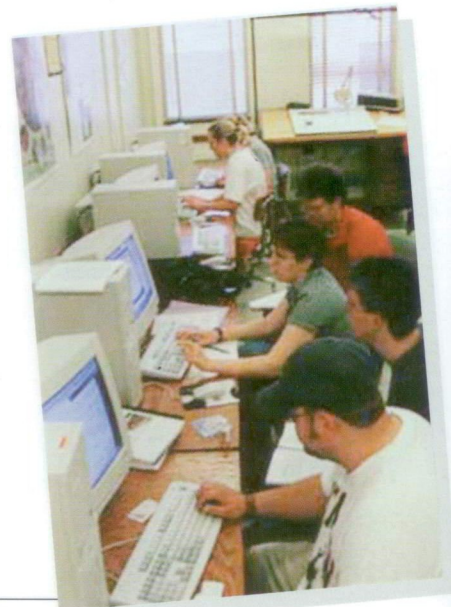




IT Revolution in Romania

In 1989, Romanian IT was poor.
In 2002 we are among
the world's top ten.



Historic Moments

In 1991, the Romanian government made a major decision concerning the development of the whole telecommunication sector (Decree No. 500 in July 1991), launching a 15-year (1991-2005) programme (Telecommunication Development Programme - Master Plan), to expand and modernize the country's telecommunication system. Targets for 2005 include: creation of a high speed national data transmission network, development of the

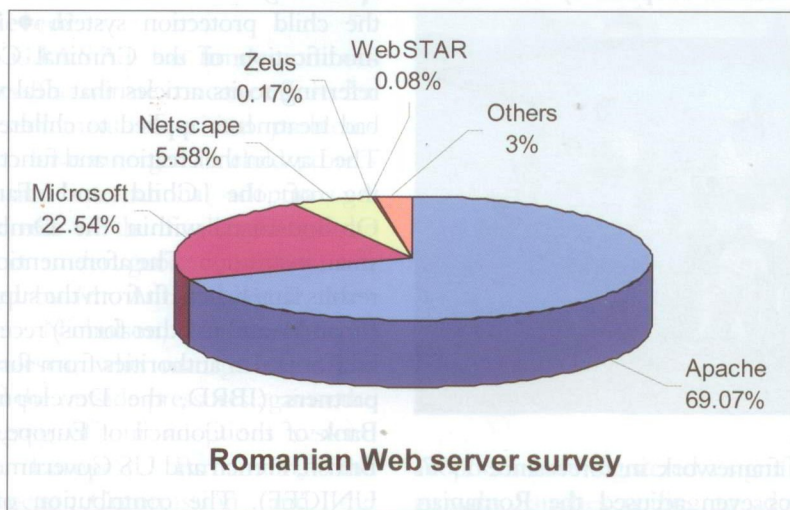
Information Technology and Communication) - now Ministry of Communications and Information Technology was submitted to the European Commission - DG XIII, whose observations are under study.

The strategy of the Information Society regards: Modernization of the tax collection system by using information and communication technologies; Endowment of education units with information technology and communication means; Equal opportunities in terms of access to information, technological research

developed at central and local public administration offering useful information for citizens and companies regarding the legal frame, administrative procedures, general-use documents, etc. Private web-sites spread over the country: information media, education, services of any kind, electronic commerce.

Internet areas & more

The academic and the commercial are the two major Internet areas in Romania. In the academic area the biggest network is RoEduNet (Romanian Education Network - "http://www.roedu.net"), created in July 1993, with the Central Node at PUB (Polytechnic University of Bucharest). From the very beginning RoEduNet was conceived as an open structure, offering free access to the academic, scientific and cultural non-profit institutions. The Central Node PUB is a centre of the academic data communication infrastructure, in which take part many Universities around the country. So, RoEduNet covers the national territory, connects and offers services to more than 150 institutions, offering connections by two high speed channels - 1.5Mbps with TaideNet and 4Mbps with LoralOrion. The traffic figures show a data exchange volume over the international channels of 1-1.4 Tbytes/month. RoEduNet connects over 64 Universities, many County Scholar Inspectorates, Public County



microwave network to encourage radio link solutions (especially for rural areas), and the development of value-aided services.

The draft law for IT - the "Code for Information Technologies Development and Use", finalized by former ANCI (National Agency for

and development, continuous education and training; Assistance to high technology spread to industry and administration (e.g. customs supervising and control system, population recording system, integrated information system of the Ministry of Finance); Many web-sites were

Computer related fairs and exhibitions in Romania (e.g. Cerf, Tibco) present most of all hardware and technology in the domain and less software or software oriented services. It is expected that software market will grow after the Parliament vote on IPR.

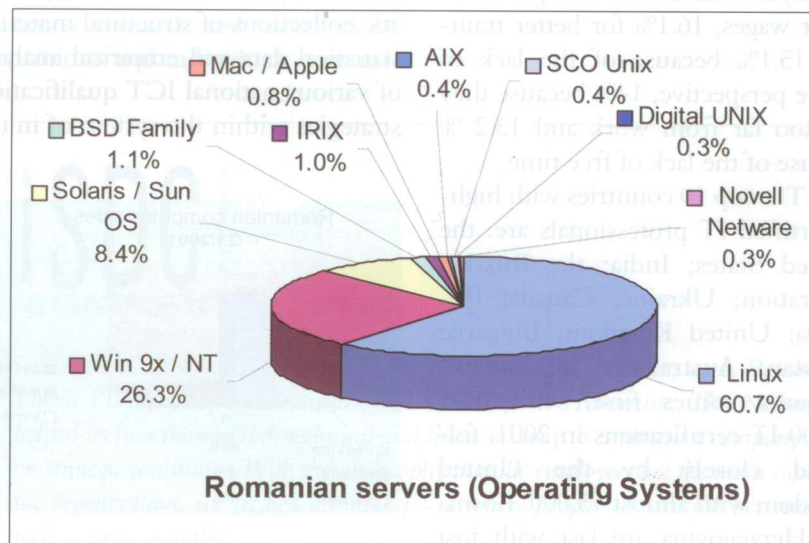
Libraries and High Schools over the country. The structure remains open to all universities as well as to non-profit scientific and cultural institutions. The status of the participating nodes now makes a clear distinction between NSP (Network Service Provider) nodes and End User (client) nodes. NSP nodes and the links between them define the RoEduNet Backbone, which is ground 0 in the structure. NSP are regional POPs, concentrating traffic from their service area. The end user nodes, level 1, connect to the nearest ROEduNet NSP node, usually located at central nodes of Universities as large Academic Centers throughout the country: Bucharest, Iasi, Galati Cluj, Targu Mures, Timisoara, Craiova.

The other large network, dedicated to Research and Development area, is RNC (Romanian National Research and Development Network - "http://www.rnc.ro"). RNC is a national wide project co-ordinated and established by the National Agency for Science, Technology and Innovation. Its main objectives are: Setting up technical and organizational infrastructure meant to provide national and international services for the Romanian scientific research community; Providing a rapid and competitive tool for the exchange of information in the framework of R&D community; Using the scientific and technical data base available in the country and by the national networks from other countries through international networks; Providing a support for information, documentation and scientific or technical co-operation considering research teams and topics or R&D programmes.

RNC offers access to 94 institutions connected through leased lines and more than 250 research institutes connected through dial-up lines. The total national and international traffic is higher than 700 Gbytes/month.

In 2000 year, Mobifon (parent company of Connex mobile communication company) launched Romania's first WAP service, providing the new service to Connex customers

After a study on firms members of "Romanian Association for Electronic Industry and Software" (ARIES) it results that most of them are private (93.5%) and few based on state capital (6.5% in which 3.3% with mixed capital). Most software firms are located in Bucharest (69%), 6.8 % in Cluj and Braşov, 3.2% each in Buzau, Iasi, Timisoara, Galati, Sibiu, Piatra Neamt, then 5% in



with a guide to Bucharest, airlines, hotels, exchange rates of major currencies, e-mail, chat, play. Since same year, Xnet (ISP of Mobifon) offers to Connex subscribers free dial-up Internet access at RomTelecom local tariff.

Major ISPs in Romania are: Global One, PCNet, DNT, EU Net, Kappa, RNC, RoEduNet, SoftNet, Xnet.

Computer market

Equipment market forms the main part of computer market as many software products come from known firms in the area. What are the statistics on software companies?

other places. Most firms are created after 1990 (96.8%) only 3.2% before; so, between 1990-1995 appeared 67.7%, between 1996 - 1998 the rate decreased somehow (12.9%) but increased again from 1998 to 2000 (16%). In those firms works around 1600 persons with a mean of 50 persons per firm; actually most of the firms have fewer than 20 employers. The export of software raised in the last three years: from 10.2% in 1998, to 28.9% in 1999 and 36.5 % in 2000.

In software firms the average employee's experience is less than 8 years. The leaders' opinion on the qualification received in the Romanian high education is: 46.43%

EUQuaSIT is a new European Project in ICT field with Romania as partner. EUQuaSIT is funded by the European Commission, Leonardo da Vinci II project, 2001-2003.

- good, 46.2% - satisfactory, 7.3% - poor. So, in many firms the training is less than 10 days (32.14%), for 25% of them between 10 and 20 days, and only 21.3% offer more than 40 days of training for their employees.

The average monthly wage is 371 USD. 17.6 % of the firms offer wages under 200 USD, 47.1% between 200 and 400 USD, and 35.3 % more than 400 USD. 27.2% employees leave the company for better wages, 16.1% for better training, 15.1% because of the lack of future perspective, 14% because they live too far from work and 13.2 % because of the lack of free time.

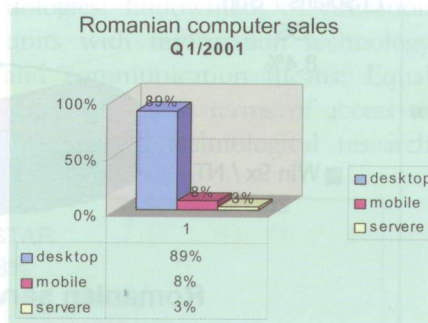
The top 10 countries with highly certified IT professionals are: the United States; India; the Russian Federation; Ukraine; Canada; Romania; United Kingdom; Bulgaria; Pakistan; Australia. In Europe, Romania comes first, with over 16,000 IT certifications in 2001, followed closely by the United Kingdom with almost 15,000. Bosnia and Herzegovina are last with just over 200 certifications received in 2001.

We are on EUQuaSIT

EUQuaSIT - European Qualification Strategies in Information and Communication Technologies (www.euquasit.net) is a transnational project being carried out since 2001 involving partners of five European countries: The National Institute of Technical and Vocational Education Weilova, Praha, Czech Republic, <http://www.nuov.cz>; Berufsbildungsinstitut Arbeit und Technik, University Flensburg, Germany (project coordinator), <http://www.biat.uni-flensburg.de>; Bundesinstitut für Berufsbildung,

Bonn, Germany, <http://www.bibb.de>; VEV International - Nijkerk, Netherlands, <http://www.vev.nl>; Tecnoforma, S.A. Almada, Portugal, tecnoforma@mail.telepac.pt; Central Systems, Foundation for Promoting ICT, Constantza, Romania, <http://www.central-systems.ro>; Danubius University, Galati, Romania, <http://www.uni-danubius.galati.ro>.

The project is aiming at systematic collections of structural material, statistical data and empirical analysis of various national ICT qualification strategies within the system of initial



and continuing vocational education and training (VET, CVT) taking into account possibilities in higher education (HE). Considering the equal opportunity theme as well as special programmes and individual initiatives in ICT for disadvantaged groups. Major objective is finally an international comparison of national qualification strategies within the systems of initial and continuing vocational education and training aiming at the identification of synergies and alternatives from the European point of view. Correspondingly there is a need for investigations, evaluation and international comparison on ICT working areas and its

interaction with the practical organisation and implementation of qualification strategies and training in companies and training institutions in the field of ICT. The objective of the project is to focus on this interaction in order to allow comparable research outcomes in a European context that sufficiently consider companies' demand of ICT specialists and professionals and acceptance of corresponding ICT qualification profiles. Although, however, used ICT technologies are supposed to be similar in most of the European countries it can be presumed that work processes are organised in more or less different ways, depending on the country, the region, the size of companies etc., probably especially in the field of ICT. Furthermore various results of studies carried out in the past indicated that the systems and therefore qualification strategies in European countries differ considerably. The Work packages of the project are:

- National analysis of the development of technological development and the qualification possibilities and strategies within the national framework of initial and further vocational education and training in the field of information and communications technology considering special initiatives and programmes for less favoured groups and females. Furthermore taking into account other ICT professional groups (e.g. Higher Education).

- Empirical analysis of the practical implementation and acceptance of ICT qualification and training based on a written and online examination of companies and training institutions of different size and business also focusing on the demand of skilled workers and considering

The project EUQuaSit intends to establish various regional, national and international cooperation between the partner countries. Furthermore and in medium term view other countries are invited to join the project's activities, both in Europe and also other parts of the world.

the great variety ICT professionals.

- International (European) comparison of collected national material on ICT qualification strategies and training statistics of the VET and CVT system as well as the implementation of training strategies and profiles in companies and training institutions. Outcomes' transfer including recommendations with regard to common and innovative strategies in order to better meet the demand of ICT professionals in Europe.

- Case studies on ICT working areas and processes as well as the implementation of vocational training strategies in the field of information and communications technology undergoing expert interviews with ICT professionals, skilled workers, VET professionals (teachers, trainers) in companies of different size and sectors as well as training institutions.

- International and comparative analysis and evaluation of the case studies with ICT managers, ICT and VET professionals and personnel staff in companies considering the demand of ICT professionals of different qualification levels. Considering aspects like special initiatives for disadvantaged groups and females.

- Final international co-ordination, dissemination and possible transfer of the project results. Organization of a European workshop and final recommendations on feasible common international strategies and initiatives as well as the international acknowledgement of degrees and certificates in the field of ICT.

Seven partner organisations in five European countries cooperate in the EUQuaSIT project. These expert organisations are responsible for research and development of the qualifications and training structure

in the field of ICT and the transfer of the project outcomes.

Based on the objectives and the partnership of EUQuaSIT the following target and beneficiary groups are addressed: companies of various sectors and size, especially small and medium sized enterprises (SMEs) vocational schools, colleges and other training institutions committed in ICT qualification and training, ICT professionals and specialists, as well as students, trainees and apprentices, institutions and individuals commit-

ted in ICT training for disadvantaged groups, European, national and regional policy makers in vocational education and training in the field of ICT, social partners and other organisations related to vocational education and training in the field of ICT, e.g. Chambers of Commerce.

*Professor Eugen Petac, Ph.D,
President of Foundation for Promoting
Information and Communications*

iSDC!
ROMANIA

ISDC Romania was founded in 1999 in Cluj-Napoca, as a Romanian-Dutch IT company. Our partner, ISDC BV from Hilversum, The Netherlands helped us in a managerial, technical and financial way to establish a company based on strategic continuity. With the philosophy that the employees are the main capital of the organization, we created an atmosphere where people can develop personally as well as professionally.

The company was profitable both in 2000 and 2001.

After this initial phase of pioneering and improving, we find ourselves in a consolidation phase. The professionalism we have reached is reflected in the standard of our main clients among which the best known are banks like ABN-AMRO or Fortis and companies like KPN Telecom, Siemens, Budget Rent A Car, Volkswagen, De Ster.

Now we are ready for the next step to further expansion. At this moment 20 FTE's are employed on a permanent basis and our plan is to grow to 50 people by end of next year. Due to the rapid changes in the world market place, especially in the IT market, another important direction of investment is both in knowledge (new technologies, business administration) and infrastructure (own company office).

Integrating our partner's managerial experience and the Romanian highly qualified working capital, we are convinced of our future development vision, strategic expansion of ISDC and contribution to the Romanian economy.

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