ESTABLISHMENT OF INFORMATION ACCESS CENTRE AT UNIVERSITY OF GHANA

REPORT ON TRAINING FOR IAC OPERATORS
NOVEMBER 6TH – 16TH, 2011
SEOUL, REPUBLIC OF KOREA

Submitted by:

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Executive Summary
A ten day IT program was organized for twelve participants, three each from Ghana, Nepal, Panama and Ukraine from the 6th – 16th November 2011 in Seoul, Republic of Korea. The program was organized by the National Information Agency (NIA) with the objective of equipping operators of Information Access Centers (IACs) to manage and operate these centers in their countries in line with the ideals of the Korean experience. These centers are supposed to be opened to the public where the community can access the Internet, free of charge and also train people to become IT literates in order to bridge the digital gap between the rich and the poor, between the rural and the urban societies.

Lectures were delivered on various IT related topics by seasoned experts in the field. Topics covered include planning and management of IT curriculum, e-learning contents, networking information, and security of the infrastructural systems. Some equipment and facilities for video conferencing and software for creating e-learning contents, and basic computers that IACs need to have were promoted. Some policy issues and strategies to adopt to enhance IT literacy were shared based on the experiences of Korea so that participants would also learn from the experiences.

Business tours were organized to institutions such as the Konkuk University, Seoul Data Center, and Seohwa Information Network Village to observe their IT infrastructure and systems and to help participants to understand the contents of the lectures. IT related companies such as AhnLab and LG CNS were also visited to understand their IT security services, operations and security products that they provide to support the IT infrastructure of Korea and to enhance the informatisation of the Korean society.

The training was successful and an eye opener in equipping participants to manage their IACs. It however calls for hard work, commitment, and cooperation especially from the host institution’s administration to achieve success.
Introduction
The National Information Society Agency (NIA) of Korea is establishing an Internet Access Centre (IAC) in the University of Ghana, Legon, in line with its policy of bridging the digital/IT gap between the IT knowledge poor and the rich. As has been the Agency’s practice/policy, NIA invites the operators of such Information Access Centres to Korea to undergo training so that the centres can be effectively and efficiently managed. A team of three staff from the University of Ghana joined teams of three (3) each of nationals of Nepal, Panama, and Ukraine for the training from 6th – 16th November, 2011. This report therefore gives account of the training.

The IAC at the University of Ghana would be located on the 2nd floor – West Wing of the Balme Library. The facility will consist of five (5) seminar rooms with one equipped with Video Conferencing equipment. There will be one (1) Internet Lounge and one (1) IT training laboratory to be furnished with appropriate furniture, over 50 computers and accessories.

Day one, Monday, 7th Nov. 2011
The participants were welcomed to the National Information Society Agency (NIA) headquarters by Hyo-Joong Kim, Principal Researcher, Global Project Department on behalf of the President of the Agency. After the welcome ceremony, Dr. Shin, Sukyoung Senior Manager, made a presentation on the Agency under the topic Understanding of NIA Global project and IAC. She began by briefing participants on the history of the Agency. She said the agency was established in 1987 with a mission to support ICT enablement of national agencies, local autonomies and development of policies for the informatisation of the Korean society. As a public agency its operations are based on National Computer Network Act 1986 and Framework Act on Information Society 1996 and it is being funded by the Korean government. The Agency formulated medium and long term plans for the national informatisation project. Thus in the 1990s NIA initiated plans to build the basic information system through computerisation and expanding dissemination and promotion of utilisation of the information system. In 2000 NIA was designated as the chief managing body of Korean e-government projects. During that period foundation for high-speed information communications was laid and Internet access and use was also promoted. Many other projects were undertaken in promoting e-governance. For example, between 2003 and 2007, the groundwork for linking and integrating multiple government departments and agencies were done and plans for the future e-government blueprint (smart government) were drawn and is being implemented.

With staff strength of 350, eight divisions (National IT Project, National IT Policy, Future IT Policy, Digital Infrastructure, Digital Inclusion Policy, Digital Culture, Information Resource, and Global IT Cooperation) and one management office, NIA had chalked a number of successes. For example, there have been:
1. Improvement in efficiency and transparency of administrative work. For instance,
   i) Use of electronic documents has become standard practice and most administrative businesses, such as in finance and procurement, and even transactions from residences are being handled electronically, thereby greatly enhancing the efficiency of government administration.
   ii) All central administrative organisations have introduced a standard business process management system to record all decision-making procedures of government, thereby enhancing transparency of administration.

2. Provision of people and company-focused administrative services
   i) Civil service processing at home has become reality by implementing integrated online civil service processing channels and enabling notification, filing and payment of taxes via the Internet.
   ii) Various corporate activities are supported efficiently through a single window to provide corporate support and process logistics, customs clearance, and trading online.

3. Strengthening of communications with citizens regarding government policies
   i) Citizens can now participate in the government decision-making process more easily through a single window linked to all administrative organisations to provide comprehensive civil services and receive public suggestions.
   ii) Citizens can also easily request and check a wide range of administrative information online. It is possible to check national records anytime, anywhere.

4. Increased efficiency of information resource management.
   i) National computing and information agency manages all information systems of the government comprehensively, thereby improving its capability to respond to system errors and security threats.
ii) Enterprise architecture, a comprehensive informatisation blueprint, enables design and systematic management of e-government at governmental level.

These achievements have therefore given a global recognition of the Korean’s e-government and earned awards from the UN.

These ideals the Korean government wants to also impart internationally. As such NIA has carried out Information Access Centres (IACs) projects in public institutions in developing countries. IAC is a centre that has IT training lab, seminar room, Internet lounge and administrative office, all equipped with the necessary ICTs (computers, scanners, printers, projectors A/V equipment etc.) to promote IT education and free Internet access. The IAC therefore is designed to create an environment so that the public can benefit from IT literacy, promote IT cooperation between countries, and help reduce the global digital divide. NIA has IT volunteers who are assigned to these centres (at times on request) to assist run the facility for a certain period of time.

Visits
Later in the day, participants visited two facilities – Konkuk University and Seoul Data Centre. These visits were to allow participants to have first hand interaction with some of the IT facilities and systems established to drive the e-governance agenda and IT literate society.

The participants were at the Konkuk University for a two-hour tour. At the Konkuk University, participants were first taken to the ICT laboratory to look at the IT installations at the facility. The operations and functions of the data centre in the university were explained to participants. It was relayed that the laboratory’s bandwidth was four (4) gigabytes and one (1) gigabyte is dedicated for the library services. This system provides security to all the network system of the university. This is done by monitoring the kind of data inflows so as to
prevent any attack on the system. The laboratory also has two battery power installations as a standby for any unexpected power failure.

At the administrative block, Kim, Youngdad welcomed participants and briefed them on the operations of the University. He said the university was established in 1946 and has been recognized as among the top 10 universities in the country. The university offers a range of programmes; 120 undergraduate, 74 graduate and 64 doctoral. Its most renowned academic fields are biomedicine, veterinary medicine, computer science, environmental science, aeronautical engineering, business and real estate science.

The university has two campuses which are about 2 hours drive apart. It has a student population of about 25,000 and is affiliated to a number of schools and institutions. He said the university cooperates with some other universities in providing exchange programmes. He added that the university owns and operates experimental farms and forests with area of 5.3km square, and five business enterprises.

He briefed participants on the IT infrastructure on campus. He said that the university has about 10,000 computers, and wireless system that enables students to have access to the Internet. He said every building has between one and eight computer laboratories with between 50 to 400 computers and other IT equipments in each of them to facilitate Internet access. He added that these computers are replaced every two years. The university purchased a number of software for the usage of the students, faculty and researchers. The library he said has a space for over one million volumes, sitting capacity of 4,000, has seminar room and conference room equipped with facilities for simultaneous interpretation in up to five languages and provides 24 hour reading room.

**At Seoul Data Center**

The second organisation visited by the participants in the day was Seoul Data Center. This centre is responsible for the management of the government’s information and is a major player in the e-governance agenda of Seoul. It was established in 2004. It has well equipped facilities such as automated computer room, master control room, help desk, remote facility among others. It is equipped with a 24 hour management system that ensures prompt resolution of problems in event of any system failure.

The centre also provides Internet security for the city by monitoring the network so that it can detect any virus attack or cyber-attack and preventing or alerting the government to take precautionary measures. It has about 300 IT professional employees. The centre manages data for about 800 government organisations –municipal agencies, civil services. Generally, it oversees the entire IT infrastructure system and information resources. Because of its excellent performance it had been ranked among the top four performers for four consecutive times by the Rutgers Global e-governance.
Second Day, Tuesday 8th Nov. 2011
The second day of the programme took the participants to another two sites – AhnLab Company and Seohwa Information Network Village – as examples of informatisation initiatives of Seoul. Participants’ visit to these places was to acquaint themselves with the good practices, experiences and successes chalked by Seoul’s e-governance agenda. In sum, the purpose of the visit was for the participants to acquaint themselves with the IT status of the country and help them understand Korea’s IT environment.

Seohwa Information Network Village
The Information Network Village Project (INViL) was established in 2001. Seohwa village is about one and a half hours drive from Seoul. The participants were met by Ms Carrie Youngjoo Sung, from INVIL Central Operation Agency, the President and two members of the village project management committee. Ms Sung presented an overview on the project to the participants. She said the project was established with the objective of creating a favourable living environment for the rural community in order to reduce the digital divide; to enable them also to participate in the use of e-government services; to increase the income of the residents, and to achieve a balanced local development. The ultimate result is that the rural people should be able to use information in everyday life. She provided detailed information on the structure and role of the stakeholders - local government, Ministry of Public Administration and Security (MOPAS) and the village.

Figure 3- Group Photo of Participants in Front of Seoul Data Center
The facility is among 365 such of centers that have been established in Korea. The facility consists of a self-contained house, with a conference room which is well furnished, equipped with about 10 computers with their accessories, Internet connectivity, constant supply of power from the national grid and a collection of books. The day to day management of the facility is under the village President and one assistant.

Services provided at the centre include IT training for the villagers so that they can use the computer and the Internet, teaching them how to use the information, showing of movies and a study room for students. The place also serves as a community place for consolidation of relationships among residents both at home and abroad (since parents who have children in the cities and outside Korea can use the Internet to communicate with them). The project also has a web site www.invil.org. The facility is being used by both students of the village and the elders.

According to the president, the income of the villagers has increased greatly through the reduction of operational costs of online transactions and their products are delivered to the buyers. In addition, the rural folks who have children outside the village communicate directly with them which have contributed immensely to the well-being of the elderly in the village. Furthermore, the project has become a tourist attraction since visitors from outside Korea come on tour to see the operations of the facility. According to them, over 2,453 people from 103 countries visited the facility. They said INViL has won many awards for best practice including UN Public Service Award (PSA) for year 2011.
Participants were treated to some of the local dishes, some in which they actively participated in preparing.

**AhNlab**

AhNlab is a very reputable security software company in South Korea. The laboratory was founded in 1995, and has its headquarters in Seoul, Korea. The company develops industry-leading security solutions and sells computer software such as antivirus software, online security, network security appliances—firewalls and security software for online game and mobile web. The Laboratory also provides professional services that are designed to secure and protect information of companies as well as that of the Korean government. These solutions are provided 24 hours, 365 days so that any malicious codes and hacking attacks are quickly detected and prevented. As the oldest and largest security solution provider in Korea, it has established the V3 product lineup as the industry-standard for information protection, as well as other solutions, such as mobile security, online transaction security, appliances for network security.

AhNlab operates through a network of sales and research operations in more than 20 countries worldwide. It has been adjudged to provide products and services of unparalleled quality and accommodate a wide variety of needs in the dynamic IT environment.
Staff
AhnLab has staff strength of 600 of various backgrounds – Computer, administrative and business. Ahnlab is not only concerned with its products and services but also about its employees. The health and wellbeing of the staff is catered for by providing massaging seat for those who will like to stretch themselves when tired on the job. Games are also provided for staff to play when they want to relax during working hours. Roof top and unique stair cases are also provided to serve as places to seat, relax and interact with colleagues.

Participants were taken round various sections to acquaint themselves and appreciate the processes and installations that the Company has. The participants were given copies of their products – V3 Internet security 8.0.

Some of its specific products and services are:

- AhnLab V3 Internet Security 8.0 (Total Internet Security)
- AhnLab V3 Internet Security IS 7.0 Platinum (anti-virus, anti-spyware, anti-malware)
- AhnLab V3 365 Clinic (anti-virus, anti-spyware, pc medic)
- AhnLab TrusGuard (Firewall, VPN, IPS, against DDoS)
- AhnLab Absolute IPS (block worms and DDoS attack)
- AhnLab Online Security (anti-malware, anti-keylogger, firewall)
- AhnLab HackShield for online game
- AhnLab Mobile Security (windows mobile, symbian, Wifi OS,Wii,Nintendo DS/DSXL/3DS)
- AhnLab SecuGuard for PC (security for PC)
- AhnLab SiteGuard (web filtering) protects against phishing websites and infected pages)
- AhnLab TrusGuard UTM for LTAD (for securing LTAD).

**Meeting with NIA President**

Later in the day, the group met with the President of the NIA, Prof. Seang-Tae Kim in the IAC Head Office to interact with him. He briefed the participants on how his dream of closing the digital divide among all people in Korea has become a reality. He said his dream was to create a smart society where everyone will be IT literate thereby improving the lives of people. He stated the success of Korea can be replicated anywhere in the world and that has been his passion. He said that was the reason why IAC invites people to Korea to come and learn at first hand the experiences of Korea get some training and return to their countries and implement the example of IAC ideas. He shared with the participants his contributions to the global UN forum on how the Millennium Development Goals (MDGs) can adapt the “smart society” ideals to achieve its goals.

![Meeting with NIA President](image)

At this juncture he invited the Heads of the Teams to share with him information on the status of ICT development in their institutions or organisations and how they are going to implement the ideals of IAC in their countries. The Heads shared on efforts being made in their respective institutions in respect of status of ICT infrastructure - computers, bandwidth, power supply – and the prospective population of users of the facility.

In conclusion, Prof. Kim reminded the head and other participants that the success or failure of the projects lies with them and they must do everything within their capabilities to make it a success. He added IAC is ready to assist in every way. Farewell dinner was held in honour of the heads of participants who had finished their participation.
Day Three – Wednesday, 9th Nov. 2011

There was a presentation on the topic - ICT Based Teaching and Learning Approach: Policy of E-Learning in Korea by Drucker K Y Kim, Principal Researcher, International Development Cooperation Division of Korea Education Frontier Association. He provided an overview of IT in education in respect of policy, strategy and solution. He emphasized the Korean government’s strategies on providing a comprehensive IT infrastructure (computers and other necessary accessories), adoption of Education Broadcast Service Internet (EBSi), and National Education Information System (NEIS), all to promote e-learning particularly Cyber-Home-Learning System (CHLS) and to provide improved services, transparency and efficiency. He added that since 1996 the government has been providing educational networks (Edunet) to encourage learning at any place and anytime. Further, the government has provided Cyber universities in Korea in 2010 and 19 of such universities with total student population of 30,000 are benefitting. He intimated that all these policies are being driven by the Ministry of Education and the government. He said, with the experience of Korea in e-learning and with globalization, the government has initiated a global partnership for ICT in education with some countries such as Kenya, Nigeria, DR Congo, Yemen, Iraq, and some Central and Southern Asian countries.

He mentioned that their initiatives were not without challenges and many countries will encounter challenges as they execute such projects. He revealed one of the biggest challenges as the strategies are being pushed too fast. As a result there is insufficient time in the medium to grasp some of the issues. For example, moving from e-learning to u-learning is being done too quickly. He emphasized teachers’ role in IT learning. He recommended that countries should establish master plans, reinforce teachers’ ability with sound IT environment.

After the presentation, two invaluable IT products - DAULSoft software and Polycom video conferencing equipment – were introduced to participants. DAULSoft introduced its three softwares called TeachingMATE Suite (LectureMAKER, TeachingMATE, and TeachingMATE Academy System). He emphasized their spectacular features and abilities to facilitate rapid e-learning. He also informed participants about solar powered laptops his company has developed. He reminded the participants that these are very valuable especially in places where there are no electricity supplies. Similarly, Polycom introduced participants to the features of their product. There was hands-on demonstration on the equipment.

The countries invited were given the opportunity, in the evening to do presentation on their institutions and facilities and how they are going to manage the IAC project that will be established in their institutions. Three of the four presentations were on universities (Universities from Ghana, Nepal, and Ukraine) and the fourth one was on a public sector organisation (from Panama). The main issues outlined by these presentations were about spaces provided, users of the facility, management and sustainability of the project. Present at the presentations was the Advisory Council for NIA.

There was also a presentation on Informatization of Educational System for Public Officers in Korea. The issues addressed were on planning, Laws enacted to support the policy and framework of the project. Areas of training were listed as informatization, advanced IT, information utilization and online education. Categories of persons trained included teachers and public servants among others. This presentation was to set the tone for discussion and also serve as a guideline on earlier presentations.
The conclusion was that the principle of providing the basic IT infrastructure is the beginning. Without the infrastructure, the informatization will not happen.

**Day Four, Thursday 10th Nov. 2011**

**Planning IT Curriculum I & II**

The participants were taken through a systematic process of preparing for IT education. They were introduced to the general steps to go through to have effective education. The participants were made to understand that teaching IT needs to have a curriculum. In arriving at the curriculum there must be an instructional design – a systematic process of translating principles of learning and instruction into plans for instructional materials and activities. He briefly tackled different types of models but recommended using the ADDIE model – Analyse, Design, Develop, Implement and Evaluate. He emphasized nine instructional events in order to achieve results. They include gaining attention, informing the learner of the objective, stimulating recall of prior learning, presenting the stimulus, providing learner guidance, eliciting performance, providing feedback, assessing performance and enhancing retention and transfer.

**Day Five, Friday, 11th Nov. 2011**

The second part of Management of IT curriculum was about how to develop e-learning content. Working definition of the term e-learning was given as “Learning method that uses ICTs to transform and support the teaching and learning process”. Having drawn comparison between conventional and e-learning, the instructor dwelt on how to develop the content. He said it is a process of a team work of technical experts, subject matter knowledge persons and a strong leadership - people, technology and technique. The team can be varied depending on the status of the budget. Templates to help draw a good program for IT education were presented. Worksheets for instructional design were also provided for practical purposes. There was a parallel session on Network Planning. The instructor took participants through networking technologies and how it relates to management of IACs.

**Saturday and Sunday- 12th and 13th Nov. 2011**

The program was not only about IT training to manage IACs; participants were treated to the spectacular and deep culture and history of the Korean people. Participants visited the Demilitarized Zone of Korea (DMZ), Gyeongbokgung Palace, National Folk Museum of Korea, the 2002 FIFA world cup stadium, and Insa Dong, Myeong Dong and Seoul Tower.

The DMZ is a truce line drawn between North and South Korea. The buffer zone was created at the end 1950-53 Korean War. Even though the two parties agreed on this the South decided to create an area of 5-20 kilometres south of the southern area with the view of controlling civilian movement, protecting military facilities and maintaining security in the southern region.

Many historic sites and monuments are located in this area. Some of such sites visited include the peace bridge, bell of peace, Dorasan station, the third tunnel fitted with electric mini train by which visitors could go into the tunnel and back, 280-seater theater, Dora observatory, the freedom village among others.
Figure 8- Group Photo at Gyeongbokgung Palace

At the National Folk Museum, located in the Gyeongbokgung Palace are displayed artifacts and exhibitions depicting the history of the people, their way of life and life cycle of the people where visitors can experience and understand the Korean traditional life styles.

At the stadium the participants were shown a video clip on the Korean National Team who reached the semi-finals for the first time in the history of Korea during the 2002 FIFA world cup. We also visited the Referees’ changing rooms and a souvenir shop. At the Seoul Tower visitors could see the aerial view of four corners of the city. We had a cruise on river Hang which runs through the entire city of Seoul.

Monday, 14th Nov. 2011
Topics treated for the day were Introduction to cyber security and Cyber security applications presented by Harsh Durga Tiwari, a Ph.D student Konkuk University, Seoul. Under the introduction he elaborated on the security problems faced in the use of the Internet. The presentation was done at the backdrop of the fact that Internet was designed for enhancement and many services such as world wide web, e-mail, instant messaging, peer to peer sharing, gaming, gopher, audio and video streaming. In the process of providing these services many challenges are encountered in the form of attacks from Malware categorized as viruses, worms, spyware, spam, phishing and Trojan horses. He said these attacks are man-made and are intentional. They are software designed to infiltrate or damage a computer system without the owner’s informed consent. There are many different types of viruses with different structures and behaviours. For example whilst some can replicate themselves others cannot. He said they are originally harmless pranks or political messages, now has evolved
into profit making. The effects of these attacks are enormous and destructive. For example these viruses can reformat your hard disk or delete files and programs and expose your system to intruders.

Whatever the situation, solutions must be found in relation to network security problems. The lecturer indicated that the best solution is prevention. Some of the preventive solutions include having a firewall, either software or hardware. For overall protection, providing anti-virus, spam filtering, anti-spyware in addition to the firewalls are very necessary.

It was also recommended that in selecting any kind of protection to purchase, professionals should read reviews from professional neutral sources; make sure that they understand the subscription statuses; they should not use advertisings or blogs as main source of information or run two software firewalls or two anti-virus applications. Users are also to be educated to be cautious and use the Internet responsibly.

It was emphasized that level of firewall protection depend on the entity, whether at home, school, small-medium or large businesses or by governments. Governments for example should have a strong firewall and proxy to keep unwanted people out; should have strong anti-virus software and Internet security suites; should have a strong encryption; white list authorized wireless connection and block all else; all network hardware should be in secure zones etc. The security of other entities may not be same as that of government’s.

Tuesday, 15th Nov. 2011
Closing ceremony was performed at the NIA Headquarters from 11.00 to 12.00 noon. It was under the chairmanship of Jeon Jong Soo, (Ph.D,) Executive Director, Global Cooperation Division. The Chairman congratulated the participants for undergoing and completing the training and exhorted them to apply the things learnt when they return home. He asked the participants about their impressions and views about the program and about Korea as whole. They all expressed positive impressions about the program, the Korean society, particularly Seoul. One participant from Ghana on behalf of the others thanked NIA for inviting them for this training and assured NIA that the training is going to help them manage the IACs efficiently. Certificates were presented to the participants by the Director.

The participants had their last tour to LG CNS after lunch. This company is a global IT service provider. It offers services from consulting to system implementation by promoting smart IT services for all kinds of businesses. It provides architecture designs to systems and applying smart technology to the management of transportation system and information on the national and city roads and of the express ways. It also provides charging and billing systems for electric cars and bus control and management information systems. The facility has a strong security system which does not allow easy entry.

Departure
Wednesday, 16th November saw the departure of all the participants back to their respective countries.
Recommendations

1. The IAC to be established at the University in the Balme Library should be positioned as a strategic point of collaboration between the University and the Korean National Information Society Agency, the sponsors of the project. There is a great deal the University can learn from the Korean IT experience.

2. The IAC should be maintained as a centre of excellence. This means some revenue generation opportunity should be explored while making it accessible to the disadvantaged within the larger society. Secondly the IT curriculum to be run at the Centre should not be limited only to Information Literacy topics. The Committee that is to be appointed to oversee the implementation should advise on the IT curriculum.

3. The University should constitute an Interim Management Committee to work with the Korean Contractors and Project Counterparts (Korea) during the installation of equipment and furniture prior to the commission of the project. We propose the following:
   a. The University Librarian
   b. The Director of ICTD
   c. Network Administrator (ICTD)
   d. The Head, IT Unit – Balme Library
   e. A Representative – Computer Science Department
   f. A Professional Librarian (Balme Library)

Conclusion
The ten day IT training program for the trainees from Ghana, Nepal, Panama and Ukraine had been a great success in raising awareness among the participants on the use of IT in driving the development of a country. With proper management of the IAC in the University, IT education and usage would be enhanced within the University and also benefit the wider society.

1. Emmanuel Owusu-Oware (ICT Directorate)  ......................

2. Barfi-Adomako Owusu (Balme Library)  ......................

3. Mrs. Gladys Kwadzo (Balme Library)  ......................