

ICT and E-Business Strategies for Development

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Honorable Ministers,
Distinguished delegates
Ladies and Gentlemen,

We have a pleasure to participate in an important conference, which is taking place in a symbolic place, at a symbolic time. Just a week ago Geneva was the capital of the world telecommunications industry and in December this year it will host the World Summit of the Information Society. We are grateful to UNCTAD and UNECE for their initiative to organize a conference on such an important topic for the future of countries with economies in transition. Indeed while facing challenges of transforming the planned economy to the one based on market rules, those countries soon had to face another challenge of moving towards the information economy. The art of combining these two important agendas was rather challenging for many countries. Some countries achieved successful results while others are still lagging behind. Fortunately, while many of those countries especially from the CIS area, had to build up market institutions and mentality from a scratch, to build up an information and knowledge based economy they enjoyed better initial conditions thanks to such advantages as well-educated population and relatively well developed fixed line telecommunications. However, even these advantages need a constant updating and upgrading given the breathtaking changes in information and telecommunication technologies (ICT) and their impact on the performance of enterprises, industries and whole national economies.

The organizers of the conference asked me to present the national experiences of Armenia in the area of the ICT and its use in the economy and especially in business and trade operations.

¹ This text is provided unedited by UNCTAD/UN-ECE as received from the author.

Before going into this complex subject let me stress here that during last few years Armenia has returned to the path of high growth and reindustrialization including the more active use of ICT.

1. Armenia's comparative advantages

The knowledge-intensive strong sectors of the Armenian economy inherited from the Soviet period, in particular the ICT, have been among the key components in ensuring the transition of Armenia to liberal market economy and they have substantial capacities and show promising potential backed up by such comparative advantages as:

- qualified and experienced labour force,
- high level of specialized education,
- high educational level and high literacy rate- 98.6%
- developed ICT R&D infrastructures,
- high ratio of scientists and engineers in R&D per population- 1,312 per million people[?]
- heritage and traditions in the ICT sector coming from the Soviet period,
- significant Diaspora resources.

2. ICT in Armenia: some facts and figures

Despite the recent downturn and excess capacity in the ICT sector in the developed world, the ICT sector in Armenia has shown high growth rates in recent years. There was a rapid increase in the number of IT companies from just a few in 1999 to up to 200 in 2002. 80% of these companies are small and medium sized enterprises. Meantime, the participation of foreign capital is also considerable and is growing at an accelerated pace. It is important to stress here that the IT and software services and goods produced in Armenia are mainly driven by exports as, up to 85% of demand for the sector products is coming from abroad and the role of the Armenian Diaspora is crucial here. This is a natural tendency; because the presence of ICT related skills in the Republic it is becoming a natural destination for outsourcing originated by companies based mainly in North America, Western Europe and Russia.

As a result the export volumes of the Armenian ICT companies were growing at a rate of 17% annually, and last year they reached the level of 50 million USD. At the same time according to the views expressed by many international investors and contractors, the productivity and work quality of these companies meet the high international standards. The ITC sector share in the country's GDP has already reached the level of more than 2%, which is a good by international standards indicator. It is higher than in neighboring countries and in the region Armenia occupies a leading position in this field. The development tendencies in the sector show that these growth rates will be sustained in the coming years. Armenia's ITC sector is transforming from the production of the software goods and services to the real IT industry, i.e. to the chip production, systems creation etc.

Meanwhile, there are new developments in a number of advanced and specific IT sub-sectors. The sub-sector employs the cooperation and feedback approach between R&D and manufacturing infrastructures, which ensures such notable results.

[?] Development Data Group, World Bank, ICT at a glance, Armenia, 2002

3. The Importance of Policy Framework

The fast growth of economy (average growth of the last years are 10% and 15% for this year) dictates new challenges. While developing this sector of economy, which was accelerated during the process of privatisation, it was necessary to preserve the existent and potential capacities. At this stage, the giant enterprises which had five to ten thousand employees, were restructured into more efficient small and medium enterprises; a process which brings to more sustainable development of the country. The key goal of this sector its growth into other sectors of economy.

While the market reforms and institutions have been put in place till 1998, the further development of ICT sector brought about the need to develop a modern institutional and legal framework. In 2000, the ICT sector was acknowledged by Government as the priority sector of the Armenian economy and as a step in this direction, the IT Industry Development Concept Paper was elaborated in 2001. The Concept Paper has identified the ICT industry development goals and objectives, as well as the necessary measures to develop the ICT sector, such as the improvement of the legal framework and infrastructures that facilitate the development of the sector, expanding the use of ICT by public and also the ICT application in different sectors of economy.

The introduction of e-business and e-commerce practices in Armenia is the other objective in the development of the ICT sector and it is viewed as one of the means to facilitate Armenian enterprises to enter into the world of the networked economy. As a step in regulating this field, a draft *Law on Electronic Document and Digital Signature* was developed, which took into consideration the world best practices and the legislative experience of other newly independent states (NIS) in this field, and it has been submitted to Government for approval. It is worth to mention that equal conditions have been already set by the Armenian legislation both for electronic transactions and other commercial transactions. To facilitate the development of e-commerce, the IT Marketing Centre was established.

4. Infrastructure Development and Capacity Building

In countries like Armenia building up physical and human infrastructure for ICT needs a consistent support from public authorities. The IT Development Support Council headed by Prime Minister and founded by the Presidential decree in 20 July 2001 is the state coordinating body facilitating the effective communication between the business community and Government and to improve the public and private partnership. The Council involves representatives of the relevant state bodies and enterprise executives, and its working groups present action plans to the Council, and then to the Government.

Among government priorities are the support for the development of necessary infrastructure for capacity building and human resource management in the sector. In November 2001, the *Enterprise Incubator Foundation* has been established with the support of the World Bank. The main objectives of the *Incubator* are the provision of newly established enterprises with working facilities and their support in gaining access to international markets. The role of the *Incubator* is quite significant in training specialists by providing them with up-to-date skills

and, as the experience has shown, those specialists in ICT, who are not employed in the field, after a short training fully utilize the acquired skills in the ICT sector.

Government also tries to make sure that the issues of human capital development in the sector were adequately addressed. Armenia produces more than 300 high-educated specialists for ICT related sectors each year. With the support of the Government, there have been changes in educational programs, courses and teachings methods in state tertiary educational institutions. Several private educational institutions are quite successful in training cadres for the sector, and their number is considerable in the sector. In this regard, the experience of *Leda Systems* Company is notable. The company was the first to train its own cadres by carrying out joint educational and internship programs with Yerevan Engineering University, and beginning from the third grade the students have their courses in the company acquiring necessary professional knowledge and skills. The Ministry of Science and Education of the Republic of Armenia and *Quantum* College have initiated the development of the program to introduce the principles of software programming in the fifth grade of secondary school and the up-to-date teaching methods.

While the Government efforts in this field are significant, other conditions such as adequate inflow of capital, better integration of Armenian enterprises in global and regional marketplaces and others factors should also be met so that to ensure the sustainable character of the development of ICT sector in Armenia.

In conclusion I would like to stress the importance of consistent national strategies to develop ICT and in particular e-business practices, which might give a possibly to countries like Armenia to skip traditional stages of ICT development, go for the modern technologies and thus leapfrog towards a society with a high degree of e-readiness and hence economic development.

Thank you for your attention