Migration of Excellence from ITU CoE to NBU Continuous Education Programs

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Summary: This article presents the migration of existing educational content and excellence from International Telecommunication Union (ITU) distance learning program to New Bulgarian University (NBU) continuous education programs. We focus on development of new university distance learning program for English speaking students using already created educational content for ITU. Some important program migration principles are explained. We also try to figure the students interest in this new program.

Introduction

Since 2004 up to 2008 Department Telecommunication at New Bulgarian University (NBU) was selected to be the leading centre for program coordination of International Telecommunication Union (ITU) Centre of Excellence. NBU was responsible for development and organization of activities for English speaking branch in Eastern European Countries [2], including creation and leading of different distance learning courses, case studies and regional international workshop arrangements. ITU CoE structure is shown on Fig. 1, CoE includes 6 world wide regions: Asia and Pacific, Americas, European Union + Commonwealth of Independent States, Eastern and Southern Africa, Western and Central Africa and Arab States.
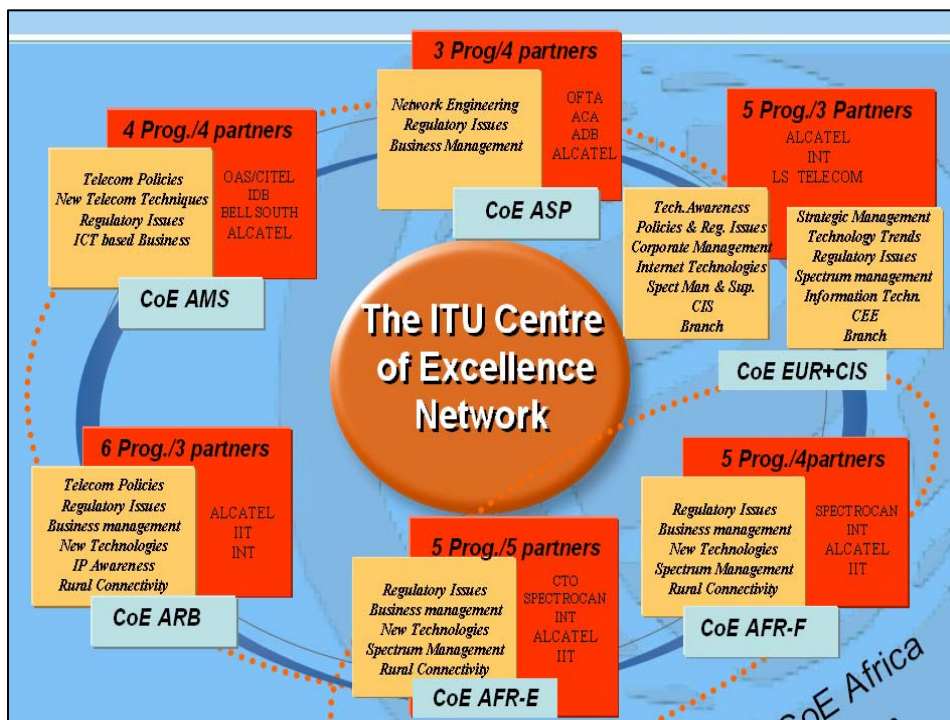

Fig. 1 ITU CoE world wide structure

ITU Centers of Excellence Role and Objectives

ITU CoE distance learning programs targets tree main groups of participants (independent students) coming from:

- Policy makers
- National Regulatory Authorities
- Business experts

The main objectives of the CoE are:

- To establish a regional mechanism for strengthening the experts capacity of the region, to develop high-level know-how and expertise in electronic communications, regulatory matters, business and spectrum management and communications technologies, in some countries to force e-Readiness and Internet protocol (IPv6) awareness.
- To build *self-dependent and sustainable networks* for training providers offering advanced training facilities focused on sensitive issues of the electronic communication sector of the region and world wide.

Convergence of Main CoE Programs Worldwide

ITU CoE Programs rely on five major tracks:

- **Regulatory Issues -** a limited number of issues with diversity of regional practices influenced by a growing harmonization on the regional level.
- **Business Management –** to cover topics focused on the Operator skills with some subjects which address other Telecom player needs.
- **Technology Awareness -** Broadband Services, Transitions towards Next Generation Networks (NGN), Transitions towards 3 Generation mobile networks, IP based Technologies.
- **Spectrum Management –** these actions are already implemented in most of the regions. An area where Experts are more familiar with cooperative practices, NBU have cross regional experience during development of Spectrum management (SM) distance learning course for Caribbean region.
- **Broadband in Rural Areas -** Technical Innovation, Regulatory and Economical issues, how to utilize the use of Satellite technologies, WiMAX, WiFi in rural areas.

CoE Cross-regional programs

Cross-regional electronic communication programs:

- Buenos Aires (1995-1998)
- Valletta (1999-2002)
- Istanbul (2003-2006)
- Doha (2007-2010)

Doha Action Plan [1] is a comprehensive package that will enable developing countries to promote the equitable and sustainable development of information and communication technology (ICT) networks and services. It consists of six programs, to be implemented by the ITU Telecommunication Development Bureau (BDT) over the coming two years:

- Regulatory reform.
- Information and communication infrastructure and technology development.

- E-strategies and ICT applications.
- Economics and finance, including costs and tariffs.
- Human capacity building.
- Least developed countries and Small Island developing states, and emergency.

Since 2008 NBU become a head of ITU CoE Bulgarian Node, because of world wide economical crisis the implementation of CoE activities is delaying but is not stopped. For 2009 we have planed and work on implementation of tree different distance learning courses for English speaking branch countries from EURO CIS region. Since 2008 participation in ITU CoE is not free, but is open for all participants. There is no significant leakage of participants during 2008-2009 corresponding to 2005-2007. The biggest leakage of participants is measured in face to face meetings and workshops. This is easy to explain with rising transportation and accommodation costs for single participant.

NBU CE IT Related Programs
At this point of view it is interesting to see how continuing educations programs (CEp) are implemented at New Bulgarian University. NBU offers have five different CEp, that are not adapted for distance learning:
- Cisco Academy.
- HP – Unix.
- WEB DESIGN.
- Informatics – school teacher.
- Computer based book publishing and art design.

Because Cisco is practically oriented IP networking training program most of students know and enter different certification levels. CISCO covers different topics on: Routing & Switching, Design, Network Security, Service Provider, Storage Networking, Voice and Wireless. This program brings necessary education for Internet Service Provider staff and network administration staff. But there are still many areas in electronic telecommunication industry and management that can't be covered by CISCO programs. The missing part here is **Telecommunications systems and technologies** CEp [3, 4]. Another reason to develop such independend distance learning program is that many students after completing their education at NBU begin to work in different country regions. They have troubles accessing class face to face educational programs. This is the main reason why most of NBU B.S. degree students do not enter M.S. degree program. The same criterion can be carried out for students in telecommunication department. We offer tree Bachelor of science programs and tree Master of Science programs:
- B.S.
    - Telecommunication system and technologies
    - Telecommunication management
    - Post and courier management
- M.S.
    - Telecommunication system and technologies
    - Radio communications and electronic media technologies
    - Telecommunication management

- The missing part
  - **Post B.S. Professional Certificate Programs**
  - **Post M.S. Professional Certificate Programs**

These new CEp is based on our existing experience during development of distance learning courses and workshops implementation since NBU ITU CoE participation. The main topics are focused on: Next Generation Networks and Spectrum Management. Here is the entire list of activities that Bulgarian Branch have developed:

- Next Generation Networks
- Intelligent Networks
- Spectrum Management

  Technology Solutions for Next Generation Access Networks
- International Notification and Coordination of Radio Communication Systems
- The EU Directives and the liberalized Telecommunications market
- IPv6 Services
- Utilization of the ITU Spectrum Management databases
- National Spectrum Management Practices
- NGN core and access technology, economical and regulatory aspects
- National Spectrum Management Practices
- National Spectrum Management Practices - Caribbean Region
- NGN core and access technology, economical and regulatory aspects
- Broadband Communications and Access Networks
- Utilization of SM Training tools and Digital Libraries for Enhanced Learning

It is interesting to compare ITU CoE program with classical in class university programs and courses. ITU program was designed for working people who do not have much time for participation in class education, who have troubles traveling and who need fast and accurate in-topic education. ITU programs are business oriented, and do not cover large amount of educational content that students in classical study programs do. Because ITU program trust on student capabilities for self organization and motivation they typically finish with certification grading. ITU certificates do carry continuing education credits, and typically are not university recognized. The first step here is to adapt educational content to standard university program basis. Each one ITU course is designed for **6 weeks** self organized education (*real course duration is often extended up to 2 months*). Students examination and certification is organized as follows:

- After each learning module participants take a quiz
- During each week students must participate in discussions and surveys that course tutor organizes for them
- After completing course student must take a final test that includes learning material from all 6 modules
- Student must achieve 50% or above to gain a certificate

Adaptation of ITU courses to NBU continuing education program can be done corresponding next main conditions:

- Course content modification
  - 6 learning modules must be redesigned in 15 standard lectures (corresponding to 30 hours standard class time schedule).
  - 6 tests + final test must be redesigned to 2 median tests and final examination test.
- Student entrance level selection is most narrow place. Practically participants in ITU CoE have different education levels: school, B.S., M.S., PhD. ITU learning materials are created in popular form ready for use by everyone. Some diversification must be done here in adaptation of course content for tree levels:
  - **Beginner** for B.S. and students.
  - **Intermediate** for post M.S. students.
  - **Advanced** for PhD or experts.
- Content modernization is another major topic in this process. Since first of ITU distance learning courses are developed in the beginning of 2003-2004 many technologically and regulatory issues have changed.

We understand that these "narrow" places must be overcome first before program can be started as a standard university distance learning program. This process is very complex and many experts and university professors must share knowledge and experience while final CEp will be implemented.

Participants benchmarking

Today in in-class education programs at department Telecommunications we have above 320 students (B.S. 190 and M.S. 130). Standard CISCO training class consists of 10-15 students. To be financially effective such a course must have at least 7 students, and each one program up to 15 students. Because we are preparing distance learning programs we can avoid the duty for simultaneous student education. Course content and tests are organized in such a manner that tutor can schedule only discussion topics and program director must carry out only for final evaluation and graduation problems that students may have. If we take a short view of past ITU activities we can conclude what will be the average number of participants that will enter this program see Fig. 2. Since 2005 ITU starts to issue certificates for course participation. Not all participants can gain such a document for each one course. Because of this assuming that particular CEp consists of minimum 5 learning courses we should keep the ability to issue certificates for single course completition. Student must have some extra time and procedures to finish their education and they should receive diploma after successful completition of CEp. In all cases we can trust that 20-25 students will enter this CEp every semester, and 15-18 of them will finish education with diploma. These suppositions are made corresponding our local marketing. In future we can trust that more and more students having B.S. and post M.S. will prefer distance learning programs.
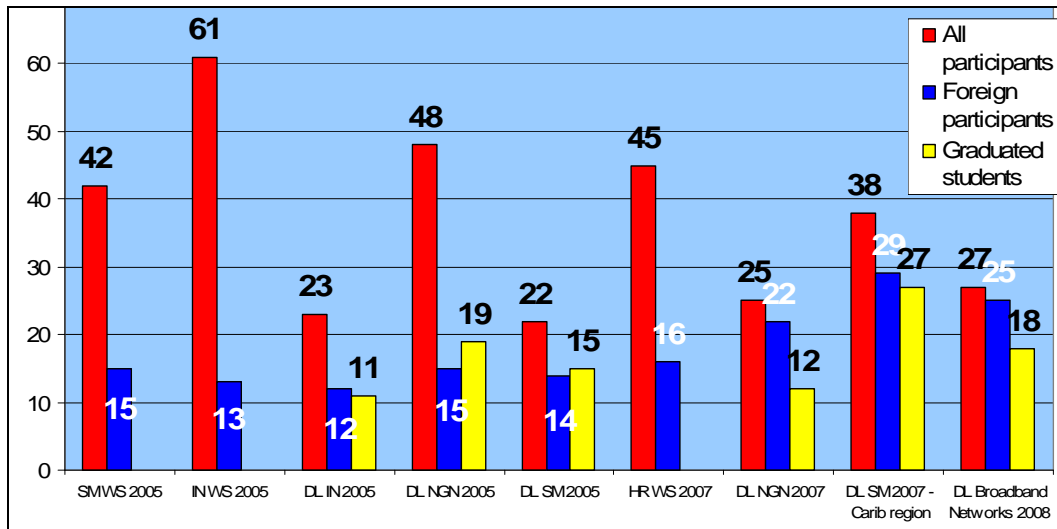
Fig. 2 ITU CoE participant distribution by national criterion and total number of certificates graded

References

[1] "DOHA ACTION PLAN" http://www.itu.int/ITU-D/wtdc06/pdf/dohaactionplan.pdf

[2] "Sustainability Practice Sustainability Practices of the Centre of Excellence Network", prof.Antoni Slavinski

[3] "Successful Experiences in Distance Education BDT - ITU International Telecommunication Union", Manuel Zaragoza

[4] "ITU Strategy for the evolution of the ITU Strategy for the evolution of the Centre of excellence Network", prof.Antoni Slavinski