

# GLOBAL INFORMATION SOCIETY WATCH 2008

*Focus on access to infrastructure*



# Global Information Society Watch

## 2008



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# KAZAKHSTAN

Andrew Beklemishev



## Introduction

Kazakhstan is the ninth largest country in the world in terms of size but is one of the countries with the lowest population density, with a little over fifteen million people living in its vast territory. Rich in natural resources – mainly oil, gas, and metal ores, including large deposits of uranium – Kazakhstan has an economy that is largely dependent on the extraction of these resources. Surging oil, gas and metals prices on world markets in recent years allowed the country to enjoy nearly 10% growth in gross domestic product (GDP) in 2002-2006. However, it was affected by the world's financial liquidity crisis in 2007, due to a dependency on credit from abroad by the banking sector.

The country's booming financial and construction sectors were affected the most. GDP increased by only 8.5% that year and economic growth is expected to slump further in 2008. Growth of money supply and increasing food prices have caused a spike in the inflation rate, which was 18.8% at year-end 2007.<sup>1</sup> Experts expect the economy to improve only by the end of 2008, given the government continues its reforms and is able to manage the inflation rate and provide assistance to the troubled sectors of the economy.

Rapid economic growth in recent years, high literacy levels, the president's long-term vision and new government programmes were among the key driving factors for increased computer and internet penetration in Kazakhstan, allowing the country's information society to develop. Rising disposable incomes allow Kazakhstanis to buy computers. Decreasing internet tariffs – although still relatively expensive compared to European Union (EU) member states (Political Intelligence/Internews, 2006) – and an increase in the availability of broadband internet in large cities allowed for easy access to global information and promoted information sharing and interaction between citizens. The implementation of two state programmes – the Programme on Reduction of Information Inequity and the Programme on Implementation of Electronic Government in the Republic of Kazakhstan – is expected to provide access to key government services in the near future for all, but especially to underserved and vulnerable groups (Beklemishev & Tsekhovoi, 2006).

## Physical access to technology

In order for the information society to develop successfully, the freedom of access to information has to be ensured. In the digital age, the most efficient means of access to information are digital: telephones, mobile phones, computers,

information kiosks, etc. It is therefore important to look at the availability of technology in a country as a prerequisite for the development of the information society – both the hardware available and the services that go with it, such as internet access. It is also always necessary to keep in mind that the technology in itself is not enough for the information society to thrive.

Fixed-line and wireless communication technologies include various options for connectivity, but all are dependent, in one way or another, on the country's communications “backbone” – a system of networks of various operators that connect cities and connect to the networks of other countries. In Kazakhstan, this backbone is formed by the networks of seven major operators and consists mostly of fibre-optic lines, although satellite and wireless radio relay connections are widely used as well.

Kazakhtelecom, the largest telecom operator in the country and a de facto monopoly, has the largest network by far, which includes fibre-optic lines connecting all major cities of the country and connections to all bordering countries. The total length of this fibre-optic network is close to 12,000 kilometres, with maximum data transmission rate capabilities of ten gigabits per second (Gbps) between three of the largest cities, and one Gbps between other cities (Kazakhtelecom, 2007). Some of the other major operators have built their own fibre-optic networks and are continuing investment in this activity, while others are relying on Kazakhtelecom's infrastructure.

Satellite communications are used widely in Kazakhstan, providing a cost-effective way to cover large distances. Some telecom operators, such as Nursat (owned by Kazakhtelecom), rely almost exclusively on digital satellite connectivity as the backbone for their networks. Very small aperture terminals (VSATs) are very popular and provide both internet and voice services; their number exceeds thousands of installations. Kazakhstan launched its own satellite in 2007, called KazSat-1, and plans to launch at least another three in the next few years. These will, supposedly, eliminate the country's need to use other satellites and will provide a wide range of satellite-based services for its citizens, including digital television, internet and voice connectivity. Experts have argued against the need for such investment, despite the government's firm position.

Fixed-line telecommunication is the most basic way to access information. However, in addition to regular voice communications services, additional services can be provided using the basic telephone line, such as voice over internet protocol (VoIP) telephony, dial-up networking and broadband

1 Economist Intelligence Unit: [www.eiu.com](http://www.eiu.com)

internet access using integrated services digital network (ISDN) and digital subscriber line (DSL) technologies.

Fixed-line penetration in Kazakhstan reached twenty lines per 100 inhabitants early in 2008, and is expected to reach 23% by year-end, according to the Agency for Informatization and Communications of Kazakhstan (AIC).<sup>2</sup> At the same time, mobile penetration has reached 78 users per 100 inhabitants, making mobile communications a preferred choice.<sup>3</sup> This does not necessarily mean that nearly 80% of Kazakhstanis use mobile services, as mobile operators report only the numbers of active subscriber identity module (SIM) cards, and some people are known to have over five such cards registered in their name. It is, however, safe to assume that over half of the country's population uses mobile phones and, according to the mobile operators, nearly 100% of the country's population is living under the coverage of mobile communications networks.

The AIC recently announced that internet penetration in Kazakhstan reached 11% early in 2008<sup>4</sup> and is expected to reach 15% by year-end. These figures are believed to be exaggerated, although a level of 8% is thought to be quite reasonable by the experts. The primary reason for low internet penetration in Kazakhstan, and its small growth rate, is the slow pace of liberalisation of the telecom sector. Kazakhtelecom, a de facto state-owned monopoly, controls most of the country's telecommunications infrastructure, owns most of the key players in the market, and enjoys favourable relationships with the government and legislature. Internet access tariffs offered by Kazakhtelecom are quite high compared to those of EU member states, especially for businesses, and are considered generally expensive for the population at large. Recent government-mandated decreases in the price for DSL-based broadband access have improved the situation slightly, although more drastic measures are necessary.<sup>5</sup>

The computer literacy level in Kazakhstan was estimated at a little less than 10% in 2007, while computer penetration was no more than 5% that year, according to the AIC. These two numbers are key to understanding the reality of internet penetration in the country: a computer illiterate person with no computer will have a much tougher chance of using the internet. The state Programme on the Reduction of Information Inequity was adopted in 2007 and aims to increase both computer literacy and computer penetration in the country. Two government-subsidised projects were launched at the end of 2007 that promise to supply citizens with affordable computers. One is implemented by the private sector, and another, called "Ashyk Alem" ("Open World" in Kazakh), is implemented by the AIC itself. The latter provides a bundle that includes a locally assembled personal computer (PC),

Microsoft's Vista Starter Edition software, and ten hours of dial-up internet access for around USD 350. It can be argued that a lowering of customs tariffs for computers, as well as other incentives, are more efficient ways to increase computer penetration levels than direct subsidies. However, efforts like Ashyk Alem still deserve praise for decreasing the country's digital divide.

Access to the internet using wireless technologies such as Wi-Fi and WiMAX is starting to pick up in Kazakhstan – but mostly in the three largest cities, including the capital, Astana, and Almaty, the country's largest city. A small number of Wi-Fi hotspots were introduced in these cities, mainly at hotels, restaurants and cafés. New hotspots will be appearing soon. Kazakhtelecom has introduced the Megaline Wi-Fi service to Astana and Almaty. The service offers prepaid access to Wi-Fi hotspots, installed and owned by Kazakhtelecom in numerous locations, and is starting to gain popularity among businesspeople on the move. Independent telecom operators are starting to introduce WiMAX-based access to the urban population.

Another option for internet access in Kazakhstan is internet cafés that are present in most cities and some rural communities. Prices are generally affordable and attract a lot of students and young adults. Public access centres are starting to appear in libraries and government service centres. Government-sponsored information kiosks are being installed at every major KazPost office (the national postal service provider), Akimats (an equivalent to a mayor's office), as well as other public venues, and promise much in terms of access to information, especially in rural areas. A lack of access to the world wide web will be among the hindering factors for the wide use of these kiosks by citizens.

The last but most undervalued option for access to the internet in the country is mobile telephony. There are three major mobile telecom operators in Kazakhstan that cover nearly 100% of the population: two offer services based on the global system for mobile communications (GSM) standard and one uses code division multiple access (CDMA). A fourth mobile operator is growing fast and also offers GSM-based services. The GSM operators offer internet connectivity using general packet radio service (GPRS) across most of the country, and EDGE (enhanced data rates for GSM evolution) in large cities. There is talk of rolling out third generation (3G) services in the near future. However, these services are not promoted enough, and users are usually unaware of their benefits.

### Political will and public support

Governments can play a key role as drivers and facilitators for the development of the information society. Many leaders have made the development of the information society, through increased use of information and communications technologies (ICTs), a priority. However, it is often difficult to translate a grand vision into specific programmes, and even more difficult to implement them without losing the initial target. Governments often end up conducting reforms for

<sup>2</sup> [www.aic.gov.kz](http://www.aic.gov.kz)

<sup>3</sup> Kazinform Agency: [www.inform.kz](http://www.inform.kz)

<sup>4</sup> Kazinform Agency: [www.inform.kz](http://www.inform.kz)

<sup>5</sup> Kazakhtelecom's "best offer package" is ADSL connectivity of 256 kilobits per second (kbps) for a USD 40 monthly fee which includes 10 Gb of traffic (as of June 2008).

the sake of reforms, without getting the private sector and civil society involved to the extent necessary.

Kazakhstan recognised the need to develop modern information technologies very early in its development, and has continued to advance this approach through the creation and implementation of various programmes and strategies. Initiated by the president of Kazakhstan in 2001, the first state programme concerned with development of the information society was called the Programme on Formation and Development of National Information Infrastructure for 2001-2003. This led to an e-government strategy in 2004, two e-government programmes for 2005-2007 and 2008-2010, two telecom sector development programmes for 2003-2005 and 2006-2008, and the Programme on the Reduction of Information Inequity for 2007-2009.

The two state programmes on telecommunications sector development helped to establish modern infrastructure in the country. Telecom sector deregulation, liberalisation, the increase of competition, and infrastructure development were and are among the top priorities of both programmes, and although some of the targets were not achieved (or were achieved only nominally), the programmes have significantly facilitated the development of ICT infrastructure in the country.

Kazakhstan's e-government development strategy consists of the two e-government programmes mentioned above, and includes four stages: "informational" (2005-2006), "interactive" (2006-2008), "transactional" (2008-2009) and "the information society" (2009) (Beklemishev & Tsekhovoi, 2006). Some government agencies already provide interactive services, with a certain degree of success. For example, it is already possible to submit tax forms electronically and to check whether tax payments have cleared the system or whether there are any tax liabilities outstanding. All of this is done in real time using digital signatures, which sets Kazakhstan apart from many other countries. It is estimated that over 80% of businesses in Kazakhstan submit their tax reports electronically. The implementation of the e-tax system has certainly motivated many businesses to harness ICTs and became a driving force for the computer training of many accountants and businesspeople. However, the e-tax system is still far from achieving its goals of efficiency, ease of use and transparency.

There are many other e-government services already available in Kazakhstan, most of them informational. The vast majority of these services, unfortunately, remain of little value to citizens and businesses. There are two main reasons for this. One involves the supply side, the government itself, which offers services that are either incomprehensible or of little value to the consumer of these services. There seems to be a disconnect between the real needs of citizens and businesses and the government's perception of what is of the most importance to these citizens and businesses. The second reason has to do with the demand side: the number of Kazakhstanis who understand what e-government is and, moreover, are aware of its advantages, is very small. Low

computer literacy and internet penetration rates only add to the problem.

In an effort to promote e-government services and to increase access to communication infrastructure and information resources, the Programme on the Reduction of Information Inequity has three main goals: a 20% computer literacy rate; a 20% internet penetration rate; and an increase in the role ICTs play in the life of the average citizen. These goals are being realised through the creation of training centres, public internet access points, information kiosks, and a reduction in internet access tariffs and the cost of computers. As a part of the programme, the government plans to implement mandatory information technology (IT) testing in schools, colleges and universities, covering a total of a million students – 6.6% of the entire population. The government claims to have educated over 800,000 people by mid-2008 under this programme.<sup>6</sup> Overall it plans to educate and train over two million people in three years, thereby increasing the computer literacy rate from the current 5% to 20%.

### Action steps

There are various options available for access to information in Kazakhstan, but many still need to be developed. The fact that nearly 90% of the population does not use the internet and is computer illiterate means that the situation is far from satisfactory for the information society to develop. Infrastructure needs to be continuously improved. The ICT sector needs to be developed using free-market approaches, and the government needs to ensure competition, deregulation and fair use of the resources available (such as radio frequency spectrum).

Largely disadvantaged inhabitants of smaller cities and rural areas spread across the vast territory of the country make up more than half of Kazakhstan's population, and are yet to experience the wonders of today's technology. It is these people that should be targeted by state programmes, as it is they who are most affected by the digital divide.

It is, however, most important that consumers have the freedom of choice of information channels based on their abilities, needs and preferences.

The possibility of reaching the majority of the population using mobile telephony with little investment is not recognised in the country. Kazakhstan can take advantage of its mobile infrastructure and leapfrog to mobile internet without the heavy investments in fixed-line infrastructure.

The leadership of President Nursultan Nazarbayev was crucial in getting ICT development on the government's agenda. The new government programmes discussed above prove that the government is keen to bring about the necessary changes to implement e-government services and improve the ICT infrastructure.

However, it is also clear that the government's priorities are not aligned with those of businesses and citizens. It often

<sup>6</sup> Kazinform Agency: [www.inform.kz](http://www.inform.kz)

seems that the implementation of e-government initiatives is done for the sake of e-government itself and not to address the population's specific problems.

The government has yet to analyse the real demand for its services by citizens. It is necessary to align priorities and to get the respective stakeholders involved in both the design and implementation of the various state ICT initiatives, including the introduction of e-government services. Stakeholders should be well informed of the government's plans, and understand both the positive influence ICTs can have on society and the technology choices that can be made. Only then will they be keen to get involved and offer all the support they can in making these ICT initiatives possible. ■

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**GLOBAL INFORMATION SOCIETY WATCH 2008** is the second in a series of yearly reports critically covering the state of the information society from the perspectives of civil society organisations across the world.

**GLOBAL INFORMATION SOCIETY WATCH** or **GISWatch** has three interrelated goals:

- **Surveying** the state of information and communication technology (ICT) policy at the local and global levels
- **Encouraging** critical debate
- **Strengthening** networking and advocacy for a just, inclusive information society.

Each year the report focuses on a particular theme. **GISWatch 2008** *focuses on access to infrastructure* and includes several thematic reports dealing with key access issues, an analysis of where global institutions stand on the access debate, a report looking at the state of indicators and access, six regional reports and 38 country reports.

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