

Belarus

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Belarus
Table of Contents

1	OVERVIEW	4
1.1	Regulation of Electronic Communications	4
1.2	Regulation of Electronic Services	4
1.3	Use of Information and Communication Technologies	5
2	GENERAL ENVIRONMENT	6
2.1	Influence of Stakeholders on Regulation and Policy.....	6
2.2	National Development Plan	6
2.3	Data Protection	8
2.4	Cybercrime and Spam	8
3	REGULATORY ENVIRONMENT FOR ELECTRONIC COMMUNICATIONS	10
3.1	Interconnection	10
3.2	Numbering	12
3.3	Rights of Way and Facilities Sharing/Collocation	13
3.4	Tariff Policy	13
3.5	Cost Accounting.....	14
3.6	Universal Service	14
3.7	Local Loop Unbundling	15
3.8	Leased Lines.....	16
3.9	Mobile Services.....	17
3.10	Satellite Services	20
3.11	Status of the National Regulatory Authority (NRA)	20
3.12	Licensing and Authorisation.....	21
3.13	Spectrum.....	23
4	REGULATORY ENVIRONMENT FOR ONLINE SERVICES	25
4.1	Digital Signatures.....	25
4.2	Payment Systems	25
5	USE OF ELECTRONIC COMMUNICATIONS SERVICES.....	26
5.1	Fixed Telephony Penetration	26
5.2	Mobile Usage	26
5.3	Cable Services.....	26
5.4	Computer Availability	27
5.5	Internet Access	27
5.6	Public Internet Access Points (PIAPs)	28

5.7	Wireless Internet Access	28
6	AVAILABILITY OF ONLINE SERVICES.....	30
6.1	E-Commerce.....	30
6.2	E-Government.....	31
6.3	E-Learning	33
6.4	E-Health	33
7	STRUCTURE OF THE COMMUNICATIONS INDUSTRY.....	34
7.1	Fixed Networks	34
7.2	Mobile Networks	35
7.3	Cable Networks.....	35
7.4	Internet Access Networks	36
7.5	Satellite Operators	36
7.6	Production of IT Services.....	37
7.7	Financial Development of the ICT Sector	37

1 OVERVIEW

The current independent state of Belarus was declared in 1990 and officially established in the following year. It has a population of 9.8 million people with a land mass of 207,595 square kilometres. The GNI per capita was 1,752 Euro in 2005, based on World Bank figures. Belarus is a republic with a President and a bicameral legislature. The country consists of seven principal administrative subdivisions: six provinces and Minsk, the capital.

1.1 Regulation of Electronic Communications

There is a high level of government involvement in the electronic communications sector and there is no independent National Regulatory Authority. Interconnection is regulated by the Ministry of Communications. Numbering resources are also managed by the Ministry of Communications. Freephone, national local call and premium rate numbers are not available. Number portability is also not available. VoIP is only available through the incumbent.

Beltelecom¹ (the state monopoly fixed line operator) has exclusive rights in the fixed line sector and the state also has significant levels of ownership in the mobile sector, limiting the possibilities for non-discriminatory access to network elements.

No efforts towards tariff rebalancing have yet been made and there is no cost accounting mechanism. The revised Law on Telecommunications, due to come into force shortly, will introduce basic aspects of universal service regulation, such as a universal service fund.

Despite the legislative framework being very limited in this regard, some local loop unbundling is undertaken, although only for Internet access services. Beltelecom is automatically the owner all the leased lines in the country. There is no specific data protection law in Belarus, nor are there any plans to introduce one. Belarus has not signed any international conventions on this topic.

1.2 Regulation of Electronic Services

Legislation regarding the use of electronic documents and digital signatures in Belarus is not complete and therefore digital signatures cannot be used for contractual arrangements in the country.

The liability of intermediaries for illegal content has not been directly addressed in Belarus. However, the limited reports of illegal online activity in Belarus indicate that the legal framework and capabilities of national authorities are quite robust. An action plan

¹ <http://eng.beltelecom.by/>

for introducing comprehensive intellectual property rights legislation is currently being implemented.

In addition, the Minister for Information has raised the issue of imposing offline rules to online services, particularly with regard to news services. No more detail is currently (December 2006) available on this point.

E-payment systems are at a very rudimentary level, partly due to the weak legislative framework. Banks are, however, beginning to offer basic online access to account information. Only twelve out of twenty-nine banks registered in Belarus issue bank cards, which limits demand for e-commerce services.

1.3 Use of Information and Communication Technologies

According to official sources, fixed network penetration in Belarus currently stands at 35 percent,² which is approximately at the same level as neighbouring new EU Member States. Mobile penetration is slightly lower than in neighbouring EU countries at 56,5 percent.³ The most recent official data on Internet penetration (from 2005) showed a penetration rate of 34.8 percent.⁴ As with the other countries in this report, there is a strong divide between urban and rural areas with regard to fixed penetration and Internet access.

Despite the weak legal framework for electronic commerce and the lack of bank cards in circulation, there is some growth in online services, although this is very heavily concentrated in the Minsk region (200 of the 219 online services identified in the course of research for this study).

E-government services are at a fairly basic level, although regional authorities do provide some interactivity, such as searchable databases, downloadable files and e-mail publications.

² Based on data presented by the Belarusian Minister of Communications and Informatisation in April 2006.

³ Data from Onliner Report, Nov. 1 2006 http://onliner.by/cont/onl_market06_10.pdf

⁴ Data from ITU Statistics 2005

2 GENERAL ENVIRONMENT

2.1 Influence of Stakeholders on Regulation and Policy

Generally speaking, stakeholder groups have little influence in the development of policy in Belarus. One exception is Infopark,⁵ which is an association of IT companies, predominantly software developers, which aims to influence decision-making, promote competition and safeguard the best interests of its members. This association has created the “Generation of Professionals”⁶ project to improve the training and recruitment of young IT specialists through identifying their needs and providing a link between industry and educational establishments. The association also focuses on influencing education policy in order to ensure that the manpower needs of the IT sector will continue to be met.

2.2 National Development Plan

The State Programme for the Informatisation of the Republic of Belarus was originally launched in 2002, to cover the period 2003-2005 (with a second stage planned for 2006-2007). The plan’s goals are as follows:

- Development of the telecommunications infrastructure and creation of access centres;
- Development and modernisation of ICT and the creation of an export-oriented branch of the IT industry;
- Enhancement of the legislative framework and system of state regulation in the sphere of informatisation;
- Improvement of State bodies’ use of ICT;
- Development of informatisation processes in all sectors of the economy, including the creation of a system of electronic trade and logistics;
- Development of training and retraining programmes for ICT specialists and to improve the qualifications of users;
- Assistance in the development of culture and mass media by means of ICT;
- Modernisation of the system of information security, taking into account the national Concept of National Security (most recent update July 2001).

The project began slowly, with only 50 percent of the planned budget for 2003 being spent in that year. By the end of 2005, the programme was still somewhat behind schedule: Telegeography⁷ reports that, in November 2005, of the 102 active initiatives proposed under the State Programme, only 10 were fully funded by the programme.

⁵ <http://www.infopark.org/>

⁶ <http://www.infopark.org/main.aspx?uid=79080>

⁷ “E-Belarus Programme Behind Schedule”, 4 November 2005

http://www.telegeography.com/cu/article.php?article_id=9768&email=html

It was decided in 2004 to extend the original programme for two further years in order to ensure that its goals could be achieved. In April, 2006, the Minister for Informatisation and Communications announced plans for 51 new projects to be launched under this programme, with BYR 54 billion (20.7 million Euro) allocated for them, divided between 29.9 billion (11.5 million Euro) for research and BYR 24.2 billion (9.2 million Euro) for capital investments.

In September 2006, the Ministry of Communications and Informatisation of the Republic of Belarus announced plans to invest 68.2 billion BYR (26,2 million Euro) in rural telecommunications infrastructure in 2006. In 2005, investments into rural telecommunications infrastructure totaled 77 billion BYR (29.6 million Euro).

Speaking at a press conference held on September 5, 2006, Belarusian Deputy Minister of Communications and Informatisation Vladimir Tesliuk, said that 67,4 billion BYR (25.9 million Euro) has been invested in telecommunications infrastructure development in the period January - July 2006. Mr. Tesliuk stated that state budget allocations totaled 17.34 BYR billion (6,65 million Euro), while 47.64 billion BYR (18,3 million Euro) were invested by private enterprises.

Also in the period January-July 2006, state-owned fixed line monopoly Beltelecom invested 39.9 billion BYR (15,3 million Euro) in rural infrastructure development, including 10.8 billion BYR (4.1 million Euro) allocated to extension of the phone network.

During the same period, mobile communications operator Velcom has invested 25.5 billion BYR (9,8 million Euro) in the extension of its network in rural regions.

The State programme for the development of rural regions for the period 2006-2010, includes plans for the roll-out of more than 30 thousand of fixed telephone lines and to achieve a fixed penetration rate of 25,8% . In rural areas, the percentage of mobile and fixed telephone users should total 93%.⁸

On October 23, 2006, the Belarusian Council of Ministers adopted the updated list of the State Informatisation Programme Projects for 2003–2005 and up to 2010 (Electronic Belarus) which includes 100 projects. At the end of 2005, from the original programme only six projects had been completed and 52 not yet started.

On the same day, the Belarusian Ministry of Communications adopted the Telecommunications Development programme 2006-2010.

The Programme objectives are:

- to further the development of telecommunications services for all the categories of users;
- to create national informatisation networks in order to provide access to information for all the citizens of the country.

The Programme defines the following priorities:

- preparation for the accession of Belarus to the WTO;
- extension of data transmission networks;
- digitisation of the public phone network;

⁸ <http://www.e-belarus.org/news/200609061.html>

- introduction of up-to-date information technologies;
- introduction of new telecommunications and mail services based on new ICTs.

In particular, a target of 80 percent digital automatic exchanges has been set, and to increase the number of fixed telephone lines up to 3,609,300 (38 per 100 inhabitants). The government is planning a 7,200km extension to the national fibre optic network. Broadband capacity of the national operator's network (Beltelecom) is expected to reach 240,500 ports by the end of 2010. The number of mobile communications network subscribers is planned to reach 8 million.

There are also plans to create 3G mobile communications networks. The 1885 - 2025 MHz and 2110 - 2200 MHz radio frequency bands are to be allocated for IMT-2000 communication providers on competitive basis.⁹

2.3 Data Protection

There is no special law on data protection in Belarus. The 1995 Law on Informatisation does not regulate the processing of personal data or the movement of data. Consequently, there is no data protection authority. There are no current or future plans for data protection in general, or specifically with regard to the online environment.

The government is, however, endeavouring to improve legislation in the area of consumer protection.¹⁰ The 2005 Law on Telecommunications introduces one provision regarding the confidentiality of telephone conversations and provides legislative underpinning for the rights and obligations of investigating authorities. The Government also plans to sign the Council of Europe Convention on Automatic Processing of Personal Data.

2.4 Cybercrime and Spam

Belarus has acceded to the UN Optional Protocol of the Convention on the Rights of the Child on the Sale of Children, Child Prostitution and Child Pornography, but has not signed the Council of Europe Cybercrime Convention (which is open to non-members). Belarus is a member of the World Intellectual Property Organisation.

In 2004, together with US law enforcement agencies, the Belarusian law enforcement authorities broke up an Internet child pornography operation based in Minsk. This suggests that national legislation is sufficiently robust to deal successfully with such cases and that law enforcement agencies in the country are prepared to act in such circumstances.

⁹ Source: <http://www.e-belarus.org/news/200610311.html>

¹⁰ You can access the Concept on the Improvement of the Legislation of the Republic of Belarus (in the local language) at: http://www.sovrep.gov.by/images/page47/plan_zakonoproektov.htm. An English summary can be accessed at <http://ncpi.gov.by/ConstSud/eng/mess04.htm>.

Belarus

The Belarusian Council of Ministers adopted a Programme for Intellectual Property Rights Protection for 2004 to 2005 (Resolution N472). The main objective of the programme is to improve the country's intellectual property rights legislation. The framework of the programme includes the drafting of laws concerning brands, patent fees and duties, as well as amendments to the laws on copyright. The programme also states that Belarus intends to enter the relevant international treaties on trademark and patent law. There is no new official information on how successful this project has been.

The issue of the liability of ISPs has not been addressed in any detail in Belarus.

An attempt was made to prohibit the sending of unsolicited e-mail. However, this was successfully opposed by various groups, including NGOs, who felt that the measure was unduly restrictive on free speech.

3 REGULATORY ENVIRONMENT FOR ELECTRONIC COMMUNICATIONS

3.1 Interconnection

There are four major documents regulating interconnection:

- Law On Communications (2005);
- Regulation on Communication Operators' Interconnection on the Territory of the Republic of Belarus (1999);
- Regulation on Supervision Procedures for Telecommunication Networks Connected to General Use Networks (1997) by the Ministry of Communications and Informatisation; and
- Regulation on Land Mobile Radio Communications Network Creation (1995) by the Ministry of Communications and Informatisation.

None of the above regulations require the publication of an RIO by the incumbent, nor do they mandate carrier selection or carrier preselection. The Regulation on Communication Operators' Interconnection on the Territory of the Republic of Belarus (1999) should have led to a situation where each operator signed interconnection agreements with every other operator connected to the public switched telephone network. However, the Regulation on Interconnection does not describe any clear procedures or rules for this situation, as it only envisages connection through/via Beltelecom. As a result, a number of conflicts regarding interconnection issues have arisen between telecommunications operators, although all of these have been resolved after intervention by the Ministry of Communication. The new Law on Telecommunications (2005) makes the situation clearer, insofar as it specifies only interconnection via the incumbent (article 38).

According to licence terms, all incoming calls should be free of charge for customers, as is normal practice in most countries. This means that MTS (a mobile provider) should pay for termination of its clients' calls to Velcom (another mobile provider) clients. However, in practice, the two operators do not have a direct channel interconnecting them and both need to use the Beltelecom network. In this case, therefore, MTS has to pay both Beltelecom (as owner of the transit network) and Velcom (as the terminating operator).

At present, six interconnection agreements between mobile operators are in place (with some operators connecting indirectly through Beltelecom). There are four mobile operators in the market, Velcom,¹¹ Mobile TeleSystems,¹² BelCel¹³ and BeST.¹⁴ The Ministry of Communications has been notified of, and has examined, all the interconnection agreements.

¹¹ <http://www.velcom.by>

¹² <http://www.mts.by>

¹³ <http://www.belcel.by>

¹⁴ <http://www.best.by/>

Mobile Call Termination Charges

Mobile Operator		Minimum BYR/min	minimum EUR/min	maximum BYR/min	maximum EUR/min
MTS					
	Call termination charges paid to Beltelecom for fixed line termination	180	0.0691	350	0.134
	Call termination charges paid to other mobile networks	180	0.0691	350	0.134
Velcom					
	Call termination charges paid to Beltelecom for fixed line termination	170	0.065	450	0.17
	Call termination charges paid to other mobile networks	170	0.065	450	0.17
Diallog					
	Call termination charges paid to Beltelecom for fixed line termination	170	0.065	230	0.088
	Call termination charges paid to other mobile networks	170	0.065	230	0.088
BeST					
	Call termination charges paid to Beltelecom for fixed line termination	94	0.036	163	0.063
	Call termination charges paid to other mobile networks	163	0.063	163	0.063
Beltelecom					
	Internal Beltelecom fixed/fixed call termination charges	7.67	0.0029	58,3	0.022
	Call termination charges paid to mobile network providers.	129	0.0495	258	0.099

The Ministry of Communications and Beltelecom RSA govern the IP-telephony market, and VoIP is currently only available (legally) through the incumbent. This situation has resulted in the appearance of clandestine IP-telephony operators. The organisers of one clandestine exchange node were recently convicted of illegal business activity and fined. It is, in theory, possible to terminate VoIP calls on the incumbent's network; however, this has proven very difficult in practice. In one case in 2005, two Belarusian citizens

used 225 SIM cards purchased from consumers to transfer calls from a VoIP link onto mobile networks, thereby bypassing the Beltelecom international calls monopoly.

Revenue sharing is not available for ISPs and international IP links are only available through the incumbent's network.

3.2 Numbering

Procedures for managing the national numbering plan are laid down in Article 16 of the 2005 Law on Telecommunications. The numbering plan is approved by the Council of Ministers of the Republic of Belarus.

Numbering resources are equally available to all mobile communications service providers. The Ministry of Communication and Information is responsible for allocating numbering resources in all cases, including when a mobile operator applies for an extension of numbering space.

State-owned Beltelecom, the incumbent fixed telephony operator, holds the monopoly on access to fixed numbering ranges, as the only provider of fixed line telephony services in Belarus.

According to the Ministry of Communications' regulations, only Beltelecom is authorised to provide VoIP services. When the Ministry of Communications issues licences to ISPs, it is expressly stipulated that they cannot provide VoIP services and, consequently, no numbering services are available to them for this purpose. VoIP will not have a numbering range but will be permitted in certain circumstances, such as for domestic calls and connecting branches of the same company.

There are no plans to introduce mobile number portability in the foreseeable future. There is no fixed line number portability in view of Beltelecom's monopoly. However, on November 2006, Sergei Poblaguev, BeST Deputy General Director, suggested that portability issues be discussed.

Non-geographic numbers (premium rate, etc) are not available, with the exception of so-called "green numbers", which are toll-free and paid for by the receiving party. These have been available since May, 2003.

Changes and additions to the numbering plan can be made during the approval process of a new communications system (a new GSM operator, for example), when the relevant part of the numbering plan has been exhausted, or if it is deemed technically necessary. Withdrawal of numbering resources can take place if a limited licence expires, if the communications service provider asks for the withdrawal, if the numbers have not been used in the two years since allocation, or in the event that the conditions of use of the numbers have been breached.

A new numbering plan was announced in early 2006, which plans to eliminate the initial 0 in city codes, value-added services, information services and taxi services. New shortcodes beginning with the digit 1 will be introduced for special services in 2007. The

new interregional and intercity numbering plan will come into effect in 2008. The use of 112 will also be extended to cover other emergency services in addition to the fire service.

All operators in Belarus adopted the new numbering plan since October 1, 2006. Old seven figures telephone numbers can still be used, but only for intra-network calls. For connections between different operators' networks, only international call formats are to be used. To connect to the fixed telephone network, seven figure numbers are to be used preceded by (#).

3.3 Rights of Way and Facilities Sharing/Collocation

Mobile and Internet providers generally do not have equal rights to the incumbent telephony company, Beltelecom.

There are no alternative infrastructures to provide effective competition in telephony and Internet access. ISPs' copper lines are carried over the Beltelecom local exchange, even when an ISP finances and builds out the line itself. This creates problems with regard to efficiency and competition. However, all ISPs pay Beltelecom under equal conditions.

ISPs pay a monthly conduit rent of 50US\$/km (41.32 Euro approximately) for a fibre-optic cable. In order to reduce overall costs, ISPs can route some of their fibre optic cables through the local Beltelecom exchange.

The application procedure for the installation of fibre optic cable by ISPs is as follows:

- A provider applies to Beltelecom requesting details of network's technical requirements.
- The provider gets a licence for design development and can prepare a network design.
- The design developed by the provider undergoes examination by experts in the Ministry of Architecture if it is a national network, or in local administrations if it is a local project. Such a study costs from 50US\$ to 250US\$ (41 to 206 Euro), depending on the complexity of the project.
- The provider submits its project and applies for a licence from the Ministry of Communications.

There are no facilities sharing or collocation obligations imposed on mobile providers. It is not permitted to build masts on cultivated land or forestry in Belarus.

3.4 Tariff Policy

RSA Beltelecom holds the monopoly for fixed line communications. The Ministry of the Economy establishes tariffs for Beltelecom, based on subsidising local fixed telephony communications. In order to preserve revenues and subsidise local services, high prices

are set for international calls and for leased lines. The new Law on Communications from 2005 maintained Beltelecom’s exclusive rights for international and intercity telephony. The tariff imbalance, which sees Beltelecom obtain 60 percent of its profit from international calls,¹⁵ makes competition in the local market difficult. Line rental is approximately 20 percent of cost.

The state also regulates prices for services provided under the universal service provisions of Article 14 of the 2005 Law on Electronic Communications.

There have not yet been any efforts to reduce or eliminate price differences between local, regional and national calls, nor are there any plans to implement rebalancing in the foreseeable future.

Beltelecom: Cost of a Three-Minute Call (local, regional, international)

Beltelecom	Min (Eur/3min)	Max (Eur/3min)
Local	0.0087	0.0087
Regional	0.02257	0.067
International	0.344 (Ukraine)	5.42 (Bangladesh)

It is estimated that local prices cover approximately 96 percent of costs in urban areas and 30 percent in rural areas. Furthermore, at current rates, it will take 25 years to recoup the cost of installation of digital exchanges in urban areas and 60 years in rural areas.¹⁶

3.5 Cost Accounting

In the absence of an NRA and liberalisation (planned for 2007), there is currently neither a pressing need for a comprehensive cost accounting system in Belarus, nor an independent body to oversee its implementation.

Obligations are imposed by the 2005 Law on Telecommunications for communications providers to inform consumers of the accounting process used to charge for their services. Similarly, Beltelecom is under an obligation to correctly account for international traffic, in line with international agreements.

3.6 Universal Service

The 2005 Law on Telecommunications¹⁷ states in Article 43 that the list of universal services, as well as terms and procedures for rolling out these services, is to be

¹⁵ Based on data from Beltelecom’s 2004 annual report. See <http://www.beltelecom.by/company/about/annual2004>

¹⁶ DELO 2006, “Connected One Network”, Issue N 4(156), 2006. Pages 11-13

¹⁷ The draft law was approved in second reading by Parliament on 21 June 2005 and will enter into force after being signed by the President.

regulated by the Council of Ministers. Universal service is described as the State-guaranteed provision, to all users on the territory of the Republic of Belarus, of commonly used electronic communication at acceptable tariffs (currently applicable to fixed line services only).

Article 27 of the Law says that a universal service fund should be formed on the basis of telecommunications operators' payments. The procedures, budget and contribution rates are to be regulated directly by the President of Belarus. Universal service providers other than Beltelecom may be appointed, although the new Law does not go into detail about how this would happen in practice.

The 2005 Law does not mention anything about calling line ID, competition in directory services or measures to ensure services to disadvantaged users. In general, while the draft law does address universal service more than previous legislation, its scope is still not as broad as universal service legislation in the EU.

Draft legislation on universal service specifically was prepared in early 2006. Various funding options have been discussed, including a 1.5 percent levy on revenue and "social obligations" (such as building rural payphones) being included in licence terms. Final proposals are expected in early 2007.

3.7 Local Loop Unbundling

In Belarus, there are no legal requirements for local loop unbundling. The Ministry of Communications has not established policy in this sphere. Nonetheless, it is still possible for Internet access providers to use unbundling. The issue seems to be solved on the basis of private agreements made between directors of local Beltelecom branches and individual ISPs to rent space in automatic telephone exchange premises. The decisions are made solely by local branch directors, with outcomes varying depending on the relationships with specific ISPs.

In Minsk, internal directives of Beltelecom and MGTS (City Telephone Network Operator, a part of Beltelecom) are used for the decision-making process. Clearly this procedure gives little or no certainty to other operators, making planning, budgeting and negotiation much more difficult for ISPs.

Costs are shared between the unbundling operator and the incumbent (leasing of space, electricity, etc). The incumbent does not permit adjacent/remote collocation to ISPs if there is a lack of space and there is no offer for shared access. Separate rooms are required for competitors' equipment. There is no competition in the back-haul market.

Due to Beltelecom's monopoly for voice services, unbundling is only available for provision of Internet access services. Overall, the study team estimates that fifteen to twenty thousand lines have been unbundled, based on discussions with industry.

In August 2006, a conflict arose between Beltelecom and ADSL service providers. Beltelecom wished to increase rates for unbundled lines and maintenance services at the same time as introducing its own ADSL services. Following three months of dispute, the parties reached a compromise and all competitive providers have signed new agreements with Beltelecom. The monthly price for an unbundled lines is 18,700 BYR (7.18EUR), while the monthly maintenance fee increased from 14,060 BYR (5.4EUR) to 14,340(5.5EUR) BYR. However, the lead time has been reduced to 3 days.

3.8 Leased Lines

In Belarus, only RSA Beltelecom can connect leased lines, as the entire infrastructure in the country belongs to it. Therefore, other ISPs have to invest in the Beltelecom infrastructure in order to develop their own networks. If an ISP were to build out a leased line itself, the line would automatically become the property of Beltelecom.

In a situation where a monopolist owns the infrastructure and establishes the accounting schemes, neither the state-owned monopoly nor the Government have an interest in putting in place regulatory requirements for transparency, non-discrimination and cost-orientation.

Beltelecom charges for leased lines (per month)

Speed	Month
64kbps	US\$150 / 124 Euro
2mbps	US\$2,000 /1,652 Euro
34mbps	US\$26,656 / 32,254 Euro

Taking the Minsk fixed line network as an example, leased lines are normally repaired within 24 hours.

The only technical limitation for interconnection between leased lines and public telecommunications networks is created by the lack of technical capacity in the Beltelecom infrastructure.

There are no specific regulations regarding the purposes for which leased lines can be used. However, Beltelecom has the right to unilaterally stop a leased line from being used, should it feel that this is appropriate.

There is no sector-specific legislation relating to leased lines in Belarus, nor is there any competition law in force. The whole field is regulated by Beltelecom and Ministry of Communications ad hoc decisions.

Beltelecom becomes the owner of copper lines once they have been built out by a competitor. If providers lay their own fibre optic lines, they pay duct rent to Beltelecom.

3.9 Mobile Services

At present, there are 4 mobile operators in Belarus: Velcom,¹⁸ MTS,¹⁹ BelCel²⁰ and BeST.²¹

Velcom was the first operator of a GSM-900 mobile digital standard in the Republic of Belarus and it began commercial operations on 16 April 1999. According to the company, its network covers 73 percent per cent of the country's territory (91.9 percent coverage of the population) and has more than 2.56 million subscribers. The Belarusian state holds a controlling stake in the company. The company has invested 310 US\$ (256 million Euro) in the past seven years.

Mobile TeleSystems (MTS) is the second GSM operator. On 30 April 2002, MTS, a joint stock venture founded earlier that month, was awarded a licence allowing the company to use the 1800 MHz frequency. MTS says that its network covers 62 per cent of the country's territory (90 percent of the country's population) and has 2,975 million subscribers. MTS Belarus now operates a GPRS network which supports EDGE technology in Minsk (since August 21, 2006). MTS also provides EDGE services in all regional centers - Minsk, Gridno, Brest, Vitebsk, Mogilev, and Gomel (since October 2006).

Vladimir Karpovich, the former Belarusian minister for communications (2000-2002) was appointed by the Belarusian President as Director General of MTS in September 2005. MTS Russia recently offered to purchase the 51 percent share of the company owned by the government of Belarus for 350 US\$ (289 million Euro), but this offer was rejected.

BelCel is a private CDMA2000 operator. Its main shareholders are Commstruct International and Beltelecom. Belcel's network covers 46.4 per cent of the country's territory (89.1 percent of the population). The number of BelCel subscribers now totals 100,000. The Belarusian President appointed Igor Bezruchonok (previously deputy director general) as director general of BelCel in September 2005. The company recently transferred all of its services to CDMA-450, shutting down its NMT-450 services.

BeST, a 100 percent state-owned operator, was launched in November 2004 following a decision by the Ministry of Communications and Information to end the then underway GSM licence tendering process. It is intended that BeST will focus on serving socially disadvantaged customers; it benefits from lower taxes to help it achieve this goal. According to Belarusian GSM operator BeST general director Mikhail Demchenko, the company is planning to extend its network to cover all the Belarusian cities with the population more than one hundred thousand to shortly put its one hundredth base station into operation .

¹⁸ <http://www.velcom.by/en/>

¹⁹ <http://www.mtsqsm.by/>

²⁰ <http://www.belcel.com.by/>

²¹ <http://www.best.by/>

As of November 1, 2006, the BeST network covers territory inhabited by 46,4 per cent of the Belarus country's population , including 8 cities, and provides services to more than 13 thousand subscribers.

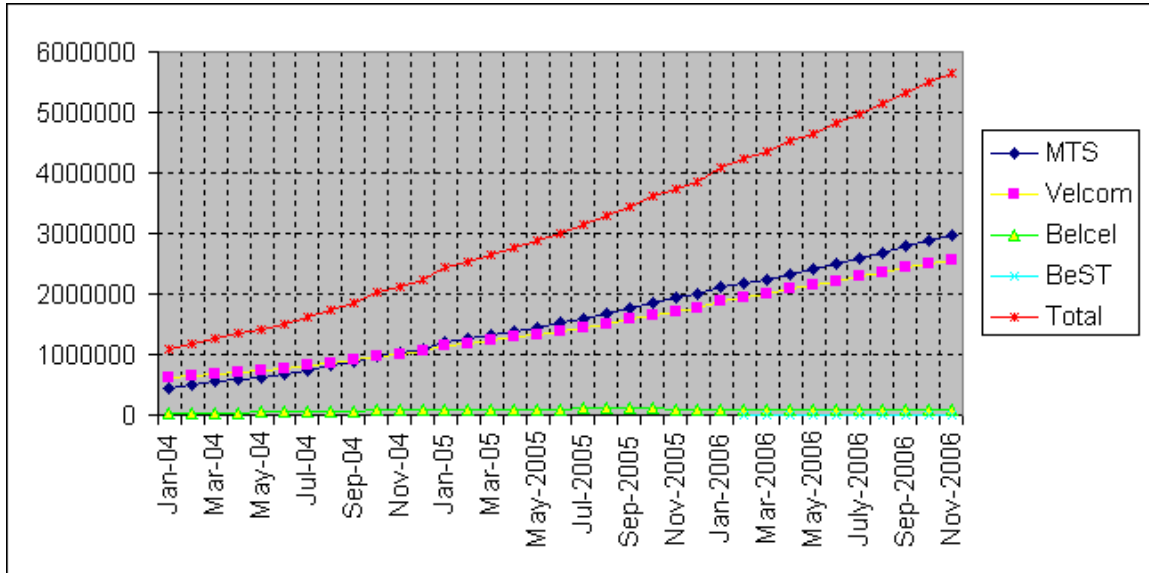
Some high-speed CDMA services are available from BelCel. No 3G licenses have yet been awarded.

There are no MVNOs on the market, although some industry experts had indicated to the study team that BeST may start to build its customer base initially as an MVNO. The current plan is for BeST to build its own infrastructure, although using towers erected by other operators.

In November 2006, there were 5,648,000 mobile phone subscribers in Belarus, which equated to 56.5 percent of the population²² and represents a growth of 1.175 million users since the beginning of the year. According to the Telecommunications Development programme for 2006-2010, it is planned that by 2010 the number of mobile communications network subscribers will total 8 million.

Roll-out of infrastructure has not been as advanced as expected: for example, MDC (Velcom) has not yet covered 11 small towns in the Mogilev region as had been previously planned by the Ministry of Communications. Similarly, MTS failed to ensure planned coverage in 14 small towns in the Mogilev region and two border check points in Gomel region. Of the 200 base stations planned by MTS for the 2004-2005 period, only 109 were actually put into operation²³.

Mobile Subscriber Numbers 2004-2006²⁴



There are no 100 percent prepaid services in Belarus, which is very unusual, particularly for a developing economy. This appears to be due to the stringent consumer registration obligations required by law.

²² Total population is based on an official estimate of population growth based on 1999 census figures.

²³ See <http://www.e-belarus.org> for more information

²⁴ From e-Belarus.org

GPRS services are available in Belarus. Velcom offers GPRS services in three different price categories. The most advanced service “Velcom GPRS Web Plus” has a connection fee of 10,000BYR (3.83 Euro), with a monthly fee of 54,000BYR (20.71 euro) which includes 100Mb of downloads, with additional downloads are charged at 45BYR (0.017 euro). Statistics for the use of WAP/GPRS services are not available.

As mentioned above, Mobile TeleSystems (MTS) Belarus publicly launched its GPRS network. As of October 2006, MTS estimated that it had 200,000 potential GPRS users among its client base. Despite doubts previously expressed by MTS executives and its general director Vladimir Karpovich regarding the possible demand for the service, all the MTS's transceivers put into operation during the last two years support EDGE technology.

As an indication of mobile costs, Velcom charges 0.04 Euro per SMS, whereas a three-minute mobile-to-mobile call costs 5 times more.

Taking Velcom charges as an example, monthly fees range from 2,100BYR (0.085 Euro) for a “light” (low monthly fee with no roaming, no international calls and ten minutes of calls included in the fee) subscription to 11,350BYR (4.35 Euro) for a “standard” subscription (a higher monthly subscription with roaming, international calls and 20 minutes of calls included in the fee. As a comparison, the monthly subscription fee for a fixed line from Beltelecom is 1,345BYR (0.515 Euro).²⁵

Fixed and Mobile Monthly Subscription Costs²⁶

	Min (Euro) per month	Max (Euro) per month
Beltelecom (fixed)	0.6	0.96
Velcom	0	11.53
MTS	0	38.42
BeST	0	0
Belcel (Dialog)	0	15.36

Negotiations have taken place between state representatives and Siemens and Ericsson for 4G services. Also, the government has confirmed that MTS and Velcom are testing new equipment for the roll-out of 3G services, even though no licences have yet been issued. Velcom has launched 3G services on a small scale, with equipment provided by Ericsson and has launched EDGE services in three regions. MTS has also started testing UMTS and HSDPA and has been providing MMS services since March 2006. After the testing period, the equipment has been dismantled and returned back to the manufacturers. Positive test results were the reason for MTS' application (on November 1, 2006) to the Ministry of Communications and Informatisation for permission to establish and operate 3G networks.

²⁵ From the Beltelecom website – www.beltelecom.by

²⁶ <http://www.e-belarus.org>

3.10 Satellite Services

Beltelecom and Intersputnik²⁷ have conducted negotiations on the creation of a joint stock company that could provide modern multimedia satellite communication services in Belarus. An agreement was reached for Intersputnik capacity to be used for providing satellite multimedia services on the territory of Belarus.

Intersputnik provides services to telecommunication operators and to corporate clients using LMI-1 (Lockheed Martin Intersputnik joint stock company), Express-A and Express-AM (Russia) satellites. Intersputnik manages the marketing and provision of Eutelsat satellite telecommunications system services (23 satellites) and Gazkom system (Jamal-200 satellites) services. The Intersputnik system consists of more than 150 ground base stations for long distance communications and more than 1500 ground base stations in VSAT and television distribution networks.

Currently, the numbers for satellite television are low, with less than one-twentieth (4.3 percent) of Belarusians having access to a satellite dish for television. At the same time, terrestrial television services are available to 97.7 percent of the population, whereas only 43.4 percent have the possibility of a cable connection for television and 88.9 percent have radio.²⁸

8.8 percent of television sets receive their signal with the help of an antenna on the television or elsewhere in the room; 54.1 percent with an antenna on the roof/outside window; 2.5 percent with an individual satellite dish; 0.9 percent with a shared satellite dish.

0.2 percent of the respondents to the TBM survey said that they received international and regional TV programs via Eutelsat, 0.3 percent via Astra, 0.3 percent via Telecom 1, 0.1 percent via Hot Bird 1, 0.8 percent via NTV+, and 0.7 percent named other satellite services. 1.5 percent did not know the name of their satellite provider. Only IP downlink and television are available to home and business users.²⁹

IP downlink and IP telephony connections are available only via VSAT (provided by a division of Beltelecom). However, the service is extremely expensive.

3.11 Status of the National Regulatory Authority (NRA)

There is no nominally or functionally independent National Regulatory Authority in Belarus.

According to the 1994 Law on Communications, the national regulatory body is to be authorised by the Council of Ministers. In 2004, the Council of Ministers issued a decree entitling the Ministry of Communications and Informatisation of the Republic of Belarus

²⁷ <http://www.intersputnik.com/>

²⁸ Data produced by Belarusian NGO TBM under contract from the Ebert Foundation.

²⁹ *ibid.*

to regulate telecommunications in the country. The 2005 Law on Telecommunications reserves *inter alia*, spectrum policy, approval of the numbering plan, and tariff regulation for designated services, as policies to be determined by the Belarusian state.

Article 40 of the 1994 Law is devoted to the national telecommunications operator. At present, state-owned Beltelecom is the national telecommunications operator in the Republic of Belarus. Beltelecom is responsible for ensuring its own functioning and development as a “*republican, state-owned association*” and that it operates in compliance with state national development programs and respective industry schemes for implementation of government plans for infrastructure development.

The Ministry of Economy will have responsibility for establishing a cost accounting system.

3.12 Licensing and Authorisation

According to the 2005 Law on Telecommunications (Articles 6 to 12), undertakings in the telecommunications sphere should be licensed. The list of activities subject to licensing and bodies authorised to issue licences are determined by Presidential Decree 1387 of 14 June 2003. The list of state regulatory bodies is listed under Article 6 of the Law and includes the President, national and local councils of ministers, executive, state and local bodies, the State Commission for Radio Frequencies and the Minister for Communication and Informatisation. Article 7 gives the President overall control of regulation in the field of telecommunications, while Article 8 delegates the management of policy issues to the Council of Ministers.

Licences for telecommunications activities are issued by the Ministry of Informatisation and Communications. The Presidential State Security Centre issues licences concerning data processing and use of digital signatures. The Presidential State Security Centre and the Committee for State Security (KGB) jointly issue licences in the sphere of cryptography.

In June 2005, the Ministry of Communications and Informatisation acquired the right to issue 10-year licences. Before this, licences expired after a five year period, although the average time it took to recover investment was seven years. This acted as a constraint on active investment in this sector.

The State Commission on Radio Frequency issues licences for use of radio frequency for five-year periods.

According to the Council of Ministers Regulation on Licensing in Telecommunications (2003) (updated in 2005 by the Presidential Decree mentioned above), the following activities require licences:

- use of radio frequencies;
- operation of telecommunications systems; and
- the design, construction and operation of networks.

According to the Regulation, the Ministry of Communications and Informatisation is authorised to restrict the number of licences for the construction and running of networks and systems of international and intercity telecommunications, fixed and mobile radio communications, and satellite fixed and mobile communications.

ISPs' licences include the requirement not to use their own international links. The licences issued by the Ministry of Communications and Informatisation state that an ISP is obliged to rent either Beltelecom international links or Delovaya Set (a joint venture with Beltelecom, which leases international links to third parties). However, the Minister for Communications and Informatisation has indicated that this situation will change when the market is liberalised in 2007, although it is intended that all existing international infrastructure will remain within Beltelecom ownership. The extent of the planned liberalisation remains unclear, as minimal measures, such as removal of Beltelecom's monopoly, have so far been announced.

According to the Regulation on Licensing in the Telecommunications Sector (20.10.2003 N 1387), Internet service providers and fixed operators are to submit the following documents when applying for licences:

- budget and the balance for the previous year (for companies already in operation);
- specifications regarding the equipment necessary for providing services;
- copies of certificates for communication equipment corresponding to the National Certification System of the Republic of Belarus;
- information about workers' qualifications (including their diplomas, certificates, etc); and
- a list of official technical requirements for the provided services and operations.

The price for an ISP licence is nominal; however documentation and design preparation are expensive.

In addition to the documents listed above, mobile operators are to submit:

- copies of certificates for the equipment;
- approval by the authorities for the siting of transmission equipment;
- necessary calculations for protection zones around transmitters;
- service zone calculations in agreement with BelGIE, a subdivision of the Ministry for Communications
- a copy of the resolution for transmission; and
- agreements with local bodies engaged in television and radio broadcasting.

A mobile operator licence does not have a fixed price. MTS paid 5 million US\$ (4.13 million Euro) in 2002 for its licence, whereas the state-owned GSM operator BeST paid 100 Euro for its licence in 2005.

3.13 Spectrum

In Belarus, the State Commission for Radio Frequencies (consisting of the Ministry of Defence, the Ministry of Internal Affairs, the KGB and other security agencies) is authorised to oversee spectrum management and allocation, while the Inspectorate of the Republic of Belarus for Electronic Communication supervises the activities of operators and providers.

The Commission was founded in 1994, in accordance with the Law on Telecommunications. The Minister of Informatisation and Communications heads the Commission. Representatives of more than twenty governmental bodies, including the Presidential Administration and National Congress, are members of the Commission. There have been no significant consultations with industry and other stakeholders so far on spectrum policy in Belarus.

The Commission allocates radio frequencies according to the National Table of 9Khz-40GHz Radio Frequencies. The Table is frequently updated by the Commission. The Commission recently adopted a new table, which takes into account 790-2500 MHz frequencies. The Commission is currently working on the table for the ranges of 2.5-10 and 10-27 Ghz.

The Law on Telecommunications, which was signed into law on 2 August 2005, is intended to be a preliminary step towards spectrum liberalisation. Article 15 (on radio frequency spectrum) states that, as radio frequency is a scarce natural resource, all users should pay for it, including the military and police. This provides a basis for radio frequency trading and equal terms for all users, with centralised government control. According to expert assessments, that will allow effective distribution of spectrum. At present, 40.2 percent of radiofrequencies, which fall within the range of 9 Khz - 10 Ghz are controlled by military agencies; 57.05 percent are operated by military and civil agencies, among which 19 percent are used by civil agencies solely. It is expected that the new legislative framework will stimulate redistribution of frequencies.

A new regulation on radio frequencies was adopted in April 2006, although the overall distribution of frequencies between public and private organisations appears to be unchanged. A fee is being imposed by the new legislation in order to promote more efficient use of existing frequencies.

According to the Presidential Decree #240 "On payment for radio-frequency spectrum usage" signed on April 18, 2006, an annual payment for radio frequencies is to be introduced in Belarus after January 1 2006.

Annual and non-recurrent fees are calculated from 1 Euro for 1Mhz frequency used during a year by one radio electronic device covering 1 square km. The rate also depends on the purpose of broadcasting, the technologies used, emission band, commercial value, service area, location and time.

Annual payments for frequencies used by governmental institutions, and national security, bodies and emergency services is a nominal 100 Euro. Annual and non-recurrent payments are transferred to the national budget.

Belarus

Public use of Wi-Fi (i.e. not used in a completely domestic or private office environment) requires a licence in Belarus. The licensing process requires the preparation of a technical dossier. The price for putting together such a dossier is approximately 1,000US\$ (846 Euro). The licence is issued, at the earliest, half a year after the application. If a business wants to use Wi-Fi in order to connect two geographic locations, Beltelecom has to confirm that the state monopoly is technically unable to provide the connection. A plan to permit unlicensed use of Wi-Fi was approved and subsequently withdrawn.

4 REGULATORY ENVIRONMENT FOR ONLINE SERVICES

4.1 Digital Signatures

Legal provisions for digital signatures are set out in the Law on Electronic Documents, which was adopted in 2000. This Law is the major document regulating Internet security issues in Belarus and covers requirements for electronic documents, security of e-documents, and the rights, duties and liabilities of participants in legal relations arising in the field of electronic document circulation.

There have been problems with the functioning of Certification Centres. These problems remain unsolved, as the order and conditions of certification have not yet been determined. The use of electronic digital signatures, the order of electronic transactions, and the responsibility of participants have also not been properly resolved. These problems, together with the fact that it is not possible to use credit/debit cards for online purchases in Belarus, means that offline payment methods are needed for online transactions.

4.2 Payment Systems

At present, Belarusian banks are developing financial services that enable clients to handle their bank accounts remotely. All the major banks have now introduced basic remote banking systems for their clients (only available to business customers). The banks are at the informational Internet-banking stage; in other words, they have installed an elementary information retrieval system for clients.

Electronic payment systems are therefore at a very early stage of development in Belarus. On 29 September 2005, the Belarusian National Bank issued a regulation concerning the establishment of a technical coordination centre for e-money processing services – the BelCard³⁰ Payment System. This aims to develop unified technical solutions for electronic money circulation and to reduce the cost of using electronic money systems.

Infopark³¹ (association of IT developers) has been lobbying for a more comprehensive legal framework for electronic payments. Currently, it is not legally possible to provide mobile or online banking to residential users.

³⁰ <http://www.belcard.by/>

³¹ <http://www.infopark.org/>

5 USE OF ELECTRONIC COMMUNICATIONS SERVICES

5.1 Fixed Telephony Penetration

In April 2006, the Belarusian Minister of Communications and Informatisation, Vladimir Goncharenko summarised the latest developments in the sphere of fixed telephony at the TIBO2006 International Congress³² held in Minsk. According to the data presented, fixed telephone line density is 35 per 100 inhabitants (38.7 in urban areas and 25.2 in rural areas). On average, 89 households out of 100 had fixed-line telephone access (101.2 lines per 100 households in urban areas and 63.1 in rural areas), a rate that is similar to that of Lithuania and Poland. Some 60 percent of automatic telephone exchanges in the country are digital.

By 2010, 80% of exchanges will be digital. By then, it is planned that there will be 3.4 million telephone lines in service.

By the end of 2006, all telephone exchanges were to be replaced by electronic ones through a phased upgrade programme. This programme had not been fully completed as of December 2006. Since January 2005, Ericsson has supplied equipment worth over 2.5 million Euro to Beltelecom. More than 430,000 AXE-10 lines have been sold by Ericsson to Belarus. According to information from Ericsson's marketing research department, Ericsson equipment supplies to Belarus in January-August 2005 had doubled as compared to the whole of 2004. In August 2005, Ericsson and Beltelecom signed a further contract for the supply of equipment to modernise Beltelecom's fixed telephony market. Within the framework of the new contract, Ericsson is to supply an AXE switchboard for the Gomel city telephone network.

5.2 Mobile Usage

Mobile penetration is currently at 56.5 percent³³. GPRS services are provided by 2 operators – MTS and Velcom.

5.3 Cable Services

In a 2003 World Bank survey, cable penetration in Belarus was presented as follows:

Cable Penetration in Belarus

Variable (only 1 option out of 4 was possible for each region)	Belarus (%)	Minsk (%)	Regions (%)
No cable services are available	30	30	50

³² <http://tc.by/eng/tibo/>

³³ Data from Onliner Report November 1 <http://www.onliner.by/>

Belarus

Cable penetration is below 5% of households	70	50	50
Between 5 and 10% of households	0	20	0
Cable penetration is high, reaching 10% of households or higher	0	0	0

In the period January-June 2006, cable operator Cosmos TV increased its subscriber base by 74% and the company is aiming to have 10,500 consumers by the end of 2006. At present, Cosmos TV transmits 39 TV channels as well as providing broadband Internet access.

5.4 Computer Availability

There were 7.39 computers per 100 inhabitants in 2003.³⁴ More recent figures are not available.

5.5 Internet Access

As of 1 November 2006, 32 ISPs were active in the country. There are 23 dial-up metered and 23 dial-up unmetered services, 19 xDSL providers, 1 wireless ISP and three mobile providers providing Internet access.

Cost of Internet Access in Belarus (November 2006³⁵)

Type of Access	Min, US\$/Euro	Max, US\$/Euro
Dial-Up	0.046/0.038 (per hour)	0.7/0.58 (per hour)
Unmetered access	34.84/28.79	55.74/46.07
ADSL	0 (fully traffic-based pricing)	460/380 (average 50/41)
Hi-speed cable	5/4.13	590/487

The ITU indicated that in 2006 there were 3.394 million Internet users in Belarus, compared with 1.6 million in 2003. This accounts for about 34.9 percent of the country's total population.

Beltelecom is developing its broadband offering, supported by a doubling of international bandwidth from 465mbps to 1.5gbps. The Belarusian government also intends to support the building of a major national IP backbone.

A survey carried out at the beginning of 2005, conducted by the Belarusian Independent Institute of Socio-Economic and Political Research, indicates that people aged 20 to 24 (who constitute one third of the respondents) are the most active Internet users and that 50 percent of all respondents are university graduates. 45.6 percent of Internet users

³⁴ These statistics come from the ICT Infrastructure and E-Readiness Assessments in the Republic of Belarus Report, World Bank, April 2003.

³⁵ This table was put together using data from several main ISPs.

live in regional centres, of which 22.9 percent live in the capital city.³⁶ Moreover, the survey notes that 40 percent of Internet users are public sector employees. In short, the research concludes that the average Internet user in Belarus is a young governmental employee in his or her early twenties, with a university degree, living in a regional centre.

According to the survey conducted by MASMI BY in 2006, Internet users make up 33% of the population of regional centers in Belarus. An offline polling of one thousand respondents aged from 18 to 64 was conducted over a period of three months in Minsk and other regional centres. According to that poll, 65% of Internet users are 18-34 years old.. Men make the largest proportion of users, at 57%.

In Minsk Internet users (people who have used the Internet in the preceding three months) represent 38% of population, in Mogilev -18%, in Grodno -36%, in Gomel -26% in Vitebsk -39%, and in Brest -23%.

The top online services in Belarus (with more than 100,000 unique Belarusian visitors per month are tut.by (news, mail, search, forum, catalogue, classified advertisements and jobs), open.by (e-shops, search, mail, news, jobs) and onliner.by (mobile devices, forum).

5.6 Public Internet Access Points (PIAPs)

As of April 2005, there were 187 Beltelecom PIAPs in the country, which provides work stations for 732 people. 92 more workstations were planned to go into operation in 2005, with a planned increase of 115 for 2006-2007. There are also ten free wireless hotspots in the country, working in test mode.

5.7 Wireless Internet Access

On 31 March 2005, the Belarus Council of Ministers adopted Decision 346 establishing the Concept for Radio Communications Development in Belarus from 2005-2010. A key element of the plan is "*to organise the production of broadband radio access equipment [using] – IEEE 802.11 and IEEE 802.16 standards.*" Before this decision, the Government did not allow the 2.4 GHz band to be used for Wi-Fi. However, in practice, the import of equipment for private use could not be prevented, since Wi-Fi was a standard feature in laptop computers.

In order to coordinate the implementation of this Concept, the National Scientific Centre for Radio Communications Facilities is to be established. Moreover, to promote the modernisation of radio communications equipment production and to develop facilities, the Government is planning to reduce or possibly eliminate customs taxes for exporting radio communications equipment, software and related goods.

³⁶ See <http://iiseps.by>

Belarus

In mid-2005 there were ten public Wi-Fi spots in Belarus, all in Minsk.

In June 2005 Siemens Communications and the Belarusian state mobile operator BeST signed a memorandum of understanding (MoU) for the delivery of a WiMax communications solution. The broadband radio network is part of a new initiative in Belarus designed to provide large parts of the population with Internet access. In addition, the Belarusian government wants to use the Wimax network for an innovative telemetering solution, which will enable all household consumption data for electricity, gas and water to be transmitted to a central billing system. In addition to the network infrastructure on the basis of its SkyMAX products, Siemens will deliver equipment capable of recording and transmitting the necessary measurement data.

Currently, Beltelecom is providing some public WiMAX services, using Ericsson equipment, while five other companies have applied for licences, although it appears unlikely that these will be successful. It is intended that WiMAX networks will cover the whole territory of Belarus, although standardisation issues may result in delays in the commercial operation of the programme.

The Ministry is seeking investors for wireless services in Belarus, estimating that Minsk alone will need 50 million US\$(41 million Euro) investment.

In October 2006, Konstantin Tikar, Beltelecom General Director, announced that WiMax testing proved that its real technical specifications are far from those promised by manufacturers. In addition, some issues of equipment compatibility and frequencies allocation are to be settled.

6 AVAILABILITY OF ONLINE SERVICES

In 2003, there were approximately 600³⁷ companies, firms and organisations operating in the ICT market in Belarus in such fields as hardware manufacturing, assembly and sales; software development and delivery; and telecommunications and Internet services. The Computer News Online site included 494 registered ICT firms at the end of 2002.

6.1 E-Commerce

Despite the fact that the legal and procedural bases for e-commerce activities are yet to be fully determined, several Internet sites have sprung up, such as Minsk.shop.by and Real.shop.by, which are the two market leaders. The total quantity of registered e-retailers in search systems is more than 200 – this is original research put together as part of this project.

Minsk region - 200;
Vitebsk region - 5;
Brest region - 5;
Grodzensk region - 4;
Mogilev region – 4;
Gomel region – 1.

Belarusian e-retailers mainly sell household equipment, computers and their spare parts, CDs, video or audio tapes. As it is impossible to use credit or debit cards for payments, some non-electronic payment method needs to be used in order for a transaction to take place.

Other electronic shops offer a wide range of goods, for example, CD-ROMS, video cassettes, computers and spare-parts, online maps, food products, perfume (universum.shop.by), automobiles, tyres, domestic electronics, crockery, lamps, office equipment, children's goods, office supplies, furniture, personal hygiene products, cosmetics, sporting goods, flowers, plants, photography supplies, telephones, communication devices, audio and video devices, household equipment and tobacco.

Other services offered online include: medical services, flower arranging services, landscaping, connection to Velcom network, extension of pager service, sale and rent of real estate, etc.

6.1.1 Card Payments

³⁷ Extrapolated from the Computer News Online information to include state organisations.

Plastic bankcards were first introduced in Belarus in 1993. There are two types of bankcard currently in use in the country: the cards issued by the national payment system “BelCard” and those issued by international banking associations, VISA and MasterCard/EuroPay. In addition, banks issue their own debit cards.

Use of credit cards is very limited. Only 12 out of 29 banks registered in Belarus issue bank cards.

As of May 2006, the number of plastic credit cards in circulation totaled 3.35 million., including 3.017 million international payment systems cards and 333,000 BelCard payment system cards. According to Visa International, Belarusian holders of Visa card have performed 13 million transactions for the period June 2005 – June 2006, totaling 79 million US\$ (65.3 million Euro).

In October 2006, Belarusbank issued its 2,000,000th debit card. The first plastic card was issued by Belarus bank in 1996. In 2002 the bank had 100 000 cards, in 2003 – 500 000, and in 2004 – 1 000 000.

6.2 E-Government

In February 2006, new legislation was adopted listing the general requirements for government websites and detailing minimum information requirements, for example regarding the structure of the body in question, prices for government services, details of bureaucratic procedures, offline contact information and the biography of the head of the relevant government department. A survey³⁸ was conducted in 2005 based on three criteria: e-information, e-involvement and e-services. For the purposes of the survey, the criteria were analysed to assess the current situation and possibilities for improvement.

E-information criteria indicate the degree of information about Government institutions provided by Government websites. This includes three subcategories:

- Direct links to peers, higher and subordinate bodies, subdivisions, the private sector, NGOs and the political community;
- Information about Government bodies (about subordinate agencies, procedures, rules and regulations, information about names of officials and their responsibilities); and
- Frequency of updates.

E-involvement criteria indicate the degree of connection between the citizen and Government through online discussion forums, surveys or polls, chat rooms, possibilities to apply for services, rules and information for applications, and forms for public comments or complaints. The study indicated that names of contact persons, their telephone numbers and addresses and/or their e-mail or online mailboxes should be included on Government websites in order to increase the connection between Government and citizens.

³⁸ “Belarusian government agencies online (a survey of websites)”, Mikhail Dorosovich and Marina Sokolova, 03 May 2005

E-services functions are primarily non-interactive services, which include information or advice that is published online and that is designed to help citizens or businesses efficiently carry out their daily activities. The user only has to click on a link to receive the information or advice. Possible links are FAQs, administrative publications, news relating to areas under the department's charge, and consultative information.

There are also some interactive e-services, which do facilitate interaction between the website and the user and require more than a simple click to obtain information. There are four key interactive functions:

- e-filing (online release of information about commodities, civil status information, etc);
- searchable databases for consultative information, for instance, users can search information or documents by common subjects;
- possibility to apply by e-mail in order to place information on a governmental institution website; and
- submitting documents online.

Only 74 (8.2 percent) of the 903 national, regional and district Government bodies reviewed were represented online. Of these, 73.2 percent were national Government institutions (41 out of 56), 11 percent were regional (8 out of 72) and 3 percent were district (25 out of 775) bodies. District and regional councils and judicial bodies generally do not have Internet sites, the only exception being the Gomel District Military Prosecutor's Office. As for Belarusian higher judicial bodies, only two of them, the Constitutional Court and the Supreme Economic Court, are represented online.

The survey shows that regional administrations' websites provide information on NGOs, private companies and vertical Government structures. District agencies give information on businesses, NGOs and horizontal links. National institutions provide links to their subdivisions and to the private sector. The political community is only represented at e-Government sites on the national and district levels.

22 percent of Government websites are not updated regularly. The majority of Governmental agencies' websites give thematically organised content that duplicates offline information. 45 percent give only minimal information making it possible to contact Government officials via telephone or postal communications. 34 percent of websites make Governmental bodies more accessible with the possibility of online communications, and/or forms for complaints. 4 percent provide some interactive online services.

The significant improvement of Government agency accessibility as compared with the 2004 survey data can be explained by two major factors: "softer criteria" (a 3 percent increase), and a growing portion of district websites (a 34 percent increase). A smaller proportion of websites providing only minimal information (this figure stood at 56 percent in 2004 and 45 percent in 2005) indicates that more websites are giving specific information online.

Generally, the study concluded that official e-Government initiatives tend to offer one-way communication tools with limited possibilities of feedback. There are no plans to develop and financially support a large-scale e-government modernisation strategy.

6.3 E-Learning

E-learning has been discussed in Belarus, with the lack of a legislative basis for distance learning being identified as one of the factors holding back progress. For the moment, few services are available, with basic issues, such as the provision of computer equipment (58 percent of schools have computer equipment³⁹) and Internet connectivity (25 percent of schools have Internet access⁴⁰) for schools needing to be addressed before more sophisticated services can be prioritised. In 2005, Minsk regional authorities invested 103,000 Euro in the development of school computer networks, primarily for the purchase of software.

The Belarusian NREN is connected to the GEANT system.

6.4 E-Health

As a result of the needs created by the Chernobyl disaster, Belarus has a long history of e-health. This started in 1999 with cooperation between the Gomel Specialised Health Dispensary and developed into a sophisticated system for tele-consultation and an improved pathological review system for thyroid cancer.

³⁹ "Only 25 percent of schools have Internet access", e-Belarus.org, Mikhail Doroshevich, 16 June 2005

⁴⁰ Ibid

7 STRUCTURE OF THE COMMUNICATIONS INDUSTRY

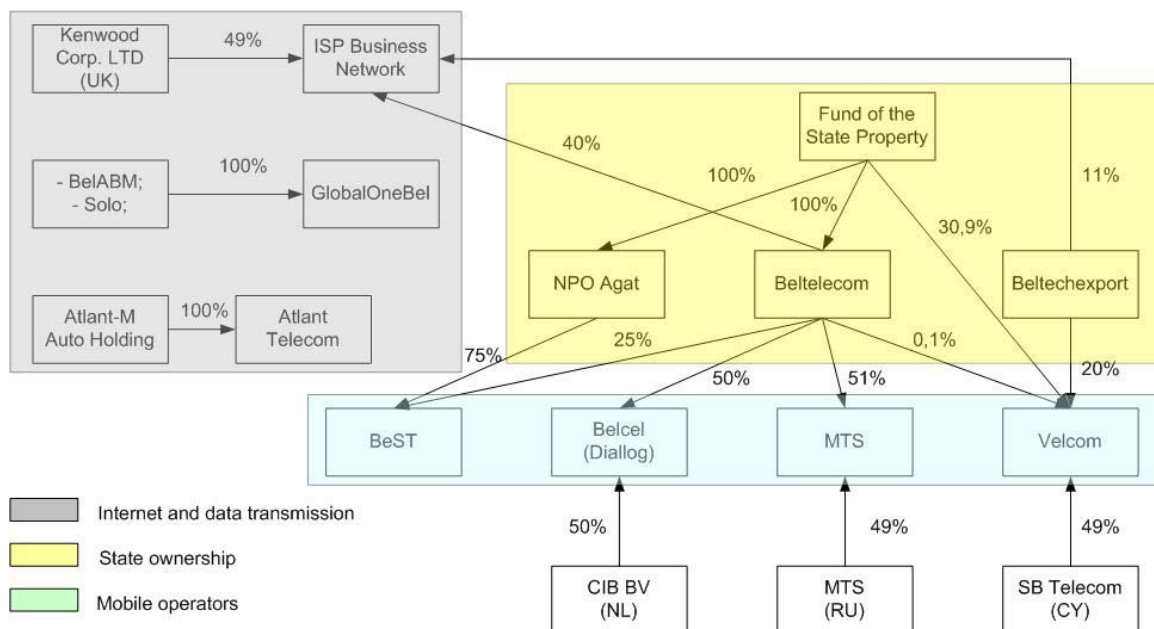
There is a very strong overlap between public and private ownership in the communications sector in Belarus, which is explained in detail in the graph below.

RSA Beltelecom⁴¹ is a key player in the Belarusian communications market. The company holds the monopoly in a wide variety of communications services.

In 2004, according to a Ministry of Communications Decision, all state communications enterprises in the country became Beltelecom subdivisions. Private individuals in Belarus hold no shares in mobile or fixed telephony services.

Wholly owned foreign telecoms operators of fixed, mobile and cable operators are absent in the national market.

Belarus Communications Ownership Structure (adapted from Comnews)⁴²



7.1 Fixed Networks

The fixed network monopolist, Beltelecom is wholly owned by the government. Liberalisation of the sector is planned for 2007, although there have been few moves to suggest that this will be achieved in a comprehensive manner. The initial view of the Belarus Government was that only Belarusian investors would be allowed to invest during the privatisation process. However, the Government appears now to have changed its stance and fully foreign-owned companies will be able to participate in the Belarusian market.

⁴¹ <http://eng.beltelecom.by/>

⁴² The original version of the diagram (in Russian) is available at <http://www.comnews.ru/index.cfm?id=14067>

7.2 Mobile Networks

The Belarusian state holds major stakes in all mobile operators. Beltelecom has shares in four mobile communications operators: MTS, Velcom, Belcel and BeST. Private individuals in Belarus hold no shares in mobile or fixed telephony services.

The Government dominates the mobile communications market. In 2003, the Belarusian Ministry of Communications put forward a proposal to further increase the Government's share of the market; however, at a press conference in October 2004, the Belarusian President renounced this initiative. In 2004, the Belarus Council of Ministers issued a decree, which expropriated just under a third of mobile operator Velcom's shares. Decree 566 State Ownership of Belarusian-Cypriot Joint Venture Mobile Digital Service (Velcom) Share of Capital, entitled the Government to acquire 30.9 percent of the company without compensation. Prior to the decree, Cypriot company SB Telecom, Beltechexport (an arms company which also has minority shares in a variety of telecommunications companies) and Beltelecom had 69.9 percent, 30 percent and 0.1 percent of the shares respectively. Following the expropriation, SB Telecom's holding in Velcom was reduced to 49 percent, Beltechexport's reduced to 20 percent, and Beltelecom's share remained at 0.1 percent.

MTS is 49 percent owned by the Russian operator MTS.⁴³ The state has owned 51 percent of MTS shares from the day the company was established. However, the Government has not made any investment in favour of the operator's development. The Russian partner, Russian MTS, after investing 165 million Euro has not succeeded in gaining a controlling stake in the company.

Ivan Rak, the Belarusian Deputy Minister of Communications and Informatisation, announced in March 2005 that Beltelecom had increased its BelCel shares from 33 percent to 50 percent. Now Comstruct International (the Netherlands) and Beltelecom each have a 50 percent share in BelCel.

In November 2004, BeST, a state owned mobile operator was created. Beltelecom and the national research association, AGAT,⁴⁴ were awarded 75 percent and 25 percent of the shares respectively.

International investors have a less than 50 percent share of the mobile market.

7.3 Cable Networks

At present, there are 97 cable operators in Belarus. A cable operators association, BETA⁴⁵ has also been founded, although it is not very active on regulatory issues. One

⁴³ See <http://www.company.mtsgsm.com/ir/2005-11-23/>

⁴⁴ <http://www.agat.by/index.php?lng=eng&PHPSESSID=688835f862be2d6d30b168367811ab3c>

of the major Belarusian cable television and Internet service providers, Cosmos TV, is in the process of expanding its cable network and provides cable television services to 40,000 additional households in Minsk. The Cosmos TV network currently covers about 150,000 households in Belarus.

British company International Telcell SNG, a co-founder of the major Belarusian cable operator Cosmos TV (50% share) was bought by Russian company "Renova Media Enterprises". The other 50% belong to the state-owned Republic Radio and TV Broadcasting Centre.

7.4 Internet Access Networks

According to the Belarusian Minister of Communications, Vladimir Goncharenko, the Ministry has issued 55 licences for providing data transmission services (including Internet access). All Internet providers are private companies, with the exception of Delovaya Set, a business network, which is 51 percent owned by state companies Beltelecom and Beltechexport (an arms company which also has minority shares in a variety of telecommunications companies). Currently, there are 30 non-state-owned Internet providers operating in Belarus. Practically all of them operate in Minsk.

According to ISPs' assessments, the dial-up services market totalled 24 million USD (19.8 million Euro) in 2004, which was 17 million USD (14 million Euro) more than in 2003.

The Ministry of Communications and Informatisation has imposed severe restrictions on access to the market for providing wireless Internet access (including mobile 3G networks). At the same time, state authorities are actively cooperating with Siemens and Ericsson in order to become providers of WiMAX services.

7.5 Satellite Operators

IP downlink and IP telephony connections are available only via VSAT (a division of Beltelecom). However, the service is extremely expensive (and only the USA Embassy uses this service).

According to Belarusian regulations, only state monopoly RSA Beltelecom is allowed to use an uplink.

⁴⁵ <http://www.beta.by/cgi-bin/index.pl?cf=news>

7.6 Production of IT Services

In 2003, there were around 600 organisations operating in fields such as hardware manufacturing, assembly and sales, software development and delivery, and telecommunications and Internet services. Less than 500 of these, representing about 25-28 percent of the market, are listed on the Computer News On-line site, which is one of the oldest and most frequently visited Belarusian Internet sites by ICT experts.⁴⁶ The Computer News On-line site included 494 registered organisations at the end of 2002.

Their geographical breakdown of companies listed on the website is as follows:

Minsk - 373;
 Brest and adjacent areas - 28;
 Vitebsk and adjacent areas - 25;
 Gomel and adjacent areas - 23;
 Grodno and adjacent areas - 24;
 Moguilev and adjacent areas - 13 and
 Minsk adjacent areas - 8.

Functional breakdown:

PC and telecommunication hardware manufacturing, assembly and delivery, service support and maintenance - 250;
 Software developers - 70;
 Internet providers - 56 and
 ICT application consultancy companies - 60.

These are, as a rule, private organisations or companies; therefore there must be at least 600 companies operating on the ICT market of the Republic of Belarus, if state institutions and R&D Institutes of the Ministries of Industries, Communications, Education, the National Academy of Sciences of Belarus and other companies are taken into account.

7.7 Financial Development of the ICT Sector

In 2004, revenue from the telecommunications market totalled 700 million US\$ (579 million Euro), 39 percent for mobile communications and 61 percent for fixed telephony, Internet access and data transmission. The fixed communications segment grew by 40 percent and the mobile communications market doubled in 2004.⁴⁷ The aggregate profit of telecommunications companies totalled 480 billion BYR (184 million Euro), with 95.9 billion BYR (36.8 million Euro) in net profit for the first seven months of 2004, which is 3.5 times more than that of the same period in 2003.⁴⁸ No more recent figures have been published by the ministry.

⁴⁶ <http://www.kv.by/sprav/sprav.cgi>

⁴⁷ According to figures published by Comnews - <http://www.comnews.ru/index.cfm?id=14067> .

⁴⁸ Belarusian Ministry of Statistics and Analysis.

According to Market-Visio Consulting/Gartner evaluations, the volume of exports of Belarusian IT companies will increase by 54 percent in 2006 as compared with 2005 and will total 200 million US\$ (165 million Euro). In 2005 volume of exports of Belarusian IT companies grew by 44 percent as compared with 2004, and totalled 130 million US\$ (107 million Euro). In 2007, the volume of exports of Belarusian IT companies will total 250 million US\$ (206 million Euro). The same research indicates that there is consolidation in the market, more competition and an overall increase in service quality.

Production and services profitability increased from 10 percent to 19.5 percent in 2004 and sales profitability increased from 7.4 percent to 13.1 percent. Some 81,000 computers were sold in Belarus in 2003, bringing sales up to 50 million US\$ (41.35 million Euro), according to the latest IDC⁴⁹ review of the Belarusian computer market. Most of the country's computers are assembled by Belarusian companies, with the share of major international computer producers not exceeding 10 percent in 2003.

Over the last two years there have not been any significant mergers or acquisitions. The latest acquisition was undertaken when Sonex Group,⁵⁰ one of Lithuania's biggest IT companies, acquired one of the largest Belarusian computer companies, Xorex-Service.⁵¹ Sonex will produce computers and servers for the Belarusian and Russian markets and will provide information services.

According to a survey conducted by Extmedia,⁵² web-hosting sales volumes totalled 500,000 US\$ (413,200 Euro) in 2004, which was 40 percent more than in 2003. It was expected that, by the end of 2005, web-hosting sales volumes would increase to 1 million US\$ (826,400 Euro).

The software export market's revenues totalled 65 million US\$ in 2003 (54 million Euro), and 90 million US\$ (74.4 million Euro) in 2004. This figure will likely double during the next two years, with annual growth totalling from 40 percent to 60 percent. It is estimated that in 2006 market revenue will total 200 million US\$ (165 million Euro).

According to ISPs' assessments, revenue for the dial-up services market totalled 24 million US\$ (19.83 million Euro) in 2004, which was 17 million US\$ (14.04 million Euro) more than in 2003.

⁴⁹ See <http://www.idc-cema.com>

⁵⁰ <http://technologies.sonex.lt/sonex/en/>

⁵¹ <http://www.xorex.by/page//30/>

⁵² Unpublished information that was received via e-mail from Extmedia, which is a web-hosting company.