HIGH LEVEL SEMINAR ON

E-Governance

5–6 May 2007, Kathmandu, Nepal

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Foreword

It is my sheer pleasure to write this foreword for the report of the seminar which I opened. The High Level Seminar on E-Governance was able to forge a consensus, among the government officials, on the major issues of e-government programs. The participants analyzed advantages and disadvantages of e-government programs, prioritized the e-government services and drafted action plans for introducing e-government programs in Nepal. All these and the papers presented are included in this report, which made it an effective decision support tool for the policymakers and will encourage knowledge sharing amongst the stakeholders at ministries and departments.

While we live in a world of constantly evolving information and communications technology (ICT) and its enabling power, the benefits of the ICT revolution have not fully percolated to the everyday life of the common people, particularly those in the rural areas. ICT can serve as one of the key enablers of citizen centric government services delivery mechanism to create easily accessible interfaces such as one-stop, single-window, automated service delivery outlets or common public service centers, devoid of harassment or corruption, minimizing waiting time and inconvenience to the public. ICT can be used to reduce the paperwork, improve efficiency, transparency, accountability and expedite the decision making process.

The march towards e-governance involves several agencies, including government ministries and agencies, the financial and banking institutions and the procedures for scrutiny of decisions and audit. Without properly re-engineered administrative procedures in the large number of agencies that touch upon the citizen, our "patchwork" of e-governance could create more problems than it could solve. Such re-engineering is possible if only all the government ministries and agencies share common e-government objectives. During the seminar we were able to identify such common objectives for e-government in Nepal and expressed our collective commitment to achieve them within the reasonable time frame.

I would like to thank Asian Development Bank Institute (ADBI) and in particular Dr. Jeoung-Keun Lee for organizing such an important seminar in Nepal. My appreciation goes to Dr. Subarna Shakya of National Information Technology Center and Ms. Hyeun-Suk Rhee of the United Nations Asian and Pacific Training Center for Information and Communications Technology for Development, for co-organizing the seminar with ADBI.

Mahantha Thakur
Minister
Ministry of Environment, Science and Technology
Government of Nepal

Preface

The proliferation of Information and Communication Technology (ICT) has had an enormous impact on every aspect of human activity. It has changed the global communication infrastructure, and is now a potential tool for creating an ever-present medium that will allow for real-time social and personal interaction across continents.

ICT benefits the economy, society, and other factors of human life. The development of ICT has even brought about e-governance, which is now one of the most discussed topics around the world.

E-governance is defined as the application of ICT in establishing interaction between the different levels of government, business and the citizenry. E-governance also involves implementing internal government operations meant to simplify and improve both the democratic and business aspects of governance. The end goal of e-governance is good governance, by providing efficient and effective services, and bringing national, regional and local administrations closer to the common people.

However, Nepal's government is facing numerous hurdles in introducing and implementing e-governance. These include political issues, inadequate human resources, the lack of a legal framework, little public awareness about ICT and poor ICT infrastructure across the nation. Government ICT resources are not fully utilized due to poor integrated planning. And, due to the general lack of awareness, most government officials are even resistant to change.

I believe that Nepal can gain sustainable development only through good governance. People still long for a transparent and accountable administration, and the government of Nepal has yet to fully provide effective services. E-governance may be the best medium to address this problem.

We are thankful that the Asian Development Bank (ADB) has an ongoing Technical Assistance project in Nepal. Through its various programs, the Asian Development Bank Institute (ADBI) is also helping in capacity building and awareness among the government officials.

Among these programs was the High Level Seminar on E-Governance. Organized by the National Information Technology Center (NITC), the ADBI, and the United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development (UN-APCICT), the seminar targeted high-level government officials from the different ministries of Nepal. The goal was to achieve a consensus on the major e-government program issues, through expert consultation and group discussions. The participants involved critically analyzed the advantages and disadvantages of e-government programs, prioritized e-government services, and drafted action plans for introducing e-government programs.

Dr. Subarna Shakya
Executive Director
National Information Technology Center

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Abbreviations

ADB	Asian Development Bank
ADBI	Asian Development Bank Institute
BPR	business process re-engineering
EA	enterprise architecture
FNCCI	Federation of Nepal Chamber of Commerce and Industries
FOSS	free and open source software
G2B	government to business
G2C	government to citizens
G2G	intra-governmental
GON	Government of Nepal
HLCIT	High Level Commission for IT
ICT	information and communication technology
ICT4D	information and communication technologies for development
ISP	Internet service provider
MDG	Millennium Development Goal
MOEST	Ministry of Environment, Science and Technology
MOGA	Ministry of General Administration
NID	national identity card
NITC	National Information Technology Centre
OS	open standard
PPP	public-private partnership
PPTA	project preparation technical assistance
RAP	rural access points
SOA	service-oriented architecture
UN-APCICT	United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development
VDC	village development committee
VPN	virtual private network

I. INTRODUCTION

Information and Communication Technology (ICT) has become the most efficient means of communication and information dissemination. It has made an immense and complex impact on economies, societies, and cultures. The rapid advancement of ICT in recent years has provided enormous benefits to any given society that has embraced its use. The advent of e-governance may be regarded as one of the end results.

E-governance is defined as the application of ICT in establishing interaction between the different levels of government, business, and the citizenry. In addition, e-governance utilizes ICT to simplify and improve the democratic and business aspects of a government.

The automation of internal government activities reduces costs while improving response time, and interaction with citizens and other government agencies reduces overhead expenditure.

The main objective of e-governance is to provide a friendly, affordable, and efficient interface between a government and its people. It is about ensuring greater transparency, accountability and objectivity, resulting in cost-effective and high-quality public service. E-governance is also about providing a single window for government services at all levels. It is related to producing a streamlined framework for government offices and organizations. Lastly, it seeks to develop ICT tools and media, which will help citizens and businesses keep pace with new opportunities in today's knowledge economy.

Nepal faces many challenges in implementing e-governance. These include political issues, inadequate human resources, the lack of a legal framework, little public awareness about ICT and poor ICT infrastructure across the nation. Due to the lack of integrated planning, ICT resources available in government offices are underutilized. There is also a strong opposition from government officials, as they believe ICT is a threat to job security.

Hence, to discuss these issues and the ways to address them, the ADBI, the UN-APCICT and the NITC joined hands to organize a high level seminar on e-governance. The organizers brought 35 high-level government officials together in one venue, so that they could formulate practical actions plans for the implementation of e-governance, initially within the ministries or agencies they represent, and eventually throughout the entire government system.

The goal of the seminar was to achieve a consensus on major e-governance program issues, through expert consultation and group discussions. The specific objectives of the seminar were:

- To critically analyze the advantages and disadvantages of e-governance;
- To identify the major issues of e-governance;
- To reach a consensus on these issues;
- To prioritize the types of e-governance services; and
- To draft action plans for introducing e-governance programs.

II. ORGANIZATION OF THE SEMINAR

With an aim to promote ICT application in Nepal's public sector, the ADBI, the NITC, and the UN-APCICT jointly organized the two-day High Level Seminar on E-Governance in Kathmandu, Nepal, from 5–6 May, 2007. The Seminar was supported by the Government of Nepal's High Level Commission for Information Technology (HLCIT), IBM, Microsoft, and the Nepal Resident Mission of the ADB.

Seminars participants were high level officials of the various ministries and agencies of the Government of Nepal.

The objectives of the seminar included not only getting a consensus on major e-governance issues, but also preparing action plans for prioritizing the required e-Government services.

Hon. Mahantha Thakur, Minister for Environment, Science and Technology, delivering his opening remarks

The Honorable Minister of Environment, Science and Technology, Mahanta Thakur, delivered the opening remarks. He emphasized the internalization of ICT in building New Nepal: peaceful, inclusive and prosperous. He expressed his belief that only through e-governance could the expansion of government services be achieved. This in turn would strengthen the tenets of good governance, while reducing cost and improving productivity and transparency.

Mr. Bal Krishna Prasain, Secretary, Ministry of Environment, Science and Technology delivered the welcome remarks.

He explained that the main purpose of the seminar was to process feedback from the participants, particularly those addressing issues identified by the stakeholders' meeting held last April, to prepare ABD-funded e-government investment projects.

Secretary Prasain also highlighted the potential role of ICT in attaining the Millennium Development Goals (MDGs). He said that the seminar would have a far-reaching significance in implementing e-government projects in Nepal.

Mr. Saroj Devkota, Vice Chairman of the High Level Information Technology Commission informed the participants that the Master Plan on electronic good governance has already been prepared. The Master Plan will serve as the major document for e-governance implementation in Nepal.

He explained both the Electronic Transaction Act, which is already under implementation, and the Project Preparation Technical Assistance (PPTA), which is an on-going ADB-assisted project. He said that the project will work out detailed investment and implementation plans for ICT projects, including e-governance.

Dr. Bhoj Raj Ghimire, Chief Secretary of the Government of Nepal, pointed out in his special remarks that the difficulty in implementing electronic good governance in Nepal can be traced to a lack of infrastructure rather than human resources. He said that the lack of awareness among the citizens and government officials is a major obstacle as well. But he gave his assurance that the Government of Nepal will promote ICT use in public service. He ended by saying that he was looking forward to seeing the action plans produced by the seminar.

In her special remarks, UN-APCICT Director Dr. Hyeun-Suk Rhee emphasized ICT's role in promoting the involvement of people in government policy formation. She extended her thanks to ADBI and the Government of Nepal for involving the APCICT in such an important seminar. She said that the UN-APCICT is ready to support any ICT initiatives toward the social and economic transformation of Nepal. She also said that such projects should ensure social as well as gender equity.

The Executive Director of NITC, Dr. Subarna Shakya, gave the concluding remarks. Dr. Shakya thanked the honorable minister, chief secretary and other distinguished guests for finding time to attend the opening ceremony. He welcomed Dr. Jeoung-Keun Lee, Dr. Hyeun Suk Rhee, the facilitators & resource speakers, and the distinguished seminar participants. He thanked the continuous support received from ADBI, Dr. Lee's in particular, in promoting ICT in Nepal.

After the inaugural session, ADB Investment Project Consultant Dr. Paul Schapper presented his paper on "Major Issues of E-Governance in Nepal." This was followed by a lunch break.

In the afternoon session, participants were divided into five groups. Dr. Jeoung-Keun Lee, Dr. Hyeun Suk Rhee, Microsoft Asia Director of Business Development Mr. Jonathan Kushner, IBM Asia Pacific Government Program Vice President Mr. Stephen W. Braim and Dr. Paul Schapper facilitated one group each. One major issue was assigned to each group for discussion. The participants looked very enthusiastic as they worked.

Dr. Bhoj Raj Ghimire, Chief Secretary, Government of Nepal, delivering his special remarks

Dr. Hyeun Suk Rhee, Director, UN-APCICT, delivering her special remarks

Dr. Subarna Shakya, Executive Director of NITC, delivering his vote of thanks

That evening, a welcome dinner was hosted by the ADBI Dean. As the last activity for the day, First Vice-Chairman of the Forum for Information Technology Mr. Subodh Tripathee exhibited some e-government software which he and his team developed in Nepal.

Welcome Dinner hosted by the Dean of ADBI

Dr. Jeoung-Keun Lee, Director, ADBI, facilitating the plenary session

On Sunday, 6th May, the plenary session began at 8:30 am, with Dr. Jeoung-Keun Lee facilitating. The five groups presented the results of their discussions.

The second session, facilitated by HLCIT member secretary Dr. Madan Pariyar, began after a break. The participants provided valuable insights into drafting the action plans for introducing e-government in Nepal. Upon finalization, the action plans were adopted unanimously.

Lunch was hosted by the UN-APCICT. The farewell dinner held that night was hosted by Dr. Subarna Shakya.

III. SUMMARY OF SPEAKERS' PRESENTATIONS

A. Modernization of Nepal,
Paul Schapper, Consultant, ADB Investment Project

Following is the abridged transcript of Dr. Schapper's presentation.

1. Introduction

Modernizing Nepal is about the empowerment of its citizens, the inclusion of everyone, including the currently marginalized, in the decision-making process. It is about promoting democracy, and facilitating sustainable development, both of which can only be attained through good governance. E-governance is one of the ways to achieve this. E-governance helps increase efficiency and transparency in government transactions, and facilitates democratic interaction between the government and its citizens.

Dr. Paul Schapper, Consultant, ADB Investment Project

Dr. Schapper presenting his paper on "Modernization of Nepal"

2. Objectives of E -Governance in Nepal

The common objective of e-governance is to offer good governance, by (i) delivering effective and efficient public services, (ii) maintaining social equity through empowering minorities and marginalized people, (iii) involving the community at the policy making level, by providing cultural support, and so on. E-governance facilitates access to information and a better educational system. It involves citizens in new economic opportunities to achieve the MDGs.

There are a number of international declarations and common strategies which deal with government use of ICT. These include the *Hyderabad Declaration of 2004, Kuala Lumpur Declaration of 2003, Tokyo Declaration of 2003, The Pacific Islands ICTs Policy and Strategic Plan of 2002, E-ASEAN Framework of 2000,* and *E-APEC Strategy of 2000.* These declarations should be considered while preparing the E-Government Investment Project for Nepal.

The E-Government Investment Project will impact economic growth and poverty alleviation, particularly in rural areas. The output will include (i) a remote areas accessibility and infrastructure plan, (ii) an infrastructure investment plan, (iii) the design of selected e-government applications and architecture, (iv) a human resource development program, identifying implementation issues, and (v) ICT industry development.

The key components to be considered in the E-Governance Investment Project are shown in Figure 1.

Figure 1: Key Components

Basically, the application of e-governance can be classified into three categories:

    a)   Intra Governmental (G2G),
    b)   Government to Citizens (G2C) and
    c)   Government to Business (G2B).

The following existing systems will be automated:

- Vehicle Registration (G2C) - Name transfer, Blue Book renewal
- Pollution checking, driving license exam and issuance
- Registration of Cottage and Small Industries (G2B)
- E-approval - Document Management System (G2G)
- E-procurement (G2B)
- Company Registration (G2B)
- E-postal Service (G2C)
- Government Accounting System - Disbursement Centers (G2G)
- Personnel Management System (Civil Service Records) (G2G)
- E-HMIS (Ministry of Health) (G2G)

- Revenue (G2B)
  - E-VAT (Integration with e-Gov umbrella) (G2B)
  - E-PAN (Integration with e-Gov umbrella) (G2B)
  - E-Filing (Integration with e-Gov umbrella) (G2B)
  - E-TDS (Integration with e-Gov umbrella) (G2B)

The following emerging systems will also be automated:

- NID (G2C)
- Vital Registrations (G2C)
  - Birth Registration
  - Death Registration
  - Marriage Registration
  - Divorce Registration
  - Relationship Certificate
  - Migration Certificate
- Excise (G2C)
- Local Government planning, budgeting and monitoring (G2G)
- Public Service Commission (G2C and G2G)
- Investment, Trade and Supplies System (G2B)
- Online Jobs and Recruitment abroad (G2C)
- E-education (G2C)

E-transformation is phased. Once the above-mentioned applications are in place, people can experience what e-government really is. In e-governance, all information systems are integrated, and the public enjoys all the G2C and G2B services at virtually any counter. A single point of availability for all services is the ultimate goal of e-governance.

3. Enterprise Architecture

Enterprise Architecture (EA) is the structure and standards of e-government systems. It consists of a set of principles, standards, guidelines and statements of direction. These permit step-by-step, business-driven policy implementation. EA establishes the language and grammar that Ministry technical systems will adopt in virtual space. It should also be community-centric.

Within EA, the government interacts with individuals, NGOs and business organizations via value added services.

Figure 2: Enterprise Architecture

In contrast, an Unstandardized Architecture is bureaucracy-centered. The community accesses government departments through separate e-portals.
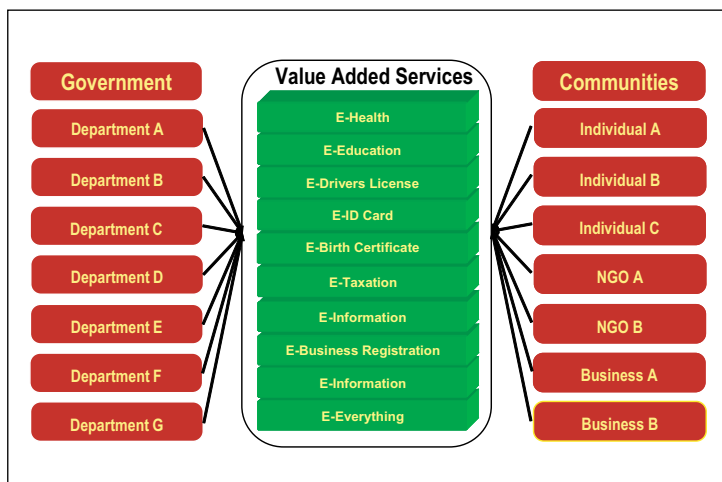
Figure 3: Unstandardized Architecture
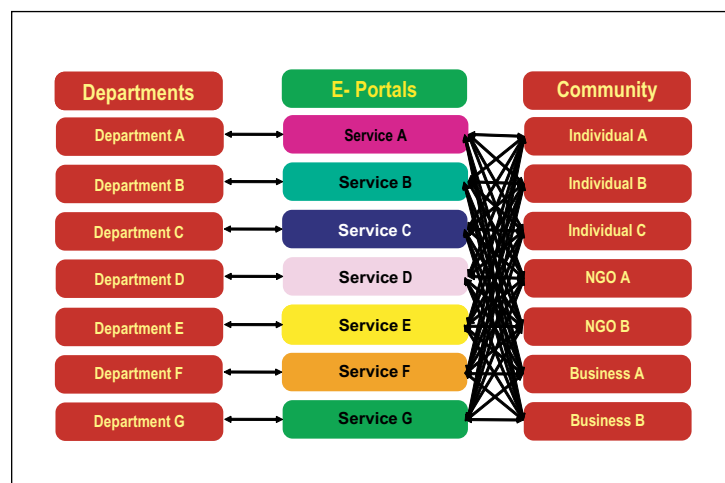
Figure 4: EA and SOA Standards for E-Government in Nepal
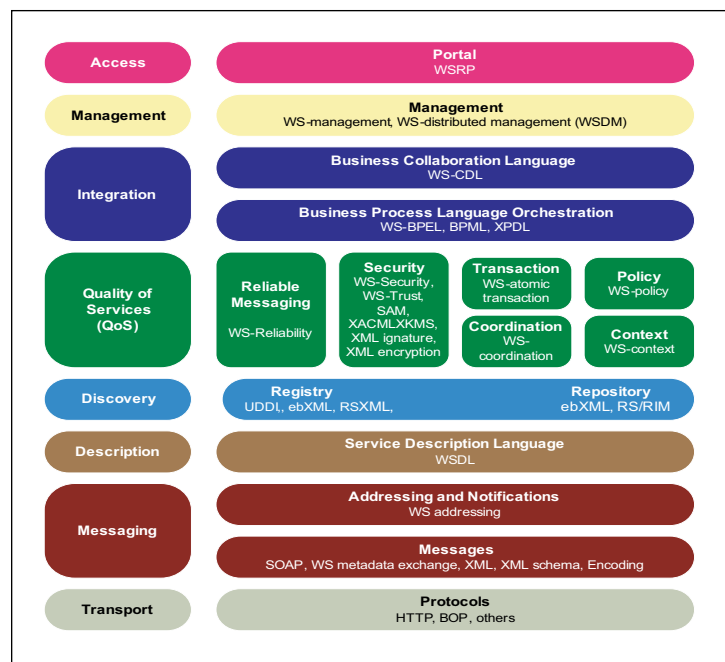
The projected EA and service-oriented architecture (SOA) standards for e-government in Nepal are shown in the figure below. It shows the future e-government language and grammar, and how multiple applications within the government can operate efficiently.

4. Implementation of E-Governance

The first step in implementing e-governance in Nepal is identifying how the program's objectives and challenges relate with the vision and strategies developed by the government.

This includes Business Process Re-Engineering (BPR), which involves an overhaul of legislation, training, policy, coordination, as well as finance and strategy. The Nepalese BPR strategy should include e-governance, under which high-level political leadership will be characterized by advocacy rather than administration.

The grassroots leadership will remain, serving as local representatives. The point of influence, however, will be focused on recognition and incentives rather than a gain/loss equation. Process re-engineering, after all, is not a science but an art form.

Human Resource Development (HRD) is another very important factor in the implementation of e-governance. It is as essential as the technology to be used. Without an adequate amount of HR and their technological preparation, no amount of development and expenditure will carry Nepal forward into the information age.

There are some critical issues related to HRD. The first issue is related to HRD planning. We should identify a way to develop a practical and strategic implementation plan for ICT HRD. The second issue is about capable training institutions developing HR for e-governance. These training institutions' capacity building should be given emphasis. The third issue is concerned with an urgent and effective strategy for e-government training, so that trained HR do not move to India or another country. The fourth is the availability of

ICT skills in Nepal-more people should be trained, if there is a shortage thereof. We also need to focus on a sustainable accreditation framework for trained HR. And finally, we need to determine how to equalize the difference in ICT skill levels among different institutions.

Infrastructure is also essential for meaningful information sharing among the central government and local governments, citizens and businesses. Village networks (VNet) are one of the key components which will enable this connection.

The promotion of village internet usage must be emphasized, so that people can benefit from web-based e-government services. Access should be straightforward. The internet bandwidth needs to be priced in accordance with the purchasing power of villagers. Internet access by the rural youth should be subsidized. And accessories like Voice Over IP (VoIP) and PC-PC webcams should be available at affordable rates. VoIP is the routing of voice conversations over the Internet or through any other IP-based network.

Rural Access Points (RAP) like cyber cafes, telecenters and schools should be owned by the community itself, or by NGOs based in the village. Government service delivery points such as health posts, post offices, and agriculture service centers can also be developed as rural access points. We need to identify cost-effective technologies which can be used in conjunction with the internet.

Community-owned telecenters can be promoted as a medium for rural connectivity. These need to be installed with affordable means of communication. Wi-Fi is a good option. The use of VoIP should be liberalized, as it may contribute to the sustainability of the centers. The role of rural Internet service providers (ISPs) and public-private partnerships (PPPs) in both providing rural connectivity and establishing telecenters has already been recognised by both the Telecom regulatory body and other agencies involved in the ICT for Development (ICT4D) initiatives.

Legislation is a very important factor in this process. In its absence, the transactions done through ICT will not get legal recognition, and e-governance will stop in the middle of implementation. Only after the formulation of relevant laws, which give legal recognition to electronic documentation and signatures, can the activities and transactions done through ICT get proper recognition.

There are other genuine issues which cannot be overlooked while implementing e-governance in Nepal. First, authorities need to be accountable. Second, a clear mandate is required for the institutions, which also need to be accountable for a comprehensive e-governance implementation. Third, value is required to engage with the community on these issues. Finally, leadership is required to set proper and realistic goals and policies.

While developing e-applications or during the actual implementation of e-governance, a framework should be designed for Legacy systems' migration to a new system. The IT Group should be formed for government-wide technical support. Acts and regulations should be amended, to introduce reengineered government processes and emerging new applications like national identity cards (NID). E-applications benefiting the community should be of major priority, and the National Citizen Database, with NID, will be one of the foundations for other e-applications.

Groupware and data centre feedback includes business intelligence as one of their components. Well-tested, quantifiable groupware should be adopted. All components, like e-mail, messaging, and document management system (DMS) need to be integrated, making groupware synchronous. The government could form an autonomous body managing data centers and outsourcing support services. Being the data owner, the government could share data centers with banks, hospitals and telecom companies.

I am glad that we are here to set goals for the implementation of e-governance in Nepal. For this purpose, let's have intensive discussions on these five major topics: Enterprise Architecture, Service Applications, Human Resource Development, Village Connectivity

and Infrastructure and Implementation. Afterwards, we will draft action plans outlining a common implementation agenda for us all.

B. Demonstration of E-Government Software
Subodh Tripathee, IT Consultant, ADBI

Subodh Tripathee, IT Consultant, ADBI

The main objective of this demonstration was to provide software experience to high level government officials, in order to convince them of the benefits of e-governance.

Tripathee exhibited a video-conferencing system, in which two people from separate remote places can see and talk to each other. Through the video conferencing facility available in the village telecenter, a farmer can get advice from an agriculture expert or veterinarian in the city. Tripathee argued that through such systems, people in remote areas can even consult with the country's best doctors, or talk with their relatives who are working abroad.

Figure 5: Demonstration of Video Conferencing System
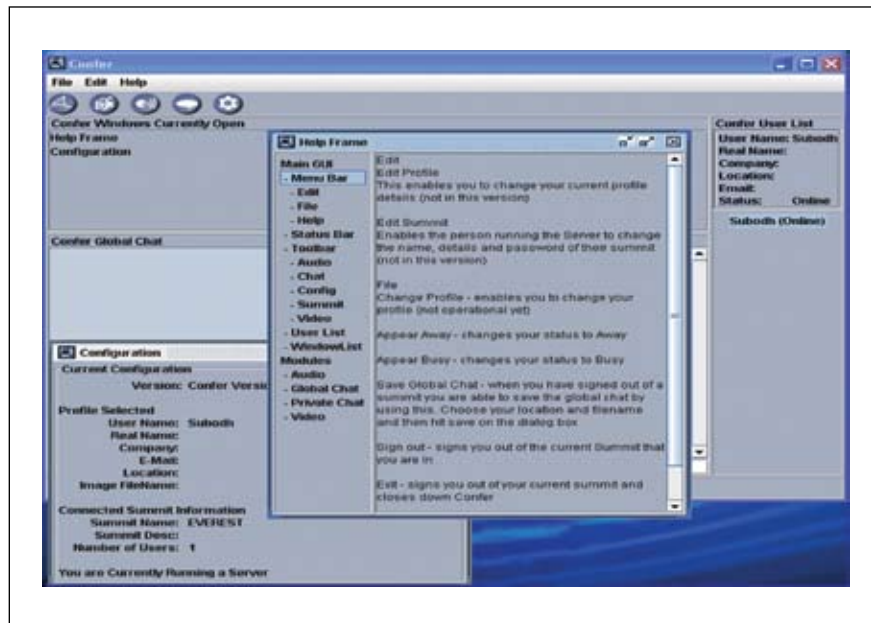
He then presented an e-government portal, which is a single convenient window from which citizens and business organizations can get access to government services and information. These include rules & regulations, market prices and weather forecasts.

Tripathee showed how these systems can also be used for birth, marriage and death registrations, payment of utility bills and taxes, filing applications, and so on. He said that these not only enable citizens to enjoy services from their homes or the village telecenters, but also reduce corruption and increase government efficiency.

Participants watching the demonstration

Figure 6: Demonstration of E-Gov Portal
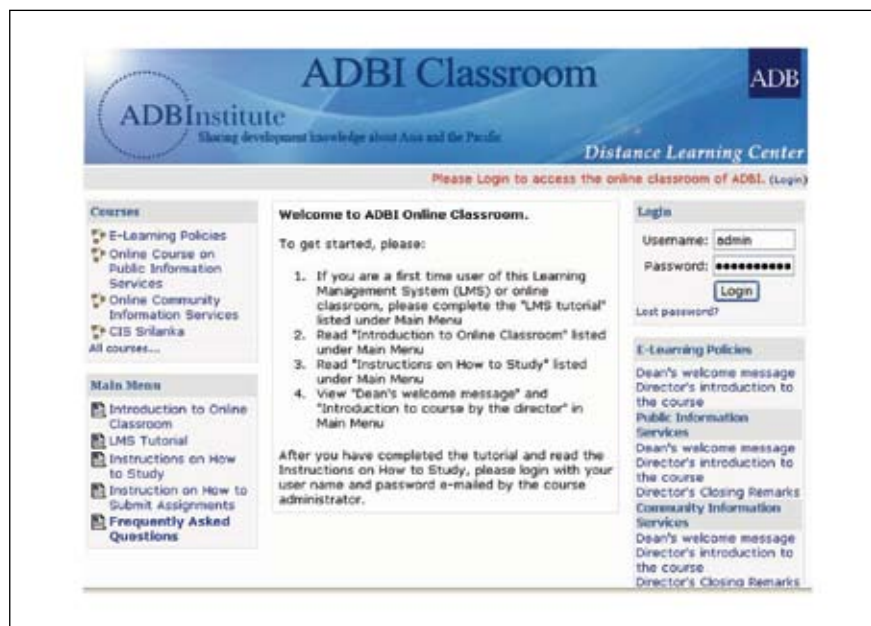
Similarly, Tripathee presented the ADBI online classroom, an e-learning system offering distance learning courses. He showed how e-learning can be used to educate citizens and train government officials. He asked the participants to visit the ADBI classroom at www. adbi-classroom.org and showed how the entire teaching/learning process takes place in that system.

While explaining the rationale behind offering distance learning courses, Mr. Tripathee quoted ADBI Director Dr. Lee's interview with the Education Technology Magazine. In that interview, Dr. Lee opined that e-learning techniques provides quality education and training to workers, and at significantly lower costs compared to any other method of delivery. The number of Asian workers that need to be retrained to meet the existing and future needs of the knowledge economy is estimated to be as high as 750 million. In Dr. Lee's opinion, only e-learning can make this possible, with its mass training capability and flexible learning environment.

Figure 7: Demonstration of ADBI Classroom

ADBI trained more than 2,500 people from 60 countries in a year. Most of these were government officials. Four courses offered in the past were:

a) Community Information Services for the Poor
b) Public Information Services for the Poor
c) E-Learning Policies
d) E-Business Strategies

Mr. Tripathee said that 3 more courses will be offered in 2008, and that one can register for them at www.adbi-dlc.org

He argued that Nepal should go for e-learning because of its diverse geography and the need of preparing a huge workforce with a low investment. He opined that Nepal has good prospects in e-learning, considering the extraordinary growth achieved in the communication sector despite a decade-long conflict. However, any initiative taken should be actively pursued.
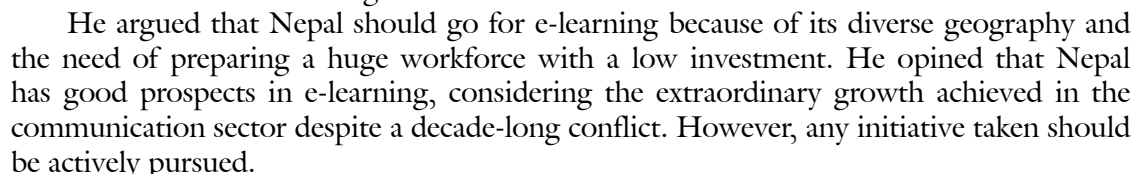
Mr. Tripathee said that Nepal benefited significantly from ADBI's distance learning courses. People from the academe, NGOs, business community, civil society, and government officials participated in the ADBI courses. According to him, 360 Nepalese participants have taken ADBI courses so far. Fifty-two (52) percent of them were government officials, and 23 percent were female.

He also said that his team has developed several other e-government softwares, apart from those exhibited. These include an e-store with online transaction system, an integrated property registration system, a job portal, an e-learning system, and several other training software and courseware.

He concluded his demonstration by requesting the government officials to formulate proper policies, strategies and programs promoting the development and dissemination of such user-friendly systems.

C. Issues in Implementing E-Government in Nepal
Paul Schapper

Dr. Schapper's presentation highlighted the following issues.

1. Enterprise Architecture

This deals with the structure and standards of e-government systems design.

Pros: EA allows the smooth operation of multiple applications within an e-government. It is less expensive to construct and maintain, and delivers integrated community service.

Cons: EA implementation requires collaboration among government Ministries. It also requires the training and establishment of an EA policy. This in turn requires effective policy development and application in the public sector. EA can also sometimes conflict with vendor interests.

Solution: It is a measure of whether the Nepal government is able to approach this whole issue strategically. This is an area where to avoid making a decision is itself a major decision of great consequence.

2. Lead Applications

This deals with selecting the lead applications for e-governance in Nepal. These can be any of the following:

- Intra-government systems such as a Human Resource Management System;
- Government to community services such as e-education;
- Non-government community services such as village connectivity and Voice-Over IP; or
- Government to business services such as e-procurement.

Pros: All these services add value to the quality of public administration and community services, while accelerating the modernization of Nepal.

Cons: Applications can be high risk endeavors, and are initially difficult to implement because of bureaucratic resistance to transparency. Intra-government applications may be perceived by the community as ineffectual. Community services also require that government administration be partly computerized.

Solution: The formulation of a decision tree for selecting a good balance of applications which have a reasonable chance of successful implementation. These applications must present public value, while assisting in the computerization of administration.

3. Telecenters and Infrastructure

Without an infrastructure connecting the government to itself and the community, there can be no meaningful information sharing.

Pros: Infrastructure for this purpose is relatively easy to install, and is a highly strategic investment for any developing country.

Cons: Establishing this infrastructure will be expensive, and will be subject to stakeholder interests, at the expense of Nepal's marginalized sectors.

Solution: An effective national infrastructure plan, with an effective regulator and the prioritization of the Millennium Development Goals (MDGs).

4. Human Resource Development

Human resource development is as essential as technology advancement. Without HR, no amount of expenditure or technological development will carry Nepal into the information age.

Pros: HRD issues are relatively easily addressed, and are often willingly engaged by individuals. The benefit / cost ratio for training is one of the highest for any government investment.

Cons: Without an urgent and effective strategy, e-government training will be valueless, and trained individuals will move to India and Bangladesh.

Solution: Additional training centers will not address this issue. An effective e-government strategy must focus on retention, recruitment and accreditation. The solution areas require an understanding of supply and demand issues.

5. E-Government Implementation

These cross-cutting government issues, which go beyond a single Ministry, include BPR, legislation, training, policy and coordination, as well as money and strategy.

Pros: Addressing these issues effectively will represent a major step towards the modernization of public administration in Nepal

Cons: These issues all need to be addressed by institutions that are often weak in many of these areas and are lacking the urgency and decision-making capacity.

Solution: Engage ministries on their strengths for quick wins to establish some momentum. Avoid central management while strengthening central policy capacity and technical support.

IV. SUMMARY OF GROUP DISCUSSIONS AND PRESENTATIONS

In the afternoon session of Day One, participants were divided into five groups to discuss each of main issues presented by Dr. Schapper. A rapporteur from each group presented their recommendations in the plenary session on Day Two.

A. Group A: Enterprise Architecture

Group A was facilitated by Dr. Paul Schapper, consultant for ADB. Following the model suggested by Mr. N. Dean Meyers, the group proposed that the architecture should consist of a set of principles, standards, guidelines and statements of direction that permit step-by-step, business driven implementation, without sacrificing the integration of various e-governance applications/services. Figure 8 below summarizes the components that would make up the proposed architecture.

The group highlighted that EA would a) promote open system, inter-operability, and seamless integration; b) prevent vendor locking, c) reduce the total cost of ownership; d) shorten the software development lifecycle and e) establish standardized and rule based systems.

Figure 8: Enterprise Architecture Component

The group identified several challenges facing EA implementation, namely:

- Lack of strong, visionary leadership
- Lack of awareness at all levels from policymakers to general public
- Lack of accountability in the government
- Lack of ownership: People would rather delegate risk than assume ownership
- Need for sustainable commitment
- Need for effective and efficient management
- Difficulty with enforcement, considering inherent resistance to change

- Difficulty with coordination due to lack of clear distinction of authority and responsibilities between departments and agencies
- Lack of competent technical manpower
- Need for capacity building
- Lack of incentives

To address these challenges, measures need to be taken in three critical areas: human resources, institutions, and systems and processes.

Group A

Human resources. HR at all levels need to be aware of and advocate for EA. The leadership should be committed to EA development and accountable for it. A sense of ownership should be cultivated among the leadership as well as the rank and file. HR must be strongly encouraged to coordinate their work. Performance and capacity should form the basis for incentives and staff retention. In turn, performance evaluation should be done with a view to cultivating "e-champions," i.e., pioneers in implementing ICT-based applications. HR capacity must be updated to keep pace with changes in ICT and the work environment. A clear system for the development, utilization and retention of valuable human resources must be established.

Institutions. To help promote ownership, there is a need to identify a focal institution for establishing the EA. This focal institution will be responsible for approving and certifying conformance for each new application development. Institutional capacity building should be undertaken to build strong professional institutions, and a competitive selection criteria should be established to establish technical and operational excellence.

Systems and Process. There is a need to build autonomous institutions with flexibility in decision making regarding finance, personnel and remuneration. A Solution Architect should be appointed to translate EA requirements into solution/application development.

B. Group B: Lead Applications for Nepal's E-Governance

Under facilitation of Dr. Jeoung-Keun Lee, Director, ADBI, Group B was tasked to identify the types of systems where e-governance could be integrated.

The group categorized e-governance applications into two distinct categories: common and vertical e-governance applications.

Common E-Governance Applications. These include a) the Human Resource Management Information System; b) the Financial Management Information System, for ICT-enabled budgeting, programming, accounting, reporting and monitoring; and c) the Country Portal, which will provide a single window for government-citizen interaction.

Vertical E-Governance Applications. These include applications for the following sectors a) Health, for disease surveillance, telemedicine, and the development of a health management information system; b) Commerce, for company registration and the establishment of a business portal; c) Armed Forces, for border management, disaster response and management, human resource deployment and the establishment of telecenters in barracks; d) Land Management, for records and archive management, networking and the establishment of a geographical information system; e) Justice and the Supreme Court, for case management and records and archives management; f) Finance and Controller, for remittance and fund transfer, budget management, expen-diture management and fund management; and g) Culture, Tourism and Civil Aviation, for the e-tourism portal, cultural heritage registry or portal and tourist services management system.

Group B

C. Group C: Telecenters and Infrastructure

Group C was facilitated by Mr. Jonathan Kushner, Director of Business Development for Microsoft Asia. The group recognized the importance of Telecenters and infrastructure in connecting the government to itself and the community, without which there can be no meaningful information sharing.

Recognizing the significance of Telecenters, the group proposed the establishment of one telecenter per Village Development Committee (VDC) in the next five years.

The group highlighted the importance of building critical infrastructure at the grassroots and central levels.

At the grassroots level, Telecenters should be established to provide following services:

Group C

- IT related services (Internet, email etc.)
- Secretarial services (typing, fax, phone, photocopy etc.)
- Government related services (forms downloads, notices, information etc.)
- Public services (e-health, e-agriculture, distance education etc.)
- Local content (pricing information, product information etc.)
- Training services (computer literacy, awareness etc.)
- News Updates, Entertainments

To ensure the viability of Telecenters, central government support will be crucial. Similarly, annual budgetary support from the VDCs should be provided for at least five

years, to help cover the operational cost of Telecenters. This budgetary support can be sourced from the top-up fund received from the central government. Ownership of the Telecenters should be handed over to institutions in the local community, such as schools and NGOs, to ensure their sustainability.

At the central level, the HLCIT should work on formulating the policy framework as well as the coordination and implementation arrangements for nationwide infrastructure development. Meanwhile, the NITC should take the lead in implementing e-governance, with the support of concerned stakeholders, including security agencies for technical back-up.

D. Group D: Human Resource Development

Group D was facilitated by Dr. Hyeun Suk Rhee, Director for UN-APCICT. The group's discussion was guided by the Confucian saying: "The art of government simply consists in making things right, or putting things in their right places. When the ruler himself is 'right' then the people naturally follow him in his right course." Group D identified possible challenges facing HRD, and recommended solutions to overcome these challenges.

The challenges include:

- Shortage of competent ICT manpower in government
- Lack of incentives to foster motivation
- Decision makers/policymakers are not well informed about the benefits of ICT
- Low utilization of ICT in public administration
- Brain drain
- Lack of legislative and regulatory framework
- Lack of proper institutional framework
- Lack of proper policies for career growth
- Problems with HR retention
- Lack of cooperation among the academe, the government and the business sector (demand-supply)
- Lack of managerial skills
- "Never on time" culture
- Lack of innovativeness and entrepreneurial skills
- Lack of concrete modules on e-governance in academic and training institutions
- Lack of training needs assessment

To overcome these challenges, the group recommended the following measures:

- Formulate comprehensive HRD policies and programs
- Develop incentive schemes for HR
- Provide awareness and training programs for decision makers/policymakers
- Integrate ICT education with ICT for development
- Include ICT curricula in all university degrees
- Provide ICT education to I/NGOs and government representatives who directly interface with rural communities

- Tap college graduates with ICT majors to train public servants, school teachers and community members in remote areas
- Strengthen institutions at the district and village levels
- Develop an appropriate mechanism for recruitment and evaluation
- Empower teachers in ICT programs
- Empower the Chief Information Officers for better decision-making

Group D

Prof. Timila Yami asking question to a presenter from another group

E. Group E: E-Governance Implementation

Dr. Paul Schapper, consultant for ADB, facilitated the group.

Group E

The group identified several challenges facing e-governance implementation. In terms of management, the group stressed the following points:

- E-government is more about governance than about technology.
- There are some issues regarding business process re-engineering (BPR). Careful analysis should be done before deciding whether to automate existing processes or re-engineer processes for optimal results. While doing so legal and procedural ramifications should also be considered.
- In the beginning e-government should be developed as an alternative platform of service delivery, thereby allowing both traditional and e-enabled systems to

> co-exist. Afterwards a smooth transition from traditional to e-enabled service delivery should be undertaken.
> - Sustainability issues are very important as e-government is a long-term commitment. A clear plan on how to build a revenue model around e-government applications should be developed.
> - Backing up e-government implementation by policy is highly imperative.
> - Incrementally implementing e-government will be more effective than attempting to make sweeping changes in a short time.
> - Creating, nurturing and leveraging social capital will help produce e-champions at all levels.

In terms of capacity building, there is a need to identify and address capacity gaps in relation to e-governance implementation, such as low ICT literacy among government staff. The government needs to mount a sizable HR initiative, encompassing developers, government and the user community.

Government needs to create compelling business cases for e-governance. Government also needs to ensure universal access to services. This will require a dramatic increase in tele-density, from the current level of 6.56%. E-governance initiatives should therefore include strategies aimed at expanding ICT access to un-served areas.

Government needs to keep in mind, however, that the simple replication of models from overseas does not work. Government has to realistically map ICT from the perspective of citizens, and ensure that applications identified are aligned with people's expectations. For instance, government needs to ask itself: are the end users ready to take their driving license test using ICT?

To overcome infrastructure and technological challenges, the government should promote open standards (OS), i.e., interoperable data formats whose specifications are public and without any restrictions to access or implementation. This should be promoted because it facilitates interoperability and data exchange between various e-government services. Other challenges that need to be addressed include:

- Interoperability issues
- High acquisition costs
- Complex EA capacity issues
- Bandwidth issues: how to make ICT experience meaningful given the low level of internet/email usage in government
- Electricity being left out of the equation
- Affordability issues

The government must hold rigorous consultations with stakeholders to find solutions to prevailing challenges.

The group also discussed challenges relating to the three key components of e-governance: people, structure of government and funding.

To strengthen stakeholder accountability, a strong performance measurement and feedback mechanism should be established. The guiding principle for implementing e-governance is citizen centric orientation with a seamless interface. A collaborative framework to eliminate turf war issues and improve coordination among agencies should be designed. This is important in Nepal's case, where various government departments develop systems on their own.

The group recommended that there should be a lead agency to oversee implementation arrangements for e-governance. This oversight function should be handed to an existing

institution with the proper mandate and authority. The lead agency should be a high level entity which can drive changes throughout the system. It should have multi-sectoral representation, structured around the different thematic areas which define the core elements of an e-governance system. The lead agency should support, facilitate and coordinate, rather than control.

Figure 9 below depicts the proposed implementation framework.

Figure 9: Implementation Framework
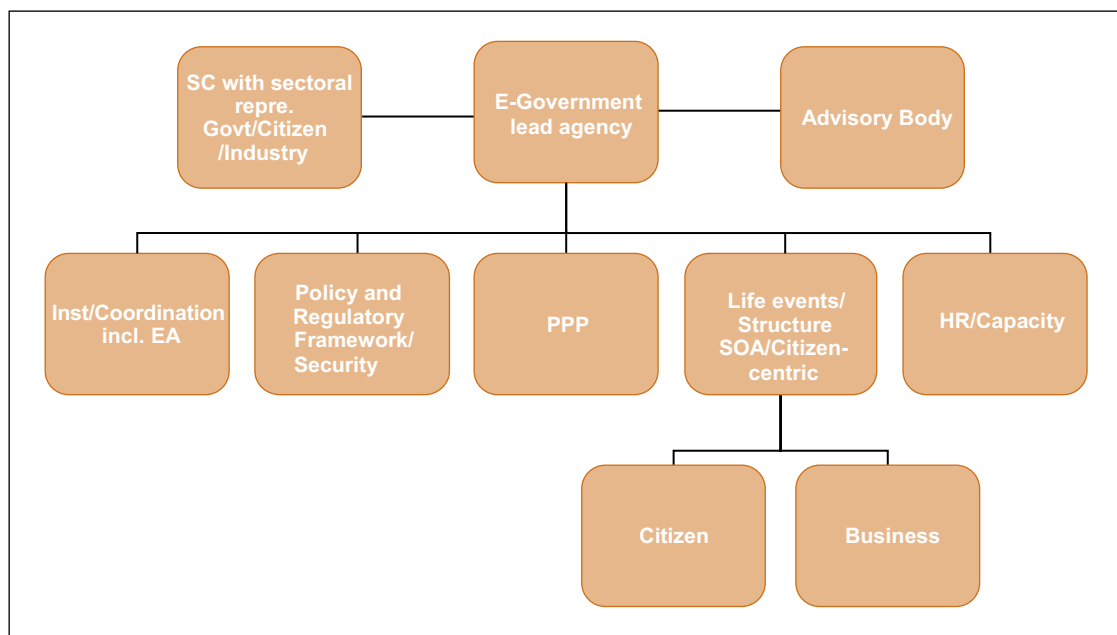
Group E concluded their discussion by drawing the government's attention to the following points:

- Implementing e-governance is a challenging undertaking entailing policy, regulatory, technological, human resource and institutional reforms.
- E-governance requires a strong project management, monitoring and evaluation mechanism.
- Software projects often face cost overruns and delays.
- E-governance has multi-sectored orientation. Good e-governance also has R&D and knowledge management dimensions.
- In most implementation scenarios, coordination and collaboration are key factors.
- Capacity development is also a key element.
- Once implemented, the momentum of e-governance projects should be maintained while ensuring their sustainability.

V. RECOMMENDATIONS AND ACTION PLANS FOR E-GOVERNANCE IN NEPAL

The high level seminar resulted in a set of realistic action plans aimed at addressing the five major issues facing e-governance in Nepal. Responsibilities were assigned and a timeframe was allotted for each proposed measure contained in the action plans.

The action plans were drawn up based on the following recommendations:

A. Enterprise Architecture

EA provides the structure and standards for Government systems design. To establish the 'language' and 'grammar' that Ministry technical systems will adopt in virtual space, there is a need to:

- Set standards, rules and regulations for standardization
- Develop an activity, advocacy, and awareness program for leadership in all sectors
- Provide e-champion incentives; performance based incentives, and capacity development and rewards for HRD
- Identify focal institutions, and develop a system for approval and confirmation of new applications from focal institutions
- Undertake institutional capacity building for the focal institutions
- Promote autonomy in financial decision making, personnel acquisition, and remuneration
- Establish a coordination committee for institutional coordination

B. Lead Applications

Several actions need to be carried out before selecting the lead applications for e-government in Nepal, i.e.:

- Promote the use of ICT technology such as business portals, e-portals
- Train HR hire experts to address HRD issues
- Formulate the necessary legal framework
- Decide on the architecture for technology transfer
- Decide on the funding mechanism, i.e., whether to find loan / grant or seek private investments

C. Telecenters and Infrastructure

To improve connectivity, the following actions were recommended:

- Set a national target of establishing 1 Telecenter per VDC
- Encourage the central government to provide hardware support
- Subsidize the Telecenters' operational expenses for 5 years, using VDC top-up funding
- Ensure commitment from concerned stakeholders at all the levels
- Transfer ownership to the community
- Develop content in local language to address local needs

D. Human Resource Development (HRD)

To build HR capacities, the following measures were recommended:

- Organize an awareness campaign for parliamentarians, high-ranking government officials, development workers and academics
- Analyze, survey and perform a SWOT Analysis, and produce a national inventory of ICT manpower
- Formulate a retention strategy for the ICT workforce, to reduce brain drain
- Review and develop a relevant university curriculum with ICT4D components
- Create strong positions for ICT manpower in government offices, while reviewing existing recruitment policies for career growth opportunities

E. Government Implementation

Critical implementation issues include BPR, legislation, training, policy and coordination as well as funding and strategy. Adopting the following recommendations should help towards the modernization of public administration in Nepal:

- Organize workshops, seminars, exposure visits, and interaction programs to build social capital in ministries and parliament
- Develop a operational modality and structure for defining and finalizing implementation arrangements
- Define enterprise architecture as an output, classify position on OS/FOSS (open source/free and open software)
- Develop applications (final set/spread over phases), HR Strategy for preparing final implementation
- Conduct and compile surveys (HR, Infrastructure, On-going Initiatives) to provide baseline information
- Articulate policy positions and initiate work on requisite legal instruments to address capacity issues and policy gaps
- Approve the revised IT Policy
- Install the fiber optic VPN or intranet for the ministry-level connectivity

The following action plans were consequently formulated and adopted during the seminar.

Table 1: Group A (Enterprise Architecture) Action Plan

S.N	Major Issues	Recommended Actions	Time Frame	Responsibility	
				Primary	Secondary
1	Lack of Standardization	Set Standards, Formulate Rules and Regulations	1 year	HLCIT	MOEST
2	Leadership in all sectors	Development Activity, Advocacy, Awareness	Continuous	HLCIT	All Stakeholders / Institutions
3	HRD	E-champion incentives	6 Months	NITC	All Stakeholders / Institutions
		Performance-based Incentives	1 year	MOGA	All Stakeholders / Institutions
		Capacity Development and Rewards	Continuous	HLCIT	All Stakeholders / Institutions
4	Institutional Development	Identification of focal institutions	3 Months	HLCIT	All Stakeholders / Institutions
		Approval and confirmation of new application from focal institutions, institutional capacity building	6 Months	HLCIT	NITC
5	Autonomy	Financial Decision Making	1 year	MOF	All Stakeholders
		Personnel Acquisition	1 year	MOGA	All Stakeholders
		Remuneration	1 year	MOGA	All Stakeholders
6	Institutional Coordination	Coordination Committee	3 Months	HLCIT	All Stakeholders
		Institution	3 Months	HLCIT	All Stakeholders

Table 2: Group B (Lead Applications) Action Plan

	Major Issues	Recommended Action	Time Frame	Responsibility	
				Primary	Secondary
1	Business Portal, E-Portal	Use IT	1 year –Ongoing	Government of Nepal (HLCIT)	Concerned Ministry / Department & private sector, NGO
2	HRD Issues	Train HR managers and people / Hire experts	1 – 5 years ongoing	Government of Nepal (HLCIT)	Concerned Ministry / Department, private sector, NGOs
3	Legal Framework	Pass necessary Act and By Laws	1 year	MOEST	Concerned Ministries
4	Technical / Technology	Technology Transfer (Architecture)	2 years	MOEST/HLCIT	Concerned Ministries
5	Funds	Loans / Grants, private investment	Ongoing	MOEST/HLCIT/ Private sector / FNCCI	Concerned Ministry / Department / NGO / Business Community

Table 3: Group C (Telecenters and Infrastructure) Action Plan

S.N	Major Issues	Recommended Action	Time Frame	Responsibility	
				Primary	Secondary
1	Target	Set national target at 1 Telecenter per VDC	5 years	HLCIT	NITC
2	Hardware Support	Government of Nepal (GON) to provide needed support	Phase-wise	GON/NITC	HLCIT
3	Sustainability	GON to provide operational expenses for 5 years, through VDC top-up funding	Phase-wise	GON/NITC	HLCIT
4	Commitment from concerned stakeholders	Ensure commitment at all levels	Phase-wise but within one year	HLCIT	NITC
5	Ownership	Transfer to local community	Phase-wise	NITC	HLCIT
6	Content development	Development of content intended to address local needs and languages	Phase-wise	NITC	HLCIT

Table 4: Group D (Human Resources Development) Action Plan

S.N	Major Issues	Recommended Actions	Time Frame	Responsibility	
				Primary	Secondary
1	Lack of awareness among different sectors	Awareness campaigns aimed at high-ranking government officials, parliamentarians, development workers, and academicians	6 Months	HLCIT	NITC
2	National Inventory of ICT Manpower	Needs Analysis, survey and SWOT analysis	6 Months	NITC	
3	Brain drain	Formulate retention strategy for ICT workforce	6 Months	Ministry of General Administration	Respective Institutions
4	Lack of Relevant Curriculum	Review university curriculum with ICT4D Component		Ministry of Education	Universities
5	Lack of career growth opportunities	Create high posts for ICT manpower in government offices, review existing recruitment policies		Ministry of General Administration / Public Services Commission	NITC

Table 5: Group E (E-Government Implementation) Action Plan

S.N.	Major Issues	Recommended Actions	Time Frame	Responsibility	
				Primary	Secondary
1	Building Social Capital- Ministry, Parliament	Workshops, seminars, exposure visits, interaction programs	2 Months	HLCIT	MOEST/ NITC
2	Defining/finalizing implementation arrangements	Define operational modality and structure	1 Months	HLCIT/PMO	NITC
3	Defining Enterprise Architecture framework	Use Enterprise Architecture as output, Classify positions on OS/FOSS	1.5 Months	HLCIT	
4	Preparing final implementation plan	Applications (final set/spread over phases), HR Strategy	1.5 Months	HLCIT	NITC/MOEST
5	Preparing baseline information	Conduct/ compile surveys (HR, infrastructure, on-going initiatives)	2 Months	HLCIT	NITC/MOEST
6	Addressing capacity issues/policy gaps	Articulate policy positions, initiate work on requisite legal instruments	2 Months	HLCIT	NITC/MOEST
7	Approval of revised IT policy		1 Months	MOEST / HLCIT	MOEST/HLCIT
8	Ministry level connectivity, VPN / Intranet/Fiber Optics	VPN / Intranet infrastructure	4 Months	MOIC / MOGA /HLCIT	NITC/MOEST

The HLCIT will act as the lead agency in making sure these action plans are viable. For the execution of the same, HLCIT will coordinate with the government, NGOs, communities, and other concerned stakeholders.

The seminar closed with the decision to organize a follow-up seminar on 10–11 November 2007 in Kathmandu. This second seminar will assess the progress of the adopted action plans. A request will be made to the Honorable Prime Minister of Nepal to chair this seminar.

APPENDIX I: GROUP DIVISION AND DISCUSSION TOPIC

Group A: Enterprise Architecture

Facilitator: Dr. Paul Schapper

Group Members:

- Manohar Bhattarai
- Iswor Singh Thapa
- Laxman Mainali
- Gaurav Giri
- Vivek Rana
- Tulasi P. Gautam

Group B: Lead Applications

Facilitator: Dr. Jeoung-Keun Lee

Group Members:

- Mr. Shree Kanta Paudel
- Mr. Sanat Kumar Basnet
- Mr. Ram Chandra Dhakal
- Mr. Vinod Jnawali
- Mr. Naindra Prasad Upadhaya
- Mr. Narayan Gopal Malego
- Mr. Diwakar Rimal
- Mr. Jonathan Kushner

Group C: Telecenter and Infrastructure

Facilitator: Jonathan Kushner

Group Members:

- Dr. Swoyambhu Man Amatya
- Mr. Madhav Sharma Poudel
- Dr. Madan Pariyar
- Dr. Dinesh Kumar Sharma

- Mr. Shiva Sundar Shrestha
- Mr. Kiran Pd. Dhungel
- Mr. Kumar Dangol

Group D: Human Resources Development

Facilitator, Dr. Hyeun Suk Rhee

Group Members:

- Mr. Netra Bahadur Basnet
- Mr. Amar Singh Shah
- Mr. Bhadreshwor Upadhaya
- Mr. Laxma Bhattarai
- Mr. Tana Gautam
- Prof Timila Yami Thapa
- Mr. Bimal Pratap Shah
- Mr. Bhimdhoj Shrestha
- Mr. Ranjan Baral

Group E: E-Government Implementation

Facilitator: Mr. Stephen Braim, VP, Governmental Programs, IBM, Asia Pacific

Group Members:

- Mr. Saroj Devkota, Hon. VC, High Level Commission for IT
- Mr. Deependra B Thapa, Secretary, PMO
- Mr. B.K. Prasain, Secretary, MoEST
- Mr. Netra Bahadur Thapa, Brig. General, Nepal Army
- Mr. Manohar K Bhattarai, Full-time Member, HLCIT
- Mr. Rana Bahadur Shrestha, Jt. Secretary, MoF
- Dr. Sunil Maskey, E-Governance Advisor, NITC

APPENDIX 2: ACTIVITY PROFILE

Saturday, 5 May 2007

11: 30 – 13:30	Registration and Lunch
13:30 – 14:00	Opening Ceremony (Master of Ceremony: Mr. Ranjan Baral)
	Opening Remarks by Hon. Mahantha Thakur, Minister of Environment, Science and Technology
	Welcome Remarks by Mr. Bal Krishna Prasai, Secretary, Ministry of Environment, Science and Technology
	Remarks by Special Guest Dr. Bhoj Raj Ghimire, Chief Secretary, Government of Nepal
	Remarks by Special Guest Mr. Saroj Devkota, Vice Chairman, HLCIT
	Remarks by Special Guest Dr. Hyeun-Suk Rhee, Director, UNAPCICT
	Concluding Remarks by Dr. Subarna Shakya, Executive Director, NITC
	Introduction of Participants
	Group Photo Session
14:00 – 15:00	Major Issues of E-Government in Nepal by Paul Schapper, Consultant, ADB Investment Project
15:00 – 15:30	Break
15:30 – 17:00	Group Discussion on Major Issues
18:30 – 20:00	Welcome Dinner hosted by Dean, ADBI
20:00 – 21:30	Demonstration of E-Government Programs by Subodh Tripathee, First Vice Chairman, Forum for Information Technology, Nepal

Sunday, 6 May 2007

08:30 – 10:00	Plenary Session (Report of the Group Discussions) Facilitator: Jeoung-Keun Lee, CBT Director, ADBI
10:00 – 10:30	Break
10:30 – 11:30	Drafting Action Plans for Introducing E-Government in Nepal Facilitator: Madan Pariyar, Member Secretary, HLCIT
11:30 – 12:00	Adoption of the Action Plans Closing Remarks by Dr. Ki-Hee Ryu, Head, Portfolio Management Unit, ADB Nepal Resident Mission
12:00 – 14:00	Lunch and adjourn (Lunch hosted by UN-APCICT)
18:00 – 20:00	Farewell Dinner hosted by Dr. Subarna Shakya, Executive Director, NITC (Venue: Dwarika's Hotel, Battisputali, Kathmandu)

Output

- About 35 high level government officials were made aware of e-governance.
- An action plan to introduce e-government programs
- Summary of seminar proceedings

Participants

- High ranking government officials in charge of e-government in Nepal (by invitation only)

Language

- English (No interpretation was provided)

Contact Persons

- Jeoung-Keun Lee, ADBI (e-mail: jklee@adbi.org)
- Subarna Shakya, Executive Director, National Information Technology Center, Nepal (e-mail: sshakya@nitc.gov.np)
- Hyeun Suk Rhee, Director, UN-APCICT (e-mail: sukrhee@gmail.com)

Participants

Name	:	**Saroj Devkota**
Designation	:	Vice Chairman
Organization	:	HLCIT
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4242483
E-Mail	:	sdevkota@hlcit.gov.np

Name	:	**Bal Krishna Prasai**
Designation	:	Secretary
Organization	:	Ministry of Environment, Science and Technology (MOEST)
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4225660
E-Mail	:	bkprasai@ntc.net.np

Name	:	**Deependra Bickram Thapa**
Designation	:	Secretary
Organization	:	Office of the Prime Minister
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4211020
E-Mail	:	deependrathapa@yahoo.com

Name	:	**Swoyambhu Man Amatya**
Designation	:	Secretary
Organization	:	National Planning Commission
Address	:	Singh Durbar, Kathmandu, Nepal
Phone No.	:	+977-1-4-225879
E-Mail	:	smamatya@npcnepal.gov.np

Name   :   **Madhab Paudel**
Designation   :   Secretary
Organization   :   Office of Prime Minister and
                   Council of Ministers
Address   :   Singha Durbar
Phone No.   :   +977-1-4211072
E-Mail   :   madhabpaudel@yahoo.co.uk

Name   :   **Tana Gautam**
Designation   :   Act. Secretary
Organization   :   Office of Prime Minister and
                   Council of Ministers
Address   :   Kathmandu
Phone No.   :   +977-1-4211040
E-Mail   :   gautamtana@hotmail.com

Name   :   **Bhadreshwar Prasad Upadhyay**
Designation   :   Deputy Auditor General
Organization   :   Office of the Auditor General
Address   :   Babar Mahal, Kathmandu
Phone No.   :   +977-1-4264649, +977-9841-268737
E-Mail   :   oagbpu@hotmail.com

Name   :   **Dr. Madan P. Pariyar**
Designation   :   Member Secretary
Organization   :   HLCIT
Address   :   Singha Durbar, Kathmandu
Phone No.   :   +977-9841-580944
E-Mail   :   Madan_pariyar@hotmail.com

Name   :   **Manohar Kumar Bhattarai**
Designation   :   Member, HLCIT
Organization   :   HLCIT
Address   :   Singha Darbar, Kathmandu
Phone No.   :   +977-1-4424135, +977-1-4244820
E-Mail   :   manohar_kb@hlcit.gov.np

Name	:	Iswar Singh Thapa
Designation	:	Joint Secretary
Organization	:	Ministry of Environment, Science and Technology (MOEST)
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4244698
E-Mail	:	isthapa@moest.gov.np

Name	:	Laxman P. Mainali
Designation	:	Joint Secretary
Organization	:	Ministry of Environment, Science and Technology (MOEST)
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-9841-365829
E-Mail	:	lpmainali2@yahoo.com

Name	:	Vinod Jnawali
Designation	:	Joint Secretary
Organization	:	Ministry of Health and Population
Address	:	Ram Shah Path, Kathmandu
Phone No.	:	+977-1-4262935
E-Mail	:	vinod_jnawali@yahoo.com

Name	:	Shiva Sundar Shrestha
Designation	:	Joint Secretary
Organization	:	Ministry of Agriculture
Address	:	Kathmandu
Phone No.	:	+977-1-5525617
E-Mail	:	shivasundar@hotmail.com

Name	:	Laxman Bhattarai
Designation	:	Joint Secretary
Organization	:	Election Commission
Address	:	Kathmandu
Phone. No.	:	+977-9841-268714
E-Mail	:	laxman_bh@wlink.com.np

Name	:	**Dr. Dinesh Kumar Sharma**
Designation	:	Chairman
Organization	:	Nepal Telecom Authority
Address	:	Baluwatar, Kathmandu
Phone No.	:	+977-1-5547208, +977-98510-40503
E-Mail	:	dsharma@ntc.gov.np

Name	:	**Narayan Gopal Malego**
Designation	:	Joint Secretary
Organization	:	Ministry of Land Reform and Management
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4221143, +977-1-4377159
E-Mail	:	nmalego@yahoo.com

Name	:	**Ran Bahadur Shrestha**
Designation	:	Joint Secretary
Organization	:	Ministry of Finance
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4211306
E-Mail	:	bhojpur2012@yahoo.com
		revadcom@mof.gov.np

Name	:	**Naindra Prasad Upadhaya**
Designation	:	Joint Secretary
Organization	:	Ministry of Industry, Commerce and Supplies
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4226046
E-Mail	:	naindrau@yahoo.com

Name	:	**Netra B. Thapa**
Designation	:	Brig. General
Organization	:	Nepal Army
Address	:	Nepal Army HQ, Kathmandu
Phone No.	:	+977-1-4225624
E-Mail	:	napthapa@yahoo.com

Name	:	**Amar Singh Shah**
Designation	:	AIGP
Organization	:	Nepal Police Academy
Address	:	Maharajganj, Kathmandu
Phone No.	:	+977-1-4410271
E-Mail	:	amarsishah@hotmail.com

Name	:	**Sanat Kumar Basnet**
Designation	:	AIGP
Organization	:	Armed Police Force
Address	:	Halchowk. Kathmandu
Phone No.	:	+977-98510-88074
E-Mail	:	sanatbasnet@hotmail.com

Name	:	**Tulasi P. Gautam**
Designation	:	Under Secretary
Organization	:	Ministry of Women, Children and Social Welfare
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-9841-345178
E-Mail	:	tpr_gautam@yahoo.com

Name	:	**Ramchandra Dhakal**
Designation	:	Under Secretary
Organization	:	Ministry of Culture, Tourism and Civil Aviation
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4266726
E-Mail	:	dhakalr66@yahoo.com

Name	:	**Kiran Prasad Dhungel**
Designation	:	Under Secretary
Organization	:	Ministry of Peace and Reconstruction
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-9841-437488
E-Mail	:	kirandhungel@gmail.com

Name	:	**Shree Kanta Paudel**
Designation	:	Joint Registrar
Organization	:	Supreme Court
Address	:	Ram Shah Path, Kathmandu
Phone No.	:	+977-1-4258081, +977-9841-588342
E-Mail	:	spaudel@supremecourt.gov.np

Name	:	**Bhan Dev Badu**
Designation	:	Assistant Executive Director
Organization	:	National Information Technology Center
Address	:	Singha Durbar
Phone No.	:	+977-1-2040521
E-Mail	:	bhanu@nitc.gov.np

Name	:	**Diwakar Prasad Rimal**
Designation	:	Dep. Financial Controller General
Organization	:	Finincial Controller Office
Address	:	Anam Nagar, Kathmandu
Phone No.	:	+977-1-4438537
E-Mail	:	dprimal@fcgo.gov.np

Name	:	**Ranjan Baral**
Designation	:	Computer Engineer
Organization	:	National Information Technology Center (NITC)
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-9841217080
E-Mail	:	ranjanbaral@yahoo.com

Name	:	**Dr. Sunil Maskey**
Designation	:	ICT Consultant
Organization	:	National Information Technology Center (NITC)
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4244627
E-Mail	:	sunil@nitc.gov.np

Name	:	**Bimal Pratap Shah**
Designation	:	ICT Consultant
Organization	:	National Information Technology Center (NITC)
Address	:	Singha Durbar
Phone No.	:	+977-1-4244617, +977-9851016121
E-Mail	:	bimal.shah@nitc.gov.np

Name	:	**Timila Yami Thapa**
Designation	:	Professor
Organization	:	IOE, Pulchowk
Address	:	Pulchowk, Kathmandu
Phone No.	:	+977-9841-298009
E-Mail	:	timilathapa@yahoo.com

Name	:	**Gaurav Giri**
Designation	:	Electronics Engineer
Organization	:	Ministry of Information and Communication
Address	:	Singha Durbar, Kathmandu
Phone No.	:	+977-1-4211168(O), +977-9841-283014
E-Mail	:	gaurav_ioe@yahoo.com, bongaurav@hotmail.com

Organizers

Name	:	**Dr. Jeoung-Keun Lee**
Designation	:	Director
Organization	:	Capacity Building and Training, Asian Development Bank Institute
Address	:	Tokyo, Japan
E-Mail	:	jklee@adbi.org

Name   :   **Dr. Hyun Suk Rhee**
Designation   :   Director
Organization :   UN-APCICT
Address   :   Incheon, Korea
E-Mail   :   rheeh@un.org

Name   :   **Dr. Subarna Shakya**
Designation   :   Executive Director
Organization :   National Information Technology Center
                  (NITC)
Address   :   Singha Durbar, Kathmandu
Phone No.   :   +977-1-4244617
E-Mail   :   sshakya@wlink.com.np
                  sshakya@nitc.gov.np

Facilitators

Name   :   **Dr. Jeoung-Keun Lee**
Designation   :   Director
Organization :   Capacity Building and Training,
                  Asian Development Bank Institute
Address   :   Tokyo, Japan
E-Mail   :   jklee@adbi.org

Name   :   **Dr. Hyun Suk Rhee**
Designation   :   Director
Organization :   UN-APCICT
Address   :   Incheon, Korea
E-Mail   :   rheeh@un.org

Name   :   **Jonathan Kushner**
Designation   :   Director of Business Development
Organization :   Microsoft Asia
Address   :   Singapore
E-Mail   :   jonathan.kushner@microsoft.com

Name   :   **Paul Schapper**
Designation   :   ADB Consultant
Organization :   Asian Development Bank
Address   :   Manila, Philippines
E-Mail   :   paul.schapper@gmail.com

Name   :   **Stephen W. Braim**
Designation   :   Government Programs Executive
Organization :   IBM Asian Pacific
Address   :   Australia
E-Mail   :   sbraim@au1.ibm.com

Speakers

Name   :   **Paul Schapper**
Designation   :   ADB Consultant
Organization :   Asian Development Bank
Address   :   Manila, Philippines
E-Mail   :   paul.schapper@gmail.com

Name   :   **Subodh Tripathee**
Designation   :   IT Consultant
Organization :   Asian Development Bank Institute
Address   :   Kathmandu, Nepal
Phone No.   :   +977-1-4278598
E-Mail   :   stripathee@adbi.org

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