

Telecommunication infrastructure of Research Institutes of the Ministry of Agriculture in Azerbaijan

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The subject of the Agroweb CEE is important not only in FAO - member countries, but especially in such developing country as Azerbaijan. Since Azerbaijan gained its independence in 1991 Azerbaijan goes on the way of building jural, democratic and civil state. Only in 1995 in view of objective political processes in Azerbaijan became real the movement in the line of formation of democratic society. The problems of Information Society creation became actual since 1997. At that moment was passed the law on Informatization and Information Protection and the laws on approval of electronic sign, information resources and the program on Informatization concepts of Republic are preparing. When in the whole world goes the globalisation process and creation of information society the most important tasks are development of national information infrastructure and integration in world information society.

Like in many other countries of the former-USSR, it was the Academy of Sciences of Azerbaijan that implemented the first connection to international computer networks in late 1980s. The Academy of Science's telecommunication node offered services to several research institutions of Azerbaijan, including some Agricultural Institutions such as Institute of Botanic, Institute of Genetics and Selection and Agricultural Institute.

The first commercial service provider in Azerbaijan emerged in 1991 that was the Azerbaijani branch of the Relcom Company. At the time, only UUCP dial-up off-line connections were offered. The provider did not deploy a leased channel, and the e-mail forwarding was also implemented as dial-up.

In 1992, the Azerincom Joint Venture was established whose founders were VNIIPAS, Sovam Teleport, and Ministry of Telecommunications of Azerbaijan, and Informatics Scientific and Production Incorporation. Azerincom offered X.25 services and had a 9.6 Kbps leased line to Moscow. Azerincom performed these services until 1995 when telecommunication lines between Russia and Azerbaijan were severely damaged during the Chechnya war.

In 1996, Azerbaijani providers started to offer on-line access to the Internet. In the same time, Ministry of Telecommunications introduced licensing for telecommunication service providers. The first licensed provider was AzInternet Services, established in the second half of 1996. AzInternet Services (<http://www.azeri.com>) had a satellite-leased channel to the UUNET backbone in the US. In the same time, Intrans Company that arose from the Azerbaijani Relcom branch also started to offer on-line access to the Internet. At the moment, telecommunications is one of the booming industries in Azerbaijan (along with the petroleum industry and construction). At the present time in Azerbaijan is functioning more than 15 Internet Provide Organizations (generally private) 6 of them are initial main providers. Quantity of Internet users is more that 15.000.

Picture #1 of Internet providers:

	AzInternet Services http://www.azeri.com	IntraNS http://www.az/intrans	AzEuroTel http://www.azeut.com	Azerin http://www.azerin.com	Adanet http://www.adanet.az	Azeronline http://www.azeronline.com
Internet channel throughput	512	1,5 Mb	1 Mb	768 K	5 Mb	2 Mb
To which country	USA (UUNET)	USA (UUNET)	Russia (Sovam-Teleport)	USA (UUNET)	Russia (Glasnet)	USA (UUNET)
The number of dial-up users	~ 350	~1500	~ 1300	~ 950	2900	4500

The number of leased line users	~ 6	-	15	12	17	20
Dial-up access fee (hourly), USD	Business access – 1 Night access – 0,5	Business access – 1 Night access – 0,5	Business access – 1 Night access – 0,75	Business access – 0,65 Night access – 0,30	Business access – 0,89 Night access – 0,5	Unlimited Per month - \$50
64 Kbps leased line monthly fee, USD	700-2400	1000 unlimited	300-4500	500-1500	750-2100	410-980

Most of the existing service providers emerged recently, and competition in telecommunication service market is growing. This has already resulted in significant price cuts and gives hope for further decrease of tariffs, although telecommunication services in Azerbaijan remain rather expensive, which significantly restricts the use of the Internet for both individuals and many organizations. As for educational and other governmental organizations, part of them is served by the network of the Academy of Sciences; however, this network mainly serves research institutions, and most universities did not have access to the Internet till 1999.

Also, telecommunication providers' activities mainly take place in Baku, the capital of Azerbaijan, and telecommunication services are very scarcely offered in other cities and towns of Azerbaijan. It was not until 1998 that access to the Internet was made available in Sumgait, the second largest city of Azerbaijan, since 1999 in Nakhchivan. At the present time there is access to Internet in 8 cities of Republic.

At the moment, several telecommunication companies in Azerbaijan (AzEuroTel, Ultel, Artel and others) offer access to X.400 and Frame Relay networks. It mainly banks and major international organizations that have large private networks that use these services.

Naturally, it is necessary developed telecommunication infrastructure for developing telecommunication services of State. In 1991 when USSR was collapsed telephone network was mainly consisted of old analogue automatic telephone system (ATS) that made difficulties for introduction of new information technologies.

Development of telecommunication infrastructure is the main task of Government and according to accepted State program all ATS on Azerbaijan territory should be changed to digital system to 2004.

Mobile telephony in Azerbaijan has been developing particularly rapidly. The first cellular telephony operator in Azerbaijan, an Azerbaijani-Israeli Joint Venture Bakcell, was established in the first half of the 1990s. At that point, mobile telephony tariffs were extremely high and prohibited widespread use of cellular telephones. A few years later, a second mobile telephony operator, an Azerbaijani-Turkish Joint Venture Azercell installed a digital GSM network. Azercell launched an aggressive price policy, which resulted in fierce competition between the two operators and dramatic price cuts.

As mentioned in the following table, at the present time quantity of cellular connection users in Azerbaijan is 580000 people. According to the World Bank's report the number of mobile telephone users per 1000 inhabitants in Azerbaijan is highest among all CIS countries.

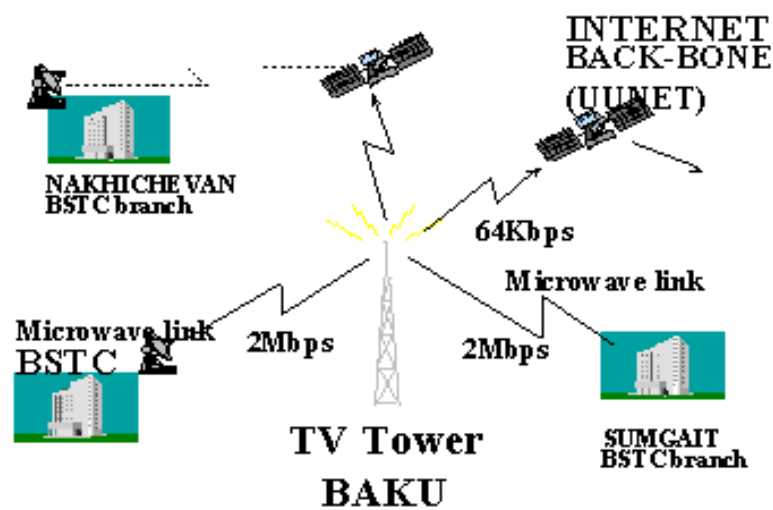
Telecommunications	1990	1995	1996	1997	1998	1999	2000	2001
Telephone connections, thsd	648.9	659.3	669.8	672.4	683.8	753.8	801.2	830.4
Mobile telephones, thsd		2.4	6.9	69.7	100.0	150.0	436.4	530.0
Telephone connection 100 inh.	9.1	9.0	9.0	9.0	9.0	9.0	10.2	11.6
Mobile telephones 1000 inh.		0.3	0.9	9.2	13.1	19.088	54.4	66.25

With the purpose of universal access to information networks and services Government of Azerbaijan Republic is carrying out the definite work. Thus, State Organization "BakInternet" has organized Internet clubs in 5 towns where people can get necessary information from Internet at a reasonable price.

The role of State Committee of Science and Engineering of Azerbaijan in telecommunication development

State Committee of Science and Engineering (SCSE of AR) is making efforts to create a national telecommunication network. In the first half of 1990s, the Informatics Scientific and Production Incorporation (ISPI), subordinate to the Committee, turned to UNESCO for assistance, which led to a project of establishment of a Computer Training Centre fit with modern computing equipment. The Centre was implemented at Baku Scientific and Training Centre (BSTC). The project was successfully implemented and followed by other projects. In 1996 BSTC became the first educational institution with Internet Connection in Azerbaijan.

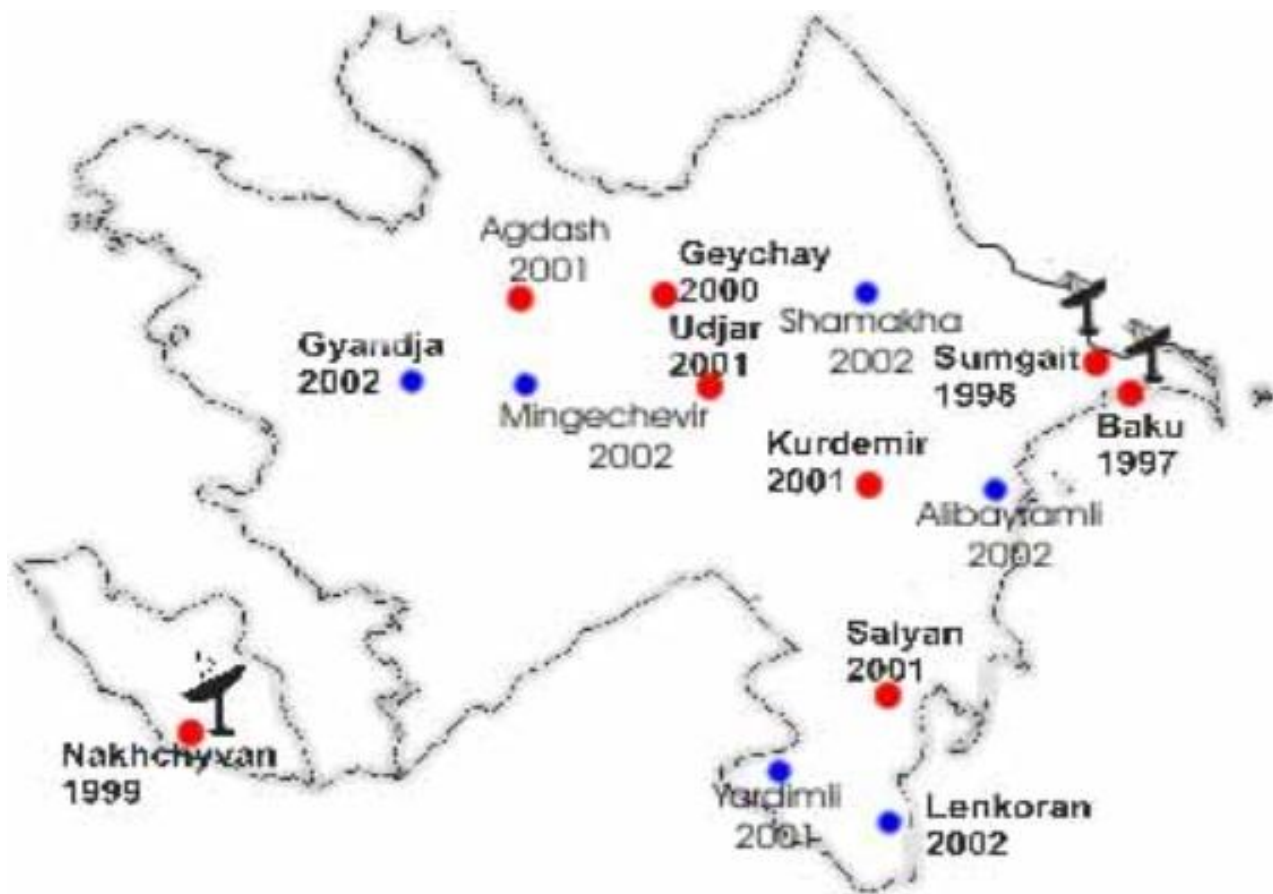
In 1997-1999, within the second joint project between SCSE of AR, UNESCO and UNDP, a branch of BSTC was established in Sumgait. The branch has been provided with computing equipment and access to the Internet.



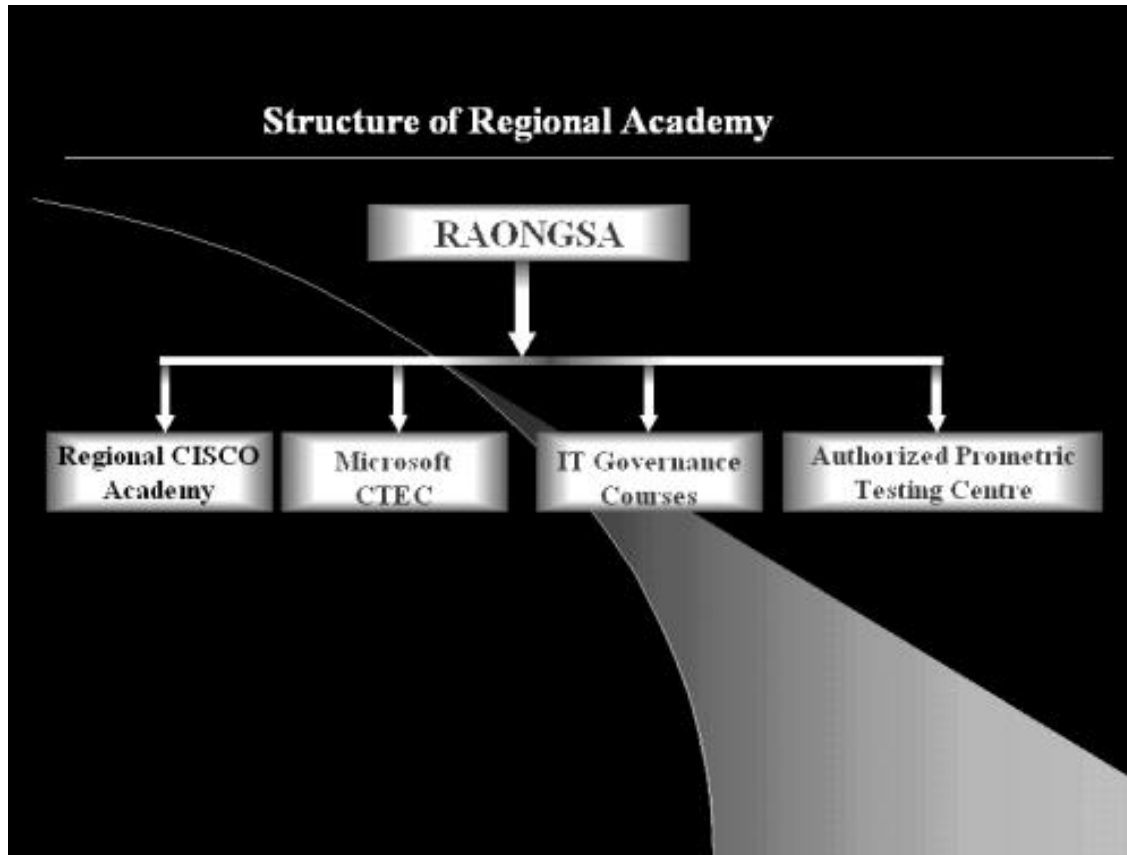
Picture #2. The Internet connection of BSTC and its Sumgait and Nakhichevan branches.

A branch of BSTC in the city of Nakhichevan was created in the framework of the third project of UNESCO/UNDP (1998-2000). This Centre is equipped with computing equipment and access to the Internet, and became the first educational organization in the Nakhichevan Autonomous Republic with access to the Internet since 1999. All mentioned Centres are self-funded and have sustainable development.

At the present time Baku Scientific and Training Centre (BSTC) is organization the heading research and educational establishment within the State Committee of Science and Engineering of Azerbaijan. BSTC have 8 branches of Computer Centres in Azerbaijan that 6 of them are created without international support and also are functioning as sustainable Centers of IT Training.



Picture #3: The branches of BSTC



Picture #4: Regional Academy

In second half of 2001 BSTC begun to realize IV Project with UNESCO and UNDP: “Regional Academy for Online Network Governance and System Administration” (RAONGSA).

There will be 4 subdivision of Regional Academy.

1. Regional Academy of CISCO
2. Ms CTEC
3. IT Governance courses
4. Testing Centre.

Azerbaijan is actively collaborating with International Institutions in creation of Information Society. As I mentioned before with support of UNESCO and UNDP were created Computer Centres. Government jointly with UNDP consultants and by Azeri specialists worked out document on Information Strategy of Azerbaijan Republic. It was worked out project on the National Strategy on using of informational communication technologies for national development in Azerbaijan to 2011.

Information Access in agrarian field. Problems and perspectives.

The establishment of market economy principles, economic reforms have given rise to information demands of a new type. The satisfaction of such demands cannot be accomplished without the use of up-to-date information technologies and the integration into the global information system.

According to foreign experts such as World Bank, The International Monetary Fund, TASIC, economic reforms are being successfully implemented in the South Caucasus. New food production enterprises are being established. And it's also known, that this process needs information support. It should be noted, that it is necessary to get access to the world agro information resources, as well as to ensure information exchange within the region.

Unfortunately, some Institutes in food and agricultural sphere in Azerbaijan still not aware of or do not have access to existing information. The Institutes of the Ministry of Agriculture of Azerbaijan Republic have dial-up Internet access in only two cities such as Baku and Ganja.

There are several organizations and Institutions of Ministry of Agriculture of Azerbaijan, connected to the Internet. Here are the list of some departments: the central apparatus of the Ministry, Research and Education Head office, Computer department, International relations department.

Only three Research Institutes of the fifteen Agricultural Institutes has Internet connection: The Research Agriculture Institute, Research Cotton Institute, Research Agro Mechanic Institute.

Also some agrarian Institutes were connected to the Internet too. Among them the following institutes: The Research Agriculture Institute, Research Genetics and Selection Institution, Research Botanic Institute.

With the purpose of closer cooperation in the field of agriculture, for providing of access to the necessary scientific and technical information farmer and private enterprises in various zones of Azerbaijan five regional agrarian and scientific centres were created. In the future creation of five more centres of such direction is planned.

For the organization of works on a high level, close acquaintance with the international experience, implementation of advanced achievements of modern time, creation scientific-technical databases for such centres need, as is known, computer maintenance and access to the Internet. In this case we will be grateful to FAO organization for help.