Decision
Concerning approval of Government Strategy for the development of electronic broadband communications in Romania for the period 2009 - 2015

On the grounds of art.108 in Romania's Constitution,

republished,

The Government of Romania adopts this decision.

Art. 1. – The Government has adopted the Strategy for the development of electronic broadband communications in Romania for the period 2009 – 2015, provisioned for in the annex that is an integral part of this decision.

PRIM-MINISTER
Emil Boc

ANNEX

Government Strategy for the development of electronic broadband communications in Romania for the period 2009 - 2015

CONTENT

I. INTRODUCTORY PART

Electronic broadband communications have become a world –wide priority in late 1990s, as a result of the fact that a society based on knowledge has a significant impact on competitiveness, on the rapid development of communications and IT technologies as well as on telecom markets liberalization.

In a global society undergoing a significant transformation process in the beginning of the 3rd millennium, the European authorities became aware of the necessity for a common vision in modernizing society and development of European Economy competitiveness. This vision, formulated after the European Council in Lisbon, in 2000 (Lisbon strategy) intended to outline the main directions of strategies and policies that should be a proper answer to challenges generated by the process of European population ageing as well as by a fierce competition globally.

In achieving the fundamental objectives of Lisbon Strategy – sustaining economic growth and creation of new working places – one of the main instruments identified was the development of a knowledge based economy corroborated with incentives for the IT and communications sector (ICT). Thus, the advantages of using ICT services and equipment over creation of an information society able to stimulate the growth of economic competitiveness, and of social cohesion were generally acknowledged.

The action plans (e-Europe 2002, e-Europe 2005, i2010) that envisaged the implementation of the objectives set in the Lisbon Strategy, concentrated round the creation of an „information society for all" by extending the access and use of Internet, as an info disseminating environment and supplying services and content, creating new markets, thus contributing to a growth in economic productivity. In order to achieve the action plans, EC proposes three priorities*:*

- Creation of a sole and competitive market for the information society.
- An increase of investments in research concerning ICT
- Promotion of a comprehensive information society

Having in view that the spread of Internet benefices depends more and more on Internet high speed access availability for citizens and companies, an increased use of broadband communication services was identified as major objective.

In this context, it became obvious that Romania also needs a political document and a strategy at national level, meant to support the development of electronic broadband communications, as determining factor in the creation of an information society. This strategy, on a medium term, must consist of realities and perspectives of all persons interested in the market, so as to become vectors of lining all relevant resources to promote broadband services in Romania.

The document was structured on five main components consistent with the analysis major directions:

- Definition of electronic broadband communications concept and presentation of the anticipated advantages of developing broadband communication services
- An analysis of the current situation in Romania
- Definition of general principles and strategic objectives
- Elaboration of the action plan
- Identification of the financial demand and options

During the options elaboration strategies and definition of priority intervention measures, there were several consultations with the main competent authorities and the suggestions and recommendations collected on the market during the info collecting stage were taken into consideration.

The current strategy is based on data in the Diagnosis Analysis – Report on communication services in broadband (Roland Berger 2006) and on those supplied by the National Authority in Communications concerning coverage with electronic broadband communications.

I.1 Definition of the broadband communication concept

Broadband, beyond its lexical or technical definition, irrespective of the transmission means (cable, radio, fiber optics) or of the speed we ensure, defines the connectivity degree to the network and, implicitly, the quantity of info we have access to at a certain moment.

The essence of the concept concerning broadband communications can be understood only if it is interpreted as a set of technological opportunities that allow rapid transmission of a huge volume of data, so that the access to a wide range of digital services may be ensured. The band width that is required by different on-line services varies significantly, depending on the respective services.

The National Authority for Communications (ANC) establishes a general definition which is based only on the quantitative dimension of the Internet connections, emphasizing the transfer speed of 144 kbps as a threshold for delimiting connections in broadband as compared to those in narrowband.

In order to monitor the development of broadband access availability we must complete the general definition with quantitative indicators that can be gradually changed depending on the demand modification at the level of the end-user, but also depending on the offer of applications and services. The uniform and final definition of broadband communications is worsen by aspects as dynamism of technological innovation, the different development levels, the level of coverage with infrastructure networks as well as the difference as concerns the applications popularity.

Taking into consideration all these aspects, the following concept shall be used in the process of providing electronic broadband communication services:

"Broadband connection represents that type of electronic communication that, by means of a multitude of available technological options, ensures permanent access to Internet, at a transfer speed of at least 1 Mbs (value increasing progressively) and a monthly availability degree of at least 98%, providing the maximum interactivity and access degree to the full on-line applications and digital content possible to be accessed by Internet. "

When applying the definition, the following characteristics shall be taken into consideration:

- The value of the transfer speed of minimum 1 Mbs shall be periodically updated so as to allow the use of all applications and digital content possible to be accessed by Internet.

- The value of the transfer speed of minimum 1 Mbs is applied to connections on broadband for the residential segment, the value for projects developed by public administration entities and economic operators being of minimum 4Mbps.

Identification at the national level of disadvantaged areas as regards access to broadband connections can be performed at the population level that does not benefit from broadband connections.

Percentage of the population with no access to broadband communications:

Percentage	**County**	**Number of counties**
50%-80%	Vâlcea , Vaslui, Mehedinţi, Sălaj, Neamţ, Gorj, Olt, Buzău, Brăila, Vrancea, Giurgiu, Bacău, Botoşani, Covasna, Argeş	15
40%-50%	Iaşi, Dâmboviţa, Prahova, Ialomiţa, Caraş-Severin, Bihor, Satu Mare, Teleorman, Alba, Suceava, Bistriţa-Năsăud, Cluj	12
20%-40%	Tulcea, Mureş, Călăraşi, Dolj, Arad, Hunedoara, Timiş, Galaţi, Sibiu, Harghita, Maramureş, Constanţa, Braşov	13
13%	Ilfov	1

Thus, taking into consideration the data in the table above and the fact that there must be a clear definition of areas where access to electronic broadband communications is limited due to different circumstances, we shall call as ***failure zone*** any locality with 10,000 inhabitants at most, where at least one internet services provider is present.

I.2 Anticipated advantages for the development of broadband communication services

Benefits of broadband communication access do not materialize by means of activities performances. The later can be executed without access also, but with far more difficulty, in a restricted area, geographically limited. The great benefit is that it shall allow fulfillment of activities in a new form. This possibility, as well as its influence on the entire society has just started to occur. Work at home by means of electronic communication systems represents solutions for problems as:

unemployment, transportation or environment. Another exemple is e-education that represents an alternative to the traditional learning method, making the applicant independant from time and space managed by specific institutions, creating the possibility to adapt the rhythm to the individual ability and need. Access to broadband communications shall also play an extremely important part for applications that shall emerge as a consequence of the occurance of new needs generated by the information society and knowledge based economy.

Measurable benefits resulting from the access to broadband communications, include:

- An easier and more rapid way of looking for information – information is fully available, unlimited from the point of view of space and time;
- Supporting education continuously as there are no social or geographical barriers;
- Simplifying relations among citizens, enterprises, companies, businesses, public administration and other entities;
- Creation of new opportunities on labour market (example, work at home);
- A more efficient management of enterprises, especially of small and medium sized enterprises, which leads to an increase in efficiency and develops competitiveness;
- New opportunities for entertainment or cultural life;
- Improvement of population's life quality in rural and disadvantaged areas by supporting development of tourism;
- Implementation of telemedicine communications among doctors for sharing of experience

From the effects point of view, we consider that broadband communications shall become conspicuous on the following levels:

Education: Broadband communications can contribute to an increase in Romanian school's value by implementing new teaching – learning methods (e-learning), the possibility to interactively communicate with teachers and students all over the world or to increase the degree of specialization of employees at companies' level by developing programs of e-Training and e-Coaching.

At the same time new opportunities arise for the knowledge level of universities by the possibility to develop and intensify university research programs by joining the efforts of researchers in different centers in Romania and intensification of cooperation at different projects internationally (e-working), facilitating and accelerating access to new info.

Research-development: Globalization and the opening by big companies of research-development centers in areas with major human potential, where operational costs are low, implies an exchange of specialized info globally distributed, access to specific applications and large data traffic generators. At the same time it supposes the existence of broadband communication infrastructure as well as certain human resources experienced in new technologies, including communications technologies.

Successful implementation of communication technologies has tangible effects in increasing the degree of innovation by the possibility to virtually aggregate best resources and ideas all over the world. The free circulation of information and an increased interactivity lead to a greater number of solutions and new products.

The announced investments by companies as Infineon, Motorola, Nokia or Ruwel in research-development centers in Romania are relevant for illustrating the potential of research-development sectors and ICT in Romania.

Economy: The interconnectivity between the business environment and that of digital communications is still at an initial stage, and the development of new business models is depending on attracting a critical mass of users. In the context of Romania's current development and its opening towards the European and global economy, the business environment shall become a major consumer of broadband communications. To that effect, we try to create a sort of mutual enticement where the business environment development leads to an increase of the offer and, implicitly, to stimulate competitiveness and added value services. In addition, broadband sector development shall make Romania attractive as a destination for foreign investments.

Broadband communications as facilitator of ICT development favors the creation of new working places and an increase in GDP/ inhabitant, estimating that between 40% and 50% of productivity growth in latest years is due to ICT.

Secondly, broadband communications allow a revolution in the business processes. For instance, it is no longer necessary for production facilities to be in close connection to research as communication can be reached virtually with the same results in most cases. Broadband communications also contribute to e-business development, with major benefits by a significant reduction of transaction costs and intensification of interaction speed among companies.

Cultural - entertainment activities: Electronic broadband communications can have a significant impact on cultural and entertaining activities by providing an increased availability, by changing consumers' behavior as well as by providing access to a great number of options. Also, while broadband communications performances increase, the on-line environment interactivity grows attracting users.

From the point of view of the main influence zones, broadband communication benefits are to be found at the level of the public administration, private companies, communities and at the level of the ordinary citizen.

By facilitating access both internationally and nationally as well as by their possibility to disseminate content rapidly, broadband communications can be a vector for promoting cultural values and diversity in Romania's context (the importance of Romanian cultural patrimony is recognized including also certain touristic objectives as the Danube Delta, Monasteries from Moldavia, Sighisoara historical center, Dacian fortresses in Orastie Mountains etc. in the world cultural patrimony by UNESCO). Thus, we can develop data basis (***e-Tourism***, ***e-Culture***), that favor the development of the digital content of cultural type, including in tourism field by introducing necessary info for promoting national attractions thus contributing to the growth of Romanian values and of the number of tourists.

Public administration: Public administration is the provider of public information, services as tax collection, education and health etc., all of major importance for citizens. Technologies and broadband communications can improve the public administration flexibility and efficiency, can contribute to an increase in availability and access to government services.

The public administration development of those electronic services meant for the citizens demand, for rendering efficient the citizen time, in terms of local and administrative tax payment, of transmitting data and answering in electronic format as well as of giving useful info as regards certifications and authorizations (***e-***

Gouvernment and ***e-Administration***) and rendering efficient the public health services by setting up data basis nationally concerning health of patients in hospitals and at the level of medical clinics (***e-Health***) and developing telemedicine services that lead to a permanent monitoring of patients with heart diseases, diabetes and other diseases as well as of handicapped people.

Private companies: For companies broadband communications represent a facilitator of ***e-Business*** applications and practices, creating new business opportunities and helping companies to get high productivity based on an improvement of access to information and transactions. Both for companies and employees broadband communications are meant to reduce the importance of localizing by allowing the establishment of offices in small, rural or isolated localities as well as by facilitating teleworking.

For the Romanian companies electronic trade development can bring important advantages namely significant reductions of transaction costs and increase in interaction speed with business partners. Secondly, broadband communications allow business processes progress, contributing to an increase in competitiveness of Romanian companies in Central and Eastern Europe (CEE), and globally (facilitating internationalization of local companies, decentralizing enterprises' functions as production, marketing etc.).

Communities: For small, rural and isolated communities, broadband communications development can favor economic and social integration by facilitating access to goods and new, superior services as well as participating facilities in digital economy or information society.

For the common consumer, besides facilities provided by broadband communications already mentioned (as e-Education, teleworking etc.), the beneficial effects materialize in the increased access to the interactive content, interconnectivity of different equipment (whether it has or not the communication component) or personalization of consumption.

II. CURRENT SITUATION ANALYSIS

II.1 Overview on the existing situation on broadband communication services market

During the last two years we noticed a remarkable evolution at the level of electronic communications market as regards internet services providing. If mid-

2006 ,we had 2, 66 million connections of internet access, mid 2008 the number increased to 9, 25 millions, approximately 3. 5 times more connections.

This particular increase is due to a plurality of economic and social factors: technological development led to a significant diminish of costs for purchasing personal computers and the information available at the level of internet networks as well as the continuous development of services using as support the internet created a trend for young people and even a way of life.

All this made possible this significant growth of internet access connections and especially broadband communications over such a short period of time.

Statistical data concerning electronic communication market in Romania in the first half of 2008, reported by providers to the National Authority for Communications, indicate an annual rhythm of growth of broadband access connections to internet. According to data reported by internet providers, in June, 2008, in Romania, there were approximately 2, 27 million broadband access connections to the internet provided at fixed points, with 760,000 more than in the similar period of 2007 (1, 51 millions) and 1, 42 millions broadband access connections to the internet provided on mobile points, with 420,000 more than the corresponding period of 2007(1 million).

Table 1: Dynamics of the total number of access connections to the internet, depending on the connecting means and access speed during 30.06.2006-30.06.2008
Source: ANC

Indicators	30.06.06	31.12.06	30.06.07	31.12.07	30.06.08
Fixed points connections	abs.(mil)	abs.(mil)	abs.(mil)	abs.(mil)	abs.(mil)
Broadband access connections at fixed points (dial-up ISDN access, dedicated access)	0,69	1,09	1,51	1,95	2,27
Narrowband access connections at fixed points (dial-up PSTN access, dedicated narrowband access)	0,38	0,34	0,33	0,20	0,02
Activated connections at mobile points					
Broadband access connections at mobile points – subscriptions for internet access and f mobile phone users on subscription basis with internet access by EDGE, CDMA, EV_DO, 3G[50]	0,50	0,68	0,82	1,06	1,10
Narrowband access connections at mobile points – subscriptions for internet access and mobile phones users on subscription basis with internet access by CSD, GPRS	0,97	1,19	1,91	2,40	2,55
Broadband access connections at mobile points – prepaid cards for internet access and mobile phone users on pre-paid cards with access to internet by EDGE, 3G[12]	0,06	0,20	0,18	0,31	0,32
Narrowband access connections at mobile points – mobile phone users on pre-paid cards basis with access to the internet by GPRS[43]	0,06	0,20	2,47	3,20	2,99

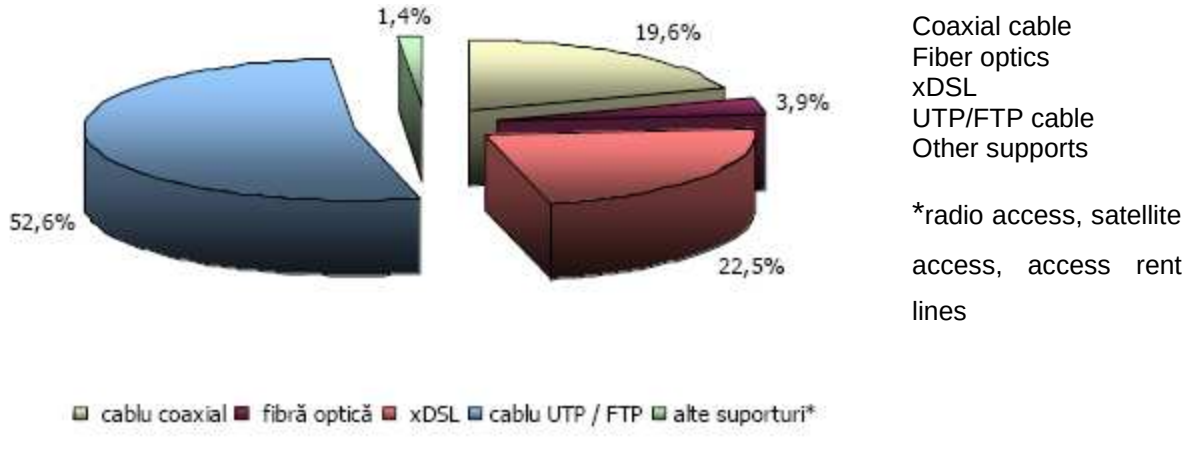
Table 2: Dynamics of the number of broadband access connections to the internet provided at fixed points, depending on the support used, during 30.06 2006 – 30.06.2008
Source: ANC

Indicator	30.06.06		31.12.2006		30.06.2007		31.12.2007		30.06.2008	
	Abs mil	evol. (%)	Abs mil	evol. (%)	Abs mil	evol. (%)	Abs mil	evol. (%)	Abs mil	evol. (%)
Total no. of broadband access connections to the internet at fixed points out of which:	**0,69**	**+82**	**1,09**	**+58**	**1,51**	**+39**	**1,95**	**+29**	**2,27**	**+16**
- dial up, ISDN	0,0005	-20	0,0002	-57	0,0001	-38	0,0001	-35	0,0003	+191
Dedicated access, out of which:	0,69	+82	1,09	+58	1,51	+39	1,95	+29	2,27	+16
a)coaxial cable	0,33	+32	0,39	+20	0,41	+4	0,44	+7	0,44	+1
b)fiber optics	0,04	+159	0,05	+32	0,07	+27	0,08	+23	0,09	+8
c)radio out of which:	0,01	+46	0,02	+50	0,03	+88	0,03	+1	0,03	-4
c1 (standard radio connections (FWA type)	0,007	n/a	0,01	+31	0,01	+6	0,01	-3	0,01	+2
c2 WI-Fi connections	0,004	n/a	0,01	+94	0,02	+185	0,02	+2	0,02	-6
c3 WiMax connections	-	-	-	-	-	-	0,00	-	0,00	-
c4 Other types of radio connections	0,0006	n/a	0,0004	-35	0,0004	+12	0,0001	+38	0,0004	-31
d) xDSL (metal molding wires, other supports)	0,05	+516	0,10	+118	0,18	+79	0,36	+108	0,51	+40
e) UTP/FTP connections, satellite, other means out of which:	0,26	+170	0,53	+101	0,83	+57	1,03	+24	1,19	+16
e1 UTP/FTP cable	0,26	n/a	0,52	+100	0,83	+58	1,03	+25	1,19	+16
e2 satellite	0,0001	n/a	0,0001	+159	0,0002	+65	0,0002	-14	0,001	+155
e3 other means[63]	0,001	n/a	0,002	+212	0,003	+27	0,001	-75	0,0005	- 36

63 The indicator consists of no. Of connections using as supports: rented line son molded metal wires, electricity transport lines (electric cable);
Source: ANC

One can notice that during June 30, 2007 – June 30, 2008, the number of broadband connections by means of xDSL increased by 190%, while the number of broadband connections contracted by household users increased by 53%. The greatest value in the total number of dedicated access internet broadband connections at fix points still belongs to the UTP/FTP cable connections (52,5%), followed by xDSL connections (22,5%) and by coaxial cable connections (19,6%).

Figure 1: Structure of the total number of dedicated access internet connections, depending on the support used, on 30.06.2008
Source: ANC



Data published by the European Commission show that, despite the diminishing of economic growth perspectives in general, broadband internet development continued at EU level with an increase of 19,23% during July 2007 - July 2008. On July 1st. 2008, in EU there were over 107 million of broadband fix lines, out of which 17 millions were added beginning with July 2007. The greatest growth rate was registered in Malta (6, 7 lines for 100 inhabitants), followed by Germany (5,1 for 100 inhabitants) and Cyprus (4,9 for 100 inhabitants) and the lowest in Finland (1,9 for 100 inhabitants) and Portugal (1,0 for 100 inhabitants). Denmark, Holland, Sweden, Finland, England, Luxemburg, Belgium, France and Germany have reached a penetration rate of 25%, according to OECD (Organization for Economic Cooperation and Development) statistics of June 2008.

In Romania, the penetration rate of broadband communications services continues to grow in 2008, but it is still one of the lowest rates in European Union - 10,52% at the level of the population and 27,04% at the level of households. Several reasons led to this situation, namely: late market liberalization (2003), late DSL launching (at the end of 2005), reduced use of personal computers (only 35% of the households have access to a PC), a reduced coverage of electronic broadband communication services (30% of the population lives in cities with no coverage of broadband communication services) and low incomes, especially in the rural zones[1].

Table 3: Evolution of the penetration rate of broadband internet dedicated access connections during 31.12.2003 – 30.06.2008
Source: ANC

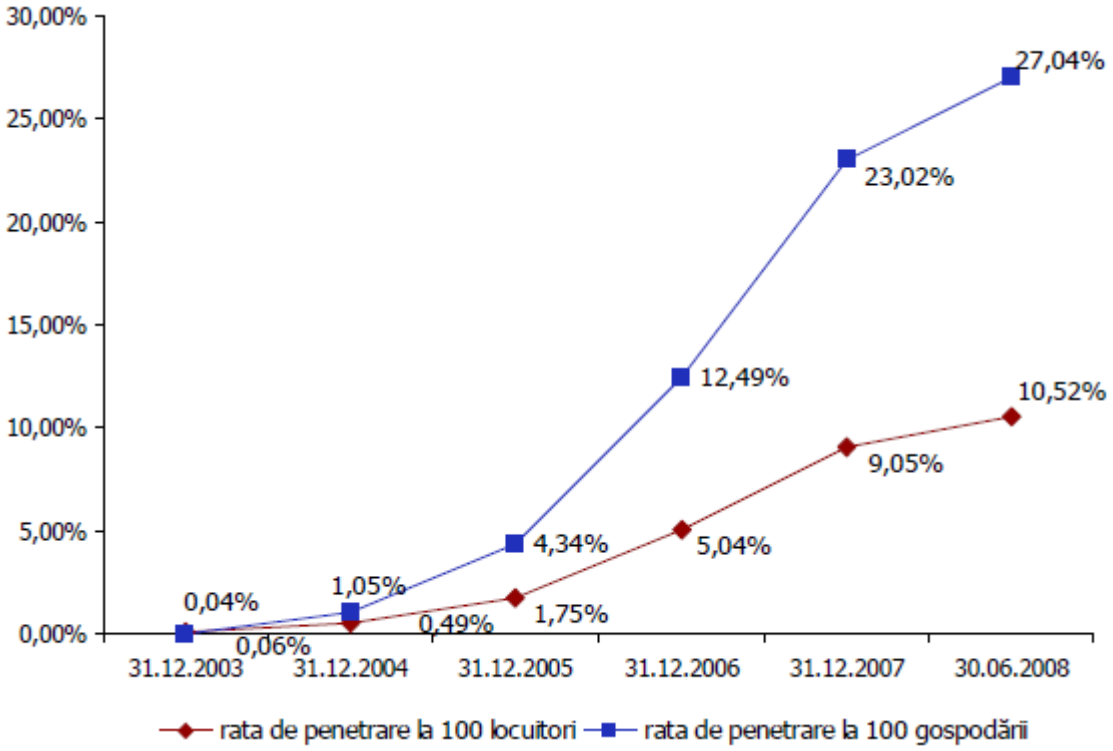
	31.12.2003	31.12.2004	31.12.2005	31.12.2006	31.12.2007	31 12.2008
Total no. of broadband internet dedicated access (mil)	0,01	0,10	0,38	1,09	1,95	2,27
Penetration rate for 100 inhabitants[66] (%)	***0,06***	***0,49***	***1,75***	***5,04***	***9,05***	***10,52***
Number broadband internet dedicated access provided to clients, natural persons (mil)	0,003	0,08	0,32	0,91	1,69	1,98
Penetration rate for 100 households[67](%)	***0,04***	***1,05***	***4,34***	***12,49***	***23,02***	***27,04***

[66] Penetration rate for broadband internet dedicated access for 100 inhabitants = no. of broadband internet dedicated access connections /Romania's population*100; population = 21.680.974 for 2003-2004, 21.673.328 on June 30 2005, 21.623.849 on December 31 2005, 21.610.200 on June 30, 2006, 21.584.365 on December 31, 2006, 21.565.112 on June 30 2007, 21.537.563 on December 31, 2007, 21.528.627 on June 30, 2008 respectively (Source: INS);

[1] European Commission country report

[67] Penetration rate of broadband internet dedicated access connections for 100 households = no. Of broadband internet dedicated access connections /no. of Romania's households *100; no. of households = 7.320.202 (source: INS, Population and households' census, March 18-27, 2002);

Figure 2: Evolution of the penetration broadband internet dedicated access connections during 31.12.2003 – 30.06.2008
Source: ANC



Penetration rate for 100 inhabitants Penetration rate for 100 households

Out of the total number of internet dedicated access connections a significant percentage belongs to natural persons, approximately 87%, the remaining percentage, but not one to be neglected, is represented by connections of legal persons.

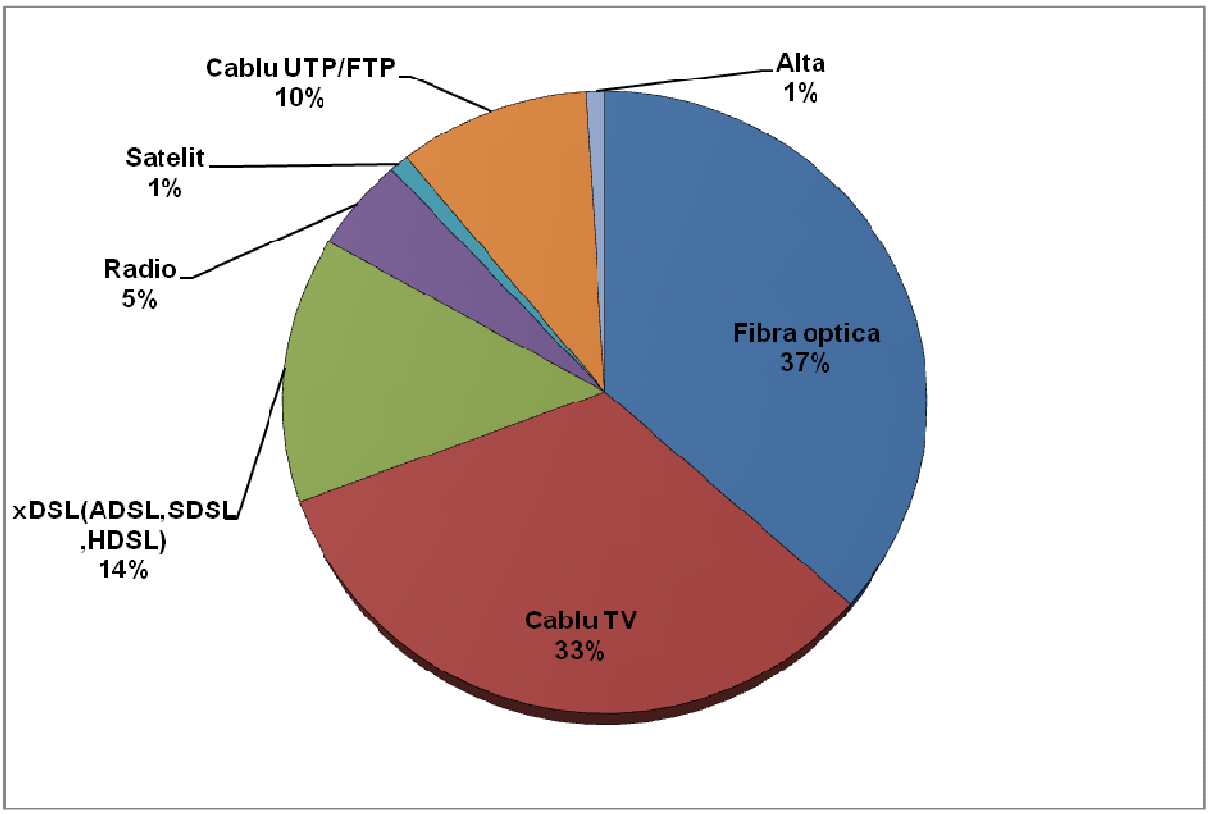
Table 4: Structure of the total number internet dedicated access connections, depending on customers' category. Evolution during 30.06.2006-30.06.2008
Source: ANC

indicator	30.06.2006		31.12.2006		30.06.2007		31.12.2007		30.06.2008	
	<128kbps	≥128kbps	<128kbps	≥128kbps	<128kbps	≥128kbps	<128kbps	≥128kbps	<128kbps	≥128kbps
Total no. of internet dedicated access connections, out of which:	**0,12**	**0,69**	**0,12**	**1,09**	**0,01**	**1,51**	**0,003**	**1,95**	**0,001**	**2,27**
a)subscribers, natural persons	**0,11**	**0,56**	**0,11**	**0,91**	**0,01**	**1,30**	**0,002**	**1,69**	**0,0007**	**1,98**
b)subscribers, legal persons	**0,01**	**0,12**	**0,01**	**0,17**	**0,002**	**0,22**	**0,001**	**0,26**	**0,0004**	**0,29**

As concerns the market of internet dedicated access connections at the level of institutions and companies, it is dominated by TV cable and fiber optics connections.

Thus, 37% of the total number of dedicated access connections existing in the selected companies and institutions are on fiber optics support, while 33% are on TV cable support. Then we have xDSL dedicated connections (14%) and UTP/FTP cable connections (10%).

Figure 3: Internet dedicated access connections depending on the type of infrastructure, existing in companies and institutions
Source: ANC



Concerning the types of used subscriptions, most companies and institutions (86%) where we have internet dedicated access connection, have subscriptions with unlimited monthly traffic, while 7% of the companies and institutions use monthly subscriptions with limited traffic and additional payment for extra traffic.

According to data provided by ANC for the next period companies and institutions intend to purchase a broadband connection at high speed transfer, this intention belonging to small companies for a value of 16-17% and at a smaller value than 9% for big companies with more than 50 employees. At the same time 57% of these companies shall select the purchase of a dedicated access connection (where the greatest value belongs to fiber optics connections, followed by TV cable connections).

II.2 SWOT analysis

Strong points

- Accelerated dynamics of the number of broadband connections;
- Penetration in ascending tendency of mobile phone (123% coverage);
- High penetration rate of CATV networks (75% coverage);
- Ascending tendency of competitivenes on major segments;
- The range of available technological solutions in ascending tendency;
- Long distance data transportation networks are well developed;
- The purchase cost terminals (PCs, laptops, mobile phones, mobile *smartphone, etc*) is rather low as compared to previous years

Weak points

- Low penetration and use rates of the internet as compared to the average at European level;
- Major differences between penetration rates of broadband networks in the urban and rural environment;
- Access problems on local loop (implementation of unconditioned access on the local loop, the systematization process of local networks photographed from the plane);
- Reduced availability of local information content and of relevant public applications;
- Penetration rate considerably lower and a reduced degree of development of fix networks of the former monopolist as compared to other European Union member states;
- Volume of investment can reach a reduction because of the current economic crisis;
- The lack of a common approach at government level for implementing projects, which leads to overlapping and scattering of public resources

Opportunities

- The advantage of late development: the domination period of narrowband connections can be reduced significantly;

- Possibilities of rendering valuable the high potential demand – aggregation of public demand, occurence of new corporate customers;
- Positive characteristics of consumers – opening towards innovative services, high digital alphabetization of young people;
- Growing availability of financing resources;
- Increase in the penetration of broadband connections at the level of the population, of the public and private sector, encourges the development of content.

Threats

- Lack of applications and local content, but also an insufficient level of digital literacy and understanding of benefits;
- The high percentage of the population residing in the rural areas which limits access development, because of limited/negative profitability;
- Deepening of the digital gap, by concentrating the offer in the urban areas, with high population density;
- Amplifying differences as compared to EU states, in cases of non-implementing adequate policies/ regulations.

SWOT analysis concerning broadband services market indicates that, although there are several advantages and opportunities for developing these services, in cases of a lack of intervention measures adapted to Romania' s existing problems, the risk to deepen the digital gap becomes even bigger thus amplifying differences between Romania and the other European Union states

III. GENERAL PRINCIPLES AND STRATEGIC OBJECTIVES

III.1. General principles

The action principles underlying the elaboration of the strategy had in view the European models used within broadband strategies developed by the member states of the European Union, as a response to “e-Europe” initiative but they took into consideration the specific of the Romanian market.

The government strategic plan proposes an acceleration of the development rhythm of broadband communication services (identified as one of the most important facilitator of society modernizing and increase of economy’s competitiveness), by encouraging those activities that may lead to reducing the areas identified as failure zones. In other words, the strategy proposes a set of recommendations aimed at improving the situation of certain activities that have influence on broadband communication services, activities that in the absence of an intervention from the state would have experienced a much more reduced rhythm.

By creating infrastructure and offering broadband access in competitiveness conditions, we had in view removal of certain access barriers to broadband services. One of the principles at the basis of this approach is guaranteeing **free access** to a large range of services with high social and geographic availability. This supposes mainly **the existence of a free market**, guaranteed by observing the **non-discrimination principle** as concerns treatment applied to network providers or electronic communication services and encouraging a **competitive market** as regards the offer diversity, tariffs and quality of services. So, the national broadband communication strategy acknowledges the importance of market instruments in developing broadband services.

At the basis of a free and competitive market lies the **fundamental principle of technological neutrality**, which ensures the existence of a diversity of solutions and technologies able to meet the specific needs of communication of different groups of users and offers the possibility to choose the most efficient method of communication in a given situation. Precisely for observing this principle, the state’s

intervention formula shall be rather indirect (by regulations and incentives) and selective (concentrated and on priority actions).

This multitude of communication resources is even more valuable having in view the rapid change of society and its evolution and implicitly its needs of communication and information. Also, given the rather long periods of time for the development and implementation of viable technical solutions, it is necessary to encourage technological diversity in order to allow the existence of several solutions able to solve a problem before it becomes stringent.

In order to ensure an optimal allocation of available resources and a minimal distortion of market mechanisms, we need to observe the **proportionality principle**. In other words, the intensity of actions taken must be proportionate with the identified problem, and selection of the instruments must be performed on the basis of the minimum necessary effort from all available alternatives that can meet efficiently the aimed objective.

With a view to absorb efficiently the available government funds for implementing the broadband for developing broadband communication services, the adopted solutions shall ensure observance of **the principle of the efficient use of resources,** namely to avoid an overlap. Thus, it is necessary to coordinate all government projects in the field of communication by a single authority, able to manage all initiatives within the program and to ensure **avoidance of overlapping of activities and resources**.

The set of identified strategic options shall try to establish a balance between the necessity to offer certain incentives for the development of infrastructure in disadvantaged zones, and **the principle of the minimum intervention from the authorities.** In this way private investments shall be encouraged, competition and reduction of prices shall be promoted as a result of the competitive level development in the field of broadband communications.

Another important principle is to ensure **the development of both infrastructure and services to generate the so-called „virtuous circle”** – creation of networks followed stimulation of services demand by developing a new content, leading to a new broadband communication demand, that shall justify investments in infrastructure and the circle starts from the beginning.

Also, we envisage to observe **the universal right of access to electronic communication means** and **to promote the specific interests of disadvantaged users or their special needs** in order to obtain a maximum of benefits from broadband services in the sense of including them socially and ensuring **equal chances**. Following the same principle of equal chances, we shall try, at the same time, to **respect and promote cultural and linguistic diversity**.

Last but not least, we want our proposed solutions to really encourage participants to contribute to the implementation of the broadband strategy, that is, the advantages these participants can benefit from should be greater or at least equal with costs related to their participation, observing the **principle of profitability as a result of commercial activities.**

III.2. Objectives

In order to ensure success for broadband communication strategy we identified and formulated a series of clear and comprehensive objectives, to efficiently orient the projects' activity and resources. The objectives were grouped around three fundamental pillars that can be implemented by a combination of intervention methods. Thus, the main pillars round which the strategy was developed refer especially to ensuring access to broadband services, providing relevant content and ensuring necessary pre-conditions for information, education and security.

Starting from the fundamental pillars of the strategy we developed a set of indicators accompanied by the related target values, with a view to assess impact on the main categories of target beneficiaries. These concrete targets represent reference thresholds that shall be used for monitoring progress, as they are specific and measurable so as to allow a correct dosing of the effort, as well as periodical recalibration of invested resources.

Table 5: Types of indicators used for each strategic pillar and main category of beneficiaries

Strategy's pillars	Individuals	Companies	Public administration
Ensuring access to broadband	- penetration rate of PC at the level of the population - penetration rate of broadband connections at the level of the population	- penetration rate of computer at the level of companies - penetration rate of broadband connections at the level of companies	- % of public administration computers with access to broadband connections - penetration of public buildings with broadband connections.
Providing relevant content	- Percentage of the population using on-line services - Number of users of e-learning services	- % of companies with their own web site - % of companies using e-Business type applications	- Number of e-Administration services available on each relevant field of activity - Solicitations or forms processed on-line
Ensuring information, education and security (pre-) conditions	- the degree of digital alphabetization of the population	- % of employees with experience in using computers and Internet	- the degree of digital alphabetization of the public administration

Based on the objectives formulated before the elaboration of the strategy on the basis of a preliminary analysis (balanced development of infrastructure, growth of availability and degree of services use, encourage development of informational content or ensure an adequate framework that may allow the improvement of competitive and investable environment) and after the diagnostic analysis of broadband communication market we identified 10 strategic objectives and six specific ones.

The strategy's general objectives are:

- Growth of the penetration rate at the level of households, of broadband connection services up to 40% in 2010 and up to 80% in 2015;
- Growth of the rate of access to electronic broadband communication services at the level of the population up to minimum 100% until 2015
- Connection and increase in the use of broadband services at the level of SMEs;
- Growth of the penetration rate of electronic broadband communication services in disadvantaged areas from the access point of view.
- Growth of on-line services offer for government and business sectors.

The specific objectives refer both to demand stimulation and electronic broadband services offer for the public and private sector:

- Connection of public institutions (public demand aggregation)
- Increase in use at the level of the public field
- Connection and increase in use at the level of SMEs
- Increase in services' availability
- Development of content and applications
- Education of consumers and inclusion of disadvantaged groups of users

III.3. Monitoring indicators

Implementation of measures corresponding to each objective shall be monitored by means of specific indicators.

In defining indicators we took into consideration the following principles:

- Key indicators must allow monitoring of the progress achieved while meeting the fundamental objectives of the national strategy for broadband communications
- Key indicators must offer a clear panoramic image on the sector's development and indications as regards the necessary actions for accelerating progress (if the case).
- Key indicators must be clearly defined and measurable/ quantifiable so that they may become a monitoring/ management instrument of the broadband communication sector development
- Transparency – indicators must be transparent, easily explainable and understandable (including in the case of composed indicators)

Table 6: Monitoring indicators and related target values

INDICATOR		PROPOSED TARGET	PROPOSED TARGET
	2007	2010	2015
Penetration rate of broadband connections at the level of households	8	40	80
Access rate of broadband services at the level of the population	10,5 (2008)	20	100
Percentage of persons that use Internet for interacting with public authorities	2.6	10	50
Percentage of use of e-government type services by natural persons (demand) as a whole	5	20	50
The rate of commercial operation on-line (e-commerce)	1.2	5	40
Rate of available computers at households level	26 (in 2006)	40	60
Percentage of persons that use the Internet for educational and instruction purposes	2.3 (in 2006)	10	40
Penetration rate of broadband connections at the level of companies	59	70	100

1. Indicators shall be collected on three distinct levels: urban, suburban and rural.

Also, with a view to assess the dynamics of investments in infrastructure projects of broadband type we shall monitor the number of projects and the related financing sources depending on the geographic area.

The target values of proposed indicators for use were established together with people interested in the market. They shall be actively involved in the validation and adjustment of initiatives priority for implementing broadband communication strategy during consultations with the Working group for implementing the national strategy for the development of broadband communications. The working group was set according to measures established in point IV.1 of this document.

We shall focus especially on extending the coverage area of broadband communication in disadvantaged areas. A first indication of the success in this respect shall be the number of projects for disadvantaged areas and implicitly, the number of communities connected in these areas that benefit from broadband communication services after implementing the strategy. Of course, for having an overview on the global degree of connectivity registered in such zones at the national level, these indicators shall be compared to the total number of

identified disadvantaged communities, with a view to have a fair assessment of necessary future efforts to meet our proposed objectives.

IV. ACTION PLAN

IV.1 Organizational implications of the strategy

The strategic plan recognizes initiatives with impact on broadband services development already executed, underlining the importance of continuing efforts on the same line as well as the necessity of coordination/ subordination of these efforts to the general objectives of the strategy.

While analyzing the market and elaborating the recommendations, we noticed the existence of several initiatives of the state institutions, that influence directly or indirectly the evolution of broadband communication services. These actions contribute to the achievement of pre-conditions for an extensive adoption of broadband connections to the Internet, either regarding access, or the digital content.

Their administration by different entities leads unfortunately to a duplication of efforts in many situations, leaving unexploited potential synergies, as well as the implementation of certain solutions disharmonic technologically. In addition there is no overview on all initiatives the result being a lack of transparency on opportunities they offer both from the potential beneficiaries' perspective and even of the authorities' perspective.

Starting from these observations we consider as convenient to set up a special operational entity which shall implement the government strategy concerning broadband communication services development.

A representative example to this effect is Italy, where two entities were set up to implement the strategy of broadband communication development:

- **Infratel Italy**, a company set up by the Ministry of Communications and responsible for the implementation of initiatives envisaging promotion of broadband communications' infrastructure development and elimination of the technological gap among regions
- **Innovazione Italy**, a company set up by the Ministry of Innovations and responsible for implementation of initiatives meant to develop applications with digital content and broadband services.

Relevant examples can be found with other EU member states as Ireland, Hungary and Finland.

In the case of Finland, the working group responsible for implementing the strategy of broadband communications development consisted of The Ministry of Internal Affairs, Ministry of Finance, Ministry of Education, Ministry of Trade and Industry, FICORA (Finnish Communications Regulatory Authority), Finnish Competitiveness Authority, Consumers Protection Agency, Confederation of Finnish Industries, Fi-Com (Finnish Federation for Communications and Teleinformatics) and Finnish Local and Regional Authorities.

In Hungary the national strategy implementation for broadband communications and ensuring electronic broadband communication spreading is ensured by Telkes Tanácsadó Rt consortium, Colosseum Budapest Kft. şi Ariosz Kft.

In the case of Ireland, a company, part of Hutchison Whampoa, was selected after tender and is responsible for administrating the Broadband National Plan which has as purpose providing broadband services in uncovered areas (disadvantaged zones).

In Romania, the role of operational entity shall belong to the *Working group set* up by the decision of the Committee for Promoting the Information Society, a group that shall monitor the implementation of projects regarding broadband communication infrastructure development as support for promoting informational services. The entity shall be the interface between the different authorities/ institutions with interests in projects application, collecting reactions from them and ensuring a minimization of transactional costs. At the same time, this operational entity shall ensure the communication/ interface with parties on the market which are involved under the form of a sole management of relations point with these parties as concerns the broadband communication sector.

For meeting objectives at national level, the Working Group shall perform the following actions:

1. Establish the strategic guidelines for passing to an information society in Romania;

2. Monitoring the implementation of infrastructure projects and broadband services bigger than EUR 100,000;

3. Establish the main updating ways for central administration using methods and instruments belonging to the information technology.

For meeting objectives regionally, the Working group shall contribute to implement the following measures:

1. initiating demarches for drawing in local administration authorities for the development of infrastructure projects;
2. elaborating pilot projects for implementing the new broadband technologies aimed at identifying models that can be applied in disadvantaged zones , concerning the access;
3. identification of specific needs for disadvantaged communities that can be solved by IT&C applications with a view to aggregate them in packages that can stimulate the demand for broadband type services.

The purpose of regional development for broadband communications was to render economically viable networks and services providing even in areas where such an enterprise is not commercially profitable. For achieving this purpose we must draw comprehensive and well coordinated regional plans that should contribute to extend broadband communication networks in disadvantaged zones as concerns the access.

The Working group shall also have the following specific tasks:

- to establish of opportunities and needs for legislative and regulatory initiatives necessary for a good progress of the transition process;
- to conceive and develop subsidy programs for equipping the disadvantaged categories of the population with reception equipment;
- to collect and centralize statistical data related to the process of equipping the population with reception devices.

The advantages of this institutional/ operational model shall get materialized by:

- Making responsible an entity/ team for the task/ activity of broadband program implementation, which shall be able to ensure also an optimal coordination of all initiatives that cooperate to meet the objective of broadband communication development and of those with implications to this effect.
- Observing the principle of functions separation – regulation of broadband communication sector versus operation of telecommunication projects and effective implementation of demarches provisioned for in the strategy
- A higher degree of visibility of initiatives from the beneficiaries perspective, owed to the coherence given to the broadband program,

- Savings due to programs aggregation
- Development of a knowledge and competences basis within the operational entity
- Strengthening relations with people interested in the market (by diminishing potential conflict of interests)

IV.2 Methodology and monitoring of the implementation of the strategy

To be able to put into practice the strategy for developing broadband communications, there shall be concrete actions meant to lead to the achievement of the assumed major objectives.

To this purpose a Working group shall be set up consisting of representatives of the Ministry of Communication and Information Society, Ministry of Education, Research and Innovation, Ministery of Administration and Internal Affairs, Ministry of Public Finance, Ministry of Economy, Ministry of Transportation and Infrastructure, Ministry of Regional Development and Housing and Ministry of Health. The above mentioned institutions, by notifying the Ministry of Communications and Information Society, shall appoint 3 representatives each for the working group, one of them being a state secretary. The working group shall establish its own organizational and functioning regulation during its first meeting. Cconsidering the provisions of art. 53 in Government Decision12/2009, by which the Ministry of Communication and Information Society is appointed as sole public authority in organizing and coordinating the programs and projects of electronic governance and electronic administration at national level. MCSI shall be the chairman and shall organize this group's secretariat.

In order to meet objectives, when necessary, the Working group shall cooperate with the representatives of the civil society, of the industry, of associations and non-government organizations with attributions in the field of audio-visual and information technology

All the measures aiming to meet the national strategy objectives, including those concerning the infrastructure shall be approved within this group. Also, the working group sets the methodology that shall regulate the monitoring of the action plan implementation.

IV.3. Next steps

The success of any demarche in strategical planning depends fundamentally on the way in which it is communicated, understood and accepted by all the parties involved and on the putting into practice by a common effort of all interested people.

On the basis of the priorities list it validates together with parties involved in the market and having in view the general indications concerning the action plans of each of the priority initiatives, the following shall become tasks of the Working group:

- Give the full particulars of the action and financing plans,
- Presentation for all parties involved and/ or affected,
- Collection of reactions/ feed-back from each involved category and later on
- Starting to put the initiative into practice.

In addition, experiments at international level show that the success of broadband programs depends fundamentally on the existence of a sole entity mandated to implement the strategy and on the high level of efficiency in coordinating the different competent public authorities.

V. DEMAND AND FINANCING OPTIONS

In order to offer a most complete image on all the implications of the current strategy, a mandatory stage consists of a preliminary assessment of the necessary financial resources. Having in view the complexity and diversity of proposed actions, as well as the different degree of priority, we must underline that the financial calculated demand represents an initial estimation. During future consultation stages, after setting up the measures provisioned for in the strategy, we shall have to validate and adjust estimations in more details.

V.1. Financing demand for the development program of broadband communication services

For meeting the objectives set, the Working group for implementing the national development strategy of broadband communications shall have to evaluate the financing demand and also to identify and quantify available resources to that effect.

As a result, a closer estimation to the real financing demand can be obtained by substantiating on costs which can be done only by a clear dialogue between all working group representatives and the operators on the communication market. This dialogue shall also emphasize their interest to participate in achieving the proposed options, which shall allow a good quantification of the necessary contribution from the authorities, by public funds respectively.

However, a brief evaluation of costs involved in putting into practice of the strategy was possible based on the analysis of financial resourses engaged in similar initiatives/ of a similar extensive operation in other European states.

Tabel 7: Summary of the financing demand for implementing government strategy concerning broadband communication services development

Major objective	**Instruments**	**Financing demand by the national development program of broadband services 2009-2015 [mills. of Euro]**
Infrastructure development in the failure areas	**Total out of which:**	**140**
	• Cofinancing infrastructure projects in failure areas	130
	• Granting fiscal incentives for infrastructure projects in the failure areas.	10
Extensive growth of broadband services availability	• **Development of HotSpots at the level of towns (public markets, libraries, public places, etc)**	**5**
Connecting public institutions to broadband services		**85**
Introduction of on-line services at the level of the public administration	**Total out of which:**	**770**
	• **e-Romania**	90
	• **e-Guvernment**	90
	• **e-Administration**	70
	• **e-Justice**	40
	• **e-Health**	60
	• **e-Education**	60
	• **e-Tax**	80
	• **e-Culture**	40
	• **e-Tourism**	40
	• **e-Emergencies**	60
	• **e-Fraud**	40
	• **e-Associative**	50

	• **e-Participation**	50
Connecting and increase in using ICT in SMEs.		**80**
Stimulation of content development		**35**
Increase in services availability		**85**
Consumers education		**15**
Other expenditures (ex. Communication, instruction, etc)		**35**
TOTAL PROGRAM		**1.250**

IV. 2 Financing means

In drafting the financing plan, the Working group shall use the following guidelines:

- Active contribution to maximize the degree of absorption of national funds or European funds related to ICT sector.

- Establish value and methodology of granting subsidies from the state budget by purchasing equipment, taking into consideration that ensuring the population's access to such equipment at a minimal cost shall encourage the use of broadband technologies and, implicitly reaching a high penetration until 2015.

Also, in elaborating the financing diagram, the Working group shall keep in mind the opportunities that may occur on medium term:

- The possibility to include broadband services in the universal service field. At the European level such a proposal already exists, and Romania, as a member state, is in favor of this opinion. If this proposal is adopted, projects financing for implementing broadband services and infrastructure can be sustained from the universal service fund ;

- The opportunity to conclude public private partnerships with actors of the market interested in participating at co-financing projects for implementation of broadband services and networks, but also with a view to develop new broadband technologies in the next years. Such

initiatives shall be encouraged by adopting the new draft laws concerning the public-private partnership in the first quarter of 2009, a normative act whose objective is the create the conditions to encourage private investments with internal, but mostly external resources.