Technische Universität Berlin

ZiiK-Report Nr. 30

7th IT Conference:
„An Assessment of IT in Higher Education in
Afghanistan and its Effects on Society"

18th to 20th of December 2011, Kabul / Afghanistan
Ministry of Higher Education

Organized by

IT department of the Ministry of Higher Education (MoHE) and

Center for international and intercultural Communication (ZiiK)
at the Technische Universität Berlin

Financing

Imprint

Introduction

The IT department of the Ministry of Higher Education (MoHE) organized and conducted the annual IT conference in higher education from 18th to 20th of December 2011 in Kabul in collaboration with the Center for International and Intercultural Communication (ZiiK) of TU Berlin (see program in attachment 1). The topic of the conference was "An Assessment of IT in Higher Education in Afghanistan and its Effects on Society".

Within the scheme of the conference keynote speeches, main talks and three working groups on the role of information technology (IT) in the sectors of education, economy, and society were discussed.

The three-day conference was the seventh in a series of conference in the area of IT, which is conducted at the MoHE on an annual basis since 2006. This conference, as the previous ones, was financed by the German Academic Exchange Service (DAAD) and the German Foreign Office.

Attendants of the Conference: Representatives of Afghan ministries,

representatives of the German Embassy and other embassies in Kabul, the presidents of public and private Afghan universities, the IT advisers of the Afghan universities, Master lecturers from TU Berlin, computer science lecturers and IT experts as well as high-ranking international guests such as representatives of NATO, ISAF, World Bank, UNESCO and representatives of international universities and organizations. In total more than 150 attendees were present on the first conference day. The opening ceremony and words of greeting was documented by several Afghan TV stations (further pictures can be found in attachment 2).

First Day, December 18th, 2011

Opening Ceremony and Words of Greeting

H.E. Mr. Sarwar Danesh, Minister for Higher Education greeted the participants and thanked the German government for its engagement in Afghanistan, especially in the area of IT. He emphasized the achievements of TU Berlin in the area of IT in higher education. He continued that the use of IT forms the development of society, but it also constitutes a new challenge. He expressed the hope that the number of currently eight public Afghan universities that have a Faculty of Computer Science will increase in the future.

H.E. Mr. Rüdiger König, German Ambassador in Kabul opened the conference, greeted all guests, and complimented the cooperation between the Center for International and Intercultural Communication of TU Berlin, the DAAD and the Ministry of Higher Education. He was pleased to have the honor to open the seventh part of the IT conference, which continues the sequence of cooperation between Germany and Afghanistan and which reflects a key aspect of the German engagement for the reconstruction – education from primary education to higher education. The conference brings together all areas that work in the area of IT. IT is an integral component of today's life, a bridge between people and necessary for all political, economic, industrial and cultural activities.

The Minister for Communication and Information Technology, **H. E. Mr. Amirzai Sangin**, greeted the guests of the conference and explained the development of IT at his ministry and in Afghanistan in general. He further noted the importance of IT for the areas of education and economy. The Minister was proud to announce the establishment of a Computer Science Institute at Kabul University. He underlined his further intention on collaboration with the MoHE.

Prof. Osman Babury, Deputy Minister of Higher Education, welcomed all guests of the conference. He stressed that the MoHE is still working on the basis of the national IT strategy and currently focuses on the following areas:

a) Establishing Afghanistan Research and Education Network (AFREN),
b) Supply of all universities with computer equipment and strengthening the IT infrastructure,
c) Implementation of HEMIS, and improving of our technical and users abilities in this regard,
d) Training of staff in the use of modern technologies.

It is the claimed goal to make accessible international knowledge to all Afghan institutions, so that every member of the Afghan universities as well as the employees of the MoHE will be capable of the efficient usage of IT systems.

The new director of the DAAD liaison office in Kabul, **Dr. Dieter Ortmeyer**, greeted the guests in the name of the DAAD. The DAAD has been in Kabul since 2002 – and since 2006 in the building of the MoHE. The long-standing cooperation with the ministry, as he went on, means that the DAAD has established a bond of trust and friendship over the years. Relationships are an important factor, if you want to achieve something in Afghanistan.

Education is the foundation for fair, future-oriented and sustainable development, democracy and peace. The country has been changing so fast and there is an unbelievable energy and spirit of renewal among the people.

He emphasized that the DAAD will be engaged in Afghanistan over the long term – even after the handover of security responsibilities in 2014. DAAD has supported academic exchange with Afghanistan and the Afghan universities since the 1960s. And this will not change in the future.

He expresses his thanks to Dr. Nazir Peroz and his team from the Technical University of Berlin for shaping the IT landscape here in Afghanistan fundamentally for the last 10 years. He considered the bright promise of Afghanistan's future. The hard times that exist cannot be ignored. Many Afghans are struggling to pay the rent or the mortgage, to find a job, to feed their families. The road ahead will not be easy, but the German-Afghan journey that has been taken together over the past five decades – and in particular over the last ten years – fills him with optimism for the one that now lies ahead. Working together on the rebuilding of Higher Education in Afghanistan, as he explained, results have been created that one can be proud of. Higher Education is a big step towards peace.

Keynote Speeches

Apart from the greeting words, two keynote speeches on the topic of IT were held on the first conference day.

The first keynote by **Mr. Salim Saay**, director of the IT department of MoHE, was on the current situation of IT and its effects on higher education in Afghanistan. In his speech Mr. Saay gave an overview on the current IT supply at Afghan universities. He said that the development of IT has progressed at a vast pace. He demonstrated this with the example that ten years ago the total number of computers at Afghan universities was between 5 and 10. He was happy to announce that the current number of computers is more than 3000 and that all of them are connected to the Internet. Ten years ago, no one in Afghanistan even know what "Internet" means, today all Afghan universities have Internet access. Ten years ago the Department of Computer Science at Kabul University had four lecturers, no power supply and no books for the 20 students, which were enrolled at the time. In the meantime the former department has become the Faculty of Computer Science, with 22 lecturers and 500 students. Further three Faculties and more Departments of Computer Science at Afghan universities have been founded since then. Since Afghanistan has long been cut off from this development, these numbers are still not sufficient.

Apart from the construction of IT infrastructure and the usage of IT, possibilities should be created on how further benefit can be generated from the IT usage for the universities and for Afghanistan. Guidelines, laws and structures are necessary for that purpose. Currently the usage of IT is often implemented as single projects rather than aiming for a holistic IT structures on a broad societal basis.

But even with the above mentioned obstacles the MoHE and the universities in support by their international partners were able to reach a modern standard and high-level tertiary education within a short time-span. This was accomplished by the establishment of computer systems in the area of higher education (HEMIS) and its usage in universities, the establishment of a structure for research and education (AFREN) and the extension of knowledge in the area of IT, among others. These tasks are also noted in the strategic plan of MoHE.

Dr. Nazir Peroz, director of ZiiK at TU Berlin, described in his speech how the usage of IT creates a challenge for Afghan society. He stressed that this challenge makes necessary the development of certain measures that coordinate and steer the procurement, the usage, the running, the support,

the service, and above all the training in the area of IT. Among the most important measures are a sustainable IT planning, a solid IT infrastructure, a demand-orientated IT education and a modern management as well as sufficient financial means. The implementation of these measures on the other hand requires a judicial and political frame, competencies and responsibilities. If these structures are not being established soon, isolated solutions of different IT projects will be the result. These will afterwards lead to more disadvantages than advantages in the Afghan society. At the end of his talk he presented four precise fields of action, which are important for the development and the usage of IT in Afghanistan: 10 to 15 years of IT education programs, Development of an eGovernment considering the Afghan culture and the available resources, establishment of a technology park for Afghanistan in order to support Afghanistan's IT and to create jobs, and finally the foundation of an IT society, which will consult the government, analyze the IT demand of the country, develop and propose IT curricula, et cetera.

Second Day, December 19th, 2011

Morning: Introductory Speeches

The second conference day began with four introductory speeches. The selection of presentations had been organized by MoHE. A call for papers had been published and had called for abstracts on proposed talks to be submitted to the IT department of MoHE by members of the Afghan higher education system. A scientific committee consisting of members of MoHE, Kabul University, and TU Berlin had selected the presenters based on the submitted papers. The transcription of the speeches can be found in the appendix of this report.

The first talk was held by **Mr. Hadi Mohaqeq,** lecturer at the Faculty of Computer Science at Kabul Polytechnic University. His talk was on the role of IT in the establishment of Afghan public organizations. He emphasized on the structure of administration and its challenges and described each one together with their respective responsibilities. He stressed that corruption within the Afghan administration has increased. In order to hinder this problem on expanding further, a modernization of administration through the use of IT is of big importance.

The consequent talk was presented by **Mr. Mohammad Hadi Hedayati**, lecturer at the Computer Science Faculty of Kabul University, on the significance and effects of IT for Afghan economy. The spread and usage of IT does not only play an important role in the administration, but also in economy, like eBusiness for example. By presenting a few examples he showed how different large foreign companies can increase their economic power through the use of IT.

Mr. Shafi Tohki, lecturer at the Faculty of Computer Science at Herat University, talked about "Open Source and Open Learning in academic institutions".

In his speech he first summarized the significance of open source and described a number of basics and practices, which enable the support of access to development and production of open source solutions. He described several application areas, which are based on the philosophy of open source, e.g. an open source curriculum, open source science, distributed and reusable data and open source administration and governance. Apart from advantages of open source, he also mentioned from difficulties which result for Afghanistan: because of a lack of resources, a lot of important applications are not being used by university employees (professors, lecturers, and students).

The concluding speech was held by **Mrs. Fereshteh Forough**, lecturer at the Faculty of Computer Science of Herat University. She talked on "Thin Client Technology in the Academic Environment for Developing Countries". She began by explaining the term thin client and introducing the problems that appear due to the increasing number of PCs at Afghan universities and the resulting additional costs. This problem can be solved with the help of a thin client concept. Such a concept is in successful operation at Herat University.

Second Day, December 19th, 2011

Afternoon: Working Groups

After the presentations, three working groups were formed for the afternoon: *IT in Society*, *IT in Economy* and *IT in Education*. The talks in the morning were meant as an input for the discussion in the working groups. The goal of the working groups was to work out measures for possible development goals.

Working Group „IT in Society"

Within the working group "IT in Society" new ideas about the important role of IT in Afghan society were discussed. The question arose on how the consciousness of the Afghan population can be raised about the chances and risks, which new technologies like social networks can bring. With a focus on Afghan culture there was a lot of talk about Afghanistan being a multilingual country without this fact being reflected in IT applications. Also Afghanistan's cultural heritage and history are important for all Afghans and IT could be used for to raise information and awareness in the population.

The working group first did an analysis on which stakeholders could be involved. The result named the Ministry of Higher Education, the Ministry of Communication and Information Technology, and the Ministry of Information and Culture as important examples of government actors. On the other side non-governmental organizations such as the World Bank, the UN, DAAD, the different embassies and government donor agencies were listed.

Working Group „IT in Economy"

The participants of the working group "IT in Economy" debated about the significance and the possibilities of IT in Afghan economy. Central point of the discussion was how the Afghan youth can be prepared for the IT labour market and how the Afghan economy can make the step from using IT to the development and production of IT applications. It was discussed how a separation between academic education and on the job training can be achieved. Both are important, but so far there is no real distinction being made at Afghan universities. Research should receive more funds. In this field it would be interesting to cooperate with Afghan companies.

Nevertheless, the challenges are huge. There is still no reliable power supply at the university and in the country and a reliable IT infrastructure is not

available. The security situation in the whole country makes long-term planning almost impossible.

Working Group "IT in Education"

In the final working group "IT in Education" there was a discussion on the different types of IT training that are necessary in Afghanistan. The discussion was mainly on qualified IT training like IT administration, IT applications, and academic IT education.

The representatives of the universities discussed mainly about the challenges and the status quo at the Afghan universities. The situation is very different at the various universities across the country. Some universities have computer science faculties and are implementing IT projects at those faculties. A stable power supply and above all an organizational IT structure is still lacking at the universities. Furthermore there are still no funds *(tashkeel)* for IT salaries available. Therefore universities cannot employ IT staff currently. If there is budget available for the purpose, it is nevertheless difficult to find appropriate staff, because of the low availability of IT specialists and the low university salaries.

An important topic in this working group was the establishment of partnerships – on the one hand with companies, but on the other hand, also with other universities. Focus of the partnerships should be the building of capacity through Master- and PhD-programs and the resulting perspective on scientific research.

As a side topic, eLearning was discussed. IT provides new possibilities to deliver educational material. Nevertheless the participants gave more importance to the curriculum, the academic exchange with foreign partner universities and the establishment of research institutions.

Third Day, December 20th, 2011

Final presentation

On the last conference day the three working groups presented their results and elaborated proposals for future development.

The results of the first working group **"IT in Education"** where presented by Mr. Akmal Yaqini, IT director at Kabul University. In order to guarantee a sufficient flow of new young academics, the group point out the importance of a three-staged computer science education in the country – Bachelor, Master, and PhD – based on a ten-year development plan.

During the working group it was pointed out several times that a separation of computer science as an academic field and IT as a vocational training is necessary. Mr. Yaqini presented the IT policy of Kabul University which is currently being drafted with the goals of connecting all faculties and office to the fiber-optic network, a suitable networking monitoring and bandwidth control at the faculties, in order to supply a stable Internet connection. Troubleshooting of network equipment must be guaranteed on the whole campus. This means that guidelines and work flows for planning, design and implementation of IT need to be developed. This will be the basis to be able to provide an IT infrastructure that can be used for research purposes as well.

The working group pointed out that such a project cannot be implemented without support. There is a necessity of an IT budget *(tashkeel)*, a stable power supply. Partnerships and exchange programs with foreign universities and a goal-orientated cooperation with private companies are of utmost important to support young academics.

The results of the working group **"IT in economy"** were presented by Mr. Saeed Ahmadi, computer science lecturer at Kabul University. He started by presenting some projects in the area of IT in Afghanistan, that were discussed in the working group, as the establishment of computer science faculties, eBanking and mobile banking applications, local mobile telecommunication carriers as well as the connection of Afghanistan to the Internet through fibre-optic cables. Now steps must be made and the focus needs to be put on the generation of IT specialists, the supply of IT services in the private and public sectors, the support of ICT start up companies and the establishment of support centres. Also here education was one of the main focus points. A unified computer science curriculum, qualified training programs for IT administrators and IT technicians have to be developed of –

if already available – need to be implemented. Furthermore there is the need for an evaluation of the demands of the Afghan society. It should be analyzed how open source software could be used more effectively. Currently the majority of the Afghan population is using IT only on a user basis. Thoughts need be put on possibilities of transforming the users to developers.

He further stressed that the government must urgently form a legislative frame for the Afghan economy. This means IT laws as well as a functioning tax law. An IT society should be formed, that links the private IT companies to academic education. This IT society could also reach into other sectors of Afghan society. He demanded to give a decisive voice to local experts in national ICT projects, especially to the young generation.

The results of the final working group **"IT in Society"** were presented by Mr. Naweed Rahmani, lecturer at the Computer Science Faculty at Balkh University. Mr. Rahmani stressed the richness of Afghanistan in its number of languages as well as the rich cultural heritage. He pointed out that the group debated extensively on the influence of IT on the different aspects of society. IT should be used more to develop a consciousness for the country, and the conservation of its culture and languages. The languages spoken in Afghanistan should be used more extensively in software products by localizing them to these cultures. For example, a platform should be established that will present the culture, history and cultural heritage of Afghanistan to tourists.

Localization of software will make it easier for the population to use the services of public institutions and thereby extend the use of eGovernment applications. Furthermore employees must develop a consciousness on how to deal with technical security. The use of IT can lead to more transparency and thereby influence positively the development of corruption and distribution of power. The best solution would be the foundation of an IT society that makes IT questions and problems transparent to the society and develops solutions jointly with the politicians, in order to reach a functional and usable IT supply which is benefitting the whole Afghan society, political institution, and the economy.

Furthermore the strengthening of *good governance* in Afghanistan was discussed. In this development, IT plays an important role to link government institutions with its subordinate institutions. The administration and work flows of the different institutions should be digitized and employees should be trained on the use of IT resources.

Final discussion

The final discussion was moderated by Prof. Babury, Deputy Minister of Higher Education, and Dr. Peroz, director of ZiiK at TU Berlin. After the presentations of working group results, all participants had the possibility of putting questions to each working group. Topics in the discussion were the demand of IT at universities and the use of open source. The latter has been demanded and supported and at some universities deployed and implemented through TU Berlin since 2002. After a lively discussion about the different IT situations at the respective universities, the topic turned towards the foundation of an IT society in Afghanistan. The foundation of such a society was proposed by Dr. Peroz and strongly agreed upon by the participants. Prof. Babury picked up this proposal and seconded it in his final speech of the conference with the words: *"With the foundation of an IT society for Afghanistan, a milestone will be set in the development of IT in Afghanistan"*. Dr. Peroz remarked: "*Plant a tree today, and one day you will harvest its fruits*". This project was welcomed by all participants and the basis for the foundation was laid during the conference under the hospices of Deputy Minister Prof. Babury. Mr. Saay proposed to form a working group that will form and actively support the progress of the society. The group should consist of representatives of the Afghan computer science faculties. In the closing moments of the ceremony, Prof. Babury thanked all conference participants and pointed out the well functioning cooperation between ZiiK at TU Berlin and the IT department of MoHE.

Conference Program

Conference "Information Technology for Higher Education in Afghanistan"
Part VII
Kabul, Afghanistan
18 - 20 December, 2011

This conference is the seventh in a series of conferences on Information Technology (IT), that is conducted in Afghanistan on an annual basis since 2006. It is hosted by the Ministry of Higher Education (MoHE) with technical assistance by the Center for International and Intercultural Communication (ZiiK) of the Technical University Berlin and with financial support by the German Academic Exchange Service (DAAD). Representatives of Afghan universities as well as international guests have been and are invited to these IT conferences.

The topic of this year's conference is the "Assessment of IT in Higher Education in Afghanistan and its Effect on Society".

The three-day conference offers the possibility to study the IT situation in higher education in Afghanistan and its effect on the economy and society. The MoHE published a Call for Papers for the thematic introductory talks on the morning of the 2nd conference day. Proposals were submitted to the IT department of the MoHE from members of the Afghan higher education system. A scientific committee consisting of members of the MoHE, Kabul University and the Technical University Berlin chose the speakers from the submitted proposals.

Language of the conference: Pashto, Dari and English

Program

First day: **Sunday, December 18th, 2011**

Moderation: Mr. Salim Saay, Head of IT section of MoHE, and
Mr. Abdul Azim Noorbakhsh, Spokesman & Director of Public Relations of MoHE

01:30pm   Reading of Quran

Welcome and Opening
01:35-01:50   H.E. Minister Danish, MoHE
01:50-02:05   H.E. Ambassador König, German Embassy in Kabul
02:05-02:20   H.E. Minister Sangin, MCIT
02:20-02:35   Prof. Babury, Deputy Minister of MoHE
02:35-02:50   Dr. Ortmeyer, Head of Kabul Coordination Office of DAAD
02:50-03:00   Dr. Peroz, Head of ZiiK at TU Berlin

3:00pm   **The current situation and extension of IT in higher education**
Mr. Salim Saay, Head of IT section of MoHE

3:30pm   **Tea Break**

4:00pm   **Information Technology: Challenges for the Afghan Society**
Dr. Nazir Peroz, Head of ZiiK at TU Berlin

4:30pm   **Organisation of Workshops**
Mr. Salim Saay and Mr. René Herlitz, ZiiK at TU Berlin

4:45pm   **End of day 1**

Second day: Monday, December 19th, 2011

Moderation: Prof. Naseri, Dean of CS Faculty of Kabul University,
              Mr. Salim Saay, Head of IT Section, MoHE, and
              Mr. René Herlitz, ZiiK at TU Berlin

Presentations

Each topic consists of 30 minutes presentation with 15 minutes discussion.

IT in Society

9:00pm   **Developing of an Administration System in Afghanistan by Using IT**
         Hady Mohaqiq, Kabul Polytechnic University

IT in Economy

9:45 am   **IT in Digital Economy**
          M. Hadi Hedayati, Kabul University

10:30am   **Tea Break**

IT in Education

11:00am   **Open Source and Open Learning in Academic Institutions**
          M. Shafi Tokhi, Herat University

11:45am   **Thin Client Concept for Herat University**
          Fereshteh Forough, Herat University (tbc)

12:30pm   **Lunch**

Working groups

02:00pm   Three parallel Working groups:

          Group 1: IT in Society
          Moderation: Naweed Rahmani, Balkh University

          Group 2: IT in Economy
          Moderation: Baseer Ahmad Baheer, Kabul University (tbc)

          Group 3: IT in Education
          Moderation: M. Mussadiq Jalalzai, Kabul University

04:00pm   Working groups – final discussion of results

04:30pm   **End of Day 2**

Third day: Tuesday, December 20th, 2011

Moderation: Prof. Babury, Deputy Minister of MoHE, and
               Dr. Peroz, Head of ZiiK at TU Berlin

9:30pm   **Presentation of Workshop Results**

10:30am   **Tea Break**

11:00am   **Discussion and Future Prospective**
              Summary and conclusion
              Prof. Babury, Deputy Minister, MoHE
              Dr. Peroz, Head of ZiiK at TU Berlin
              Mr. Salim Saay, IT Department, MoHE

1:00pm   **Lunch**

2:00pm   **End**

Organization and Support
The IT Department of the The Ministry of Higher Education in Afghanistan (MoHE) organized
the Conference "Information Technology for Higher Education in Afghanistan", Part VII, in
cooperation with the ZiiK at the Technical University Berlin (TU Berlin) and financially supported
by the German Academic Exchange Service (DAAD).

Location of the conference: Conference Hall at MoHE, Kabul, Afghanistan

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Conference Pictures

Conference Pictures