Russia Introduces New Models for Higher Education to Increase Efficiency and Transform Teaching and Learning

Executive Summary

CUSTOMER NAME
Institutions of Higher Education, Russia

INDUSTRY
Education

BUSINESS CHALLENGES
- Overcome legacy of underinvestment by finding new sources of income
- Manage Russia's participation in the "Bologna process" of converging Europe's diverse higher-education systems
- Attract different types of students to counterbalance decline in national birth rate

SOLUTIONS
- Single IP infrastructure based on solutions and technologies from Cisco
- Ability to carry voice, data, and video traffic

BUSINESS RESULTS
- Improved communications have increased cost savings and efficiency
- More flexible educational models have helped complete the Bologna process, recruit new students, and generate income

Governments in many countries are struggling to balance the need for higher education—essential to a globally competitive economy—with other demands on public finances. In Russia, where state funding for higher education has been greatly reduced since the collapse of the Soviet Union in 1991, many universities are working with Cisco® to introduce technology as an enabler for new ways of funding, designing, and delivering their services.

BUSINESS CHALLENGES

Russian institutions of higher education, like many of their foreign peers, are currently managing the consequences of sustained underinvestment, particularly prevalent in Russia since the collapse of the Soviet Union. Before then, higher education was free to all students and funded by federal and regional budgets. Since the collapse, many institutions have found it difficult to offer adequate salaries or scholarships and to maintain their facilities. The state-sponsored universities that predate 1991 are now only partially funded by government, and they have to compete for staff and students against a growing number of newly formed, private institutions.

The "Bologna process" is another source of pressure on universities. Russia is one of 40 European countries involved in the Bologna process, which began in 1999 with a signed agreement by ministers of education from 29 European countries to converge Europe's diverse higher education academic and quality assurance standards into a more harmonized system using a common framework by 2010.

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In the next decade, Russian universities will also have to face the consequences of a dramatic drop in the country's birth rate in the 1990s, which will result in fewer potential students. Recruitment opportunities in Russia will increasingly come from retraining mature graduates whose skills may have become outdated.

Almost all Russian universities now understand that information and communications technology (ICT) can help them build a foundation for innovations in the field of education. Such a foundation will allow them to manage the Bologna process more effectively by opening up new communications links and methods of collaboration between institutions. It will also create an environment in which teaching and learning are no longer dependent on a specific physical location, but can be undertaken anytime, anywhere. This approach to higher education will help universities create necessary new sources of income by allowing them to cost-effectively deliver a much wider range of courses to more students than ever before.

SOLUTIONS

Many Russian universities, particularly those specializing in the humanities, have little or no experience using ICT on a large scale and, therefore, face a steep learning curve. However, a number of institutions have already made significant progress. Many are working closely with the Cisco® Internet Business Solutions Group (IBSG), as well as with the company's sales and business development teams, to share global best practices on the changes that are taking place in education and in the role of ICT.

An important theme of this collaboration is how to achieve "connected learning"—applying new models to education that offer students, teachers, and administrators improved access to information and tools that enhance efficiency and provide opportunities for collaboration. Such an approach makes better use of limited funding and results in higher standards of education because students are more familiar with the tools and working practices they will need in the workplace.

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Vitaly Timiryasov, rector
Kazan Institute of Economy, Management and Law

"Unlike technical universities, we are not IT-focused or well versed in IT, and we needed some time to define our requirements," says Professor Igor Ilinsky, rector of Moscow Humanitarian University (MosGU). "Cisco IBSG helped us a lot by making a number of presentations to the University Council and the Moscow Association of Non-Governmental Universities, of which I am chairman."

A robust IP networking infrastructure is an essential starting point because it is the basis for an almost unlimited number of applications. Many universities have geographically dispersed locations, and they are using a Cisco-based network to connect their regional sites to the central campus—a capability that is particularly important in a vast country like Russia.

"The foundation network is needed to connect all the resources of the university and to channel the educational and research information, not only at our headquarters but also at the regional campuses," says Vitaly Timiryasov, rector of Kazan Institute of Economy, Management and Law, which has eight campuses throughout Tatarstan in the Volga region of Russia.

The university's eight regional locations communicate with its Kazan central campus and with each other using Cisco IP telephony. The same infrastructure also carries a rich variety of content and applications from Kazan to regional campuses hundreds of miles away. These include videoconferencing capabilities, video lectures that are streamed on demand, structured multimedia e-learning courses, and online case studies.

One Network, Multiple Uses

Multiple uses for a network help maximize the initial investment and lower costs. MosGU has implemented an electronic security system, for example, to better protect the people and facilities on its large campus. The University has issued electronic pass-cards to all staff and students whose profiles and access rights are stored on a central server. The system has one point of entry to the network, helping ensure high levels of security. An authentification portal provides easy and efficient identification of all users.

The Moscow State Institute of Radio Engineering, Electronics and Automation (Technical University) decided to build a Cisco-based multiservice network in 1999 to provide the students and teachers with a wide range of capabilities. As the country's leading school for radio access and IP technologies, its goal was to use advanced technologies as a delivery channel for many of its educational services and as a management tool. Today, the Institute uses one Cisco infrastructure to carry all its voice, data, and video traffic.

In 2005, the Institute further extended the network's functionality by commissioning the first meshed Wi-Fi zone in a Russian university and providing students, teachers, and visitors with secure wireless broadband Internet access. Authorized users first visit their personal page, which shows their connection status, personal settings, and available network services such as Internet access, IP telephony, video on demand, and digital satellite TV.

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Marat Artemiev, vice rector
Kazan Institute of Economy, Management and Law

BUSINESS RESULTS

Installing a single, converged IP infrastructure has allowed many of these universities to reduce operational costs and improve the effectiveness of internal communications and administration. This is particularly true of institutions with more than one location which benefit from the ability to transmit voice calls between sites over their own IP infrastructure, thereby avoiding the call charges they previously incurred when using the public switched telephone network.

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"Introducing one IP telephony solution into all eight of our remote campuses has improved efficiency and allowed for quicker resolution of any issues," says Marat Artemiev, vice rector of Kazan Institute of Economy, Management and Law. "The IP voice network also helps to cut communications costs between our various campuses."

Time savings is another benefit of the IP infrastructure. Instead of traveling to each location, one teacher can now run several classes simultaneously on different campuses using videoconferencing and other techniques. This means that smaller class sizes have become economically viable for the first time, making the education system more inclusive. Interactive tools and applications also make it possible for students to collaborate more effectively—an essential element in the learning process.

Working with Cisco IBSG has helped universities analyze the financial advantages of using the same network for multiple purposes. "When we decided to introduce a new access system based on electronic passes, our old infrastructure would not support such services," says Ilinsky. "Cisco IBSG demonstrated how we could protect our investments by building a new multipurpose network that would fulfill a number of practical needs such as campus access, IP telephony, and a local area network for administration."

As well as lowering the cost of ICT ownership, a multiservice Cisco infrastructure has allowed many universities to begin transforming the way in which they teach. They can now deliver high-quality distance learning materials to remote campuses, helping ensure that students in regional facilities receive access to the same resources as those on the central campus. This capability not only helps to sustain high standards in education, but also makes it easier for universities to raise income levels by recruiting more students at their regional facilities.

Technologies, such as wireless, are helping to create a more flexible and cost-effective learning environment. For example, at Nizhegorodsky State University in Nizhni Novgorod, Russia's third largest city, staff has discovered that Wi-Fi access reduces the amount of space required to equip classrooms with PCs and other equipment. Having installed a wireless network, the University no longer needs to provide expensive, dedicated buildings for its computer courses. Staff is also monitoring network usage to discover which Wi-Fi zones are most popular with the students so that future zones can be designed for maximum convenience.

"We understand traffic patterns much better and can now develop our network coverage based on those usage patterns," explains Sergey Gorokhov, technical director of Nizhegorodsky State University.

NEXT STEPS

By setting up a single IP infrastructure and using it as a foundation for diverse administrative and educational purposes, many Russian universities are now much better placed than before to cope with challenges like the Bologna process. They are also well positioned to appeal to older students and those in remote regions or in different countries. This new infrastructure will not only provide new sources of income, but will also allow Russia's prestigious universities to participate in the development of new models for higher education that is taking place around the world.

COMMON NETWORK LINKS MOUNTAIN COMMUNITY

Perm State Technical University

Close cooperation between Perm State Technical University (PSTU), in the Ural Mountains, and Cisco started in 1992, and today PSTU has a sophisticated IT environment built on a network that is 90 percent Cisco-based. A Regional IT Center was established on PSTU's premises 15 years ago. Its main objectives include the creation of a common IT policy, the development of an IT culture in educational institutions, and the promotion of IT in education, entertainment, and healthcare.

To raise standards in Russian education, a decision was made in 2000 to set up a common data network for the Perm region; it would be built by the regional administration and the Regional IT Center. The network will consist of a high-performance core that supports 100Mb high-speed access to the computing resources of educational institutions and to the teacher training centers. The creation of a common information environment will help close the digital gap in remote areas, providing all citizens with access to IT resources and attracting more people to education.

PSTU and its Regional IT Center are now starting work on another complex, a federally-funded project, which will provide Internet access to 44 secondary schools to promote ICT and encourage innovation; 20 schools are already online.

MORE INFORMATION

The Cisco Internet Business Solutions Group (IBSG), the global strategic consulting arm of Cisco, helps Global Fortune 500 companies and public organizations transform the way they do business—first designing innovative business processes and then by integrating advanced technologies into visionary roadmaps that improve customer experience and revenue growth.

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Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

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