Policy Issues for NRENs in South East Europe

1. Introduction

This document reports the conclusions and recommendations from the workshop "Policy Issues for NRENs in South East Europe" held on 7-9 September 2003 in Varna, Bulgaria. It is meant to provide input to the agenda of decision makers responsible for policies on research and education, telecommunication, technical and economic developments of governments in South East Europe and of the European Union institutions.

The workshop, organized by TERENA, CEENet and the SEEREN EU project, with support from the NATO Programme for Security Through Science and hosted by the ICT Development Agency of the Republic of Bulgaria, was attended by more than fifty key representatives of National Research and Education Networks (NRENs), universities, governments and telecom operators in the South Eastern European region, representatives of the European Commission and the NATO Networking Panel. Detailed information and workshop proceedings are available at http://www.terena.nl/conferences/nato-anw2003.

1.1. National Research and Education Networks

National research and education networks (NRENs) are organisations that offer specialised networking services to the research and education community. They are integral part of the academia and one of their major goals is to introduce and validate new services by making use of the latest technological developments well in advance of their commercial exploitation. The activities of the NRENs include, but are not limited to: interconnection of all the research and education institutions, development and distribution of information services, analysis and implementation of network technology, education and training, participation in peer international organisations, generation and transfer of know-how and proactive involvement in the creation of strategies for the development of the information society.

1.2. Digital divide in South East Europe

Recent studies confirm that there is a significant digital divide in research and education networking in Europe, with a huge spread between countries in terms of network connectivity and service offering. Countries in South East Europe lie at the extreme lower end of the spectrum. Often the case for effective government support for research networking in these countries still needs to be made.

The SEEREN project, a support measure of the European Union's Fifth Framework Programme in the region, is having a phenomenal impact on research and education networking in South Eastern Europe. However, the full benefits of this project will only be achieved if the existence and operation of local organisations providing network connectivity and services to the research and education community is sustained with adequate long-term funding, excellent technical staff and a resilient management structure. Political support and the legal framework should ensure the

conditions for a stable environment enabling research and education networking, contacts and co-operation in the region and within the European Research Area. Local, national governments and policy decision makers should understand the importance of research networking and provide adequate funding to support the research networking community.

The major obstacle to improving research and education network provision at international, national or university level is the extremely high pricing of telecommunication links. This is the result of the lack of competition and frequent persisting dominance of (ex-) monopoly telecommunications operators. The situation in South East Europe today is very similar to the one which existed in the countries of the European Union ten years ago, and the measures which need to be taken are the same. It is vital that the market for electronic communications in the region will be fully liberalised as quickly as possible.

If measures are not taken the research exclusion in South East Europe will obstruct attempts to complete the realization of the European Research Area (ERA). One should be aware of the risks of information exclusion and recognise the need to close the digital divide as the only way to follow the lead of *e*Europe in building an Information Society.

Varna conclusions and recommendations

The drive to the Information Society

- The importance of Information Society developments

The European Council has affirmed twice, at Lisbon in 2000 and at Barcelona in 2002, the critical nature of the speed and quality of development of the Information Society in Europe for the future of the continent's economic prosperity. The aim is to make Europe, by 2010, the world's leading knowledge based economy. There is no knowledge-based society without the appropriate information and communication infrastructure. Participation in the development and establishment of the information society is a question of autonomy and competitiveness for each and every nation.

- The research and education community is a key driver for the Information Society

The research and education community is the environment where new Information and Communication Technologies (ICTs), and their applications, are conceived, prototyped and brought to life. This community is the place in which the first, real-life, nation-wide tests of many of these techniques are conducted, and further developed. Every year the research and education community generates a new cohort of citizens trained in the latest and most advanced applications of the Information Society, who move on from their education to join the workforce.

The leading role of NRENs

In order to fulfill its research and teaching roles effectively, each national academic community needs advanced and stable infrastructure and services, which are growing increasingly important in the modern practice of research and teaching. It is not possible to rely solely on the market forces for the provision of these services, and they require a strong, dynamic, stable, professional, not-for-profit organisation in each country, in order to build, maintain and develop the necessary communication infrastructure.

The role of this organisation – the National Research and Education Network (NREN) - is not only to provide services reactively, at the request from the user community, but also to act proactively as a national focus, inspiring, designing and deploying advanced and innovative projects and services which rely on human resources coming from the research and education community itself. It is very important for the NREN to ensure that services required by its users are provided at an appropriate quality level.

Government interest in supporting NRENs

In a region where governments have to face a multitude of economical and social problems, they might tend to perceive investments in NRENs and state of the art ICT as being of low priority and something that should wait for "better times".

However, in order to help speed-up the construction of the Information Society in each country, it is in the best interest of the nation and government to establish and support an NREN.

The governments concerned need to understand that, over the coming decades, investments in NRENs and ICT will be important elements in the creation of economic prosperity and autonomy, and vital for achieving a better national future. Therefore, NRENs and the general Internet require investments and care from governments because it should be a national priority to make advanced services available to the broadest audience as soon as possible, in order to capture their creative and innovative potential and to supply them with latest knowledge and information.

Twenty years of European experience show that it is crucial to have only one NREN per country, and that it should be an autonomous legal entity in charge of all education and research needs, answering to a board which represents the major stakeholders. In the medium-term it is best if the NREN is mainly funded via its user community, but it is hard to do that successfully until the user community is itself assured of adequate funding, and possesses sufficient awareness of the importance and role of ICT and NRENs. Accordingly, in an initial phase the efficiency and impact of the NREN can be optimized by direct and full finance from the government budget.

The scope of NRENs

Standard Internet services, which are available at an affordable price to all citizens and enterprises, are important in the process of developing the Information Society. An NREN's role of providing advanced and innovative services for a specific group of users, and an Internet Service Provider's (ISP) role of making available general Internet services for the whole population are different and complementary, and governments need to ensure that both functions are being well met. Over time the advanced services provided by the NREN will find their way into the standard offerings of the ISPs, but at the same time the services required from the NREN will advance further. To ensure ongoing complementarity between the general commercial offerings of ISPs and the advanced services provided by NRENs for their own well-defined communities, it is important that NRENs should have clear, well-publicised and effectively monitored Acceptable Use Policies.

Research and education, exchanging knowledge and ideas, exploring and experimenting are the most important activities for the future of the citizens and are no longer confined to universities but are happening everywhere. In some European countries, especially smaller ones, the government has been very successful in expanding the scope of the NREN to include other communities beyond the traditional ones of research centres, universities and higher educational institutes. Some of the communities that have been included in various countries are secondary and elementary education as well as NGOs, libraries, hospitals and other types of public, non-profit access points.

However, it is also important for NRENs to keep in mind that they should avoid being in any way in competition with commercial ISPs. NRENs are needed to provide advanced services, which are not normally available on the market, for a well-defined community. If they are under strong economic pressure NRENs may be tempted to improve their financial situation by offering commercial services. NRENs should avoid this at all costs, else they will come to be seen as competitors of ISPs, and in the medium term they will lose the justification for their existence, activity and operation.

The importance of the infrastructure and the government's role

The communication backbone is a vitally important infrastructure for the NREN user community. It will inevitably be one of the most advanced and large-scale infrastructures in the country.

In order to make an adequate communication infrastructure available to the research and education communities via the NREN, governments have a special role and obligation.

1. Governments need to ensure that sufficient financial resources are made available to the NREN.
2. Governments should exert their interest (based on ownership, the legal situation and the regulatory framework) to ensure that telecommunications operators (especially those holding a monopoly or dominant market position) do indeed provide the services required by the NREN at cost-related prices.
3. Finally, governments should enable, encourage and, if necessary, require NRENs to own their infrastructure for local, national, cross-border, regional and global connectivity when no suitable services are available or those available are offered at exorbitant price. Optical fibre infrastructure offers very considerable economic and technical advantages, and should be the solution of choice.

References

TERENA is an association that represents National Research and Education Networks (NRENs) in almost all countries in Europe. The mission of TERENA is the promotion and development of a high-quality international information and telecommunications infrastructure to support European research and education. http://www.terena.nl

CEENet is an association of national organisations in Central and Eastern European countries whose primary focus is on academic, research and education networking. The primary objective of CEENet is the international co-ordination of the establishment and operation of NRENs in Central and Eastern Europe and adjacent countries. http://www.ceenet.org

The "South-Eastern European Research & Education Networking" project (**SEEREN**, IST-2001-38830) funded by the European Commission provides NRENs in South-East Europe with the appropriate network infrastructure and services to allow the NRENs in the region to connect to GÉANT, the pan-European backbone for research and education networking. http://www.seeren.org

The **ICT Development Agency of the Republic of Bulgaria** started its activities in February 2002. The Agency is subordinated to the Minister of Transport and Communications and carries out functions related to administration, collection and spending of funds to support the development of telecommunications, posts' infrastructure, and information and communication technologies (ICT). http://www.ict.bg

The **NATO Programme for Security Through Science** offers support for international collaboration between scientists of the countries of the Euro-Atlantic Partnership Council or the Mediterranean Dialogue. The support for collaboration is channelled through a range of different mechanisms or activities which are designed both to create enduring links between researchers in different countries and to stimulate the cooperation which is essential to progress in science, with the objective of contributing to overall stability and peace. http://www.nato.int/science

GÉANT is a multi-gigabit pan-European data communications network, reserved specifically for research and education use. GÉANT is a collaboration project between 26 National Research & Education Networks representing 30 countries across Europe, the European Commission, and DANTE, who built and operates the network. http://www.geant.net

The Study into European Research and Education Networking as Targeted by eEurope (**SERENATE** project IST-2001-34952) provides input to the development of future strategies by national governments and funding bodies, by the management of universities and national research and education networks on initiatives targeted to keep the evolution of the European research networking at the forefront of world-wide development. The study has produced a "Report identifying issues related to the geographic coverage of European research and education networking", November 2003, See: http://www.serenate.org/publications/ , baseline material and data for the report has been gathered in the context of the TERENA NREN Compendium http://www.terena.nl/compendium/