INTERNET DEVELOPMENT AND USAGE

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Summary

Belarus is still one of the leading countries in Central and Eastern Europe according to the growth of its Internet audience. However, the fact that this growth slowed in 2012 compared to 2011 indicates that the resources needed to increase the number of users by developing infrastructure have been exhausted.

Inappropriate regulation policy is causing the country to fall behind in terms of effective Internet use. There is no programme to develop free Internet access. People's media literacy, on which their ability to use e-governance services also depends, is still beyond the scope of state bodies. Various restrictions on the development of the Internet market have led to the Belarusian audience using mostly foreign resources. At the same time, the government is unable to augment processes to "create national content."

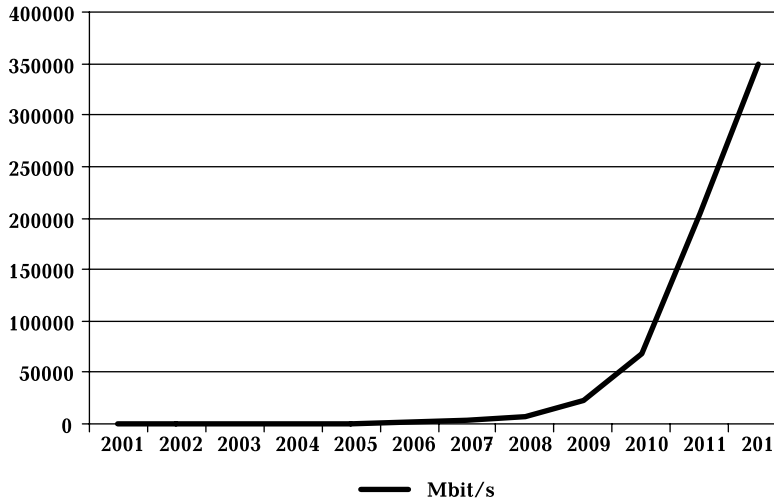
Trends:

- The growth in the number of users by means of infrastructure development is now falling;
- Internet access is still unequal, and depends on age and place of residence;
- State companies (*Beltelecom* and the National Traffic Exchange Centre) have an on-going monopoly over the outer channels;
- Search engines, portals, and social networks are the most popular sites on the Internet.
- The repertoire of online civic activism is expanding, with the appearance of initiatives related directly to Internet usage;
- State regulation policy is restrictive, not stimulatory.

Infrastructure development and the growth of the audience

The main role in the development of telecommunications infrastructure is still played by the state communications operator *Beltelecom*. By the end of 2012, the outer channel had been expanded to 350 Gbit/s, and the average daily external traffic was at 270—280 Gbit/s.

Graph 1. Internet access capacity of *Beltelecom*'s international channel, Mbit/s[1]



2012 saw the implementation of a project capable of competing with *Beltelecom* to provide data transmission services using in-country infrastructure ("transit traffic"). On the basis of Belarusian presidential decree No.556 *On conditions for an investment project in the field of information and communications technologies*, the unitary enterprise National Traffic Exchange Centre set up the joint LLC Belarusian Cloud Technologies (with Russian investment). This company will lay a new communications transit highway from Moscow to Frankfurt via Minsk, which will be jointly owned by the Belarusian and Russian partners. Its channel capacity will be 23 times higher than what the current Belarusian outer channel can provide (350 Gbit/s).[2]

In 2012, the National Traffic Exchange Centre began to offer peering services. Within a short period, this allowed the cost price of Internet traffic to be reduced by 2.5 times for private providers.[3] However, the main communications operator is still

1 http://it.tut.by/298235
2 http://tech.onliner.by/2013/02/15/traffic
3 http://tinyurl.com/c2vvv4o

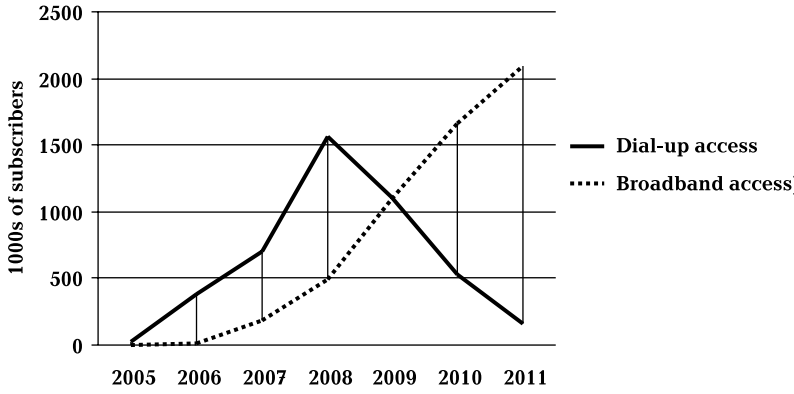
Beltelecom, which has the largest number of subscribers. The private provider *Kosmos TV* is in second place.

The state company's share of the broadband Internet market is 30% (mobile operators included).[4] The hottest competition on the data transfer market is still to be found in Minsk, which is where half of the existing secondary providers are located. There are only *four* companies in all Belarusian cities: *Beltelecom* (*byfly*), plus *three* mobile phone operators who offer mobile Internet access — *diallog*, *life:)*, *Velcom* and *MTS*.[5]

In general, the average data transfer speed for users around the country ("end subscribers") is around 1.5 Mbit/s (maximum — 4.78 Mbit/s). This puts Belarus in 96th place out of 180 countries worldwide, according to the results of Internet channel capacity testing carried out by *speedtest.net*.[6]

Starting in 2006, Internet access tariffs went down by 30 times in roubles, and by 119 times in their US dollar equivalent.[7] The number of broadband subscribers and users rose by 6% over the year.

Graph 2. Number of broadband subscribers, as compared to dial-up subscribers and users (in 1000s of subscribers)[8]



4 http://tinyurl.com/bmamvlz

5 For a full list of Belarusian Internet providers, see: http://providers.by/by-providers/?by_cities.

6 http://www.internettrafficreport.com/faq.htm#include

7 http://it.tut.by/307018

8 http://www.mpt.gov.by/ru/new_page_5_6_15108/

There are currently no exact figures for mobile Internet use, but experts consider that the most "traffic-generating" mobile devices in 2012 were *iPads*, *iPhones* and *Nokia 523s*, and the number of mobile Internet users was approximately 2.1 million. The experiments with mobile Internet access via 4G (LTE) systems begun in 2011 were discontinued. Despite the increased number of paid *Wi-Fi* access points, the number of hotspot users decreased three times in the course of the year (from 1.2% to 0.4%). At the beginning of 2012, there were 1626 multi-access points registered in Belarus (*Beltelecom* access points, computer clubs, and Internet cafes).[9]

In December 2012, the .BY zone included 73,000 registered domains (up from 44,000 in 2011).[10] In 2011, the majority of domains were registered by physical entities. The situation altered considerably in 2012, however, with about 56% of domain names registered by legal entities and private entrepreneurs, and 44% by physical entities. The largest number of .BY domains were registered outside of Belarus: in Germany, America, and Russia. Apart from the two main DNS servers for the .BY domain zone (both located in Minsk), there are also several others abroad: in Moscow, Prague, Amsterdam, and (since early December) the American state of Virginia.[11]

According to data from a selective survey of the standard of living in households, carried out by the Belarusian National Statistical Committee, the number of households with a personal computer has risen only slightly in three years: 40% in 2009, 44% in 2010, and 46.4% in 2012.[12] The number of households with Internet access from a home computer was 40.3%.[13]

Throughout the year, the Belarusian Internet audience grew by 13.3%, i. e. another half a million users. By the beginning of December 2012, there were over 4.5 million users in Belarus, with a 56% Internet penetration. Belarus remains one of the leading countries in Central and Eastern Europe in terms of the growth of its Internet audience. However, the fact that this growth

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9 http://www.mpt.gov.by/ru/new_page_5_6_15108/
10 http://ng.by/ru/issues?art_id=72750
11 http://tinyurl.com/auctcse
12 http://belstat.gov.by/homep/ru/news/news130.php
13 http://www.mpt.gov.by/ru/new_page_5_6_15108/

slowed (by 20%) compared to the previous year indicates that the resources needed to increase the number of users by developing infrastructure have been exhausted. Moving into the foreground are media literacy (knowledge of Internet resources and services, and knowing how to use them) and the creation of free multi-access points.

The increased number of women (up to 51%) among Internet users indicates a certain maturity of the market (the number of men always tends to be higher among users in emerging markets for Internet resources and services). Among Belarusian Internet users, 39% have a higher education, 28% have specialised secondary education, 28% are specialists and senior specialists, and 15.5% are students and schoolchildren. The largest group of Internet users has a monthly income of between USD 250 and 500.

The Belarusian Internet audience was still marked by digital inequality: the divide between users in Minsk and other regions of the country, plus an insignificant number of users aged 55 or over. However, the 55+ age group actually showed the largest growth in the past three years, increasing fivefold (see Table 1). Minsk residents currently account for about 28% of the Belarusian Internet audience, whereas they constituted over 40% of the audience five years ago.[14]

Table 1. Age composition of the Belarusian Internet audience in 2009 and 2012, %[15]

	Age group				
	15–24	**25–34**	**35–44**	**45–54**	**55+**
2009	39.5	28.5	18.9	11.6	1.4
2012	30.5	30.1	19.5	13.0	6.8

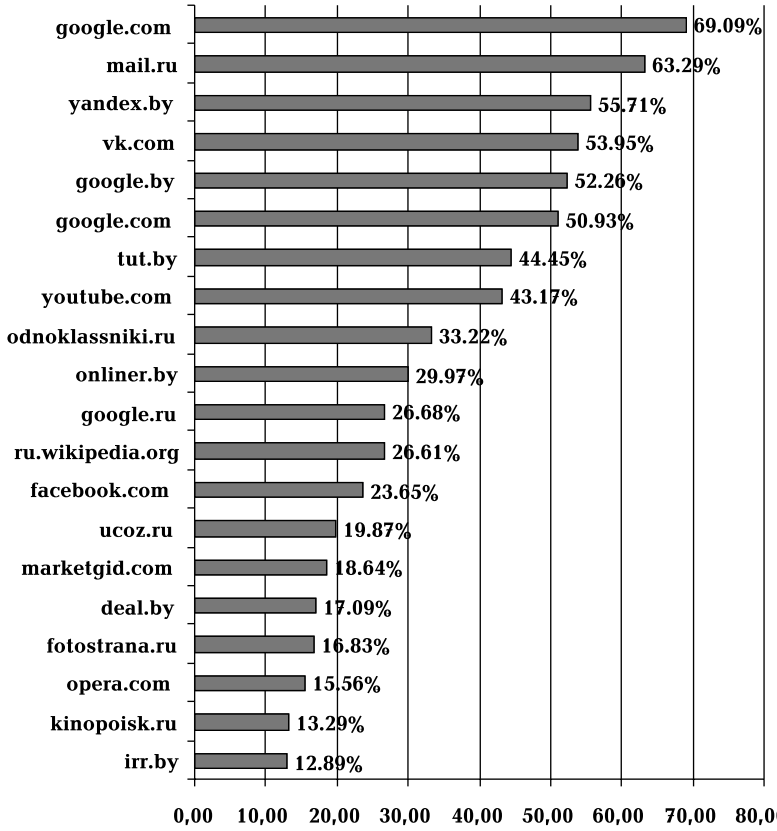
As before, most citizens were accessing the Internet from their homes (93.4%), while 30% had Internet access at work, 6.9% in schools and universities, 11.1% via friends and relations, and 4% in Internet cafes.[16]

[14] http://it.tut.by/298235 (accessed on 6/7/2012)
[15] https://gemius.com/pl/products_audience_about
[16] Ibid.

Resources and services

In 2012, there was a continuing trend for Belarusian websites to lag behind their Russian counterparts in terms of popularity, with only *tut.by* and *onliner.by* in the top ten. This can be explained by the fact that, due to the limited flow of funds from advertising, Belarusian websites find it rather hard to compete for users' attention. Four websites (portals and search engines) were

Graph 3. The most-visited websites in 2012[17]



[17] Website ratings compiled from Internet audience measurements by *gemiusAudience*. See: http://www.audience.by.

reaching over 50% of the Internet audience: *Google*, *mail.ru*, *vk.com* and *yandex.by* (see Graph 3). The *tut.by* portal had a 48% reach. It should also be mentioned that the Belarusian government plans to create a state-run portal called *All Belarus Online* in 2015, as part of the National Programme for the Rapid Development of Information and Communications Technologies (ICT).

After search engines and portals, the third most popular websites are still social networks. According to data from January 2013, social network users made up 73.6% of the Internet audience (69.8% at the end of 2011). The networks with the largest number of users with higher and postgraduate education are *facebook.com* (44.3%) and *i.tut.by* (42.3%). The highest number of users with incomplete secondary education are on *vseti.by* (32.6%). There is a prevalence of users with average specialised education on the *odnoklassniki.ru* network (35%), and with incomplete higher education on *vk.com* (17.4%).[18] The most active users are still with *LiveJournal* (16% reach), and almost 96% of those are also members of at least one other social network.[19]

Video and music websites

The overall reach of video websites is almost 2.6 million people, or 57.2% of the Belarusian Internet audience. Among the most popular sites are *video.mail.ru*, *video.yandex.by*, *megogo.net*, *youtube.com*, *zerx.ru*, *my-hit.ru*, *seasonvar.ru* and *kinobanda.net*. Only *kino.tut.by* and *megogo.net* offer legal content. In 2012, several attempts were made to create Internet television channels on *YouTube*. Short videos are also available on the news websites *Nasha Niva*, *naviny.by* and *svaboda.org*. However, none of this went beyond the trial stage, and failed to attract any serious attention from Internet users. Regular video content is produced by *BelSat*, *tut.by* television, and *iTV*. A plan to create youth Internet television (*www.a-tv.by*) using state resources has still not been implemented.

The most popular music websites in Belarus are *music.tut.by*, *zaycev.net*, *music.yandex.by*, *muzofon.com* and *ultra-music.com*,

[18] As of September 2012.
[19] http://www.infpolicy.biz

with an overall reach of 19.82% of the Belarusian Internet audience. Their most active users are residents of villages and towns with less than 50,000 inhabitants.

Creating "heavy" content (videos, films, music tracks, online games) was one of the priorities for state programmes aimed at developing Internet resources. The reasoning behind such initiatives sounded rather odd: "This will allow the load on the outer Internet channel to be reduced, and cut costs for the national unitary enterprise *Beltelecom.*"[20] This is approximately the same motivation as for a competition to buy the rights to host television channels, video materials, and downloadable audio- and e-books: "As owner of the outer Internet channel, the national communications operator incurs serious expenses in foreign currency. We are therefore working to increase the amount of national content, so as to reduce the need for foreign traffic, to lower our costs, and to increase the appeal of the Internet resources being used."[21]

News websites

There was also a continued trend of declining interest in dedicated news websites (various versions of traditional media), in contrast to the increased popularity of social networking websites (see Table 2).

Citizens and online governance

The range of online activism extended in 2012. The online petition site *change.org* was quite popular.[22] An original civil watchdog was Viktor Malishevskiy's blog (*editorfm.blog.tut.by*), which monitors state purchasing (*www.icetrade.by*). Gamification tendencies appeared in *politizator.com*, a project combining an Internet news website with a political tote board. The Internet also continued to be a place for mobilising citizens to support charitable causes. One of the most interesting initiatives was the creation of an Internet charity-shop.[23]

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20 http://tinyurl.com/af8czx8.
21 http://tinyurl.com/bmamvlz.
22 http://it.tut.by/304581.
23 http://it.tut.by/273963

Online political activism was particularly visible during the parliamentary election period (*vybary.blogspot.com*, *electby.org*, *elections2012.spring96.org* and the *Election Observation: Theory and Practice* project – *www.eotp.info*). Nearly all the Belarusian political parties, movements, and organisations have an online presence. Members of the Belarusian opposition prefer to appear as analysts and bloggers, however, rather than standing up for their political beliefs. Experts have remarked that "the Internet is used for communication, not mobilisation."[24] There is also a clear communications divide "between what the electorate are interested in, and what is being discussed by political forces on the media that are open to them."[25]

Table 2. Top 20 news websites[26]

Website	Rating	Number of users	Average daily number of visitors
news.tut.by	1	1094422	247248
news.mail.ru	2	778251	176124
interfax.by	3	552665	40699
news.yandex.by	4	513907	86522
kp.by	5	378396	36847
naviny.by	6	317203	32021
charter97.org	7	299045	73172
euroradio.fm	8	215112	13910
ctv.by	9	203249	10860
telegraf.by	10	163889	11383
21.by	11	147504	10259
utro.ru	12	146028	10075
5min.by	13	131147	8851
nn.by	14	117642	16573
ex-press.by	15	112415	8150
ej.by	16	105598	7046
udf.by	17	96134	9426
gazeta.ru	18	87448	6571
afn.by	19	74553	8761
n1.by	20	69544	6290

[24] http://tinyurl.com/b2leyk2
[25] http://tinyurl.com/adjdvxh
[26] Website ratings compiled from Internet audience measurements by *geniusAudience*. See: http://www.audience.by.

By 2015, the all-in-one electronic services portal *portal.gov.by* plans to offer 24 services, of which 23 will provide information from state banks and registers. The only "real" services will be offered by the Ministry of Internal Affairs: registering cars with the State Automobile Inspectorate, and issuing or changing driving licences. Set up in March 2012, the National Centre for Electronic Services (*nces.by*) is designed to be used by national state management bodies. Only one of the forty services it offers (information about education documents) is also intended for physical entities, *i.e.* Belarusian citizens.[27]

Regarding e-governance projects in general, experts have noted that, even with the National ICT Development Programme and the creation of the one-stop-shop portal by 2015, Belarus will still be lagging behind. By that time, UN ratings will probably cover the development of mobile government (*m*Gov), the *e*Participation index (Gov 2.0), and work with social networks (SMM) — projects the Belarusian government is not even considering.[28]

People's media literacy, on which their ability to use e-governance services also depends, is still beyond the scope of state bodies. A proposal by the head of the NCES to introduce a system of information mediators via the *Belpochta* post office network in order to help "old ladies use electronic services at home or in post offices"[29] can certainly not be considered an adequate response to this issue.

In this situation, private citizens and businesses are putting in efforts to devise and implement more effective projects of their own. In October 2012, *MTS* launched an educational project "Children on the Internet" and organised its first "Lesson on using the Internet usefully and safely." In autumn 2012, *Our House* campaign activists organised a "Gomel Connect" drive in order to get Homiel's ten most-visited cafes, bars and pizzerias

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[27] Belarusian Council of Ministers resolution No.509 of May 31, 2012 *On free electronic services provided by the unitary enterprise National Centre for Electronic Services to state bodies, other organisations, and citizens, and several measures for organising the provision of electronic services*. See: http://www.pravo.by/pdf/2012-66/2012-66(006-014).pdf.

[28] http://tinyurl.com/a5gvc4p

[29] http://tinyurl.com/adgtyoa

to equip themselves with free Wi-Fi access points. "To coordinate the business community's activities to develop e-business and interact with e-governance in order to provide state electronic services, to create state information resources for supporting entrepreneurial activity, and to compensate for losses sustained by users of those resources," a public expert council for Belarusian e-business development was set up in February 2012.[30]

Monitoring and restriction of access to Internet resources and services

The Belarusian government was added to Reporters Without Borders' list of "Internet Enemies" in 2012. However, most experts are inclined to disagree with such a categorical assessment of the situation. Alaksandr Klaskouski affirms that the authorities are trying not to overdo it, and although they are "watching" the social networks and Internet resources in general, they "don't interfere unless they need to."[31]

In 2012, the agenda for state bodies still included *monitoring and inspection* of websites. Back in 2010, Internet service providers were obliged to enable free round-the-clock remote access to databases of subscribers and the services they received (if so required by state bodies engaged in operative investigative activities). Moreover, providers had to pay out of their own pockets to purchase, install, and operate technical systems to assist the carrying out of operative investigative activities (SORM).[32] In spring 2012, *Beltelecom* instigated a SORM project for the *byfly* data transfer network, and upgraded its filtering software in the summer.[33]

In 2014, it is planned to complete the development of "software and hardware to research and monitor information

30 http://allminsk.biz/content/view/26105/1/

31 http://tinyurl.com/ac2qacv

32 SORM is a range of equipment and measures designed for carrying out operative investigative activities on telephone, mobile, wireless and radio communication networks. SORM-1 is a system for monitoring telephone communications. SORM-2 is a system for monitoring Internet access.

33 http://it.tut.by/286586; http://newsby.org/by/2012/04/28/text24007.htm

resources in the national segment of the Internet global computer network".[34] Since the end of 2011, DPI (Deep Packet Inspection) technology has been in place in Belarus for network packet inspection and filtering according to content, which also allows packets to be modified. It allows Internet traffic to be analysed, and different policies to be applied depending on its content.[35] Nevertheless, according to figures from *UCEPROTECT*, the Belarusian data transfer network is now in third place worldwide in terms of spam and botnets (up from 43rd place in 2010, and 8th place in 2011).[36]

The public list of *websites to which access is restricted* is still empty, and the criteria for the so-called "secret" blacklist of websites are still undisclosed (by early 2013, that list contained 119 websites). Neither the Belarusian State Electronic Communications Inspectorate (BelGIE), which is responsible for maintaining the lists, nor the presidential News and Analysis Centre, which assigned that function to BelGIE, would provide any details about the situation.

Website-blocking is still being used in Belarus. In summer 2012, access to the *change.org* site was blocked. Following that, the owners of *DNS Made Easy* reported that access was also blocked to *sixteen* other sites which had nothing to do with Belarus: *aviasales.ru*, *f1news.ru*, *trusteer.com*, *digicert.com*, *jquery.com*, *sendgrid.com*, *mxtoolbox.com*, *getclicky.com*, *urbanairship.com*, *life360.com*, *path.com*, *vizio.com*, *arenajunkies.com*, *wowdb.com*, *wowstead.com* and *whmcs.com*.

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34 http://it.tut.by/269626

35 In 2012, the International Telecommunication Union (ITU) approved the Y.2770 standard (recommendations) for use of DPI technology. This standard makes no provision for inspecting encrypted traffic, but requires any unencrypted parts of such traffic to be inspected. Representatives of Russia and numerous Central Asian countries propose to make this standard compulsory for Internet providers. Germany voted against the Y.2770 document, because they felt that standardising DPI would lead to increased Internet censorship. Experts remark that the document leaves several important issues open. For example, it does not mention the protection of users' private data. Furthermore, such documents should include a condition for net neutrality to prevent operators from favoriting any particular type of traffic.

36 http://stats.uceprotect.net/

Clients received the following message: "*DNS Made Easy* is not responsible for this blocking of our servers. If your clients or business have been affected, please direct your requests to *Beltelecom* regarding the blocking of our servers on their network". In autumn 2012, access to the websites of the Belarusian Christian Democracy party (*bchd.info*) and the joint "For Fair Elections" observation campaign (*vybary.org*) was blocked for users inside Belarus.[37]

The authorities also attempted to *infiltrate viruses* into the systems of *charter97.org*, and used malware to gain access to opposition leaders' and independent journalists' e-mail accounts.[38] There were also cases of *physical persecution of website creators*. For example, in autumn, people were detained for administering two opposition groups on the *vk.ru* social network: "We've Had Enough of Lukashenko" (37,000 users) and "If Only He'd Die" (15,000 users).[39] The underage head of the "Free *Lyapis Trubetskoy* Concert in Minsk" initiative was detained, and only released following an interrogation.[40]

Generally, there has been no significant increase in repression, however, and no legal action was taken regarding calls to hold unauthorised mass events via the Internet, despite related legal amendments which came into force in 2011.[41]

Conclusion

The potential for Internet audience growth will be defined not only by infrastructure development. A vital condition would be to reduce digital inequality by developing media literacy and devising programmes to create free multi-access points (which will become increasingly relevant as more e-governance services are introduced).

The most growth is projected for mobile Internet access. The amount of time spent online will increase, but the top five websites will probably remain unchanged.

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37 http://belapan.com/archive/2012/09/23/576417/.
38 http://charter97.org/ru/news/2011/11/6/44406/.
39 http://www.charter97.org/ru/news/2012/8/30/57616/.
40 http://www.charter97.org/ru/news/2012/8/31/57675/.
41 http://tinyurl.com/cgd4j25.

Increased numbers of users and the development of e-governance and e-business services will be stimulated by civic initiatives and new research projects in the field of Internet development and use management. State regulation policy will continue to be restrictive, not stimulatory. The amendments to laws "on electric communications" and "on information, computerisation, and information protection" planned for 2013 will not make much impact on the situation.