Telecommunication Problems in Rural Areas of Armenia

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BACKGROUND

The Synergy Project "Priorities in the Development of Telecommunications Sector in the South Caucasus" (2003) has the task of modernising the telecommunications system:

- Creation of conditions for free information space;
- Establishing the market of information and knowledge as a factor of production;
- Ensuring informational security of individuals, society, state, and establishing an effective system of free and equitable receiving, dissemination and use of information as a key condition for democratic development;
- Increasing the level of education of the population, the scientific-technical and cultural development of the society by expanding the opportunity of information exchange on an international, regional and national level and, consequently, increasing professionalism and creativity;
- Forming new structures in the public administration, economy, business, culture and social spheres based on massive use of information technologies, computer technologies and telecommunication; and
- Effective use of information resources in the activities of government bodies.

In the rural areas of Armenia during the Soviet authority, the telephone communication system was based on analog stations and a linear network. After many years of operation, the analog telephone stations are worn out, and the linear network is damaged and in the most part is completely destroyed. In spite of the fact that in recent years the infrastructure of telephone communication of the country was considerably improved, one can still see non-uniformity of development of infrastructure between various regions, urban and rural infrastructures of telephone communication, and also between city and other regions of the country and in particular remote villages.

A four-year project of ArmenTel, the telecommunication company with the monopoly in Armenia, aimed to provide 800 villages with a digital telecommunication technology until 1997, but this promise remains unaccomplished. As a consequence, the majority of villages in the country are now suffering information isolation. Add to this, the terrible condition of rural roads, which have not been reconditioned for 10-15 years, and the image of the majority of villages of Armenia in this aspect will be clear. The only communication facility with the external world is television.

Under these conditions, some public and charitable organizations have undertaken their own research on telecommunication problems and on satisfaction of villages' information need. For example, in 2000, as part of the 3PN (2004) within the framework of the "Narod" network project (NNP, 2004) at school #1 of Akhuryan village, we tried to organize an Internet centre which could also be used by small groups of school children from the neighbouring villages, but owing to absence of telephone communication, this idea was not realized. In the same year, with the support of the Bureau of Educational and Cultural Affairs of the U.S. Department of State, the Armenian School Connectivity Programs (http://www.ac2k.am/) (AC2K, 2004) began as part of the Program "Project Harmony" (http://www.projectharmony.am/) and many villages, including Akhuryan, obtained access to such services as e-mail, distance learning and e-commerce. The program creates centres connected to the Internet at schools in rural regions using a basic radio-modem connection, which in the absence of linear telephone communication is the only option for rural areas.

RIGHT DIRECTION OF DEVELOPMENT POLICIES

It is necessary to note, that the creation of a telecommunication network in rural regions by the creation the Internet centres at schools is the right strategy for closing the digital divide as the experience in many countries shows. Despite different socio-economic conditions, in all countries there are similar problems and difficulties:

- Low and insolvent demand of telecommunication services due to small density of the population;
- Significant distances of the villages from the regional centres and truncated relief (sometimes by natural barriers—mountains, gorges, bogs);

- Absence of necessary technical and financial assets; and
- Absence of the highly-skilled specialists.

Irrespective of the development level of the country, the problems of providing telecommunication services in rural areas are similar, and similar solutions are possible—differing in their application, means and fundraising strategies for the necessary resources.

The decision to use the village high school as the telecommunication center was because it is a uniting factor in a village community and is the institution for the preparation of the young generation most receptive to new information technologies. In the present socio-economic environment, the village school is disadvantaged in comparison with urban schools, for example, highly-qualified teachers and specialists do not find rural life attractive. Therefore, a regional computer network for rural educational institutions will be particularly useful for the schoolchildren, the teachers and for the whole rural community. Access to the Internet is a valuable educational information resource for the village school children and teachers, which helps them to prepare for competitive examinations, and is an irreplaceable communication facility that enables dialogue about common projects with colleagues world-wide.

The transformation of villages to be convenient and attractive places to live, is strategically important for the sustained development of the country, and so one should expect effective participation and support by the appropriate state structures and, most of all, by the national government. In particular, the government of Armenia has already decided to sanction local and regional networks of the data transfer in a range of frequencies from 2.4 up to 2.5 GHz in all territory of the country. Henceforth, use of radio-modems and wireless network access in this range of frequencies will provide rural Internet centers with the high-quality Internet services. As the base scheme of regional network development, it is expedient to use the network of TV towers—previously having coordinated this with the TVR Committee. Such a concept for the development of telecommunications in rural region was offered in October 2000, at the international seminar "Conversion potential of Armenia" organized by the International Scientific and Technical Centre in Yerevan (http://www.sci.am/istc2000/).

After the successful development of new communication facility application processes, information and telecommunication technologies can become not only one of the factors ensuring competitiveness of the economy, but also a basis of active regional cooperation between communities and the formation of a uniform economic space in the region.

ACHIEVEMENTS, THE PROBLEMS AND FUTURE TRENDS

Many rural schools in Armenia are supplied with modern computers donated by different charity organizations and private persons. For schools that do not benefit from such initiatives, the organization "Project Harmony" offers an alternative solution: to equip a bus with computers. However, given the condition of our rural roads, we must note that with this equipment (at a cost of US$80,000-$100,000) will not solve the problems. The author believes that it would be more effective to locate computer and telecommunication equipment where it can be in constant use. And for schools deprived of Internet access, training can be offered by means of multimedia programs on CD-ROMs simulating a real Internet network - offering selection from the most popular sites on a disk and using it as one of computers of a server for the local network. This technique was successfully used at the childhood-youth centre "Meghvik" (http://users.freenet.am/~meghvik/) in Gyumri, Armenia.

An acute problem for Internet centres in rural communities (community telecentres) is shortage of expertise. Because of its absence, the directors of schools, being aware of computer breakage and the failure of the programs, often lock away the computers, and then later the computers are obsolete and no longer suitable for work with the new versions of the programs. Carried out by Open Society Institute (http://www.isoc.am/), IREX (http://www.irex.am/), ACCELS (http://www.accels.am/), "World learning" (http://www.worldlearning.am/) and "Project Harmony" preliminary courses have eased this problem a little, but further courses are necessary.

Recently, the Open Society Institute of Armenia (http://www.osi.am/) has developed a community telecenters creation program in rural regions of Armenia, which should help considerably with the problem of information provision in rural communities, thereby reducing the digital divide between the urban and rural population. For this purpose, the Open Society Institute has given a grant to the Armenian association of users CDS/ISIS (http://www.distancelearning.am), which has chosen NGO "Internet Society" of Armenia (http://www.isoc.am) as the partner. The grant was stipulated to prepare the personnel for work at the telecentre - managers, network administrators, operators, and also specialists in training and creation of the programs for training. In addition, a Web-portal for a telecentres network was to be created which all telecentres of the country would use. In the early phase of the grant, there have been approximately 40 telecentres organized in schools. Forty students have completed training on WebCT™, and also use of the Internet for searching for educational resources.

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