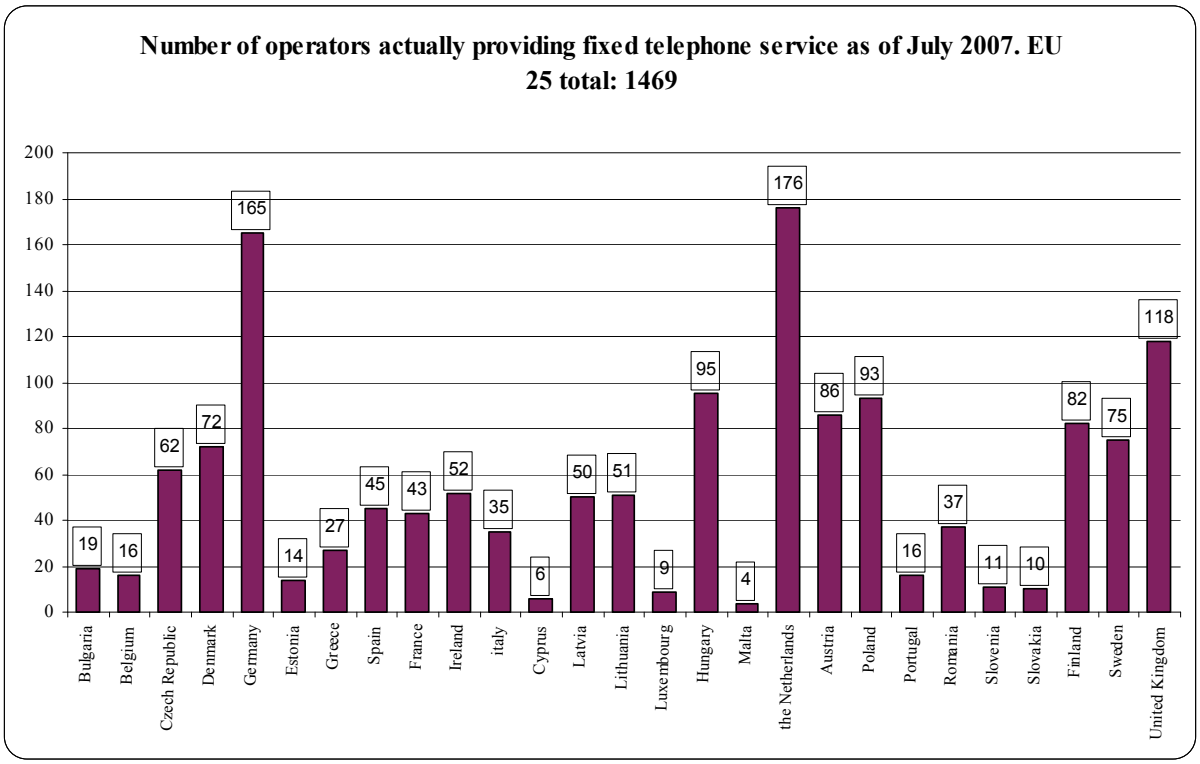
Source: *CRC*

Figure 18

In 2007, besides BTC AD, sixteen alternative undertakings also provide fixed voice telephone service under individual license 116 A. Five alternative undertakings (EUROCOM CABLE MANAGEMENT BULGARIA EOOD, NET IS SAT OOD, TELECOM 1 OOD, MOBILTEL EAD, COSMO BULGARIA MOBILE EAD), which started up in 2007, should be added to the eleven operators (EASTERN TELECOMMUNICATIONS COMPANY AD, CABLETEL EAD, NEXCOM BULGARIA EAD, ORBITEL EAD, SPECTRUM NET AD, TELECOM PARTNERS NETWORK EAD, TRANS TELECOM EAD, ITD NETWORK AD, BULGARIA TELECOM NET AD[38], VESTITEL AD AND NOVO EAD), providing electronic communications through fixed networks and fixed telephone services in 2006.

There are no changes in the players on the market of access to publicly available telephone services through carrier selection. Five of the 16 operators listed above provide in addition to the publicly available telephone service through fixed network also access to publicly available telephone services through carrier selection – ITD NETWORK AD, NEXCOM BULGARIA EAD, ORBITEL EAD, SPECTRUM NET AD, TRANS TELECOM EAD. Two operators hold licenses and provide only access to voice telephony through carrier selection – BTC NET EOOD AND GOLD TELECOM BULGARIA AD. All operators provide the carrier selection service in its call-by-call format and only one operator (ORBITEL EAD) provides carrier pre-selection.

The real operators on the EU fixed telephony market register high dynamics in 2007. The total number of these market players, including incumbents, has increased by over 32% (Figure 19).



Note: The number given includes incumbents; data for Bulgaria are valid as of 31.12.2007.

Source: *Progress Report on the single European Electronic Communications Market 2007 (13th Report) Annex 2, p.36 and CRC data*

Figure 19

[38] The operator has failed to submit a report on its activity under Individual License No. 116A in 2007. Therefore the subsequent analysis does not include data about the activity of BULGARIA TELECOM NET AD.

The Netherlands leads in the number of real players on the market of fixed voice telephone services in EU 25 with 176 operators, while Belgium, Portugal, Estonia, Slovenia, Slovakia, Luxembourg, Cyprus, and Malta rank behind Bulgaria on this indicator.

Providers of "access to publicly available telephone services through public pay-phones"

In addition to the operators providing public electronic communications using scarce resource – numbers from the National Numbering Plan, the players on the Bulgarian market of fixed telephone services include also the providers of access to publicly available telephone services through public pay-phones. Until mid-2007, the operators, who provide this type of service not under an obligation to provide universal service, did it on the basis of registration under General License No. 204. By the adoption of the LEC, the registration under general license is replaced by a notification to CRC.

In 2007, another three operators are registered for provision of "access to publicly available telephony services through public pay-phones": DIALOG EOOD, registered under General License No. 204 pursuant to TA (repealed), and TRANS TELECOM EAD and BG OPEN.NET OOD with notifications pursuant to the LEC. Thus at 31.12.2007, in addition to BTC AD, a total of eight other operators providing public electronic communications have the right to carry out installation and operation of public pay-phones and public telephone boots: BULFON AD (BTC AD owns 100% of the capital of BULFON AD), INTERTEL EOOD, SPECTRUM NET AD, EXTEL OOD AND NEXCOM BULGARIA EAD, TRANS TELECOM EAD, BG OPEN.NET OOD, AND DIALOG OOD. Of these, actual providers of "access to publicly available telephone services through public pay-phons and public telephone boots" are BULFON AD, SPECTRUM NET AD, TRANS TELECOM EAD, BG OPEN.NET OOD, AND NEXCOM BULGARIA EAD. The incumbent (BTC AD) is also a player in this segment of the fixed telephony market. It provides "access to publicly available telephone services through public equipment" in accordance with its individual integrated license and within its obligation to provide universal service.

1.2. Development of the market of fixed voice telephone service

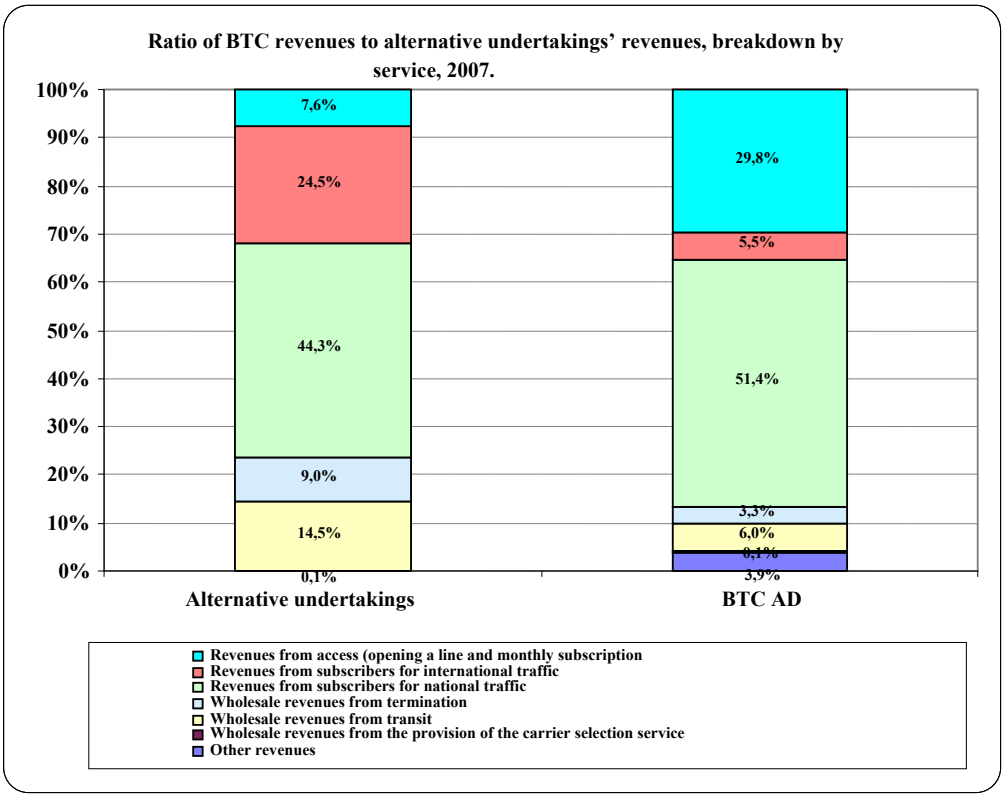
In 2007, total revenues[39] from the provision of fixed telephone service stand at BGN 723 mln, 7% down on the previous year. The decrease is attributable to the lower earnings from fixed telephone service, generated by BTC AD, and cannot be offset by the higher revenues (4% up) generated by the alternative undertakings.

A major item in the earnings[40] generated by BTC AD and the alternative undertakings (respectively over 51% and over 44%) is revenues from subscribers for outgoing national calls, which include local and national calls, calls to terrestrial mobile networks, to point-to-multipoint networks with national access codes and to non-geographic numbers[41]. In contrast to alternative undertakings, who make efforts to attract clients offering free subscriber's line installation and no monthly subscriptions or minimum charges for these services, the incumbent generates almost 30% of its revenues from monthly subscriptions and charges for the subscriber's line installation. On the other hand, the alternative undertakings generate 1/4 of their earnings from outgoing international calls.

[39] Including revenues from access to public telephone services through public pay-phones

[40] Exclusive of revenues from the provision of public telephone services through public pay-phones and public telephone boots.

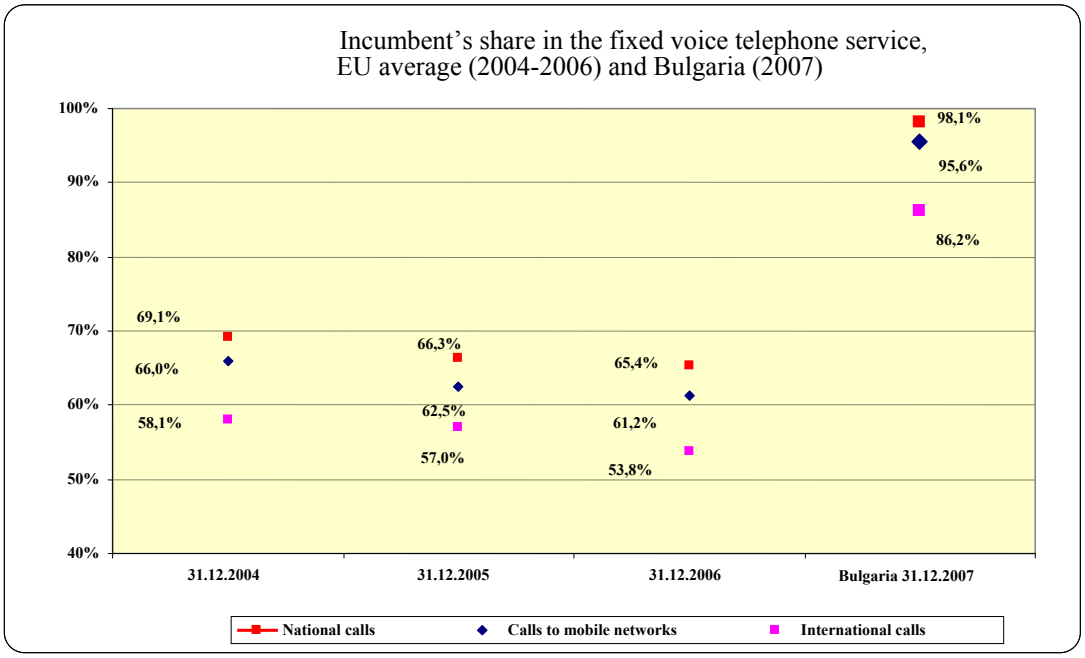
[41] Inclusive of : personal number in the number format 700XYZZZ, free access in the number format 800XYZZZ and value added services in the number format 90XYTZZZ.



Source: *CRC*

Figure 20

Notwithstanding the growing number of active alternative undertakings on the market of fixed networks and services in 2007 and the increasingly wider range of services they provide, the high market share (96.5%) of the incumbent, estimated on revenue basis, indicates that in this segment of the Bulgarian public electronic communications market real competition is still absent. It has to be noted that in 2007, compared to 2006, the revenue-based market share of BTC AD in the market of fixed telephone networks and services has decreased by less than 0.4 percentage points.



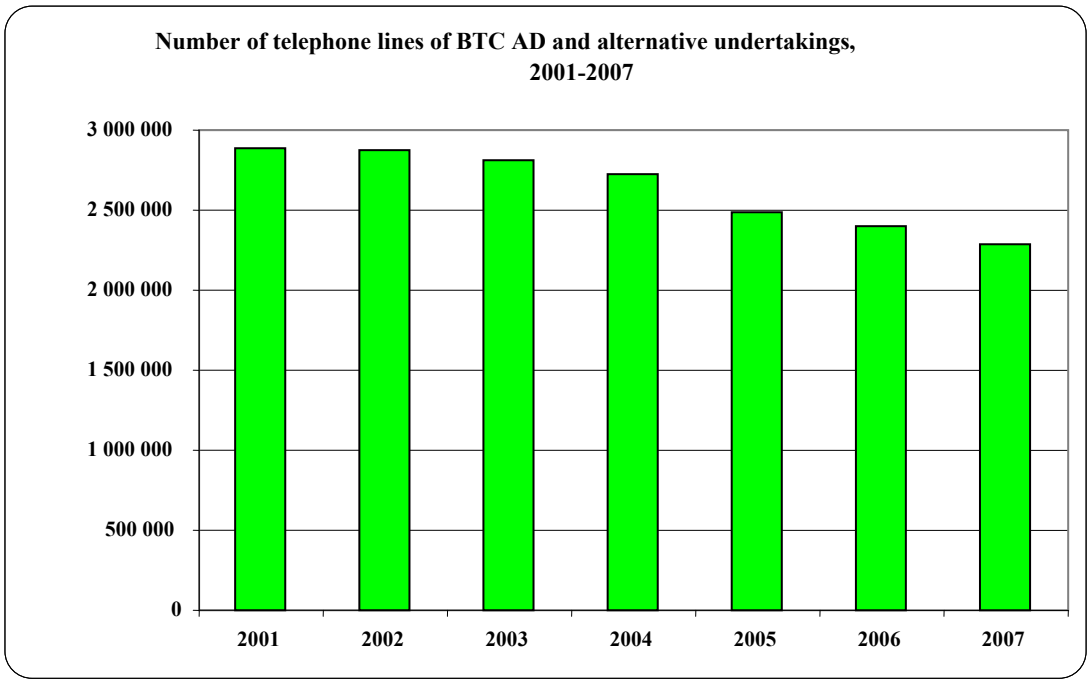
Source: *Progress Report on the single European Electronic Communications Market 2007 (13th Report), p. 7 and CRC*

Figure 21

By comparison, Figure 21 presents incumbent's share average for the EU countries respectively for national calls, calls to mobile networks and international calls. The data analysis shows that incumbent's share average for the EU, estimated on revenue basis, decreases in the past three years, registering bottom values for international calls (down to 53.8%), followed by calls to mobile networks (down to 61.2%) and national calls (down to 65.4%). Data show that the Bulgarian incumbent BTC AD also holds the highest share in terms of revenues from national calls (98.1%) and the lowest share in terms of revenues from international calls (86.2%). It has to be noted, however, that for all calls the market share of the Bulgarian incumbent is still high above the EU average.

Fixed telephone lines

At the end of 2007, the number of fixed telephone lines in Bulgaria is 4% down on the previous year. Despite the downward trend in the total number of lines, lines of alternative undertakings increase both in absolute and in relative terms. In 2007, their number is almost 3 times up on 2006 and at year-end their relative share in total fixed lines in Bulgaria is 2.5%. The Bulgarian incumbent accounts for 97.5% of the fixed telephone lines in Bulgaria.



Source: *CRC*

Figure 22

The decrease in the number of fixed telephone lines is attributable to users' shifting to mobile voice telephony services and to the increasingly popular free real-time PC-to-PC voice transmission over Internet.

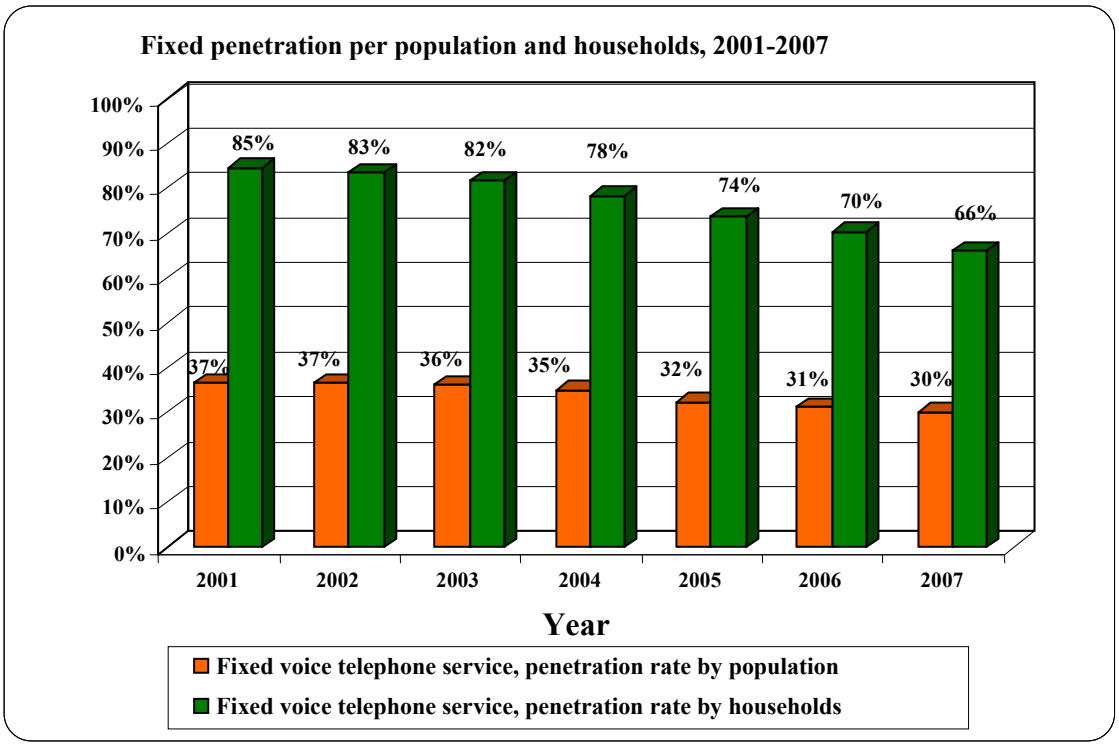
On the whole, the alternative undertakings in the SEE countries[42] still have very low shares in total fixed telephone lines. The percentage varies across the region within the range 0.14% for Croatia – 19.4% for Romania.

The values of the fixed telephone penetration rate indicators by population and by households continue downwards in 2007. The fixed telephone penetration rate by population has gone 1 percentage point down over the period 2005-2007, and the fixed telephone

[42] Report 4 – Country Comparative Report Supply of services in monitoring of South East Europe - telecommunications services sector and related aspects, November, 2007, p. 47

penetration rate by households[43] is down 4 percentage points for a fourth year running but at the end of December registers traditionally high values (66%), which shows that 2/3 of the households in Bulgaria still have fixed lines.

By comparison, the value of the fixed telephone penetration rate by population indicator is 25.5% on average for the SEE countries and 45% for EU25.

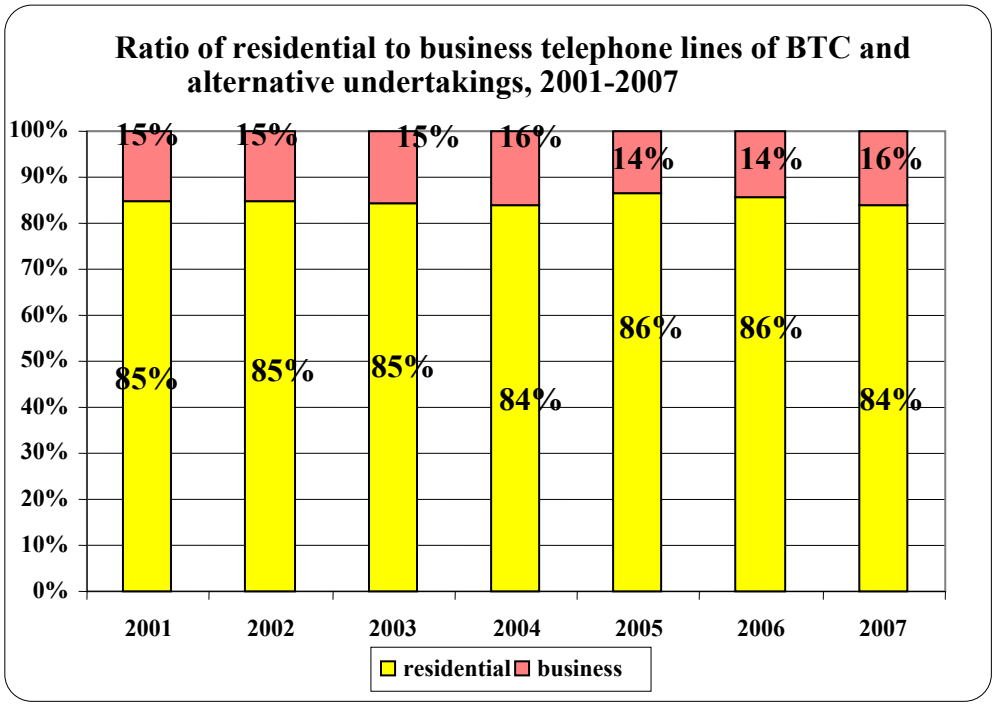


Source: *CRC*

Figure 23

Over the year, the ratio of residential to business telephone lines changes by two percentage points in favour of business lines (Figure 24).

[43] When calculating the penetration rate by households the number of residential telephone lines is compared to the number of households data according to the latest census taken by NSI in 2001.

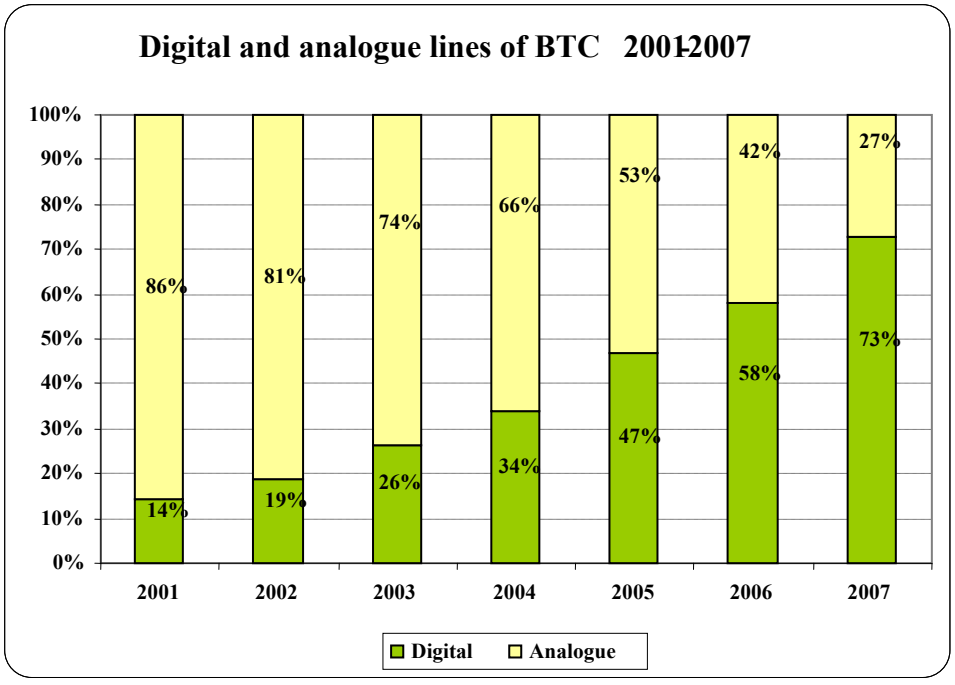


Source: *CRC*

Figure 24

For BTC AD the ratio of residential to business telephone lines is 6:1, whereas for the alternative undertakings it is 1:2, showing that business subscribers are the target audience of alternative undertakings.

At the end of 2007, 73% of the telephone lines of BTC AD are digital, indicating that the company has fulfilled its obligation under the license to achieve network digitalization rate of 59-65% over the year (Figure 25).



Source: *CRC, based on data submitted by BTC AD*

Figure 25

Notwithstanding the achievements, the digitalization rate for the fixed telephone network of the Bulgarian incumbent is still the lowest in the SEE countries[44]. The Republic of Macedonia, Croatia and Montenegro, Romania and Kosovo have achieved 100% digitalization, in Albania, Bosnia and Herzegovina and Turkey the rate is over 95%, and in Serbia it is below 90% but registers notable growth on the previous year. In line with the commitments under Chapter 19 "Telecommunications and information technologies" of the negotiations for Bulgaria's accession to the EU, by the end of 2008 the fixed network of BTC AD should be digitalized at 75-81%.

Public pay-phones

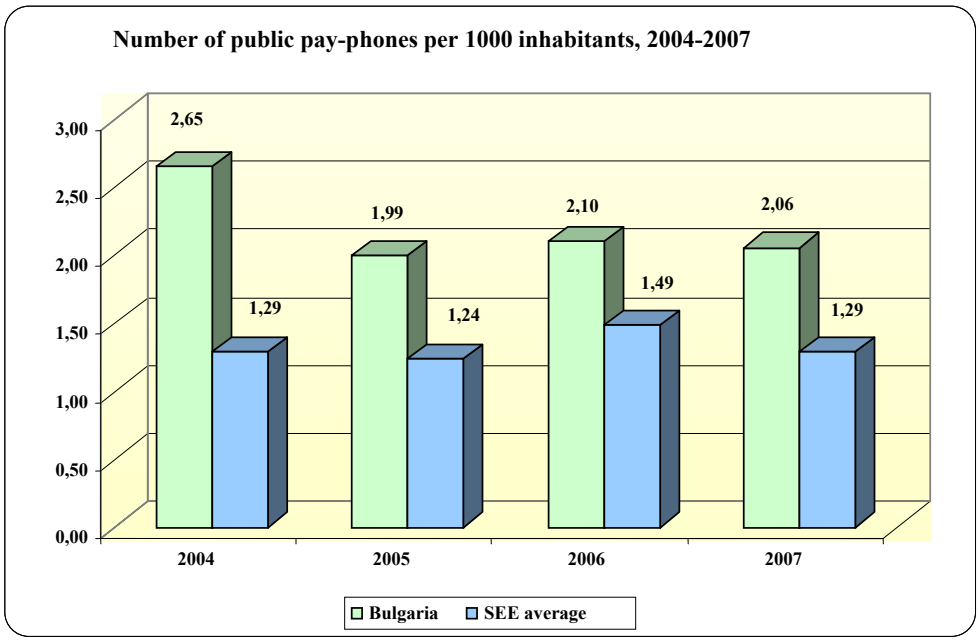
Data, reported by the operators providing access to publicly available telephone services through public pay-phones, show that the total number of public pay-phones does not register notable changes on 2006 and at 31.12.2007 their number is 3% down.

Source: *Data submitted to CRC*

Figure 26

In 2007, the value of the indicator "number of public pay-phones per 1000 inhabitants" for Bulgaria decreases compared to the previous year to 2.06 at the end of December. By comparison, at 1 January 2007, the average value of this indicator for the SEE countries is 1.29, which means that the average year-on-year value of the indicator for Bulgaria is above the region's average.

[44] Report 4 – Country Comparative Report: Supply of services in monitoring of South East Europe - telecommunications services sector and related aspects, November 30, 2007, p. 14



Source: *Cullen International, Report 4 – Country Comparative Report: Supply of Services in Monitoring of South East Europe – telecommunications services sector and related aspects, November 30, 2007, p. 58, and data submitted to CRC*

Figure 27

At the end of 2007, the operators, providing access to publicly available telephone services through public pay-phones and public telephone boots, report revenues at BGN 5.4 mln and investment at BGN 953 thousand. 2008 investment by the market players in the installation, maintenance and operation of public telephone pay-phones and public telephone boots are projected at over 970 thousand BGN.

1.3. Services provided and competition development

In 2007, real competition is still absent on the market of fixed telephone networks and provision of voice telephone services. Incumbent's market share, estimated on number of lines and on revenue basis, remains very high at 97%.

On the Bulgarian telecommunications market, the number of the operators, providing carrier selection, remains the same as in 2006: ITD NETWORK AD, BTC NET OOD, GOLD TELECOM BULGARIA AD, NEXCOM BULGARIA EAD, ORBITEL EAD, SPECTRUM NET AD and TRANS TELECOM EAD. All of them provide call-by-call carrier selection and only ORBITEL EAD provides also carrier pre-selection.

The carrier selection service is still not widely used. Less than 1% of BTC AD's subscribers have made use of the service in 2007.

Since 2007, the subscribers of the alternative undertakings can make calls to non-geographic numbers of the BTC AD network. The subscribers of two operators, NET IS SAT OOD and VESTITEL BG AD, have made use of the service during the year but the traffic is negligible. None of the alternative undertakings provides services for access to personal non-geographical numbers to its subscribers yet.

Over the year, eight alternative undertakings providing fixed telephone service offer to their subscribers the so-called bundled services (Table 2). The benefits of these services for the users consist in lower package price than the price of individual services, shorter servicing time and payment of one bill for several services.

Table 2

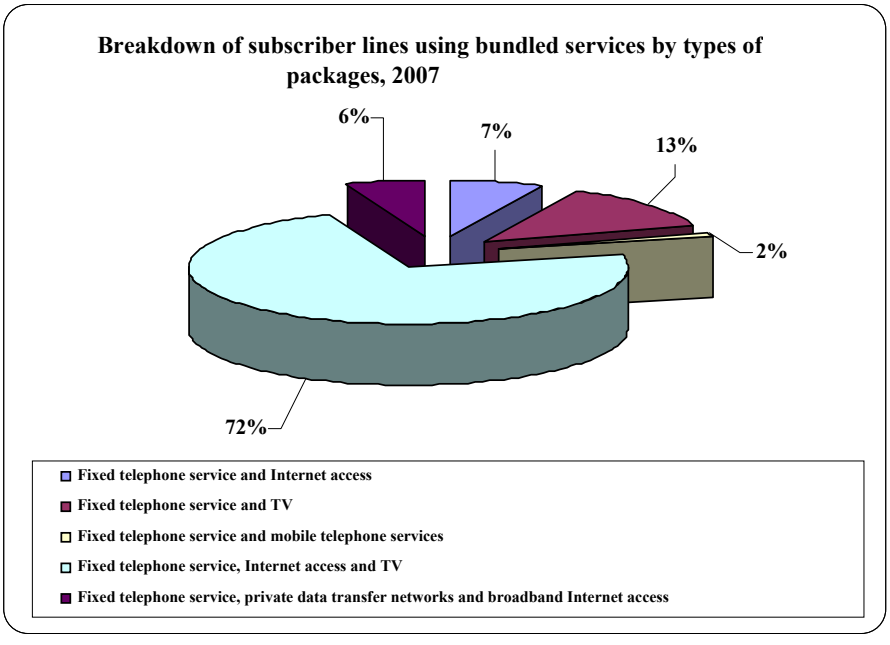
Operators providing bundled services in 2007

OPERATORS / SERVICES			DOUBLE PLAY			TRIPLE PLAY	
			Fixed telephone service and Internet access	Fixed telephone service and TV	Fixed telephone services and mobile telephone services	Fixed telephone service, Internet access and TV	Fixed telephone service, data transfer and broadband Internet access
1.	VESTITEL BG	AD	√	√		√	
2.	EUROCOM CABLE MANAGEMENT BULGARIA	EOOD	√	√		√	
3.	CABLETEL	EAD	√	√		√	
4.	COSMO BULGARIA MOBILE	EAD			√		
5.	MOBILTEL	EAD					√
6.	NEXCOM-BULGARIA	EAD	√				
7.	NET IS SAT	OOD	√				
8.	TRANS TELECOM	EAD	√				

Source: *CRC*

The established market operators (COSMO BULGARIA MOBILE EAD and MOBILTEL EAD), providing publicly available telephone services through terrestrial mobile networks, launched in 2007 the provision of bundled services including fixed voice telephone service.

Over 60% of the subscribers of the alternative undertakings offering bundled services use Double Play or Triple Play services, with Triple Play (fixed telephone service + Internet access + TV) users accounting for the highest share (72%) of customers.



Source: *Data submitted to CRC*

Figure 28

In 2007, the relative share of the revenues from monthly subscriptions for fixed voice telephone service, provided in a package with other electronic communications services as a bundled service, accounts for only 0.1% of the total volume of the fixed telephone service market.

As bundled services tend to become a significant element of the fixed telephone service market in the EU[45], it is expected that, in Bulgaria, a higher number of alternative undertakings will start offering such services. The intentions to introduce new electronic communications services in 2008, declared by ITD NETWORK AD, imply that in the next year the operators providing bundled services will increase by at least one undertaking. Another market player – MOBILTEL EAD, intends to diversify the range of bundled services it offers.

Three of the alternative undertakings holding licenses for fixed telephony network and provision of services through it – TRANS TELECOM EAD, NEXCOM BULGARIA EAD, and MOBILTEL EAD, have also point-to-multipoint licenses. This license enables wireless access to the subscriber for the provision of fixed telephony service. Since 2007, TRANS TELECOM EAD AND NEXCOM BULGARIA EAD offer to their customers a package of WiMAX-supported fixed telephony service + Internet access.

1.4. Prices of fixed voice telephone service

BTC AD prices of fixed voice telephone service

In accordance with CRC Decision No. 2280/14.12.2006, the BTC AD prices set pursuant to the Fixed Voice Telephone Service Pricing Regulations[46] (the Regulations) and the provisions of Article 216, Paragraph 1[47] of TA (repealed) took effect on 01.02.2007. The changes in the price levels, compared to the prices in force until the above date and the prices in effect since 01.02.2007, weighted respectively with the number of subscriber lines and the sum of the call minutes, are as follows:

1. Subscriber's line installation fee – decrease by 26.75%[48] for all subscribers (residential and business).
2. Monthly subscription – increase by 26.98% for all subscribers (residential and business).
3. Calls:
   3.1. Local calls of subscribers with time-based charging – decrease by 1.87% (0.45% for residential subscribers and 3.13% for business subscribers).
   3.2. National calls of subscribers with time-based charging – increase by 6.54% (8.97% for residential subscribers and 2.84% for business subscribers).
   3.3. International calls of subscribers with time-based charging – decrease of 11.60% for all subscribers (12.84% for residential subscribers and 10.55% for business subscribers).

[45] Progress report on the single European electronic communications market 2007 (13th Report) Annex 2, p.118
[46] The Fixed Voice Telephone Service Pricing Rules are adopted with CRC Decision No. 1050/15.04.2004, prom., SG, No. 42/2004. According to the Rules, the price of the fixed voice telephone service is determined on basis of a consumer price basket comprising the following elements: charge for initial connection to the network, monthly subscription and prices for calls. The price increase for the separate elements in the basket is limited by a common price ceiling the maximum value of which is equal to the product of the consumer price index and the gross domestic product index.
[47] Pursuant to the cited article, regulated prices cannot: contain pricing elements based solely on the significant market power and discounts breaking the competition possibilities; create advantages for separate consumers regarding the same or similar service; be under the level of the costs incurred for their provision.
[48] This percentage does not take account of the number of and revenues from the opening of ISDN and R2D lines and lines of subscribers holding Group One disability certificates.

The BTC AD prices are differentiated by time zones of the day and in 2007 the time zones for peak and off-peak calls are the same as those applied in 2006. By CRC Decision No. 2280/14.12.2006, the names of "At Home" and "At Home City" tariff plans for residential subscribers and the number of minutes included were changed with effect from 01.02.2007. In 2007, the prices of the "BTC Office" and "BTC Planet" tariff plans for business subscribers and the conditions for their provision remained unchanged compared to 2006.

BTC AD offers different promotional discounts to its subscribers, conditional on the signing of long-term contracts between the parties.

Prices for fixed voice telephone service charged by alternative undertakings

In 2007, BTC AD's competitors set the prices for the fixed voice telephone service on basis of supply and demand, and the obligations of these operators consist in providing information about the prices in visually accessible places, publishing prices on the Internet and notifying CRC of the entry into force of new prices or changes to existing prices. The LEC provides for shorter notification time compared to TA (repealed) – 3 instead of 7 days. On the whole, the alternative undertakings, who notified prices to CRC in the autumn of 2007, continue to pursue an aggressive pricing policy, associated with their entry in the market and characterised by lower price levels than those of the incumbent BTC AD and by price packages including various services.

Carrier selection service prices

In compliance with its obligations of an operator with significant market power, imposed pursuant to TA (repealed), BTC AD allows its subscribers to select the carrier for their national and international calls. The BTC AD subscribers, who have chosen alternative undertakings, pay for their national and international calls at the prices charged by the respective alternative operator[49], which are lower than the prices charged by BTC AD for these calls.

2007 data for the national and international calls of the BTC AD subscribers show that the traffic through alternative undertakings is 10% down on 2006 and that in 2007 ORBITEL EAD is again the only operator that offers carrier pre-selection. According to alternative undertakings' data, international calls account for about 90% of the carrier selection traffic.

Bulgaria – EU comparison of fixed voice telephony prices

A comparison of the prices for fixed voice telephone service, charged by BTC, the Bulgarian alternative undertakings and the incumbent operators in the Member States of the European Union (EU) for 2006 and 2007, is made below. It satisfies the following conditions:

- The European Commission (EC) Progress Report on the Single European Electronic Communications Market 2007 (13th Report)[50], giving data for September 2006 and September 2007, is the data source for the average Community price;
- The data about ORBITEL EAD, which holds the second biggest market share after the incumbent, are taken as representative for the alternative undertakings in Bulgaria;
- The prices, charged by the incumbent BTC AD[51] and the alternative undertakings[52] in Bulgaria, are based on CRC data and refer to 31.12.2006 and 31.12.2007;

[49] The prices of national and international calls of alternative undertakings are not regulated. They vary depending on the operators selected and for long distance calls – depending on the chosen destination as well.

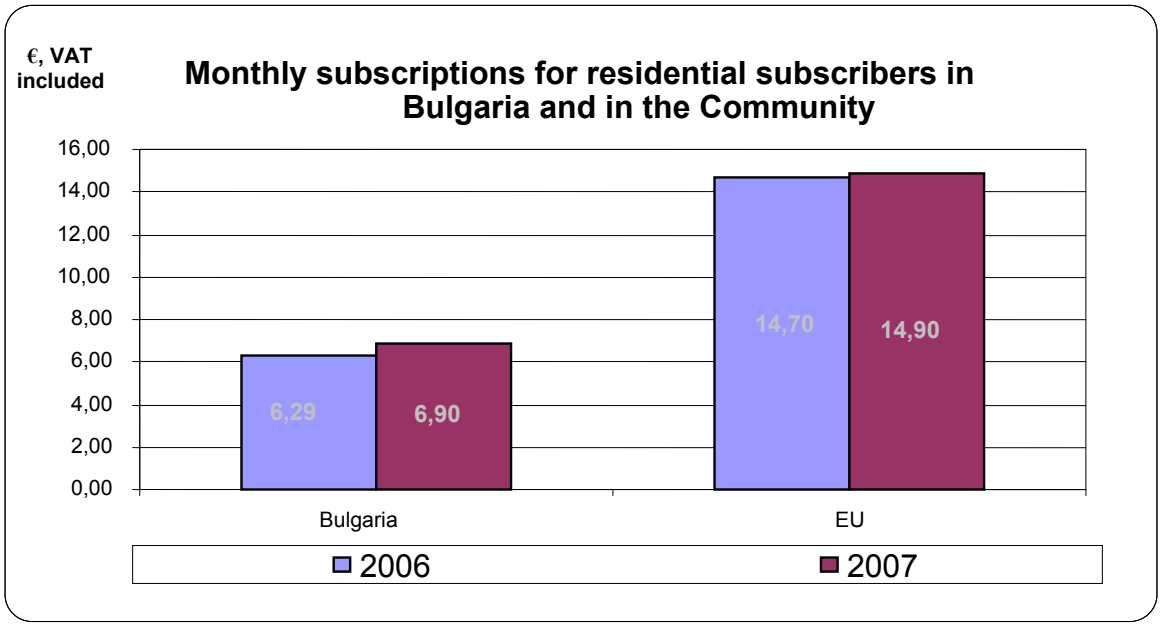
[50] Progress Report on the Single European Electronic Communications Market 2007 (13th Report), http://ec.europa.eu/information_society/policy/ecomm/library/communications_reports/annualreports/13th/index_en.htm

[51] The monthly subscriptions and the prices of three-minute local and national calls and ten-minute international calls of BTC AD refer to subscribers charged according to the standard tariff.

- The prices of a three-minute local call, a three-minute national call and a ten-minute international call are used in the price comparison;
- The monthly subscriptions and the prices of ten-minute international calls are in Euro and the prices of three-minute local calls and three-minute national calls are in Eurocents;
- The comparison of monthly subscriptions for residential subscribers refers only to the price levels of BTC and of Community incumbents because ORBITEL AD has monthly subscriptions for business subscribers only.
- As the Bulgarian operators apply tariffs for international calls, which do not correspond to the distance zones in the tariffs for international calls of the EU Member States, the comparison of these prices is conditional. With that in mind, when comparing the prices for calls to neighbour countries in Bulgaria, the prices charged by BTC and by the alternative undertakings for calls to Albania, Macedonia, Romania, Slovenia, Serbia and Montenegro, and Turkey are taken into account. For calls to distant European countries, the prices charged by the Bulgarian operators for calls to the United Kingdom are taken into account.
- In Bulgaria, the prices for ten-minute international calls do not differ by time zones of the day because neither BTC AD nor the alternative undertakings apply differentiated charges for the international calls made in different time zones of the day.

Comparison[53] of monthly subscription prices

Figure 29 presents BTC AD and Community monthly subscriptions for residential subscribers in 2006 and 2007.



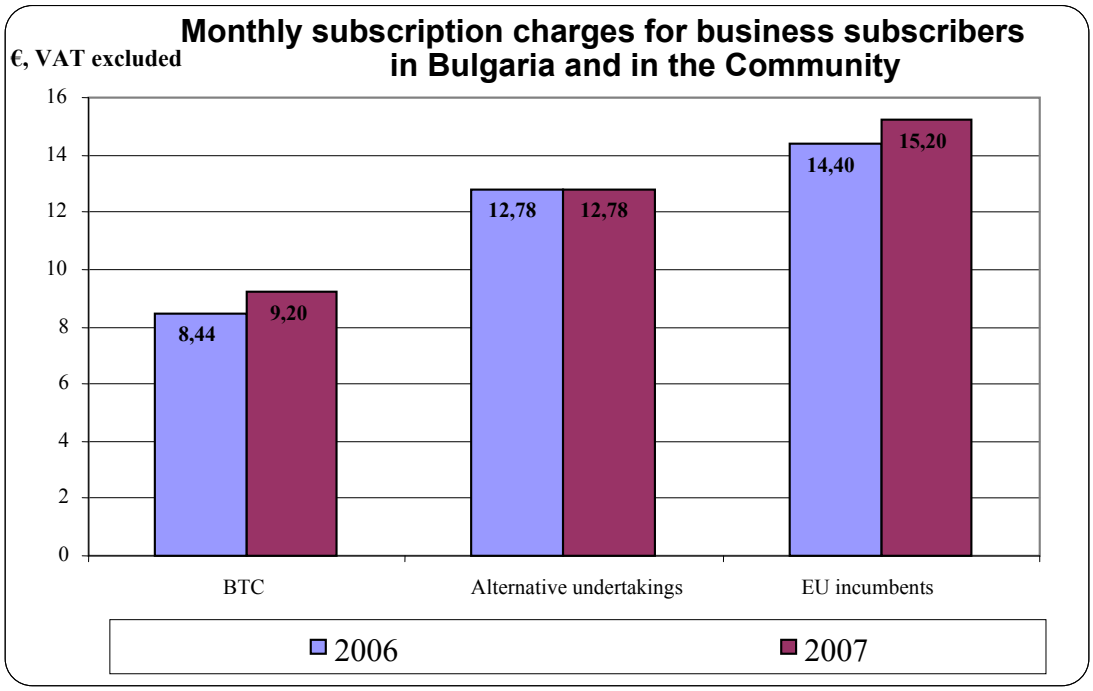
Source: *Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2; CRC data*

Figure 29

From 2007, BTC AD applies higher monthly subscription charges, but the Bulgarian incumbent's rate for residential subscribers is still below the EU average.

[52] The monthly subscriptions and the prices of three-minute local and national calls and ten-minute international calls of ORBITEL EAD refer only to Standard Tariff Plan business subscribers.
[53] For residential subscribers the price is inclusive of VAT and for business subscribers it is exclusive of VAT.

Figure 30 presents a comparison of monthly subscription charges for business subscribers in Bulgaria and in the Community, for 2006 and 2007.



Source: *Progress Report on the Single European Electronic Communications Market 2007 (13th Report) Volume 2; CRC data*

Figure 30

Data show that, in 2007, the BTC AD monthly subscription charges for business subscribers are by 39.47% below the Community average. The monthly subscription charge rates for business subscribers of the alternative undertakings are by 28.01% lower than the BTC AD prices and by 15.92% lower than the EU incumbents' average. The monthly subscription charges of the alternative undertakings have not changed compared to 2006.

The dynamics of the monthly subscription charges of the Bulgarian incumbent (BTC AD) and of the EU incumbents shows that in 2007 charges move up on 2006:

- by 9.70% for residential subscribers in Bulgaria against 1.36% average for the EU;
- by 9.01% for business subscribers in Bulgaria against 5.56% average for the EU.

Comparison of call prices

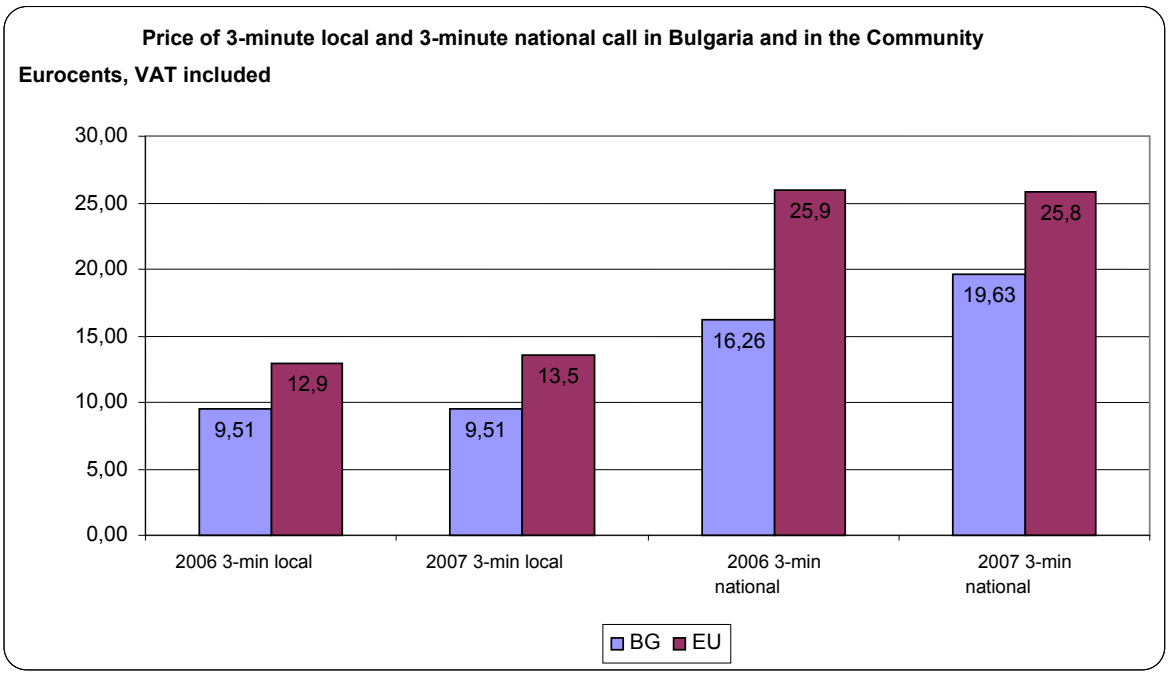
Comparison of 2006 and 2007 prices of three-minute local and three-minute national calls of Bulgarian[54] and Community incumbents

The prices of three-minute (local and national) calls charged by the Bulgarian and the EU incumbents are compared, applying the following congruence:

- the price of a three-minute 3-km distance call in the Community corresponds to the value of a three-minute local call charged by BTC AD;
- the price of a three-minute 200-km distance call in the Community corresponds to the price of a three-minute national call charged by BTC AD;
- the comparison of BTC AD and Community three-minute local and national calls refers only to the peak-traffic time zone of the day.

Figure 31 presents the 2006-2007 dynamics of the three-minute local and three minute national call prices charged by BTC AD and the Community incumbents.

[54] The price per standard tariff subscriber of BTC AD is used in the comparison.



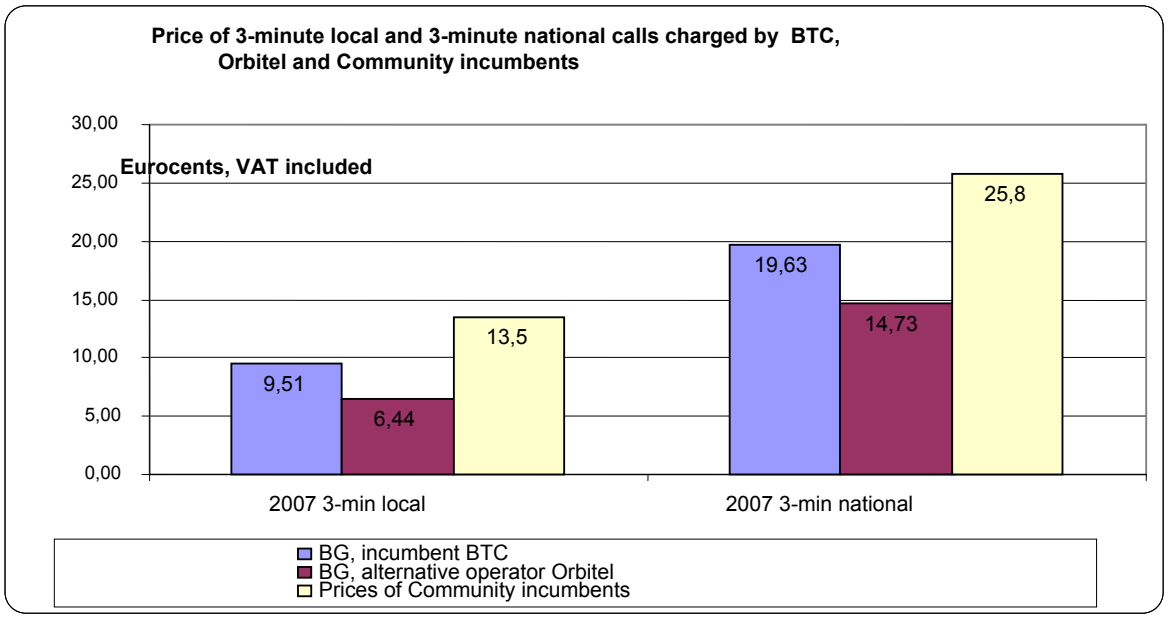
***Source**: Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2; CRC data.*

Figure 31

The chart shows that, over the reference period, the prices charged by BTC AD for local calls do not register any change, whereas incumbent's prices for national calls are 17.17% up on 2006. Over the same period, Community prices for 3-minute local and 3-minute national calls change negligibly, going 4.65% up for local calls and 0.39% down for national calls.

In 2007, the BTC AD price for three-minute calls is lower than the Community price, respectively by 29.56% for local calls and by 23.91% for national calls.

Comparison of 3-minute local and 3-minute national calls in 2007, in Bulgaria (BTC and alternative undertakings) and in the Community (incumbents).



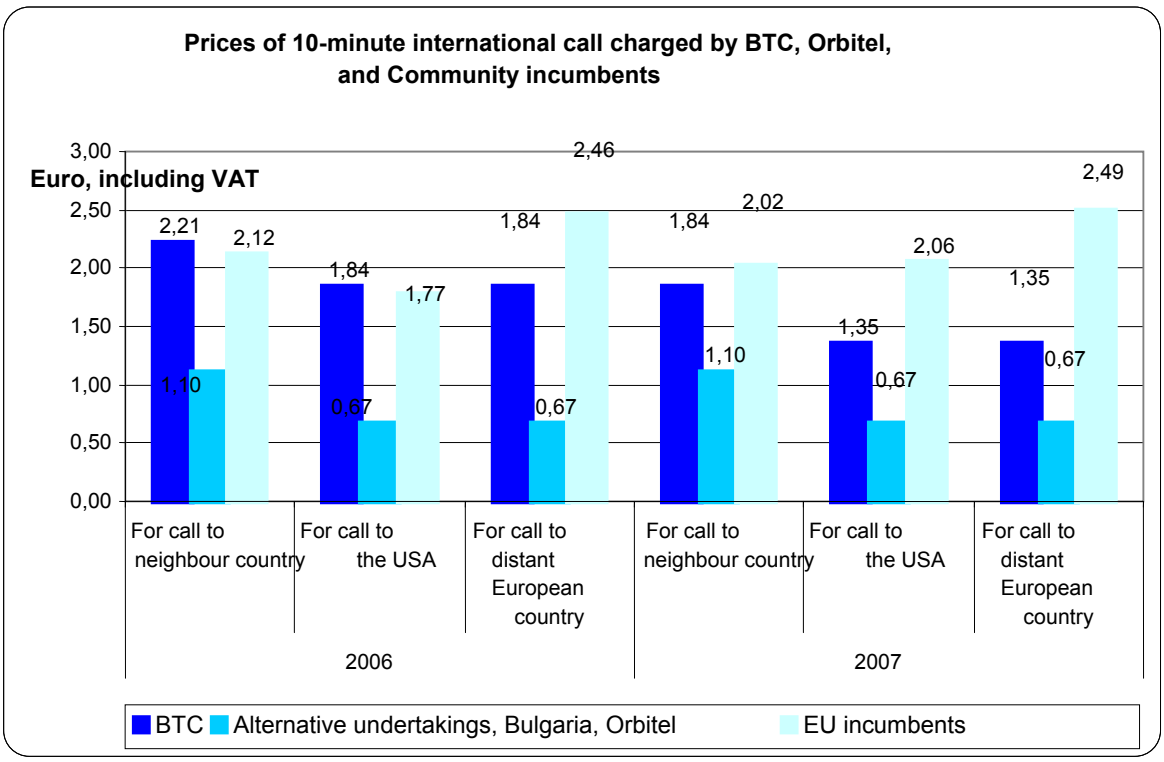
***Source**: Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2; CRC data.*

Figure 32

The chart shows that the subscribers of the alternative undertakings pay the lowest price for local and national calls. The price of a three-minute local call in the BTC network is by 47.67% higher than the price of such call in the networks of the alternative undertakings. The price of a 3-minute national call in the BTC AD network is by 33.27% higher compared to the price of such calls in the networks of the alternative undertakings.

Comparison of the prices of ten-minute international calls in Bulgaria (BTC AD and alternative undertakings) and in the Community[55]

Figure 33 presents the price of ten-minute international calls to a neighbour country, a distant European country, and the USA, made by the subscribers of BTC AD and the alternative undertakings in Bulgaria, and the average prices for such calls, charged by Community incumbents.



Source: *Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2; CRC data.*

Figure 33

The comparison shows no difference for Bulgaria in the prices for calls to distant European countries and the USA, whereas the average EU charges for these zones are different and are higher than the prices in Bulgaria. The national call prices charged by the alternative undertakings are more than three times below the EU average.

While BTC AD has lowered its prices for international calls, the alternative undertakings keep unchanged their rates for this service, but the prices charged by BTC are still higher than the rates of the alternative undertakings. Ten-minute international calls are cheaper for the subscribers of the alternative undertakings than for the BTC AD subscribers, respectively by 40.22% for calls to distant European countries and by 50.37% for calls to the USA.

[55] The average value of international calls charged by EU incumbents according to 13th EU Report data and the prices charged by BTC AD and ORBITEL EAD according to CRC data are used in the comparison.

2. Mobile cellular networks and services

2.1. Market players and competition

Four undertakings are commercially operational on the Bulgarian mobile cellular networks and services market at the end of 2007. Three of them operate under GSM and UMTS standards: MOBILTEL EAD (*under the trade name M-TEL)*, COSMO BULGARIA MOBILE EAD *(under the trade name GLOBUL)* and BTC MOBILE EOOD *(under the trade name VIVATEL),* and one employs the NMT 450 standard – RADIOTELECOMMUNICATION COMPANY EOOD *(under the trade name MOBIKOM)*.

Table 3 presents information on the license issue dates and the launching dates of commercial provision of services for the operators providing electronic communications through mobile cellular networks and/or services.

Table 3

Name of operator	Trade name	Standard	License issue date	Launch date of commercial provision of services
RTC EOOD	MOBIKOM	NMT 450	16.03.1993	End of 1993
MOBILTEL EAD	M-TEL	GSM 900/1800 UMTS	08.06.1994 25.04.2005	September 1995 September 2005
COSMO BULGARIA MOBILE EAD	GLOBUL	GSM 900/1800 UMTS	11.01.2001 25.04.2005	September 2001 September 2006
BTC MOBILE EOOD	VIVATEL	GSM 900/1800 UMTS	07.06.2004 25.04.2005	November 2005 April 2007

2.2. Infrastructure of the mobile cellular networks

The table below presents the coverage rate of digital mobile networks as of 31.12.2007

Table 4

operator / **indicator**	**M-TEL**		**GLOBUL**		**VIVATEL**	
	GSM	***UMTS***	***GSM***	***UMTS***	***GSM***	***UMTS***
Geographical coverage	*98.0%*	*6.21%*	*98.68%*	*23.66%*	*86.00%*	*1.84%*
Coverage of the population	*99.85%*	*45.51%*	*99.95%*	*49.03%*	*98.13%*	*40.80%*

Source: *Data submitted to CRC.*

In 2007, the three digital mobile operators continued to invest in their third-generation UMTS networks. At year-end, COSMO BULGARIA MOBILE EAD has the highest UMTS coverage by territory and by population, respectively at 23.66% and 49.03%. RADIOTELECOMMUNICATION COMPANY EOOD also continues to expand its analogue network, which at the end of last year covers 92.28% of the national territory and 98.27% of the population.

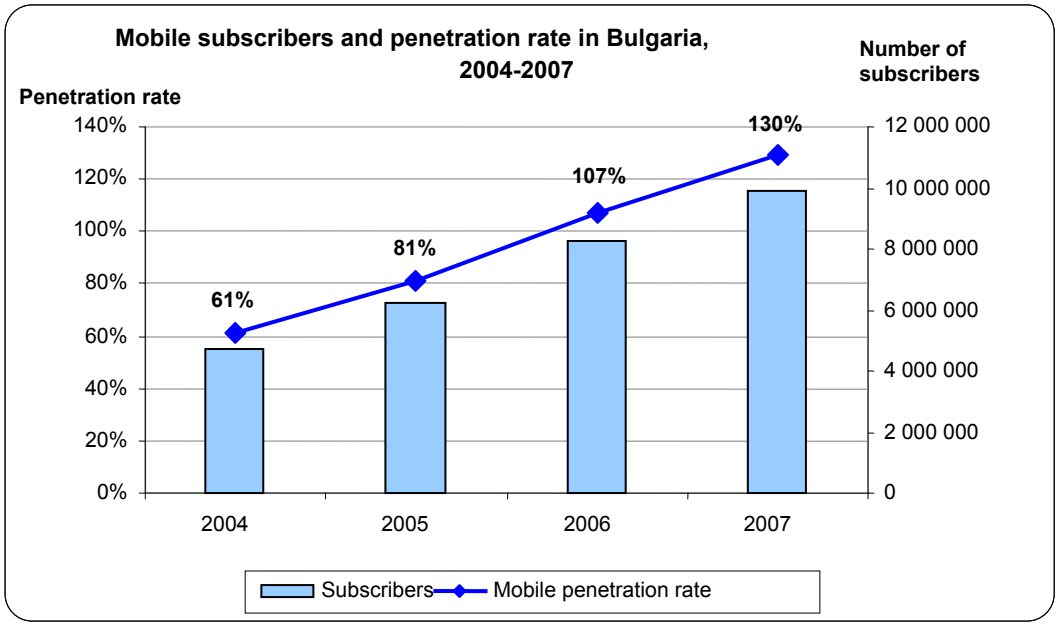
2.3. Development of the mobile telephone services market

Dynamics and market development

For a third year running, the Bulgarian mobile networks and services segment is a leader in total market volume and continues to develop dynamically in an environment of keen competition and gradual market saturation.

Total revenues from the provision of mobile services continue upwards: they have increased by 14% year-on-year and at the end of 2007 amount to BGN 2.1 bn (61% of total Bulgarian telecommunications market volume).

The number of mobile subscribers is 20% up on end of 2006, registering 12 percentage points lower growth compared to growth in 2006 on 2005, to a total of 9 897 477 subscribers[56] at year-end. The slowdown of growth in the number of users and the significant penetration rate of mobile telephone services clearly indicate that the market is highly saturated, entering upon the maturity phase of the product life cycle.

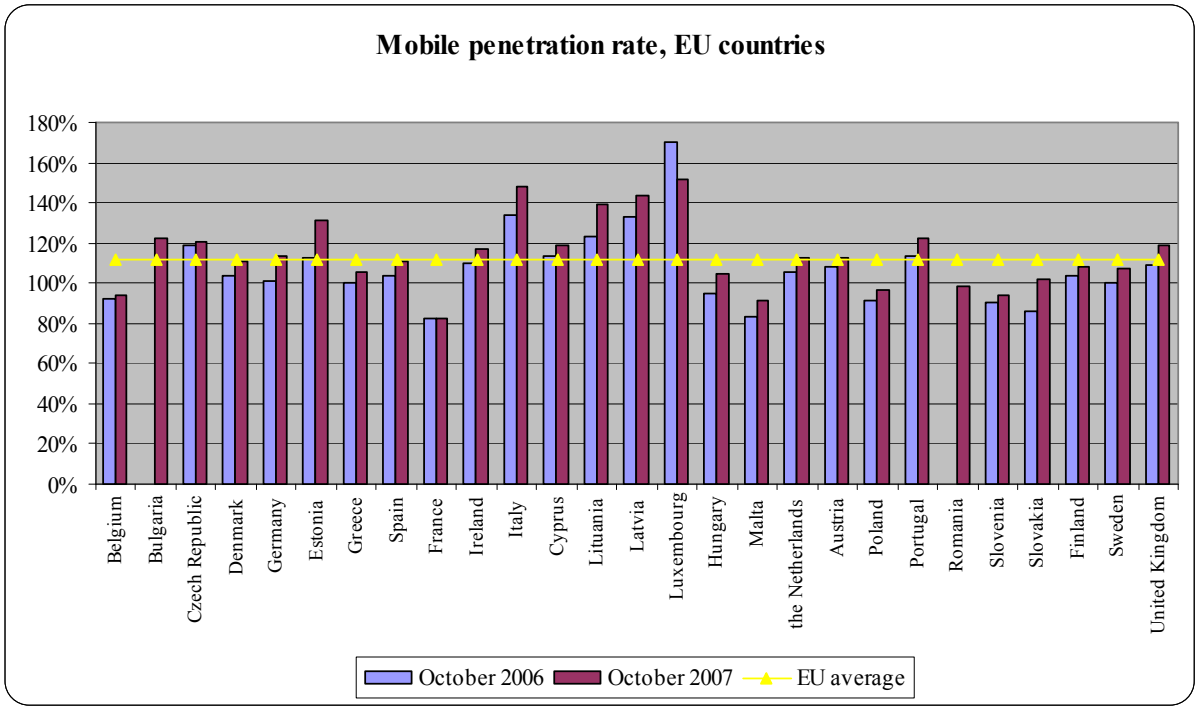


Source: *Data submitted to CRC*

Figure 34

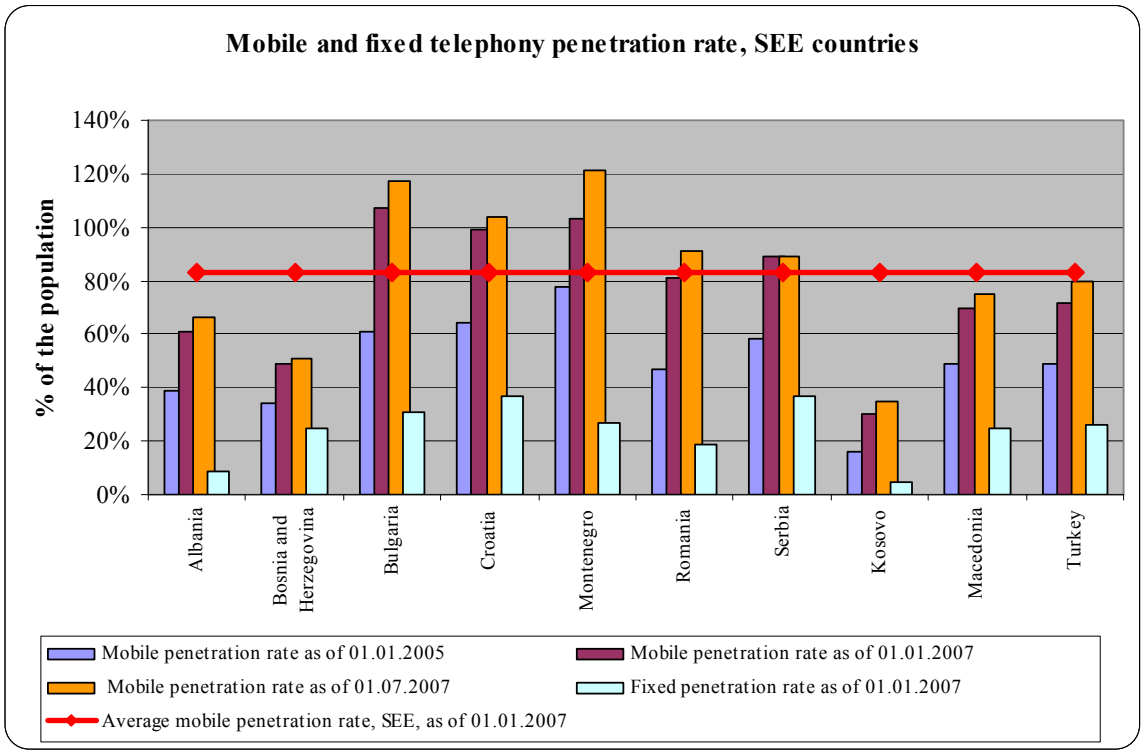
The penetration rate of mobile telephone services is 33 percentage points up year-on-year to 130% of country's population at end of 2007, attributable to the fact that the number of users with more than one SIM card is going up. On the penetration rate of mobile telephony services indicator, Bulgaria is now ahead of a large number of EU Member States and SEE countries (Figure 35 and Figure 36).

[56] Includes number of active subscribers under contracts and number of active pre-paid cards (with validity of 12 months after purchase of SIM card or latest voucher for pre-paid services).



Source: *Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)*

Figure 35



Source: *4th Country Comparative Report - Supply of services in monitoring of South East Europe - telecommunications services sector and related aspects, 30 November 2007*

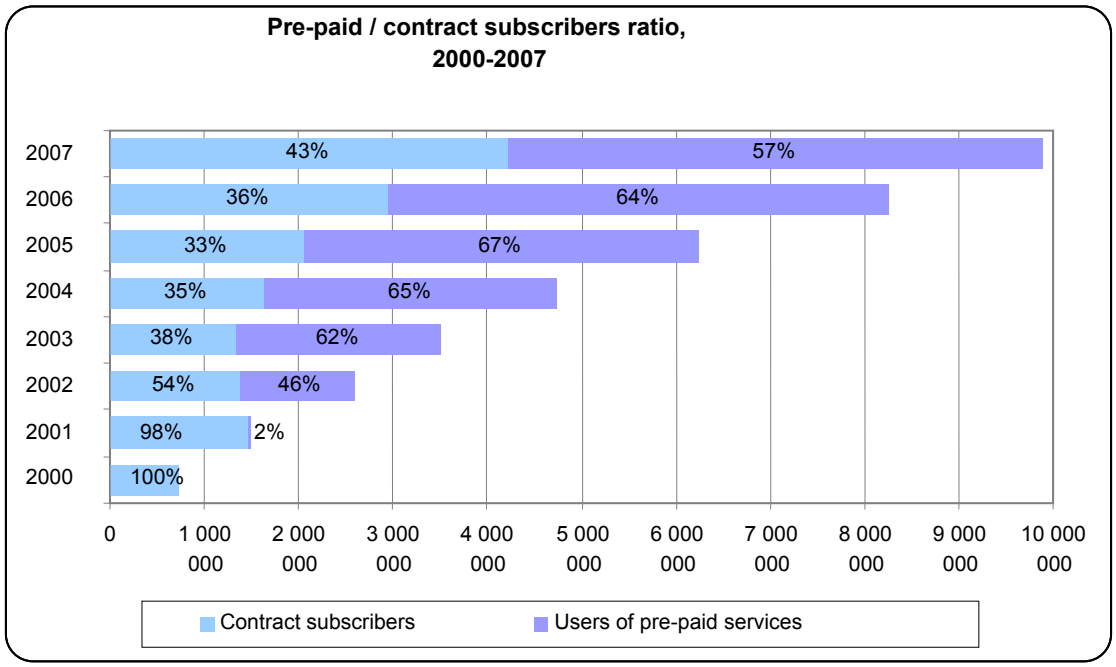
Figure 36

It should be noted, however, that the method of reporting of pre-paid cards as active users influences the value of the indicator "penetration rate of mobile telephone services" – in some EU countries active are considered to be the users that have made or received a call or

sent an SMS in the last 9 or 6 months, whereas others only consider the active users of the last 3 months[57]. In Bulgaria, the digital mobile operators report as active all pre-paid service users who have purchased a SIM card and then recharged service usage credit at least once in 12 months, which is a comparatively long period compared to the EU countries.

Pre-paid /contract subscribers ratio

For a fifth year running, more than half of the mobile customers use services through pre-paid cards. At the end of 2007, 64% of the new clients use pre-paid services and their relative share in total market volume is 57%.



Source: *Data submitted to CRC*

Figure 37

In 2007, one-third of the new mobile subscribers are in the post-paid segment. The total pre-paid – contract subscribers' ratio for the three digital mobile operators (BTC MOBILE EOOD, COSMO BULGARIA MOBILE EAD, AND MOBILTEL EAD) remains at close values, whereas RADIOTELECOMMUNICATION COMPANY EOOD accounts for a higher share of pre-paid service users.

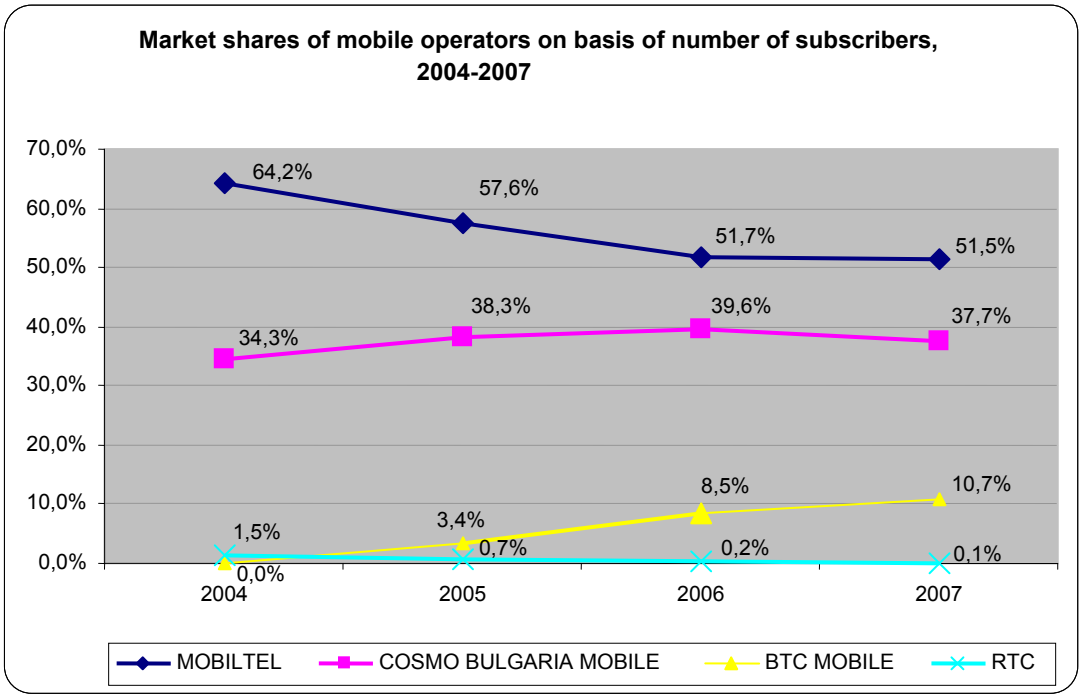
The average EU ratio of pre-paid to contract subscribers is 61/39, varying significantly across the countries – in Italy and Malta, for example, about 90% of all mobile clients use pre-paid cards, whereas in France the share of pre-paid users is only 34%.[58]

Market shares

The 2004-2007 dynamics in the market shares of the four mobile operators, estimated on basis of the number of subscribers and on basis of the revenues from provision of voice telephony and other services through the networks, is presented in Figure 38 and Figure 39.

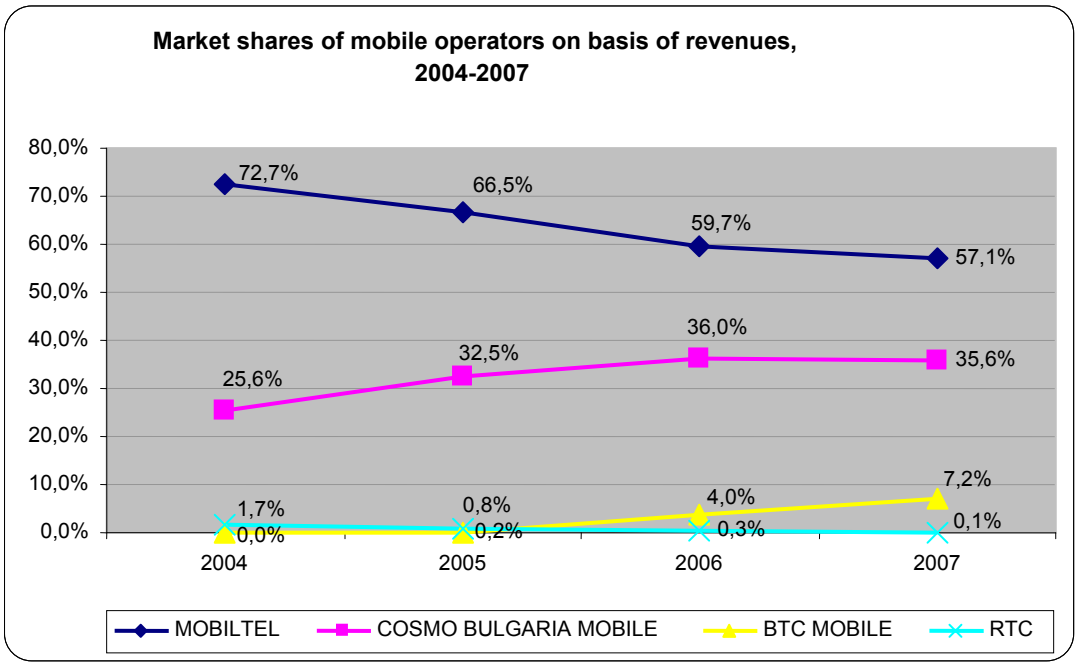
[57] Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)

[58] Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)



Source: *Data submitted to CRC*

Figure 38



Source: *Data submitted to CRC* **Figure 39**

The analysis of the market shares, estimated on basis of the number of subscribers of every operator, reveals that the recent market structure remains unchanged, with continuing weak trend of subscribers repartition registered in the past two years. For a year (2006-2007) the market shares of the two biggest operators, estimated on basis of the number of subscribers, have decreased by less than two percentage points, whereas the third operator, employing GSM/UMTS standards in its network, has increased its share by 2.2 percentage points, attracting 10.7% of total mobile subscribers.

Negligible repartition is registered also in the market shares estimated on basis of revenues from the provision of mobile networks and/or services. For a year, the market shares of each of the two biggest operators in total market volume have decreased by less than 2

percentage points, whereas the market share of the third biggest operators is 3.3% up on the previous year.

The share of customers using the services of more than one operator is increasing. This trend is depended by the notable differences in the prices of on-net and off-net calls (according to CRC data for 2007, the average off-net price is about 6 times higher than the average on-net price) and by the multitude of discounts for new subscribers offered by mobile operators over the year. According to a survey conducted by *Alpha Research*[59] in mid-2007, almost one-tenth of adult Bulgarians use the services of more than one operator.

Undertakings with significant market power

Pursuant to § 7 of the Transitional and Final Provisions of the LEC, the obligations imposed under TA (repealed) on the operators of mobile telecommunications networks providing voice telephone service through these networks, MOBILTEL EAD and COSMO BULGARIA MOBILE EAD, which are designated undertakings with significant market power, remain in force in expectation of Commission's decisions imposing specific obligations on undertakings designated as having significant market power under the LEC to take effect. The obligations imposed on the mobile operators pursuant to TA (repealed) include:

- Provision of interconnection on basis of a reasonable request for access to the network;
- Compliance with the non-discrimination principle in the provision of interconnection;
- Ensuring access to the information and specifications required for the interconnection.

The LEC transposes in the Bulgarian legislation the EU Regulatory Framework 2002, which implies an entirely new approach to market regulation and the imposing of obligations on undertakings with significant market power. After an analysis and designation of undertakings with significant power on the wholesale market of voice call termination in individual mobile networks, it will be possible to impose obligations, including for cost-orientation of the charges for termination in mobile networks.

Meanwhile, in the transitional period until the analyses of relevant markets are completed, CRC, by its Decision No. 2/03.01.2008, imposed on MOBILTEL EAD and COSMO BULGARIA MOBILE EAD obligations to abide by a glide-path for reduction of the fixed to mobile termination charges, as follows:

- As of 01.02.2008, charge for fixed to mobile termination of BGN 0.35/min for peak time and BGN 0.325/min for off-peak time;
- As of 01.07.2008, charge for fixed to mobile termination of BGN 0.32/min for peak time and BGN 0.29/min for off-peak time;
- As of 01.01.2009, charge for fixed to mobile termination of BGN 0.29/min for peak time and BGN 0.25/min for off-peak time;
- As of 01.07.2009, charge for fixed to mobile termination of BGN 0.25/min for peak time and BGN 0.19/min for off-peak time.

The decision can be regarded as Commission's first step after the coming of LEC into force towards non-discrimination in the regulation of fixed and mobile operators' wholesale prices and encouragement of competition in the provision of electronic communications networks and services in Bulgaria.

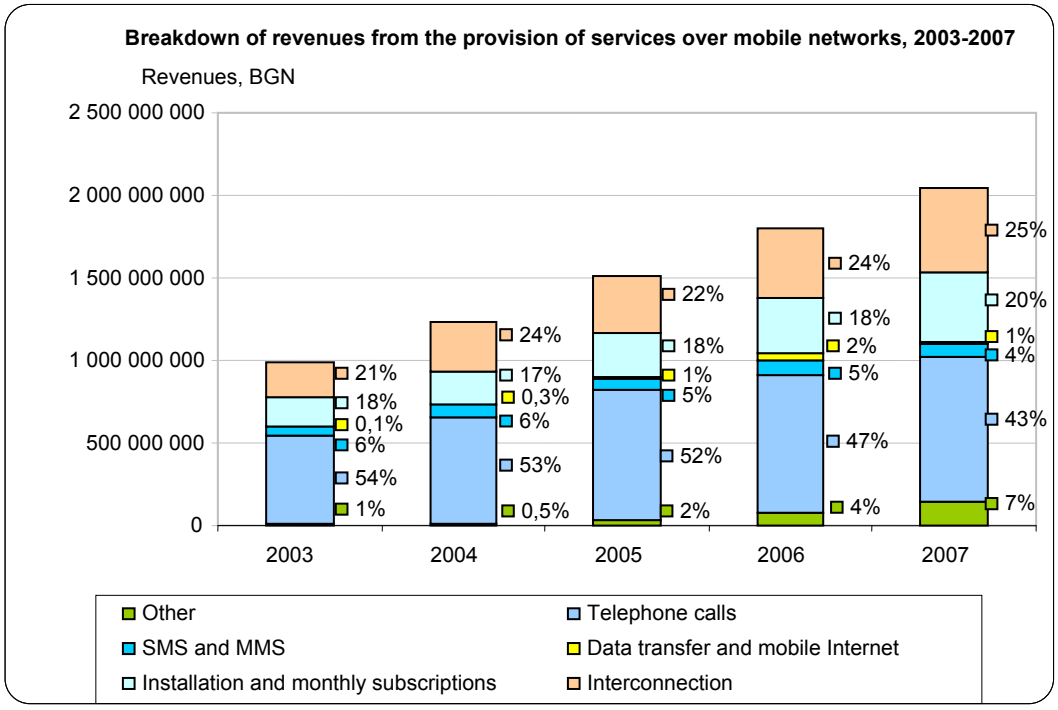
At the end of 2007, CRC approved a priority list of markets to be analyzed by the end of 2008, including the market of voice call termination on individual mobile networks.

[59] Survey by *Alpha Research* – Mobile Communications, July 2007.

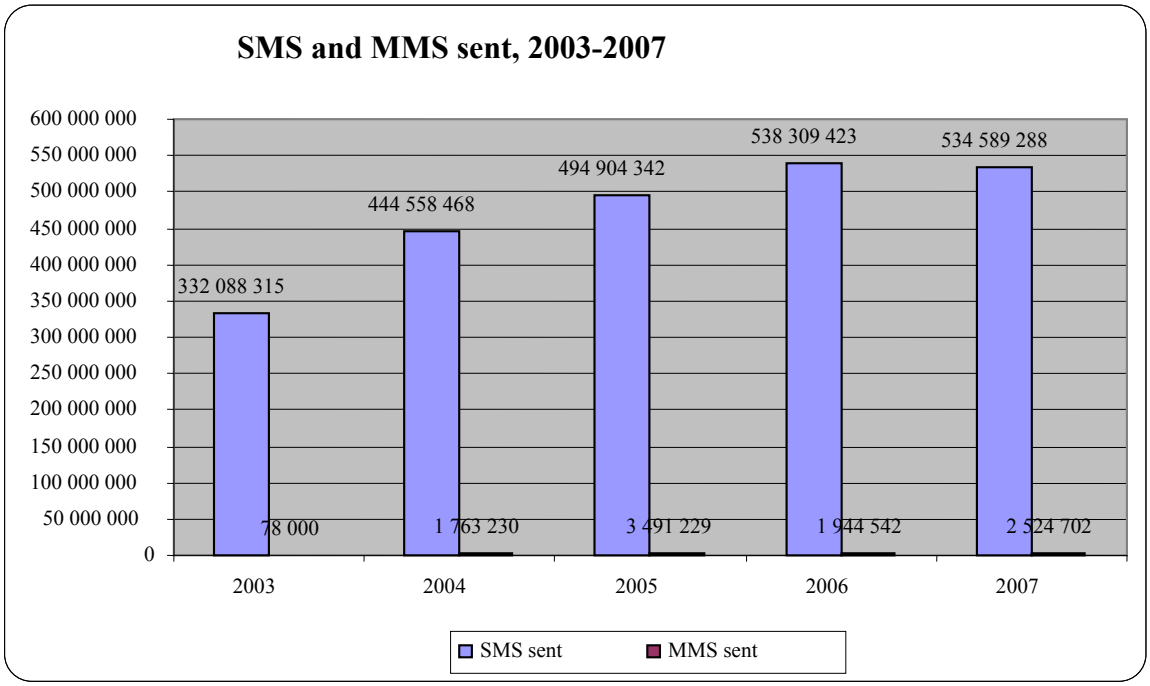
2.4. Services

Breakdown of revenues from services provided through mobile networks

Voice traffic remains operators' main source of growth and earnings, accounting for about 43% of the revenues from the provision of services through mobile cellular networks. In 2007, the relative share of the earnings from voice services is 4 percentage points down on 2006, attributable mainly to the fact that the earnings from tariff plans, which include "free" call minutes, are accounted as revenues from monthly subscriptions (which are 2 percentage points up, to 20% of total revenues). The actual share of voice services in the total earnings of the mobile operators is higher. The SMS and MMS services account for 4% of the revenues generated by digital operators (Figure 40).



***Source**: Data submitted to CRC* **Figure 40**



***Source:** Data submitted to CRC* **Figure 41**

For the first time, the number of short messages (SMS) registers decrease. They are about one percentage points down year-on-year, attributable mainly to the fact that the mobile operators increasingly offer tariff plans with included call minutes, as evidenced from the average per month number of SMS sent by a mobile subscriber in 2007, which is 4.5, whereas the average per month number of voice calls is 47.

Regulation on roaming services across the EU

On 27 June 2007, the European Parliament and the Council of the European Union adopted Regulation (EC) No. 717/2007 on roaming services across the Community aiming to ensure that users of public mobile telephone networks when travelling within the Community do not pay excessive prices for Community-wide roaming services when making calls and receiving calls.

The Regulation introduces:

- Maximum charge at wholesale level – the prices payable by Bulgarian to foreign mobile operators;
- Maximum charge at retail level – the prices charged by the Bulgarian mobile operators for calls made or received by a subscriber of the operator while abroad. The Regulation allows exceptions only in respect of special roaming tariffs;
- A schedule for a gradual decrease of the regulated maximum wholesale and retail charges over the period 30 August 2007 – 30 August 2009;
- The information, which mobile operators are required to provide to consumers.

After 30 August 2007, all three mobile operators, providing international roaming, have submitted to CRC and published the new Eurotariffs they apply.

New services offered by the mobile operators in 2007

In 2007, the digital mobile operators continue to offer multitude of new services, including for data based on new technological applications, enquiry and information services, and services facilitating users' access to options of interest, as well as new conditions for using roaming services (Table 5).

Table 5

New electronic communications services offered in 2007	
Operator	**Service**
MOBILTEL EAD	• **Mobile VPN** • **Quick Top** • **M-Tel Quick Pay** • **SOS Credit** • **SMS Parking** • **Available Calls**
COSMO BULGARIA MOBILE EAD	• **Talk2Me** • **BlackBerry** • **3G Video Portal** • **SMS Call Me Back** • **Recharging of minutes**
BTC MOBILE EOOD	• **3G services** • **Pre-paid and post-paid plans for residential and business clients**

Source: *Data submitted to CRC*

In April 2007, BTC Mobile EOOD offered third generation UMTS-based services to its subscribers and at year-end all three operators offer two types of 3G services – video call and access to mobile data through UMTS network.

In 2007, the top two mobile operators in Bulgaria launched various services for easier recharging of pre-paid cards. MOBILTEL EAD has launched Quick Top allowing recharging of 5 to 100 BGN, while COSMO BULGARIA MOBILE EAD has offered Recharging of Minutes allowing the purchase of packages of 5 or 15 minutes on-net call time at preferential prices. MOBILTEL EAD has launched also a service allowing pre-paid users with no cash in their accounts to recharge their cards with BGN 1 on credit, which is deducted from the amount of the next recharging, while COSMO BULGARIA MOBILE EAD offers to pre-paid users with no cash in their account to send a free-of-charge SMS to the subscriber they want to talk to and have him/her call them back.

New services expected in 2008

In 2008, the top two mobile operators (on basis of revenues and subscribers), MOBILTEL EAD and COSMO BULGARIA MOBILE EAD, are expected to offer to their clients a number of new services. MOBILTEL EAD intends to offer 3G video surveillance, a service for booking of tickets for concerts via the *Vodafone live!* Portal, and COSMO BULGARIA MOBILE EAD plans to launch a new pre-paid product, as well as value added services. The third digital operator BTC Mobile EOOD plans to launch video surveillance.

2.5. Prices and pricing policy

Mobile service usage baskets

The charts below present the expenditure of the mobile service users in Bulgaria and in the other EU Member States as of 01.10.2007, estimated on basis of the three OECD (Organization for Economic Cooperation and Development) mobile baskets[60]: for low, medium and high usage. The average monthly expenditure is given in euro and is estimated on basis of installation charges, monthly subscriptions and charges per one-minute call, as well as SMS and MMS charges, for the respective tariff plan. Every basket contains an OECD-established average usage pattern including the following elements:

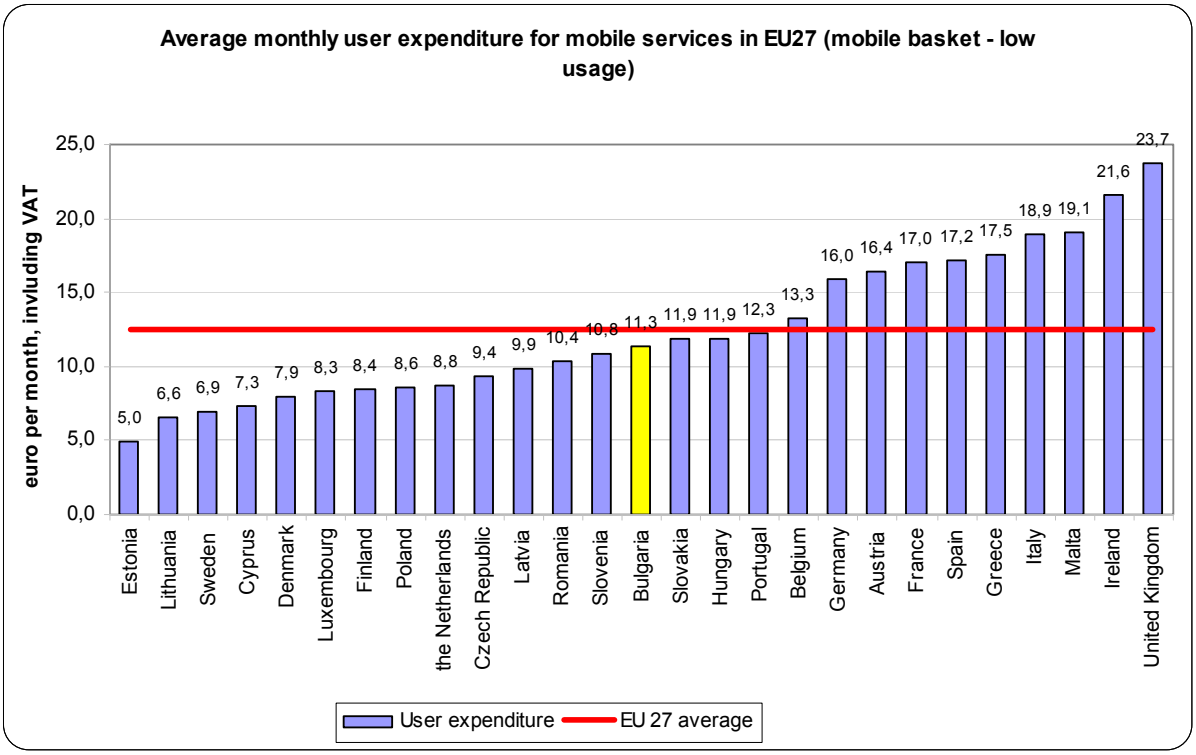
- Low usage basket: it contains 33 SMS and 30 outgoing calls per month, including 22% calls to fixed line phones, 70% calls to cell phones (48% on-net and 22% off-net) and 8% for voicemail;
- Medium usage basket: it contains 50 SMS and 65 outgoing calls per month, including 21% calls to fixed line phones, 72% calls to cell phones (48% on-net and 24% off-net) and 7% for voicemail;
- High consumption basket: it contains 55 SMS and 140 outgoing calls, including 20% calls to fixed line phones, 73% calls to cell phones (47% on-net and 26% off-net) and 7% for voicemail.

Every basket has a specific pattern of peak and off-peak time calls and different call duration.

In estimating the levels of expenditure in the different countries, the tariff plans of the two largest operators (on basis of subscribers) are used for each country, exclusive of any discount packages. For each usage level, the charts present the most favourable variant (the cheapest tariff package for the chosen usage pattern) for every country, including Bulgaria.

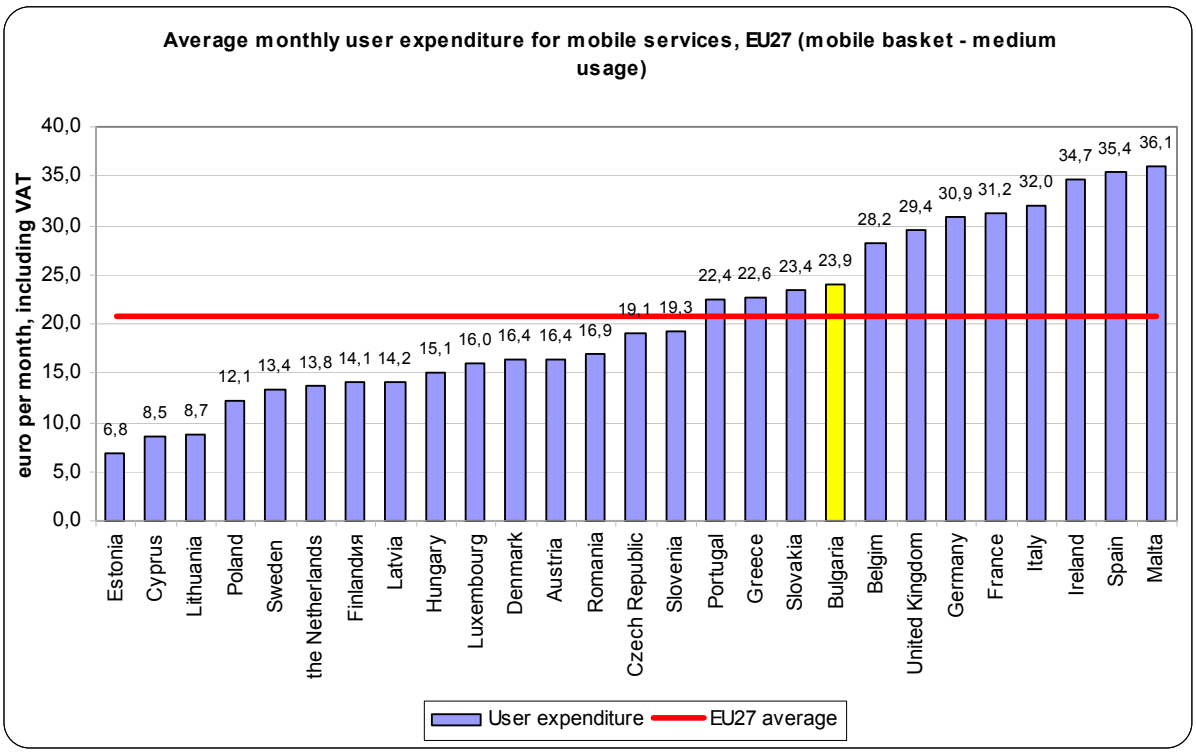
Full description of the baskets is available in the Internet site of Teligen Ltd[61].

[60] Revised in early 2006.
[61] http://www.teligen.com/publications/oecd.pdf



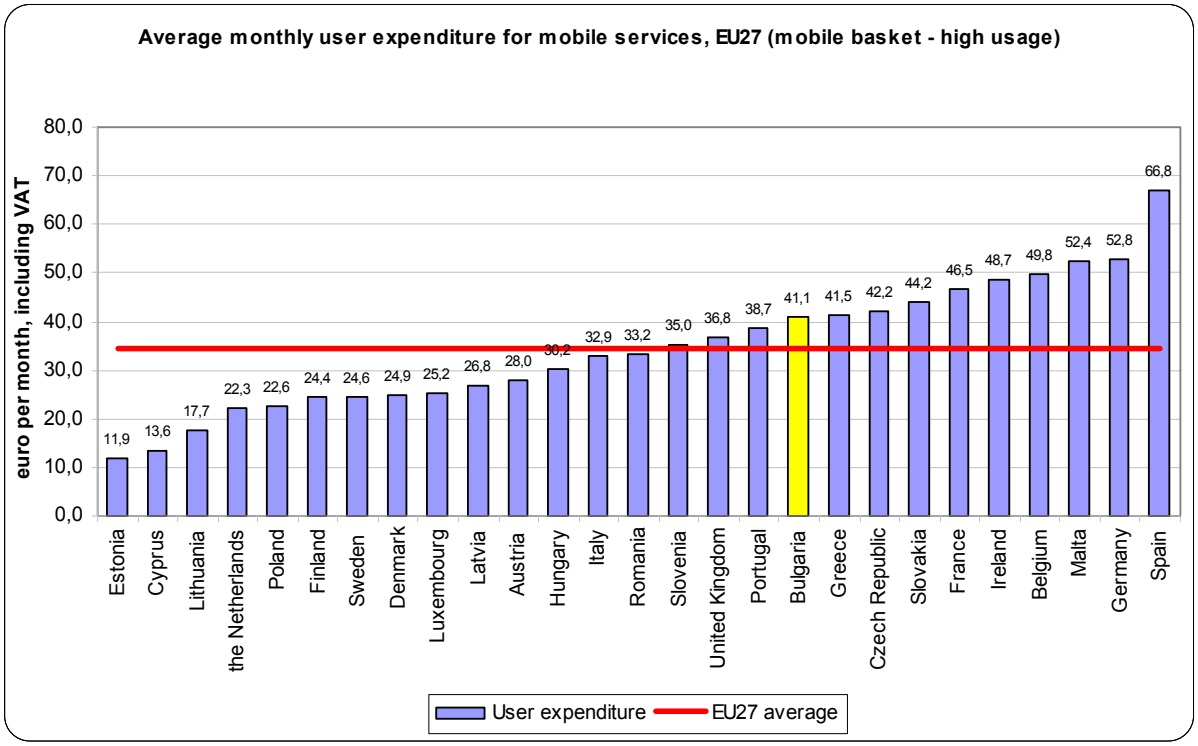
Source: *Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)*

Figure 42



Source: *Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)*

Figure 43



***Source**: Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)*

Figure 44

The above charts show that, in Bulgaria, the average monthly expenditure of mobile service users, estimated on basis of the low usage basket, stands at EUR 11.3 and is about 10% below the EU average, whereas in the other two baskets it is respectively 15% and 19% above the EU average. According to a survey conducted by Alpha Research[62], almost half of the mobile subscribers (47%) generate average monthly expenditure for mobile services up to BGN 20 (about EUR 10.3). Therefore, having in mind also that user expenditures are estimated on basis of averaged usage levels for the OECD countries, which do not take account of the specific usage pattern in Bulgaria, the user expenditure for mobile services in our country is at the low usage basket level. This is confirmed by the 2007 monthly weighted average revenue per user[63] of the mobile operators in Bulgaria, which is by 17.2% lower than the value for Bulgaria in the low usage basket (Figure 42) of BGN 18.30 (€9.35) per month.

It should be noted that the three GSM operators in Bulgaria offer to end-users a multitude of promotions, including discounts from monthly subscriptions for certain tariff plans, additional minutes for outgoing calls, etc., which, accordingly, lower the average monthly expenditure of users presented above.

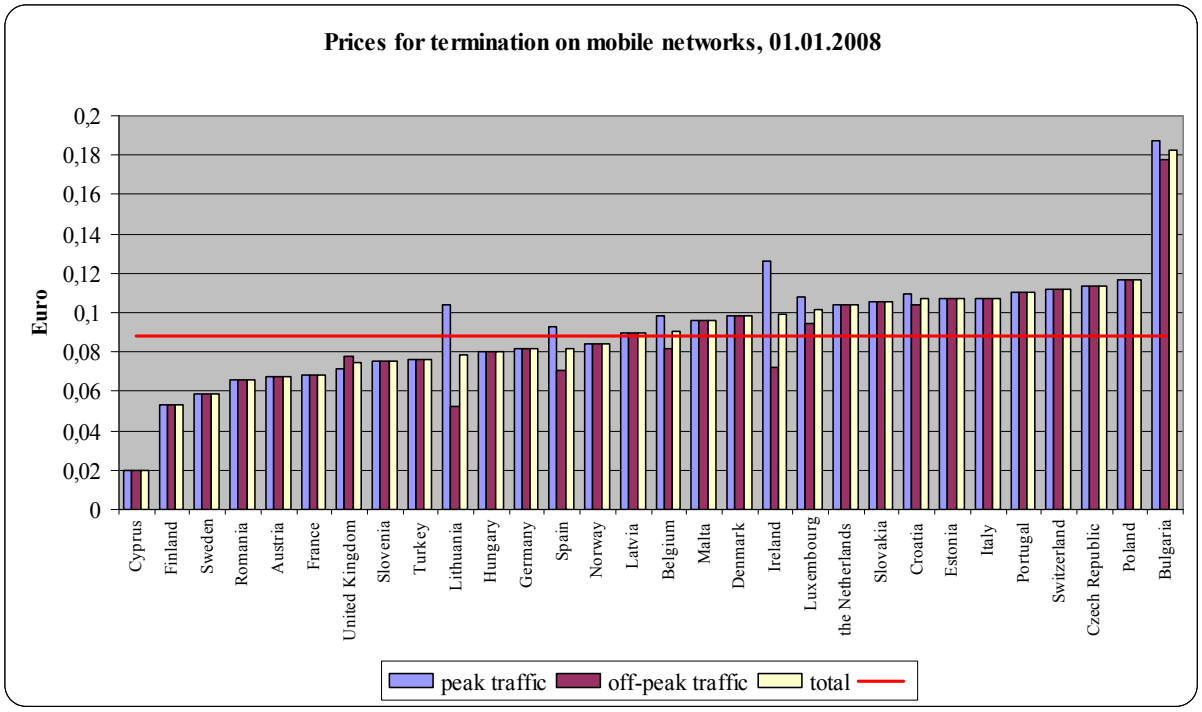
Charges for traffic termination in the networks of mobile undertakings

The end-user prices of mobile services depend both on the pricing strategies of the operators and on the agreements for interconnection with the fixed network of BTC AD, with alternative fixed operators and between mobile operators.

Figure 45 presents a comparison of the charges for fixed to mobile termination to the levels in the other European countries.

[62] A survey conducted by Alpha Research – Mobile Communications/06.03.2008 (http://www.aresearch.org/mobile_communications/1489.html)

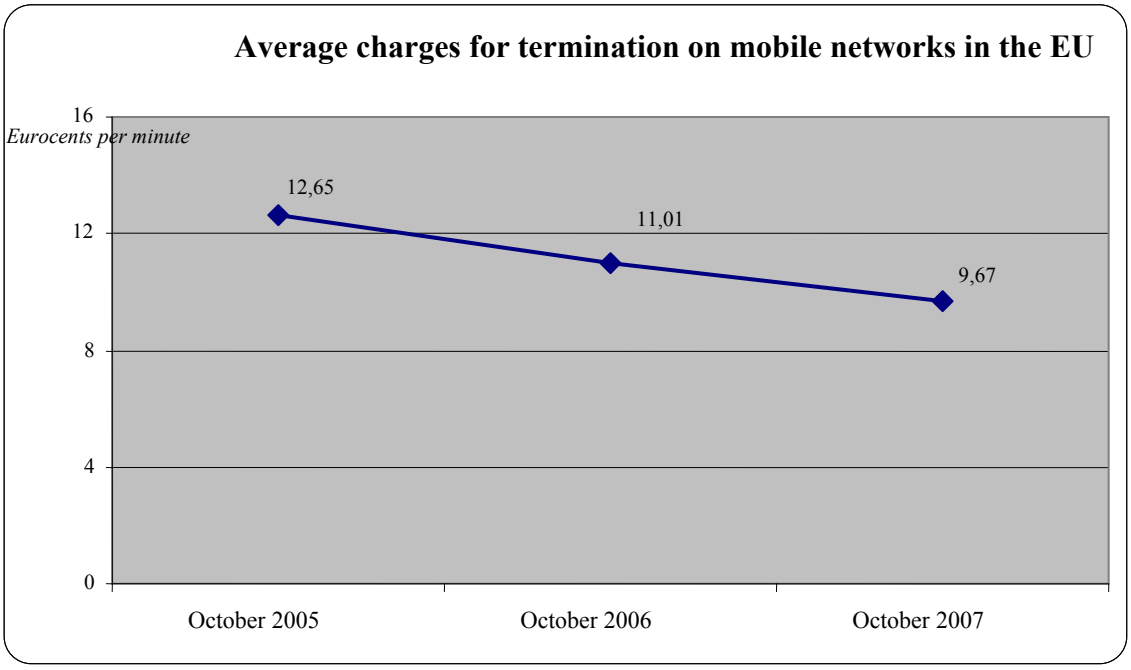
[63] Average Revenue per User (ARPU) of mobile operators, weighted with the number of their users. The indicator is estimated on basis of 2007 ARPU values submitted by mobile operators.



Source: *ERG (08) 17 MTR update snapshot final 080604*

Figure 45

The data are taken from a survey, conducted by ERG, and are estimated as weighted average for the countries, taking account of the number of users and the termination charge levied by each mobile operator. Many of the operators from the countries covered by the survey apply uniform termination charges regardless of the type (fixed or mobile) of the network in which the call originates. At mid-2007, only Bulgaria and Slovenia are an exception and Bulgaria has the highest average charges for fixed to mobile termination.



Source: *Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)*

Figure 46

The above chart shows that the average charges for termination in mobile networks in the EU countries (data for Bulgaria and Romania are included only for 2007) are 12% down

year on year. According to EC data[64], Slovenia leads in terms of decrease with 53%, followed by Belgium with 36% and Austria with 26%, whereas Bulgaria and Estonia levy charges for termination in mobile networks, which are respectively by 95% and 75% higher than the EU average.

According to CRC's decision cited in item 2.3 above, as of 01.02.2008 the charges for fixed to mobile termination in Bulgaria have to be decreased by 8% and 11% for peak and off-peak time and for a year and a half these charges should go down respectively by 34% and 48% compared to the currently effective levels for peak and off-peak time.

International roaming

The provisions of Article 3, Paragraph 2 and Article 4, Paragraph 2 of Regulation 717 of the European Parliament and of the Council on roaming on public mobile telephone networks within the Community and amending Directive 2002/21/EC, establish the following maximum levels (caps) of international roaming charges:

Table 6

Maximum charge level pursuant to the Regulation		**From 30.08.2007 till 29.08.2008**	**From 30.08.2008 till 29.08.2009**	**From 30.08.2009**
Average wholesale charges per minute in EUR, excluding VAT[65]		*0,30*	*0,28*	*0,26*
Re-estimated in average wholesale charges per minute in BGN, excluding VAT		*0.59*	*0.55*	*0.51*
Retail charges per minute in euro, excluding VAT	For call made	*0.49*	*0.46*	*0.43*
	For call received	*0.24*	*0.22*	*0.19*
Charges per minute re-estimated in BGN, including VAT	For call made	*1.15*	*1.08*	*1.01*
	For call received	*0.56*	*0.52*	*0.45*

In accordance with the Regulation, on 23 July 2007 the Bulgarian mobile providers BTC MOBILE EOOD, COSMO BULGARIA MOBILE EAD, and MOBILTEL EAD submitted to CRC and published the Eurotariffs of retail charges they levy within the Community, in effect from 30.08.2007 until 29.08.2008, as follows:

Table 7

Eurotariff	**Operators**		
	M-TEL	**GLOBUL**	**VIVATEL**
Charge per minute of call made (BGN, including VAT)	*1.15*	*1.08*	*1.15*
Charge per minute of call received (BGN, including VAT)	*0.56*	*0.516*	*0.56*

[64] *Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)*

[65] The average wholesale charge is the charge that the operator of a visited network may levy from the operator of a roaming customer's home network for the provision of a regulated roaming call originating on that visited network, inclusive inter alia of origination, transit and termination costs.

Charging method	Per minute	At one-minute intervals, every commenced interval charged as full interval	At 60-second intervals

In Bulgaria, only MOBILTEL EAD offers the following special tariffs:

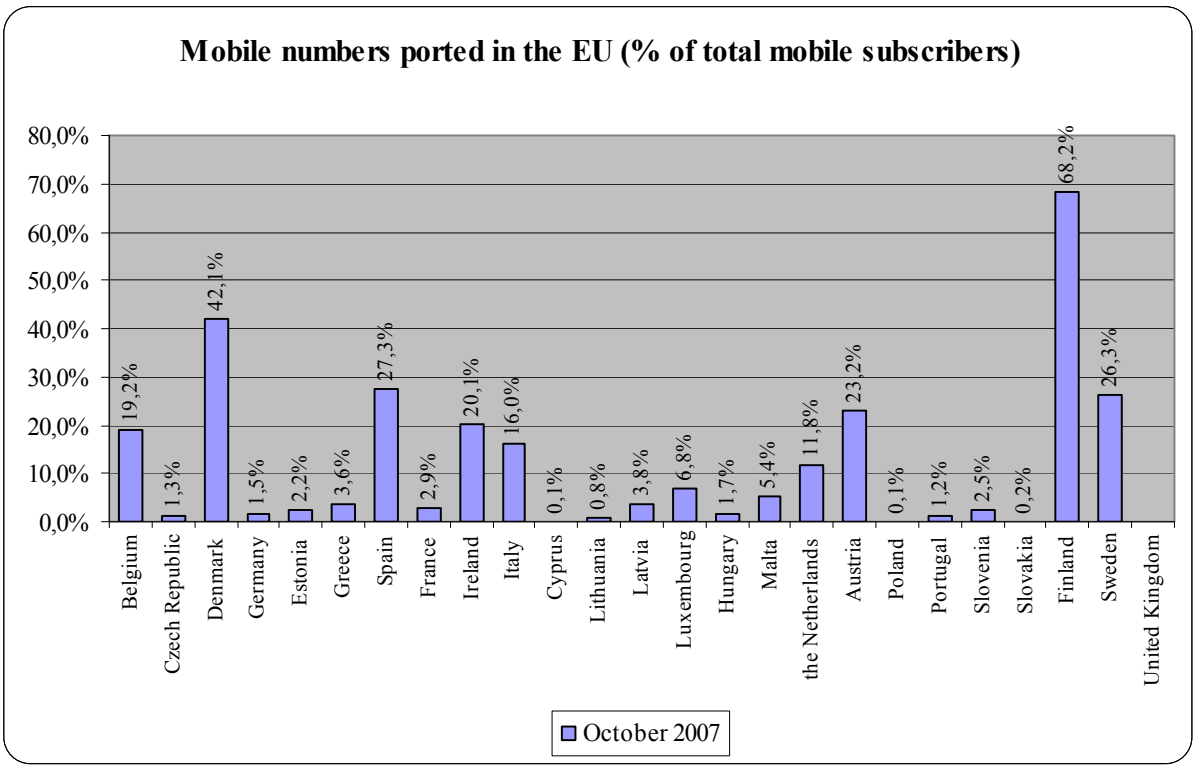
- M-Tel Traveller
- Vodafone Eurocall
- Vodafone World (since 30.09.2007 it cannot be activated by new subscribers).

In accordance with the Regulation, the Commission prepares and submits to the EC on a regular basis reports on the compliance with the requirements for international roaming charges. CRC has published in its Internet site up-to-date information on the application of the Regulation.

Development outlook

The future development of the mobile services market will be focused to a greater extent on the repartition of current subscribers and to a lesser extent on attracting new customers (with lower purchasing power, hence less attractive). The propensity of current users to change the operator and the preparedness of operators to offer conditions for easy and convenient migration of users between operators will be crucial.

The number portability, implemented since April 2008, is expected to provide additional incentives for competition on this market segment by facilitating users to shift to cheaper tariff plans and more favourable conditions offered by other operators, on one part, and, on the other part, by creating better opportunities for market players to win over subscribers of other networks.



Source: *Commission staff working document accompanying the Progress report on the single European electronic communications market 2007 (13th report)*

Figure 47

As of October 2007, 47 mln subscribers from 24 EU Member States have ported their numbers since the introduction of this possibility. Finland leads in terms of the number of

subscribers that have ported their numbers with 68%, followed by Denmark (42%) and Spain (29%). The service is not very popular in the new EU members yet because they have introduced number portability later.

By the adoption of the LEC, which transposes the EU Regulatory Framework 2002, the regulator is empowered to intervene on the wholesale markets of call generation and termination in different mobile networks by applying ex-ante regulation.

While the mobile telephony market gradually enters the saturation phase, its significance within the electronic communications market increases, given the revenues and the traffic originated, as well as the users attracted by this market.

3. Interconnection and access

3.1. Interconnection

Over the past year, Commission's regulatory activity in respect of interconnection and access was focused on:

- Compliance assessment pursuant to LEC of interconnection and access agreements;
- Drafting of the sub-legislative acts on interconnection and access under the LEC.

The appeal procedure, initiated by the incumbent in respect of CRC's decision for approval of Reference Interconnection Offer, was not completed by the end of 2007. Therefore, BTC AD and the alternative undertakings enter into new and amend existing interconnection agreements on basis of non-discrimination of effective agreements. The mobile operators with significant market power also adhere to the principle of non-discrimination when signing or amending agreements.

Concluded and effective interconnection agreements

Table 8

Type	2004	2005	2006	2007	Total
BTC AD – mobile	0	1	2	0	3
BTC AD – alternative fixed	3	6	8	1	18
Mobile – mobile	0	3	0	0	3
Mobile – alternative fixed	6	6	12	20	44
Fixed – fixed (excluding BTC AD)	0	1	6	13	20

The obligations to set cost-oriented prices for interconnection and unbundled access, imposed on BTC AD pursuant to TA (repealed), remain in force on the grounds of § 7 of the Transitional and Final Provisions of the LEC, in expectation of the decisions for imposing specific obligations pursuant to the LEC to take effect. In accordance with the above obligations, BTC AD applies a cost accounting system approved by CRC Decision No. 1049/15.04.2004.

Cost accounting system

In accordance with CRC Decision No. 882/11.05.2006 on amendments to the Cost Accounting System (the System), in June 2007 BTC AD submitted corrected draft of the System. Not all instructions given by Decision 2278/14.12.2006 were covered, therefore, CRC, by Decision No. 1056/24.07.2007, required the company to comply with the instructions in full and to submit all data on basis of which costs are allocated to services, as well as allocation results. On basis of the information submitted in October, the Commission continued to monitor and analyze the conformity of the System amendments, introduced by BTC AD, with the instructions given.

Interconnection charges

The litigation between BTC AD and the regulator regarding the binding instructions for amendment of the Reference Interconnection Offer (RIO), approved by CRC Decision No. 572/30.03.2006, continued over the year. As the Supreme Administrative Court stayed the immediate execution of the CRC decision (therefore there were no legal grounds to require BTC AD to comply with the interconnection charge restrictions imposed by CRC), in 2007, like in 2006, the charge levels in the interconnection agreements were set in accordance with the principle of non-discrimination to which BTC AD adhered.

Despite that, in 2007 the charges for termination on the BTC AD network at metro level, single and double transit levels, as well as for carrier selection at single transit level of the BTC network, have dropped to the levels imposed by the Commission with Decision No. 572/30.03.2006 for approval of the Reference Interconnection Offer. The interconnection charges have decreased in consequence of the regulatory intervention of CRC during the evaluation of company's proposal for amendment of fixed voice telephony prices.

As the prices of call-by-call carrier selection and carrier pre-selection at single transit level are linked to the termination charges, they have also decreased against 2006, respectively by about 22% for peak time and by about 28% for off-peak time traffic.

The interconnection charges under the agreements concluded in 2006 and 2007, and the charge limits imposed by CRC with Decision No. 572/30.03.2006, are given in the table below:

Table 9

Prices for traffic services (BGN per minute)	2006 prices in interconnection agreements		2007 prices in interconnection agreements		Price restrictions imposed by CRC with Decision No. 572 / 30.03.2006	
	Peak time	Off-peak time	Peak time	Off-peak time	Peak time	Off-peak time
Fixed-to-fixed termination on the BTC network:						
Local level	0,018	0,017	0,018	0,017	0,0165	0,0145
Metro level	0,027	0,026	0,0230	0,0208	0,0230	0,0208
Single transit	0,033	0,031	0,0270	0,0240	0,0270	0,0240
Single transit – termination of international calls	0,034	0,032	0,034	0,032	dropped	Dropped
Double transit	0,090	0,075	0,0600	0,0530	0,0600	0,0530
Double transit – termination of international calls	0,100	0,075	0,100	0,075	Dropped	Dropped
Mobile-to-fixed termination on the BTC network	0,100	0,075	0,100	0,075	0,0600	0,0530

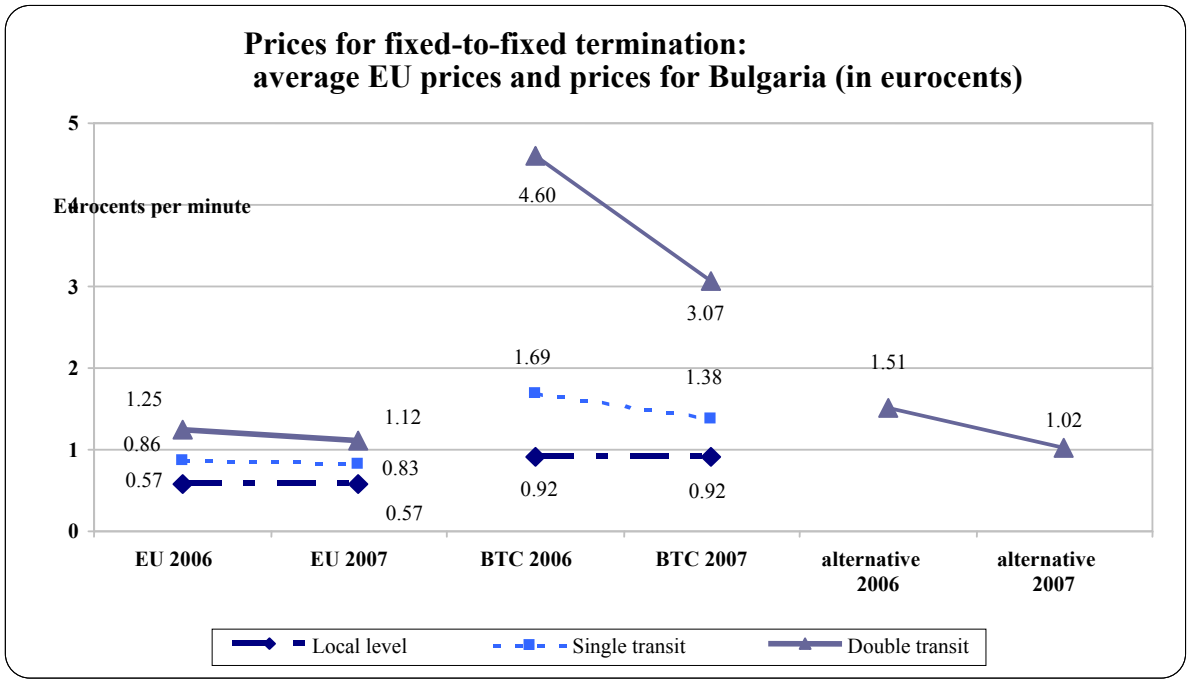
Trunk traffic						
Single transit	0,030	0,030	0,030	0,030	0,024	0,024
Double transit	0,080	0,080	0,080	0,080	0,055	0,055

Source: *CRC*

Bulgaria – EU comparison of fixed termination rates

As a result of CRC's regulatory intervention, the prices for fixed-to-fixed termination in the BTC network at metro, single and double transit level have decreased respectively by 14.8%, 18.2% and 33.3%. As the prices of call-by-call carrier selection and carrier pre-selection at single transit level are linked to the termination charges, they have also decreased against 2006, respectively by about 22% for peak time and by about 28% for off-peak time traffic. Community termination charges continue downwards, except those for termination on local level, which remain the same as in 2006. In 2007, the average charge for single transit decreases by 3.5% and for double transit – by 10.4%.

Figure 48 presents the average interconnection charges for termination in incumbent's fixed network in the EU, and for termination in the BTC AD network and in the networks of the alternative undertakings in Bulgaria. The average EU prices, given in EC's 13 Report, and CRC data about the prices[66], charged by BTC AD and by alternative undertakings, are used in the comparison. The average prices are estimated for peak traffic, and prices for Bulgaria are re-estimated in eurocents.



Source: *Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2; CRC data*

Figure 48

The chart shows that the prices charged by BTC AD, in particular for double transit termination, are notably higher than the EU average. Taking into account that the alternative undertakings do not have defined levels in their networks, in Figure 48 the termination charge[67] is visualized as double transit termination.

Some alternative undertakings carry traffic among their networks using H.323 and SIP protocols and negotiate prices that are lower compared to those charged by BTC AD.

[66] CRC data for the termination prices charged by BTC and by the alternative undertakings are as of 31.12.2007.

[67] The prices given for alternative undertakings on figure 34 are prices for termination on alternative undertakings' networks weighted with the traffic between the alternative undertakings.

Bulgaria is the only EU Member State, which has differentiated charges depending on the type of network where the traffic originates, because the price restrictions, imposed by the regulator in 2006, failed to take effect in 2007 due to litigation. Given the higher charges for termination in mobile networks, the alternative undertakings, as well as BTC AD, negotiate higher termination charges for traffic originating in mobile networks than for traffic originating in fixed networks.

Charges for termination in mobile networks

Despite that the consultation procedure for decreasing the prices for termination in mobile cellular networks of traffic originated in the networks of the operators providing fixed voice telephony service did not yield any results, in Q4 2007 the regulator launched a new round of negotiations with mobile operators for approval of a glide-path for phased and voluntary decrease of the charges for termination in mobile networks. The negotiations were not closed by the end of 2007 and the high rates of the charges for termination in mobile networks remain unchanged.

3.2. Local loop unbundling

Provision of services to end-users through unbundled local loop failed to become a fact in 2007. The alternative undertakings showed no interest in using local loop unbundling to offer services.

BTC AD prices for local loop unbundling

The litigation between BTC AD and the Commission on the Reference Unbundling Offer (RUO), approved by CRC Decision No. 1459/11.07.2006, continued over the year. In this period, the prices for local loop unbundling remained unchanged because in 2006 the court rejected company's claim for stay of the immediate execution of regulator's decision, whereby, in spite of the litigation, the maximum price limits, imposed by CRC in compliance with the decision quoted above, entered into force. These price restrictions are given in the table below.

Table 10

Prices for local loop unbundling services (in BGN)	Price restrictions imposed by CRC Decision No. 1459/11.07.2006[68]	
	For shared access	For fully unbundled access (LLU)
Tie cable – installation of 100 pairs	Up to 2 900	Up to 1 200
Tie cable – monthly fee for 100 pairs	Up to 43	Up to 43
Twisted copper pair – installation per pair	Up to 68	Up to 35
Twisted copper pair – monthly fee per pair	Up to 8.50	Up to 19.50

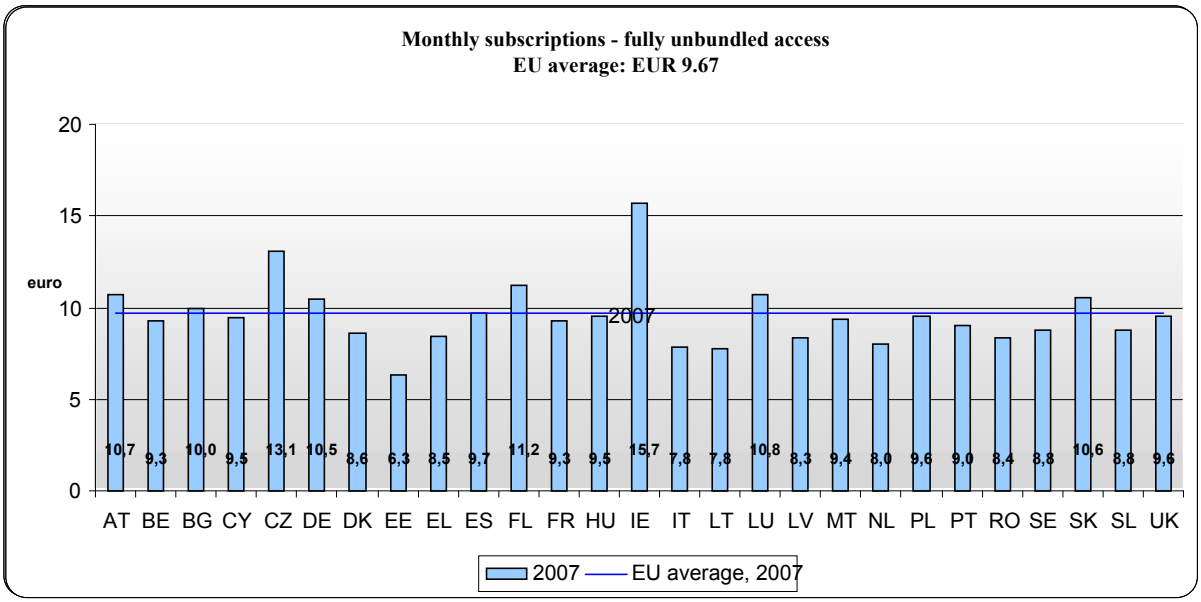
Source: *CRC*

Bulgaria – EU comparison of the monthly subscription for twisted copper pair

The figures below present the prices in Euro, excluding VAT, of the monthly subscription for twisted copper pair for Bulgaria and the EU. Data about the prices in the EU Member States and the EU average as of October 2007, given in EC's 13th Report, and data about the BTC AD December prices are used in the comparison.

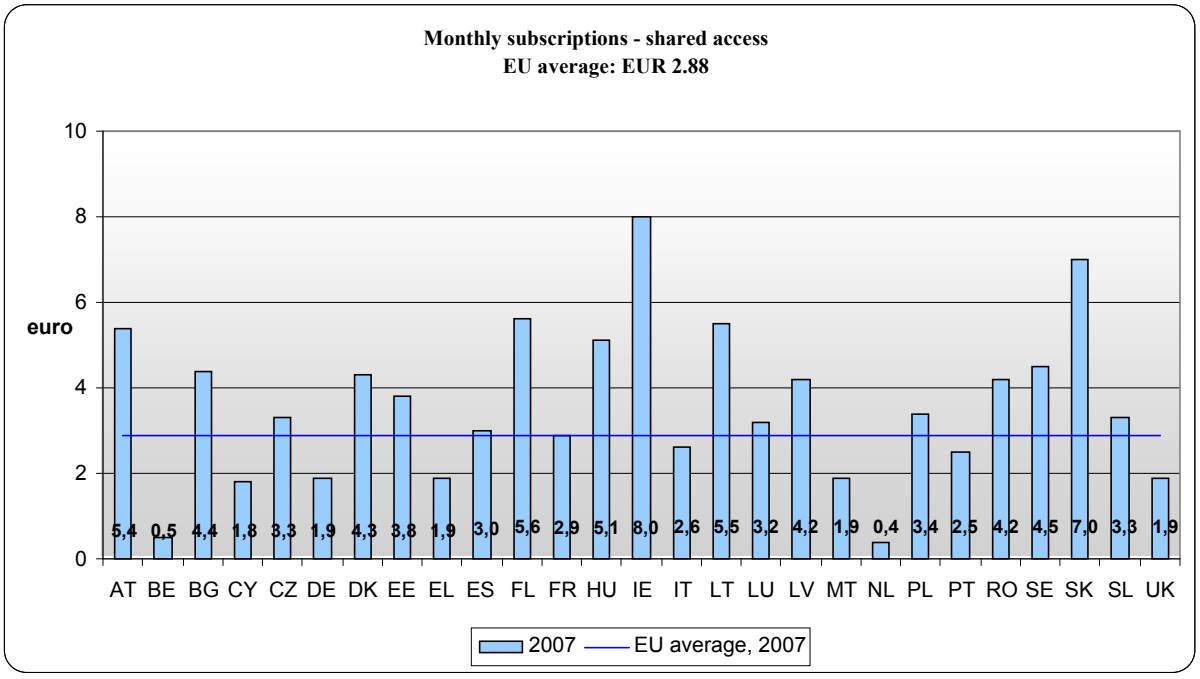
[68] Price restrictions are in force throughout 2007.

Figure 49 presents the monthly subscription for fully unbundled access, and figure 50 gives data about shared access. The names of the Member States in the figures are replaced by their country codes in Latin[69].



Source: *Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2; CRC data*

Figure 49



Source: *Progress Report on the Single European Electronic Communications Market 2007 (13th Report), Volume 2; CRC data*

Figure 50

[69] BG - Bulgaria, BE - Belgium, CZ – Czech Republic, DK - Denmark, DE - Germany, EE - Estonia, EL - Greece, ES - Spain, FR - France, IE - Ireland, IT - Italy, CY - Cyprus, LV - Latvia, LT - Lithuania, LU - Luxembourg, HU - Hungary, MT - Malta, NL – the Netherlands, AT - Austria, PL - Poland, PT - Portugal, RO - Romania, SL - Slovenia, SK - Slovakia, SE – Sweden, and UK – United Kingdom.

The comparison between the 2007 maximum limits of monthly subscriptions for twisted copper pair in Bulgaria and the EU average price shows that the BTC AD monthly price for fully unbundled access is close to the EU average, whereas the price for shared access is almost twice higher.

3.3. Bitstream access

Pursuant to TA (repealed) and in accordance with § 7 of the Transitional and Final Provisions of the LEC, BTC AD has an obligation to provide bitstream access to its network, setting cost-oriented prices for it. Back in 2006, operators filed requests for binding instructions to be given to BTC AD on the provision of bitstream access and CRC took the role of a mediator in the negotiations between the parties in order to achieve consensus on the provision of the service.

Notwithstanding the above, CRC imposed limits on five of the BTC AD price proposals for bistream access services, on which consensus was not reached, on one hand, and, on the other hand, their cost-orientation was not proven. The price restrictions imposed by CRC Decision No. 1358/15.11.2007 concern some starting prices as a precondition for the provision of the service by alternative undertakings. Monthly service rentals vary depending on the client profile and are the lowest for the ADSL 1024-A client profile (1:50 share ratio), and the highest for the ADSL 8192-B client profile (1:20 share ratio).

The decision, adopted by CRC, ensures non-discriminating access of the alternative undertakings to incumbent's infrastructure and creates an environment conductive of broadband services development in Bulgaria.

Work on the BTC AD proposal for provision of bitstream access continued. Meetings and consultations were organized and held with BTC AD and with the alternative undertakings. Thus at year-end, the first bitstream agreement was entered into by BTC AD and BTC MOBILE EOOD.

The interest, which alternative undertakings showed in the discussions on bitstream access terms, can be interpreted as a precondition for the establishment of competition in the provision of broadband services.

3.4. Co-location and use of specific network facilities

In accordance with its obligations of an operator with significant market power, in 2006 BTC AD proposed draft general conditions for co-location and use of specific network facilities, which CRC sent back for redrafting. In April 2007, BTC AD submitted corrected draft general conditions for use of its underground duct network and for shared access to premises, facilities and towers, with enclosed price terms and relevant supporting documents. The regulator analyzed and approved the drafts.

By Decision No. 721/10.05.2007, CRC approved the general conditions, including the charges for use of BTC AD's underground duct network and for co-location and towers.

4. Provision of universal service

The obligation to provide universal service (US) is imposed on BTC AD pursuant to TA (repealed) with individual license No. 100-00001/28.01.2005. On the grounds of § 7 of the Transitional and Final Provisions of the LEC, the obligation remains in force in 2007. It concerns the provision at a specified quality level and an affordable price, across national territory, of the following services:

1. connection at a fixed location to the public fixed telephone network and access to fixed voice telephone services (subscription) allowing end-users to make local, national and international calls;
2. access to fixed voice telephone service through public pay-phones (PPP);

3. common subscribers directory of the numbers of fixed network subscribers and provision of directory enquiry services for the subscribers of fixed and mobile networks;
4. free access to emergency call services;
5. for disabled and disadvantaged end-users, ensuring access to fixed voice telephone services under special conditions and/or making available, if appropriate, terminal equipment.

Pursuant to the LEC, in effect since May 2007, the scope of the US includes an obligation to provide possibility for making free of charge emergency calls to national numbers and to the single European emergency call number 112.

The penetration rate of the fixed voice telephone service is almost 92%, based on the number of settlements. According to BTC AD data, at 31.12.2007, 515 settlements of a total of 5 303 geographical units[70] in the country do not have installed telephones, and these are mainly settlements with less than 50 and less than 20 inhabitants. In some cases, there are settlements with 50 – 200 and 200+ inhabitants without installed telephones. Installed telephones are available in all Bulgarian settlements with 500+ and 1000+ inhabitants.

The breakdown of settlements without installed telephones by number of inhabitants is as follows:

- ✓ 31 settlements with 200+ inhabitants;
- ✓ 42 settlements with 200 – 50 inhabitants;
- ✓ 100 settlements with less than 50 inhabitants;
- ✓ 342 settlements with less than 20 inhabitants.

Two telephone lines each have 103 settlements with the following breakdown by number of inhabitants:

- ✓ 7 settlements with 500+ inhabitants;
- ✓ 58 settlements with less than 50 inhabitants;
- ✓ 38 settlements with less 20 inhabitants.

According to BTC AD data, the telephone penetration rate by households[71] is negligibly above 65%, 4.5% down on the previous year, attributable mainly to the smaller number of subscribers, which in 2007 is 6.48% down on 2006.

4.1. Connection at a fixed location to the public fixed telephone network and access to fixed voice telephone services (subscription) allowing end-users to make local, national and international calls

The obligation to connect is concerned with provision of connection on basis of reasonable requests pursuant to Article 8, Paragraph 1 of Regulation No. 15/2 September 2004 on the terms and procedure of provision of universal telecommunications service and on the specified quality level it must satisfy (in force in 2007). As verifying the information on whether the application is a first one for the household concerned is cost-intensive, BTC AD considers reasonable all applications submitted by residential users.

According to BTC AD data, the number of applications for connection at a fixed location to the public fixed telephone network and access to fixed voice telephone services, filed as of 31.12.2007, is 19 336, including 2 909, or 15.04%, pending applications. BTC AD refuses applications by the following main reasons: lack of technical possibility to provide the

[70] According to National Statistical Institute data from the Unified Classification of Administrative-Territorial and Territorial Units (UCATTU), in effect since 15 March 2008, in Bulgaria there are 5 303 territorial units/settlements.

[71] The penetration rate by household indicator is measured by dividing total residential lines/subscribers by the number of households in the country. The number of households is taken according to the latest officially published data of the National Statistical Institute which are from 2001.

service; the application is for connection at a fixed location outside the building limits of the settlement.

4.2. Access to fixed voice telephone service through public pay-phones

Under its individual license, BTC AD has an obligation to provide, on a uniform basis and in proportion to the number of the population of the serviced territory, public pay-phones for ensuring access to fixed voice telephone service, and to install not less than two public pay-phones per 1000 inhabitants, taking into account the available public pay-phones installed by all operators.

In 2007, total public pay-phones are 15 713 in number, including 2.18% per cent owned by BTC AD and almost 95% owned by BULFON AD (incumbent's daughter company). The undertaking with imposed obligation provides the service also through almost 4000 automatic dialling telephone boots, including 319 in company's premises.

At 31.12.2007, the value of the number of public pay-phones per 1000 inhabitants indicator is 2.06[72], taking account of the number of public pay-phones and the telephone boots of all operators. In Bulgaria, the number of public pay-phones per 1000 inhabitants is 2.22% down on the previous year, attributable mainly to the lower number of public pay-phones and telephone boots of BTC AD (almost 45% down), whereas the number of public pay devices for voice calls of SPECTRUM.NET has increased.

In the Review of the Scope of the Universal Service conducted in 2005 in accordance with Article 15 of Directive 2002/22 (Universal Service Directive), EC invited comments on whether the scope of the services included in the universal service, in particular for provision of access to publicly available telephone services through public pay-phones, should be changed. Some comments defend the opinion that the service "access to telephone services through public pay-phones" should be dropped because of the high penetration rate of mobile services and the cheaper mobile telephones. Other comments defend the opposite opinion, motivated with the need for public pay-phones to be used in specific geographic locations, to be accessible to disadvantaged (disabled) users, and with the need to guarantee consumers' rights in respect of emergency calls. A final decision has not been taken yet.

At 31.12.2007, public pay-phones owned by BTC AD and BULFON AD, with installed facilities for users with impaired hearing and blind users or users with impaired vision, account for 96% of total public pay-phones nationally. Some of them are equipped with text or other type of connection for users with impaired hearing or speech and are installed in appropriate places accessible by disabled users in wheelchairs.

At the end of 2007, BTC AD reports an exceptionally high rate (over 95%) of PPP in working order.

Over the past year, the provision of telephone services through PPP was accessible to users upon purchase of phone cards [73] at the following prices:

Table 11

Card	25 pulses	50 pulses	100 pulses	200 pulses
Price (BGN)	2.90	4.90	7.50	13.00

Note: Prices are inclusive of VAT.

[72] The indicator is estimated by dividing the total number of public pay-phones and telephone boots of the undertakings in the country, installed at 31.12.2007, by the number of the population in 2007 according to National Statistical Institute data, and multiplying the product by 1000.

[73] The prices given are for MOBICA and BULFON cards.

4.3. Common subscribers directory of the numbers of fixed network subscribers and provision of directory enquiry services for numbers of subscribers of fixed and mobile networks

In line with the obligations, imposed on BTC AD in accordance with TA (repealed), the incumbent is to provide to users directory enquiry information, prepare and publish a printed edition of a common subscribers directory with data for the subscribers of all operators providing fixed voice telephone service, and maintain an up-to-date electronic directory.

In early 2007, BTC AD submitted to CRC a request for approval of printed directory circulation in accordance with the provisions of Regulation No. 19/21.07.2006 on the terms and procedure for publication of common subscribers directories, including operation, transfer and use of databases, and for provision of directory enquiry services. Because of problems with the provision of (protection of subscribers' personal data) and payment for the information to be included in the common subscribers directory, the procedure was delayed in expectation of regulations conforming to the EU Regulatory Framework 2002 to be adopted. Therefore, in 2007 BTC AD did not prepare, update and publish printed or electronic common subscribers directory, and, accordingly, prices for access to directory enquiry services and common subscribers directory were not set.

According to Cullen International data, the obligation to publish a common subscribers directory is a problem also for other Member States, which have failed to fulfil it in 2007.

The LEC introduces amendments to the regulations on the publication of a common subscribers directory within the obligation to provide universal service. The directory content now covers data about the subscribers of all operators who provide publicly available telephone services.

4.4. Provision of directory enquiry services for the numbers of subscribers of fixed and mobile networks and free of charge access for end users to emergency call services

BTC AD has an obligation to provide to end-users, on a 24-hour basis, access to directory enquiry service for all numbers of subscribers included in the common subscribers directory.

The directory enquiry services offered by BTC AD are at the price of a local call, which is BGN 0.00 per minute in off-peak time and BGN 0.018 per minute in peak time, inclusive of VAT.

The rate of use of directory enquiry services by end-users is low and accounts for 0.6% of total local call traffic of residential and business users, and the revenues from these services account for less than 2% of total earnings from local calls made by company's subscribers.

As emergency call services, which are free of charge for the end-users, are used only as needed, the volume of calls, measured in minutes, is negligible and accounts for only 0.04% of the traffic of national and international calls.

4.5. Provision of Internet access through the public electronic communications network of BTC AD

In 2007, BTC AD provides dial-up Internet access through specified access numbers. When charging calls[74] to numbers 0134 100, 0134 000, 0134 111, 01331 and 01333, connection to Internet is charged separately. The call value includes the call set up price for national calls, as well as rate per minute, equal to the price of local calls to local Internet and

[74] Standard charging prices are used in the comparison.

VoIP providers. In the free Internet access through numbers 0134 200 and 0134 300, the connection to Internet is included in the call value. The call set up value is again equal to the call set up price for national calls, and the per minute rate is higher than the price of local calls to local Internet and VoIP providers, respectively by 20% for peak time and by 25% for off-peak time.

The traffic of calls to access numbers 134xx accounts for 0.94% of total local and national calls.

4.6. Prices for universal service

The requirements for affordability of the universal service price are set in accordance with the Methodology, approved by Council of Ministers' Decree No. 229/31.08.2004 (promulgated, SG, No. 78/2004). According to the Methodology, affordability requirements concern initial connection, monthly subscription, local, national and international call charges, which are set on analogy with the fixed telephone service prices on basis of a usage basket. The increase of basket prices is restricted by a common price cap with a maximum value equal to the product of the consumer price index and the gross domestic product index. The US basket elements are the same as the elements of the usage basket for the fixed voice telephone service. According to BTC AD data, at year-end service costs are over three times higher than revenues from the service.

The prices of calls made on public pay-phones are by up to 20% higher than the price of the same calls made through residential or business telephone lines.

In 2007, BTC did not prepare and publish printed common subscribers directory, hence there are no prices determined in compliance with the obligation for access to directory and enquiry services. The procedure for publication of a common subscribers directory was delayed until approval of regulations, complying with the EU Regulatory Framework 2002, because of problems with the provision of (personal data protection) and payment for the information to be included in the common subscribers directory.

BTC AD has an obligation to provide price packages and in 2007 the company continued to offer the following packages for:

- **Low usage** (BTC Low User according to the BTC Price List)

The package is provided to socially poor individuals, eligible for social assistance or holding documents issued by administrative bodies to the effect that the person is socially poor. The package price of BGN 3.10, exclusive of VAT, covers the monthly rental with included 20 minutes or 10 pulses (for telephone lines with no feasibility for charging per minute) for local calls per month, charged at zero BGN per minute/pulse. Calls in excess of the minutes/pulses included in the package are charged at per minute prices, which are about 1.13 times higher than peak time call prices and 4.32 times higher than off-peak time call prices for subscribers who are not on BTC AD price plans.

- **Disabled users with permanent disability and working ability reduced by over 90%** (I group disabled persons according to the BTC Price List)

The package is provided upon presentation of the relevant documents evidencing permanent disability. The package price of BGN 1.50, exclusive of VAT, covers the monthly subscription with included 160 minutes or 80 pulses of local calls per month charged at zero BGN per minute/pulse. Calls in excess of the minutes/pulses included in the package are charged at prices equal to the prices of calls made by subscribers who are not on BTC AD price plans.

- **Disadvantaged people in social and health institutions**.

The package is provided to social institutions on basis of a list approved by the relevant ministry and updated every year by 30 January. The package price of BGN 3.50, exclusive of VAT, covers monthly subscription with included 1000 minutes or 500 pulses of local calls per month charged at zero BGN per minute/pulse. Calls in excess of the

minutes/pulses included in the packages are charged at prices equal to the prices of calls made by subscribers who are not on BTC AD price plans.

4.7. Quality of provided US

Under its individual license, BTC AD has an obligation to ensure quality of provided service in accordance with the regulations, standards and technical specifications in force in the Republic of Bulgaria.

Individual license No. 100-00001/28.01.2005 of BTC AD stipulates that in the provision of fixed voice telephone service the company shall guarantee quality of service parameters as given in the table below, which presents also the changes in the quality of service:

Table 12

Parameter	Change of parameter in 2007 compared to 2006, %
5.1. Supply time for initial connection	
5.1.1. Time for fastest 95%	No change
5.1.2. Time for fastest 99%	No change
5.1.3. Rate of provision according to agreed date	No change
5.1.4. Hours for acceptance of applications	No change
5.1.5. Time for meetings	No change
5.2. Fault rate per access line	
5.2.1. Fault rate per access line per year	-12.74%
5.3. Fault repair time	
5.3.1. Fault repair time for 80% of access line cases	-5.74%
5.3.2. Fault repair time for 95% of access line cases	-21.25%
5.3.3. Fault repair time for 80% of all other cases	-36.04%
5.3.4. Fault repair time for 95% of all other cases	-42.37%
5.3.5. Rate of submitted faults repaired by a preset date	No change
5.3.6. Time for submission of faults	No change
5.3.7. Time for meetings	No change
5.4. Unsuccessful call rate	
5.4.1. Rate of national calls	No change
5.4.2. Rate of international calls	-4.92%
5.5. Call set up time	
5.5.1. Average time for national calls	-2.31%
5.5.2. Time for fastest 95% of national calls	-11.63%
5.5.3. Average time for international calls	-0.13%
5.5.4. Time for fastest 95% of international calls	-0.82%
5.6. Call set up time (response time for operator services)	
5.6.1. Mean time to answer	No change
5.6.2. % calls answered within 20s	
5.7. Call set up time (response time for directory enquiry services)	
5.7.1. Mean time to answer	4.44%
5.7.2. % calls answered within 20s	
5.8. Percentage of public pay-phones in working order	
5.8.1. % PPT in full working order	-0.20%
5.9. Percentage of bill correction complaints	
5.9.1. Percentage	1.00%

The table above shows that BTC AD fulfils its quality obligations under the license and reports higher quality of service compared to 2006 on the following parameters:

- ✓ Fault rate per access line per year and fault repair time;
- ✓ Call set up time.

Complaints and satisfaction of complaints

According to company data, at 31.12.2007 the number of subscriber lines with no feasibility for time charging is 359 280, accounting for 18.78% of total residential subscribers. These lines are connected to analogue telephone exchanges with no feasibility for time charging and because of the technical impossibility subscribers are deprived of their right to receive detailed data sheet of the number, type and duration of the calls made. Therefore, they cannot monitor and control their costs.

In 2007, the number of complaints regarding the provision of US, filed with the company, is significant – over 23 000, or the ratio of complaints to total subscribers is 1.21%.

The main reasons by which complaints are lodged include monthly bill corrections and quality of connections. The percentage of bill correction complaints registers negligible increase by 1% compared to the previous year.

In 2007, BTC AD replied to all complaints within the regulated period of 30 days and the satisfied complaints rate is over 33%.

4.8. Compensation of the net cost incurred for provision of US

In 2007, BTC AD is the only operator in Bulgaria with imposed obligation by CRC to provide US nationally.

According to the provisions of TA (repealed), in relation to §7 of the Transitional and Final Provisions of the LEC, undertakings with an obligation to provide US may apply for compensation of the proven net cost incurred by filing applications to CRC in the cases where the provision of US constitutes an unfair burden on them.

In 2007, applications for compensation of the net cost incurred for the provision of US were not filed with CRC; therefore there is no legal ground for taking steps for compensation. In that light, the Management Board of the Guarantee Fund for the Universal Service Provision (the Fund) has not taken decision on the total amount of compensation and on the specific amount for every applicant. The Fund has not operated with financial assets and does not have a bank account.

5. Leased lines

5.1. Market players

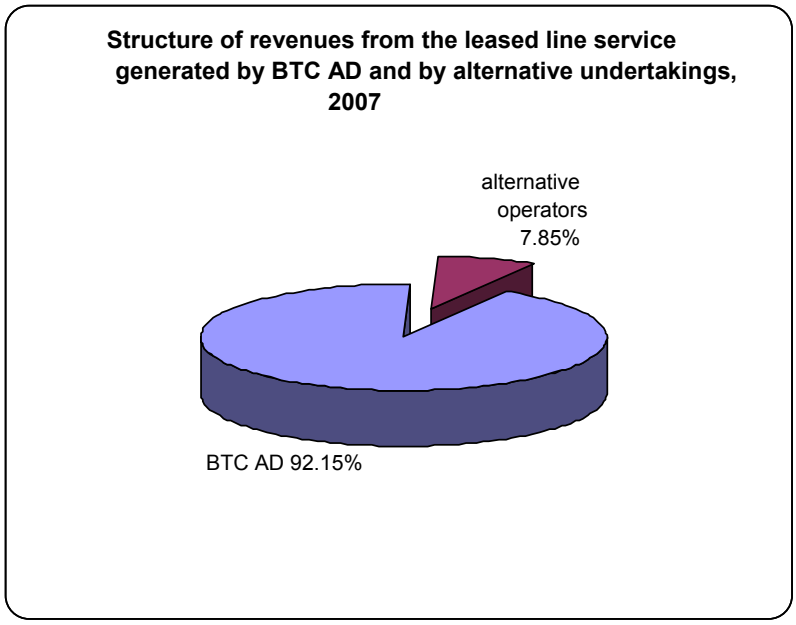
In addition to BTC AD, the mobile operators (MOBILTEL EAD, COSMO BULGARIA MOBILE EAD, RADIOTELECOMMUNICATION COMPANY EOOD), one of the big cable operators (EUROCOM CABLE MANAGEMENT BULGARIA EOOD), and the operators of networks for data transfer (SOFIA COMMUNICATIONS EAD, NETERA EOOD, NOVATEL EOOD) also hold individual licenses for provision of telecommunications through telecommunication network in relation to the provision of the "leased lines" service.

In 2007, two new individual licenses for provision of telecommunications through telecommunications network, in relation to the provision of the "leased lines" service, including international leased lines, were issued to RACOM AD and TELECOM PARTNERS NETWORK EAD. At year-end, total telecommunications operators licensed to provide the leased lines service are 16 in number. Five operators have submitted notifications to CRC pursuant to the LEC, notifying the Commission of their intentions to provide

electronic communications through electronic communications network in relation to the provision of the "leased lines" service, with prospective start up of activity by 31.12.2007. According to data submitted to CRC, in 2007, 12 other operators besides BTC AD provided leased lines: BULGARTEL EAD, VESTITEL BG AD, GLOBAL COMMUNICATIONS NET EAD, EUROCOM CABLE MANAGEMENT BULGARIA EOOD, EST AD, COSMO BULGARIA MOBILE EAD, MEMOREX TELEX COMMUNICATIONS BULGARIA EOOD, MOBILTEL EAD, NOVATEL EOOD, RACOM AD, SOFIA COMMUNICATIONS EAD and NETERA EOOD. None of the operators, who have submitted notifications pursuant to the LEC, provided the leased lines service in 2007.

5.2. Market volume and market shares

The revenues from the provision of the leased lines service amount to BGN 152.95 mln, 19.77% up on 2006. The increase is attributable to the higher number of alternative undertakings doing business on this market (12 in 2007 against 10 in 2006) and to the growth in incumbent's revenues (almost 16% up). On the other hand, the relative share of the former monopolist in the market structure continues smoothly but steady downwards and at year-end stands at 92.15%, decreasing by 3 percentage points, whereas the share of the alternative undertakings is up to 7.85% (Figure 51).



Source: *Data submitted to CRC*

Figure 51

Given the sizeable share of BTC AD in the leased lines service market, the competitiveness of this market segment is strongly dependent on the regulation of the operator with significant market power. By CRC Decision No. 1315/20.06.2006, BTC AD is designated operator with significant market power (OSMP) on the leased lines service market, on basis of analysis of the information about the net revenues generated by the operators in the previous year, the total volume of the leased lines market segment, and the market share of each one of the players in this market segment (in accordance with the Methodology for the terms and procedure of relevant markets definition, analysis and assessment, and criteria for designating undertakings with significant market power (USMP))[75].

The LEC transposes in the Bulgarian legislation the EU Regulatory Framework 2002, which implies an entirely new approach to market regulation and the imposing of obligations

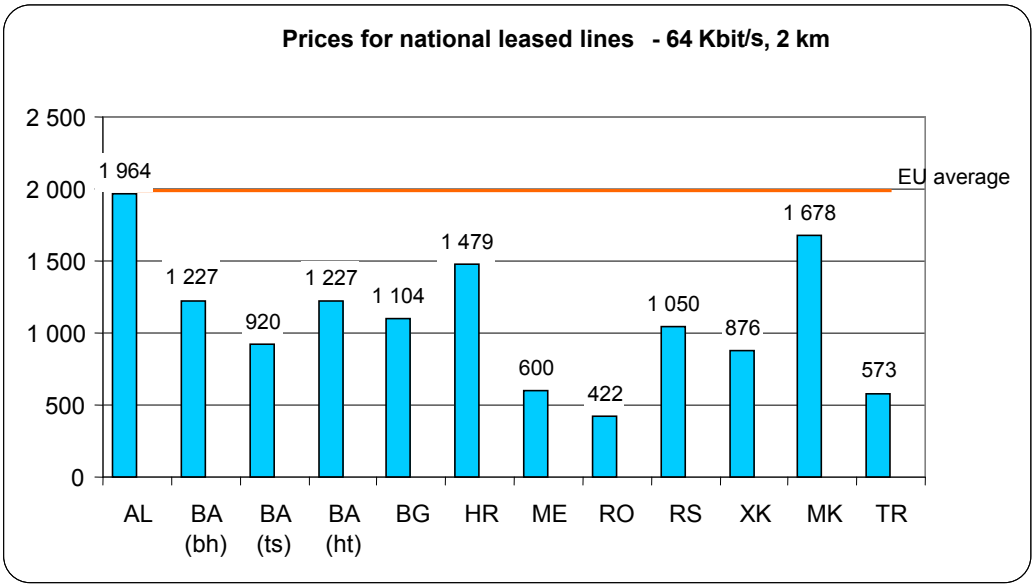
[75] The high market share of the incumbent is attributable to the limited definition of the leased lines service applied in the analysis pursuant to TA (repealed) and the EU Regulatory Framework 1998. The market definitions and analyses pursuant to the LEC are likely to show higher market share of alternative undertakings.

on undertakings with significant market power. The EC recommends a detailed list of wholesale and retail markets susceptible to ex-ante regulation, which national regulators should analyze for the existence or absence of effective competition. In accordance with §7 of the Transitional and Final Provisions of the LEC, the obligations imposed on the operators designated as having significant market power pursuant to TA (repealed) remain in force in expectation of the CRC decisions for imposing specific obligations on the undertakings designated as having significant market power pursuant to the LEC to take effect. In that light, BTC AD continued to discharge the obligations for provision of the leased lines service pursuant to TA (repealed) and in accordance with its individual license for provision of telecommunications through telecommunications network in relation to the provision of the leased lines service.

5.3. Leased lines service prices

The prices for the minimum package of the leased lines service, provided through the public fixed telephone network of BTC AD, are in the scope of the CRC-regulated prices. They shall be public and cost-oriented. In 2007, there was no change in the prices in the Reference Offer for the leased lines service, approved by CRC Decision No. 1486 of 15.07.2004.

Figures 52 through 55 present the average annual retail prices for national leased lines provided by the incumbents in Bulgaria and the other SEE countries, estimated on basis of the monthly subscriptions for 12 months[76]. The EU average is also given. The prices are in Euro, exclusive of VAT and any discounts offered at negotiation. The EU prices for national leased lines are for September 2007, and the SEE prices are for July 2007.

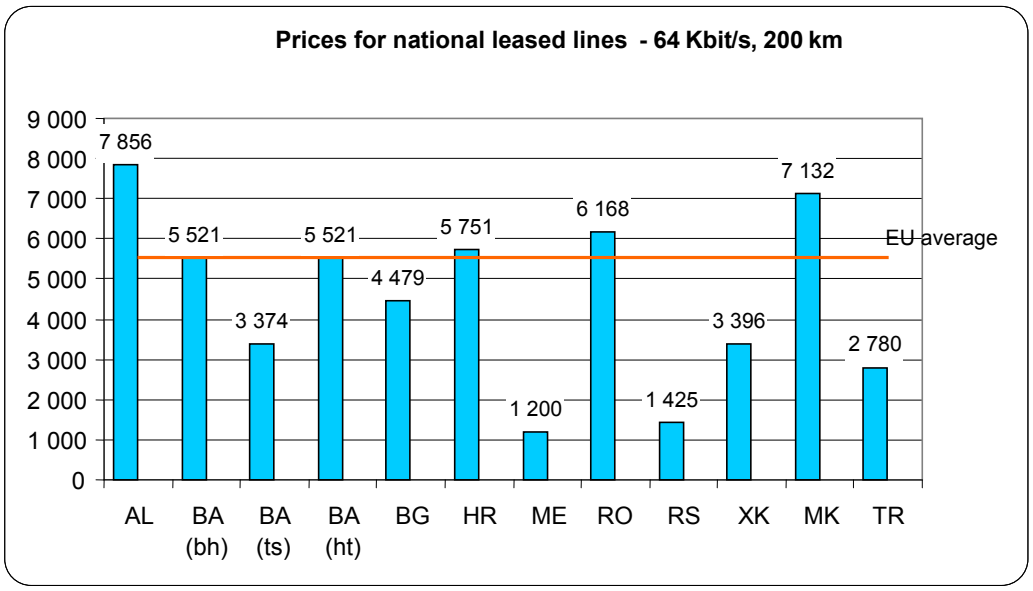


Country codes and regions: AL - Albania, BA – Bosnia and Herzegovina: (bh) - BH Telecom, (ts) - Telekom Srpske, (ht) - Hrvatske Telekomunikacije, BG - Bulgaria, HR - Croatia, ME - Montenegro, RO - Romania, RS - Serbia, XK - Kosovo, MK - Macedonia, TR - Turkey.

Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 13th Implementation Report, 2008; BTC AD prices*

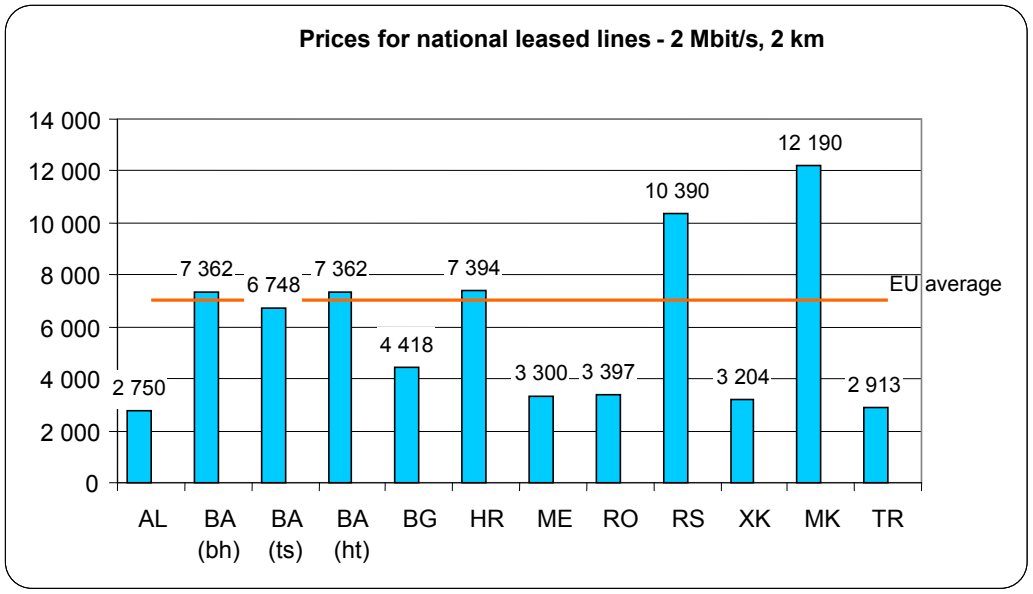
Figure 52

[76] For Bosnia and Herzegovina, the prices quoted by the three incumbents operating in the different regions are given, as follows: *BH Telecom (BH)* in the Federation of Bosnia and Herzegovina as a sole operator in some regions and in cooperation with *Hrvatske Telekomunikacije Mostar (HT)* in other regions*; Telekom Srpske (TS)* – in the Republic of Serbia; *Hrvatske Telekomunikacije Mostar (HT)* – in the Federation of Bosnia and Herzegovina as a sole operator in some regions and in cooperation with *BH Telecom* in other regions.



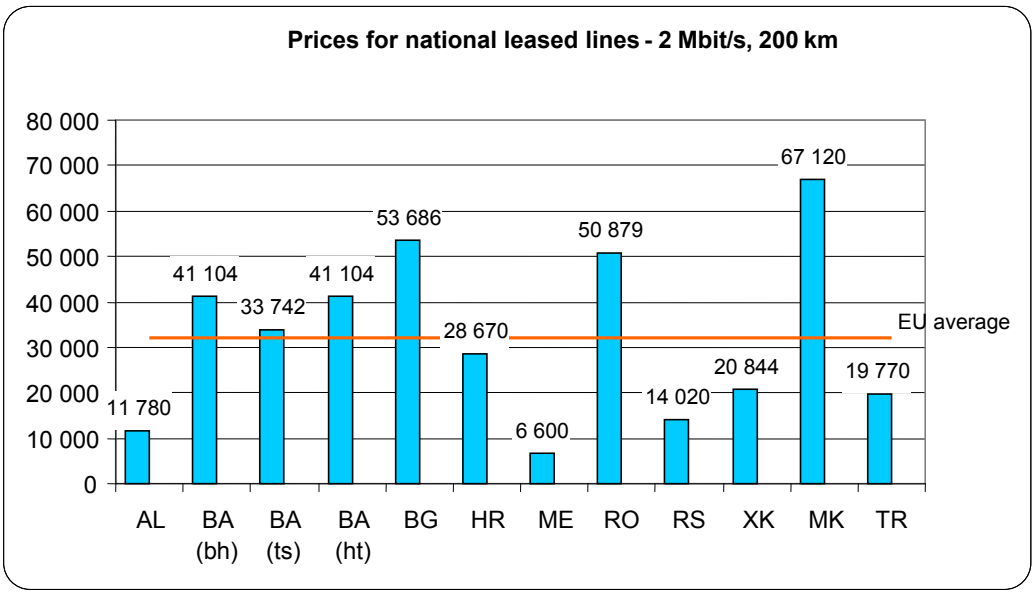
Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 13th Implementation Report, 2008; BTC AD prices*

Figure 53



Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 13th Implementation Report, 2008; BTC AD prices*

Figure 54

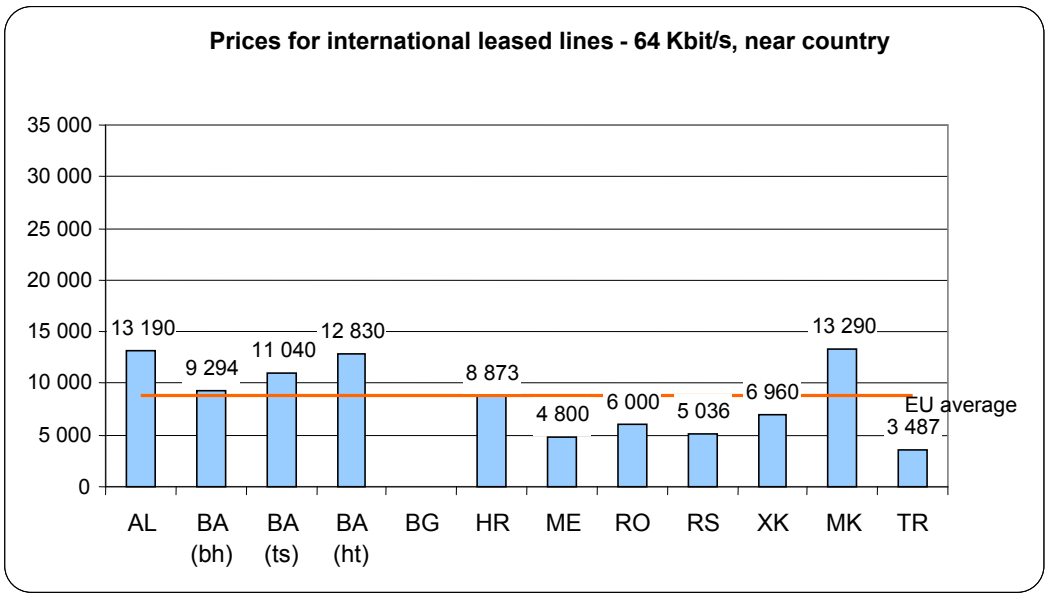


Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 13th Implementation Report, 2008; BTC AD prices*

Figure 55

For the short 2 km 64 Kbit/s lines, all SEE countries have prices below the EU average, and for the other types of lines tariffs vary across countries and regions. The lowest prices have incumbents in Romania and Turkey (for 64 Kbit/s, 2 km), in Montenegro and Serbia (for 64 Kbit/s, 200 km) and in Albania, Montenegro and Turkey (for high-speed 2 Mbit/s lines). The highest tariffs have incumbents in Albania (for 64 Kbit/s lines) and Macedonia (for high-speed 2 Mbit/s lines). With the exception of the 2 Mbit/s, 200 km leased lines, BTC AD has prices that are significantly lower than the EU average, respectively by 81% (for 64 Kbit/s, 2 km), 23% (for 64 Kbit/s, 200 km) and 59% (for 2 Mbit/s, 2 km).

The average annual prices (the monthly subscriptions for 12 months) for international leased lines, provided by SEE incumbents, are presented in figures 56 through 59. Prices to the United Kingdom are taken as reference for prices to distant country. The EU average is also given. The EU prices for international leased lines are for September 2006, and the SEE prices are for July 2006.

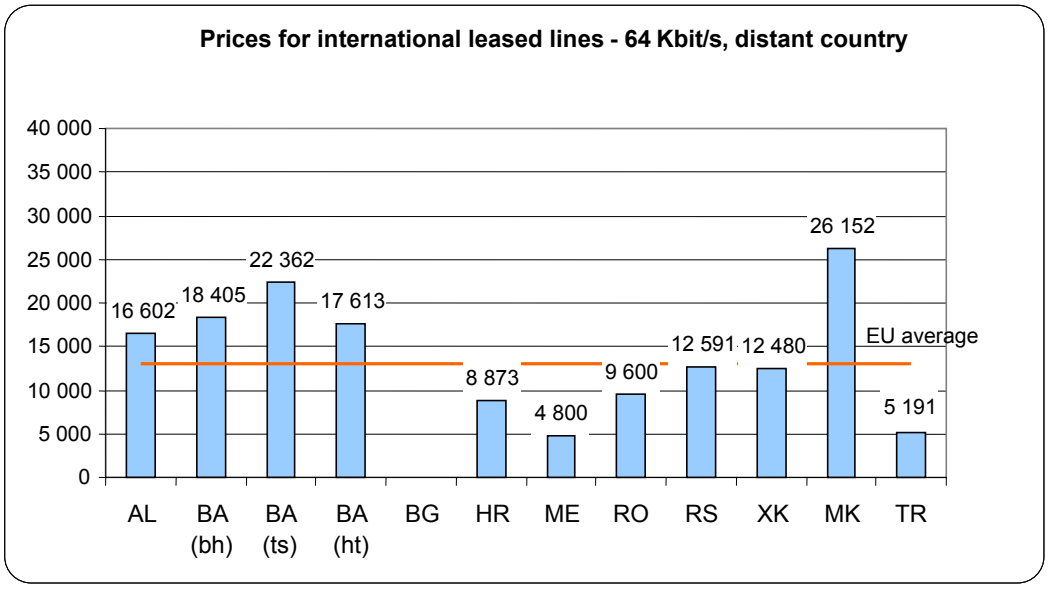


Note: The information for the international leased lines in Romania and Turkey is for "single routing". The tariffs for all other countries and regions are for "double routing". In many cases international leased lines

are offered as "double routing", implying that they include reserve capacity to account for potential technical problems.

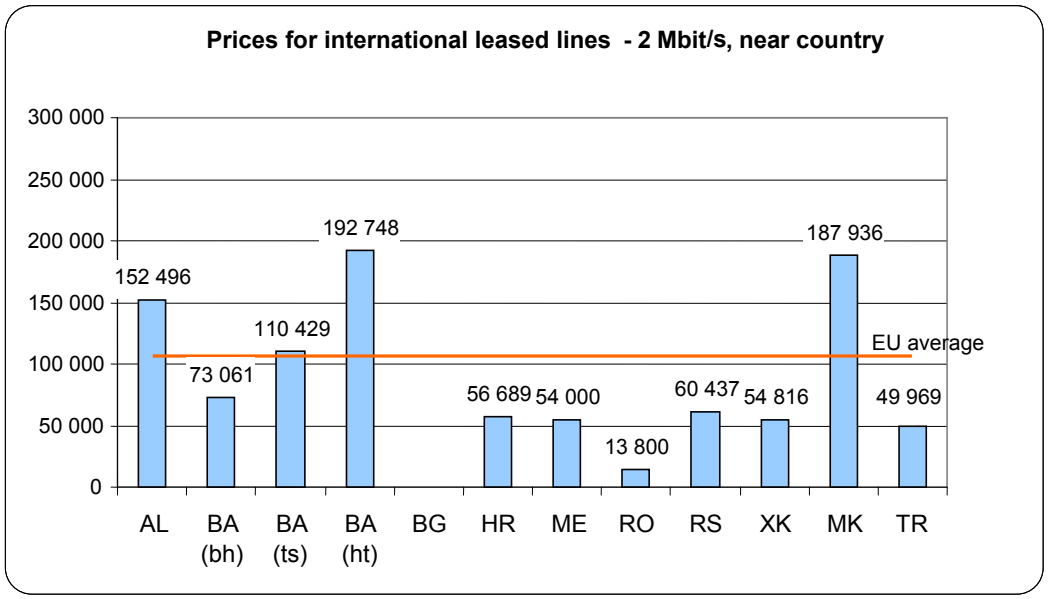
Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 12th Implementation Report, 2007*

Figure 56



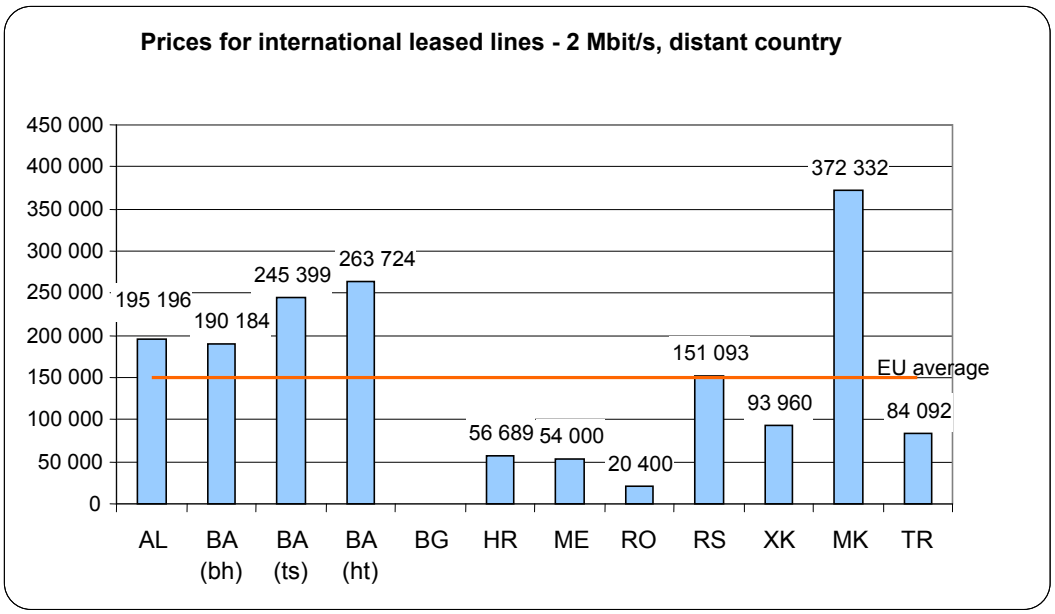
Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 12th Implementation Report, 2007*

Figure 57



Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 12th Implementation Report, 2007*

Figure 58



Source: *Cullen International, 4th Country Comparative Report SEE, 2007; EC, 12th Implementation Report, 2007*

Figure 59

It has to be noted that BTC AD no longer publishes prices for international leased lines. These are now subject to negotiations, even though the operator has been designated, pursuant to TA (repealed), as having significant market power for leased lines and is subject to transparency requirements. The lowest prices in the SEE region have the incumbents in Montenegro, Romania, and Turkey, and the highest tariffs have incumbents in Bosnia and Herzegovina, Macedonia, and Albania.

New operators are likely to enter the leased lines market in the next years. Operators' forecasts for provision of 714 new lines in 2008 give grounds to project growth in the revenues from this activity.

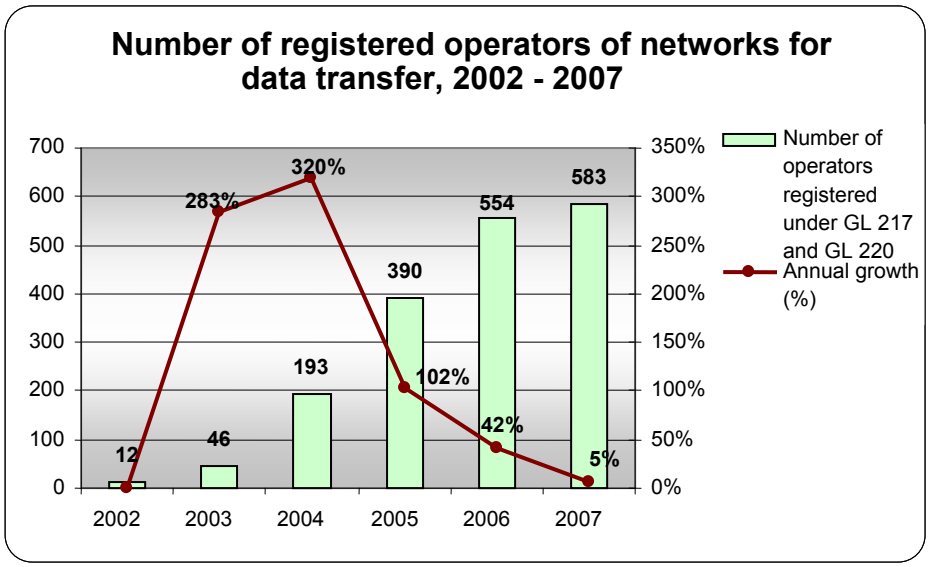
6. Networks for data transfer and provision of Internet access service

6.1. Networks for data transfer

In the period from the beginning of 2007 until the LEC came into force, there were 64 operators authorized pursuant to TA (repealed) under General License No. 217 for the provision of telecommunications through public telecommunications network for data transfer without use of scarce resource (General License 217). This market segment includes also 34 undertakings registered by May 2007 under General License No. 220 for the provision of electronic communications through public RLAN network of the mobile radio service (General License No. 220).

The licensing regime has been changed by the adoption of the LEC – subjects, who want to provide electronic communications without use of scarce resource, are required to submit to CRC a notification for the start up of provision of electronic communications. After the LEC came into force, 107 notifications for the start up of activity for provision of Internet access and data transfer through networks for data transfer without use of scarce resource have been submitted to CRC, including by some operators holding registrations under general license pursuant to TA (repealed).

At year-end, the operators, registered under General Licenses No. 217 and No. 220, and the submitted notifications for the start up of provision of data transfer and Internet access total 583 (Figure 60), 5% up on 2006.



Source: *CRC*

Figure 60

The slowdown of growth in the number of new operators is attributable to the high number of free regime providers of Internet access registered in the previous years.

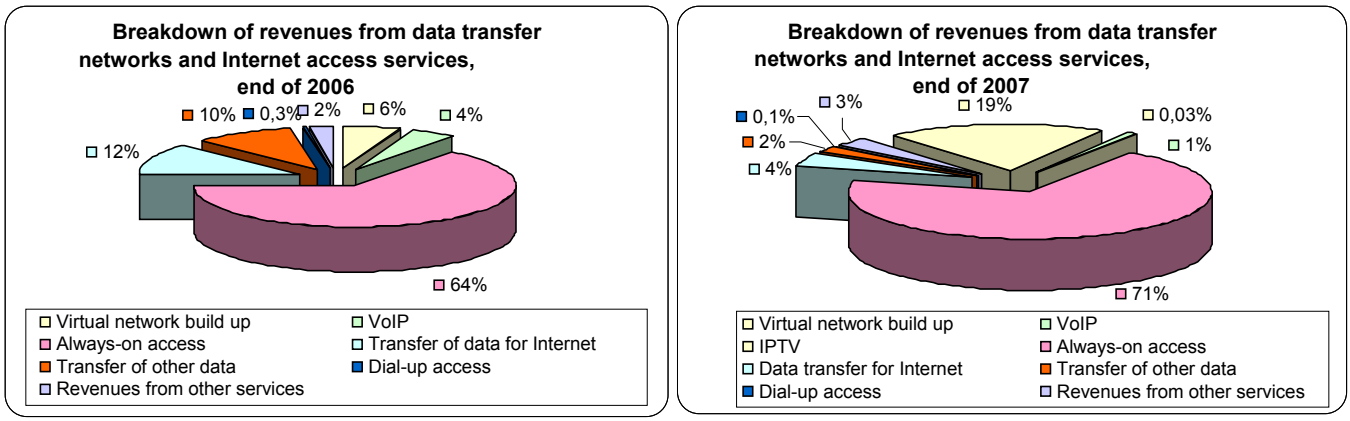
Given the intensive registration of the networks of Internet providers as operators of public networks for data transfer without use of scarce resource, since 2005 CRC analyzes the networks for data transfer and the provision of Internet access as one market segment.

The data transfer and Internet access segment includes also the undertakings, authorized under individual license for provision of telecommunications through point-to-multipoint public telecommunications network of the fixed radio service, who are 26 in number at the end of the reference period.

New subjects, doing business on basis of individual licenses for data transfer, including rights of use for scarce resource – numbers from the National Numbering Plan, were not licensed in the past year.

The consolidation trend, registered in the Internet segment in 2006, persists – some smaller providers have been bought by big ones while other small operators have gone out of business.

The volume of the data transfer and Internet access services segment stands at almost 201.8 mln BGN, 49% up on 2006. The analysis of the breakdown of revenues by provided services shows that provision of always-on Internet access accounts for the highest share of earnings (71% against 64% in 2006). Revenues from the building up of virtual networks are more than 4 times up. All other services register relative downswing (Figure 61)). It is most significant (in absolute and relative terms) in VoIP (reported revenues from this service are 68% down), transfer of other data (70% down), transfer of data for Internet (47% down). Dial-up Internet access also registers decline (by 47% in absolute terms), attributable to the increasing consumer demand for high-speed broadband and to the uneconomical dial-up Internet (an expensive service with speed quality not corresponding with modern Internet user needs).



***Source**: CRC*

Figure 61

Investments in the building up, maintenance and use of networks for data transfer stand at BGN 93.84 mln, 133% (over two times) up on 2006.

In 2008, 22 of the operators, who have submitted information, plan to introduce Voice over Internet Protocol (VoIP) service and 27 intend to offer also IP TV. By comparison, at end of 2007, 29 operators have declared that they offer Voice over Internet Protocol and 19 have declared that they provide IP TV.

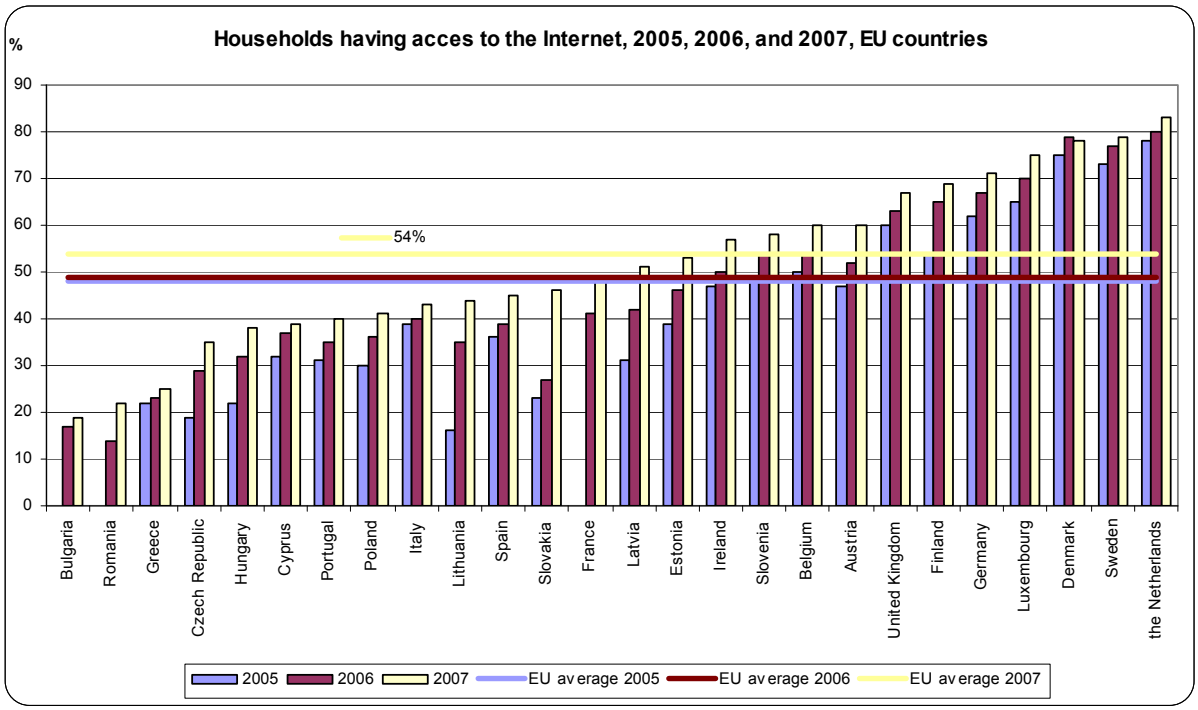
6.2. Internet access services

According to NSI data[77], at the end of Q1 2007, 33.70% of the population in the 16-74 age group use Internet against 18.1 percent in Q1 2004, 86% up over four years.

According to a survey[78] conducted by *Alpha Research*, in January 2008 31% of the population aged 18+ uses Internet.

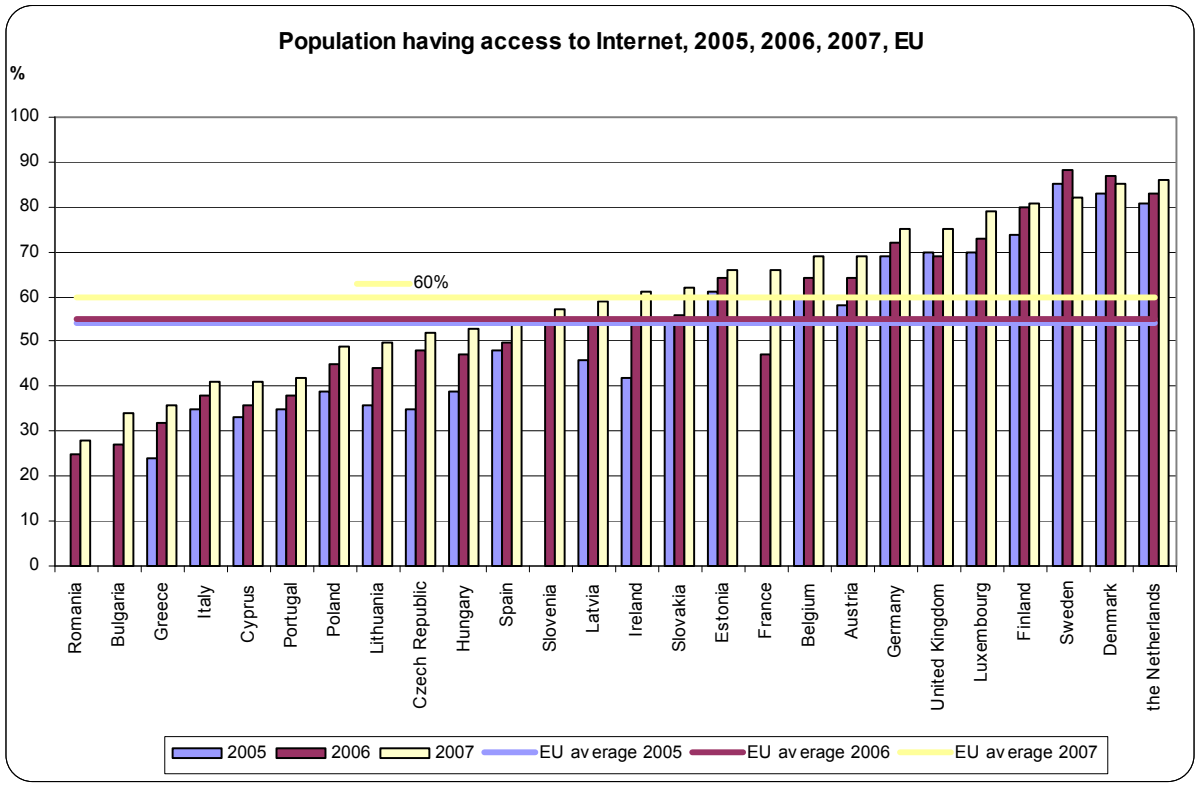
Figure 62 presents the Internet services penetration rate in the EU based on households, according to Eurostat data. The chart shows that, in Bulgaria, the internet penetration rate based on households is 12% up in 2007 on 2006 to 19%. Despite this growth, Bulgaria is still at the bottom on the indicator "Internet penetration rate based on households", with values below the EU average.

[77] http://www.nsi.bg/IKT/IKT.htm
[78] http://www.aresearch.org/internet.html



***Source**: Eurostat,*
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/science/isoc/isoc_ci/isoc_ci_in&language=en&product=EU_MAIN_TREE&root=EU_MAIN_TREE&scrollto=138

Figure 62



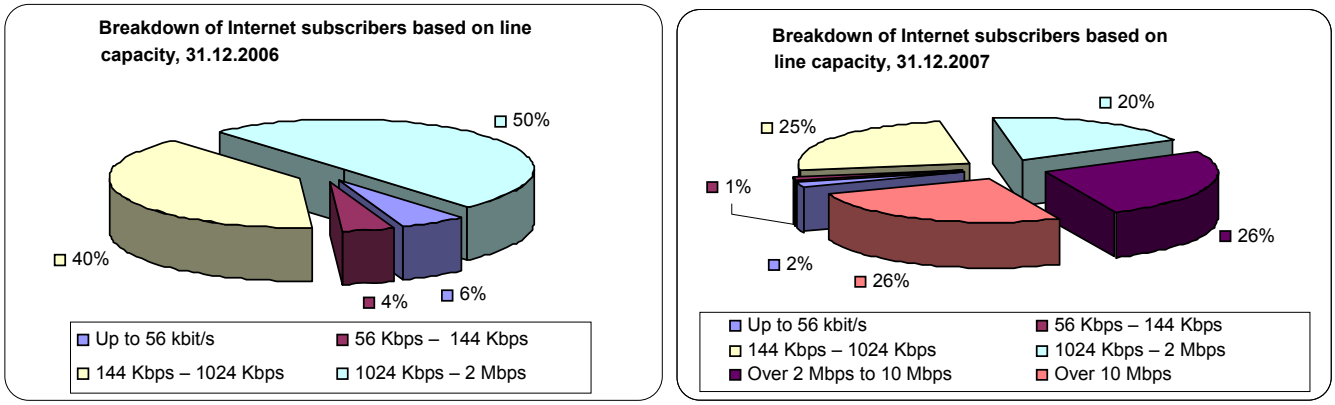
***Source**: Eurostat,*
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,45323734&_dad=portal&_schema=PORTAL&screen=welcomeref&open=/science/isoc/isoc_ci/isoc_ci_in&language=en&product=EU_MAIN_TREE&root=EU_MAIN_TREE&scrollto=138

Figure 63

In the period 2006 – 2007, the Internet penetration rate based on the population is 26% up (Figure 63). Bulgaria ranks at the bottom on this indicator as well (ahead of Romania only) with values almost 2 times below the EU average penetration rate by population (60%).

According to undertakings' data, at the end of 2007 Internet access subscribers are 652 181 in number, including Double and Triple play subscribers reported by the operators, registered under General License No. 201 for provision of telecommunications through public cable telecommunications network for distribution of radio and TV programs pursuant to TA (repealed), who account for 10% of total Internet access subscribers. Data show that the number of subscribers is 40% up on 2006.

Figure 64 presents the breakdown of Internet access service subscribers based on the capacity used. The cumulative relative share of subscribers using Internet access with speed below 144 Kbit/s is 3%, i.e., the number of lowest speed subscribers has decreased over 3 times compared to the previous year. Data show that, in Bulgaria, broadband[79] Internet access subscribers account for a notable share of total Internet subscribers. The users of speeds above 1024 Kbit/s have increased to 71% of total subscribers.



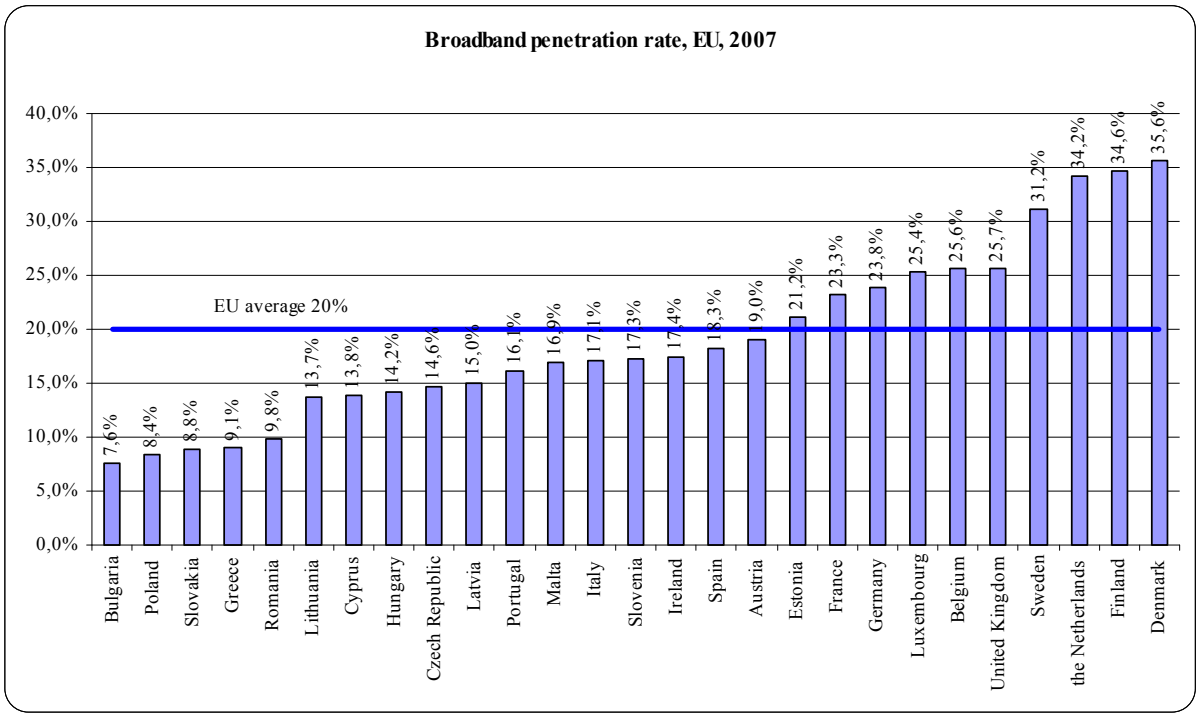
Source: *Data submitted to CRC*

Figure 64

Figure 65 presents in a graphical format the data about the broadband services penetration rate[80] in the EU. In 2007, Bulgaria registers growth in the use of broadband services at 27% but still ranks at the bottom among EU countries on this indicator.

[79] According to European Commission's definition, broadband access is the Internet access at speeds above 144 kbit/s

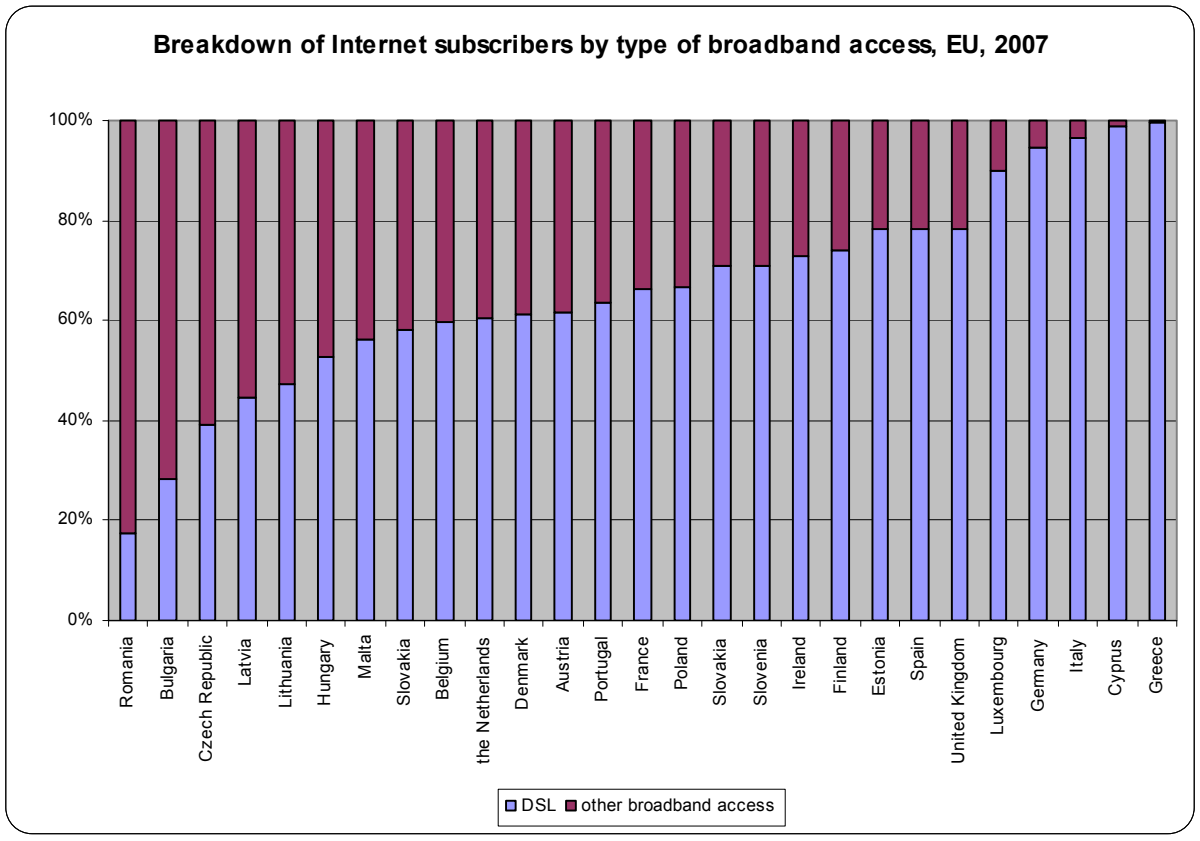
[80] Ratio of total broadband lines to the number of the population in the respective country.



***Source**: 13th Report on European electronic communications regulation and markets*

Figure 65

In the EU, the prevalent broadband connection technology is xDSL: 80% (Figure 66).

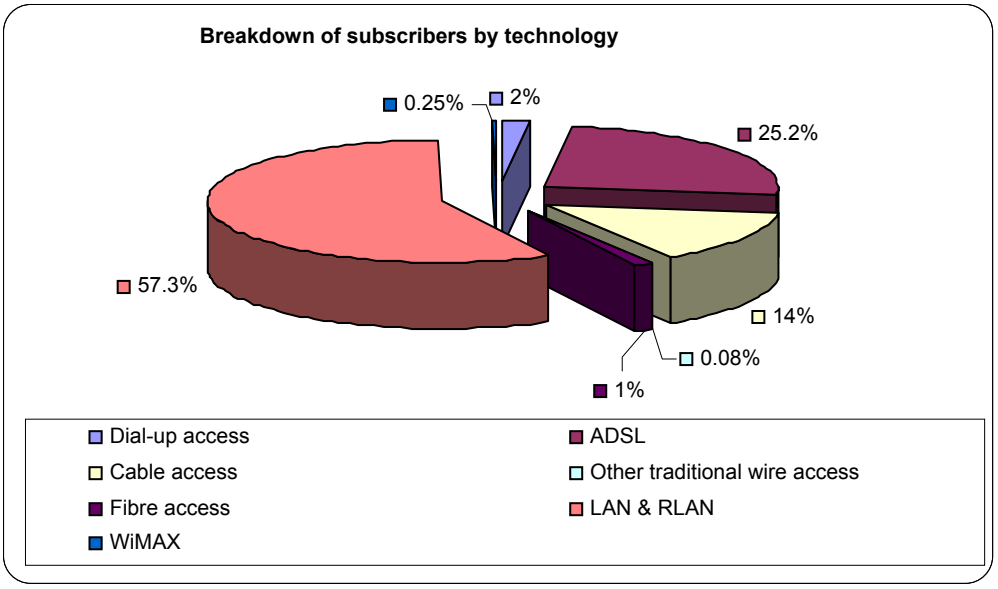


***Source**: 13th Report on European electronic communications regulation and markets*

Figure 66

Accounting for a share of only 28%, xDSL is the least favoured technology in Bulgaria, compared to EU countries, with only Romania ranking behind us on this indicator. BTC AD is still the only provider of ADSL services in Bulgaria, with subscribers increasing 1.7 times on the previous year. This relatively low penetration rate is associated with the trend of building up and expanding LANs, observed in the country. Bulgarian Internet users prefer access via LAN and RLAN because of the higher speed to local servers with free music, films and information, and because of the lower prices.

Figure 67 presents the breakdown of broadband Internet subscribers in Bulgaria by type of technology. LAN and RLAN top the technology ranking (accounting for 57.3% of total subscribers), followed by xDSL (25.2%) and cable access (14%). The graphic shows a new technology emerging in 2007 - WiMAX (WiMAX services were launched on the Bulgarian market not before the end of 2007) with 1657 subscribers, accounting for a small but prospectively growing share in total subscribers (0.25%).



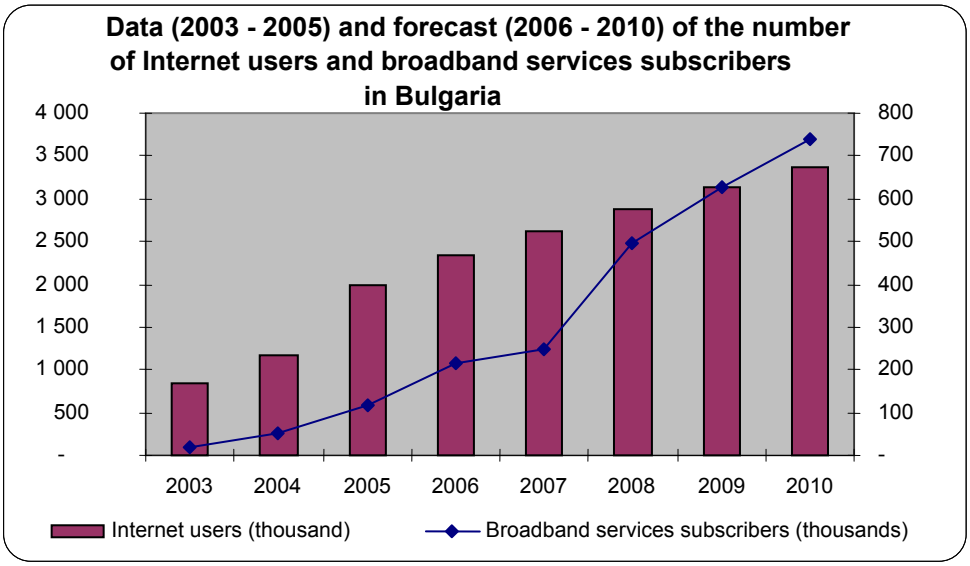
Source: *Data submitted to CRC*

Figure 67

Prospects and trends

According to Business Monitor International[81] forecasts, in 2010 the Internet penetration rate in Bulgaria will stand at 44.9%, going up by 31%. Over the same period, the penetration rate of broadband services will be 3 times up to 9.9% in 2010 (Figure 68).

[81] www.businessmonitor.com



Source: *BMI*

Figure 68

The implementation of new wireless networks and the development of existing fibre networks, as well as the provision of ADSL and Triple Play (cable TV + fixed voice telephone service + high-speed Internet) through one cable, are expected to push up the Internet usage rate in Bulgaria. Besides, the content provision alternatives and the new interactive service options will strengthen the competition of operators, bringing about more affordable services of higher quality for users.

7. Satellite systems

As networks expand and users' mobility requirements increase, the significance of satellite systems is growing.

Satellite communications have many advantages. They are highly reliable, independent of terrestrial infrastructure, enable traffic distribution, and offer solutions for high information volumes and large territories**.**

The market segment of fixed satellite networks covers the activity of the undertakings, providing public electronic communications through networks of the fixed satellite radio service under individual license No. 112 and under registration certificates within general license No. 216 for provision of the public electronic communications service "access to satellite systems".

In 2007, CRC cancelled the license of one of the eleven operators holding individual license No. 112 (TRANS TELECOM EAD) and did not issue new authorizations pursuant to the LEC[82]. Notifications for provision of the public electronic communications service "access to satellite systems" were not submitted in 2007 and the number of providers (4) remains the same as in 2006.

Table 13 and Table 14 below present information on the number and activity of the operators providing electronic communications through satellite systems and on the types of services they offer.

[82] Authorization for the provision of electronic communications using scarce resource pursuant to the LEC replaces the licensing regime pursuant to TA (repealed). On the grounds of § 9, Sub-paragraph 2 of the Transitional and Final Provisions of the LEC, undertakings continue to do business on basis of the individual licenses until they are authorized pursuant to the LEC.

Table 13

Operators and services provided in 2007 – provision of the public electronic communications service "access to satellite systems"

No.	Name of the undertaking	Number of licenses	Type of electronic communications services provided by the undertaking through the network in 2007					
			Radio and television broadcasting	Voice transmission retailing	Wholesale transfer of data for Internet	Internet access retailing	Two-way data transfer	Other retail services
1	ELSACOM EAD	1	-	✘	-	-	-	
2	SCORTEL OOD	1	-	✘	-	-	-	✘
3	ET SKU-JULIA LAZAROVA*	1	///					
4	FORCE DELTA OOD *	1						
Total:		**4**	-	**2**	-	-	-	**1**

**In 2007, the undertaking did not provide services under the license*

Source: *Data submitted to CRC*

Table 14

Undertakings and services provided in 2007 – provision of public electronic communications through networks of the fixed satellite radio service

No.	Name of undertaking	Number of licenses	Type of electronic communications services provided by the undertaking through the network in 2007				
			Satellite broadcasting of television and radio programs – wholesale and to end-users	Two-way transfer of data for Internet - wholesale	Internet access retailing	Two-way transfer of other data – retailing	Other wholesale services
1	BIKAM EOOD	1	✘	-	-	-	-
2	BULSATCOM AD	1	✘	-	-	-	-
3	BNT	2	✘	-	-	-	✘
4	INTERACTIVE TECHNOLOGIES AD	1	✘	-	-	-	
5	LYMES CONSULTING OOD	1	-	-	-	✘	-
6	NETERRA EOOD	3	✘	-	-	-	✘
7	CITS AD*	1	///				
8	TELENOR BULGARIA EOOD	2	✘	-	-	-	-
9	TRANS TELECOM EAD**	1	///				
10	TRANSAT AD	2	-		✘	✘	-
11	HUNGARO DIGITEL OOD***	1	///				
Total:		**16**	**6**	**-**	**1**	**2**	**2**

** The undertaking has not submitted information*

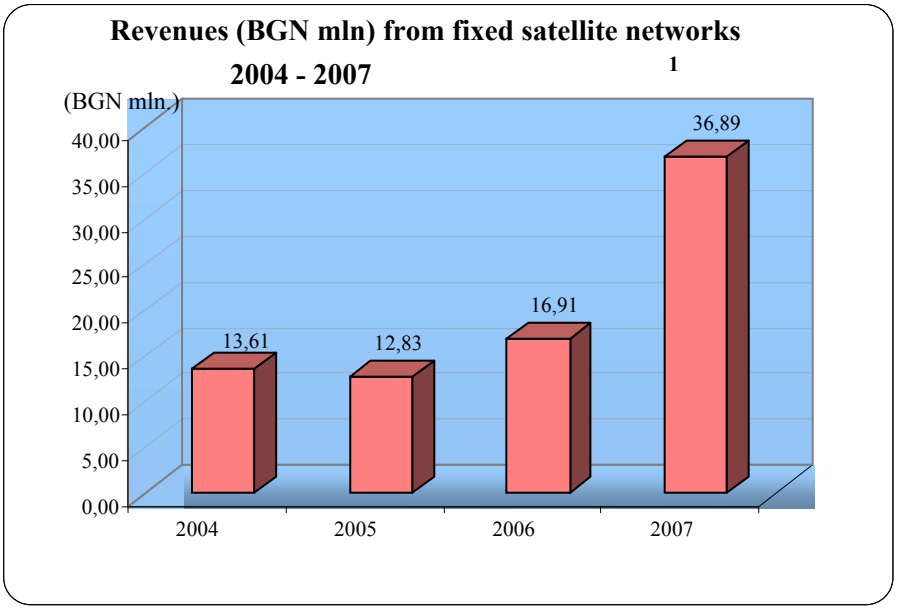
*** The license is discontinued*

****The undertaking did not provide services under the license in 2007*

Source: *Data submitted to CRC*

Volume, structure of, and investment in the market segment of fixed satellite networks, 2007.

In 2007, the volume of the market segment of fixed satellite networks, estimated on basis of the revenues from provided services, is more than two times up on 2006 to BGN 36.89 mln (Figure 69) [83].



Source: *Data submitted to CRC*

Figure 69

The wholesale services from which market players have generated revenues include:

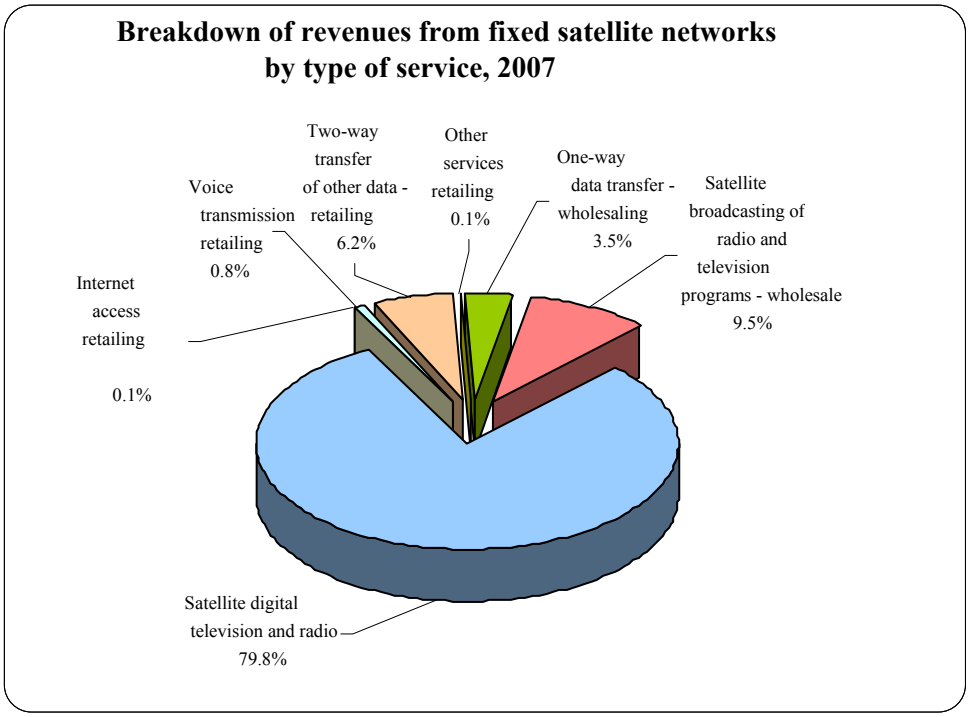
- Services for satellite broadcasting of programs of television and radio operators, provided through satellites on the territory of Bulgaria, Central and Eastern Europe;
- One-way data transfer services.

Services for end-users, from which operators generated revenues in 2007 include:

- Satellite digital television and radio;
- Provision of Internet access;
- Voice transmission;
- Two-way transfer of other data (transfer of data from book-keeping, ERP and other applications);
- Other retail services (voice transmission and data transfer for the purposes of maritime communications and navigation, intelligent transport systems and GPS systems for monitoring and control of transport fleets.

The share of the revenues from wholesale services in total earnings from the market segment of fixed satellite networks is 13% and the share of the revenues from provision of services to end-users is 87%. Figure 70 below presents the structure of the revenues from the segment in 2007.

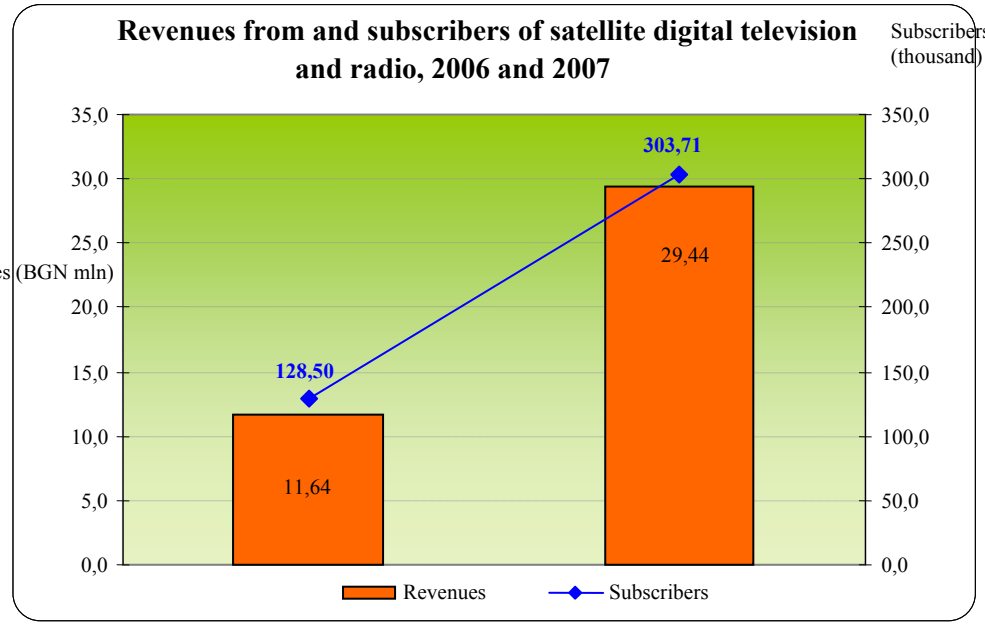
[83] 2006 data have been adjusted by excluding revenues from the sale of terminal devices.



Source: *Data submitted to CRC* **Figure 70**

The high growth at BGN 20.2 mln in the fixed satellite networks market volume, reported for the past year, is attributable to the fact that the revenues from provision of satellite digital television and radio to end-users are 2.5 times up on 2006 to BGN 29.4 mln. This notable increase in absolute terms of the earnings from digital television and radio in 2007 has pushed up the relative share of the revenues from this service in the total fixed satellite networks market volume, which in 2007 stands at 79.81%, almost 10 percentage points up on 2006.

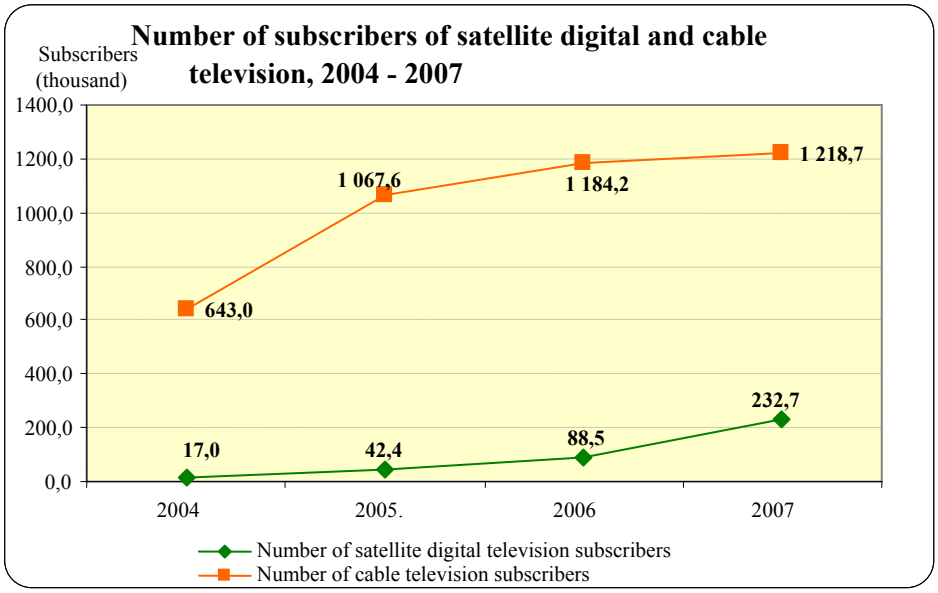
Over the year, revenues from wholesale services for satellite broadcasting of radio and television programs also register growth at 1.3 times, to BGN 3.5 mln. While in absolute terms the revenues from this wholesale service are BGN 0.8 mln up on 2006, their share in the total segment volume is down by almost 7 percentage points to 9.53% .



Source: *Data submitted to CRC*

Figure 71

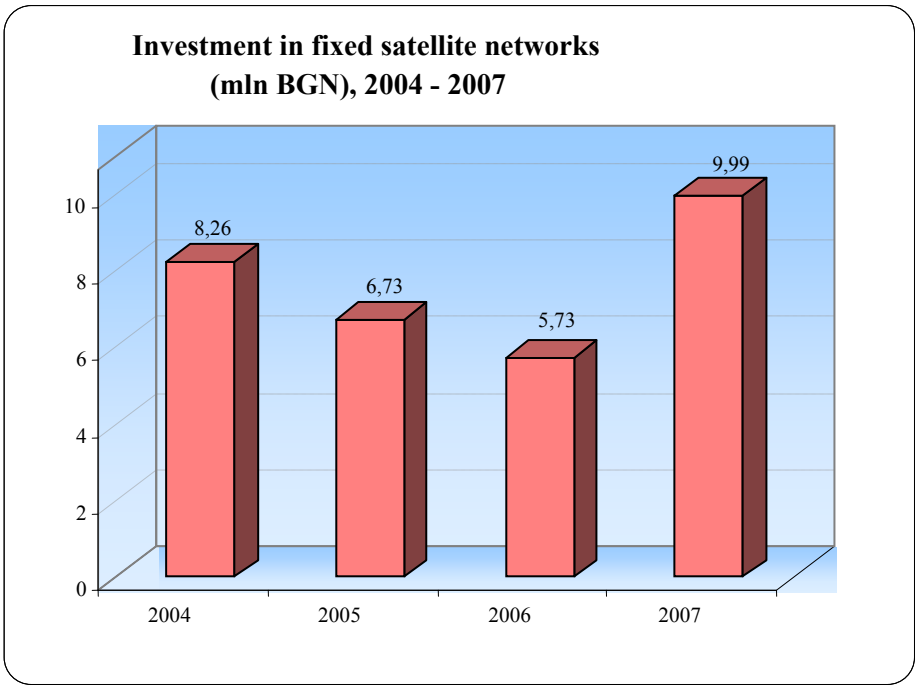
According to data submitted to CRC, the penetration rate of the satellite digital television service, based on households, is 8%, 5% up on 2006 when it is reported at 3%[84]. By comparison, in 2007 the penetration rate of cable television is 42% against 41% in 2006. These data confirm CRC's 2006 projections that despite of the notable differences in absolute values, the provision of satellite digital television is picking up speed, doubling its subscribers every year from its launch in 2003 till 2006 and registering 2.6 times higher number of subscribers in 2007 on 2006, at 232.7 thousand (Figure 72).



Source: *Data submitted to CRC*

Figure 72

In 2007, operators report investment in fixed satellite systems at BGN 9.99 mln, 75% up on 2006 (Figure 73). 2008 investment in the sector is projected at BGN 15.65 mln.



Source: *Data submitted to CRC*

Figure 73

[84] The number of households in the latest official census, 2001, is taken to estimate the indicator.

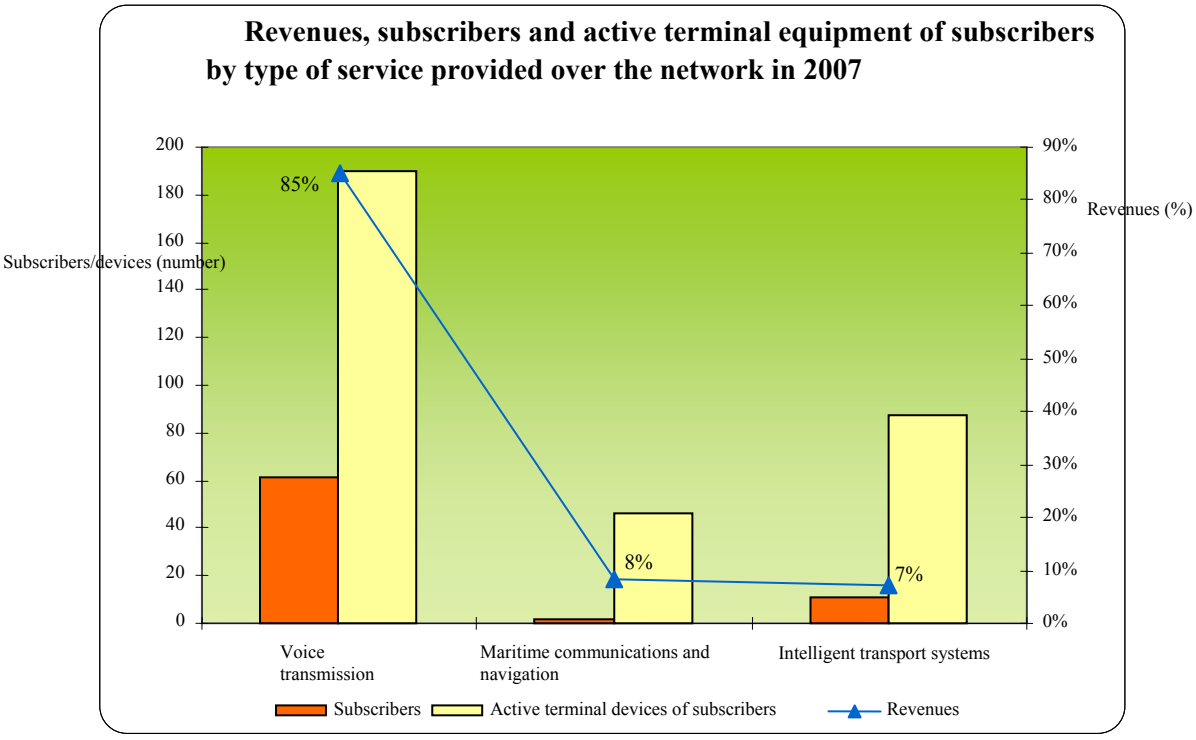
Access to satellite systems

In 2007, the revenues from access to satellite systems account for a negligible share (below 1%) in the total volume of the market segment of fixed satellite networks. The information on the activity of the operators holding certificates for registration under General License No. 216, submitted to CRC, shows that in 2007 the main market player is the SKORTEL company providing the following public electronic communications services for mobile satellite connection in the Inmarsat, Iridium and Thuraya systems:

- Voice transmission;
- Voice transmission and data transfer for the purposes of maritime communications and navigation, and for the so-called intelligent transport systems and GPS systems for monitoring and control of transport fleets.

Over the year, the undertakings, providing services through access to satellite systems, have generated revenues only from retail services, including 85% from voice transmission, 8% from voice transmission and data transfer for the purposes of maritime communications and navigation, and 7% from voice transmission and data transfer for the so-called intelligent transport systems and GPS systems for monitoring and control of transport fleets.

The breakdown of revenues, number of subscribers and active terminal equipment of subscribers by type of provided service is presented in the figure below (Figure 74):



Source: *Data submitted to CRC*

Figure 74

Residential subscribers account for 9% of the service users. The share of the revenues from these subscribers represents 4% of total revenues from the segment. The share of business subscribers is 91% and the revenues from them account for 96% of the market.

8. Terrestrial broadcasting

The practice to separate the regulatory functions in the media sector continued in 2007. The terrestrial broadcasting of radio and/or television signals is again regulated by CRC and the program content – by the Council for Electronic Media (CEM). The authorization for provision of electronic communications for terrestrial broadcasting pursuant to the LEC is bound to the licensing of the programs for radio and television activity, which is in line with the provisions of European law.

By its decision dated 02.08.2007, the Council of Ministers approved the Final Acts of the Regional Radiocommunication Conference for planning the terrestrial digital broadcasting services in parts of Regions 1 and 3, in the frequency bands 174-230 MHz and 470-862 MHz (RRC-06), and the Final Acts of the Regional Radiocommunication Conference for Europe for the revision of the Stockholm Agreement, 1961 (RRC-06-EUR). The new radiofrequency plan in the frequency bands 174-230 MHz and 470-862 MHz for terrestrial digital broadcasting discontinues the effect of the radiofrequency Stockholm 1961 Plan for terrestrial analogue television broadcasting in these bands. According to the new radiofrequency plan, Bulgaria is allocated radiofrequency resource in the III VHF, IV and V UHF television bands for 13 geographical zones (+ 2 city zones) with possibility for development within these zones of 10 to 14 SFN (single-frequency networks) carrying the respective number of program and information multiplexes. Upon the entry into force of the resolutions of the Regional Radiocommunication Conference, the new digital radiofrequency plan becomes binding for all subsequent radiofrequency assignments and provides a basis for transition from analogue to digital terrestrial broadcasting of radio and television signals.

8.1. VHF FM broadcasting

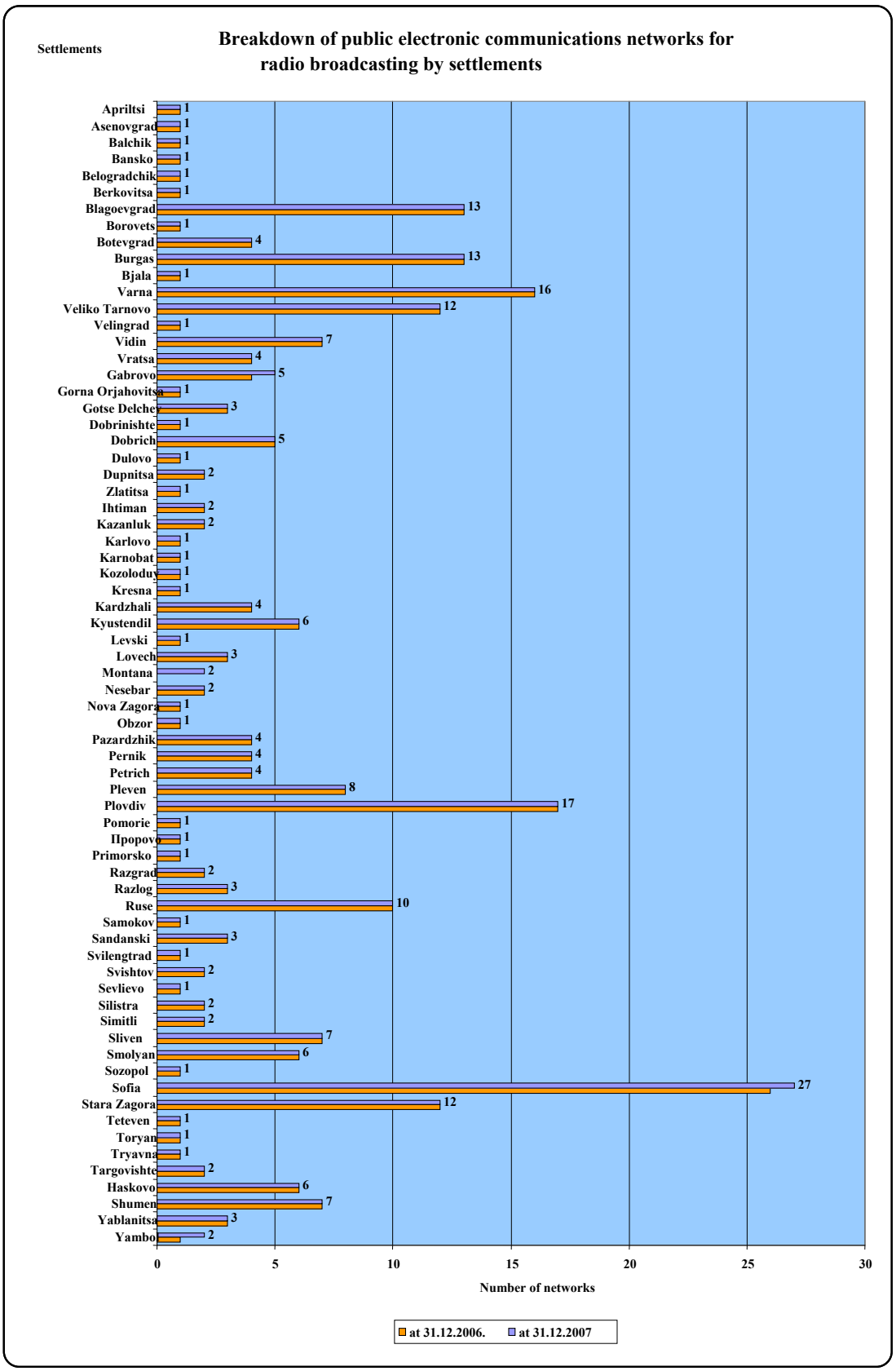
In early 2007, the number of operators holding licenses for radio broadcasting with local coverage is 99, and the licenses issued are 263. The two operators holding licenses with national coverage – BNR and DARIK RADIO AD, continue broadcasting.

Over the year, CEM and CRC transferred through adopted decisions 5 individual licenses for construction, maintenance and operation of telecommunications network for provision of the telecommunications service "terrestrial broadcasting of radio signals with local coverage". Four licenses of the same type have been cancelled.

On the grounds of Article 55, Paragraph 2, Item 6 and Article 27, Item 6 of TA (repealed), in relation to Article 116c, paragraphs 2 and 4 of the Radio and Television Law and in accordance with CEM decisions, 5 licenses with local coverage have been issued to local radio operators. Issued are four authorizations for use of individually assigned scarce resource – radiofrequency spectrum for VHF FM broadcasting with local coverage – two to ALFA RADIO OOD and one each to SEDEM DNI RADIO AD and METRO RADIO EOOD. In 2007, CRC issued one authorization for temporary use of individually assigned scarce resource – radiofrequency spectrum, to APOLONIA FOUNDATION, covering the territory of the town of Sozopol.

At end of 2007, total 97 radio operators have the right to provide terrestrial broadcasting with local coverage, including 94 holding licenses. SEDEM DNI RADIO AD holds an authorization and ALFA RADIO OOD, as well as METRORADIO EOOD, hold both licenses and authorizations. The individual licenses for terrestrial broadcasting are 264 and the authorizations are four.

Figure 75 presents the breakdown of the public electronic communications networks for radio broadcasting with local coverage, by settlements, at 31 December 2006 and 2007, with one license and one authorization issued for a new settlement – the town of Montana, in 2007. 34.02% of the operators do business in more than one settlement.



Source: *CRC*

Figure 75

In 2007, the revenues from the provision of services through the networks of radio operators amount to BGN 33.9 mln, including 98.3% from broadcasted commercials, 1.20% under contracts with licensed operators for broadcasting of own programs, 0.01% under

contracts with licensed operators for broadcasting of their programs, and 0.50% from the provision of other services through the networks.

2007 investment in the construction, maintenance and operation of radio broadcasting networks amounts to BGN 4.1 mln and 2008 investment is projected at BGN 3.7 mln.

At 31.12.2007, BNR has 100% coverage of the population and DARIK RADIO AD – 90%.

Digitalization is a key priority in the Strategy for Development of Radio and Television Activity through Terrestrial Broadcasting (promulgated, SG, No. 82/14.10.2005).

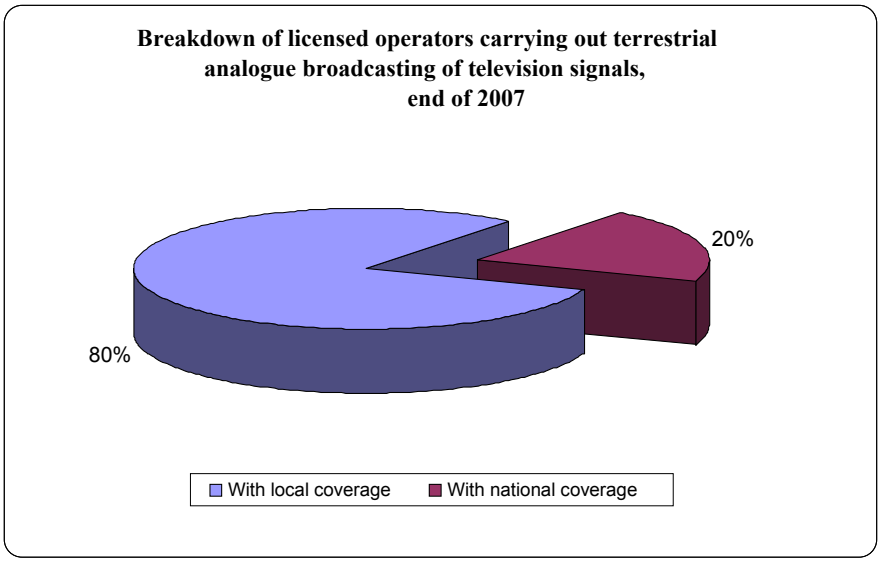
Implementation of terrestrial digital broadcasting will ensure notably higher sound quality compared to the existing VHF FM broadcasting and will result in better mobile reception of radio programs. In terms of the radiofrequency management, digital broadcasting will guarantee more efficient spectrum utilization, which will make it possible to release frequency bands for other purposes.

8.2. Television broadcasting

At 31.12.2007, total 15 operators have the right to provide electronic communications under licenses for terrestrial analogue broadcasting of television signals, including 12 with local coverage networks. New licenses and authorizations for terrestrial analogue broadcasting of television signals were not issued over the year, except one authorization for temporary use of individually assigned scarce resource – radiofrequency spectrum for digital mobile broadcasting of television signals based on DVB-H technology, issued to NOKIA SIEMENS NETWORKS ÖSTEREICH GmbH, with local coverage on the territory of the city of Sofia. The license of BELOSLAV MUNICIPALITY has been transferred to VARNA TELEVISION AD by CRC Decision No. 196/ 09.02.2007, and the effect of the license of SHABLA MUNICIPALITY has been discontinued on operator's request, by CRC Decision No. 337/09.03.2007. Thus, at year-end, the number of issued individual licenses for terrestrial analogue broadcasting of television signals with local coverage is down from 42 to 41.

BULGARIAN NATIONAL TELEVISION (BNT), BALKAN NEWS CORPORATION EAD, and NOVA TELEVISION – FIRST PRIVATE CHANNEL EAD hold licenses for terrestrial analogue broadcasting of television signals with national coverage.

BTC AD holds a license for terrestrial digital broadcasting of television signals based on the DVB-T[85] standard for the region of Sofia. In 2007, the incumbent broadcasted the following TV programs – CHANNEL 1, bTV, NOVA TELEVISION, BBT, TV7 and THE VOICE.



Source: *CRC* **Figure 76**

[85] DVB-T (Digital Video Broadcasting-Terrestrial) – a standard for terrestrial digital broadcasting of television signals

The revenues from the provision of services through the networks of television operators amount to BGN 278 mln, 43.18% up on 2006, including 85.27% from broadcasted commercials.

In 2007, investment in the construction, maintenance and use of television broadcasting networks amounts to BGN 14.9 mln, over two times up on the previous year. 2008 investment is projected at BGN 20.1 mln.

At 31.12.2007, BNT has achieved coverage at 98.5%, bTV – at 97.7%, and NOVA TELEVISION FIRST PRIVATE CHANNEL EAD – at 76%.

On 31.01.2008, the Government approved the Plan for Implementation of Terrestrial Digital Broadcasting of Television Signals (DVB-T) in the Republic of Bulgaria. The plan regulates harmonized assignment of the radiofrequency spectrum in accordance with the Final Acts of the Regional Radiocommunication Conference for planning the digital terrestrial broadcasting services in parts of Regions 1 and 3, in the frequency bands 174-230 MHz and 470-862 MHz. It creates conditions for phased digitalization to be launched in 2008. By the end of 2012, all transmitters for terrestrial analogue broadcasting of television signals should be decommissioned.

The terrestrial digital broadcasting of television signals opens up opportunities for more efficient utilization of the radiofrequency spectrum, better quality of the television emission, interactive information exchange, and provision of information and other services – teletext, exchange rates, electronic program guides, Internet and e-mail, e-trade, electronic banking transactions, video on demand, interactive games, enriched content with added audio description, audio subtitles and special subtitles for disadvantaged people. The technical parameters of terrestrial digital broadcasting of television signals ensure better technical quality of the mobile reception (in moving vehicles) which attracts a wider audience of users.

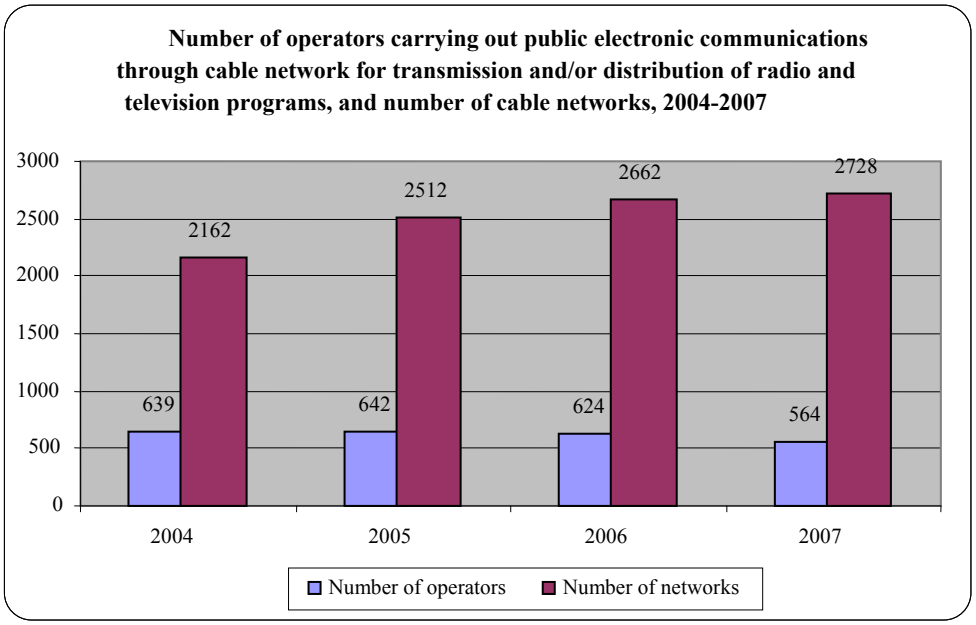
9. Cable networks for transmission and/or distribution of radio and television signals

9.1. Market players

Twenty-seven new operators, providing electronic communications through cable network for transmission and/or distribution of radio and television programs, were licensed in 2007, including 9 registered under General License No. 201 for provision of telecommunications through public cable telecommunications network for distribution of radio and television programs pursuant to TA (repealed). Following the entry of the LEC into force, 18 other operators have notified CRC of their intention to provide this type of electronic communications. Interestingly, the number of new entrants is decreasing. On the other hand, 33 supplements to existing registrations and 11 notifications (pursuant to the LEC) for supplemental coverage have been issued and 67 registrations have been cancelled.

At year-end, total operators providing public electronic communications through cable network for transmission and/or distribution of radio and television programs are 564[86] in number, 60 down on 2006, and the number of cable networks is 2728. In a nutshell, the restructuring of this segment of the electronic communications market towards consolidation, observed in the past few years, continues, and the number of networks in the settlements increases.

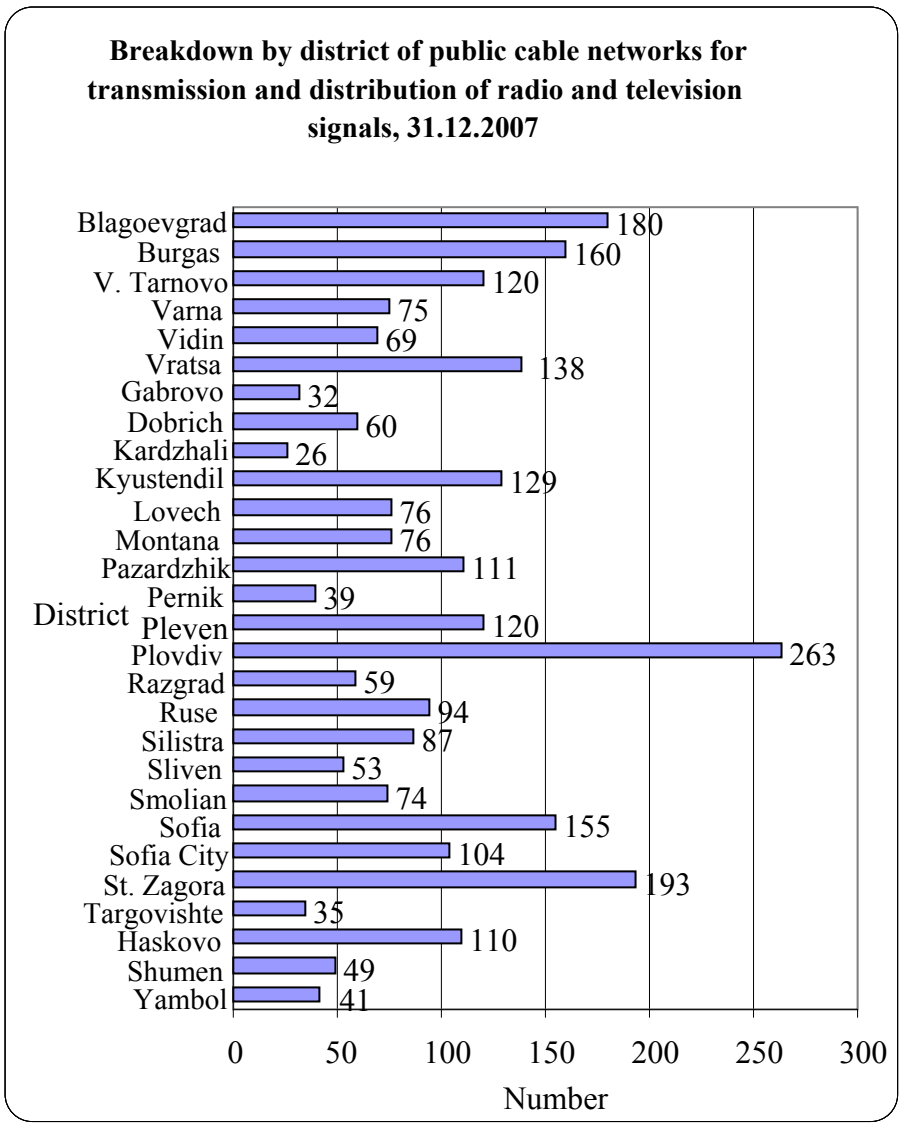
[86] Total operators providing electronic communications through cable network for transmission and/or broadcasting of radio and television programs at year-end, exclusive of those cancelled in 2007.



Source: *Data submitted to CRC*

Figure 77

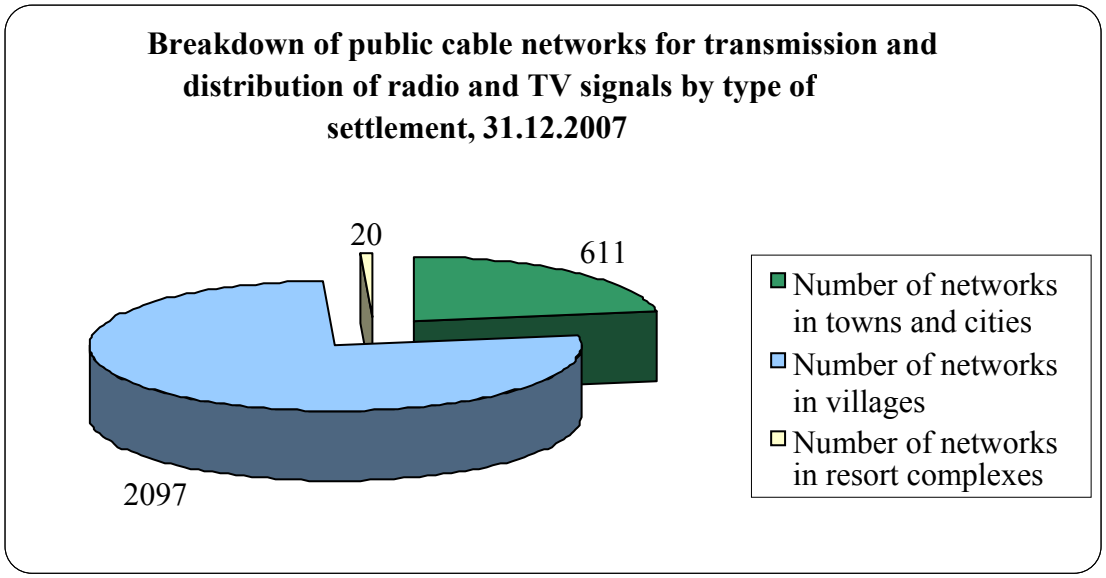
The chart shows that the number of operators, providing public electronic communications through cable networks for transmission and/or distribution of radio and television programs, decreases compared to the previous two years, but the number of networks in the settlements increases, indicating that big operators strengthen their positions.



Source: *Data submitted to CRC*

Figure 78

The breakdown of registration certificates issued under general license and/or notifications submitted (pursuant to the LEC) varies across districts. Some 65%+ of the networks are built up in twelve of the twenty eight national districts (Figure 78), the highest concentration registered in Plovdiv, Burgas, Blagoevgrad, Sofia, and Stara Zagora.

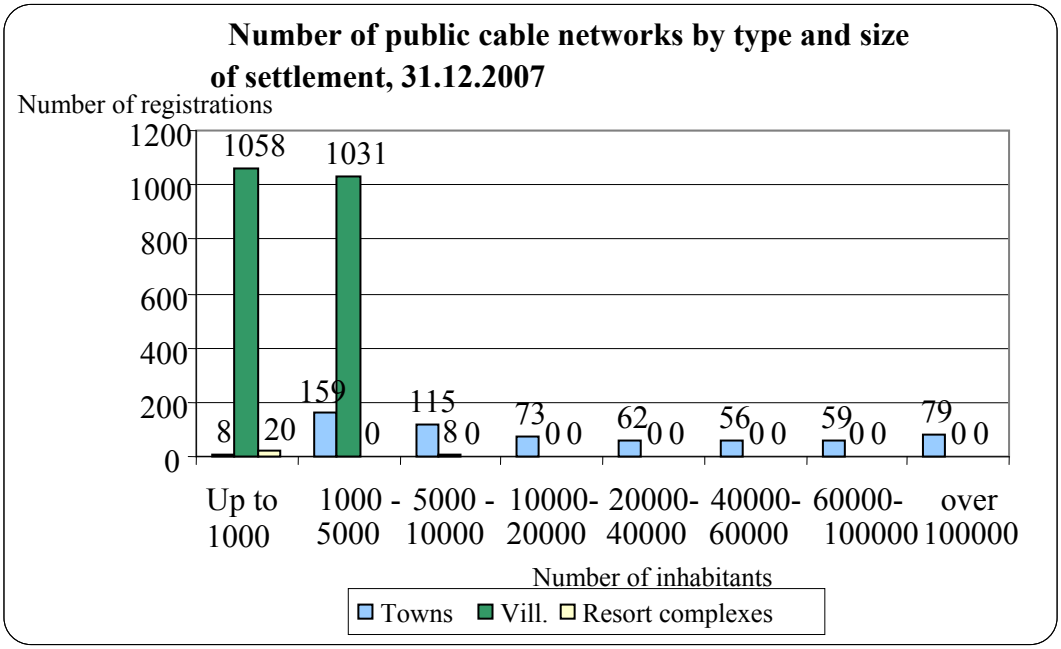


Source: *Data submitted to CRC*

Figure 79

Figure 79 presents the breakdown of cable networks by the type of settlement in which they are located. Almost 77% of the total number of networks are located in villages. Against 2006, the cable networks in villages have increased by 60 and those in towns and cities – by 10.

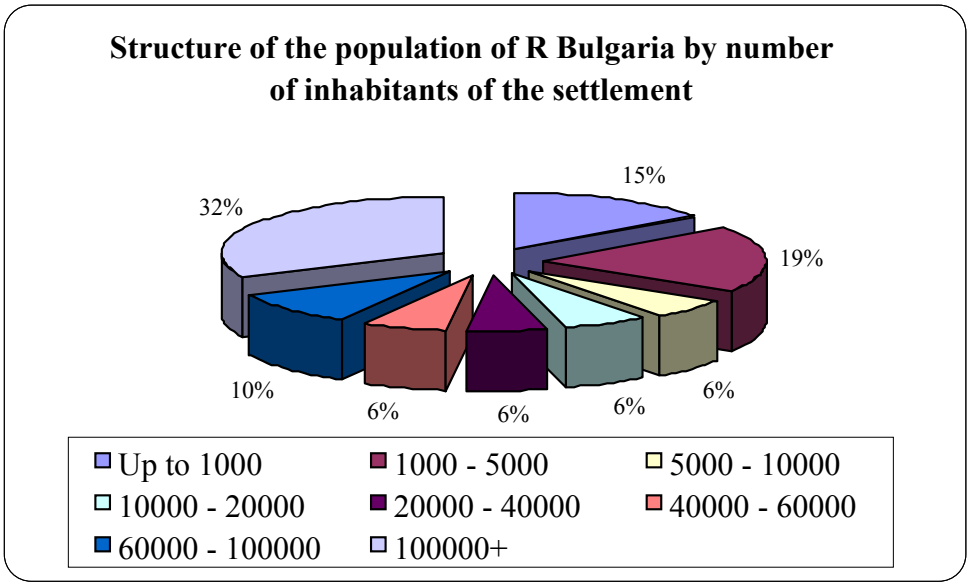
All towns and cities, as well as 32% of the villages in Bulgaria have cable networks for distribution of radio and television signals. For a year, the number of villages with cable infrastructure has increased by 1%.



Source: *Data submitted to CRC*

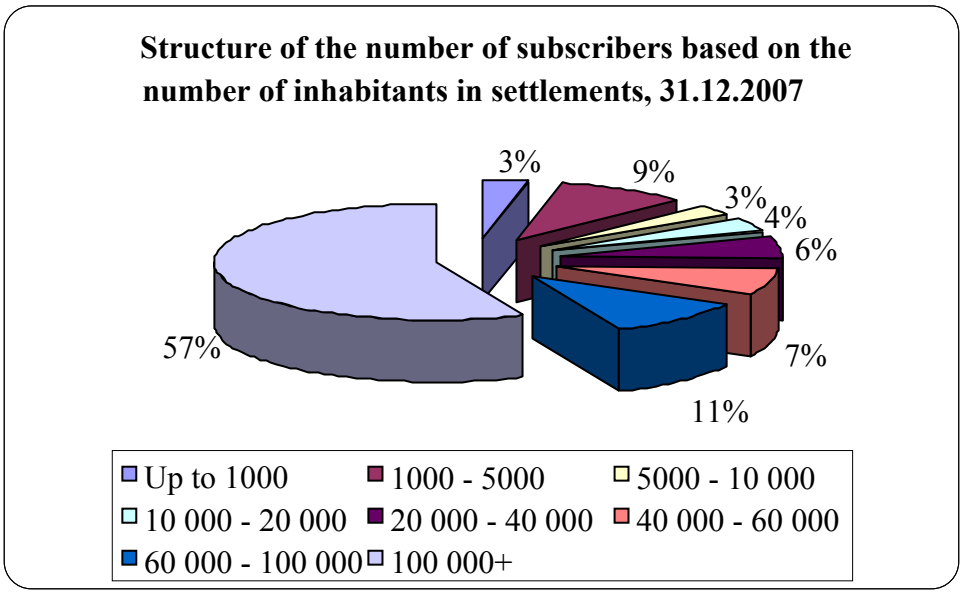
Figure 80

The number of cable networks built in settlements with up to 5000 inhabitants has increased to 2276 and is 3% up on 2006 (Figure 80). These settlements account for some 83%+ of the networks, whereas the settlements with 60 000+ inhabitants, which concentrate almost half of country's population, account for only 5% of the networks.



Source: *National Statistical Institute*[87]

Figure 81



Source: *Data submitted to CRC*

Figure 82

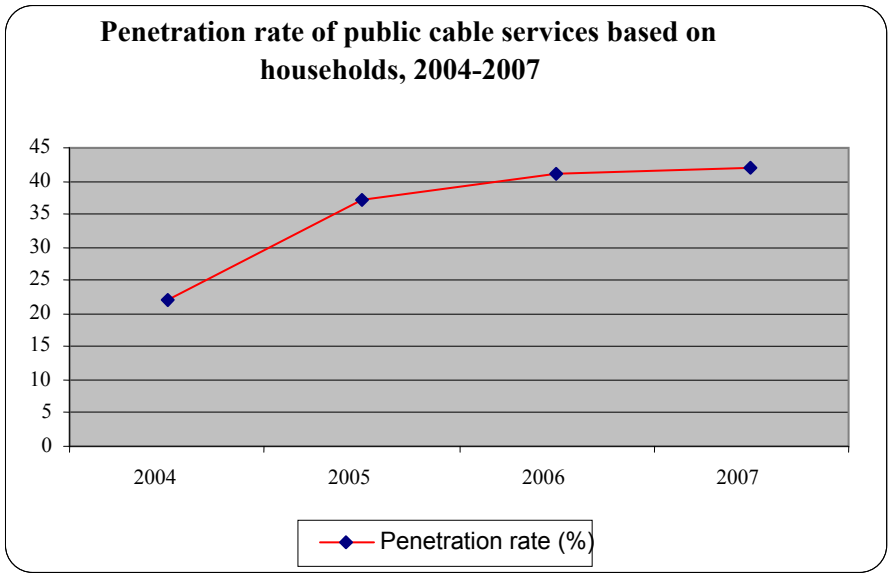
The high concentration of population in the big cities, on one part, and the higher living standard there, on the other part, determine the higher relative share of users of public electronic communications services provided through cable network for transmission and/or distribution of radio and television programs. Big cities with 100 000+ inhabitants concentrate more than half of the cable network subscribers and the (cumulative) relative share of subscribers for towns with 60 000+ inhabitants is 68%. For small settlements with up to 5000 inhabitants, the value of this indicator is 12%.

At 31.12.2007, the total number of the cable network subscribers in Bulgaria, according to an expert estimate based on data submitted to CRC by 94% of the registered operators, is about 1 220 000[88], almost 10% up on 2006. According to submitted data about

[87] Data are based on the latest census taken in 2001.

[88] Includes subscribers of basic program packages, including of supplemental package of encoded programs, as well as of bundled services, including Double Play (cable TV + Internet), Double Play (cable TV + voice transmission) and Triple Play.

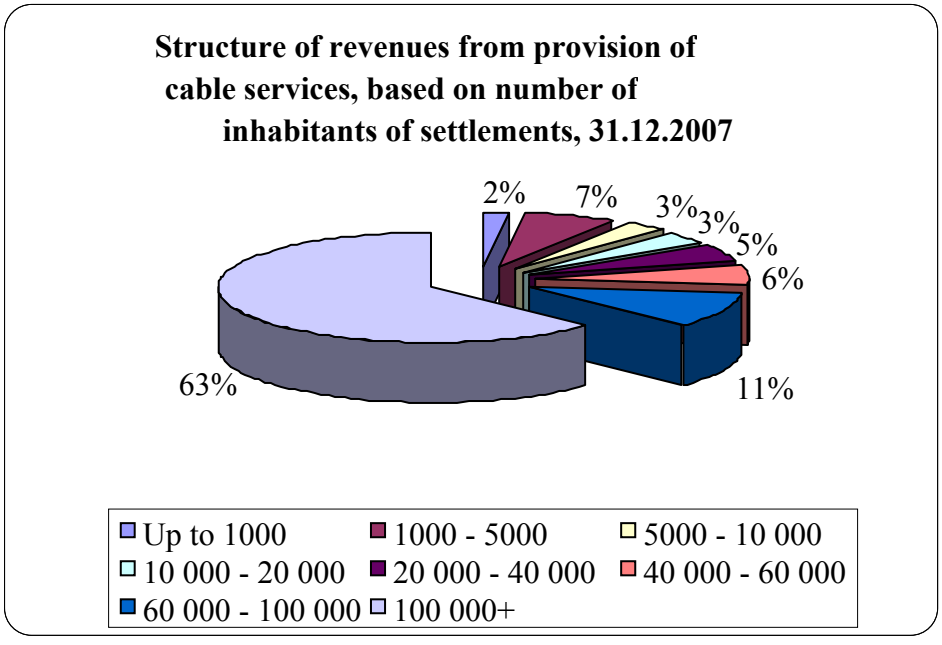
subscribers, at the same date the penetration rate of cable television based on households is 42%, 1 percentage point up on 2006 (Figure 83).



Source: *Data submitted to CRC*

Figure 83

Figure 84 presents the structure of the revenues from the provision of public electronic communications services through cable network for transmission and/or distribution of radio and television signals. Having in mind that more than half of the subscribers live in settlements with 60 000+ inhabitants, the revenues from this type of activity in these settlements account for a significant share (74%) of this market segment. For settlements with up to 5000 inhabitants the value of this indicator is only 9%.



Source: *Data submitted to CRC*

Figure 84

According to an expert estimate by CRC, total 2007 revenues from cable networks amount to almost BGN[89]177 mln, 10% up on 2006. The main portion of these revenues (85%) is still generated by distribution of radio and television signals, which is 4% up. The share of encoded programs is almost the same as in 2006, at about 1% of the revenues generated by the operators providing services through cable networks, who have submitted information to the Commission. The revenues from the provision of bundled services of the Double Play type (cable TV + Internet access) are 3 percentage points up to 11.4%, those from the provision of services of the Triple Play type have increased to 0.9%, and the revenues from the transmission of programs, received by subscribers in a digital format, have moved up to 1.9% of total earnings generated by cable networks.

9.2. Provision of services and prices

Along with the packages of radio and television programs, an increasing number of operators of cable networks provide or intend to offer bundled services like Double Play (cable TV + Internet access and/or cable TV + voice transmission), Triple Play (cable TV + Internet access + voice transmission), encoded programs, data transfer, including HDTV[90] and video on demand services. The integration of services is convenient for end-users as it allows them to choose among different packages according to their individual needs and at discounted prices.

The operators doing business mainly in big towns and cities like Sofia, Varna, Burgas, Plovdiv, Ruse, and Stara Zagora focus on the provision of Double Play. Provision of this service is on an upward trend also in the smaller towns and in some villages. In 2007, 20 of the operators, who have submitted information to CRC, have declared that they provide this service, and the revenues from it amount to about 11.4% of total revenues from the market segment. Provision of cable TV + Internet access through one network enjoys much favour in the past few years since it offers to users permanent access at favourable prices. According to the data submitted to CRC by the operators, the average monthly subscription for the Double Play bundled service is BGN 35.

In 2007, the so-called Triple Play service, providing access to cable TV, fixed voice telephony and high-speed Internet through one cable, is coming in strong on the Bulgarian market. The number of operators (7), who have declared that they provide this service, has doubled: CABLETEL EAD, CABLE INFORMATION SYSTEM AD, VESTITEL BG AD, VIDEOSAT 21 CENTURY OOD, EUROCOM CABLE MANAGEMENT BULGARIA EOOD, LYNOS OOD and TELECABLE AD provide Triple Play not only on the territory of big towns and cities, but also in smaller settlements. In 2008, 8 other operators have declared their intention to provide this service, which shows that the interest in Triple Play is steady upwards. It has to be noted that the Bulgarians using bundled services of the Double Play and Triple Play type account respectively for about 5.2 % and 1.5 % of total cable network subscribers in Bulgaria.

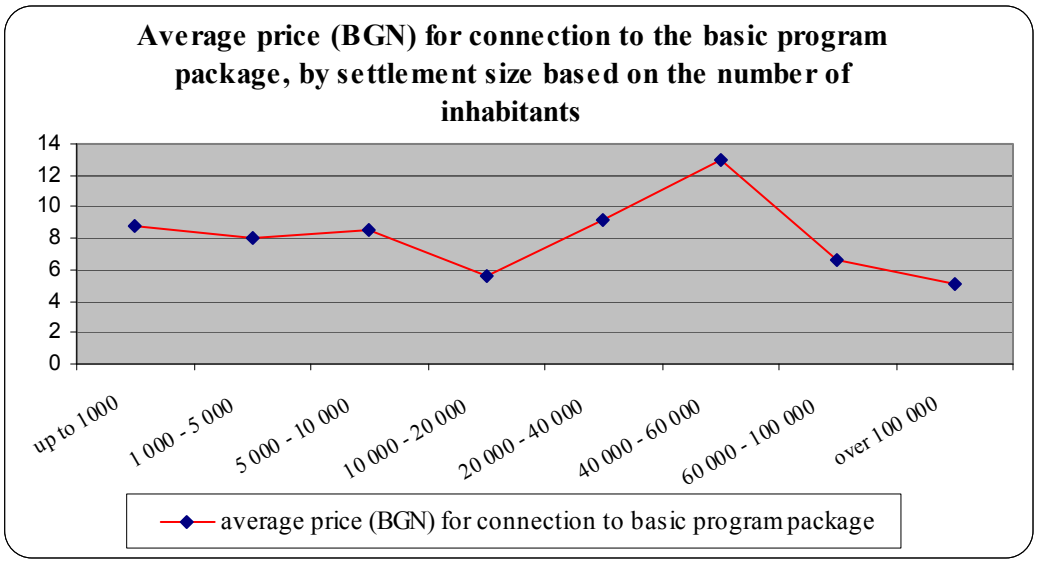
A growing number of cable network operators provide to their subscribers reception of TV programs in both analogue and digital format. More than 10 cable network operators (including KRAKRA AD, CABLETEL EAD, EUROCOM CABLE MANAGEMENT BULGARIA EOOD, TELECABLE AD, M-SAT AD, DIGITAL CABLE COMPANY OOD, etc.) offer digital television, which guarantees emission, transmission and reception of television signal entirely in a digital format. The subscribers, who receive cable TV in a digital format, account for about 5.3 % of total subscribers. Video on demand is one of the most popular services of this type, which enables the subscriber to watch films or programs of his/her choice against additional payment. The package of digital programs is generally used

[89] Inclusive of revenues from provision of basic program package, including additional package and encoded programs, as well as bundled services, including Double Play (cable TV + Internet), Double Play (cable TV + voice transmission) and Triple Play.

[90] A digital TV standard, which ensures higher quality of emission and higher resolution, compared to traditional analogue or standard digital TV.

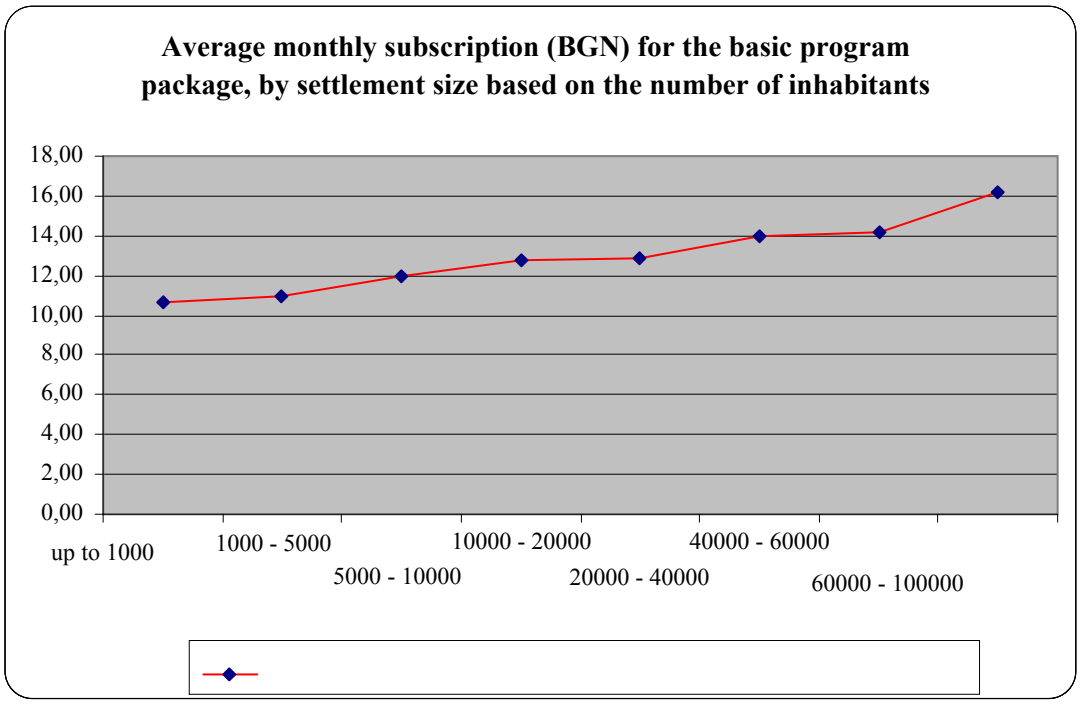
with the basic package of analogue programs against an additional monthly subscription. The service is offered also in a package with encoded programs.

The figures below present the average connection and monthly subscription charges for the basic program packages of the cable network operators. As mentioned above, the revenues from these packages account for the highest share of this market segment.



Source: *Data submitted to CRC*

Figure 85



Source: *Data submitted to CRC*

Figure 86

A relatively wide gap (about 30%) in the installation charges for the basic program package is registered between the settlements with up to 5000 inhabitants and the towns with 60 000+ inhabitants (Figure 85), attributable to the unequal competition on the market of public electronic communications provided through cable networks for transmission and/or

distribution of radio and television programs. For the potential subscribers of the operators providing this service in towns with 60 000+ inhabitants, the installation charges for the basic program package are low or the installation is free of charge, dictated by the high number of players on the relevant market. Reversely, the limited number of operators doing business in the small settlements with up to 5000 inhabitants determines the relatively high installation charges in these places. Although the competition in these settlements is ineffective, monthly subscriptions for the basic program packages are notably lower, depended by the inferior quality and smaller range of provided services, as well as by the lower purchasing power of the population in these places.

10. Services provided through point-to-multipoint networks

In 2007, four operators started doing business and launched services through WiMAX-based point-to-multipoint networks: MAX TELECOM OOD, TRANS TELECOM EAD, MOBILTEL EAD, and NEXCOM BULGARIA EAD. Three of them (MAX TELECOM OOD, TRANS TELECOM EAD, and NEXCOM BULGARIA EAD) provide services to residential as well as to business users, and MOBILTEL EAD offers this service to business users only. MAX TELECOM OOD is the only operator in Bulgaria providing exclusively WiMAX-based services to users.

It is typical for the WiMAX networks that through high-speed wireless connection with a coverage of several kilometres operators can offer a wide range of fixed and mobile services, including Internet access, voice services, private virtual networks, video surveillance, IPTV – real-time television over Internet, as well as other services for provision of specific content at user's choice (audio and video clips, mobile office applications, navigation services, weather forecast, news, etc.). The services are delivered through WiMAX modems or wireless data transfer cards for mobile computers.

Three of the alternative undertakings holding licenses for fixed telephony network and provision of services through it – TRANS TELECOM EAD, NEXCOM BULGARIA EAD, and MOBILTEL EAD, hold also point-to-multipoint licenses. The latter enable wireless access to the subscriber for the provision of fixed telephone service. TRANS TELECOM EAD and NEXCOM BULGARIA EAD offer to their clients a package of fixed telephone service + Internet access based on WiMAX.

Two operators – TRANS TELECOM EAD and MAX TELECOM EOOD, hold licences authorizing them to provide voice telephone service and data transfer through point-to-multipoint network of the fixed radio service with use of non-geographic numbers. This makes it possible to provide services at an arbitrary point within the coverage of the respective network (Nomadic Service). MAX TELECOM EOOD offers to its clients a package of telephone service + Internet access based on WiMAX.

Information about the services, provided by the four operators at mid-2008, is presented in the table below:

Table 15

	Mobiltel		Nexcom Bulgaria		Trans Telecom		Max Telecom	
	User type		User type		User type		User type	
	Residential	Business	Residential	Business	Residential	Business	Residential	Business
Pre-paid services	✗	✗	✗	✗	✗	✗	✔* Voice services	✗
Services under contract	✗	✔	✔	✔	✔	✔	✔	✔
Voice services	✗	✗	✔ Geographic number Bundled only	✔ Geographic number	✔* Geographic number	✔* Geographic number	✔ Non-geographic number	✔ Non-geographic number
Broadband Internet access	✗	✔	✔ Bundled only	✔	✔	✔	✔	✔
Data transfer	✗	✔	✔ Bundled only	✔	✔	✔	✔	✔
Voicemail	✗	✗	✔ Bundled only	✔	✔*	✔*	✔	✔
IPTV	✗	✗	✗	✗	✔	✔	✔	✔
Bundled services	✗	✗	✔	✔	negotiable	negotiable	✔	✔
double play (voice+Internet)	✗	✗	✔	✔			✔	✔
double play (other)	✗	✗	✗	✗			✗	✗
triple play	✗	✗	✗	✗			✗	✗
Other services	✗	✗	✗	✔ MAN, VPN	✗	✗	✔ Mobile applications	✔ Mobile applications, VPN, local VoIP or telephone exchanges video surveillance

* *Independent service provided by undertakings regardless of the broadband Internet access technology used by the client. In this case they could bind the service to the wireless data transfer provided through operator's WiMAX network.*

Source: *Information available on the official sites of the four operators.*

The four market players offer to their clients WiMAX-based broadband Internet access. The currently offered Internet access speeds vary from 256 kbps to 2048 kbps.

Only MAX TELECOM OOD provides voice services through WiMAX network with national access code 099X (code 0999). TRANS TELECOM EAD has declared its intention to launch the service in 2008. The advantage of voice services with national access code is that the number is not attached to a fixed geographical location. Users can make and receive calls anywhere in Bulgaria. Typical for these voice services are the free-of-charge on-net calls and the free minutes to fixed networks in Bulgaria and abroad included in the tariff plans.

The other two operators (TRANS TELECOM EAD and NEXCOM BULGARIA EAD) provide voice services with geographic number through their WiMAX networks, binding their license for building up of point-to-multipoint network to license No. 116 A[91] for provision of fixed voice telephony service.

In the past year, only MAX TELECOM OOD provided WiMAX-based bundled services, including Internet access + voice services, as well as free IPTV and access to interactive Internet applications.

The prices of the wireless Internet access service provided through point-to-multipoint networks are at the price levels for cable and DSL broadband Internet access, and in addition to reliable speed some operators offer to their clients mobility – users can access Internet on

[91] Discussed in detail in Item 2. Fixed telephone networks and provision of fixed telephone services.

their portable computers within the coverage of the WiMAX networks. The prices of voice services with national access code are lower than the standard plans of most operators providing electronic communications through fixed networks.

At the end of 2007, the subscribers of services provided through WiMAX networks in Bulgaria total 1 767 in number (which is quite an insignificant figure compared to the total number of the subscribers of voice services and Internet, but these services have been on the market only a couple of months yet). The ratio of residential to business subscribers is almost uniform at 1.3:1.

At the end of 2007, total revenues from the services provided through WiMAX networks stand at BGN 92 427, accounting for a negligible share of the Bulgarian electronic communications market. The fact that WiMAX networks have managed to attract users over a short period of time indicates that the services provided through point-to-multipoint networks are attractive and hold much promise.

The future development of the market of services provided through point-to-multipoint networks is associated with active looking for a market niche in the provision of mobile services and broadband Internet access. Winning over of new subscribers is expected to rest on the fact that wireless access to high-speed Internet is a real alternative to the so-called "last mile" and can be regarded as a potential competitor of operators providing DSL, cable, fibre or LAN broadband Internet access. On the other hand, many producers of cellular phones are said to plan WiMAX network support for their future models of end-user devices, which means that point-to-multipoint technologies may well begin to compete even with the mobile Internet access included in the mobile voice services.

The operators doing business on the Bulgarian market of services provided through point-to-multipoint networks are yet to develop their networks and reach up to new potential clients. This is indicated by the investment they plan to make in 2008 to expand their networks: BGN 46.8 mln, accounting for 6.6% of total 2008 investment planned by the operators providing electronic communications. A fifth operator is expected to start doing business in 2008 – CARRIER BG OOD, which at end of 2007 is still building up its network.

IV. MANAGEMENT OF SCARCE RESOURCES

1. Radiofrequency spectrum

The radiofrequency spectrum is a scarce national resource, with great significance for the development of the electronic communications sector as an element of the national economy. The growing demand for new services and technological development require the availability of suitable and sufficient frequency resource. In that light, the management of the radiofrequency spectrum should be carried out in a way providing conditions for satisfying the constantly increasing needs of the market for electronic communications services. On the other hand, because of its limited nature, the radiofrequency spectrum cannot be used entirely on a free, market-driven basis, but needs to be effectively regulated in order to secure spectrum in accordance with the needs and requirements of both present and future technological and market development. The regulation process takes account of end-users' interests and advance technology implementation, as well as of the need to create conditions for easy and rapid access to radiofrequency resource, for flexible, effective and without harmful interference spectrum usage, and to build an environment conductive of effective competition. In the issue of the increasing globalization of markets and of EU's efforts to develop the internal market in the Community, the radiofrequency spectrum planning, harmonization and technical specification at international level has increasing impact on the spectrums regulation at national level.

By the adoption of the LEC, the European Regulatory Framework for Electronic Communications 2002 has been implemented and new principles and rules of electronic communications regulation have been established, including in relation to radiofrequency spectrum management. The provisions of Decision No. 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) have been transposed. The Decision has the aim to establish a policy and a legal framework in the Community in order to ensure the coordination of policy approaches and, where appropriate, harmonized conditions with regard to the availability and efficient use of the radio spectrum necessary for the establishment and functioning of the internal market in Community policy areas such as electronic communications, transport, and research and development.

The liberalized use of the radiofrequency spectrum is a notable change in respect of spectrum management, which LEC has brought into effect. Conditions for facilitated regulation are put in place by reducing regulatory intervention to the required minimum, and possibility to apply the technological neutrality principle in spectrum utilization is ensured. Thus the undertakings, holding authorizations for use of individually assigned radiofrequency spectrum, are given the opportunity for flexible use of spectrum with regard to the technology applied. On the other hand, it is not possible to liberalize to the same extent the utilization of all radiofrequency bands. The right of use for frequency resource is limited to necessity by imposing technical and operational requirements depending on the physical characteristics of radio propagation in the different frequency bands, in order to ensure adequate protection of other spectrum users against harmful interference. Spectrum usage limitations have been reduced for the radiofrequency bands for which it is possible to do so. The neutral regulatory policy creates conditions for development of the electronic communications market, reduces the investment risk for undertakings, and ensures rapid penetration of new technologies; therefore, this principle of radiofrequency spectrum management is expected to be widely applied in the future, in line with Community policy.

The technical requirements for the operation of electronic communications networks of the different radio services and associated facilities set the parameters, characteristics and

conditions of operation of the relevant electronic communications networks using individually assigned radiofrequency spectrum. The parameters and the technical characteristics of the radio equipment using radiofrequency spectrum which is not individually assigned are defined in the General requirements for provision of public electronic communications, the Regulation on the provision of electronic communications for own needs by means of radio equipment using frequency spectrum which does not need to be individually assigned, and the List of radio equipment using frequency bands harmonised throughout the EU and electronic communications terminal equipment. The adoption of these sub-legislative acts ensures effective and without harmful interference use of the radiofrequency spectrum in line with the international principles and rules.

Another essential change in spectrum management is the introduction of provisions in the LEC, which allow the undertakings to transfer their authorizations for use of individually assigned radiofrequency spectrum or any part of the rights and obligations covered by authorizations upon approval by the Commission. This creates an environment conductive of development of a secondary spectrum market. Expected benefits from secondary market introduction include more flexible and more efficient spectrum utilization, competitive environment for development of electronic communications networks using radiofrequency spectrum, rapid and easy access to radiofrequency resource, more dynamic services market and economic development in the sector.

The amendments to the existing legislation allow CRC to issue temporary authorizations, valid for not more than 6 months, for use of the individually assigned radiofrequency spectrum for promotion of electronic communications equipment, testing of new technical equipment or new electronic communications networks prior to putting them into operation, testing of new technical methods and/or technologies for carrying out electronic communications, and for short-term events.

CRC manages the radiofrequency spectrum allocated for civil needs in line with the provisions of the LEC and in accordance with its statutory powers and the principles of legality, predictability, transparency, publicity, consultation, non-discrimination, proportionality, technological and service neutrality, and reduction of regulatory intervention to the required minimum.

1.1. Planning, assignment and effective use of the radiofrequency spectrum

The increasing globalization of the electronic communications markets and the efforts to build up and develop pan-European networks and to ensure operational compatibility of services and end-to-end connectivity call for harmonization at the international level of the radiofrequency spectrum and the applications using this spectrum. In addition to the radio services defined by the International Telecommunication Union, there are also some very specific requirements and conditions for radiofrequency usage. These international specifications have direct impact on national frequency planning. In order to ensure effective and free from harmful interference spectrum usage and effective competition, frequency panning at national level provides additional sound basis for the existing and the future frequency applications by setting specific technical requirements and operating conditions. On the other hand, these requirements and conditions need to be sufficiently flexible so as not to hinder the implementation of the booming new technologies.

In accordance with its statutory powers, CRC implements the regulatory framework of Community policy in the field of radiofrequency spectrum management. By the adoption of the sub-legislative acts, the following decisions of the European Commission have been transposed in the Bulgarian legislation: Commission Decision 2004/545/EC on the

harmonisation of radio spectrum in the 79 GHz range for the use of automotive short-range radar equipment in the Community; Commission Decision 2005/50/EC on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community; Commission Decision 2006/771/EC on the harmonisation of the radio spectrum for use by short-range devices; Commission Decision 2006/804/EC on harmonisation of the radio spectrum for radio frequency identification (RFID) devices operating in the ultra high frequency (UHF) band; Commission Decision 2007/90/EC amending Decision 2005/513/EC on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of Wireless Access Systems including Radio Local Area Networks (WAS/RLANs); Commission Decision 2007/98/EC on the harmonised use of radio spectrum in the 2 GHz frequency bands for the implementation of systems providing mobile satellite services, and Commission Decision 2007/131/EC on allowing the use of the radio spectrum for equipment using ultra-wideband technology in a harmonised manner in the Community.

The frequency planning process includes detailed feasibility study and thorough analysis at national and international level in order to ensure effective and free from harmful interference spectrum utilization by the multitude of diverse applications and technologies. At the same time, the need to protect public interest is taken into consideration, as well as the economic effect, the market trends, the European harmonization, the technological progress, and the compatibility of frequency applications. This implies that existing applications are adequately protected but also that opportunities for implementation of new technologies are ensured by the frequency planning. Only a balanced complex assessment of all these factors can guarantee optimal frequency planning. Given the short life cycle of innovations and the limited nature of the radiofrequency spectrum, planning becomes critical and increasingly difficult.

CRC grants rights of use for individually assigned radiofrequency spectrum on basis of examination, on a case-by-case basis, of the technical possibilities for provision of communications through the relevant electronic communication networks, examination for electromagnetic compatibility and biological protection, and upon national coordination and harmonization with all state authorities, institutions and services concerned, with the view of ensuring safe aeronautical and maritime navigation and protection of national security. International coordination is applied, if appropriate.

The National Plan for Allocation of the Radiofrequency Spectrum is not fully aligned yet with the European Table of Frequency Allocations and Utilizations, in terms of both some radio services and users. The state still utilizes a pretty large portion of the radiofrequency spectrum. This causes problems with the allocation of frequency resource for civil needs for the purposes of implementation of new technologies and provision of advances services of high quality to end-users. The release of frequency resource for civil needs is a slow process, depending generally on the earmarking of targeted funds in the state budget for modernization of the communication equipment of state authorities and services. A large portion of the actual radiofrequency bands, which are essential for the electronic communications development, cannot be utilized for implementation of affordable advanced electronic communication services, which are technologically effective and of high quality.

Mobile radio service

In 2007, frequency planning of the radiofrequency bands in the 420 MHz range was carried out and radio frequency spectrum was allocated for use by operators providing electronic communications for private needs through TETRA-standard-based mobile terrestrial network with local coverage.

Frequency planning was also carried out for the 50 MHz, 60 MHz, 80 MHz, 160 MHz, 420 MHz and 460 MHz ranges allocated for the mobile radio service. On the basis of this planning and following national coordination with all state authorities, institutions and services concerned, 592 radio frequencies have been assigned to different institutions and companies for provision of electronic communications for private needs through electronic communication network of the mobile radio service with national and local coverage.

In accordance with a clause in the individual licenses for provision of telecommunications through private mobile telecommunications network PMR, the procedure for changing the radio channel band from 25 kHz to 12.5 kHz of the radiofrequency spectrum assigned for use by operators providing mobile electronic communications for private needs was completed. The change released radiofrequency resource for mobile applications in the 50 MHz, 60 MHz, 160 MHz and 460 MHz ranges, opening up an opportunity for more efficient utilization of the frequency spectrum. The analysis and assessment of the results of the change of the radio channel band from 25 kHz to 12.5 kHz has shown that the released radiofrequency spectrum in the 50 MHz and the 60 MHz range is about 8 MHz, in the 160 MHz range – 2.6 MHz, in the 460 MHz range – 1.6 MHz. A total of over 12 MHz of frequency resource has been released for mobile applications, which makes it possible to satisfy applicants' requests for assignment of frequency resource for carrying out of electronic communications of the mobile radio service. The planning of the radiofrequency spectrum in these bands is carried out in a way, which ensures optimal spectrum utilization. Depending on the geographical coverage – national or local, the same frequency can be used in different regions of the territory of the Republic of Bulgaria and within different service areas (up to 20 km, 50 km, and 120 km), which creates conditions for effective management and utilization of the radiofrequency spectrum.

Steps towards implementation of digital technologies in the 460 MHz range, based on the CDMA-PAMR standard (Code Division Multiple Access - Public Access Mobile Radio), were taken in 2007. In Q4, the individually assigned scarce resource – radiofrequency spectrum granted for provision of public electronic communications on the territory of the country through mobile terrestrial network employing the NMT (Nordic Mobile Telephone) standard, was reallocated for utilization under both standards - NMT and CDMA. Making possible the implementation of digital technologies in the 460 MHz range creates conditions for development and modernization of the existing mobile terrestrial network, for efficient utilization of the assigned radiofrequency spectrum, and opens up opportunities for high-speed transmission of voice and data or data only and for provision of a wider range of modern services to end-users. Full network digitalization will be phased over the next few years, following reallocation of the assigned radiofrequency spectrum for utilization under the CDMA standard only.

A public consultation procedure on the opportunities for utilization of the available released scarce resource – radiofrequency spectrum with a capacity of 2 x 5.4 MHz in the 900 MHz range (radiofrequency bands 880.1 – 885.9 MHz and 925.1 – 930.9 MHz) was initiated in the past year. CRC has highlighted in the public consultation documents the advantages and disadvantages of both options for assignment of the released spectrum – assignment to a new operator or assignment to the three active mobile GSM operators for expansion, modernization and development of their electronic communications networks.

Fixed radio service

The number of traditional radio service networks of the "point-to-point" type (radio relay networks) continues on a steady upward trend. Following frequency planning and national coordination, radiofrequency spectrum for 3623 radio relay links was assigned to

different operators and thus total radio relay links are now over 10 200. The upswing in the number of radio relay links in the past few years has caused critical shortage of spectrum for the fixed radio service, which called for differentiating the requirements to networks utilizing high-speed and low-speed resource in order to create conditions for more efficient utilization of the radiofrequency spectrum.

Stricter rules for the use of the radiofrequency spectrum for low-speed transmission, in particular restrictions on the minimum admissible lengths of radio relay links, have been introduced in order to ensure efficient spectrum utilization. The aim is to achieve high density of electronic communications, which corresponds to the energy specifics of the different frequency ranges, taking into account all specific characteristics, the terrain specifics, and the performance capabilities of the equipment. The minimum requirements for the lengths of radio relay links have been cut down or eliminated for the more efficient, high-speed digital systems in order to guarantee high reliability and quality of transmission.

Minimum requirements to the antennas, as well as additional technical and technological requirements to the facilities have been introduced for the frequency ranges for broadband and trunk transmission in order to achieve maximum spectrum compatibility, hence high efficiency of spectrum utilization.

Additional regulatory measures have been introduced also with respect to the release of radiofrequency spectrum utilized by networks of the fixed radio service in ranges allocated for other services. Such measures were implemented in the 11.7-12.5 GHz range in order to protect satellite broadcasting and the fixed satellite radio service, as well as in the 21.4-22.0 GHz range in order to protect satellite broadcasting. In accordance with Decision ECC/DEC/(05)01 of the Electronic Communications Committee of the European Conference of Postal and Telecommunications Administration on the use of the band 27.5-29.5 GHz by the Fixed Service and uncoordinated Earth stations of the Fixed-Satellite Service (Earth-to-space), frequency division of the range between the two radio services has been adopted.

In 2005, two companies were assigned scarce resource of 2x21 MHz duplex channels for provision of telecommunications through point-to-multipoint public telecommunications networks of the fixed radio service in the 3.4-3.6 GHz range based on FDD (frequency division duplex) technology. The accelerated technological development and the universal migration to TDD (time division duplex), together with the setting of the IP technologies on the 5 MHz frequency band instead of the previous 3.5 MHz, called for consolidating the frequency blocks of operators. In 2007, CRC permitted the exchange of assigned frequency blocks between the two operators, and, consequently, the new frequency blocks were expanded to 42 MHz uninterrupted spectrum, which made easier the planning of WiMAX-based networks.

CRC issued an authorization for the use of individually assigned scarce resource – radiofrequency spectrum, for provision of electronic communications through point-to-multipoint public electronic communications network of the fixed radio service with national coverage (class B) for the last 2x10.5 MHz duplex frequency blocks.

Satellite radio services

The new regulatory framework introduced in the Bulgarian legislation has brought about easier spectrum utilization arrangements and a facilitated procedure for access to frequency resource for satellite communications, which, in turn, stimulates the implementation of new technologies and fosters the development of the satellite electronic communications and of the services provided to end-users.

Electronic communications for private needs can now be provided free through VSAT stations in the 12.50 – 12.75 GHz and 14.00 – 14.25 GHz radiofrequency bands in compliance

with the Regulation for provision of electronic communications for own needs by means of radio equipment using frequency spectrum, which is not individually assigned. Public electronic communications can be provided through VSAT terrestrial stations in the same bands following submission of notification to the CRC, and operators' rights originate from the date on which the notification is duly submitted, whereas under the TA the operators had the right to start doing business after being issued an individual license. Operators can provide electronic communications through networks of portable terrestrial SNG TES stations only after submission of notification to CRC.

The Technical requirements for the operation of electronic communications networks of the fixed satellite and the mobile satellite radio service and associated facilities set out the technical characteristics and parameters of the electronic communications networks of the two radio services and the applicable standards and documents of European organizations. The admissible satellite broadcasting ranges have been defined. Conditions for implementation of high-density networks of terrestrial stations in the ranges of the fixed radio service have been created. In that light, frequency division of the range between the fixed and the fixed satellite radio services has been adopted in accordance with Decision ECC/DEC/(05)01.

Broadcasting

Analogue broadcasting

In order to expand the geographical coverage of the national networks and to satisfy people's demand for quality broadcasting, CRC has made 20 new frequency assignments in the decimetre range to BNT, bTV, NOVA TV, and 17 new frequency assignments in the VHF range to BNR and DARIK RADIO.

National coordination and harmonization with all state authorities, institutions and services concerned has been achieved for 107 frequency assignments for broadcasting of radio signals and 125 frequency assignments for broadcasting of television signals. Eighty detailed designs for radio broadcasting stations and 120 detailed designs for television broadcasting stations have been discussed, analyzed and approved.

Digital broadcasting

In order to create conditions for transition from analogue to digital systems and for implementation of new technologies in the field of radio and television broadcasting, in 2006, the International Telecommunications Union held in Geneva the Regional Radiocommunication Conference for planning of the digital terrestrial broadcasting service in parts of Regions 1 and 3, in the frequency bands 174-230 MHz and 470-862 MHz. The Regional Agreement adopted in Geneva approves a frequency plan for introduction of digital radio and television broadcasting in the above bands. By the coming of the Conference decisions into force, the new digital radiofrequency plan becomes binding for any subsequent frequency assignments and provides the basis for transition from terrestrial analogue to terrestrial digital broadcasting.

According to the Geneva 2006 Digital Plan, Bulgaria has protected and registered frequency resource, which makes it possible to build up the following networks:

- 10 networks for terrestrial digital broadcasting of television programs with national coverage;
- 34 networks for terrestrial digital broadcasting of television programs with regional coverage;

- 23 networks for terrestrial digital broadcasting of television programs with regional coverage – 12 for the territory of Sofia and 11 for the territory of Varna;
- 2 networks for terrestrial digital broadcasting of radio programs with national coverage;
- 8 networks for terrestrial digital broadcasting of radio programs with regional coverage for the cities of Sofia (6) and Varna (2).

A Plan for Implementing Terrestrial Digital Television Broadcasting (DVB-T) in the Republic of Bulgaria has been developed with considerable input from representatives of the Communications Regulation Commission. It provides a strategic basis for the building of DVB (Digital Video Broadcasting - Terrestrial) networks and sets out a schedule for decommissioning of analogue transmitters. Specific actions have been elaborated towards the digitalization of terrestrial television in the country. Construction and putting into operation of the first multiplex platforms under the new digital radiofrequency plan is scheduled to start in 2008 with a view to completing the phased digitalization of the terrestrial broadcasting of television programs by the end of 2012. The terrestrial digital broadcasting of television programs is introduced with the main purpose to ensure efficient utilization of the radiofrequency spectrum, higher quality, and provision of additional services.

Commission experts have conducted technical analyses of the frequency channels assigned for the launching of terrestrial digital broadcasting of television programs, and have set out the specific technical characteristics of the radio equipment. The respective radiofrequencies and the technical parameters of the radio equipment using these frequencies have been sent to the International Telecommunications Union for international coordination in accordance with the procedures of the Geneva 2006 Regional Agreement.

Research and technical analyses have been carried out to determine the technical parameters and the operational conditions and requirements for the use of individually assigned radiofrequency spectrum in the shortwave range for provision of terrestrial digital broadcasting of radio signals based on the DRM (Digital Radio Mondiale) technology.

9.2. Electromagnetic compatibility

110 studies on the electromagnetic compatibility between VHF FM radio broadcasting stations and the aeronautical navigation systems ILS, VOR, and COM have been carried out towards ensuring safe aeronautical navigation.

80 detailed designs of radio broadcasting stations and 120 detailed designs of television broadcasting stations have been discussed and analysed for the purposes of ensuring electromagnetic compatibility on the sites and between the radio services.

Towards solving the problem with harmful cross-border interference, the Commission has authorized higher power for some of the radio broadcasting stations in the border areas. In that light and in order to ensure the safety of aeronautical navigation, joint measurements were carried out in November to identify the levels of harmful emissions in navigation and communications frequency channels under conditions of higher power of VHF-FM radio broadcasting stations in Burgas.

As some studies on the electromagnetic compatibility with the aeronautical navigation radio services have identified potential harmful interference, measurements according to the Methodology for measuring A1 type intermodulation products, generated by the operation of VHF-FM radio broadcasting stations with small separation distance, have been carried out over the year.

2. Numbers and addresses

2.1. Assignment of numbering resource

CRC is responsible for the management of the National Numbering Plan (NNP), which involves analysis of the use of all kinds of numbers and codes, as well as drafting and implementation of policy that ensures efficient utilization of the numbering resource and provides opportunities for the allocation of number ranges for new services and networks.

A new National Numbering Plan (superseding the 2005 one) was adopted in 2007 (promulgated, SG, No. 72/04.09.2007). It changes the designation of number range 116, which is reserved for the Harmonized European Numbers for Services of Social Value. The length of national significant numbers after some destination codes has been changed and the districts served by the geographical destination codes, as well as the operators using mobile access codes, have been defined more precisely.

Over the past year, the alternative undertakings, providing fixed telephone service, have been assigned 324 000 geographic numbers and 9 addresses (6 national and 3 international signalling point codes).

In answer to the need to extend the numbering space in Sunny Beach and Sozopol, two new three-digit geographical codes have been assigned to these regions. On the other hand, 5000 geographical numbers in the Sunny Beach region have been withdrawn from CABLETEL EAD because of ineffective utilization.

As NETPLUS OOD has failed to reclaim the numbering resource it has been assigned, the numbers and addresses originally assigned to the operator have been withdrawn.

A total of 17 000 non-geographic service numbers in the ranges 700, 800 and 90 have been assigned over the year (2000 numbers in the 700 range, 2000 numbers in the 800 range, and 13 000 numbers in the 90 range), plus one number for the telephone fault reporting service – 130ХУ.

Two operators (TRANS TELECOM EAD and MAX TELECOM EOOD) have been assigned codes with national coverage in the range 99X for access to point-to-multipoint electronic communications networks of the fixed radio service.

The numbering resource, assigned to alternative undertakings over the year, confirms the tendency of these operators to put more efforts in the development of their networks and in winning over a greater number of subscribers, which contributes for stronger competition and successful implementation of fixed number portability. At the end of 2007, the alternative undertakings have reclaimed about 19% (203 000) of the numbers they have been assigned, which shows that despite the progress they have achieved, their share in the market of fixed voice services is still small.

Table 16

Year	Numbers assigned to alternative undertakings
2003	145 000
2004	207 000
2005	242 000
2006	166 000
2007	324 000
Total:	**1 084 000**

The digitalization of the fixed telephone network of BTC AD released a resource of 1 153 000 numbers in different geographical areas of the country, as well as service access numbers with first digit 1 – 130 and 144 in all regions of the country. 68 000 numbers have changed from incomplete to full length of the national significant numbers.

About 90 000 numbers have been assigned to BTC AD in relation to future digitalization projects.

On the increase is also the number of the million groups, used by the operators providing services through terrestrial mobile networks, within the blocks of 10 000 000 national significant numbers assigned to these operators.

Table 17

GSM operator	Numbers used at the end of 2007
MOBILTEL	10 000 000
COSMO BULGARIA MOBILE	10 000 000
BTC MOBILE	5 000 000
Total:	**25 000 000**

2.2. Number portability

Work on the implementation of mobile number portability continued in 2007.

At the end of 2006, CRC adopted a position on the requirements to be included in the procedure for mobile number portability (the Procedure). The regulator had to intervene because the mobile operators failed to achieve consensus on the content and terms of the Procedure. By Decision 2338/22.12.2006 the Commission obligated the operators to submit the Procedure, signed and with content complying with the position of CRC, by 10 January 2007. Only two operators (COSMO BULGARIA MOBILE EAD and BTC MOBILE EOOD) have signed and submitted the Procedure in due time. The third one (MOBILTEL EAD) appealed Commission's decision before the Supreme Administrative Court. In mid-2007, by Decision 1130/13/08.07, the Commission obligated once more the mobile operators to sign the Procedure, but this decision was also appealed by MOBILTEL EAD in court.

The provisions of the LEC set out specific content of the Functional Specifications for Number Portability and introduce amendments to number portability regulation. In that light, an obligation to draft amendments to the Functional Specifications for Mobile Number Portability, in order to align them with the provisions of the law, has originated for CRC. Work on the drafting of the Functional Specifications for Mobile Number Portability, and public discussions on the specifications continued till year-end.

Fixed number portability should be a fact from 1 January 2009, as provided for in the LEC. Therefore, in 2008 the Commission will focus on the drafting of functional specifications for the implementation of fixed number portability. Besides, the regulator will continue to monitor the practical implementation of mobile number portability.

2.3. Single European Emergency Call Number 112

By Decision No. 46/11 January 2007, the number is assigned to the Ministry of State Policy for Disasters and Accidents (MSPDA).

Rules for defining the terms and procedures for transferring end-users' and subscribers' location data in case of emergency calls, by the undertakings providing public emergency telephone services to the emergency call centres have been drafted on the grounds of Article 255, Paragraph 3 of the Law on Electronic Communications. Since 10 March 2008, the draft is in a public consultation procedure.

CRC representatives are on the inter-institutional working group drafting a Law on the National Emergency Call System with Single European Number 112.

V. ACTIVITIES PURSUANT TO THE LAW ON ELECTRONIC COMMUNICATIONS AND THE LAW FOR THE ELECTRONIC DOCUMENT AND THE ELECTRONIC SIGNATURE

1. Provision of electronic communications

Pursuant to the LEC, electronic communications are provided:

- After submitting a notification – public electronic communications without use of individually assigned scarce resource;
- After submitting a notification and granting right of use for individually assigned scarce resource – public electronic communications with the use of individually assigned scarce resource;
- After granting right of use for individually assigned scarce resource – electronic communications for private needs;
- Free use – electronic communications for own needs by means of networks, which are not using scarce resource (spectrum or numbers), and by means of radio equipment using radiofrequency spectrum, which is not individually assigned.

The entry of the LEC and of the sub-legislative acts on electronic communications into force has created conditions for easier and streamlined procedures regarding operators' rights to provide electronic communications. Under TA (repealed), public telecommunications operators had right to provide telecommunications on basis of a registration under General License, whereas under the LEC they are required to obtain authorization and to comply with the General Requirements for Provision of Public Electronic Communications. Operators, who have provided telecommunications for private needs on basis of a registration under General License, are free to provide electronic communications in compliance with the Rules for provision of electronic communications for private needs through radio equipment using frequency spectrum, which does not need to be individually assigned.

According to the LEC and the General Requirements, all operators have to notify CRC of their intention to provide public electronic communications services and/or electronic communications to an unlimited number of users on a commercial basis. In other words, regulation is provided for all types of public electronic communications services, including Internet access and VoIP, which were provided free under TA.

The provisions of the LEC, regulating the cases in which authorization for use of individually assigned scarce resource – radiofrequency spectrum is issued, are generally similar to those of TA (repealed).

1.1. Individual licenses under TA (repealed) and authorizations by CRC under the LEC for use of individually assigned scarce resource

Table 18

Individual licenses under TA								Authorizations for use of individually assigned scarce resource issued under LEC		
No.	*Telecommunications network*	*Individual licenses, 2007*				*Individual licenses valid as of 31.12.2006 (number)*	*Individual licenses valid as of 31.12.2007 (number)*	*Decisions for granting right of use for individually assigned scarce resource – radiofrequency spectrum*	*Decisions for granting temporary right of use for individually assigned scarce resource – radiofrequency spectrum*	*Decisions for granting right of use for individually assigned scarce resource - numbers*
		Brought in compliance/reissued (number)	*Amended/supplemented/transferred (number)*	*Nullified/discontinued/withdrawn/ cancelled/expired (number)*	*Issued (number)*					
100	Public telecommunications networks and provision of telecommunications services	-	10	-	-	1	1	-	-	-
101	Available and/or new telecommunications networks for terrestrial analogue broadcasting									-
	Television broadcasting with national and local coverage	-	42	1	-	45	44	-	1	-
	Radio broadcasting with national and local coverage	-	122	4	5	265	266	4	1	-
102	Telecommunications networks for terrestrial digital broadcasting	-	-	-	-	1	1	-	-	-
106	Telecommunications paging networks	-	-	-	-	4	4	-	-	-
107	Telecommunications mobile TRUNK networks	-	-	-	-	2	2	-	-	-
108	Assignment of geostationary orbit positions, allocated to Bulgaria by international agreements	-	1	-	-	2	2	-	-	-
110	Mobile cellular telecommunications networks – GMS standard	-	51	-	-	3	3	-	1	-
111	Third generation mobile cellular telecommunications networks (UMTS)	-	-	-	-	3	3	-	-	-
112	Telecommunications networks of the fixed satellite service	-	5	4	1	39	36	-	-	-
113	Point-to-point telecommunications networks of the fixed radio service	-	59	21	6 *	162	147	13 **	-	-
114	Mobile cellular telecommunications network – NMT and/or CDMA standard	-	7	-	-	1	1	-	-	-
115	Point-to-multipoint telecommunications networks of the fixed radio service	-	2	-	-	5	5	1	-	-
115-A	Point-to-multipoint telecommunications networks of the fixed radio services in the 26 GHz range	-	-	-	5	-	5	-	-	-
116-A	Telecommunications networks for provision of fixed voice telephone service	-	18	-	-	18	18	-	-	1
116-B	Telecommunications networks for provision of the service “access to voice telephone service through carrier selection”	-	1	-	-	12	12	-	-	-

117	Telecommunications networks for data transfer with granted right of use for individually assigned scarce resource – numbers	-	1	-	-	4	4	-	-	-
117A	Point-to-multipoint telecommunications network of the fixed radio service with national coverage for provision of voice telephone service and data transfer	-	-	-	2	-	2	-	-	-
120	Telecommunications networks PMR/PAMR of the mobile radio service for professional purposes	-	154	72	35 ***	801	764	32 ****	1	-
121	Telecommunications networks for provision of the service "leased lines", including international leased lines	-	2	-	2	14	16	-	-	-
122	Mobile telecommunications network – TETRA technology – public	-	-	-	-	2	2	-	-	-
123	Mobile telecommunications network – TETRA technology – private	-	-	-	1	-	1	-	-	-
125	Radio services aeronautical mobile, radiolocation and radio navigation for air traffic control and provision of aeronautical navigation services for the flights in the civil aeronautical space	-	-	-	-	1	1	-	-	-
	TOTAL:	-	475	102	57	1385	**1340**	50	4	1

** Total licensed links: 2621;*
*** Total links assigned by a decision: 12;*
**** Total frequencies assigned under individual licenses: 431;*
***** Total frequencies assigned by a decision: 161.*

1.2. Certificates for registration under general license pursuant to TA (repealed)

Table 19

No.	*Telecommunications network*	*Certificates for registration under General License 2007*		*Issued certificates for registration under General License, 31.12.2006*	*Total issued certificates for registration under General License, 31.12.2007 (number)*
		Deleted registration certificates	*Issued registration certificates*		
201	Pubic cable telecommunications networks for distribution of radio and television programs without use of scarce resource	68	56	957	1013
202	Satellite news gathering networks - SNG	-	3	19	22
203	Telecommunications networks SAP/SAB, including ENG/OB	-	-	9	9
204	Provision of the service "access to voice telephone service" through public pay-phones	-	1	6	7

205	Radio stations and radiolocation stations on board vessels and radio stations on board aircraft	-	21	252	273
207	Radio equipment of the amateur radio service	-	19	4400	4419
211	Telecommunications networks of the mobile radio service (PMR) – for short-term events	-	-	1	1
212	Private telecommunications networks of the mobile radio service (PMR)	-	1	32	33
215	Private telecommunications networks of the fixed satellite service - VSAT networks	-	12 *	35	47
216	Provision of telecommunications service – access to satellite systems	-	-	4	4
217	Public telecommunications networks for data transfer without use of scarce resource	26	96	480	576
218	Public telecommunications telex networks	-	-	1	1
219	Public telecommunications telegraph networks	-	-	1	1
220	Public RLAN networks of the mobile service	3	39	132	171
	TOTAL		248	6329	**6577**

** Registrations include 65 VSAT stations.*

Table 20

Other documents issued in relation to the registrations under general licenses

Type of document	*As of 31.12.2006 (number)*	*2007 (number)*	*Total*
Amateur radio certificates	1533	66	1599
HAREC certificates	131	8	139
CEPT licenses	215	13	228
Certificates for radio stations on board vessels	631	56	687
Certificates for radio stations on board aircrafts	593	23	616
TOTAL:	3103	166	**3269**

Table 21

Radio amateur certificate examinations

Exams/examined persons	*As of 31.12.2006 (number)*	*2007 (number)*	*Total*
Exams	45	3	48
Examined persons	1275	45	1320

1.3. Notifications for provision of public electronic communications pursuant to LEC

Table 22

Notifications for provision of public electronic communications pursuant to LEC	
Number of notifications for provision of public electronic communications submitted to CRC	157
Number of undertakings included in the register of undertakings, who have notified CRC for provision of public electronic communications	122
Number of undertakings, who have ceased to provide public electronic communications (SNG)	4

2. Market regulation

The implementation of adequate regulatory measures in a transparent and non-discriminatory way is crucial for the promotion of effective competition and for building up confidence in the market players, as well as for encouraging investment in the sector. CRC follows the development of the market, studies it and makes forecasts, collecting and processing on regular basis information about the activities of the undertakings providing public electronic communications and electronic communications services. On basis of the information received, the Bulgarian regulator conducts an analysis of the networks and services and uses it as a feedback for the market response to the regulatory mechanisms applied in respect of undertakings. The ultimate purpose of market regulation is to ensure wide choice, affordable prices and the quality demanded by the users of electronic communications services.

In its work, CRC places special priority on the activities for analysis and regulation of the market of electronic communications. In the past year, the work and tasks in the area of market regulation were determined by the transition from the old to the new sector framework after the adoption of the LEC and were aligned with the preparations for the first steps of the exercise for definition, analysis and assessment of the markets of electronic communications networks and/or services in Bulgaria for existence of effective competition and designation of undertakings with significant market power on these markets in accordance with the EU Regulatory Framework 2002.

2.1. Annual report 2006 and market monitoring

The regular yearly analysis of the condition and development of the Bulgarian electronic communications market in the previous year[92], and of the regulatory activities in respect of this market, was prepared in 2007. The analysis is part of the 2006 Annual Report of CRC and is based on the received information for the activity of about 1300 public network undertakings providing electronic communications services and for the work of other providers of services for Internet access operating under free regime. The necessary data were collected again by drafting and sending out questionnaire forms.

[92] The data collection in respect of operators' activity in 2006 was based on the Telecommunications Act, in effect until May 2007, which was superseded by the Law on Electronic Communications (LEC), promulgated, SG, No. 41/22.05.2007.

A CRC expert working group, involving economists, engineers, and jurists, reviews and updates the questionnaire content and format. A database by types of electronic communications activities is maintained on basis of the collected information.

The Commission provides ongoing follow-up of the condition of the Bulgarian electronic communications market in general and of the separate market segments, by monitoring a set of parameters, the data for which are collected directly from the undertakings through yearly questionnaires designed for the purpose. The scope of this set of parameters covers the necessary data required for exercising the specific market analysis and regulation functions and for the submission of information to international institutions and organizations of which CRC is a member as party to international agreements: the International Telecommunications Union (ITU), the European Regulators Group (ERG), the Independent Regulators Group (IRG), etc.

The information, collected and processed through the yearly questionnaires for 2007, covers the activity of the operators providing the following publicly available electronic communications services:

- Provision of fixed telephone services;
- Provision of fixed telephone services through public pay phones;
- Provision of publicly available telephone services through terrestrial mobile networks;
- Provision of the leased lines service, including international leased lines;
- Provision of services for data transfer and/or Internet through networks for data transfer;
- Provision of cable TV and public electronic communications through cable network;
- Voice telephone services and data transfer through point-to-multipoint network with national coverage using radiofrequency spectrum of the fixed radio service;
- Terrestrial analogue/digital broadcasting (radio and television broadcasting);
- Provision of services through network of the fixed satellite service.

In relation to Bulgaria's commitment to submit information to the EC on the activity of the undertakings providing broadband Internet access, CRC drafted, in addition to the regular collection of information about the yearly activities of undertakings, a special questionnaire on the provision of broadband services at 30 June 2007 and used it to collect and submit the necessary information to the EC.

Over the year, CRC continued to submit information about the condition of the Bulgarian electronic communications market to ITU in relation to the World Telecommunication/ICT Indicators Database update. Facts about the Bulgarian electronic communications market have been submitted also for the Fourth (last) Report of the SEE Countries Monitoring Project and for the first for our country as an EU Member State 13th Report on the Implementation of the Telecommunications Regulatory Package – 2007 (13th Implementation Report).

2.2. Designation of undertakings with significant market power (USMP)

With the adoption of the LEC, and in line with the Regulatory Framework 2002, CRC started work on the implementation of the respective procedure, order and conditions for designating undertakings with significant market power in accordance with the principles of competition law. These require from the National Regulatory Authorities (NRAs) of Member States to carry out an analysis of a relevant market of electronic communications networks and/or services for the existence of effective competition and determine on basis of analysis results whether it needs regulation. The Regulatory Framework 2002 brings new meaning to

the term "undertaking with significant market power" (USMP), which takes account of the state of play on today's more complex and more dynamic market and is aligned with the competition law concept of dominance.

According to Article 150, paragraphs 2 and 3 of the LEC, this new approach for designation of USMP in Bulgaria is applied in accordance with the Methodology for the terms and procedure of relevant markets definition, analysis and assessment. The Methodology is approved by the Council of Ministers. In 2007, an expert working group of the Bulgarian regulator drafted the act, followed by public consultations and summary of results. The Commission was asked to and presented its position. At year-end, by CRC Decision No. 61 the final draft of the Methodology was approved and submitted to the Council of Ministers for adoption[93].

The adoption of the required regulatory documents at national level (the LEC and the Methodology) has made it possible to start work on the analysis of relevant markets in early 2008. Meanwhile, till completion of the analyses pursuant to § 7 of the Transitional and Final Provisions of the LEC, the obligations, imposed on the operators under the TA (repealed), remain the same in expectation of the decisions of CRC, imposing specific obligations on these undertakings according to the LEC, to take effect. These are obligations imposed by Decision No. 1315/20.06.2006 and Decision No. 1317/20.06.2006 on BTC AD as an undertaking with significant power on the market of fixed telephone networks and provision of fixed voice telephone services and on the market of provision of the "leased lines" service, and obligations imposed by Decision No. 1316/20.06.2006 on MOBILTEL EAD and on COSMO BULGARIA MOBILE EAD as undertakings with significant power on the market of mobile telephone networks and provision of voice telephone services through them.

By the above decisions, BTC AD is imposed obligations to keep on discharging its specific duties for interconnection, provision of unbundled and specific access, sharing of premises, electronic communications facilities, ducts and towers, and for provision of universal service, as well as with the obligations for provision of the leased lines service, set out in the TA and in the individual license. The obligations imposed on MOBILTEL EAD and COSMO BULGARIA EAD are related to interconnection – they have to comply with the principles of non-discrimination, transparency and confidentiality in the provision of interconnection services.

2.3. Price regulation and costs

According to the LEC, electronic communications prices are subject to regulation only where it has been found on the basis of a market analysis that the competition on the relevant market is ineffective and CRC has imposed specific measures on the undertakings with significant power on the market concerned, including obligations in respect of prices. According to §7 of the Transitional and Final Provisions of the LEC, the obligations imposed pursuant to TA (repealed) remain in force, pending the completion of the market analyses.

Detailed information about the prices of fixed voice telephone services (charged by BTC and the alternative undertakings), of universal service, of services for carrier selection, interconnection and unbundled access, for termination in mobile networks, as well as about the cost accounting system of the incumbent, is presented in Section II of this report. International roaming prices are regulated in accordance with Regulation (EC) No. 717/2007

[93] *The Methodology was adopted by Decree of the Council of Ministers No. 40/28.02.2008 and was promulgated in SG, No. 27/11 March 2008.*

of the European Parliament and of the Council on roaming on public mobile telephone networks within the Community (information on these prices is available also in Section II of this report).

2.4. Cooperation with CPC

In 2007, CRC continued to cooperate with CPC in many investigations concerning potential breaches of the Competition Protection Law (CPL), and in evaluations of economic concentration cases involving operators providing electronic communications services.

Towards attainment of the objectives set out in Article 4 of the LEC and Article 1 of the CPL, in early 2008 a joint working group of representatives of the two institutions drafted Rules for interaction and coordination between the Commission and CPC (the Rules) which aim to create conditions for effective cooperation and coordination between the two institutions when exercising their legally delegated powers and implementing national and European electronic communications and competition law. The document regulates the forms of interaction between the two institutions when exercising their powers under the LEC and the CPL, and the rules to be complied with in the work with and exchange of information representing professional secret. On the grounds of Article 44, Paragraph 1 and Paragraph 2 of the LEC, the Rules have been adopted by CRC Decision No. 62/31 January 2008.

2.5. Participation in international market monitoring and analysis projects

CRC keeps on submitting information on the condition of the Bulgarian telecommunications market through questionnaires drafted by the International Telecommunications Union (ITU). The information is needed for the World Telecommunication Indicators Database update and for the preparation of the ITU annual report.

In December 2007, in Geneva, Commission experts took part in the sixth annual World Telecommunication/ICT Indicators Meeting organized by the Telecommunication Development Bureau (BDT) of the International Telecommunication Union. The forum was attended by 171 participants from 78 countries and by representatives of different organizations: the World Economic Forum, the Organization for Economic Cooperation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD), the Common Market for Eastern and Southern Africa (COMESA), etc. The purpose of the regular meetings is to review the sector development indicators employed by ITU to collect yearly information from all countries through extensive questionnaires. Consequently, ITU updated its World Telecommunication Indicators Database. The forum covered also the issues of data, definitions, methodology, information collection and dissemination methods, towards improving the collection rate and quality of covered data and adapting the set of monitored indicators to the changing demand for information about the sector. The focus was placed on three main issues: community access indicators, new and revised indicators and definitions, the single ITU index.

With regard to the need of upcoming harmonized implementation of the EU Regulatory Framework, of special importance is CRC's more active participation in the working groups of the Independent Regulators Group (IRG). Commission experts followed teams' work, submitted information for the purposes of the projects and the prepared reports, and took part in workshops within a number of IRG working groups and teams: Significant Market Power Project Team (SMP PT), Mobile Termination Rates/SMS Benchmark Project Team (MTR/SMS Benchmark PT), International Roaming Regulation PT, End Users WG, Fixed

Termination Rates Project Team (FTR PT), Mobile Termination Rates Project Team (MTR PT), Regulatory Accounting PT.

CRC concluded its participation in the SEE telecommunications markets monitoring project "SEE Observatory", implemented with funding from the European Commission. For the fourth and last regular report, Commission experts submitted, jointly with their colleagues from SAITC, information on a wide range of regulatory practice, telecommunications services and market development parameters. Experts from the two Bulgarian institutions took part in the final project forum, held in November in Istanbul, Turkey, which discussed the content and scope of the fourth report[94], published on the Internet sites of the European Commission and the project contractor – the consulting company Cullen International.

2007 was the first year when Bulgarian regulator experts submitted to the EC, with a detailed questionnaire, information for the preparation of the regular progress report on the single European electronic communications market (13th Report)[95] and took part in a working meeting in Brussels to discuss the definitions of the market indicators monitored in the EU.

3. Standardization and terminal equipment

3.1. Standardization

CRC successfully acts as a National Standards Organization before the European Telecommunications Standards Institute (ETSI), organizing public enquiry on draft ETSI standards during the year.

In 2007, the Commission took part in the following ETSI procedures:

Table 23

2007	**Number of processed documents**	**Number of procedures**
PE – Public Enquiry	28	14
Vote – Voting	32	13
OAP – One-Step Approval Procedure	33	16
MV – Membership voting	36	16
PUB – Publications (documents received on a weekly basis)	1378	27

The Regulator representatives took part in the 51st General Assembly of ETSI.

Information about the national standards published by the Bulgarian Institute for Standardization (BDS), which transpose ETSI standards, is added on a regular basis to the ETSI database. For the past year, their number is 70.

Being a member of BDS, CRC took part through its representatives in the work of four standardization Technical Committees (TCs) on electronic communications.

94 http://ec.europa.eu/information_society/activities/internationalrel/docs/eu_enlargement/final_report4_comparative_report.pdf

95 http://ec.europa.eu/information_society/policy/ecomm/library/communications_reports/index_en.htm

Eighty of the ETSI standards published over the year have been submitted to the Technical Committees of BDS for transposition by endorsement and implementation as Bulgarian standards.

The Official Journal of the European Union publishes in the Bulgarian language the titles of all harmonized European standards under Directive 99/5/EC. Annex B (informatics) gives the titles of all harmonized ETSI standards in the Bulgarian language. Therefore, all titles of draft harmonized ETSI standards are prepared and agreed with TC.

As the drafted sub-legislative acts under the LEC contain references to standards, a list of 22 applicable standards was compiled in the past year on basis of an internal coordination procedure. On a proposal by CRC, the standards on the list have been included in the 2007 plan of the State Agency for Information Technology and Communications (SAITC) for translation into Bulgarian. Their implementation as national standards with identical text in the Bulgarian language is pending.

3.2. Radio equipment and terminal equipment

In order to assist the operators of public telecommunications networks in the discharge of their obligations to publish the technical specification of the interfaces for connection of terminal telecommunications equipment and radio equipment to their networks, in early 2007 CRC prepared and published on its website *Guide on the publishing of interfaces.* The document has been drafted on basis of TCAM and ETSI instruments, and gives instructions, which the operators are to follow when preparing the interface publications.

The information submitted by the operators was summarized and a list of the web addresses of the operators, who have published technical specifications of the interfaces for connection of terminal and radio equipment, was compiled.

On a demand by the EC, a Bulgarian translation of a Quick guide on the obligations of manufacturers under the R&TTE Directive), which is part of the general information published on the EC website in relation to Directive 99/5/EC, was prepared and submitted.

Detailed information on the placing on the market and/or putting into service of radio and terminal equipment has been made available on the website of CRC.

After the coming of the LEC into force, *the List of the radio equipment and electronic communications terminal equipment referred to in Article 262* was amended by a CRC decision.

The 546 submitted *Notifications for placing on the market of radio equipment pursuant to Article 269 of the LEC,* have been examined in due time, with additional correspondence exchanged in some of the cases.

4. Electronic document and electronic signature

CRC continued with the ongoing activities related to the duties and responsibilities imposed by the Law on the Electronic Document and Electronic Signature (LEDES). The Commission is required under the LEDES to register Certification Service Providers (CSP) and to control their activities. No new CSP's applied for a registration during the year, but the four registered providers kept on offering certification services and expanding their activities thus proving the tangibility of this recently formed market. During the year, the activities of the four CSP's in the country were subject to constant control and monitoring in accordance with the requirements of LEDES. Two planned audit inspections were conducted – one in Spectar JSC and the other in Infonotary PLC.

The Consultative Council on Electronic Signature Matters convened a couple of meetings over the year. At these meetings, CRC representatives, experts from the Centre for Information and Communications Technology Law, and representatives of the registered electronic signature providers in the country, discussed amendments to the existing electronic document and electronic signature legislation.

5. Communications control

5.1. Monitoring and control of the radiofrequency spectrum allocated for civil needs

In 2007, the control of the RFS for civil needs was again focused on ensuring non-discrimination of lawful RFS users and guaranteeing a specified quality of the electronic communications services provided to end-users. Special emphasis was placed on monitoring, with a view to the absorption of additional frequency ranges for the implementation of new technologies in the field of electronic communications, and in order to create conditions for phased digitalization of terrestrial television broadcasting. RFS monitoring was fully matched with the objectives set out in the CRC Strategy, and involved the following basic exercises.

1.1. First and foremost, **preventive monitoring** in order to ensure flexible, efficient and interference-free spectrum utilization, which is crucial for preventing the unregulated provision of electronic communications:

- Control for compliance with **the rules for use of the radiofrequencies and radiofrequency bands** for civil needs; implementation of the policy for radiofrequency spectrum management and of the clauses of the individual licenses;
- Monitoring to assess the actual **radio spectrum occupation** and to estimate the available capacity for new frequency assignments. Monitored are the radiofrequency ranges allocated for electronic communications networks for terrestrial broadcasting of radio and television signals, private mobile networks (PMR), terrestrial mobile networks employing TETRA, NMT, GSM, UMTS standards. Monitoring on the absorption of new frequency ranges and implementation of new technologies (GSM-R и CDMA) was carried out in some settlements;
- Monitoring and measurement to assess **cross-border harmful interference** in the radiofrequency ranges for terrestrial broadcasting of radio and television signals. Monitoring has been carried out in 64 settlements in country's border regions, with three measurements per studied settlement made in the Black Sea region (two in the summer period) and two measurements per settlement made in the other regions. The results are integrated in 417 measurement protocols;
- Assessment of the **electromagnetic compatibility** between the radio stations in the 87.5–108.0 MHz range and the radio navigation and communications equipment of the aeronautical navigation services. Examined were five civil radio transmitter sites in Varna, Sofia, Plovdiv, the village of Posabina in Popovo Municipality, Ruse;
- Inspection on the absorption in accordance with license clauses of the frequency resource, assigned for the building up of UMTS-based terrestrial mobile networks and for provision of electronic communications through point-to-multipoint network of the fixed radio service.

The RFS monitoring was aimed at the undertaking of preventive measures towards efficient and interference-free use of the RFS allocated for civil needs and at ensuring the electromagnetic compatibility of the radio equipment towards improved technical and operational parameters of the transmitted signals. Over the year, the operators providing

electronic communications through networks for terrestrial analogue broadcasting of radio and television signals, were sent again, in an electronic form and on a monthly basis, information about the results of control measurements of the basic technical parameters of radio broadcasting stations. The e-mail messages, sent to the operators providing terrestrial analogue broadcasting or radio signals, were 1854, and the measurement protocols drawn up were 2235, whereas the e-mail messages, sent to the operators providing terrestrial analogue broadcasting of television signals, were 366, and the measurement protocols drawn up were 457.

1.2. Control to ensure non-discrimination of operators, towards effective competition:

♦ Control of the **radio broadcasting equipment** to verify compliance with the specified technical and operational characteristics of broadcasted signals. Examined were the basic technical and operational parameters of broadcasting stations for terrestrial analogue broadcasting of radio signals across the country; 2220 measurement protocols for measurement results were drawn up; the parameters of certain broadcasting stations were examined in connection with identified harmful interference;

♦ Inspections for **conformity** of the built-up broadcasting stations for terrestrial analogue broadcasting of radio and television signals with the **approved detailed designs** were carried out. 163 broadcasting stations were inspected (76 broadcasting radio signals and 87 broadcasting television signals);

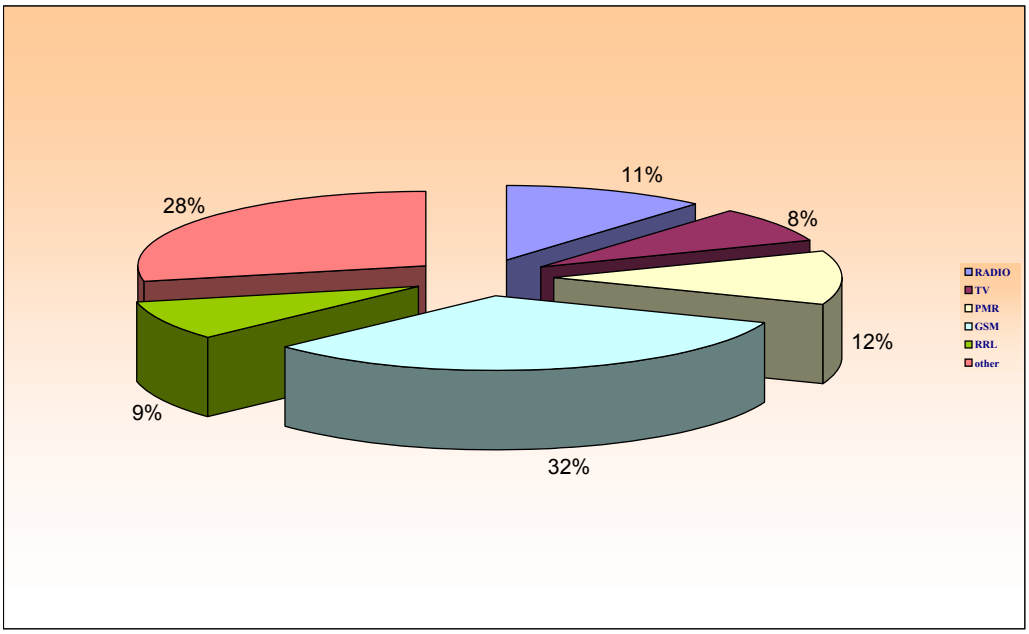
Planned control for compliance with certain technical and operational characteristics of the signals transmitted by the broadcasting equipment aims to create conditions for normal operation of the lawful providers of electronic communications, to guarantee the electromagnetic compatibility and a specified quality of the electronic communications services provided to end-users, and to prevent harmful interference.

1.3. Monitoring and control towards protection of public and consumer interest with respect to the **quality control** of provided services:

♦ Control measurements of the coverage and quality of the services provided **through terrestrial mobile networks employing the GSM standard.** Measurements in respect of the coverage and the quality of the three cellular networks were carried out in 90 settlements across the country, including along main routes of the national road system (Sofia – Pleven – Shumen – Dimitrovgrad – Sofia, Sofia – Teteven – Svishtov – Vidin - Sofia, Sofia – Varna, Sofia – Nova Zagora, Sofia – Petrich, Sofia – Silistra – Durankulak – Malko Tarnovo, Sofia – Plovdiv – Burgas, Sofia – Pleven – Gabrovo – Dimitrovgrad, Sofia – Ruse – Razgrad – Karnobat – Targovishte, Sofia – Velingrad – Smolyan), as well as along certain secondary routes. 334 measurement protocols were drawn up.

♦ Monitoring to detect, localize and identify **sources of harmful interference** in relation to complaints and warnings submitted by lawful RFS users, citizens, organizations, and institutions. A total of 97 cases were registered, including about 36 for interference in private mobile networks, 20 in relation to the broadcasting of radio and television signals, 19 for interference to terrestrial mobile GSM networks, and 32 in relation to other cases. 308 measurement protocols were drawn up during the inspection for detecting and eliminating harmful interference.

COMPLAINTS AND WARNINGS OF HARMFUL INTERFERENCE RECEIVED IN 2007

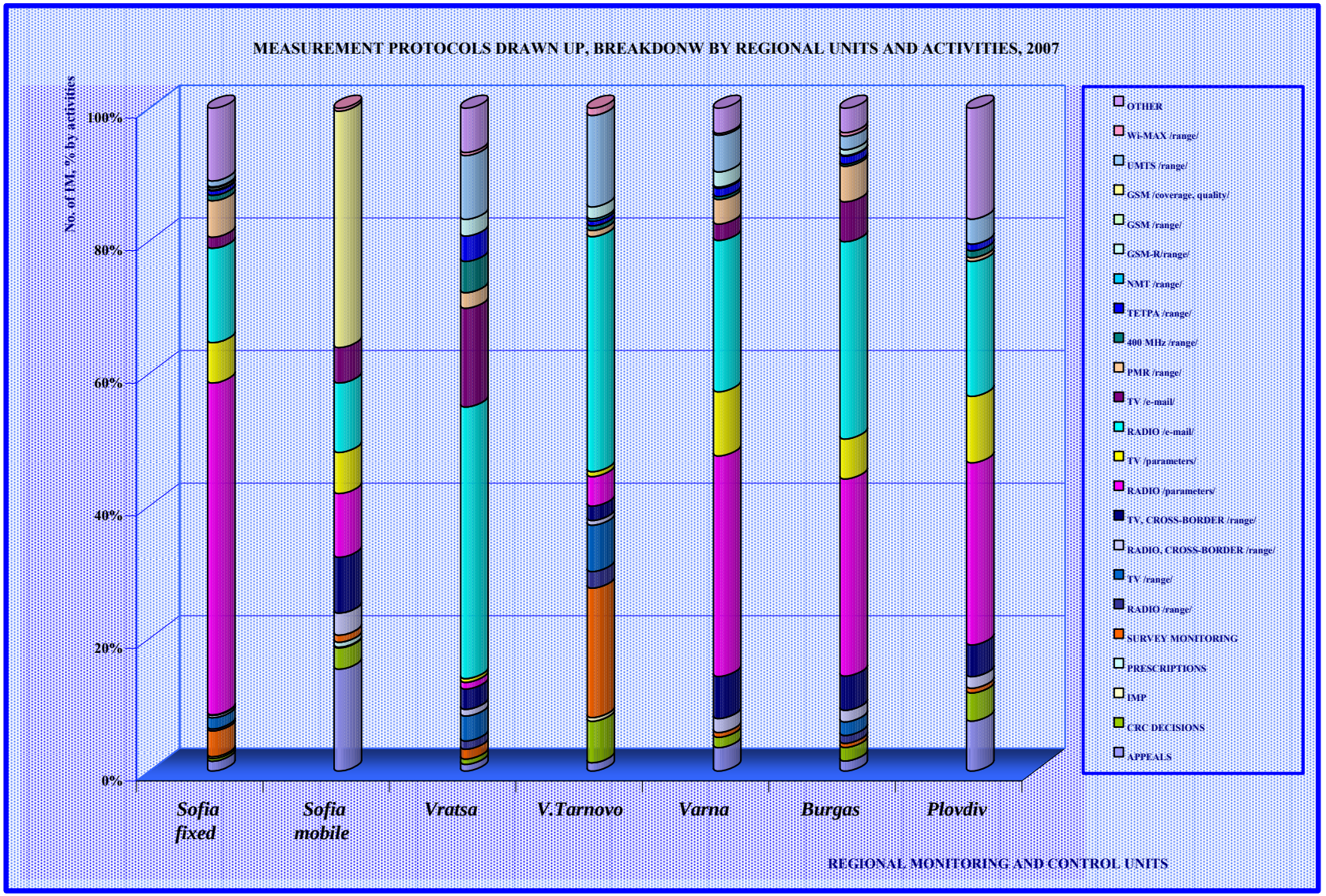


Source: CRC **Figure 87**

1.4. Monitoring in relation to the development of the **National RFS Monitoring System**. Measurements for the selection of locations for remote-control unattended fixed monitoring stations across the country were carried out in the past year. To that end, the electromagnetic situation of 23 locations was assessed and the results were reflected in 60 measurement protocols.

5827 measurement protocols were drawn up during the 2007 RFS monitoring and control, including:

- 5519 measurement protocols in relation to CRC decisions, for the purposes of spectrum management and planned RFS monitoring;
- 308 measurement protocols in relation to received complaints and warnings of harmful interference.



Source: CRC

Figure 88

5.2. Inspection activity

In connection with the functions of CRC in the area of control on the provision of electronic communications pursuant to the LEC, on the provision of postal services pursuant to the Law on Postal Services (LPS), and on the compliance with the requirements of LEDES, the following activities were carried out in 2007:

♦ 128 inspections for control of the basic parameters of broadcasting stations were carried out towards bringing the **electronic communications networks for terrestrial analogue broadcasting** into compliance with the requirements of TA (repealed) and the LEC. The preventive control introduced with the implementation of Article 313, Paragraph 1, Item 9 of the LEC, has produced excellent results and all prescriptions have been fulfilled in due time. The positive tendency of compliance with all requirements set out in the sub-legislative acts persists. Ten complaints have been administered over the reference period, including 3 valid. Fifty statements of administrative violations have been drawn up and delivered, including 3 for breaches of the clauses of individual licenses, 1 for unlawful operation, and 46 for failure to submit information to CRC. The unlawful operation of a radio broadcasting station on the territory of the town of Montana was terminated by an order of the Chairperson of CRC.

♦ 103 inspections of **electronic communications networks for terrestrial broadcasting of television signals** have been carried out. Five complaints about the quality of services, including 2 valid, have been administered. Thirty statements of administrative violations have been drawn up and delivered for failure to submit information to CRC.

♦ The consolidation of **the cable networks for distribution of radio and television programs** and provision of electronic communications and services continued in 2007. The restructuring of this market segment increased the number of services in the big towns, but not in the small settlements. 212 inspections have been carried out and 102 statements of administrative violations have been drawn up, including 96 for failure to submit information to CRC and 6 for breach of clauses of General License No. 201. Forty complaints by end-users about the legality of networks, about the quality and prices of provided services, and about copyright violations have been received over the year. On the grounds of the Memorandum for cooperation on the protection of copyright and neighbouring rights between the Ministry of Culture, CEM and CRC, all statements of findings, drawn up on basis of inspections on complaints concerned with the Law on Copyright and Neighbouring Rights, have been forwarded to the Ministry of Culture as the competent body.

♦ 339 inspections for compliance with the clauses of individual licenses for building up, maintenance and use of private mobile networks PMR have been carried out towards efficient use of the scarce frequency spectrum resource. Steps for withdrawal of licences and release of frequency channels have been taken on basis of established inefficient utilization of the scarce spectrum resource. Typical for this type of networks remain violations like non-compliance with the parameters, set out in the individual licenses, and harmful interference caused by defective radio equipment. Fifty-one complaints concerning harmful interference have been administered, including 9 valid. The inspections have lead to localization and removal of the sources of harmful interference. Three statements of violations have been drawn up for breaches of legal provision.

♦ The networks of the **fixed satellite radio service VSAT** have been inspected 13 times. Breaches of the legal provisions have not been established.

♦ 61 inspections of operators providing **electronic communications through cable networks for data transfer without the use of scarce resource** have been carried out. During the inspections of this type of networks, in particular LAN, carried out in 2007, Commission experts continued to notify the Directorate for National Construction Supervision (DNCS) of established breaches of the Structure of the Territory Act, sending the drawn up statements of findings to the competent body. 51 statements of administrative violations have been drawn up, including 46 for failure to submit information to CRC and 5 for unlawful operation.

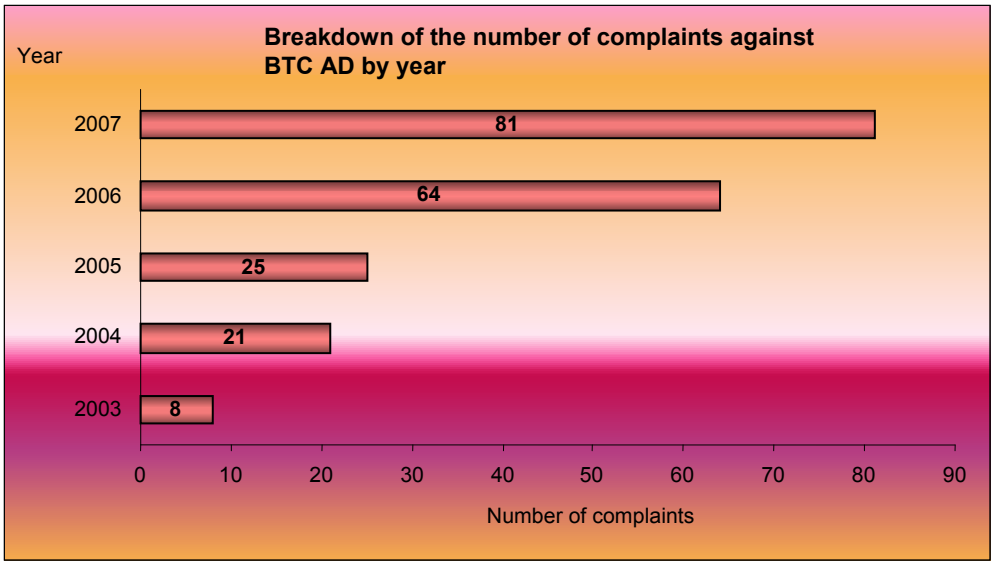
♦ Four statements of violations for failure to submit information to CRC have been drawn up and delivered to undertakings providing public electronic communications through wireless access.

♦ Thirty-two point-to-multipoint networks of the fixed radio service have been inspected. One statement of violations has been drawn up for established provision of electronic communications for private needs without the necessary authorization for use of individually assigned scarce resource.

♦ Four statements of findings for established failure of telecommunications networks and interruption of the provision of telecommunications, with constituent element of offence pursuant to Article 240 of TA, were drawn up in 2007 prior to the entry of the LEC into force.

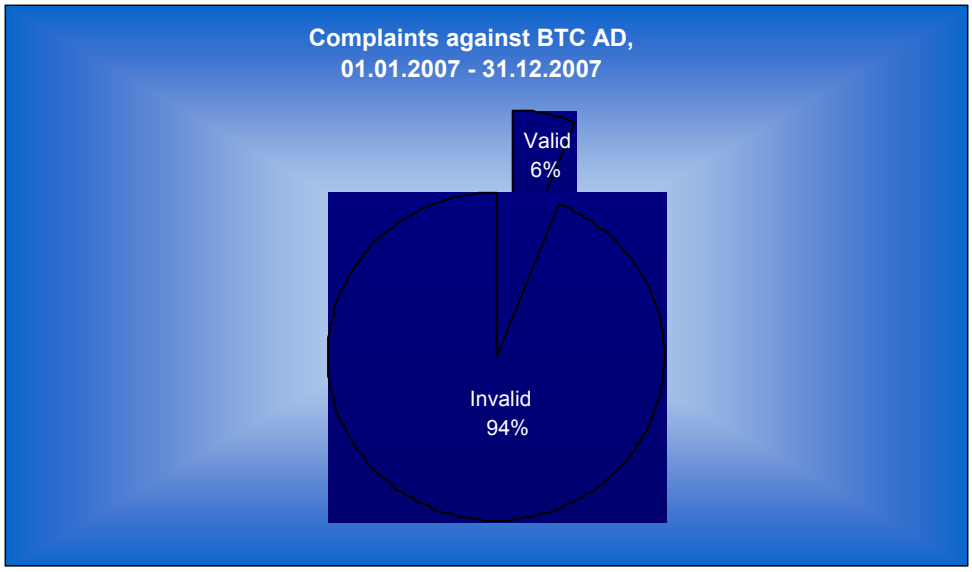
♦ Thirty-three inspections for compliance with license clauses and efficient use of scarce numbering resource have been carried out in respect of undertakings providing **fixed telephone service**. The services marketed by the alternative undertakings providing fixed telephone services are not yet in high demand from users. The numbers and addresses assigned to one undertaking have been withdrawn on basis of established violations. Planned inspections included measurement of the quality parameters of the service – the voice quality assessment factor and the one-way voice delay, and have established very high quality of the provided fixed telephone service.

♦ On the grounds of § 7 of the Transitional and Final Provisions of the LEC, the validity of the obligations **to provide universal service,** imposed on BTC AD by CRC Decision No. 1317/20.06.2006 whereby the undertaking is designated OSMP on the market of fixed telephone networks and provision of fixed telephone services, has been extended. In discharge of their obligations to provide control on the compliance with the requirements for universal service provision and to consider end-users' complaints, in 2007, CRC officials carried out 159 inspections of BTC AD and drew up 4 statements of administrative violations. The complaints against the incumbent, received over the reference period, are 81, including 5 valid and 76 groundless. Over the past few years, the number of complaints, submitted by BTC AD subscribers, is on a steady upward trend.



***Source*: CRC**

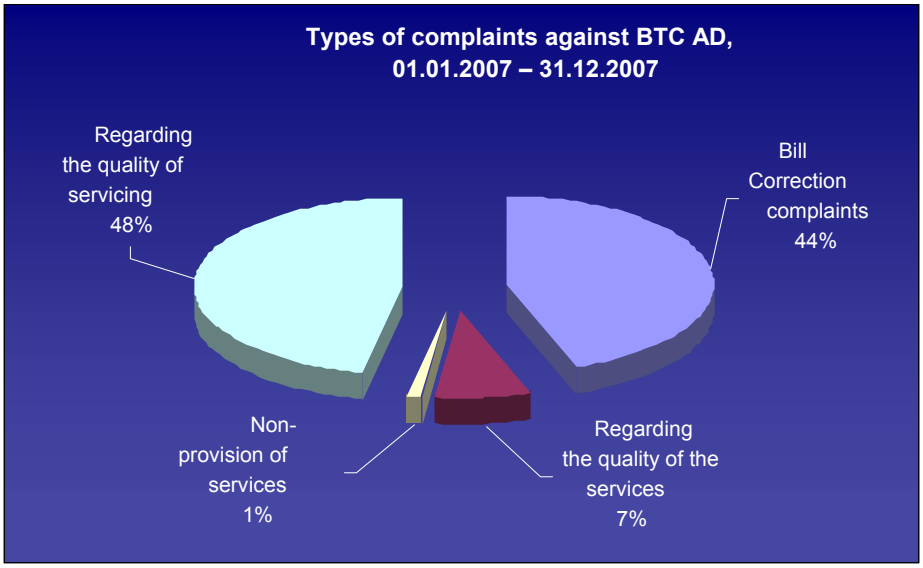
Figure 89



***Source*: CRC**

Figure 90

The highest share of complaints concerns the quality of servicing, followed by bill correction complaints. A large number of the invalid complaints contain representations or complaints only about contractual relations originating between the users and BTC AD in the provision of electronic communications. The problems, stated in these complaints, are of a civil nature and are regulated through civil channels, in accordance with the General Conditions of operators for users, and it is not within the terms of reference of CRC to deliver an opinion.

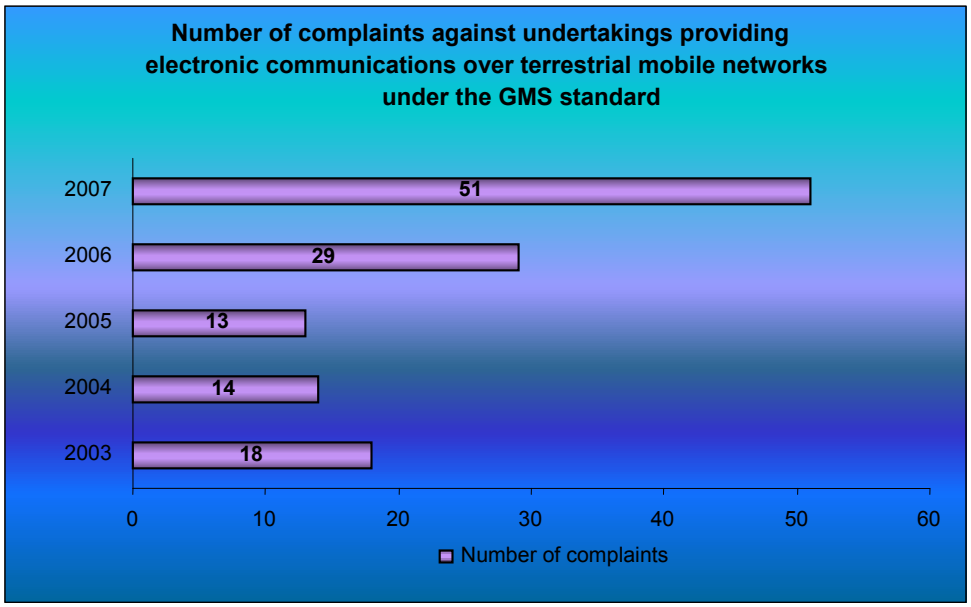


Source*: *CRC

Figure 91

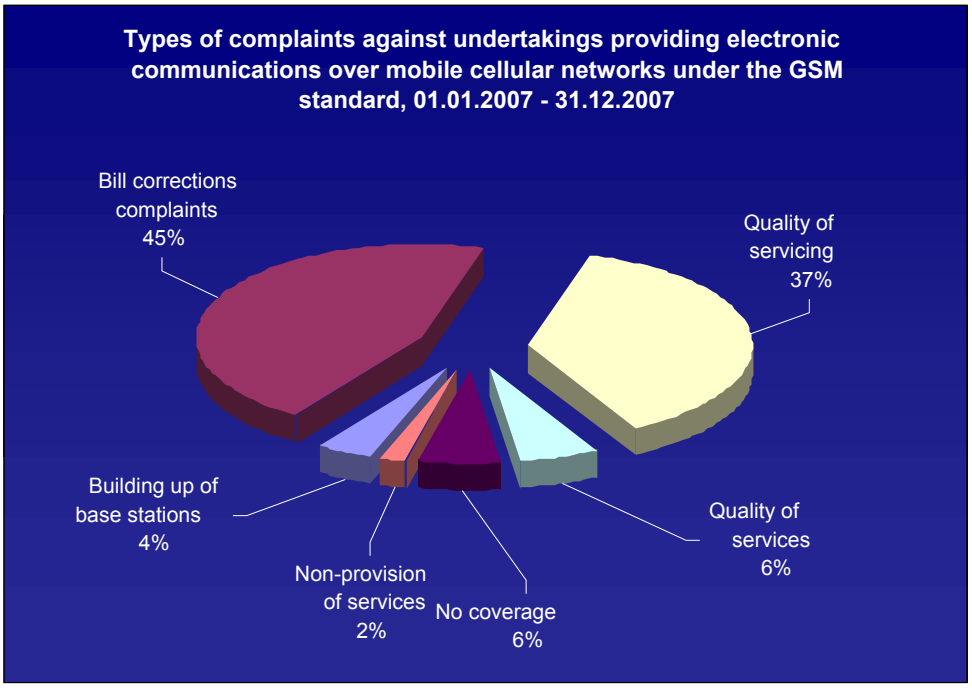
♦ Eighty-two inspections of the three operators providing **electronic communications through terrestrial mobile networks** under the GSM standard – MOBILTEL EAD, COSMO BULGARIA MOBILE EAD and BTC MOBILE EAD, have been carried out over the reference period, as well as 2 inspections of the operator of terrestrial mobile network under the NMT standard – RADIOTELECOMMUNICATION COMPANY EOOD. The Bulgarian mobile market is characterized by strong competition and rapid growth. The new services offered and the new technological platforms implemented have pushed up the number of subscribers but also the number of

submitted complaints. In 2007, the Commission received a total of 51 complaints. While the number of complaints is on a steady upward trend, the rate of grounded claims is comparatively low – only two in 2007. The highest number of subscribers complain about bill corrections, followed by the quality of servicing, and implementation of the regulation on roaming within the Community comes last. Complaints about the positioning of mobile operator facilities near residential buildings continued over the year. This is a highly sensitive issue for the people because of the poor awareness and the fear of the harmful effect of electromagnetic fields. All inspections involve strict examination for compliance with the national administrative procedure for putting into operation of the base stations mounted in settlements, and for availability of the relevant documents, issued by the Ministry of Health, the laboratory of the National Centre for Public Health Protection, and of the building permits and authorizations for putting into operation, issued by the Directorate for National Construction Supervision.



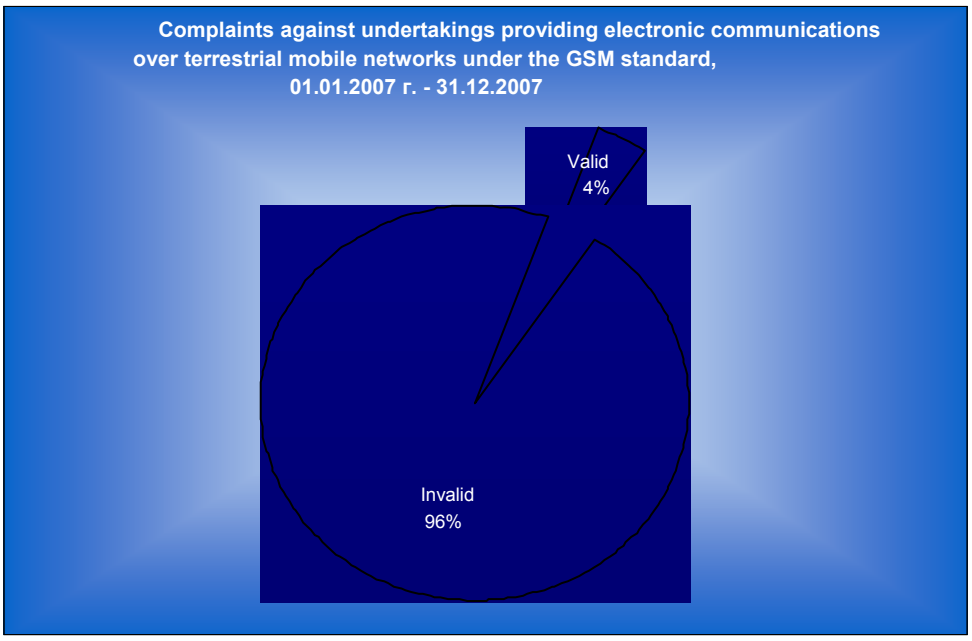
***Source**: CRC*

Figure 92



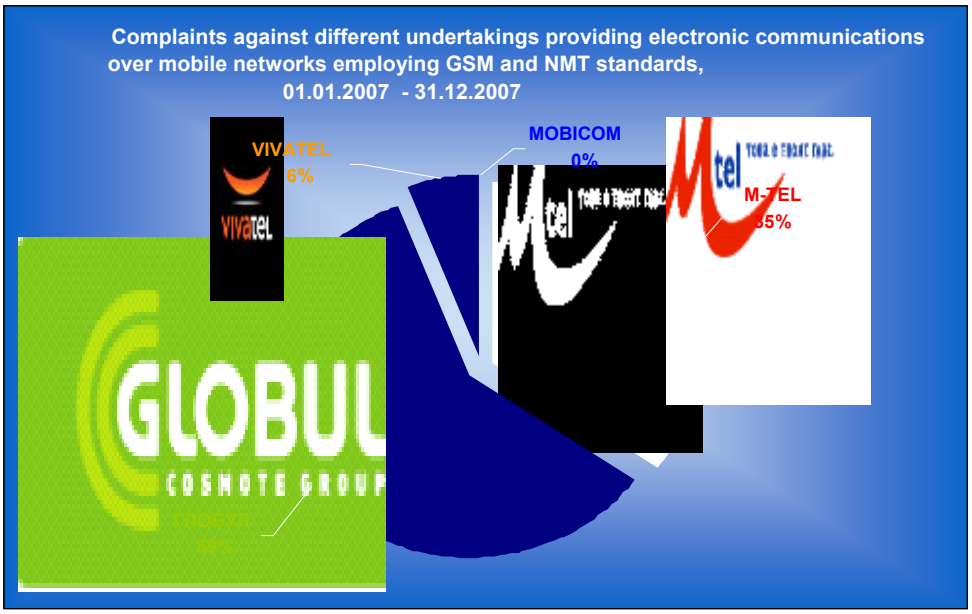
***Source**: CRC*

Figure 93



***Source**: CRC*

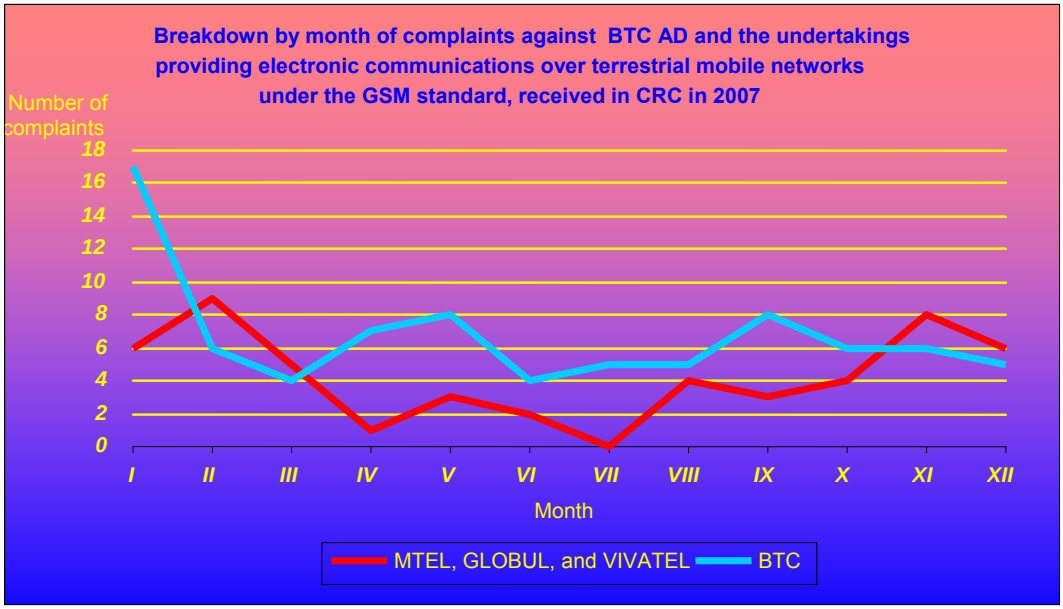
Figure 94



***Source**: CRC*

Figure 95

Complaints against RADIOTELECOMMUNICATION COMPANY EOOD were not filed in 2007. The figure below presents the breakdown by months of the ratio of the complaints filed by subscribers of the incumbent BTC AD to the cumulative complaints filed by subscribers of the three undertakings providing electronic communications through terrestrial mobile networks under the GSM standard.



***Source**: CRC*

Figure 96

♦ On the grounds of Chapter 13 of TA (repealed) and Chapter 21 of the LEC, and on basis of the results of conducted inspections, 250 statements of violations have been drawn up and delivered for the established 250 administrative violations.

♦ In relation to the **universal postal service,** provided by the main postal operator,, BULGARIAN POSTS EAD, 30 inspections for compliance with CRC Decision No. 703/2003 for adoption of "Standards for determining the density of the access points to the postal networks for provision of universal postal service so as to correspond in number and density to the needs of users" have been carried out over the year. The following branches have been inspected: SOFIA POSTAL COMMUNICATIONS Branch, Blagoevgrad Branch, Kyustendil Branch, Pazardzhik Branch, Smolyan Branch, Varna Branch, V. Tarnovo Branch, Vratsa Branch, Montana Branch, and Targovishte Branch. The inspection has established that the 136 post offices on the territory of the above branches of BP EAD satisfy the main requirements set out in the CRC decision – the access points are matched to user needs and include post offices, postal agencies and other service forms, in accordance with the standard. The requirement of item 5.1. for minimizing the time for provision of universal service to all users has been complied with. Uniform principles for provision of universal service are valid and customers are not discriminated when using the service.

♦ A total of 7 inspections have been carried out in relation to received warnings and complaints about the provision of universal service by the principal postal operator and they have not established any breaches of PSA or of the clauses of the individual license issued to BP EAD.

♦ 17 inspections have been carried out on basis of CRC's protocol decision for the provision in cooperation with BTC of fixed voice services through public telephone boots. A statement of administrative violation has been drawn up for an established irregularity.

♦ Another 12 inspections of the licensed operators providing **parts of the universal postal service "cash transfers"** have been carried out and one operator has been sanctioned for the breach of a clause of its individual license. Typical of the new operators on the marked is that they build up their networks on a phased basis and there is some delay of services. One statement of violations has been drawn up and delivered to a licensed operator for failure to comply with the license clauses.

♦ Operators registered for provision of **non-universal postal services** have been inspected 24 times**.** Violations have not been established.

♦ Seven complaints about provision of UPS by operators of non-universal postal services have been administered. Breaches of PSA have not been established.

♦ One breach of PSA has been established and administrative-penal liability has been imputed on basis of a drawn-up statement of violations.

♦ On basis of the approved schedule for inspection of the **certification services providers** (CSP) registered under the Law for the Electronic Document and the Electronic Signature (LEDES) and in accordance with the Methodology for control of CSP, approved by CRC, INFONOTARY EAD and SPECTRUM EAD have been subjected to joint inspections for compliance with LEDES and its implementing regulations. Five statements of findings have been drawn up. Minor omissions and irregularities have been registered in the activity of the two CSP and notification letters for removal of irregularities within a specified period have been sent.

5.3. National Radio Frequency Spectrum Monitoring System

The activities in respect of the radiofrequency spectrum have been carried out along the following lines:

♦ Analysis of the available and the required technological hardware and software for provision of control;

♦ Technical support and introduction of the measuring equipment for the implemented National Radio Frequency Spectrum Monitoring System;

♦ Technical support of the specialized technological equipment (fixed, mobile, and portable monitoring stations, portable measuring equipment, LANs и WANs of the National Monitoring System) – configuration, adjustment, administration;

♦ Methodological assistance for carrying out of the operational measurement tasks for RFS control and communications inspection;

♦ Participation in the drafting of opinions on operators' methodologies;

♦ Activities for the building up of the National System for Monitoring of the Radiofrequency Spectrum (RFS) for Civil Needs.

NMS is being built on a regional basis and aims at putting in place an integrated monitoring system servicing the whole national territory. The regional principle is called for by the need to provide effective monitoring of the VHF/UHF ranges, which are used most intensively for modern networks and have coverage, restricted by the requirement for direct (line-of-sight) visibility. Towards ensuring countrywide control, there is a need to provide coverage by a sufficient number of fixed monitoring stations and/or by a large number of mobile monitoring stations. Towards system improvement, taking account of the diverse topography of the country, mainly unattended fixed stations will be built up.

Following an open procedure according to the Law for Public Procurement (LPP) and on the grounds of Article 93, Paragraph 1, in relation to Article 93, Paragraph 1 of LPP and CRC Decision No. 1391/22.11.2007, a framework agreement for **Supply of equipment for 8 unattended fixed stations for radio monitoring in the range 20 MHz - 3.0 GHz in the period 2007 – 2010** was concluded**.** The unattended fixed stations will be equipped with modern monitoring receivers and measurement antennas for reception of signals with horizontal and vertical polarization. The fixed stations will be equipped also with direction-finding systems for localization of the radio transmitters. Proposed equipment will be used to carry out radio monitoring in 8 (eight) new regions, whereby the CRC capacity for effective control of the radiofrequency spectrum up to 3.0 GHz will be enhanced. The unattended fixed stations will measure the electromagnetic field, localize and identify unlawful radio emitters, and measure the occupation of radio channels in accordance with the recommendations of the International Telecommunications Union (ITU-R).

An open procedure according to LPP was used also for the supply of a mobile radio monitoring station for the 20 MHz – 3.0 GHz range. It is equipped with a modern monitoring receiver with a direction-finding system for localization of the radio transmitters. The mobile stations will be used to take measurements outside the coverage of the fixed station of CRC's Regional Unit in Plovdiv. This will make it possible to monitor the RFS for civil needs in large areas of Southern Bulgaria, whereby Commission's capacity for control of the radiofrequency spectrum will be enhanced.

The measuring equipment, supplied for the mobile radio monitoring station, meets the high technical requirements set out in the recommendations of the International Telecommunications Union (ITU-R).

Selection of the eight locations for building of the unattended monitoring stations continued in 2007, following the relevant studies, measurements and analysis. The locations determined by CRC are under legalization. Two unattended RFS control stations will be built up and put into operation in 2008.

At end of 2007, CRC employs the following operational technological measurement systems in the discharge of its control functions:

- 7 fixed stations (4 attended and 3 unattended), connected to the network of the National Monitoring System;
- 9 mobile stations (8 for monitoring up to 3.0 GHz and 1 for measurement of GSM networks/digital television DVB-T);
- 2 portable stations for the 1 – 26.5 GHz frequency range;
- 19 portable measuring devices for RFS control.

6. Administrative-penal activity of CRC

6.1. Analysis of the administrative-penal activity

In 2007, the administrative-penal activity of CRC included control for fulfilment of the clauses of individual and general licenses by the telecommunications operators (undertakings providing electronic communications, according to the LEC), control for compliance with the regimes for provision of electronic communications – notification and authorization, inspections on basis of complaints by citizens and operators about breaches of the LEC, and termination of the unlawful provision of different telecommunications activities.

Critical have become the problems of provision of electronic communications through networks for terrestrial broadcasting of radio signals without authorization by CRC, and of failure to submit the information requested by the Commission for the discharge of its regulatory functions. For the termination of the unlawful provision of electronic communications through networks for terrestrial broadcasting of radio signals in the town of Montana, CRC acted jointly with the Regional Police Directorate in Montana and the General Directorate for Combating Organized Crime of the Ministry of Interior.

6.2. Penal provisions issued

171 penal provisions were issued in 2007, including 2 for breaches of the Postal Services Act (PSA), and the other – for administrative violations under TA and the LEC. It has to be noted that by December the Chairperson of CRC had issued **11 penal provisions.** The highest number of administrative violations under TA are with constituent elements of offence under Article 234, Paragraphs 2 and 4 of TA. Constituent elements of offence implying the most rigorous sanctions set out in TA – those of Article 233, have been applied. In one of the cases with constituent elements of offence under Article 233 of TA, a property sanction in the amount of BGN 70 000 (seventy thousand leva) was imposed, and in the other – a property sanction in the amount of BGN 180 000 (one hundred and eighty thousand leva).

Over the year, the chairperson of the Commission issued **84 resolutions** for dismissal of administrative-penal action.

The number of administrative violations consisting in non-compliance with the clauses of individual/general licenses is on a downward trend over the year, whereas the cases of non-submission of information to CRC on operator's activity in the preceding year have tripled in number.

Considering the collection of fines and property sanctions, imposed with penal provisions for administrative violations under TA, it has to be noted that the operators, who had failed to pay voluntarily the amounts due, were sent notices for voluntary compliance, giving them 7 days to make the due payment. Where the due amounts were not paid within the specified period, the files of the enacted penalty provisions were duly sent to the State Receivables Collection Agency for compulsory collection.

7. Procedural representation

7.1. Before the Supreme Administrative Court

In 2007, Commission's legal experts were involved in the preparation and procedural representation of 50 cases before the Supreme Administrative Court (SAC), which can be generally classified by subject matter as follows:

- Administrative actions against individual administrative acts of CRC and of the Chairperson of CRC – 40 actions have been taken;

- Administrative actions against CRC statements of established public state receivables – 10 actions have been taken.

7.2. Before district and administrative courts

The procedural representation before district and administrative courts was focused on determining the cases of appeal before the two instances of penal provisions, issued by the Chairperson of CRC in 2006. Only one administrative-penal action was brought in 2007 in relation to a penal provision issued by the Chairperson of CRC.

There were on average two appearances in sittings of different district and administrative courts across the country per action brought against penal provisions issued by the Chairperson of CRC.

Respective appeals have been brought in the court of cassation against rulings whereby the court of first instance reverses penal provisions.

8. International activity

CRC is actively involved in the work of the main international organizations, institutions, and structures (ERG, IRG, EC, ITU), the Universal Postal Union (UPU), the European Conference of Postal and Telecommunications Administrations, and ETSI, working on the issues of the telecommunications and the postal sectors, and takes part in international projects and programs in the field.

The main purpose of the Commission was to achieve maximum synchronization of the Bulgarian regulatory system with that of the EU countries, and to enhance regulator's capacity for adequate implementation of the EU Regulatory Framework, fully reflected in the new LEC.

Considering the international activity, there was also some structural transition – the International Relations and Projects Department was transformed into International Activity and Communication with the European Commission Directorate.

International cooperation

2007 was a year full of significant international events, in which the Commission and representatives of the administration took part.

CRC experts were included in the working group for preparing the position of the Republic of Bulgaria and took part in the World Radiocommunication Conference (WRC-07) of ITU.

Management representatives and experts took part in the 5th annual Francophone Network of Telecommunications Regulation (FRATEL) Meeting, held in November in Montreux on an invitation by the Swiss regulator. The Commission presented its experience in the implementation of regulatory mechanisms for promoting the access of an increasingly higher number of users to electronic communications services.

In October, CRC took part in the 42nd regular meeting of the Standing Committee on Transfrontier Television, which took place in Strasbourg, France.[96]

[96] According to the Council of Ministers Decision No. 81/12.02.1999, the Commission is the competent body under Article 19 of the European Convention on Transfrontier Television.

In November, the regulator participated within the Bulgarian presidency in the Final Conference of the *Great-IST* Project of the Central European Initiative. The purpose of the project which covers 11 countries: Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Montenegro, Romania, Serbia, and Ukraine, is to achieve harmonization of the national information society policies of the CEI countries with the European regulatory framework.

The first National Forum on the condition and development of the information and telecommunications technology in Bulgaria was held within BAIT Expo. CRC presented the regulatory policy in the electronic communications sector, the practical possibilities for successful transition from terrestrial analogue to terrestrial digital television broadcasting, and the challenges of number portability. Considering the success of the event and the wide interest it enjoyed, it was decided for the forum to be held once a year in order to provide a platform for discussions on topical information and communications technology issues, and to expand its format to include representatives of the SEE countries.

A joint declaration of cooperation was signed with the Egyptian regulator in March. It aims to promote the exchange of information on the experience of the two institutions in telecommunications market liberalization, on the regulatory framework of the authorization regime and interconnection, and on issues concerning the cooperation between the organizations of the two countries.

European Union

From the day, on which the Republic of Bulgaria became a full member of the European Union, the Communications Regulation Commission is a full member of ERG and IRG.

ERG and IRG have been set up as groups for cooperation and coordination between the national regulatory authorities (NRAs) and for communication between NRAs and the European Commission, in order to promote the development of the internal market for electronic communications networks and services, and to achieve consistent application, in all Member States, of the new regulatory framework.

IRG was set up in 1997 as a group to share experience among NRAs. In contrast to ERG, it is an informal forum of NRA, which discusses issues without the attendance of EC.

ERG was set up on 30.07.2002 by a decision of the European Commission, with the role to advise and assist the European Commission in consolidating the internal market for electronic communications. In that light, EC participates in the meetings and working groups of ERG.

In 2007, the work of ERG and IRG was organized in the form of plenary sessions, Contact Network meetings, and Project Teams, to which the Commission sent its representatives.

In 2007, CRC joined in the work of the EC Communications Committee (COCOM). The COCOM was set up in 2002 in the context of the new regulatory framework with the task to assist the EC in carrying out its executive powers under Regulatory Framework 2002 and the Regulation on the .eu Top Level Domain. The COCOM exercises its function through advisory and regulatory procedures in accordance with the Council Comitology Decision. It furthermore provides a platform for the exchange of information on market developments and regulatory activities. The main topics discussed at the COCOM meetings in 2007 included review of the regulatory framework, mobile satellite services, and the new Recommendation on Markets.

The Commission kept up with and took part in the consultation procedures within ERG, IRG, and COCOM on the preparation of the new Recommendation on relevant product and service markets in the electronic communications sector. The framework directive

requires the EC to review regularly the recommendation on relevant markets it adopts. In consequence of the public consultations on amendment of the Recommendation of 11.02.2003 and of the positions presented by I/ERG and NRAs, a new Recommendation on relevant product and service markets within the electronic communications sector took effect on 17.12.2007. It aims to define relevant markets, susceptible to ex-ante regulation, in accordance with the principles of competition law and the framework directive. In comparison with the 2003 Recommendation, the markets are reduced to seven and the criterion for cutting down their number is the established level of effective competition on the markets, which have been removed from the list.

The mission of EC representatives in relation to the 13th report on the condition of the European electronic communications market was prepared in October within the EC monitoring process. Detailed information about the state of play on the Bulgarian telecommunications market was submitted and duly reflected in the EC report.

CRC furthermore took active part in the work of CEPT, at high level (CEPT Assembly, meetings of the two committees – on electronic communications (ECC) and on postal regulation (CERP)), as well as in the expert working groups concerned with the practical implementation of the working programs.

Being the national standards organization at ETSI, the Commission took part in the work of institution's general assembly, and in the adoption of respective decisions.

Projects and programs with funding from the EU

The projects/programs provide assistance to the administration in the field of communications, taking due regard of the European legal and regulatory norms, and technological convergence.

Prepared was the final report under contract BG2004/IB/TE/01/UE/TL "Regulatory implications of the introduction of New Generation Networks and system security issues of Electronic Signature", which gives account of attained objectives and positive results and indicators. The contract has made real input to the development of effective regulatory mechanisms for the electronic communications networks, based on new technologies, and to the advancement of system security and certification services.

The regular reports in relation to CRC's participation in the work of the Sectoral Monitoring Sub-committee on Energy and Telecommunications have been prepared and submitted.

The project documents for twinning light project BG2005/IB/TE/01/UE/TL "Assistance in the transition from analogue to digital terrestrial television" have been successfully elaborated and defended. The institutional partner has been selected – the State Secretariat for telecommunications and information society to the Ministry of Industry, Tourism and Trade in Spain, with effective contract starting date on 30 November 2007.

The ambitious project objective is to develop, in line with the acquis, effective regulatory approaches in relation to the gradual transition from analogue to digital broadcasting, which, in turn, promotes the development of competitive market environment in the field of digital terrestrial television networks and services.

Addressing key regulatory challenges, the contract envisages maximum input to the exchange of good practices of transition from terrestrial analogue to terrestrial digital broadcasting.

Other applications/documents have been developed with a view to make use of all possible mechanisms (including along TAIEX) for new projects scheduled for implementation at a later stage.

VI. ADMINISTRATION AND INFORMATION SERVICES

1. Human resources

In order to be effective in the discharge of its functions and to achieve its strategic goals, the Communications Regulation Commission strives to work with a team of competent and qualified specialists showing high working performance.

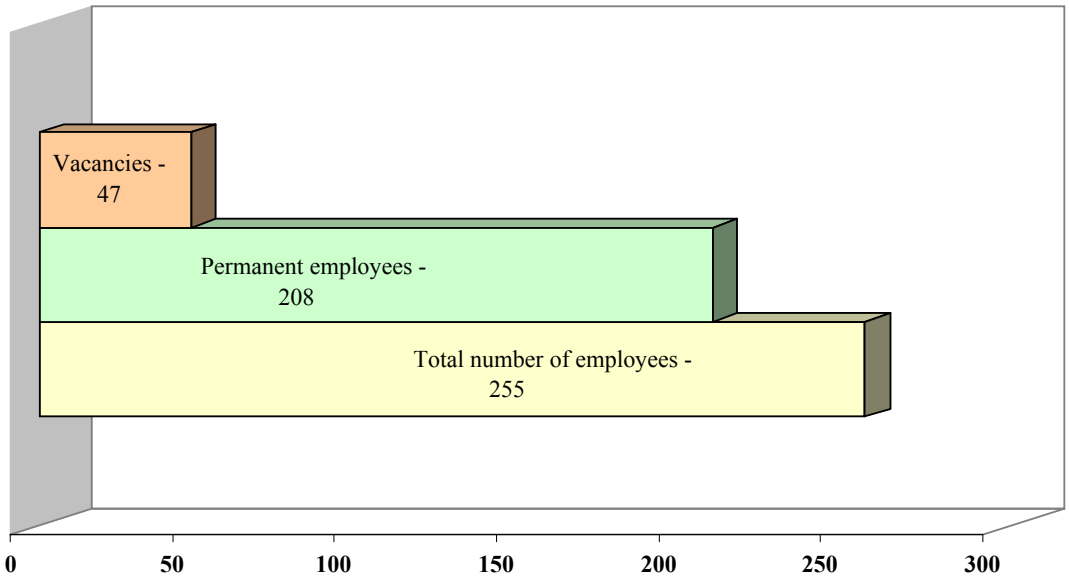
In 2007, total permanent employees of the regulator are 208, including 90 men and 118 women.

The average age of the employees is 42 years. 186 of them have university degrees.

In accordance with the adopted LEC and the new functions deriving therefrom for the Commission, in 2007 the number of employees was increased by 30 permanent positions. In that light, new Regulation on the structure, activity and organization of work at CRC and on the structure of its administration have been approved, with effect from 01.09.2007.

Total number of employees: 255

Permanent employees: 208. Vacancies: 47.

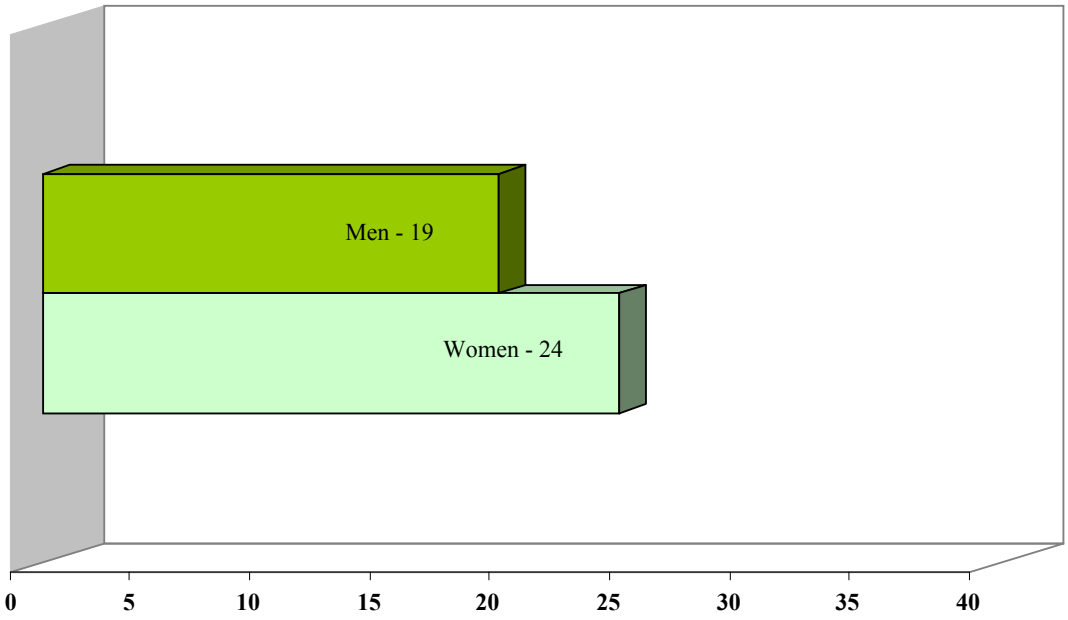


***Source**: CRC*

Figure 97

Personnel on managerial positions - 43, including 19 men and 24 women.

Men: 19; 44.19 %.
Women: 24; 55.81 %.

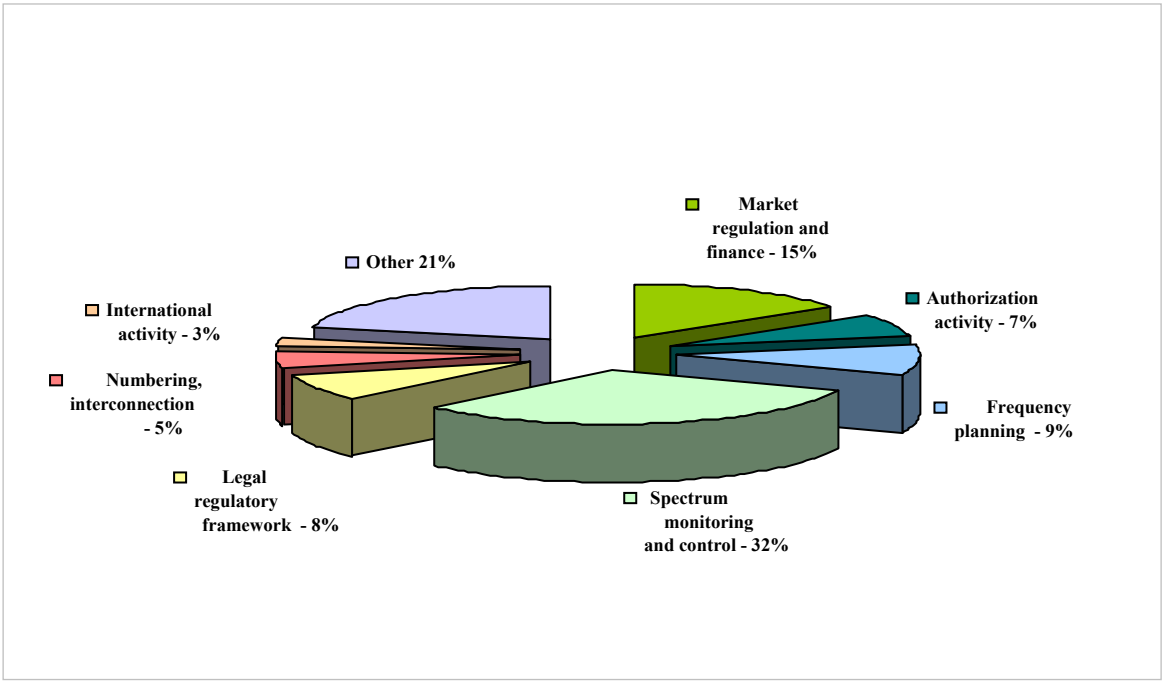


***Source**: CRC*

Figure 98

Functional structure and number of personnel by type of activity:

- Market regulation and finance 32
- Authorization activity 15
- Frequency planning 18
- Spectrum monitoring and control 67
- Legal and regulatory framework 16
- Numbering, interconnection 11
- International activity and communication with the EC 6
- Other 43



***Source**: CRC*

Figure 99

In line with the requirements set out in the Ordinance on the structure and organization of wages, new Internal rules on the organization of salaries, on compulsory and negotiated additional labour pay and on additional paid annual leave in the Commission and its administration have been drafted and adopted.

The Internal rules on the terms and procedure of selection, hiring and dismissal of employees and on changes in the administrative structure were updated in 2007. 14 new employees joined the team on basis of announced and organized competitions.

The internship program, which has won recognition as good practice and makes it possible to recruit young specialists, who, having gone in the specifics of work and the working environment, are interested to work at CRC, was organized again in 2007.

On basis of Commission's own system for remuneration of the personnel and assessment of the work performance, the employees received incentive bonuses for high performance results.

In line with the Government Income Policy, the basic salaries were raised, taking into account the results of the annual appraisal of employees.

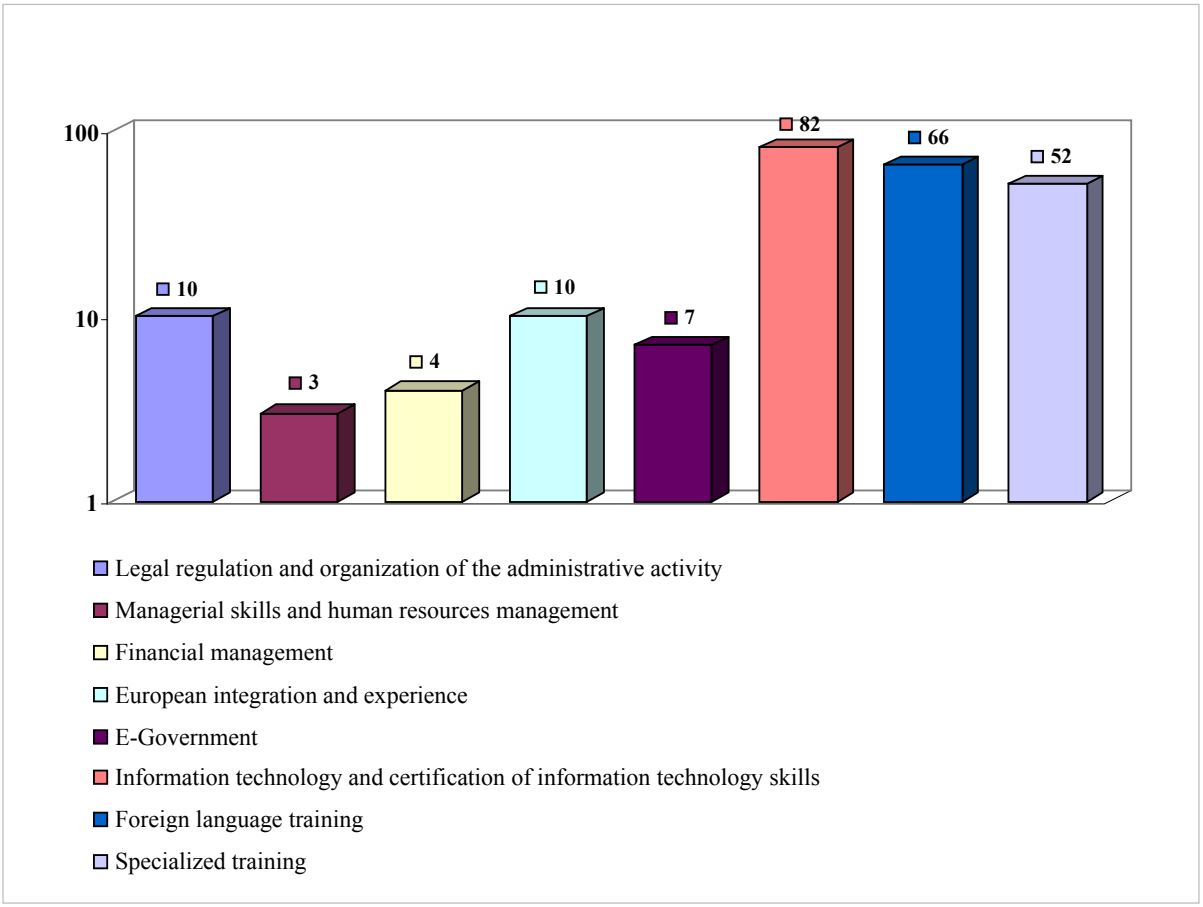
An administrative seminar on LEC-related topics was organized in 2007.

Personnel training:

The number of employees, who received training, is 234.
Areas of training and number of participants:

- Legal regulations and organization of the administrative activity – 10
- Managerial skills and human resources management – 3
- Financial management – 4
- European integration and experience – 10
- E-Government – 7
- Information technology and certification of information technology skills – 82

- Foreign language training – 66
- Specialized training – 52



***Source**: CRC*

Figure 100

2. Information services

The main activities, related to the development of information services and technology in CRC, are exemplified by projects implemented in the following areas:

2.1. Implementation, analysis and development of information systems

- Implementation, maintenance, and development of a new web portal for information, communication and feedback with citizens and the business.
- Maintenance and functional development of a web-based document-flow system for 200 users, functioning on the corporate DBMS – *Oracle*. The information system is servicing the entire clerk activity, the documents circulation, the control on decisions, resolutions and terms within CRC.
- Start up of a project for the implementation of a Licensing and Registers information system, in relation to the new obligations of the Commission under the LEC. The building up of this system will facilitate the management of the information processes for maintenance of the registers and provision of public access to part of the information, contained therein, over Internet.

- Analysis, development and maintenance of other basic and supporting information systems: specialized telecommunications software; technological software, used by the specialized CRC directorates; legal information systems; accounting systems; storehouse and salary systems etc.

2.2. Protection of data and electronic information

- Maintenance of an electronic protection system of the workplaces with one-time authentication through smart cards, card readers and specialized software;
- Development and maintenance of a corporate antivirus protection *firewall* and *antispam*.
- Maintenance and development of the integrated system for control of the access to and the working time in the administrative building of CRC at 6, Gurko Street.

2.3. Activities, related to the participation of the organization in the Bulgarian e-Government projects

- Registration and submission of up-to-date information about the activities, related to the IT servicing of the CRC administration, to the Information System for Elaboration of Reports on the Condition of the Administration and the System for Self-Assessment and Reporting of Administrative Servicing.
- Active participation in inter- and intra-institutional working groups and in commissions, training programs and seminars on *e-Government* projects.

2.4. Maintenance and administration of a system for issuance of universal electronic signature of CRC, in accordance with the provisions of LEDES.

2.5. Technical and communications maintenance and support:

- Reengineering and building up of new segments of a structural cable system of the Commission. Maintenance and monitoring of all available communications and network equipment and structural cabling.
- Purchase, installation, putting into operation, and service of computer equipment and technical devices supporting the work of the regulator.

VII. BUDGET

CRC budget execution, assignment of 2007 revenues and expenditure.

By the State Budget Act, the Ministry of Finance has budgeted CRC revenues at BGN 35 050 thousand. In 2007, the revenues to the budget of the Commission are BGN 55 127 thousand, which means that there is a surplus of 57% on the revenue side. The execution of revenues is given below:

Table 24

(BGN'000)

Types of revenues	Amount	Share, %
1. Own revenues approved with the CRC 2007 budget	**35 050**	**100**
2. Revenues accounted for in 2007, including	**55 127**	**100**
One-off fee for issuing of authorization	9 093	16.49
Annual supervision fee	9 055	16.43
Fee for use and temporary use of scarce radiofrequency spectrum resource	28 476	51.66
Fee for use of geostationary orbit positions	81	0.15
Fee for use of scarce resource – numbers from the national numbering plan	6 537	11.86
Fee for use of individually assigned scarce resource on basis of a tender	1 383	2.51
One-off fee for administrative services	240	0.44
Fines	181	0.33
Interest payable	3	
Tender documents	8	
Initial licensing fee and one-off fee for registration under the PSA	70	0.13

The assignment of the CRC revenues is regulated in Article 148 of the LEC and Article 64, Paragraph 1 of the Postal Services Act. The revenues of CRC are assigned as follows:

Table 25

(BGN'000)

No.	Line of assignment	Deduction per item	Share %
А.	**Total revenues to the national budget, including**	**8 303**	**15.06**
	Fee for use and temporary use of scarce radiofrequency spectrum resource	7 119	85.74
	Fee for use of geostationary orbit positions	57	0.69
	Fee for use of individually assigned scarce resource on basis of a tender	968	11.65
	Fines	145	1.75
	Initial licensing fee and one-off fee for registration under the PSA	14	0.17
Б.	**Revenues to SAITC, including**	**10 364**	**18.80**
	Fee for use and temporary use of scarce radiofrequency spectrum resource	9 967	96.17
	Fee for use of geostationary orbit positions	20	0.19
	Fee for use of individually assigned scarce resource on basis of a tender	346	3.34
	Initial licensing fee and one-off fee for registration under the PSA	31	0.30

B.	**Revenues to the budget of CRC, including**	**36 460**	**66.14**
	One-off fee for issuing of authorization	9 093	24.94
	Annual supervision fee	9 055	24.84
	Fee for use and temporary use of scarce radiofrequency spectrum resource	11 390	31.24
	Fee for use of geostationary orbit positions	4	
	Fee for use of scarce resource – numbers from the national numbering plan	6 537	17.94
	Fee for use of individually assigned scarce resource on basis of a tender	69	0.19
	One-off fee for administrative services	240	0.66
	Fines	36	0.10
	Interest payable	3	
	Tender documents	8	
	Initial licensing fee and one-off fee for registration under the PSA	25	0.08
	Total deductions	**55 127**	**100**

2. In 2007, CRC has the following expenditures:

Table 26

(thousand BGN)

Types of expenditures	Amount	Share %
Salaries	3 112	42.2
Social security payments	578	7.8
Other remunerations and payments	378	5.1
Operational costs	1 714	23.2
Membership fee	57	0.8
Capital expenditure	1 537	20.9
Total expenditure	**7 376**	**100**

II. BALANCE SHEET

Communications Regulation Commission	BULSTAT	BG121747864	EBC CODE	4300	Appendix to item1.1
Compiler (undertaking, division)					
Sofia, 6, Gurko Street	e-mail	smadjarova@crc.bg	telephones:	949-23-32	0

BALANCE SHEET of Communications Regulation Commission **as of** *31.12.2007* /total/ *(thousand BGN*

Assets

Assets

Sections, groups, items	Code	I. Accounting group *"BUDGETS AND BUDGET ACCOUNTS"*		II.Accounting group "OFF-BUDGET ACCOUNTS AND FUNDS"		III. Accounting group "OTHER ACCOUNTS AND ACTIVIT		IV. TOTAL	
		Opening balance	Closing balance	*Opening balance*	Closing balance	*Opening balance*	Closing balance	*Opening balance*	Closing balance
a	б	1	2	3	4	5	6	7	8
A. NON-FINANCIAL ASSETS									
I. Tangible fixed assets									
1. Buildings	0011	4 985	**5 551**	0	**0**	0	**0**	4 985	**5 551**
2. Computers, vehicles, equipment	0012	21 056	**22 875**	0	**0**	0	**0**	21 056	**22 875**
3. Economic stock and other fixed tangible assets	0013	794	**852**	0	**0**	0	**0**	794	**852**
4. Tangible fixed assets under acquisition	0014	0	**0**	0	**0**	0	**0**	0	**0**
Total group I:	**0010**	26 835	**29 278**	0	**0**	0	**0**	26 835	**29 278**
II. Intangible fixed assets	**0020**	2 271	**2 306**	0	**0**	0	**0**	2 271	**2 306**
III. Current tangible assets									
1. Materials, production, goods, production in progress	0031	40	**51**	0	**0**	0	**0**	40	**51**
2. Other current tangible assets	0032	0	**0**	0	**0**	0	**0**	0	**0**
Total group III :	**0030**	40	**51**	0	**0**	0	**0**	40	**51**
IV. Deferred expenses	**0040**	0	**0**	0	**0**	0	**0**	0	**0**
Total section A:	**0100**	29 146	**31 635**	0	**0**	0	**0**	29 146	**31 635**
B. FINANCIAL ASSETS									
I. Participation, shares and other securities									
1. Participation and shares	0051	0	**0**	0	**0**	0	**0**	0	**0**
2. Government/municipal securities	0052	0	**0**	0	**0**	0	**0**	0	**0**
3. Bonds and other securities	0053	0	**0**	0	**0**	0	**0**	0	**0**
Total group I:	**0050**	0	**0**	0	**0**	0	**0**	0	**0**
II. Amounts receivable on borrowings									
1. Long-term receivables on loans	0061	0	**0**	0	**0**	0	**0**	0	**0**
2. Short-term receivables on loans	0062	0	**0**	0	**0**	0	**0**	0	**0**
Total group II:	**0060**	0	**0**	0	**0**	0	**0**	0	**0**
III. Other receivables									
1. Public administrative/municipal receivables	0071	0	**0**	0	**0**	0	**0**	0	**0**
2. Receivables from clients	0072	0	**0**	0	**0**	0	**0**	0	**0**
3. Advances paid	0073	2 003	**976**	0	**0**	0	**0**	2 003	**976**
4. Accountable persons	0074	0	**0**	0	**0**	0	**0**	0	**0**
5. Receivables on loans to/from other state budget organizations	0075	0	**0**	0	**0**	0	**0**	0	**0**
6. Other receivables	0076	30	**13**	0	**0**	0	**0**	30	**13**
Total group III:	**0070**	2 033	**989**	0	**0**	0	**0**	2 033	**989**
IV. Cash									
1. Cash in hand	0081	0	**0**	0	**0**	0	**0**	0	**0**
2. Cash at banks	0082	0	**6**	0	**0**	467	**135**	467	**141**
Total group IV:	**0080**	0	**6**	0	**0**	467	**135**	467	**141**
Total section B:	**0200**	2 033	**995**	0	**0**	467	**135**	2 500	**1 130**
T o t a l a s s e t s	**0300**	31 179	**32 630**	0	**0**	467	**135**	31 646	**32 765**
C. OFF-BALANCE SHEET ASSETS	**0350**	865	**941**	0	**0**	0	**0**	865	**941**

Liabilities

Sections, groups, items	Code	I. Accounting group *"BUDGET AND BUDGET ACCOUNTS"*		II.Accounting group "OFF-BUDGET ACCOUNTS AND FUNDS"		III. Accounting group OTHER ACCOUNTS AND ACTIVITIES		TOTAL	
		Opening balance	Closing balance	*Opening balance*	Closing balance	*Opening balance*	Closing balance	*Opening balance*	Closing balance
a	б	1	2	3	4	5	6	7	8
A. CAPITAL IN STATE BUDGET ORGANIZATIONS									
1. Capital available	0401	10 959	**10 959**	0	**0**	0	**0**	10 959	**10 959**
2. Increase/decrease in net assets from previous years	0402	17 533	**19 947**	0	**0**	0	**0**	17 533	**19 947**
3. Increase/decrese in net assets for the period	0403	2 413	**1 407**	0	**0**	0	**0**	2 413	**1 407**
Total section A:	**0400**	30 905	**32 313**	0	**0**	0	**0**	30 905	**32 313**
B. LIABILITIES AND DEFERRED INCOME									
I. Long-term liabilities									
1. Long-term liabilities from issuance of securities	0511	0	**0**	0	**0**	0	**0**	0	**0**
2. Long-term liabilities on loans received	0512	0	**0**	0	**0**	0	**0**	0	**0**
3. Other long-term liabilities	0513	0	**0**	0	**0**	0	**0**	0	**0**
Total group I:	**0510**	0	**0**	0	**0**	0	**0**	0	**0**
II. Short-term liabilities									
1. Short-term liabilities on loans and issuance of securities	0521	0	**0**	0	**0**	0	**0**	0	**0**
2. Liabilities to suppliers	0522	0	**0**	0	**0**	0	**0**	0	**0**
3. Advances received	0523	0	**0**	0	**0**	0	**0**	0	**0**
4. Amounts owed for pensions, benefits, grants, subsidies	0524	0	**0**	0	**0**	0	**0**	0	**0**
5. Amounts payable for taxes, custom duties and charges	0525	0	**0**	0	**0**	0	**0**	0	**0**
6. Social security contributions, health insurance (NHIF), additional	0526	0	**0**	0	**0**	0	**0**	0	**0**
7. Amounts payable to personnel	0527	0	**0**	0	**0**	0	**0**	0	**0**
8. Liabilities incurred on loans to/from other state budget organizations	0528	0	**0**	0	**0**	0	**0**	0	**0**
9. Other short-term liabilities	0529	68	**44**	0	**0**	467	**135**	535	**179**
Total group II:	**0520**	68	**44**	0	**0**	467	**135**	535	**179**
III. Provisions and deferred income									
1. Provisions for liabilities	0531	206	**272**	0	**0**	0	**0**	206	**272**
2. Deferred income	0532	0	**0**	0	**0**	0	**0**	0	**0**
Total group III:	**0530**	206	**272**	0	**0**	0	**0**	206	**272**
Total section B:	**0500**	274	**316**	0	**0**	467	**135**	741	**451**
T o t a l l i a b i l i t i e s	**0600**	31 179	**32 629**	0	**0**	467	**135**	31 646	**32 764**
C. OFF-BALANCE SHEET LIABILITIES	**0650**	896	**293**	0	**0**	0	**0**	896	**293**

D a t e: **31.12.2007 r.**

Chief accountant: _____ **Director:** _____