



**Ziik-Report 47**  
**Information Technology Week in Afghanistan**  
**December 16<sup>th</sup>–20<sup>th</sup>, 2017**



1. Second Exhibition of Student's IT Projects, December 16<sup>th</sup> – 17<sup>th</sup> 2017
2. Conference "Information Technology for Higher Education in Afghanistan", Part XIII, December 18<sup>th</sup> – 20<sup>th</sup> 2017
3. Presentation of the results of the IT Week to H.E. Dr. Ghani, December 20<sup>th</sup> 2017



## ***Organized by***



IT Competence Center Afghanistan (ITCC)



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



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## Information Technology Week in Afghanistan

### December 16th–20th, 2017

This year, the ZiiK of TU Berlin and the IT Competence Center Afghanistan (ITCC) in cooperation with the IT department of the Ministry of Higher Education (MoHE) organized an **Information Technology Week** (IT week) in Afghanistan from December 16<sup>th</sup> through 20<sup>th</sup>. This IT Week consisted of the 2nd IT exhibition from December 16<sup>th</sup> until 17<sup>th</sup> and THE 13th IT conference from December 18<sup>th</sup> until 20<sup>th</sup>.

During this week workshops and discussions were held as well as chosen IT topics were presented to the general public including IT projects from computer science students. The IT Week was accompanied by politics and the media.

The **second IT exhibition** was opened on December 16th by **H.E. the First Lady of Afghanistan**, Mrs. Rula Ghani. 26 innovative IT student's projects (see annex 4) were exhibited, and in the end, the five best of these IT projects were selected by an eleven-person jury. The winners were awarded during the IT conference.

Among the winners were projects like "Secure Cyber-paths of Afghanistan: Implementation of Dynamic Multi-point VPN using Ipsec over GRE between Multiple Routers", "Traffic System", "Darmaan" – a search engine for medical practices, or a "Green House Automatic Irrigation System".

The **13th IT conference** was opened by Dr. Khwaja Omary, Minister of Higher Education, Mr. Aryobee, Minister for Communication and IT, and Dr. Peroz. The results of the conference were presented to H.E. State President Dr. Ghani on the last conference day on December 20th at the ARG palace. The most important result of the IT conference was a resolution for the development of a five-year IT strategy plan for Afghanistan.

In general, the "IT Week in Afghanistan" took into account the fact that IT became an essential part of everyday life in Afghanistan. Despite all adversities like poor education, insufficient infrastructures, and a lack of IT management structures, IT has the potential to increase efficiency, transparency and wealth in Afghanistan. For this, it is crucial to create the required basic structures, so that the planned objectives can be reached.

In the following, the **second IT exhibition** will be presented briefly, and an overview of the **13th IT conference**, mainly the results of the workshops as they were presented to H.E. the State President on December 20th, will be provided.

## 1. Second Exhibition of Student's IT Projects



The opening ceremony of this year's IT exhibition was moderated by Mr. Azim Noorbakhsh and it began with a recitation of a few verses of the Holy Quran. Mr. Noorbakhsh welcomed all guests, and the opening speeches were delivered by the First Lady of Afghanistan, H.E. Mrs. Rula Ghani, and the Minister of Higher Education, Dr. Khwaja Omary on December 16<sup>th</sup>, 2017.



In the following, Dr. Nazir Peroz welcomed H.E. the First Lady and stated that it is a great honor that H.E. is opening the IT exhibition today for the second time. He also welcomed Dr. Omary, Minister of Higher Education, the Deputy Ministers of Higher Education, Deans of Computer Science faculties, university lecturers, students and all guests at the ITCC Afghanistan.

Dr. Peroz continued by explaining that today, IT has changed the face of the world and introduced a new global culture. It enables us to develop our lives and society, therefore, we need to keep up with the development of this phenomenon. The national and international universities play a crucial role in achieving this. Students are the most active members of these institutions, and inventions that further the world's progress have been made by these students.

He continued by pointing out that today's exhibition showcases the results and achievements of students from Afghan Universities. When he first came to Afghanistan in 2002 there was only the department of Computer Science at Kabul University and other universities in Afghanistan did not teach IT and Computer Science. Today, 12 public Afghan universities have Computer Science faculties and every year around 800 students graduate from these faculties to serve the society. One of the roles of the ITCC Afghanistan is to link Afghan universities with the private sector and to shape the university education to better suit the society's needs. The ITCC Afghanistan made contracts with the Computer Science Faculties of Kabul University and Kabul Polytechnic University for having their students as intern for one year and to present their projects to private sector stakeholders.

This year, twelve universities were invited to submit their students' projects to this IT exhibition, and eight universities (Kabul University, Kabul Polytechnic University, Herat University, Qandahar University, Nangarhar University, Balkh University and two private institutes of higher education named Rana and Bakhter) submitted a total of 26 projects.

Dr. Peroz continued that each team would be given five minutes to present their projects. The jury, comprised of Computer Science lecturers, technical experts from the private sector, members of the parliament and other branches/disciplines, will judge each project. At the end five projects will be chosen and awarded on the first of day of this year's IT conference on December 18<sup>th</sup>. He concluded by thanking the First Lady of Afghanistan for her participation and expressed his hope that H.E. will always accompany the ITCC Afghanistan and will participate next year for the 3<sup>rd</sup> IT exhibition, too.

### Opening Speech by the First Lady of Afghanistan, H.E. Mrs. Rula Ghani



In her opening speech, H.E. Mrs. Rula Ghani first stated that this is a great opportunity for her to be introduced to the new Minister of Higher Education. Higher education is very important for the future of the country, and she thanked Dr. Peroz for his trust and commitment in this field and promised to attend the opening of the 3<sup>rd</sup> IT exhibition again next year. Initiatives such

as the ITCC Afghanistan, she stressed, bring the country to order and towards self-sufficiency.

H.E. went on to congratulate all the students, and she expressed her excitement to see their achievements and inventions. The young generation is a little bit less affected by past difficulties, as she stressed, and they are more likely to try new things, which is what the country needs, after all. Citing Dr. Peroz, H.E. said that computer science and IT are a major part of the people's day-to-day lives. Everyone is using smartphones, there are electronic elections through e-Tazkira, online shopping, applications such as WhatsApp, Viber, telegram and others, which are all based on computer science. Therefore, H.E. called for an update of initiatives in computer science and IT and praised the students for choosing computer science as their field of study. It is their task to invent new solutions so that Afghanistan will not be kept back in its development.

H.E. explained that two or three years ago, the Kankor exam was not a very transparent process, but now, after bringing some positive changes, the Kankor process has improved and is more transparent, and proper admission is also available for girls. H.E. praised Mr. Jawed Rasuli who introduced these changes to the Kankor exam and who is now in charge of the statistics center. She expressed her hope that in a few

years, there will be a database and more information available. Finally, H.E. emphasized that she trusts the students and hopes that in a few years, people will mention the ITCC Afghanistan for its positive role and impact on the development of Afghanistan.

## Opening Speech by the Minister of Higher Education, Dr. Khwaja Omary



Dr. Khwaja Omary first welcomed H.E. the First Lady of Afghanistan, Dr. Nazir Peroz from the Technical University Berlin, the Presidents of the Afghan universities and his colleagues at the MoHE. This IT exhibition, as he stated, represents the commitments of this ministry to modernize and support creativity centers, creative ideas, and Ministry of Higher Education programs to provide standardized and transparent academic services.

He explained that the promotion of IT depended on three aspects: human resources, financial resources and infrastructure.

Within the first weeks of his work at the MoHE, he continued, he found that investment and planning to strengthen structures with technology was not successful yet despite the hard work. According to him, this is caused by a lack of proper studies and human resources capacity, and the lack of coordination causes a limited use of technology in the delivery of academic services in its simplest and most basic form.

Looking at the strategy of modernizing and reducing bureaucracy at the MoHE, he suggested that the adaptation of management practices of the electronic unit at the MoHE will not be a one-day activity. However, he welcomed the steps taken and appreciated the financial and technical support of the donors who are also supporting this exhibition. He stressed that the development which is facilitated through IT applications is clearly visible and that he wanted changes to the supply of academic services to be constructive and sustainable.

From the sponsors and donors of IT projects at the MoHE, he expected constructive plans for the improvement of electronic management practices. For this, he specified the following focus areas:

**Networking:** Electronic networks are an infrastructure which connects Afghan universities to a strong ministerial system and ensures transparent delivery of services to all stakeholders. The network between universities and the MoHE breaks the old structure into economic and human resource management which is one of the best ways to eradicate corruption.

**Planning:** Only if the application of technology is followed through from planning to implementation, integrated management systems can be adapted in academic



institutions. Using effective technologies will provide communication between the MoHE, donors and other partners in a transparent and coordinated manner.

**Coordination of the management and responsibility of information:** Information is the backbone of the MoHE and the Afghan universities. The application of technology contributes to the quick and easy access to information and guarantees the security and privacy of information. From the MoHE's position, he asked all universities to reconsider the way they store and exchange their information, and to take immediate action working on the design of an integrated system.

**Use and culture of IT in teaching and research:** Today, learning happens everywhere, not just in the classroom. When teachers and students are familiar with universal education and research methods and educational centers are equipped with modern technology, then it would be possible for the MoHE to meet the global standards of teaching and research. Exchange of academic achievements on a scientific and international level is possible when technology is considered as one of the most important and valuable tools in education.

**Supervision and communication of private higher education Institutions:** The MoHE is responsible for the supervision of public universities as well as private academic and higher education institutions. Adaptation and consolidation of electronic systems can assist the MoHE in preventing enrolment of imaginary/fictitious students, document forging, manipulation of academic affairs, etc.

Dr. Omary concluded his speech by reminding the audience that we are living in an evolving and ever-changing world. Today, technology has changed management practices and market metrics, and in the current competitive environment, only organizations that are moving along with global values and standards will be able to maintain their credibility.

He issued his thanks to the Federal Republic of Germany, the Technical University of Berlin and all colleagues who participated in organizing this exhibition. He hoped that this IT exhibition will provide new solutions for the administration of MoHE's electronic systems and lead to new inventions. Finally, he promised to be committed to maintain a competitive atmosphere among the experts in all areas, and particularly in IT.

## Visiting the student's IT projects



After the opening speeches, the visitors took a tour through the exhibition. H.E. Mrs. Ghani was impressed by the creativity of the students. The 26 IT projects showed the public their commitment to using IT to support the country with its urgent challenges.

Among the visitors were representatives of the Ministries of Higher Education, Communication, and Economy, as well as deans of the computer science faculties of the Universities of Kabul, Kabul Polytechnic University, Herat, Mazar-e-Sharif, Nangarhar, Balkh and Qandahar, as well as two private universities, Rana and Bakhtar. Further photographs of the event can be found in annex 2.

## Selection of the five best IT projects



All students were allowed to give a five-minute presentation of their projects. After these presentations, the five best IT projects were selected by a jury of representatives of science, politics and the private sector. Like in the previous years, the winners were awarded a laptop computer which was handed over during the 13<sup>th</sup> IT conference on December 18<sup>th</sup>.

This year's winners were students of Kabul Polytechnic University, Herat University, Balkh University, and two from Nangarhar University. Each of the winners also received an amount of 60.000 AF from H.E. President Dr. Ghani on December 20<sup>th</sup>.

Photographs of the event can be found in annex 3.



## 2. Conference "Information Technology for Higher Education in Afghanistan", Part XIII

This conference was the thirteenth in a series of conferences on Information Technology (IT) that has been taking place in Kabul, Afghanistan, on an annual basis since 2005. It was hosted by the Ministry of Higher Education (MoHE) with technical assistance from the IT Competence Center (ITCC) Afghanistan and the Center for international and intercultural Communication (Ziik) of the Technische Universität Berlin (TU Berlin), with funding from the German Federal Foreign Office and with support from the German Academic Exchange Service (DAAD).

This year's IT conference topic was "Modernizing and Unifying the Management System for IT Services" which was discussed during this three-day conference from December 18<sup>th</sup> through 20<sup>th</sup> 2017 with representatives of the Afghan government, authorities, universities as well as international guests about aspects of modernizing and unifying the management for IT Services.

During the conference, three workshops took place about various topics of **Management of e-Services**, **Management structures for IT security** and **IT Projects Management**. The results of these workshops were presented to H.E. President Dr. Ghani at the ARG Palace on December 20<sup>th</sup>. A large part of the presentations of this year's conference were given by Afghan computer science Masters graduates from TU Berlin, current PhD Students at TU Berlin, and Master's graduates from different universities of Japan and the UK.

**First day: Monday, December 18<sup>th</sup>, 2017**

## **Reception and Opening**

**Mr. Azim Noorbakhsh**, Head of Public Relations and strategic plan of the ITCC Afghanistan



Mr. Noorbakhsh welcomed all contributors and guests to the 13<sup>th</sup> Conference on Information Technology for Higher Education in Afghanistan. He stated that the conference will be opened with the recitation of a few verses of the Holy Quran, followed by the national anthem of Afghanistan. In the following, Mr. Noorbakhsh gave the word to H.E. the Minister of Higher Education Dr. Najibullah Khwaja Omary.

**H.E. Dr. Najibullah Khwaja Omary**, Minister of Higher Education Afghanistan



colleagues.

Dr. Omary began his speech by welcoming all distinguished guests and stated that the thirteenth in a series of international conferences on Information Technology at the MoHE represents thirteen years of planning, experiences and activities to strengthen the role of technology in academic institutions. He congratulated all involved organizers and appreciated the efforts of all colleagues.

He considered the results and outcomes of these conferences as very important to the MoHE and expected tangible achievements in the growth and application of technology in the MoHE.

According to the National Higher Education Strategic Plan, as he explained, the use of IT is a well-defined prerequisite for the realization of good governance. Conversation of good governance and promotion of e-government can be started much better from academic institutions than any other places. The creation of creativity centers for the implementation of Information Technology projects is a great initiative, as he stated.

The study of developed countries, as he went on, shows that the creation and strengthening of such centers in the academic institutions has been the basis of the beginning of a technological revolution in all fields.

These centers could help students acquire scientific knowledge and theories beyond what they learn from classrooms and lecturers. He pointed out that the generation of the 1980s and before that in higher education institutions were a generation focusing only on texts, but the generation of the 1990s expects to acquire knowledge tailored to the market demands and beyond theories. In this context, computer science students have successful and tangible experience. Two days ago, as he stated, students from computer science faculties presented their inventions and achievements, and the MoHE welcomed these initiatives and the creativity of these young students, and it is committed to the creation of a healthy competitive environment.

Until now, as Dr. Omary pointed out, creative centers have been established only at bigger universities, and the MoHE is determined to extend these centers to other universities as well. According to him, these centers give students of all disciplines the opportunity to think, discover, and invent. Programs such as training of software and hardware skills, employment methods, foreign language training, advice on academic affairs and class projects along with the support of Information Technology should be the foundations and agenda of these centers.

Dr. Omary continued to explain that despite the large amount of activities and investments, the application of technology at the MoHE is still at its elementary level. This situation indicates that the implementation of Afghanistan's Higher Education Management Information System (HEMIS) has not yet been implemented at other universities beyond the ones in the capital. Still the storage and processing information in the administrative and scientific sections are very simple and basic. With consideration of the described situation at the MoHE, he suggested to the conference conductors to consider the following aspects seriously:

**Coordination between hardware and software management:** He expected donor partners of the MoHE, IT projects and all IT partners and colleagues to plan and design all projects from now on by carefully studying both hardware and software components in higher education institutions. Designing and installing modern software without studying the hardware capacity, as Dr. Omary stressed, has always been a failure and causing a waste of time and resources.

**Alignment of updating processes between the capital and the provinces:** Since the MoHE is responsible for the supervision and organization of educational services at the level of all academic institutions; therefore, the application of technology and its updating between the center and secondary units of this ministry should be integrated and coordinated together.

**Capacity building for ICT staff:** Increasing the capacity knowledge of ICT staff is a fundamental principle in the development of modern technology, as Dr. Omary stressed. Good designs will find the ability to execute, the time when the human capacity is available to implement it.

In the end of his speech, he emphasized once again that, according to its title and agenda, the 13<sup>th</sup> conference on IT should provide applicable solutions for the modernization and management of the MoHE with technology. Once again, he asked the Head of the IT Department of the MoHE to share the results of this conference and the proposals presented at this conference with all aspects with the MoHE leadership.

He wished all the supporters and organizers of this program much success.

**H.E. Shahzad Aryobee, Minister of Communications and Information  
Technology of Afghanistan**



Mr. Aryobee welcomed all distinguished guests and stated that it is an honor to be part of this conference which has gathered many professionals of the IT sector of Afghanistan. Information Technologies are transforming our lives faster than ever, and they are influencing every aspect of our work and living. Government and businesses, entertainment, communications, secu-

urity, health care and education – all are being affected by these changes.

He emphasized that more and more countries around the world adopt e-government practices in order to deliver public services efficiently. In Afghanistan, as he continued, a new agency is to be set up as a one-stop shop where all services are provided to citizens under one roof.

More and more universities and educational institutions worldwide, as Mr. Aryobee explained, are offering e-learning opportunities and the number of people subscribing for online-education is increasing at a rapid pace. According to projections, the e-learning market worldwide is going to surpass 243 billion USD by 2022. He stressed that the role of IT in education is increasing, and it is not only the way the lessons are taught which is changing, it is also how the education and universities are managed. Nowadays, missing a class is not a nightmare as it used to be, as students can access class materials online and interact with their peers using more robust communication than ever before.

The mission of the Ministry of Communications and IT (MoCIT), as he emphasized, is to promote connectivity, encourage competitiveness and drive innovation, as well as to ensure that people have access to well-functioning, safe and reasonably priced communications networks.

He approved that without connectivity, markets will not grow and education modernization and innovation will not come to Afghanistan. With this in mind, the MoCIT is working hard to improve connectivity, through the recently agreed upon Digital CASA project. He explained that this project will help the country to get significant support from the World Bank to further enhance the OFC network. With this project, most education institutions' connectivity will be supported by fiber-optic high speed internet.

During the next coming years, as he went on, the MoCIT is looking at building a fiber optic channel in the Wakhan region, to connect China with Central Asia, Africa and Europe. All this will contribute to Afghanistan becoming a digital hub in the region. Afghanistan already has a fiber network of about 5.000 km. During the next few years, he expected that another 1.000 km of fiber to be laid.

Mr. Aryobee continued to explain that all these projects require proper management of IT systems. Together with the MoHE a curriculum for the BA degree in "E-government"

has been finalized. Within the framework of this project, 120 professors will be trained to teach the course at the universities of Afghanistan.

He stressed that the MCIT together with the MoHE will start another new project called “Digital Library”, within which, during the next 2 years, 150.000 books will be digitized.

He confirmed that it is his aim to facilitate the creation of resources in our native languages so that with increased connectivity, people living in the provinces can get access to knowledge and information wherever they are.

He also promised to attempt to reform the ICT Institute, build partnerships and strengthen its capacity to prepare the next leaders of IT industry of Afghanistan.

Mr. Aryobee closed his speech by stating that education is a key to all these ambitious goals, and that the MCIT is committed to contribute to achieve these goals and to go beyond.

#### Dr. Nazir Peroz, Director of the ZiiK at TU Berlin



Dr. Peroz welcomed all participants of the IT conference and expressed his thanks to the MoHE for the good cooperation, to the German Federal Foreign Office and the DAAD for the financial support, and to the German Embassy in Kabul, for the support.

Dr. Peroz explained that a modern administration today is not possible without Information and Communication Technology (IT). Even in the Afghan administration there are hardly any processes running completely without support by IT. This allows for an enormous acceleration of administrative processes on the one hand, and on the other provides completely new services and an outstanding quality, transparency and citizen-friendliness.

The pressure on today's IT departments of the institutions, as he went on, is constantly rising due to increasingly scarce resources (qualified IT personnel, IT services, IT equipment) and a growing number of tasks. Especially IT security aspects play an important role. This requires a strong management system, stable power supply, quality-assured software and updates to fix vulnerabilities.

Dr. Peroz stated that the goal of this three-day conference was to discuss aspects of modernizing and unifying the management for IT Services with representatives of the Afghan government, authorities, universities as well as international guests.

Dr. Peroz closed his speech by wishing all participants much success and good results during the conference workshops.



## Keynotes

On the first day of the conference, in addition to the opening speeches, two keynote presentations were given on the subject of Cyber Security:

### Data and Information Management System

#### Jawed Rasuli, President of the Central Statistics Organisation of Afghanistan



In his presentation, Mr. Rasuli spoke about the challenges of the national census in Afghanistan, and how they can be overcome with technology: The last national population census in Afghanistan was conducted in 1979 and covered only 67% of the districts in the country due to security reasons. Recent plans to conduct a full population census have been hampered by ongoing insecurity as well. Current population estimates

are based largely on projections and put Afghanistan's population at 29.7 million.

Starting in 2011, the Afghanistan Central Statistics Organisation (CSO) has been conducting a form of rolling census, the Socio-Demographic and Economic Survey (SDES), one or more provinces at a time. However even within provinces for which SDES has been completed, some areas were not surveyed due to insecurity. To overcome these problems and obtain current population estimates for these regions high-resolution population mapping has been conducted by WorldPop-Flowminder, in collaboration with the CSO, the Bill and Melinda Gates Foundation and the UN Population Fund (UNFPA).

These efforts follow methods successfully implemented in other settings and involve the integration of SDES data, small area surveys and high resolution geospatial datasets, many of which were derived from recent satellite imagery.

Mr. Rasuli continued by pointing out that these methods lead to population estimates at different administrative unit levels up to a 100x100m resolution across the country.

## Building a management structure

**Abdul Rahman Sherzad**, Lecturer at the Computer Science Faculty of Herat University and PhD Student at TU Berlin



Mr. Sherzad began his presentation by emphasizing the value and importance of data in organizations. It is quickly becoming one of the most important resources for any country, company or organization. Data-driven technologies like Knowledge Discovery from Data (KDD), Data Mining, Data Science and Big Data are shaping our present and will become only more important in the future. It is the data that en-

ables organizations to explain the past and predict the future through data science and business intelligence tools.

To demonstrate how data can be used as a resource in the context of Afghanistan, he gave the example of the Kankor data. Kankor is the national university entrance exam and since 2003, around 1.7 million eligible high school graduates have attended it. Their first names, last names, father's and grandfather's names are all recorded in a database.

Mr. Sherzad illustrated how this data can be used by giving a couple of practical examples and applications. One could for example autofill missing gender values in the data using identical names, audit and match high school data with Kankor data, use the dataset as a basis for fake default data or use Named Entity Recognition (NER) to recognize People, High Schools, Provinces or Districts.

Mr. Sherzad concluded that there are interesting opportunities for the application of educational data mining in Afghanistan. It could for example predict suitable fields of study for high school graduates, help policy makers in shaping the education system or allow an early warning systems to identify university students who are at high risk of attrition.

## Introduction and Overview of the workshops

**Shukria Jamal**, Director of the IT Department of the MoHE



Ms. Jamal explained to the participants of the conference how the three workshops on the second day of the IT conference are organized. She invited all participants to take part in one of the three workshops that would focus on the following areas:

- Management of E-services
- Management structures for IT security
- IT Projects Management



The first conference day was closed by Deputy Minister of Higher Education, Dr. Mahjoor.

In the following, the prizes for the five winners of the IT project competition, which were selected by the jury, were handed over. Further pictures of the conference can be found in annex 5 and annex 6.

**Awarding ceremony of the exhibition of IT projects from computer science faculties of Afghan universities**



**End of the first day**

**Second day: Tuesday, December 19<sup>th</sup>, 2017**

### **Organization and introduction to the workshop topics**

Ms. Shukria Jamal, Director of the IT Department of the MoHE

The three workshops of the second day were introduced to the participants of the conference by Ms. Jamal. The workshop topics were “**Management of e-Services**”, “**Management structures for IT security**” and “**IT Projects Management**”. Ms. Jamal asked all participants to decide in which workshop they would like to participate.

### **Workshop: Management of e-Services**

**Moderated by:** Mr. Hassan Adelyar, Dean of the Computer Science Faculty at Kabul University

**Opening by:** Mr. Shakirullah Waseeb, Assist. Professor at Faculty of Computer Science, Nangarhar University

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### **Introduction**



Dr. Hassan Adelyar, Dean of Computer Science Faculty at Kabul University, presented the schedule of the workshop to the participants. He stated there were four keynotes in the morning.

The workshop has been opened by a presentation of Mr. Shakirullah Waseeb, Assist. Professor at Faculty of Computer Science, Nangarhar University, about the topic “Current situation of Management of e-Services”.

This was followed by Mr. Ahmad Masood Latif Rai, Assist. Professor at Kabul Polytechnic University. His presentation was about the “Fourth Industrial Revolution”.

As third presenter, Dr. Adelyar introduced Mr. Rafiullah Momand, Assist. Professor at Faculty of Computer Science, Kabul University. Mr. Momand spoke about “Management of Big Data”. Last speaker of this workshop was Dr. Adelyar himself, who spoke about “Management in e-Government”.

In the afternoon, concrete measures about the workshop topics and their implementation had been discussed. Altogether, 30 persons participated in this workshop.

## Keynotes

### **Management of e-Services:** Mr. Shakirullah Waseeb, Assist. Professor at Faculty of Computer Science, Nangarhar University



With rapid advancement in technologies, Afghan society demands for services that can be delivered electronically. Such e-services require proper management in order to achieve a high quality. Mr. Waseeb based his research on the iterative Plan, Do, Check, and Act (PDCA) approach.

The first major step towards e-government was taken in 2011 with a strategy for the implementation of e-government in Afghanistan. Strengths, Weaknesses, Opportunities, and

Challenges for e-government in Afghanistan were specified by conducting assessments, workshops, and trainings. Subsequently a strategic framework for e-government development in Afghanistan was published. It is composed of five components: Strategic Principals, E-Government Vision, Strategic Goals, Strategic Directions and Actions Lines, and Strategic Implementation Mechanisms.

Currently the Ministry of Communication and Information Technology (MCIT) is working on the implementation of the EGOV.AF project. Some of the components are already implemented and some are underway, and some are just planned. These components include National ID Cards, E-Governance Resource Center, Websites for Service Delivery and Interoperability, Automated National Registries (Asan Khedmat), Establishing an ICT village, Developing Electronic Government Applications, and Improving ICT training and ICT literacy.

Mr. Waseeb concluded that e-services are underway in the country and it can be expected that the public will be served with these services soon, adding transparency, efficiency and reliability to government services. There are still problems as well: a lack of public experience and awareness regarding the use of such services, delivery of such services in rural areas, corruption in administrations, lack of technical professionals, weak management and budget issues all complicate the matter. There is hope, however, that these challenges can be overcome soon.

## Fourth Industrial Revolution

Mr. Ahmad Masood Latif Rai, Assist. Professor at Kabul Polytechnic University and Head of the Cyber Security Group at the ITCC Afghanistan



In his presentation, Mr. Latif Rai introduced the idea of the fourth industrial revolution or Industry 4.0 which is understood as the rise of cyber physical systems (CPS). The basic building blocks of these CPSs, as he explained, are the objects (things) which are connected over the Internet known as Internet of Things (IoT). These CPSs are interconnected with each other forming a network of Smart Factories.

These smart factories are able to provide certain services over the Internet which are often figured as Internet of Services (IoS). According to him, the enormous amount of data generated by this 4th industrial revolution gives rise to the concept of Internet of Data. Similarly a large amount of people who are interconnected with these systems and services comprise the Internet of People.

After discussing the key terminologies of fourth industrial revolution environment, advantages of Industry 4.0 were discussed along with the challenges and difficulties that are hindering its adoption. In the end, the problems specific to the situation of Afghanistan were discussed, concluding that it is currently very difficult for Afghanistan to take part in this fourth industrial revolution. While the technologies used in the Industry 4.0 paradigm are already in use today, standardization and interconnection of these technologies towards robust system architectures and business models remain a major challenge.

## Management of Big Data

Mr. Rafiullah Momand, Assist. Professor at Faculty of Computer Science, Kabul University and Head of IT Center - Kabul (ITCK)



In the beginning of his speech, Mr. Momand explained that every two days, we create as much information as we did from the beginning of time until 2003. To store, analyze, and gain insight from this huge amount of data (a.k.a Big Data) the traditional architecture needs to be changed. He then discussed how to cope with this challenge and started by defining Big Data using the three V's: Volume, Velocity, and Variety.

He continued by discussing two available architectures of scalability – scale up and scale out – to handle big data.

To ease the distributed programming and store data redundantly he talked about the Map-Reduce Framework. In addition to providing data redundancy, a simple programming model and automatic fault tolerance it also moves computation to data that removes the latency caused by data transfer. Finally, he concluded the presentation by discussing machine learning to cope with the bottleneck of software engineers by enabling computers to program themselves.

## Management in e-Government

Dr. Sayed Hassan Adelyar, Dean of Faculty of Computer Science, Kabul University



Many countries around the world developed and implemented e-government based on the best practices of developed countries, as Dr. Adelyar began his speech. The experiences from these countries show that for a successful implementation of e-government the local context and conditions of a specific country must be considered.

Dr. Adelyar explained that for implementing e-government in Afghanistan, one needs to find countries that have similar conditions to Afghanistan. However, the complexity of the task is that it is difficult to find countries with the same situation in all aspects. Therefore, Dr. Adelyar's research focused on identifying the factors which affect e-government development and identify criteria for these factors to find similar countries. To accomplish this goal he reviewed the existing literature for these factors and criteria. This literature review based on articles and international reports in the domain of national development, governance, ICT development, and e-government. Dr. Adelyar concluded that there are seven main categories of factors which affect e-government development and implementation. These factors are: Geography, Economy, Culture, Human Development, Governance, ICT, and Stability.



## Discussion: Challenges, proposals and implementation

In the afternoon, all participants of this workshop discussed the issues which have been presented in the keynotes and the topic of “**Management of e-Services**”. The results of this discussion were presented and discussed on the third conference day.



## Workshop: Management structures for IT security

**Moderated by:** Mr. Mirza Mohammad Mirza, Dean of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University

**Opening by:** Mr. Mohammad Mustafa Naier, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University

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### Introduction



Mr. Mirza, Dean of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University, presented the schedule of this workshop to the participants. He explained there were four key-notes in the morning.

The first presentation of the day was from Mr. Mohammad Mustafa Naier, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University, about the “Current Situation of Network and Internet Policy”. The second presentation came from Ms. Zohra

Zekeria, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University and was about a “Results of IT Security Analysis”. The following speech was from Mr. Said Jawad Saidi, Assist. Professor at Faculty of Computer Education and Information Technology, Education University of Shaheed Ustad Rabani and PhD Student at TU Berlin, about “Developing a Security Action Plan”. The last presentation was from Mr. Niaz Mohammed Ramaki, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University and IT Manager at the ITCC Afghanistan, about “Botnets and their Mitigation”

In the afternoon, measures and their implementation were discussed. Altogether, more than 25 persons participated in this workshop.

## Keynotes

### Current Situation of Network and Internet Policy

Mr. Mohammad Mustafa Naier, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University



Mr. Naier opened his presentation with the remark that IT security has become a major concern in Afghanistan. The first step to understand the threats and challenges facing the country in this area is the analysis of the current situation of the network and internet usage policy. The goal of Mr. Naier's research is to analyze the policies of eleven Afghan ministries. Up to now, three ministries have been surveyed based on the Threat-Safeguard Approach. One of the central results of this research has been that these ministries are expecting the MCIT to enforce policies related to IT Security. Therefore, it is

necessary to check and analyze the MCIT's policies and regulation. According to the NCSA of MCIT however, the policies and laws are still being drafted. Additionally, their implementation status is unknown since December 2014. As a result, the security policy, its enforcement and awareness about it is seriously lacking in Afghan ministries.

### Results of IT Security Analysis

Ms. Zohra Zekeria, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University



Ms. Zekeria continued with an analysis of the IT security situation at three Afghan ministries: the Ministry of Energy and Water (MoWE), the Ministry of Women Affairs (MoWA), and the Ministry of Counter Narcotics (MoCN).

The checklist for the survey consisted of six different sections: Common Aspects, Infrastructure, IT Systems, Network, Application Security,

and Application Development Security. Ms. Zekeria then presented the current situation of the three ministries based on these sections and elaborated on the implementation of basic security safeguards in the Ministry of Women's affairs.

The results of the IT security check and conversations with the heads of IT at the ministries showed that the IT security situation throughout Afghanistan is insufficient and inadequate. This is mainly due to inadequate organizational structures, lack of qualified

IT personnel, the absence of solid IT infrastructures, vulnerabilities in IT systems (hardware and software), communication and networks, lack of Emergency planning, and lack of Nation-wide IT security policies.

Ms. Zekeria concluded that a National IT Security Strategy Plan for Afghanistan is necessary to establish and maintain an appropriate IT security level. Moreover, effective, secure, consistent and sustainable IT structures can only be achieved through the establishment of strong management structures. A solid management structure helps to mitigate risks for IT and cyberspace, protect governmental and institutional networks, and maintain a trustworthy operation of the IT supply of the country.

## Developing a Security Action Plan

Mr. Said Jawad Saidi, Assist. Professor at Faculty of Computer Education and Information Technology, Education University of Shaheed Ustad Rabani and PhD Student at TU Berlin



Mr. Saidi opened his talk with the observation that the increasing internet penetration and an up-tick in electronic services provided by the government makes the challenging task of securing information in the Afghan government offices more and more important. Information Security is not just about the technical aspects. Indeed, in order to have a sustainable information security, an organization needs an Information Security Management System (ISMS). Establishing an ISMS requires various interactions with the organization administration. A critical success factor for an ISMS is a visible support and commitment from the leadership. The top management should take the initiative for information security process and realize that they are responsible in general for information security. Besides that, they provide funding, resources and act as a role model when it comes to information security.

## Botnets and their Mitigation

Mr. Niaz Mohammed Ramaki, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University and IT Manager at the ITCC Afghanistan



Mr. Ramaki began his presentation by sketching the rising threat of cyber crime. His presentation focused on a central tool in the arsenal of online criminals: the botnet. A botnet is a network of interconnected malware that is installed on devices without their owner's knowledge and used to run distributed Denial-of-Service (DDoS) attacks. Attackers ensure their invisibility by exploiting vulnerable computing systems connected to the Internet

and use that system as a foothold while launching malicious activities on other systems. The infected systems – i.e. bots – receive commands indirectly from attackers via command and control (C&C) servers.

He emphasized that this topic is becoming more urgent with the trend of the Internet of Things (IoT). Poorly secured IoT devices are not only easily attacked and brought down, but can become part of a botnet as well. In 2016, the so-called Mirai bot malware took control of poorly protected IoT devices such as wireless routers and security cameras to launch DDoS attacks on prominent websites making them unavailable for several hours. The mirai bot also targeted some Russian Banks with almost 24,000 infected computers around the world.

Mr. Ramaki concluded his talk by talking about different empirical and analytical approaches researcher have been using to mitigate the destructive power of botnets.

## Discussion: challenges, proposals and implementation

In the afternoon, all participants of this workshop discussed the issues which have been presented in the keynotes as well as the topic of “**Management structures for IT security**”. The results of this discussion were presented and discussed on the third conference day.



## Workshop: IT Projects Management

**Moderated by:** Mr. Ashuqullah Alizai, Acting Dean of the Computer Science Faculty at Herat University

**Opening by:** Mr. Mohammad Zia Sana, Lecturer at the Computer Engineering and Informatics Faculty at Kabul Polytechnic University

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### Introduction



Mr. Ashuqullah Alizai, Acting Dean of the Computer Science Faculty at Herat University, presented the schedule of this workshop to the participants. He stated there would be four keynotes in the morning.

The first presentation was from Mr. Mohammad Zia Sana, Lecturer at the Computer Engineering and Informatics Faculty at Kabul Polytechnic University, about the “Current situation of IT Projects Management in Afghanistan”. As next speaker, Mr. Hamidullah Sokout, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University, who spoke about “ICT4D: Utilization of In-

formation and Communication Technology (ICT) for achieving sustainable development in the developing countries, particularly in Afghanistan”. The next speaker of the day was Dr. Ahmad Javed Baktash, Assist. Professor of the Computer Science Faculty at Kabul University, about “Critical Failure Factors of IT Projects: Afghanistan Perspective”. As last presenter, Mr. Ghezal Ahmad Zia, Assist. Professor of the Computer Science Faculty at Kabul University and PhD Student at TU Berlin, spoke about “Higher Education Management Information System (HEMIS)”.

In the afternoon, possible measures and their implementation were discussed. Altogether, more than 25 persons participated in this workshop.

## Keynotes

### Current situation of IT Projects Management in Afghanistan

Mr. Mohammad Zia Sana, Lecturer at the Computer Engineering and Informatics Faculty at Kabul Polytechnic University



Mr. Zia Sana explained how IT project management involves a structured approach to managing, organizing, and controlling information technology projects. As the complexity and importance of IT projects have evolved dramatically, thus a successful project that overcomes the numerous challenges like project scope, ineffective planning and unclear expectations, needs to use modern project management techniques for IT projects.

The number of IT projects in Afghanistan is steadily increasing, including complex projects like electronic ID and e-passport. While those projects have already begun, they are facing many problems due to project management failures.

The most common IT project management challenges in Afghanistan include IT managers without technical expertise, not using standard approaches, focusing on the solution rather than problems, duplicate projects, miscommunication inside the team, unskilled employees, non-existing IT culture and awareness.

Mr. Zia Sana concluded that an iterative and adaptive project management approach fits the current situation in Afghanistan best, where the scope is changing rapidly and user expectation is unclear. Furthermore, a comprehensive and tailor-made IT management policy is required on the government level including an organization that manages and supervises all IT projects.



## ICT4D: Utilization of Information and Communication Technology (ICT) for achieving sustainable development in the developing countries, particularly in Afghanistan

Mr. Hamidullah Sokout, Assist. Professor of the Computer Engineering and Informatics Faculty at Kabul Polytechnic University



Mr. Sokout recounted the history of successful and unsuccessful IT projects in Afghanistan since 2001, emphasizing that many of those failed due to cultural, social, political and many other factors. A lack of enough educated people as well as knowledge on the essential models and frameworks are a hurdle for the success of such projects in developing countries.

This in turn impacts the economic development, social development and nation building process. Mr. Sokout's research focuses on better understanding ICT projects for development and understanding which factors contribute and which are detrimental to their success. Furthermore he seeks to develop appropriate solutions and specific recommendations including models and frameworks for ICT projects. He concluded his presentation with the suggestion that the concept of Information Communication Technology for Development (ICT4D), which is still new in Afghanistan, should be added to the universities' curriculum. In this way, knowledge about how ICT interacts with society, the challenges and possible solutions can be disseminated, hopefully leading to more successful IT projects in the future. Current situation of Information Technology Project Management in Afghanistan.

## Critical Failure Factors of IT Projects: Afghanistan Perspective

Dr. Ahmad Javed Baktash, Assist. Professor of the Computer Science Faculty at Kabul University



The increasing demand for having IT-based systems in Afghanistan has led to a high number of IT projects, as Dr. Baktash pointed out. In his research, he was looking into the reasons why many of these projects are failing.

According to his studies, the most important factors of IT project failures in Afghanistan are corruption, poor planning and political interferences. But

also failures in project management like unclear goals and objectives, objectives changing during the project implementation and unrealistic time or resource estimates. The sustained progress of projects is hampered by frequent change in government, failure to communicate and act as a team and inappropriate skills of the team members. Dr. Baktash also mentioned stakeholder conflicts, lack of executive support and user involvement, delays in payment and a lack of continuity and monitoring.

His research examines some common factors to these problems stemming from project management, project team competencies, government support, and communication management.

The presentation concluded with recommendations on how to cope with the existing challenges to IT projects in Afghanistan.

## Higher Education Management Information System (HEMIS)

Mr. Ghezal Ahmad Zia, Assist. Professor of the Computer Science Faculty at Kabul University and PhD Student at TU Berlin



Mr. Zia started his presentation based on a concept that he had presented on the 11<sup>th</sup> IT conference, and which is about a module-based distributed HEMIS for MoHE that is expandable, flexible and usable at low cost (Open Source technologies). The concept was accepted by the workshop members.

Mr. Zia started his work at the ITCC Afghanistan in Feb 2016 as IT manager, where he and 21

students from Kabul University developed 11 modules of HEMIS. Today at this conference, he wanted to discuss the reasons why HEMIS is not implemented yet, and thus contribute to the workshop topic of "Why IT projects fail in Afghanistan".

At the beginning, he explained that developing of HEMIS was a dream, and that for 10 years already, MoHE did not succeed yet to establish a stable MIS to automate the processes and generate timely report. This is mostly due to the fact that too many donors try to get involved in this topic and thus create chaos.

Mr. Zia explained that on the 11<sup>th</sup> IT conference in 2015, two major IT projects were discussed: HEMIS and AfGREN, and it was decided that these should be developed.

In January 2016, as he went on, the ITCC Afghanistan started development work for these two projects. Agile methodologies were used, and a close collaboration with various departments of MoHE was established. He stated that there were a number of difficulties, like how to collect all the requirements from the different MoHE departments. Also, there were challenges in using of the new technologies and the framework (PHP Laravel).

## Discussion: challenges, proposals and implementation

In the afternoon, all participants of this workshop discussed the issues which have been presented in the keynotes and the topic of “**IT Projects Management**”. The results of this discussion were presented and discussed on the third conference day.



**End of the Second day**

Third day: Tuesday, December 20<sup>th</sup>, 2017

**Moderation:** Prof. Abdul Tawab Balakarzai, Deputy Minister of Higher Education, Afghanistan,  
Prof. Dr. Mahjoor, Deputy Minister of Higher Education, Afghanistan,  
Shukria Jamal, Director of the IT Department of the MoHE,  
Dr. Nazir Peroz, Director of the ZiiK at TU Berlin and Director of the ITCC Afghanistan



First, Prof. Balakarzai welcomed all participants to the third conference day and wished all a successful day. Prof. Dr. Mahjoor briefly presented the schedule of this day and stated that the aim of the last conference day was to discuss the results of the three workshops.

The results of the workshop "**Management of e-Services**" were presented by Mr. Rafiullah Momand, Kabul University, of the workshop "**Management structures for IT security**" by Mrs. Zohra Zekeria, Kabul Polytechnic University, and of the workshop "**IT Projects Management**" by Mr. Bismillah Hussainy, Kabul Polytechnic University.



## Discussion

After the presentation of the workshop results, representatives of a few universities reported about their poor infrastructures.



### 3. Presentation of the results of the IT Week to H.E. Dr. Ghani: Summary of third day (20th December, 2017)



Upon invitation of H.E. President Dr. Ghani, the participants of the 13<sup>th</sup> IT conference presented the conference results at the ARG Palace on December 20<sup>th</sup>. Among the participants of this event were H.E. the First Lady of Afghanistan, Presidents of the Afghan universities, deans of computer science faculties, lecturers, representatives of the MoHE and MoCIT, students from Afghan universities and representatives from the ITCC Afghanistan.

First, Dr. Khwaja Omary, Minister of Higher Education, thanked H.E. Dr. Ghani for the invitation. He reported about the opening of the exhibition of student's IT projects on December 16<sup>th</sup>. 26 IT projects from eight universities were presented in this exhibition, and the five best projects were selected by a jury to receive a prize. He continued with a brief report about the three days of the IT conference at the MoHE and expressed his gratitude for the honor of presenting the conference results to H.E.



In the following, Dr. Peroz spoke about the results of the IT Week Afghanistan and thanked H.E. Mrs. Rula Ghani, First Lady of the Islamic Republic of Afghanistan for opening the second IT exhibition on December 16<sup>th</sup>. A comprehensive summary about the conference will be provided by Mr. Latif Rai. Dr. Peroz stated that for a more effective and modern administration, reliable management structures are required. He again thanked H.E. for his support in this area.



Mr. Ahmad Masood Latif Rai presented the overall summary of the three workshops on the third day of the 13<sup>th</sup> IT Conference with the topics of "Management of e-Services", "Management structures for IT security", and "IT Projects Management". He pointed out the challenges and problems which were discussed in the workshops and then highlighted the outcome and results of the conference.

In the following, the results of these workshops will be presented:

## **Workshop: Management of e-Services**

Mr. Latif Rai reported that there were four presentations in the first workshop which were regarding the “Management of e-Services”. In the first presentation, Mr. Shakirullah Waseeb presented the current situation of Management of e-services in Afghanistan by pointing out the problems in implementation of e-Tazkira, AsanVisa, AsanPassport, AsanJawaz and AsanERP. He provided some historical background of these services and gave statistical figures as well.

Mr. Latif Rai then presented the summary of the second presentation, which was regarding the “Fourth Industrial Revolution”. In his presentation Mr. Latif Rai mentioned the key terminologies of Cyber Physical Systems(CPS), Internet of Things (IoT), Internet of Services (IoS), Internet of Data (IoD), Internet of People (IoP), Smart Factories, Cloud Computing and the relationships among them in the new industrial revolution. He clarified that the enormous amount of data produced as a result of these components gives rise to the concept of Big Data.

Mr. Latif Rai then summarized the third presentation which was “Management of Big Data” presented by Mr. Rafiullah Momand. He mentioned the 3V characteristics of Big data which are Velocity, Volume and Variety. He then mentioned the concept of Map-Reduce and machine learning techniques which are used in processing and management of Big data.

He then summarized the last presentation in the workshop which was “Management in e-Government” presented by Mr. Said Hassan Adelyar. He pointed out the effective ways for government for providing e-services to facilitate their administration and improve their services by usage of ICT. He focused on seven categories of factors and aspects, which is notably effective in the development of e-government: geographical aspects, economic aspects, cultural and social aspects, the human development factor, governance factor, ICT factors and stability. These factors should be kept in mind while introducing and bringing an e-service from another country, because only services from countries which are similar in regard to these factors can be adapted successfully.

## **Workshop: Management structures for IT security**

Mr. Latif Rai summarized the second workshop which was about the “Managements for IT Services”. There were four presentations in the workshop. The first workshop was regarding the “Current Situation of Network and Internet Policy in Afghanistan” presented by Mr. Mohammad Mustafa Naier. He provided some statistics regarding the number of internet users in Afghanistan and highlighted the network and internet usage policies developed by MCIT.

He further highlighted that in the second presentation, Ms. Zohra Zekeria presented the “Result of IT Security Analysis” which was conducted by the security group of ITCC in 2017. The group analyzed the Ministry of Women Affairs, Ministry of Counter Narcotics and Ministry of Energy and Water. He explained the findings and statistics which were revealed in the analysis and the current situation of IT projects in these ministries.

Mr. Latif Rai then summarized the third presentation which was presented by Mr. Said Jawad Saidi which was regarding the “Role of Organization Administration in Information Security”. He focused on the role of top level management in adoption of information security in an organization. He also mentioned the importance of budget allocation for information security within an organization.



He then summarized the last presentation of the workshop entitled “Destructive Botnets and their Mitigation” which was presented by Mr. Niaz Mohammad Ramaki. He presented the types and categories of botnets and explained the security issues linked with botnets. He provided some statistics regarding the harms caused by them and further proposed the development of an email security gateway and an Afghan Internet Exchange Point for checking the internet traffic.

### **Workshop: IT Projects Management**

Mr. Latif Rai then summarized the last workshop which was entitled as “IT Projects Management”. In this workshop there were four presentations, first of which was regarding the “Current Situation of IT Projects Management in Afghanistan” presented by Mr. Mohammad Zia Sana. In this presentation, some of the key projects of Afghanistan were enumerated and the reasons why they were not successfully implemented. The major projects which were outlined, were e-Tazkira, e-Government Resource Center, Websites for Service Delivery and Interoperability, Automated National Registries, Asan Khidmat, establishing an ICT Village in Afghanistan, developing Electronic Government Applications and improving ICT training and ICT literacy. He further provided some statistics regarding these projects and pinpointed the key management issues which had caused problems in the way of successful completion of these projects.

Mr. Masood then summarized the second presentation of the workshop which was regarding the “Information and Communication Technology for Development (ICT4D)” presented by Mr. Hamidullah Sokout. He presented the ways of utilization of Information and Communication Technology (ICT) for achieving sustainable development in the developing countries, particularly in Afghanistan. The techniques discussed in the presentation cause different innovations in the world, and effectively remove the corruption, decrease organizational bureaucracy, minimize the cost for huge investments and accelerate the routine activities. He further explained how the concept of ICT4D is completely new in Afghanistan; and its addition in universities’ curriculum will help the recognition of ICT in different aspects of human life as knowing the challenges and solutions with the help of models and frameworks could be a pathway for the implementation and realization of such projects.

Then he summarized the third presentation which was regarding the “Critical Failure Factors of IT Projects in Afghanistan” presented by Dr. Jawid Ahmad Baktash. He presented some of the main factors and reasons of projects failure as corruption, poor planning, political interferences, unclear goals and objectives, objectives changing during the project implementation, unrealistic time or resource estimates, change in government, failure to communicate and act as a team, inappropriate skills, requirements changed and were not finalized, poor user input, stakeholder conflicts, hidden costs of going, lack of executive support and user involvement, delays in payment, lack of continuity and monitoring. At the end, he proposed some solutions which should be considered while dealing with projects management.

Then Mr. Latif Rai summarized the last presentation of third workshop which was regarding the “Higher Education Management Information System (HEMIS)” presented by Mr. Ghezal Ahmad Zia. In his presentation he presented the modules of HEMIS that were developed and the reasons why it could not be successfully implemented. He further mentioned the duplication of tasks which were done during the development of different modules of HEMIS and how it caused problems in the way of its implementation.

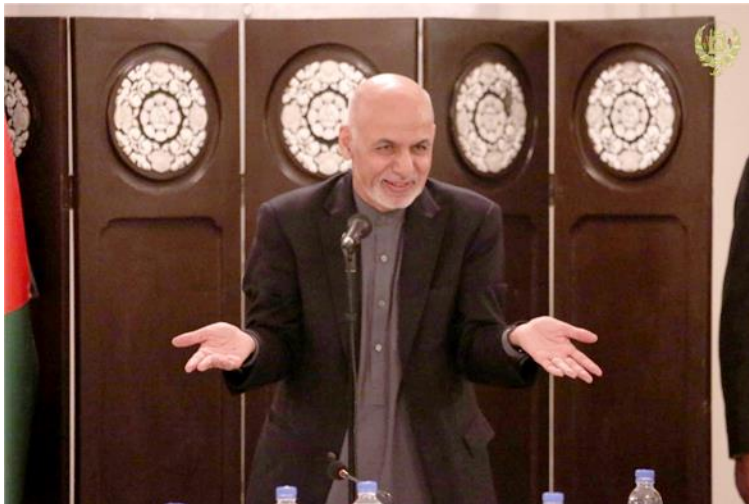
### Findings of discussion sessions:

After presenting the summary of workshops, Mr. Ahmad Masood Latif Rai mentioned some problems which were talked about in the discussion session of workshops.

These problems are:

- Lack of IT Personnel in organizations
- Lack of sufficient budget allocation for IT Projects
- Weak Project Management Skills
- Lack of IT Policies and standards
- Lack of a monitoring body for supervision of IT Projects
- Inefficient cooperation, communication and coordination among different sections within organizations
- Implementation of e-services from other countries in Afghanistan without analyzing the factors which can negatively affect these projects
- Inefficient implementation of Open Access Policy in Afghanistan
- Lack of an internet Traffic Monitoring agency in Afghanistan
- Lack of a National IT Security Strategy Plan for Afghanistan
- Lack of awareness and training programs for IT personnel in organizations
- Inefficient motivation and dedication for securing the IT infrastructure in organizations
- Poor project planning and unrealistic cost estimation techniques
- Unnecessary bureaucracy within different business processes
- Corruption
- Inefficient control of MCIT in IT Projects monitoring and evaluation
- Lack of knowledge of essential and secure models and frameworks

### Speech of H.E. State President Dr. Ghani



After presenting these factors, H.E. President Dr. Ghani spoke about the meaning of the term „Information“. H.E. emphasized that we are currently living in an Information Age, in an Information Society, and that Information today is most valuable.

H.E. explained that the increasing complexity of the global economic competition and the extension of information and communi-

cation technologies are forcing corporations and the society to develop a new understanding about the handling of information.

This development from the industrial to the information age, as H.E. pointed out, can be compared to the transition from agricultural to the industrial age. Today, day-to-day life, work and the economy is fundamentally changed through the use of information and communication technologies. To meet these challenges, a thorough strategy plan is required for the development of the state, its administration, and its citizens. H.E.

added that there are three options: no strategy at all, a bad strategy, and a good strategy. According to H.E., that a good strategy explains exactly how a goal can be reached, including a corresponding action plan.

H.E. said he wanted to create stable Internet supply for Matrasse, mosque, schools, universities, authorities and private corporations. H.E. criticized that Internet costs in the country are still too expensive compared to other countries, and H.E. expected that Afghanistan soon will have stable power supply. IT staff plays an important role in this development.

Further proposals of H.E. were:

- Development of a National IT Strategy Plan for five years in collaboration of the Ministry of Higher Education, the Ministry of Communication and Information Technology, the Central Statistics Organization and Dr. Peroz.
- Development of an Internet Exchange Point for inspection of internet traffic
- Development of a secure email gateway

H.E. was very much looking forward to seeing the results of the work of the ITCC in terms of these proposals at the 14<sup>th</sup> IT conference in 2018.

Finally, H.E. thanked the organizers of the IT Week Afghanistan and announced that the winner projects of the IT exhibitions will each receive a prize of 60,000 AF from H.E. own funds.

### **End of the third day and of the 13. IT Conference**

Opening of the 2nd IT exhibition



Visiting the student's IT projects



Selection of the five best IT projects by the jury



## Annex 4

### List of student's IT projects of the 2nd IT exhibition at the ITCC Afghanistan

| No. | Project Name   | Person                          | University  |
|-----|--|---------------------------------|-------------|
| 1   | New Administration System  | Mustafa Hosainy                 | Kabul       |
| 2   | Concept and Implementation of management Information System for Academic Research Center of Kabul University               | Mohammad Samim Kashefi          | Kabul       |
| 3   | Private School Management Information System   | Naweed Yaqoobi                  | Kabul       |
| 4   | Concept and Implementation of MIS for NIVC   | Bahram Azimi                    | Kabul       |
| 5   | IoT-smart city/Home automation process   | Sayed Alim Ahmady               | Kabul       |
| 6   | Smart Lock   | Ali Reza Erfan                  | Polytechnic |
| 7   | City Report  | Abdul Fatah                     | Polytechnic |
| 8   | Scratch Card Reader  | Subhan Anas                     | Polytechnic |
| 9   | Criminal Face Detection  | Abdul Ghafoor                   | Polytechnic |
| 10  | Secure Cyber-paths of Afghanistan: Implementation of Dynamic Multi-point VPN using IPsec over GRE between Multiple Routers | Khalid Sediqi                   | Polytechnic |
| 11  | 118 (mobile application)   | Ehsan Hadeed                    | Herat       |
| 12  | Traffic System   | Nazir Ahmad & Zilmai Afshar     | Herat       |
| 13  | Project Management System  | Said Mustafa Mohammadi          | Herat       |
| 14  | Darmaan  | Mustafa Raad Hossainy           | Balkh       |
| 15  | Pharmacy Management System   | Mustafa Mohammady               | Balkh       |
| 16  | Quality Assurance Management System  | Hakhamanesh Karimi              | Balkh       |
| 17  | Android-based Online Car Identity System   | Mohammad Eshaq                  | Nangarhar   |
| 18  | Green House Automatic Irrigation System  | Javed & Dawood                  | Nangarhar   |
| 19  | Home Automation System   | Zabit Gull & Noorullah          | Nangarhar   |
| 20  | A Gardener System  | Humayoun Hamdard                | Qandahar    |
| 21  | MIS for Haj  | Mohammad Younus                 | Qandahar    |
| 22  | Online Crime Management System for Police Department   | Feroz Bashardost                | Qandahar    |
| 23  | Discovering the Reasons of Women Deaths in Afghanistan   | Niaz Mohammad, Bilal, Atiqullah | Qandahar    |
| 24  | University Management System   | Esmatullah Arefi                | Rana        |
| 25  | Online Construction Management System  | Ab. Roheed Khaliqyaar           | Rana        |
| 26  | Online Examination System  | Ab. Qadir Qadir                 | Bakhtar     |

Conference Pictures: First day





## Conference Pictures: Second day



## Conference Pictures: Third day



Pictures of Conference Summary in ARG palace: Third Day





