



Position statement on e-Infrastructures for Distance Learning: Opportunities and Challenges for the Indian Society

The BELIEF and 6CHOICE consortia call on policy makers to consider and act upon the following needs:

1. Greater expansion of distance learning programs in India, for which is necessary:
2. The development of higher bandwidth networks in order to deliver learning faster to more people at levels of urban, suburban and rural areas, and
3. Public promotion of new technologies (e.g. IPv6, standards), to increase the capacity and cost effectiveness of education and training systems thus reaching target groups with limited access to conventional education and training.

eLearning as a vital application

Distance learning is a field of education that incorporates self-motivation, communication, and technology in order to make independent studying and education accessible to more and more individuals. The use of e-Infrastructures adds massive value to distance learning by making the process of learning independent of time and space. Using them in distance learning fosters nonlinear interactivity, creativity, motivation and commitment among students and teachers alike. These features become even more critical for countries with wide territorial boundaries, and huge differences among the educational levels. This is why distance learning constitutes a key priority for the Indian society and where e-Infrastructures can enable a qualitative leap.

Progress in eLearning

In recent years, the Indian government has invested a great amount of money and has put considerable effort into providing quality education and promoting new technologies to all citizens. Several initiatives have been set up to develop the e-Infrastructures, which are deemed necessary to support and encourage distance learning. Perhaps the most significant among these e-Infrastructures, the *Integrated National Knowledge Network (iNKN)* endeavors to build a “technology backbone” in



the country. In the Expert Group Report it is stated: *“The existence of Integrated National Knowledge Network (iNKN) has been recognized as an absolute necessity for development of the nation. The proposed network will enable researchers and academia from different background and diverse geographies to work closely for development in critical and emerging areas. It will allow them to share and transfer knowledge at ease. The benefits of such a network go beyond immediate gains as it would rekindle the interest of wider section of research and education institutes in research and development of new technologies. Additionally it would enable use of specialized applications, which allow sharing of high-performance computing facilities, e-libraries and virtual classrooms”*. According to experts, India is a nation that has the potential to create over 500 million trained people by 2022, which is over a fourth of the global workforce.

Besides the contribution of iNKN, several Indian institutes have tried to enhance the development of distance learning. For example, the *Indian Institute of Information Technology and Management – Kerala (IIITM-K)* promotes higher education through its IT facilitated education programs and services. Among several activities, IIITM-K provides multimedia authoring and content generation facilities for the development of quality e-courseware, targeting higher education and professions. The *Computational Chemistry Portal* that is hosted by IIITM-K interactively assists in building quality education in Chemistry. The *Indira Gandhi National Open University (IGNOU)* constitutes another demonstration of the progress being made in distance learning. IGNOU was founded to impart education by means of distance and open education, and to provide higher education opportunities, particularly to the disadvantaged segments of society. IGNOU also acts as a national resource centre serving to promote and maintain standards of distance education in India.

India is in close collaboration with Europe on several projects. One of these projects is the third generation of the Trans-Eurasia Information Network (TEIN3) which extended the connectivity between Europe and the Asia-Pacific region. EU-IndiaGrid and 6CHOICE promote innovation in eScience applications and IPv6 use, respectively, whereas BELIEF II offers a one-stop shop for users, developers and policy makers to network and understand more about the value - and the challenges - of e-Infrastructures.

Prospects of eLearning

The prospects for further development of distance eLearning in India are positive. Several efforts are currently progressing towards providing quality distance learning to more people in urban and rural areas, through the utilization of more effective



web resources and practices. Such developments include the enhancement of ICT Infrastructure to streamline and reorient institutions and services, the establishment of open access published contents for effective use, and the establishment of Indian scientific databases. Furthermore, open Geographic Information Systems (GIS) and Web Technologies integrated with mobile access have shown great potential in rural development, agriculture-related programs and services, community healthcare, disaster management systems, and community governance systems.

The established successes and ongoing developments give shape to a series of potential synergies between India and the EU. As an example, India, as well as other developing countries, which are currently in the process of building their networks, can help in the creation of better next-generation networks by the EU, through sharing of their experiences and lessons learned.

Challenges

Even though India has shown considerable progress, the full development and large scale adoption of e-Infrastructure-enabled distance learning still face several challenges, including:

- Lack of course content,
- High cost of production of high quality e-learning material,
- Lack of satisfactory quality applications in certain areas (like genomic sciences).

Tackling these challenges requires:

- More training for greater expertise in development and delivery of e-learning solutions,
- Additional investment in research and application and product development,
- More reliable communication infrastructures with higher bandwidth,
- Further development and use of standards
- Higher availability of adequate IPv6 applications.

These are important challenges for consolidating the development of distance learning in India. Collaboration with the EU and its FP7 funded projects will be key in addressing these issues. It is in fact essential to have policies that meet these challenges and to promote e-Infrastructures as the new research



paradigm. E-Infrastructures have yielded massive leaps forward in scientific research. Now, with strategic policy guidance, e-Infrastructures can enable today's learners – regardless of their opportunity level and location – to be a force in tomorrow's knowledge economy.

This statement takes into account the discussions that took place on the 28th and 29th of January, 2009, during the 1st BELIEF II – 6CHOICE Symposium in New Delhi, India. The symposium was jointly organized by the BELIEF II and 6CHOICE projects, and was additionally supported by the GLOBAL project. The primary goal of the symposium was to identify obstacles and highlight opportunities in the development of Distance Learning as an e-Infrastructure application and thereby to set the axes of the related research agenda.