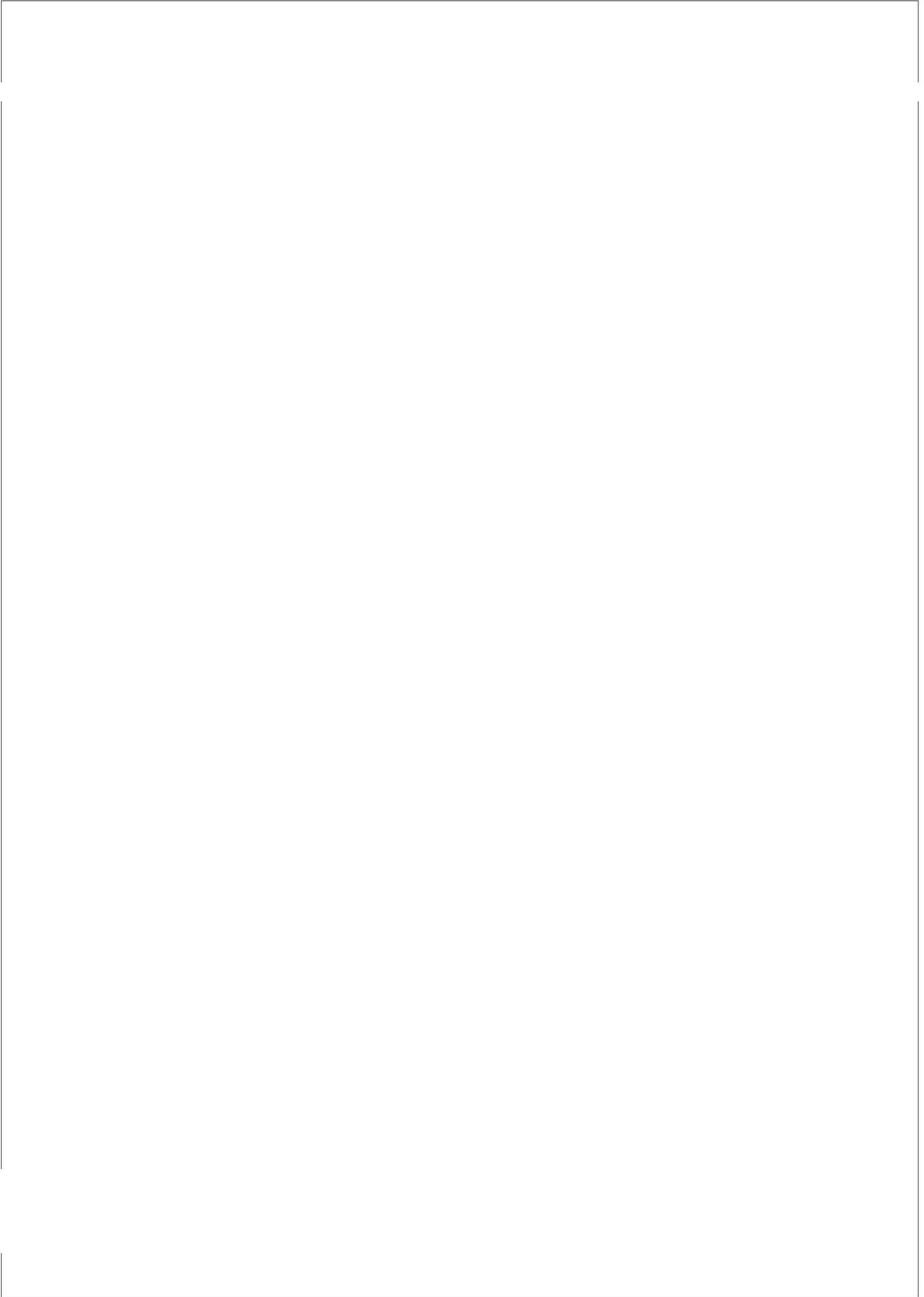


ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

ASIAN DEVELOPMENT BANK INSTITUTE

Designing e-Government for the Poor





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**United Nations
E S C A P**



ADB INSTITUTE

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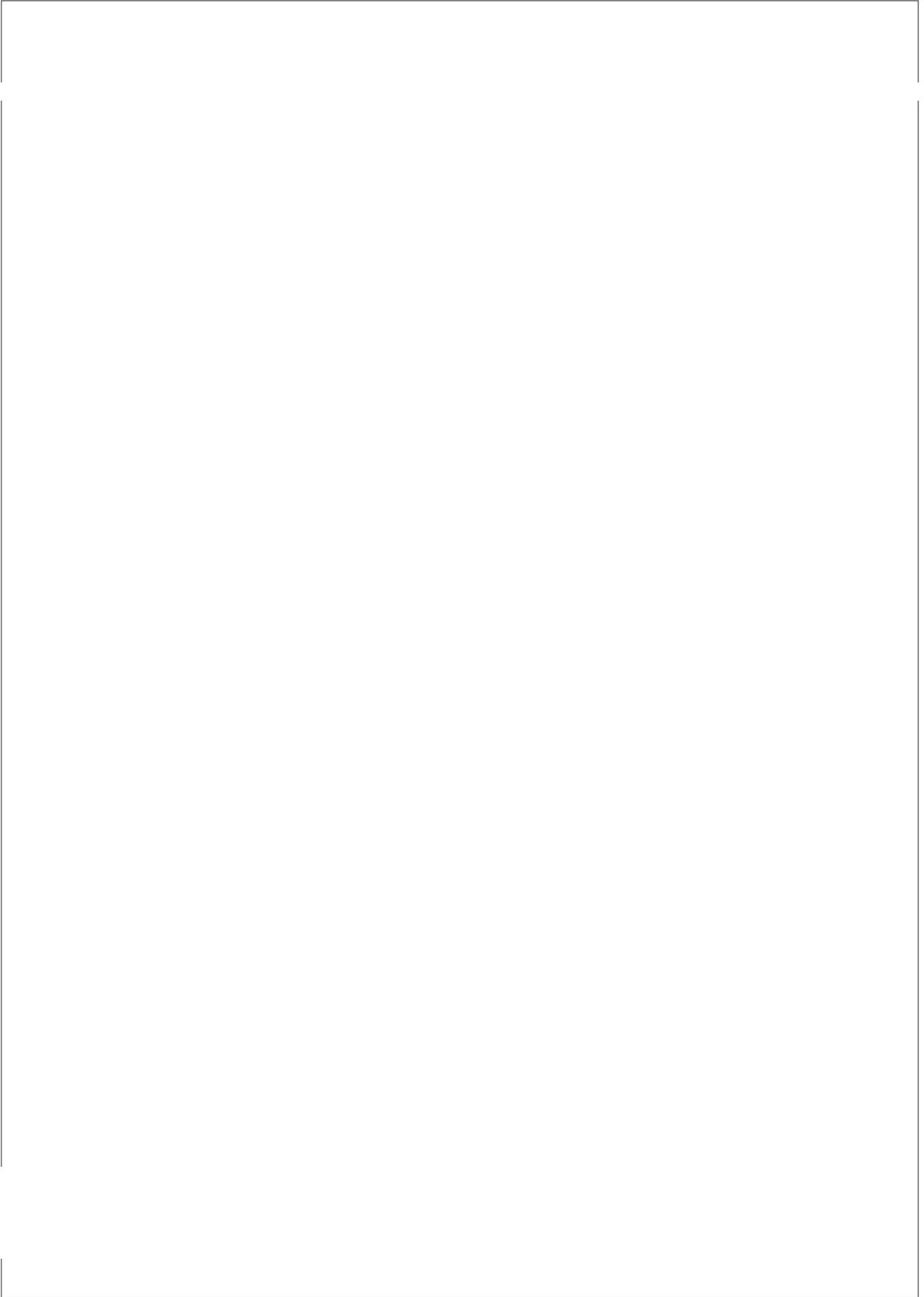
PREFACE

In recent years, the countries of the Asian and Pacific region have increasingly adopted e-government. E-government can be defined as the transformation of public-sector internal and external relationships through use of information and communication technology (ICT). E-government for the poor means that an e-government strategy and related policies must be aimed at bridging the digital divide, the uneven distribution and use of ICT between the poor and the rich. E-government is a tool to achieve better governance and enhance economic development.

Many nations have developed an e-government strategy, and are rapidly expanding the use and knowledge of ICT by establishing online public services and digital collaboration between government ministries. However, successful implementation of e-government remains a challenge. It requires a fundamental transformation of traditional government organization, rebuilding of the infrastructure; and tremendous financial and human resources. Sustainability of e-government programmes requires policies, legislation, and a legal framework conducive to reorganizing the government and its services to the citizens.

The Regional Workshop on Designing E-government for the Poor assisted the participants to gain a better understanding of e-government, and build capacity for the planning and implementing e-government for the poor. The Workshop was intended to assist the participants in defining priorities and specific actions for progressing to e-government. The Workshop highlighted the potential of e-government and ICT to improve access for the poor to information and government services, and foster economic growth. Countries were able to share their experiences in the implementation of e-government; and discuss issues, and options for implementation. Some of the topics addressed at this Workshop included: e-government programmes for the poor; re-engineering internal processes of government/public administration; factors critical to the successful implementation of e-government including e-training of government officials; stakeholder participation in e-government projects; building community and government leadership; and security and privacy issues in e-government. Participants were required to submit a proposal for implementing e-government in their countries, which could potentially be implemented.

The Regional Workshop on Designing E-Government for the Poor was organized by the Asian Development Bank Institute (ADBI), and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). The organizers would like to thank the Government of Japan, the Republic of Korea, the Asian Development Bank (ADB), and the private sector including International Business Machines Corporation (IBM) and Microsoft for co-sponsoring this Workshop.



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Abbreviations

ABR	Australian Business Registry
ADB	Asian Development Bank
ADB I	Asian Development Bank Institute
ADSL	asymmetric digital subscriber line
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
B2B	business-to-business
B2C	business-to-citizen
BAEC	Bangladesh Atomic Energy Commission
BANBAIS	Bangladesh Bureau of Educational Information and Statistics
BANSDOC	Bangladesh National Scientific and Technical Documentation Centre
BBS	bulletin board system
BCC	Bangladesh Computer Council
BCSIR	Bangladesh Council of Scientific and Industrial Research
BPR	business process reengineering
BRIS	Birth Registration Information System
BTTB	Bangladesh Telephone and Telegraph Board
BUET	Bangladesh University of Engineering and Technology
CA	Certification Authorities
CAP	community access points
CD-ROM	compact disk – read only memory
CeCs	community e-centres
CEG	Centre for e-Governance
CEO	Chief Executive Officer
CIC	community information centre
CIN	community information network
CIO Council	Council of Ministerial Chief Information Officers
COs	Community Organizations
DDC	District Development Committee
DDN	digital data network
DECT	digital enhanced cordless telecommunications

Abbreviations (Continued)

DMIS	Decentralized Management Information System
DSWD	Department of Social Welfare and Development
EAS	electronic approval system
EDMS	Electronic Document Management System
ECNEC	Executive Committee of National Economic Council
ESCAP	Economic and Social Commission for Asia and the Pacific
G2B	government-to-business
G2C	government-to-citizen
G2E	government-to-employees
G2G	government-to-government
G4DP	e-Government for Development Planning
G4T	Government for Tomorrow
GAIS	Government Administrative Information System
GDP	gross domestic product
GFMS	Government Financial Management Information System
GIS	geographic information system
GPKI	Government Public Key Infrastructure
GTZ	Gesellschaft für Technische Zusammenarbeit
HTTP	hyper text protocol
HTTPS	hyper text protocol secure version
IBM	International Business Machines Corporation
ICSTD	Information, Communication and Space Technology Division
ICT	information and communication technology
ICTA	Information and Communication Technology Agency
ID	identity document
ISP	Internet service provider
ISSP	Information Systems Strategic Plan
IT	information technology
JICA	Japan International Cooperation Agency
JIWE	Japan Institute of Worker's Evolution
LAs	line agencies
LAN	local areas network

Abbreviations *(Continued)*

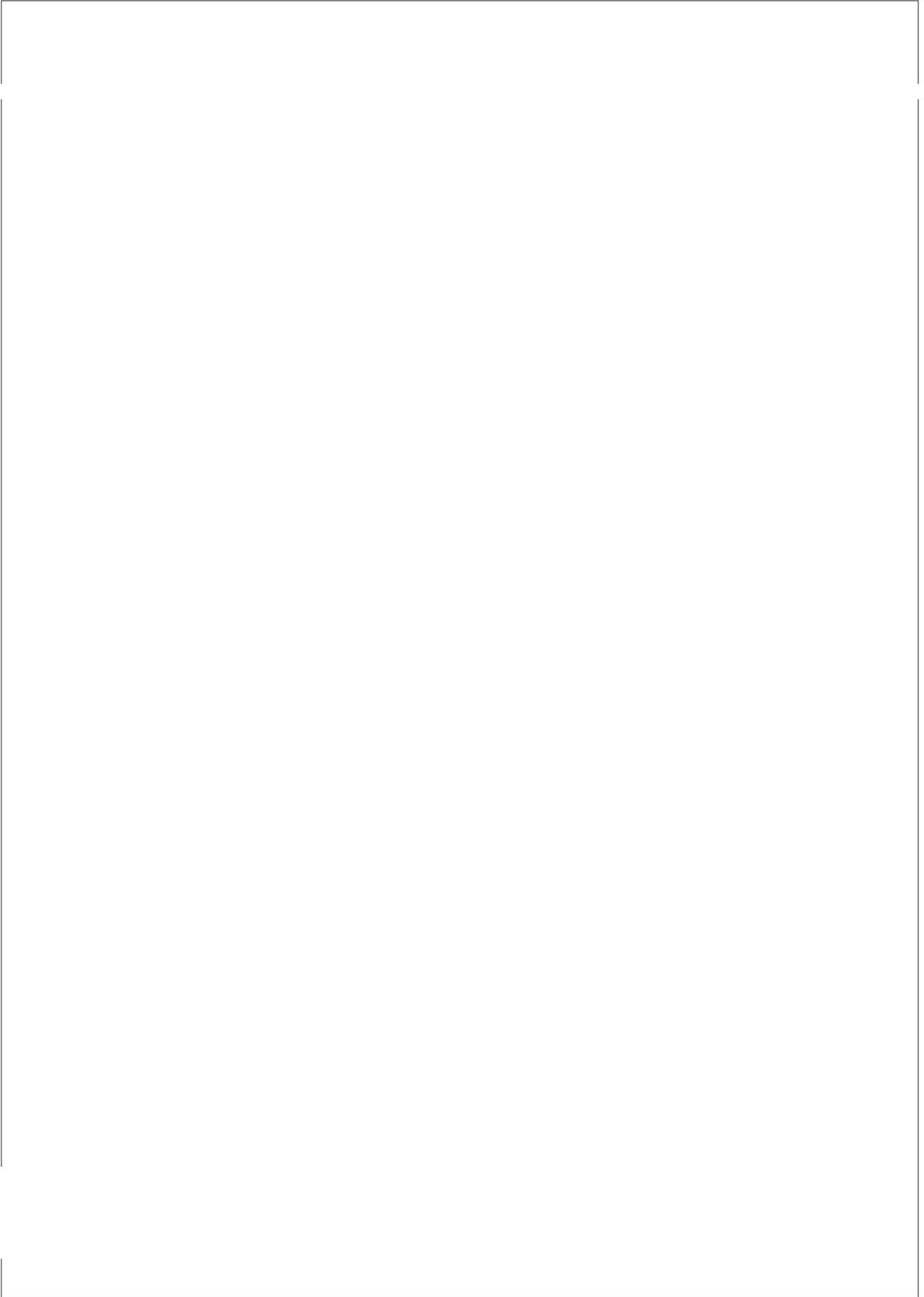
LGU	local government unit
LGWAN	local government wide area network
LIFE	Local Initiative for a System of E-Quality Education
LG	local government
MCC	multi-purpose community centres
MCI	Ministry of Communication and Information
MDGs	Millennium Development Goals
MIS	management information systems
MLD	Ministry of Local Development
MLSS	menial level subordinate staff
MoF	Ministry of Finance
MOSICT	Ministry of Science and Information and Communication Technology, Bangladesh
MPT	Myanmar Posts and Telecommunications
NCC	National Computer Centre
NEGP	National E-Governance Plan
NGAs	national government agencies
NGA	non-governmental agency
NGO	non-governmental organization
NiDA	National Information Communications Technology Development Authority, Cambodia
NMST	National Museum of Science and Technology
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PC	personal computer
PIU	project implementation unit
PKI	public key infrastructure
PMU	project management unit
PMO	Prime Minister's Office
PP	Portfolio Project
PSC	project steering committee

Abbreviations *(Continued)*

RCC	Rajshahi City Corporation
Re-Gov	Re-engineering Government
RGD	Registrar General's Department
RIC	rural information centre
SARS	Severe Acute Respiratory Syndrome
SASS	Social Sectors Division
SIDA	Swedish International Development Cooperation Agency
SME	small and medium-sized enterprise
SMS	short message service
SQL	structured query language
STEA	Science Technology and Environment Agency
T&T Board	Telegraph and Telephone Board
TAPP	Technical Assistant Project Proforma
TECHLINK	Technological Linkages
UNeDocs	United Nations electronic trade documents
UNESCO	United Nation Education, Scientific and Cultural Organization
USO	Universal Service Obligations
VAT	value added tax
VAS	value added services
VSAT	very small aperture terminals
WAN	wide area network
WLL	wireless local loop
WSIS	World Summit on Information Society
XML	extensible markup language

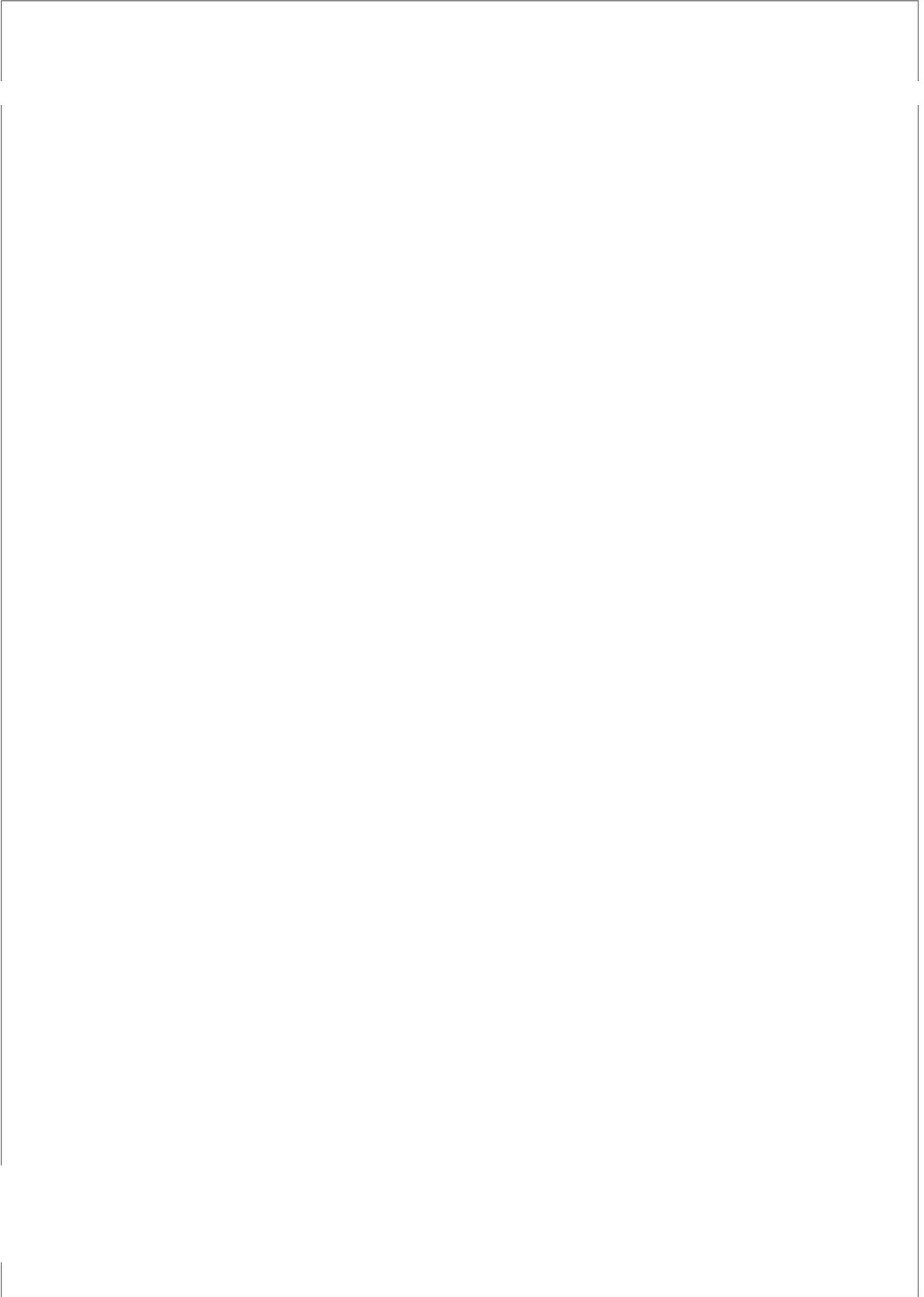
Explanatory notes

bpi	bandwidth per inhabitant
D	dong
gbps	gigabit per second
kbps	kilobit per second
mbps	megabit per second
US\$	United States dollar



PART ONE

Summary of the Workshop



I. ORGANIZATION OF THE WORKSHOP

A. Organization

The Regional Workshop on Designing e-Government for the Poor was organized by the Asian Development Bank Institute (ADBI) and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) with the support of the governments of Japan and the Republic of Korea, the Asian Development Bank (ADB), Microsoft Corporation and International Business Machines Corporation (IBM). The Workshop was designed to provide a forum for discussion on implementing e-government for the poor, and train participants in designing government portals, and draft action plans.

B. Objectives of the Workshop

The objectives of the Workshop were to highlight the benefits of e-government for the poor, and provide specific recommendations to develop strategies for the implementation of sustainable e-government.

E-government has the potential to improve efficiency and transparency in the public sector, and promote greater accountability of the government. It is a tool towards better governance which helps to limit corruption, minimize bureaucratic inefficiency, minimize time in processing government services, and brings the citizen, especially the poor, closer to the government processes. However, there are a multitude of challenges in introducing and implementing e-government. A leading challenge is that poor and rural communities lack access to ICT and knowledge of its usage. Before an e-government system can be put in place, government must be reorganized, innovative policies administered, a legal framework for ICT established, and the citizens must be educated and trained.

It is necessary to build awareness among national and local government policy makers and rural communities on the benefits that e-government can provide, and most importantly, to address the inequality in access to ICT. In support of that goal, the specific objectives of the Workshop were as follows:

- To provide an opportunity to share experiences of implementing e-government for the poor in participating countries
- To examine issues in implementing or planning e-government for the poor
- To design e-government portals
- To draft project proposals to introduce or improve e-government

C. Opening of the Workshop

The workshop was opened on 28 March 2005 at the Asian Development Bank Institute (ADBI) in Tokyo. In her welcoming remarks, Chief, ICT Applications Section, ESCAP said that e-government can improve the efficiency and quality of government services to citizens, improve transparency, reduce corruption, encourage businesses, and ultimately build trust between citizens and government. She said that the importance of e-government was also stressed at the first phase of the World Summit on the Information Society (WSIS) held in Geneva last year. Further, she added that although there are many benefits to e-government, developing countries face obstacles in introducing e-government. In the Asian and Pacific region, a large proportion of the population is poor and living in areas where access to ICT is difficult. Thus, community access points to make e-government accessible to the marginalized poor communities should be introduced. In closing, she mentioned that ADBI and ESCAP have organized this Workshop to address these issues of limited access by the poor to ICT and e-government services.

In his opening statement, Mr. Peter McCawley, Dean, ADBI, welcomed the participants to Tokyo and ADBI. He explained that ADBI conducts research, workshops, capacity building, and outreach activities. Mr. McCawley said that the current technological changes and rapid progresses in ICT are amazing and beneficial. However, there is a risk that this technology is benefiting rich countries and not developing countries. Therefore, it is necessary to think about the way this technology can be used in developing countries to promote development. Mr. McCawley outlined three challenges, which were:

- Access to technology – approximately 30 per cent of people in developing countries do not have access to electricity
- Relevant service – technology and services are designed for consumers in rich countries, but technology needs to be adapted to fit the needs of people living in poorer regions
- Sustainability of ICT activities – initial success of technological service must be sustained in the long-term

Mr. McCawley concluded by wishing the participants success in the Workshop.

D. Attendance

Twenty-four participants and six observers from 15 countries in the region attended the workshop. Resource persons of the workshop included experts from academic institutions, development agencies, government ministries as well as multinational corporations such as Microsoft and IBM.

E. Election of officers

The Workshop elected the following persons to serve as officers:

Chairperson: Mr. Mateo Gelito Montano (Philippines)

Vice-Chairperson: Mr. Mesbah Ul Alam (Bangladesh)

F. Adoption of the agenda

The following agenda was adopted by the Workshop:

1. Opening of the workshop.
2. Group photo session.
3. Election of officers.
4. Introduction to the workshop.
5. Enabling local governments to offer e-services to poor citizens: progress and challenges.
6. Presentation of country reports.
7. Maximizing participation: designing e-government for the poor.
8. Stakeholder participation in designing and implementing e-government programme.
9. Small group work: identifying information services that can be provided to the poor via e-government.
10. Developing local e-government portals.
11. Citizen-centric e-government: empowering the poor through innovative technology.
12. Preparing a project proposal for external assistance.
13. Job training and job placement services for the rural economy development.
14. E-government and the digital divide: Beijing experience.
15. Small group work: discussion on revenue generating schemes for sustainability of e-government portal.
16. Building e-government in Japan.
17. Methods of assessing information needs for the poor.
18. Conducive policy environment for e-government.
19. Challenge towards ICT from Yokosuka City government.
20. Public key infrastructure initiatives for e-Asia.
21. Presentation of action plans.

22. Recommendations.
23. Finalization of action plans and workshop evaluation.
24. Closing of workshop.

G. Recommendations of the Workshop

The Workshop recommended the following area for cooperation and action:

(a) E-government is an important tool in improving the efficiency, transparency, and productivity of government, and in providing efficient services to its citizens. For e-government to become a reality, the dedication and commitment of high level policy makers is important. To create awareness on the benefits of e-government and to build capacity of policy makers and government officials on the issues related to required policies for the development of e-government, the Workshop requested the international community to organize a high-level forum to share good practices and build capacity of high-level government officials in this application.

(b) The Workshop recognized community e-centres (or telecentres) as effective facilities to provide access to e-government services to rural and/or poor communities and urged the governments to establish such centres to achieve inclusive e-government.

(c) International and regional organizations, including regional financial institutions, play a key role in integrating the use of ICTs in improving government processes and services. Therefore, the Workshop requested these international communities to assist the countries in further developing the project ideas and make available necessary resources for developing e-government both at central and local levels.

(d) Governments, as well as private sector, civil society and international and regional organizations have an important role and responsibility in the development of e-government. In view of the fact that building a citizen-centric e-government is a joint effort which requires cooperation and partnership among all stakeholders, the Workshop recommended further partnership among all stakeholders for future capacity building activities of ADBI and ESCAP.

(e) Over 60 per cent of the population in the Asian and Pacific region lives in rural areas and the majority of them are poor. Due to techno-social and economic barriers, they are not well aware of the opportunities that ICT can provide to improve their livelihood. There is an urgent need to conduct extensive programmes for awareness creation on the benefits of ICT and capacity building in the use of ICT to the rural poor.

(f) ADBI and ESCAP, together with the private sector, should play a major role in coordinating the development of a roadmap for e-government for each country that is appropriate to the development status of ICT in the respective country, and the promotion of local language applications.

II. PROCEEDINGS OF THE WORKSHOP

A. Enabling local governments to offer e-services to poor citizens: progress and challenges

*Mr. Clay G. Westcott, Principal Regional
Cooperation Specialist, ADB*

ADB's Principal Regional Cooperation Specialist, Mr. Clay G. Westcott, gave the opening presentation of the Workshop on the current progress and challenges in providing e-services to the poor in Asia. He defined e-government as the use of information and communications technology such as computers, mobile phones, radios and television to promote more efficient and cost-effective government, facilitate more convenient government services, allow greater public access to information, and make government more accountable to citizens.

Mr. Westcott gave a brief background on ICT progress in the Asian and Pacific region. He said that developing countries need to be careful about ensuring that they benefit from technological advancements because much of these technologies originate in developed countries and are not necessarily shared with developing countries. This is exemplified by the inequalities in the use of ICT between rich countries and poor countries in Asia. The Republic of Korea; Hong Kong, China; Japan and China are in the top seven for broadband use worldwide. While Hong Kong, China has 2,700 bits of international bandwidth per inhabitant (bpi), the Lao People's Democratic Republic has only 0.2 bpi, Bangladesh 0.4 bpi, and Iran 15 bpi. This is a massive difference in potential for countries to access the Internet. There are equally wide variations in cost for the internet access. In terms of income percentages, it costs 0.2 per cent of the monthly income for 20 hours use of the Internet in Singapore, while it costs 250 per cent of the income in Cambodia. In the Philippines 27 per cent of the population has access to mobile phones, while in Indonesia it is only 9 per cent of the population. Mr. Westcott said that if this gap in mobile penetration between the Philippines and Indonesia continues, the result would be a 1 per cent increase in long term growth rate for the Philippines. This discrepancy among countries of the Asia and Pacific region is also apparent in the United Nations rankings of e-government. Singapore is highest while Palau is lowest in the world.

Next, Mr. Westcott presented examples of typical e-government programmes designed for the poor or designed to be used by governments and non-governmental organizations to serve the poor communities. In the Philippines, multipurpose community telecentres have been actively pursued with the purpose of enabling communication with relatives overseas. There are also well developed local government web sites for citizens who cannot afford to go to Internet cafes. Radio browsing is another example of a useful ICT service for poor communities in which information on how to use web sites is broadcasted over radio. In the Marshall Islands, a useful web site was set up by a Marshallese living in Arkansas who updates the web site with country and government information on a daily basis, while the e-government web site managed by the government has not been updated since 2003. Another example of e-government is the birth registration system in Bangladesh developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) which is operated at a low cost, and is very beneficial to the poor as they can receive services once registered.

Mr. Westcott outlined the e-government success factors based on research in the Asian and Pacific region. First is the notion of leadership. It is extremely important for heads of state to take the lead in initiating and implementing e-government. Leaders must support all stages of e-government initiative from introduction, to implementation, to sustaining. For example, the leader in Viet Nam made a decision to make e-government a priority, and allocated the necessary budget. This must include extensive legal training and establishment of ICT departments in ministries and provinces. The second set of success factors include administering policy, legislation, and regulation; and putting in place the institutional structure. Third is financing, and the fourth set of factors include human resources, organizational development, and political acceptability.

Mr. Westcott said it is important to note that donor financing for ICT is a very small part of the total financing. Financing for an ICT system must be mobilized from government investment, private sector, and diaspora organizations. Some innovative ways in which governments have mobilized financing are seen in Hong Kong, China in which the government portal is completely financed by the private sector, or in the United States of America in which an e-bidding system is utilized to lower costs. Mr. Westcott concluded by emphasizing that ICT is only a tool, and not an end in itself. ICT is not a substitute for bad governance. In order for e-governance to be effective, good governance must first be established. ICT on its own will not eliminate corruption. He added that the main challenges to e-government implementation are human and organizational, not technological.

In the plenary session, Mr. Westcott was asked to clarify his recommendation to use off-the-shelf software. In response he said that generally it is better for governments to use products and integrated systems that have been proven and tested by other partners and organizations, rather than experiment with never before used technology. One participant mentioned that it is difficult to adapt previously developed software. For instance, it is difficult to use the software utilized in India for Sri Lanka because of cultural, social, and organizational differences. A participant from India stated that discrepancy in e-readiness between provinces in India is an example that supports Mr. Westcott's point that while one e-government system might work in one region, it will not be appropriate for another region. A participant commented that the examples of e-government web sites and the various methods used for financing were interesting and useful examples. Mr. Westcott mentioned that the Internet addresses for these web sites are listed in the endnotes of the paper provided. Another participant asked if it were possible that the Internet might negatively affect linguistic heritage rather than help maintain it, if English script rather than local language script is used most often. Mr. Westcott replied that he did not believe this to be the case. He said that many countries are working towards having their local language scripts digitized and that some local language scripts such as Urdu, Khmer and Japanese are available.

Mr. Westcott was asked how ADB can provide financing, and to provide examples of public private partnerships. Mr. Westcott referred to the case in India in which telecentres in rural areas are privately owned and run as businesses. He also suggested the sharing saving scheme as a useful financing mechanism. He gave several examples of ongoing ADB projects of funding for mobile telephone development and e-government services. He also mentioned that ADB has several grant supported projects that support pilot e-government initiatives.

Mr. Kim, Director, Social Sectors Division (SASS), ADB, suggested that the next workshop on e-government for the poor should include participants from local areas and not federal ministries. Mr. Lee, ADBI replied that it was important to first invite federal government officials because local people cannot implement changes without federal support. He added that a bottom-up approach is also being considered, and that a e-government workshop including local government participants will take place soon. The participant from Viet Nam indicated that we should continue to perfect the administrative system of a government along with ICT development because it is very difficult for citizens in poor countries to receive services and assistance from government. Mr. Westcott added that the approach in Viet Nam has been to work on improving the administrative structure at the same time as developing the e-government system. This approach includes state modernization, restructuring ministries, and better

training of staff. In response to a question on the balance between federal and local government, Mr. Westcott said that the federal government needs to get a regulatory environment to function properly, and then the local government can work on innovative solutions to governance because they are less constrained. Thus, there is an important complementary role between local and federal governments.

B. Maximizing participation: designing e-government for the poor

*Mr. Stephen W. Braim, Government Programmes Executive,
IBM Asia Pacific*

Mr. Braim defined poverty as people with limited access to government services. He suggested that e-government can be defined as a technology enabled transformation of government services based on customer need rather than administrative convenience, and it is about transformation rather than automation. Mr. Braim emphasized that the defining characteristic of e-government is customer need. Transformation towards e-government requires business process reengineering, and executive training before technological development. Implementing e-government is part of economic development strategies.

Mr. Braim indicated that the scope of e-government is people underpinned by infrastructure, thus e-government brings people and services together more effectively. The provision of electronic government means electronic participation. E-government is not just about providing services to citizens, but aims to make citizens part of the governing process. Mr. Braim referred to this as a two-way system. Some tests for e-government from the client or citizen side are the following questions: Can you find things out? Can you register a birth? Can you set up a business? Can you decide how to get your information? Can you contribute to the policy process?

Mr. Braim said that e-government does not change the fundamental role of government or its primary policy objectives. Instead, e-government acts as a complement to the fundamental duties of government which are to develop and administer policies, provide service access and delivery, and manage enforcement and compliance.

There are different stages or waves in e-government development (figure 1). Government should be looking at going directly to wave four, complete integration. However, Mr. Braim said that for the economies of the participant countries of this workshop, it is better to initially focus on wave one and wave two. Most governments of the participant in this workshop are probably at wave two. At this stage they have transactional capabilities, but need to enhance knowledge on use of technology which is the biggest barrier to access.

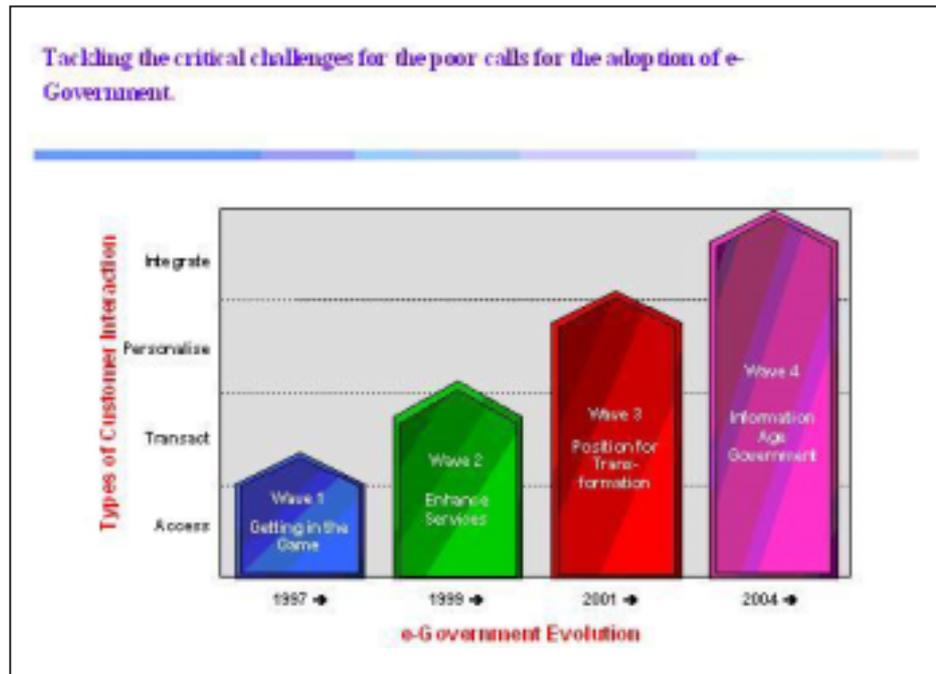


Figure 1. Stages in e-government evolution

Mr. Braim outlined the steps of an e-government strategy or roadmap, which were:

- Statement of direction – vision and goal of e-government
- Become customer centric
- Cope with change especially people change, educate people to be paperless and understand e-government
- Work across silos, break down traditional, hierarchical structures
- Collaborate across all departments ministries for success
- Develop performance measures

Mr. Braim examined the following trends driving e-government development:

1. Socio-demographic trends
 - Population growth of 600 million in low income countries
 - Existing government structures cannot service another 600 million (poor) people

2. Technology trends

- Bandwidth speed rapidly advancing
- Pervasiveness of technology – more applications, mobile phones
- Intelligent computing, improved integration
- Universal access – must cater to citizen 24 hours a day

Mr. Braim then suggested that a country's specific economic structure/model presents different challenges to setting up an e-government framework. He differentiated between three types of economic systems: agricultural, industrial, and networked. In an industrial economy, the government is individual silo focused, hierarchical, internally focused, risk averse, and works in long time frames. On the other hand, in a more advanced networked economy, the government has a participatory approach, is based on consensus, is externally focused, has an open environment, and works in real time. The provision of services in an industrial economy are paper based, based on brick and mortar mentality, geographically focused, and process centric. On the other hand, the provision of services in a networked economy are virtual or electronic, integrated across government, based on collaboration, flexible, and customer centric. An industrial economy is rules based, punitive, and protective which limits economic growth, while a networked economy is flexible, knowledge and performance based, and permits economic competition. Challenges faced by both types of economic models are: citizens loose trust in government, governments cannot compete in global market place, and governments become irrelevant.

Therefore, governments must ensure their e-government programmes reflect the structure of economic systems: agricultural, industrial, or networked (figure 2). In the area of commerce, the drivers for economic growth in an agricultural society are mechanization of means of production, and the enablers of economic growth are control over physical resources such as land and people. In an industrial economy, the drivers for economic growth are also the mechanization of means of production, and the enablers of growth are control over capital, protection of assets, and increase in scale. In a networked economy, however, the drivers of economic growth are the use of digital technology and the enablers are: open and competitive environment and policies; education and skills development; adoption of innovative technology; and rapid reinvention. The design of an e-government system must take into account the conditions prescribed by the economic model. Therefore, when designing e-government for an agricultural economy, one should consider that people think hierarchically and work within a nuclear family. On the other hand, in an industrial economy, people may work within a geographic community, while in a networked economy, communication is instant, pervasive, and constant within any area of interest (figure 2).

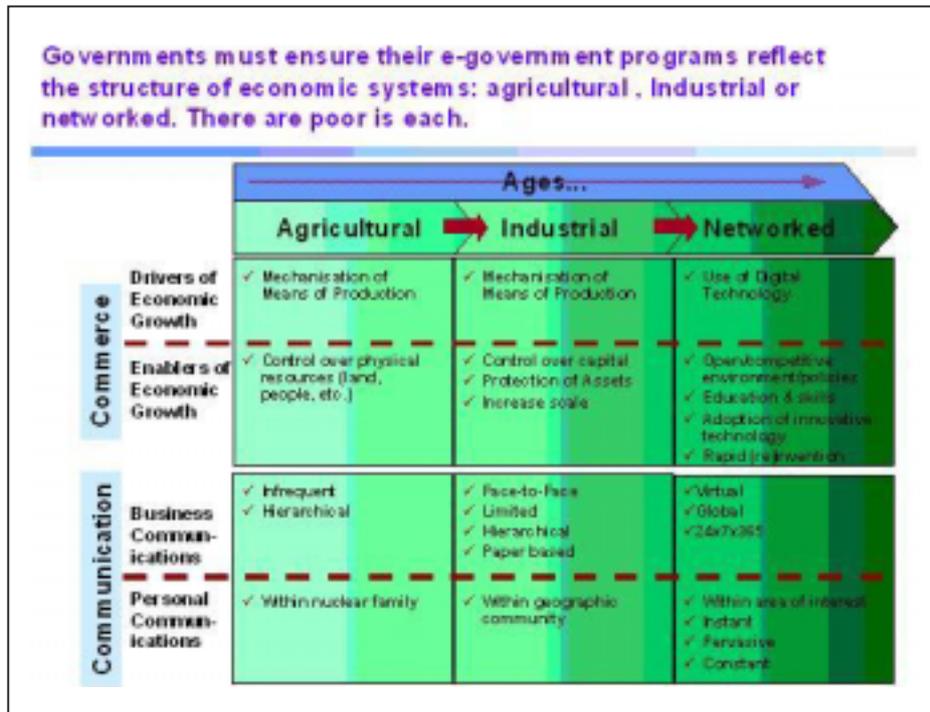


Figure 2. Economic models

Mr. Braim stated that the development of e-government relies on four cornerstones: customer centricity, knowledge focus, private sector involvement, and government alignment. Each of these cornerstones should be considered when deciding what type of e-government model to put in place. Mr. Braim presented five different models of e-government:

- Automator – provide on-line access and service delivery for all basic government services
- Integrator – develop leading edge internal operations that provide the best go- to market strategy
- Independent Innovator – provide leading edge service and delivery methods to address customer needs
- Market Driven – provide customers with ability to conduct basic services through integrated delivery channels across all public sector departments
- Collaborator – decisions and services are delivered when, where, and how customers want

Mr. Braim summarized the challenges that limit access to e-government for the poor, which were:

- Limited education or literacy
- Limited resources or finances
- Limited transportation
- Limited technology availability
- Limited exposure to government
- Limited support infrastructure
- Limited awareness on value of e-government

Mr. Braim summarized the benefits of e-government for the poor, which were:

- Lower cost access to education
- Lower cost provision of health care information
- Better resource management
- Improved access to services
- Improved access to markets
- Improved access to training for high skilled jobs

Mr. Braim said that a case study of West Bengal provides a good example of successful e-government infrastructure development. IBM worked with the government of West Bengal to provide necessary information technology (IT) infrastructure, education services, IT support and project management of 400 schools. Each school was equipped with 10 computers and more than 150,000 students were trained over a period of three years. Due to the partnership between the government and the private sector, the cost for each student was US\$0.75 per month. The relevant lesson of this case study is that a unique low cost solution was found to finance the project.

Mr. Braim said that e-governance should be designed according to the following policy principles:

- Market driven, industry-led approach
- Global coordination and harmonization
- Open competition to promote investment and economic growth
- Minimized regulatory intervention
- Transparent and predictable rules
- Technology neutral (environment)
- Government and industry partnership

Furthermore, Mr. Braim specified that policy principles should focus on awareness and promotion; skills and human resources; and privacy and tax. Awareness refers to the critical need for governments to address institutional, psychological, and technological barriers. This is connected to the need to promote industry self regulation, interconnectivity, and the adoption of open standards. Skills and human resources refer to the need for skills development in schools, training of citizens, including users and providers of ICT. Lastly, e-governance requires that the privacy (of the citizen) be ensured, and that the taxation regime be the same as for other businesses. It should look towards reducing the taxes and costs to use online services.

In the plenary discussion that followed, the participant from Indonesia stated that the ICT budget for the government of Indonesia is less than 1 per cent of the total government budget. He asked how to convince the government to prioritize the development of an e-government infrastructure. Mr. Braim replied that governments must be shown that investing in ICT leads to more economic growth, and that the cost savings in the long term will exceed the initial investment amount. He added that in order to garner support for e-government, it is necessary to build a revenue case.

C. Stakeholder participation in designing and implementing e-government programmes

Chief, ICT Applications Section, Information, Communication and Space Technology Division, ESCAP

The Chief of ICT Applications Section, Information, Communication and Space Technology Division at ESCAP said that she would discuss e-government from the perspective of the stakeholder. Stakeholder can be defined as any person, group or institution that has an interest in the project or the programme, or a group of people who share a common interest, or any group or individual who can affect or is affected by the project or programme.

The benefits of stakeholder participation include improved effectiveness, improved project design and commitments of stakeholders to achieving objectives. Improved sustainability of projects can be achieved with commitment of stakeholders. The stakeholders' participation also strengthens local ownership and reduces risk of failure.

She said that different stakeholders have various drivers of partnership. For the private sector, the incentives for partnership include enhancement of global reputation, market penetration, financial savings as a result of operational cost sharing, and greater potential for risk management with responsibility shared among several stakeholders. Additional incentives are access to finance, and improved visibility for corporate social responsibility. For the public sector, the drivers for partnership are opportunities to attract

investment, faster delivery of commitments contained in the development plan, and an opportunity to market government services. For civil society, the incentives for partnership can be a chance to influence government policy, strengthen its potential as a mechanism to deliver their strategic objectives, and identify new resources.

However, each stakeholder comes with their own organizational mandate and interests, thus there are certain challenges for participation. Therefore, it is important to build trust and respect to share information and resources, maintain open communication, and understand strengths and weaknesses of each stakeholder. In the initial stages of project development, it is necessary to analyze the stakeholders by defining the role of key stakeholders, including an assessment of the potential conflicts of interests between them.

She addressed the definition of e-government. The definition of e-government most relevant to stakeholder participation is, “using information technology, and especially the Internet to deliver government information and in some cases services to citizens, businesses, and other government agencies. E-government could enable citizens to interact and receive services from the government 24 hours a day, seven days a week”. E-government entails, “transformation of government from an agency-centric, limited service operation into an automated, citizen-centric operation capable of delivering government services to citizens, businesses, and other government agencies”.¹

She said that the tools of e-government are ICT and the stakeholders are the ones who deliver and use these tools. Government information services are the content of e-government, and the stakeholders are the ones who prepare and use this content. Citizens, businesses, and government agencies are the targets or beneficiaries of e-government, and also the stakeholders.

E-government services can be classified based on three target groups: government-to-citizen services (G2C), government-to-business (G2B) and government-to-government (G2G).

Government-to-citizen services are perhaps the primary goal of e-government that aim to:

¹ Bonham, G. Matthew, Jeffrey W. Seifert and Stuart J. Thorson (2003). “The transformational potential of e-government: the role of political leadership”, revised version (3 January 2003) of a paper presented at the panel on Electronic Governance and Information Policy (Panel 9-1) at the 4th Pan European International Relationships conference, Canterbury, United Kingdom, 9 September 2001. <<http://www.maxwell.syr.edu/maxpages/faculty/gmbonham/ecpr.htm>>

- Provide access to government information
- Make transactions such as renewing licenses and certifications less time consuming and easier
- Integrate transactions involving multiple agencies under one umbrella service
- Facilitate citizen-to-government and citizen-to-citizen interactions, and increase citizen participation in government

Government-to-business services may include:

- Electronic procurement of goods and services of government
- Electronic issuance of business licenses
- Sale of surplus government goods to the public
- Improved procurement practices that can reduce costs through increased competition

Government-to-government services consist of sharing data and resources among government agencies. These services can:

- Increase efficiency
- Act as the backbone of e-government
- Require that data be shared in electronic form between government agencies at the national, provincial, and local levels.

She outlined the steps in implementing e-government, which included:

1. Identify the stakeholders
 - The primary stakeholders are those who expect to benefit from or be adversely affected by the project. They include local government officials, government agencies, citizens, and businesses
 - The secondary stakeholders are those who take intermediary role and can influence the activity of the primary stakeholders and project outcomes. They include project managers or team, suppliers of resources, and the champions who drive the project and seek to justify its implementation, and others such as training institutions
2. Identify each stakeholder's goals/needs for the project
3. Develop systems through streamlining existing procedures
4. Provide training to create awareness and to use e-government
5. Evaluate the programme through measuring the achievement of each goal and impacts

She emphasized that stakeholders need to be involved in all stages of e-government development from the vision or planning process through implementation, monitoring, and evaluation. In order to involve the stakeholders, the first step is to define the problem to be addressed. The second step is to identify and understand the interests of key stakeholders. A meeting or consultation among stakeholders is critical in creating awareness of the project, and defining the needs of the stakeholders. It is also important to prepare a stakeholder involvement plan with a detailed project plan. The third step is to establish effective two-way communication. The fourth step is to develop options for mutual gain. The fifth step is to disseminate information through the media and other networks.

In stakeholder analysis, it is important to determine what the stakeholders want, and their expected return on the investment. For the private sector, the project is primarily a source of revenues and a desire to administer social responsibility. The government wants efficient, reliable and robust services, and increased legitimacy and trust from citizens. The citizens want a one-stop service centre, in order to reduce costs and save time. Each stakeholder offers a beneficial advantage. The private sector can share costs and co-finance a project; and provide expertise in technology and project management. Government is the only body that can provide a legal framework, make decisions on access and pricing, and make rules for outsourcing and subsidies. Citizens' strengths are to express their needs and provide feedback on e-government plan.

The following factors are critical to the success of e-government programmes:

- Clear vision, goals
- Process re-engineering
- Strategic investment (i.e. starting small and moving gradually through stages, centralized vs decentralized system, open source vs proprietary software)
- Adoption of established standards and protocols – minimize customization
- In-house analysis and outsourced design, software development, data preparation, and training
- Strong administrative and political leadership
- Awareness on the benefits of e-government among civil servants and political leaders
- Awareness creation and training among citizens, senior civil servants, project leaders, political leaders
- Technical training for project leaders, clerical staff, citizens

- Willingness to share information between agencies
- Partnership with private sector, civil society organization (CSO) and other government organization
- Participation of citizens
- Locally relevant content/services designed and implemented to suit the needs of the community
- Technology options that provide affordable and universal local connectivity, including the use of multimedia

She presented the case study of a project in Maharashtra, India. In order to facilitate the Warana Group of Cooperatives in the sugar cane production process, the project established 54 village information kiosks. The kiosks were used for yearly registration for plantation and issuance of harvesting permits and payment information. The objectives were to increase efficiency and productivity of sugar cane cooperative; provide a wide range of information and services to 70 villages around Warana in local language about crops and agricultural market prices; provide information on employment schemes of the Government of Maharashtra; and provide educational opportunities through e-learning application. The stakeholders were about 50,000 farmers and 25 cooperatives. This project was a top-down initiative initiated by the Prime Minister's Office Information Technology Task Force. The software was developed by the National Informatics Centre in New Delhi. A positive result of the project was that between 30 and 100 farmers visit the kiosks daily. However, less positive results included: (i) some planned applications have not been implemented; (ii) information on sugar cane growing and agricultural prices is underutilized, and not updated; (iii) women are marginalized users because they were never trained to use the Internet; and (iv) the poorest labourers and tribal groups are not using kiosks because they do not need the services connected to sugar cane growing, thus in turn this group is excluded from governmental schemes offering employment. Overall, the project can be said to be only partly successful.

The second case study is electronic birth registration in Rajshahi, Bangladesh. A Birth Registration Information System (BRIS) was introduced on a pilot basis in Rajshahi City Corporation (RCC) as the province of Rajshahi recognized birth registration as a fundamental right for all children. The data is used to build a population database that can be shared with other public agencies such as the Department of Health for immunization and vaccination list, and the Ministry of Education. Before BRIS was put in place, government agencies had separate registration activities that resulted in data duplication and redundancies. The stakeholders in the BRIS project were government agencies including immigration, elections, educa-

tion ministry, statistics department and health services; and citizens who participated through representatives. The mayor of RCC was motivated and committed to this project. The results of the project were positive. The mayor of RCC was honoured at a United Nations special session on Child Rights. Citizens satisfaction rate was over 90 per cent. This project is also an example of a bottoms-up approach initiated by the local government. She concluded her presentation by emphasizing that “e-government is a process that requires a sustained commitment of political will, resources and engagement among the government, private and public sectors”.²

In the plenary session, a question addressed the issue of crime in e-government systems. She noted that cyber crime is an important issue, and that ABDI and ESCAP would be holding a workshop on this issue in the near future. In response to a question on identifying the needs of stakeholders, she replied that it is important to hold meetings with various stakeholders at various stages of a project because each component of a project might involve different stakeholders. A participant suggested that the funding arrangement plays a large role in stakeholder analysis. She agreed, and said that first it is important to determine the objective, and then choose appropriate approach. For example, one can organize a meeting of potential donors to match the project with the interest of potential donors.

D. Developing local e-government portals

***Mr. Teeratep Sosakul, IT Consultant, ADBI,
Mr. Panrit Tosukhowong, IT Consultant, ADBI***

Mr. Sosakul stated that the objectives of this presentation were for the participants to develop a local e-government portal, pilot test it, and refine the functionalities. Mr. Sosakul said that those who design the best web portal would receive a free web camera to be used in video conferencing. He defined a web portal as a web site that provides a starting point, a gateway, or portal to other resources on the Internet. In other words, it is a collection of links to another web site. Mr. Sosakul showed examples of e-government portals from Canada, Singapore, and Australia. He emphasized that the aim of this session is to create portals whose target is the local government at the district or community level. He explained the functionalities and services available on a government portal. These were:

- News
- Events

² Pacific Council on International Policy. *Roadmap for E-government in the Developing Worlds: 10 Questions E-government Leaders Should Ask Themselves* (Los Angeles, U.S.A.), p. 26.

- Weather forecast
- Community forum
- Government information
- Payment of taxes, utility bills
- Meet the experts
- Online registrations
- Education and training
- Communication
- Health services
- Photo shop
- Job market
- Marketplace
- Banking services
- Advertisements

Mr. Lee, ADBI said that the participants were requested to choose one of these functionalities to include in their own portal.

Mr. Tosukhowong led the second part of the session and instructed the participants to follow the following steps in order to create their own portals:

1. Name the Portal
2. Change News Content
3. Customize Weather Forecast
4. Add an event
5. Change Local Government Info
6. Change Site Template

After each participant had completed the design of a portal, Mr. Tosukhowong prepared the participants for a session in which they would experiment with video conferencing, and understand its usage in e-community centres or e-government. Participants were divided into four groups. Two groups would simulate a video conference. The first video conference exercise was a mock consultation between a doctor and patient. The second exercise was a mock consultation between an agricultural expert and farmer. After the video conferencing exercises, participants were asked to evaluate the exercise. Technical problems mentioned by the participants were that the voice and image do not occur simulta-

neously, and that there is a delay. A participant mentioned that video conferencing could be useful when conducting loan negotiations with international organizations, but that people in rural communities were not trained to use such equipment.

At the end of the instructional session led by Mr. Sosakul and Mr. Tosukhowong, the portals designed by the participants were evaluated. Three portals were designated as exemplary. Mr. Slahuddin from Indonesia, Mr. Acharya from Nepal, and Mr. Dehua from China were presented with the award for best designed e-government portal.

E. Citizen-centric e-government: empowering the poor through innovative technology

***Mr. Jonathan Kushner, Global Accounts Executive,
Public Sector, Microsoft Asia Pacific***

Mr. Kushner began his presentation by emphasizing that ICT plays a critical role in stimulating economic growth. ICT is widely recognized as a key enabler of all industry segments. When examining the economies in the Asian and Pacific region, the role of ICT varies. In Indonesia ICT accounts for 0.5 per cent of the GDP, while it is 1.5 per cent in China, 2.5 per cent in India and to 4.0 per cent in the most advanced economics such as Singapore and Australia.

Mr. Kushner described key policies in e-government. Through the use of e-government, governments can develop and stimulate local economic growth, develop and maintain an educated workforce, ensure equal access to services, help to deliver social welfare, ensure community safety, and support an open society.

Mr. Kushner said that the implementation of e-government involved many stages. Each stage reaches a different level of service coverage, service delivery, and geographic coverage. The stages are:

- Stage 1 Emerging – official government online presence is established
- Stage 2 Transactional – users can actual pay for services and other transactions online
- Stage 3 Interactive – users can download forms, e-mail officials and interact through the Web
- Stage 4 Enhanced – government sites increase and information becomes more dynamic
- Stage 5 Seamless – full implementation of e-services across administration boundaries

Mr. Kushner outlined the challenges faced in implementing e-government, which were:

- Blending new and existing technology
- Establishing the value of e-government
- Localization
- Limited resources
- Adoption and sustainability
- Citizen access and participation
- Internal technical expertise

In order to address these challenges the following lessons have been learned (at Microsoft):

- Interoperability frameworks and mechanisms to bridge legacy systems
- Integrating e-government into core government missions
- Innovation of indigenous language
- Improving internal efficiencies
- Public-private partnerships
- Outreach and resource models
- Digital inclusion

Mr. Kushner explained that governments are in the process of moving from an organization centric approach to a more task oriented approach. Traditionally, the citizen must have many interactions with multiple agencies and access to multiple web sites to complete one task. Presently, many governments are beginning to make it easier for the citizen by creating one government portal in which all departments and ministries are linked. As the process of evolution continues, information is seamlessly exchanged through XML (extensible markup language). As the usage of web services increases, government organization becomes more transparent, and the citizen has a much easier time navigating government portals because they need to input data in only one location to get services. For example, if a citizen in New Delhi wants to change his address, through a traditional approach, he would need to give notice to the tax revenue department, the postal service, social services, and education ministry. It would be significantly easier if the citizen could notify the government of his address change only once, and automatically all the ministries, departments, and governmental organizations were notified and updated.

Mr. Kushner said that e-government can also be a tool for trade facilitation, and presented a case study on the Poland Ministry of Finance. In order to gain membership into the European Union, Poland had to enhance its customs processes. The Government of Poland had to ensure control, detect fraud, and facilitate free movement of goods. The solution was to build one integrated Customs and Tax system through an XML based customs gateway. The results were positive and beneficial. This electronic system improved cross border security while facilitating legitimate trade, eliminated paper based processes, reduced processing time from 15 to 2 minutes, with 20 per cent fewer errors by eliminating multiple data entry. A second example of an e-government system that facilitates trade is UNeDocs (United Nations electronic trade documents), an electronic trading system. According to projections by the World Bank, UneDocs are expected to increase intra-APEC (Asia Pacific Economic Cooperation) trade by US\$ 250 billion, and on average, APEC countries can expect a 4.3 per cent increase in per capita gross domestic product (GDP).

The Australian tax office system is a third example in which ICT provided a solution to facilitate trade and business among small and medium-sized enterprises (SMEs). In Australia, SMEs had a heavy administrative burden because they had to deal with multiple agencies at all levels of government. The solution was to implement an XML system in which the Australian Business Registry (ABR) could interoperate with all federal, state, and local agencies that serve and regulate the business community. In Spain, ICT played a significant role in bolstering economic growth in the tourism sector, and facilitating business procedures for SMEs. The government of Spain created a single Spanish tourism portal in which 'Content Factory' aggregates information and services from public and private sectors using XML Web services. It quantified, coordinated, and personalised tourist information in nine languages and multi-media formats. Lastly, Mr.Kushner referred to the Bhoomi project in India. In this successful project, information kiosks deployed in the state's 177 subdistricts provided 6.7 million farmers with instant access to 20 million land records spread over 27,000 villages. The benefits of this system were numerous and included: exploitation of the farmer was prevented, land records were accurate and instantly accessible, time waiting for change requests was decreased, and private sector received data for marketing farm products.

Mr. Kushner then introduced the various programmes that Microsoft provides to bridge the digital divide, which include Partners in Learning, Unlimited Potential, and Technology Innovation. Partners in Learning and Unlimited Potential aim to improve technology access and training in the community and classroom. Mr. Kushner emphasized that education and training is about making e-government citizen-centric. Technology Innovation refers to the various technologies that Microsoft is developing at the

moment. Microsoft is working on local language programmes aimed at facilitating and enabling linguistic and cultural groups to benefit from ICT advancements. Currently, there are 76 languages offered worldwide. At the moment, India is receiving much investment from Microsoft including 150 projects and the deployment of 7,000 kiosks. Such ICT projects are providing the following benefits:

- Provide health services to previously inaccessible areas
- Extend Government services and provide an open communication channel
- Give farmers access to best market prices
- Print astrological charts
- Increase livelihood options
- Empower women
- Communicate with family members in other villages
- Give artisans access to regional, national, and potentially global markets

Based on Microsoft's experiences and projects in India and other countries, specific factors have been found to contribute to the sustainability of kiosks. These are: connectivity, access device, services, business model, and abilities of kiosk operator.

In the discussion session that followed, Mr. Kushner was asked how to move to seamless interaction in the more advanced networked economy. Mr. Kushner replied that no country has yet moved to a completely seamless state because it is a long process of evolution. The participant from Cambodia mentioned that his government has been working with Microsoft in establishing a Khmer Unicode platform and developing applications for this platform. The problem is that these applications can only be used with the most current and advanced hardware, but most people in Cambodia cannot afford newer computer hardware. Mr. Kushner replied that dealing with older personal computers (PCs) was indeed a difficult issue because one has to balance between affordability and developing more advanced technology. He added that this issue can be solved on a case by case basis, and that Microsoft is committed to provide affordable hardware and localization. Another participant asked Mr. Kushner which factors in addition to business process reengineering (BPR) are necessary for seamless e-government, and how Microsoft promotes these factors. Mr. Kushner replied that open standards and technical standards are additional important driving factors towards seamless government. He said that in order to promote open standards, Microsoft is an active participant in organizations developing standards on intellectual property.

F. Preparing a project proposal for external assistance

Mr. Hun Kim, Director, Social Sectors Division, SASS, ADB

Mr. Kim began his instructional presentation by stating that it is possible to secure financing for an e-government project from various sources. In the case of developing countries more financing can be obtained from multilateral agencies such as ADB, World Bank, and the European Union. Furthermore, there are a number of bilateral agencies in each country that can be contacted for financial resources. Many international and non-governmental organizations (NGOs) provide grant financing for projects that are consistent with their vision and strategy. However, for local governments in developing countries, the best method is to secure financing from local banks. Mr. Kim said that in ADB, Policy Programme loans are best suited to finance e-government programmes because these loans have an administrative reform component. Equity investments are provided in partnership with the private sector. ADB also provides technical assistance grants for feasibility studies. Another source of financing may be obtained from trust funds such as the ICT Trust Fund financed by the Government of Japan.

Mr. Kim explained that ADB's project cycle consists of several stages. The first phase is the design phase which typically lasts 6-12/18 months. The first step in design phase is project identification. The second step is the preliminary design or feasibility study, and the last step is the appraisal during which an agreement on the scope of the project is reached. The next stage in the project cycle is the implementation phase. The project proposal is largely dependent upon the feasibility study which must provide very thorough assessments, and demonstrate that the project is sustainable. In this Workshop, the aim is to prepare the project identification, a critically important step in the preparation of a project proposal.

E-government projects can be placed in two categories. The first category includes major infrastructure projects. The second category includes local government projects. Mr. Kim recommended that the project proposals contain a physical investment component including hardware not only software. He also said that cost effectiveness must be carefully considered.

Mr. Kim presented a sample project proposal from the Maldives. The Government of Maldives wanted to establish a wide area network (WAN) to connect government agencies, launch government portals, and set up Internet kiosks. Mr. Kim outlined the components of the project proposal:

- Rational/objective - must be very clear
- Project scope - including measurable outcomes

- Cost estimates – including foreign exchange, local currency
- Financing plan – including clear indication of funding sources
- Technical justification
- Economic justification – explains why this project should receive funding
- Environmental assessment – any negative environmental impacts
- Social impact assessment – includes impact on gender, the poor, stakeholder analysis, resettlement plan
- Implementation arrangements – must be based on a clear vision
- Implementation schedule
- Project risks – must be demonstrated so that effective management plan can be prepared

Mr. Kim recommended that a project proposal be prepared according to the following outline (figure 3).

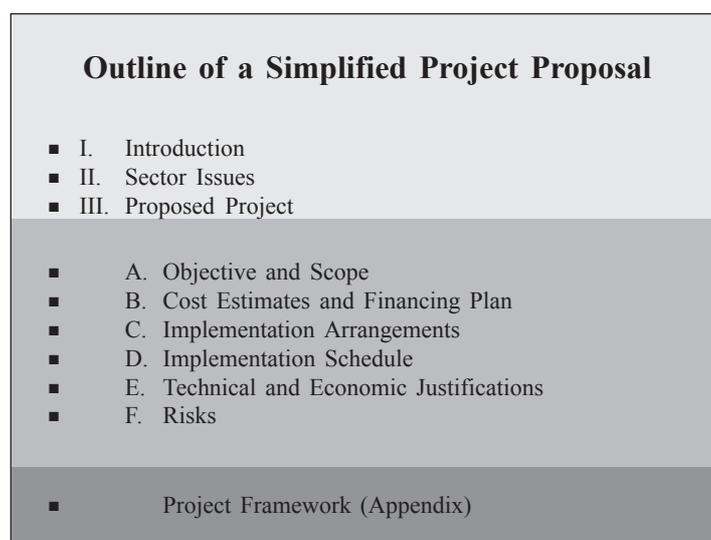


Figure 3. Outline of a project proposal

A question was asked for clarification on the difference between a project loan and a programme loan. Mr. Kim replied that a project loan is most often used to finance a project involving a physical output such as a highway or power plant. A programme loan is used to finance projects which result in policy changes, and not physical outputs. Mr. Kim was asked whether it was possible for a database project to be financed by an ADB grant rather than a loan. Mr. Kim replied that ADB mostly provides

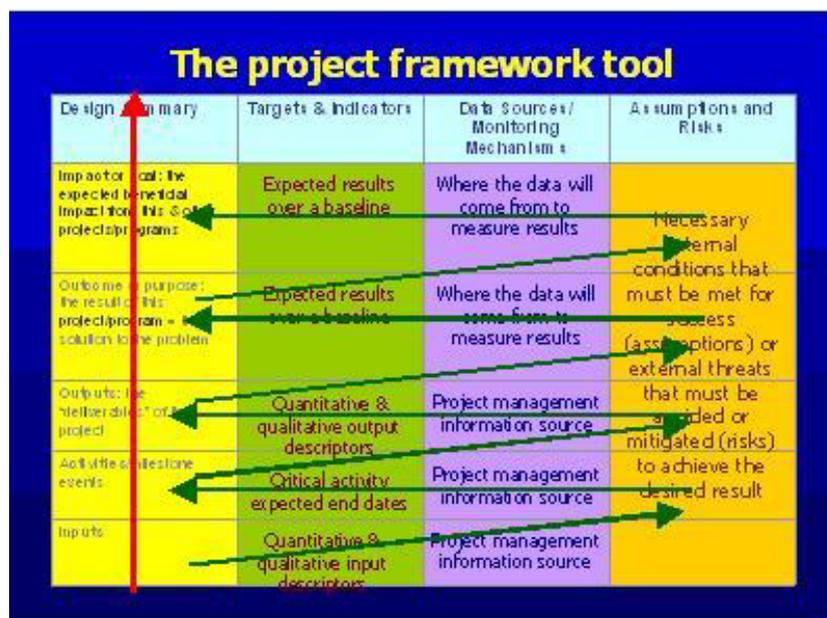


Figure 4. Project framework

loans, thus grants are very limited and mainly provided for feasibility studies, and limited capacity building. He suggested that if a particular project clearly demonstrates its impact on the poor, it may be possible to procure financing from trust funds.

Mr. Kim added that a project framework should be used as a tool to summarize the project proposal (figure 4).

The project frame-work should include the following:

1. **Impact** – Statement of desired medium term impact that is partly, but not exclusively, attributable to the project or programme.
2. **Outcome** – Beneficial result that follows from having successfully solved the problem. The outcome should be directly attributable to the project (subject to assumptions and risks) and be evident at or near completion.
3. **Output** – Includes the tangible and intangible goods and/or services produced by the project.
4. **Activities** – Groups of time critical tasks carried out using project inputs in order to produce the desired outputs.
5. **Inputs** – Main resources required to carry out the project (financial and human).

6. **Assumptions and risks** – Conditions necessary for the cause and effect, but not controllable by managers. Risks are potential adverse effects.
7. **Target** – Timebound and desired level of achievement for a result area.
8. **Indicators** – Measures to be used for determining the level of achievement of a result area.
9. **Data sources and monitoring mechanisms** – Sources of data for measurement of attainment for each/indicator.

Mr. Kim asked that the participants create similar frameworks for their project proposals and provided the project framework for the Maldives project as an example.

G. Job training and job placement services for rural economic development

*Mr. Kyosuke Yoshimura, Learning Solution Executive,
IBM Global Services Asia Pacific*

Mr. Yoshimura began his presentation by emphasizing that successful realization of e-government requires tremendous resources including ICT training. Job training and ICT training are especially critical to the development of rural and poor communities.

Mr. Yoshimura explained that actions taken by the Regional Centres for Rural Development located in the United States of America could serve as a useful example in analyzing the significance of rural development centres in ICT training and e-government implementation. The Northeast Regional Centre in the United States set forth specific goals in order to bridge the economic gap between small rural communities and large urban centres. The first goal was to improve economic competitiveness, diversity, and adaptability of small or rural communities. In order to achieve this goal, focus was placed on information linkages that increase rural urban integration. The second goal was facilitating development of policies that enhance the well being of rural people and small towns. This required that rural areas have adequate independent services. The third goal, increasing community capacity to deal with change, could only be achieved through education and training. The fourth goal was to increase social viability, and the self reliance of communities. The fifth goal was linking natural resource industries, including agriculture with community and environmental resources. Mr. Yoshimura indicated that the goals and actions undertaken by the Northeast Regional Centre highlight the importance of focusing on local needs, local characteristics, and local resources.

Mr. Yoshimura said that e-government needed to have an integrated management system to form communities of interest to address key issues across the government and private sectors. Rural development centres supported local government capability to form these communities of interest to address key issues. Communities of interest can be related to economic development, personal safety, or urban living. Each community of interest needs e-training in order to accomplish projects and receive the relevant services from e-government.

Therefore, central and local government face challenges to develop human resources. E-training centres need to have IT professionals to implement the system, and at the same time, officials and citizens need to be trained on how to use the system. Learners include citizens, workers (local industry and IT workers), students, community decision makers and leaders, and rural development professionals. Mr. Yoshimura defined e-learning as the process of learning using various technologies such as compact disk-read only memories (CD-ROMs), satellite, and the Internet. E-learning helps to implement e-government by using learning technology. Some advantages of technology based education and training are:

- Enhances learning performance
- Increases number of students
- Enables easy and fast credit transfers
- Reaches a broader segment of the population

Mr. Yoshimura said that a four-tiered learning approach was effective for education and training:

Tier 1	–	Learn from information
Tier 2	–	Learn from interaction
Tier 3	–	Learn from collaboration
Tier 4	–	Learn from co-location

Mr. Yoshimura presented a multimedia presentation as an example of utilizing e-learning technology to train new employees. In the video, a manager of a call centre trains and prepares his team to support a new product launched in half the normal time for training new employees. Through the use of e-learning technology including virtual classrooms, online call simulator, and virtual mentors, the learners or trainees progress quickly and are effectively monitored.

In the next part of the presentation, Mr. Yoshimura discussed job training and job placement services. As previously mentioned, local government faces challenges to develop human resources. E-training must be a part of job training. IT skills accelerate industry development and employ-

ment. Local economy leaders, IT professionals, students and citizens, and workers need to have basic IT literacy. In e-training, it is important to determine the adequate level of IT competency, and the number of people need to be trained. English proficiency is also a necessary part of an e-training curriculum. The skills and knowledge needed for rural economy or industry development are agricultural knowledge, natural resources, business, economy, accounting, trading, and education support.

As an example of an e-training programme, Mr. Yoshimura discussed the e-training programme administered by the Venezuela Ministry of Science and Technology. The Ministry established and developed a software workforce programme to improve its global competitiveness and encourage productivity with the use of e-business. The achievement of this IT training programme was the short turn around time of 6 months for the trainees. Participants or students in this programme quickly acquired the necessary IT skills needed to develop the software industry and generate revenue. In addition, training costs per student were low, and student drop out rates were lower than the industry standard.

The second example given was that of the Government of West Bengal Info-Literacy programme. The Government of West Bengal wanted to provide citizens with IT skills and higher education. The necessary infrastructure, education services, IT support services, and project management were successfully introduced. Microsoft's IT infrastructure and support services proved to be exceptionally reliable, and contributed to the success of the programme that impacted the economy by generating human capital for new IT employment and business opportunities.

The third example is the Japan Institute of Worker's Evolution (JIWE). The objective was to support citizen reemployment and provide a job placement support network. The challenge was providing support services to women who cannot visit the training location because of childcare. Therefore, JIWE needed to make employment information and e-learning services easily accessible at home. The solution was to provide an e-learning curriculum design consultation and a web site accessible instantly and at any time. The user friendly web based e-training content enabled development of IT skills for mothers at home.

Mr. Yoshimura said that a project plan for an e-training/learning centre requires a detailed plan on ICT workforce development and ICT curriculum. An e-training infrastructure necessitates a high performance backbone network. The infrastructure must provide the following:

- Local network for transmission of video, data, and telephone
- High speed secure connection to the Internet
- High speed secure access to WAN

- Connection to wireless access points
- Connection to university networks

In summary, Mr. Yoshimura suggested the following were necessary in order to design an e-training centre:

- Goals and leadership
- Learning project scope including funding, business model, measurement and motivation
- Project plan including proposal, feasibility study, resource planning and funding
- Project implementation including management of operations and maintenance

In the plenary session that followed, a participant asked if IBM planned to assist local governments. Mr. Yoshimura replied that IBM is ready to support projects at any level including central and local governments, or rural communities.

H. E-government and the digital divide: the Beijing experience

***Mr. Zhu Yan, Director General, Director General,
Beijing Municipal Office of Information***

Mr. Zhu said that the function of the Beijing Municipal Office of Information is to promote e-government. Beijing is home to the leading software industry in China. However, Beijing is severely challenged by a digital divide and inadequate distribution of ICT among the poor. Currently in Beijing, there are 147 television sets and 68 computers per 100 families; 8.5 million consumers of fixed network telephone, 13 million consumers of mobile phones, 4 million Internet users, and 1,500 families have access to Internet with broadband. Two thirds of the population lives in rural areas with low digital capacity. People living in rural areas especially housewives, the middle aged and elderly, and less educated lack access to ICT.

Mr. Zhu presented the results of the China Internet Development Statistics Report 2005. According to the report, less than 30 per cent of the Chinese population uses the Internet. When asked why they don't use the Internet, 40 per cent of respondents to this survey replied that they do not use the Internet because they do not know how to use it, 30 per cent said they lack the equipment, and 16 per cent said they are not eager to use the Internet because they believe it is useless for them. Only 11 per cent of the respondents said they planned to connect to the Internet in the future. In order to narrow this digital divide, the city of Beijing is taking the following measures:

- Adoption of the Tenth – Five Year Plan to develop ICT capabilities in rural areas
- Special Programme for Construction of Digital Olympics - goal is to construct a information infrastructure and functional mobile network
- Set-up official government portal - currently 300 applications issued
- 600 digital kiosks already set up
- 83 non-profit computer centres
- Develop infrastructure in rural area
- Build schools and campus network
- Establish agricultural product and market information portal
- Provide IT training
- Establish community service web site and call centre
- Plan to have one million new families connected to the Internet

Mr. Zhu said that the main issues to be addressed in order to bridge the digital divide are insufficient supply of ICT technology by the government, lack of demand among citizens, and financing. The future action plans aimed at promoting and implementing ICT and e-government are:

- Reinforce investment in infrastructure of rural areas
- Launch special projects in education and training in rural areas
- Promote Digital Hope Programme to provide access to technology for the disabled
- Attract private sector investment

In the discussion session that followed, Mr. Zhu was asked to elaborate on the Digital Olympics Programme. Mr. Zhu explained that this programme required Beijing to build facilities and provide an advanced ICT system to support the Olympics. He added that Beijing would like to take advantage of the Olympics programme to develop and renovate the city's information infrastructure including integrating government call centres; creating an information portal for citizens and visiting athletes; promote e-commerce, and the service industry; and train citizens to enter the information age. A participant asked which sources provide the budget for e-government development in Beijing. Mr. Zhu said that the majority of the budget is provided by the city government, district

government, and country government. About 30 per cent is outsourced to a company, but owned by the government. A question was raised in regards to the definition and exact percentage of rural area in Beijing. Mr. Zhu said that in the past, rural citizen referred to farmers, but now many urban people reside in rural area, therefore two thirds of the area in Beijing is considered as rural. A participant asked about the major sources of revenue for the Beijing municipality. Mr. Zhu replied that revenue derived from income taxes is shared by the central government, city, and district or county government. The other tax is value added tax. Another participant asked whether Beijing e-government includes computerization of tax records and accounting. Mr. Zhu replied that the state government tax office, and local government tax office have separate data systems. The local Beijing government tax office is computerized and enables tax applications to be done electronically, but this is not possible with the central government tax office.

I. Building e-government in Japan

***Mr. Shuichi O. Takano, Director, Administrative Management Bureau,
Ministry of Internal Affairs and Communication, Government of Japan***

Mr. Takano introduced e-government in Japan by outlining the significant information policies within the national administration. These are:

- Disclosing government information
- Making greater use of ICT
- Protecting personal information

Disclosing government information through e-government ensures transparency in public administration and requires an information disclosure act. Making greater use of ICT provides better services to the public, and a simplified efficient public administration. Greater use of ICT also requires one-stop service business, business process reengineering; and standardizing, and unifying systems.

Mr. Takano provided a history of policies and programmes relating to e-government in Japan. In summary, these include:

- The Cabinet decision of December 1994 which initiated the Master Plan for promoting government wide use of IT
- The Basic Policy for the Promotion of Advanced Telecommunications Society adopted in February 1995
- The ICT Basic Law in January 2001 established the ICT Strategy Headquarters (ITHQ)

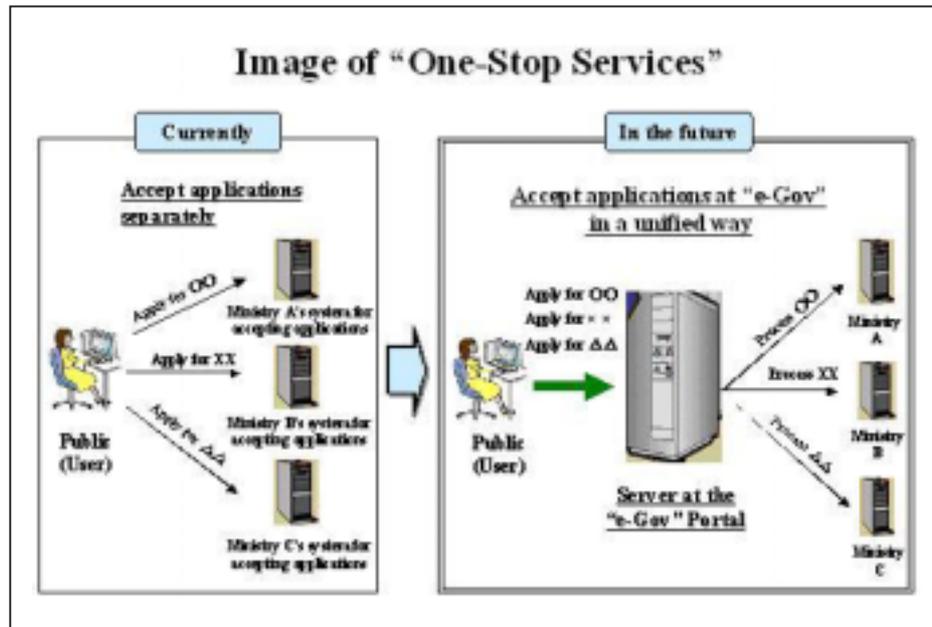


Figure 5. One-stop services envisioned for e-government in Japan

- The Council of Ministerial Chief Information Officers (CIO Council) established in September 2002 is the body for e-government initiatives
- The Programme for Building E-government put into place by the CIO Council decision in July 2003

Mr. Takano outlined the programme for building e-government in Japan. The goals of the programme are to provide user-oriented administrative services, and materialize simplified public administration with high budget efficiency. The basic principles of the initiatives are to provide better services to the public, renovate business processes and systems, and develop infrastructure for building e-government. After the first year of the programme, major achievements were: renewal of the government portal, systems ready for online processing of applications, policy for developing administrative portal site adopted, and government operations were systematically classified. The future goals are to enhance the government portal to promote one-stop services, and accelerate use of online applications (figure 5). Mr. Takano said that the current system for one-stop services is inconvenient for the user because it accepts applications separately. The future planned system for one-stop services will be a single gateway in which applications are accepted in a unified way (figure 5).

The current network infrastructure includes a local area network (LAN) in all central government ministries, a wide area network (WAN) for the national government, and a local government wide area network (LGWAN). The “Kasumigaseki WAN”, the wide area network of the national Government, connects all government ministries. The common system operated by the “Kasumigaseki WAN” includes e-mail, electronic document exchange, and sharing of ministerial databases. It functions not just as a network, but also provides necessary information for policymaking. In April 2002, the “Kasumigaseki WAN” was interconnected with the LGWAN. E-mail services and electronic document exchange between the national government and local authorities are in operation. The Government Public Key Infrastructure (GPKI) enables online filing of applications and notifications for citizens. Within this system, Certification Authorities (CA) must ensure the safety and confidentiality of transactions. Mr. Takano said that the government is currently introducing a new optimization plan to improve performance of GPKI and the “Kasumigaseki WAN”. Initiatives are being taken to renovate business processes and systems in order to promote efficient and rational administrative operations. These are:

- Optimize systematically each of the 77 nominated areas of operations
- Reduce processing time and costs
- Build government-wide unified system
- Cut costs and streamline operations of old legacy systems
- Implement and evaluate optimization

The initiatives aim to build one unified system and maximize efficiency. Currently, each ministry has its own individual system of administration. In the future, however, all ministries will have one personnel and payroll system, one inventory management system, and one statistics system. The optimization plan also includes renovation of common operations. Currently, systems are developed and operated separately by respective ministries. In the future, there will be a unified and integrated system for common operations. Procedures for formulating an optimization plan include:

1. Sorting out current systems of business processes
2. Formulate a review policy of business processes and systems
3. Design future architectures
4. Formulate an optimization plan

The steps for carrying out an optimization plan are:

1. Study renovation feasibility (for legacy systems)
2. Report to, and advice from, Assistant CIO Council (for legacy systems)
3. Make study report (for legacy systems) public
4. Formulate a review policy or an optimization plan
5. Get evaluation and advice from the Ministry Assistant CIO in charge
6. Report to, and advice from, Assistant CIO Council
7. Develop public comment procedures (for systems closely relating to citizens and companies)
8. Adopt a review policy or an optimization plan
9. Make the review policy or optimization plan public

Mr. Takano emphasized that an optimization plan is a transformation plan that needs to be documented in full detail. Full documentation is the key to optimization. Furthermore, initial budget investment in government information systems is high, but this will lead to better and more efficient optimization in the long term.

In the plenary session that followed, a participant asked how the one-stop services portal will function. In response, Mr. Takano gave the example of registering your automobile and paying for car tax in one gateway. He added that it is important to provide a single interface for the user. A participant from Indonesia asked Mr. Takano for his suggestions on developing IT policy in Indonesia. Mr. Takano suggested that an IT system could connect the islands in the region, and that IT development required large investments. It was commented that the budget allocation for e-government in Japan is very high. Mr. Takano agreed, and said that the initial investments are high, but that the budget for maintenance of these systems will be lower than the initial investment amounts.

J. Methods of assessing the information needs of the poor

**Mr. Wimal Gunawardena, Phd, Chairman/Managing Director,
TEAMS Consultants, Sri Lanka**

Mr. Gunawardena said that his presentation aimed to address the following questions:

1. Why do we need to assess information needs of the poor?
2. What are the information needs that need to be assessed?
3. What methods should be employed to assess information needs?

Mr. Gunawardena explained that over the past few decades a vast quantum of innovations in the field of ICT have increased access to vital information. However, in most of the developing countries, the access to ICT based information is limited to a very small segment of people with a high income. In these countries, the poor have little or no access to ICT based information due to the lack of social innovations. An innovation to increase ICT usage, and provide services to the poor, is the assessment of real-world information needs of the specific target groups of the poor. The information services to be provided should be people-centred and demand driven.

Mr. Gunawardena explained that when a community or government intends to establish community information centres (CIC), they must conduct an assessment of initial information needs. This initial assessment can be seen as a “kick off” information assessment and should focus on the wide range of information needs of the target population. These include their techno-social background, and data that would help to attract the poor to visit CICs and contribute to the establishment of a community information network (CIN). Mr. Gunawardena emphasized that providing services to the poor should be seen as marketing a product to a client. In addition to “kick off” or start up information needs appraisal, it is also necessary to conduct a continuous assessment of information needs to guarantee that the CIN continuously caters to the specific needs of the people who are patronizing it.

The most appropriate method of assessing “kick-off” or “start-up” community information needs is via an assessment survey utilizing a structured questionnaire. A group of investigators or interviewers with experience in this type of survey should be selected for the processing of the surveys. The survey questionnaire should be pilot tested to ensure that it is adequate and efficient for the purpose of the “kick-off” information assessment survey. The filled questionnaires should be edited and processed via data entry work. A second method of needs assessment is to conduct a series of focus group discussions among officials and opinion leaders.

For continuous information needs assessment, different methods should be undertaken. These include:

- Maintenance of registration forms of information seekers
- Maintenance of suggestion books at each information centre
- Periodical consultations with the steering committees of the CIN
- Establishment of e-communities among target groups
- Identification and continuous focus groups of small entrepreneur

It is vital for the CIN to maintain a suggestion book at each information centre. Steering committees could play a very crucial role in operating and sustaining a community-driven and needs-oriented CIN. The steering committees should be constituted of community leaders, officials working with the poor, NGOs, and representatives of the people. Information seekers of a community could be categorized into different subgroups or areas of interest where each sub-group is seeking similar type of information.

Mr. Gunawardena said the leading challenge in operating and sustaining a CIN in rural communities is that customers do not regularly visit the centres. Most people come once for a specific information on an irregular basis. However, it is possible to identify certain groups and motivate them to visit regularly. For example, there are small entrepreneurs engaged in activities such as mushroom cultivation, or sale of handicrafts. These small entrepreneurs could be encouraged to use the CIN and visit the community information centres regularly to acquire information on production capabilities and marketing information.

In closing, Mr. Gunawardena said that in order to determine specific information needs of specific target groups among the poor, social innovations in the form of appropriate information needs assessments are vital. Once the information needs of a target group are assessed adequately, it is feasible to provide ICT services relevant to poor communities.

In the discussion session that followed, Mr. Gunawardena was asked how to encourage rural people to provide information on their needs and consider the use of community information centres. Mr. Gunawardena replied that well trained investigators and simple questionnaires can successfully convince people to take part in the development of an information centre. A participant mentioned that there can be two types of assessments: one conducted by the private sector or vendor, and the other by the community or government. Mr. Gunawardena replied that the assessment should be conducted by the party who will prepare the services, and provide the information network in the future. However, if the community has already identified their needs, then these can be incorporated into the focus groups. A participant asked what type of information was most frequently demanded by rural communities in Sri Lanka. Mr. Gunawardena said that based on previous experience and research, information relating to employment opportunities was most in demand.

A participant asked how many private companies were involved in developing information centres. Mr. Gunawardena replied that private companies were not involved in the kind of information centres discussed in this presentation because these were pilot projects. Another question raised

was whether it was possible to conduct these assessment methods as a more simplified process, and at a lower cost. Mr. Gunawardena explained that it is important to conduct all steps in the assessment method, and added that the entire assessment approach, including all surveys and focus groups, is not costly in terms of manpower.

K. Conducive policy environment for e-government

Mr. Peter Chong, Corporate Attorney, Microsoft

In his presentation, Mr. Chong discussed conducive public policies for ICT/e-government from a macro perspective. He noted that poor communities are most disadvantaged by the lack of access to ICT. Therefore, there is a need to discuss and introduce policies that enhance the distribution of ICT, especially among the poor. Mr. Chong outlined the key challenges for expansion of ICT, which were:

- Accelerating broadband deployment
- Increasing research and development investment
- Embracing “any time, anywhere” learning
- Developing a world-class digital workforce
- Updating legal and regulatory systems
- Political will

Mr. Chong explained that the following policies are conducive to the development and deployment of ICT:

- Market liberalization - allow multiple ICT suppliers to enter the market
- Pro-competitive regulatory framework
- Policies that make online environment secure
- Policies that upgrade human skills through training

Market liberalization entails moving away from state monopolies and lifting restrictions on foreign investment and ownership of licenses to allow multiple telecom service providers to apply for licenses based on merit. It requires deregulation in order to promote competition, lower costs, and improve quality of service. Market liberalization should include the following:

- Market access for telecom service suppliers
- Deregulation - particularly in telecoms
- Liberalize fixed line and mobile sectors
- Allocate spectrum for wireless broadband devices

- Provide fast and affordable broadband access to allow citizens, businesses, and governments to connect over the public networks
- Permit end-users unfettered access to Internet content and applications

Market oriented and pro-innovation policies are crucial for investment in the e-infrastructure since it will be delivered by the private sector. Pro-innovative policies that stimulate new business are:

- Minimized business regulations/red-tape
- Tax breaks for initial start-up years
- Government seed money for rural IT projects
- Rural banking and micro-credit for entrepreneurs
- Removal of cultural roadblocks to entrepreneurship
- Encouragement of private investment, research, and development in new generation technologies
- Tax credits and other incentives
- Good governance
- Domestic laws and policies administered in a transparent and fair manner

Mr. Chong noted that it is critical to pave the way for small business owners/entrepreneurs towards the establishment of e-community centres by ensuring minimal business regulation, and minimal costs for startup. An example of minimal business regulation and reducing costs would be a one-stop online application system for business licenses. Such an integrated system was recently introduced in Singapore. As a result, costs for incorporating a new company were significantly reduced, and the process was completed in two hours instead of several days. Additional aspects of the business environment that encourage innovation are good governance and non-discrimination. Mr. Chong defined good governance as domestic laws and policies administered in a transparent and fair manner. Non-discrimination can be defined as domestic regulations that do not discriminate against foreign and national service providers.

The second set of policies relate to a pro-competitive regulatory framework. The framework should consist of the following principles:

- Industry-led, voluntary open standards
- Technical specifications which enable interoperability, interconnection, data exchange
- Merit-based procurement

- No preferences for specific technology solutions or platforms
- Technology neutrality funding for research and development
- Interoperability between hardware and software
- Key component of e-government initiatives
- Promotes choice, competition and innovation

Mr. Chong gave the example of Hong Kong, China. Hong Kong, China adopted open standards and an interoperability framework to assist the Government in defining interfaces between their applications, and developing a common Chinese language interface. The open standards policy and interoperability created a citizen-centric seamless e-government in which the government worked as a single organization with seamless flow of information across different government departments. As a result, the Hong Kong, China citizen can go to the Government web site to find a job, take part in the electronic tendering system, or book a registration date for marriage.

Policies that maintain a secure online environment are the third category of policies that are key components of e-government initiatives. Security requires protection of digital commerce, network security, and intellectual property regulations. Digital commerce is threatened by spam, convergence of hacking communities, and other online fraud. Network security is guaranteed through cybercrime legislation.

The following are steps taken to secure digital commerce:

- Technology and training
- Industry self regulation through sharing of information on wrongdoers
- Legislation and policy initiatives including criminal deterrence
- Enforcement

The legal framework established by the 2001 Council of Europe Convention on cybercrime, and approved by APEC, provides measures to monitor cybercrime. A secure online environment also requires encryption and authentication. Encryption improves online security and increases consumer confidence. For example, in Hong Kong, China, the Electronics Transaction Ordinance of 2000 provided a clear and conducive legal framework in which electronic records and digital signatures are given the same legal status as paper counterparts. The ordinance also lays the framework for voluntary recognition scheme for certification authorities to operate freely.

Mr. Chong said that e-government systems need to provide protection of personal information or privacy by conforming to international treaties, the Organization for Economic Co-operation and Development

(OECD) guidelines, and the APEC framework. Furthermore, patent and intellectual property legislation can secure contents of the Internet, and protect the consumer from counterfeiting and illegal goods. Mr. Chong concluded by emphasizing the significance of the Brunei goals for the vision and future of e-government.

In the plenary session that followed, Mr. Chong was asked to provide suggestions on how to develop a competitive regulatory environment in small countries of the Asian and Pacific region. Mr. Chong replied that the same principles of regulation apply to large or small countries. Companies must be motivated by economic incentives to enter the market, provide a level playing field, and make a massive investment. A participant from Sri Lanka mentioned that certain policies critical to ICT development among the poor were not mentioned in the presentation. The participant said that ICT literacy in the government, and affordability of computers are challenging policy issues. Mr. Chong replied that these were indeed important challenges, and that the industry has the responsibility to provide hardware and software at reasonable prices. Microsoft has a programme to provide software for first time users at a low cost, as well as a local language programme which helps to bridge the digital divide. He added that educating governments on the economic benefits of information technology is a demanding task and challenge.

L. The challenge of implementing e-government in Yokosuka, Japan

***Mr. Satomi Hirokawa, Chief, Information Policy Division,
Planning and Coordination Department, Yokosuka City Office***

Mr. Hirokawa provided a brief introduction to the city of Yokosuka. The city of Yokosuka is located approximately 50 kilometers south of Tokyo, and is home to the Yokosuka Research Park, a centre of international research and development on information and telecommunications technology. Mr. Hirokawa said the purpose of the Yokosuka city e-government programme is to enhance the quality of city services to attract additional residents, and compete with other cities. The city of Yokosuka has achieved this purpose by instituting the following measures:

- Promotion of citizen cooperation
- Advancement of information transmission capacity
- Reformation of city administration
- Advancement of administration services

The strategy employed by the city of Yokosuka for developing e-government is based on the balanced scorecard method. The stakeholders of the e-government include taxpayers or members of society, citizens; compa-

nies or suppliers of goods and services; and administrative staff. Mr. Hirokawa emphasized that maintaining a balance among the four stakeholders is critical to maintaining the information infrastructure.

An IT infrastructure promotes economic activity and effective administration providing citizens with adequate services. The information infrastructure is organized into seven layers from bottom up. Each component or set of services contributes to the successful and efficient e-government in Yokosuka city. These include:

- Social consensus on rule and manners
- Support services
- Storage and retrieval services of data and content
- Application services
- Authentication services
- Secure Internet services
- High speed affordable telecommunications service

Mr. Hirokawa noted that the city government is a public service industry and the mission is customer satisfaction. The competence of the local government in serving the citizens is placed into two categories. The first category is overt competitiveness such as staff's attitude and explanations; notice boards; and response time for services. The second category is covert area of competitiveness such as efficient administration, secure management of personal information, and knowledge management.

In addition to the seven layered infrastructure and competence measurements for government administration, the Yokosuka e-government has an organized approach to IT policy (figure 6). In December 2000, Yokosuka city established the Yokosuka City IT Strategy Conference together with various entities in the industrial, academic, and government sectors to promote an IT vision. An e-City Government Promotion Headquarters consisting of senior managers and directors of Yokosuka City Hall, and a steering council of enterprise IT policies was organized within the city government.

The e-government of Yokosuka city includes an integrated geographic information system (GIS). The integrated GIS of Yokosuka city is intended to upgrade public services, promote information sharing within city government; and improve, and advance government businesses. As various maps and registers managed by different organizations of city government have been digitized and made available on the system, geographic information required by different public services is easily accessible and business efficiency is improved. The geographic information available online makes it possible for the public to access data on city planning, architecture, road construction, and urban planning. There are currently 80 kinds of information available to the public.

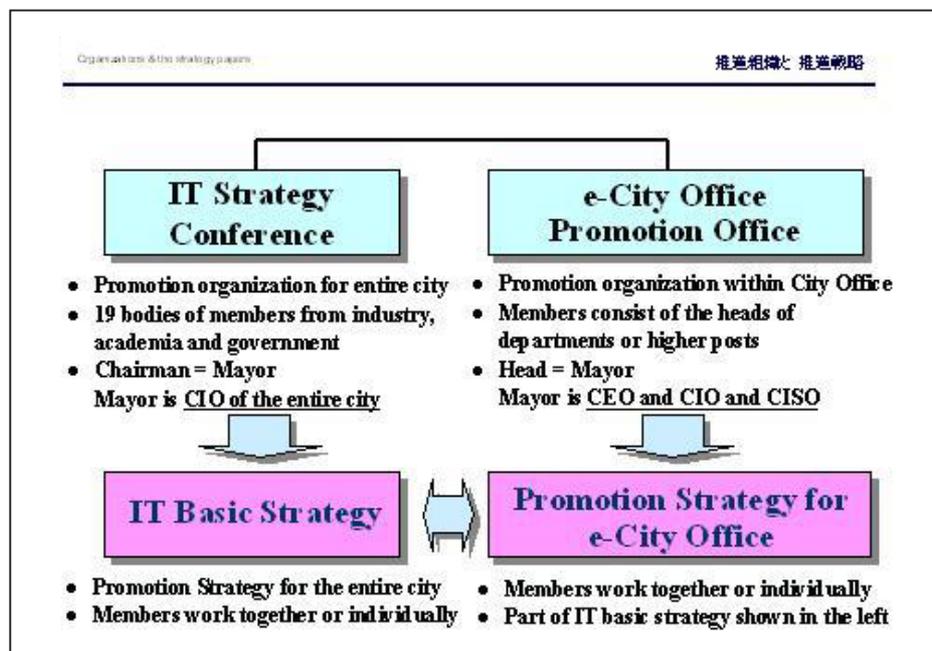


Figure 6. Organization of Yokosuka city e-government

Another function of the Yokosuka city e-government is to provide support and enhance the capacity of government to respond to natural disasters. Experimental operation of a disaster information network system began in 1997, and full operation began in 2003. In times of disaster, examiners equipped with a digital camera, cell phone and computer arrive at the scene, and over the Internet send information and images of the disaster to the rescue headquarter. At headquarters, the information and data are automatically consolidated and disclosed to all personnel. Secondly, the disaster information network assists in gathering and disclosing information on residents' safety so that people can confirm the safety of family instantly. Thirdly, a wireless service provides information on weather and disaster conditions by sending e-mail messages to mobile phones. The system effectively consolidates and widely disseminates various types of information.

Yokosuka city e-government includes an e-bidding/tender system that has been in operation since October 2003. The online tender system was implemented to automate simple manual processes such as the review of bidder eligibility and bid opening. In the e-bidding system, the Electronic Authentication Authority, and the Electronic Certificate Authority (CA) act as independent organizations that offer their certificate and authorization services. Unlike internal business systems where users are limited to internal employees, the online bidding system has external users such as the bidder.

The online tender system is easy to use and cost effective for the bidder who can participate in bidding without having to visit city hall in person. Since 2004, mutual usage of the online tender system by seven city governments has significantly reduced costs of transactions and operations.

Lastly, Mr. Hirokawa described the administration evaluation system which is part of Yokosuka city's vision for e-democracy. The system is designed to evaluate administrative activities, facilitate the planning of policies, and disclose policy information to the public. Two types of policy evaluations are provided to the public: evaluation of policies and measures; and evaluation of government work and services. Citizens can submit inquiries and comments in regards to the evaluations and policies. A bulletin board system (BBS) serves as a discussion board between citizens and government officials. Mr. Hirokawa said that in the future, the city of Yokosuka plans to establish a time efficient call centre for citizen inquiries, and a Smart Library.

In the plenary session that followed, a participant asked Mr. Hirokawa to recommend a system for mitigating flooding. Mr. Hirokawa explained that Yokosuka city has flood gates in the rivers that are monitored by the city office through remote control, while the city of Tokyo has a tank underneath the river. Mr. Hirokawa was asked if each municipality in Japan develops its own digital system or if there are standardized modules for the country. Mr. Hirokawa replied that the policy of Yokosuka city is to purchase as much off the shelf commercial technology from the vendors as is available. If it is not available, the city will work with the commercial vendor to develop and customize the technology from scratch. The intellectual property for the technology belongs to the vendor, thus the city can procure the software at a relatively inexpensive price. Mr. Hirokawa was asked for his suggestions on how to maximize the use of the GIS system in rural areas and poor communities. He said that in the case of Japan, the island of Shikoku and the prefecture of Kochi, which are rural areas, serve as good examples. In the Kochi prefecture, a GIS system combines information about road conditions between local government and police. The GIS system is also used with a satellite to find natural resources. Mr. Hirokawa was asked how the rates in e-bidding are kept confidential. Mr. Hirokawa replied that the online bidding relies on secure public key infrastructure (PKI) and secure socket layer protocols so that the transaction between bidder and municipality is protected.

M. Public key infrastructure initiatives for e-Asia

***Mr. Yeoul Hwangbo, Professor, Korea Advanced
Institute for Science and Technology***

Mr. Hwangbo provided a brief overview of e-government, PKI for e-government, and the cyber taxation system for e-government.

At first, he discussed the fundamentals of e-government. A defining feature of e-government is its contribution to the national innovation system. He explained that e-government can be analyzed in terms of supplier and consumer. When the supplier and the consumer meet in cyberspace, it impacts government innovation. From the viewpoint of the supplier we need to enhance private public partnerships, and from the consumer's viewpoint we need to create an uncomplicated interface for the citizen. E-government is multifaceted and entails the following: Government-to-Business transactions (G2B), Government-to-Citizen (G2C), Government-to-Government (G2G), as well as, Business-to-Business (B2B), and Business-to-Citizen (B2C). Mr. Hwangbo emphasized the significance of the OECD's 10 Guiding Principles for Successful E-government, and stated that these principles should be followed when designing e-government programmes. Mr. Hwangbo said that although e-government offers many benefits, it also poses many challenges for the users and providers. A leading challenge is the infringement of privacy and security. The United States, European countries and the Republic of Korea have addressed this challenge and have already been operating government public key infrastructure to ensure confidentiality, authentication, and integrity. The PKI is a fundamental to e-government because it provides a security infrastructure that enables government, citizens, and the private sector to conduct transactions online. Mr. Hwangbo gave the example of the Korean e-government. He said that the Korean government had successfully accomplished 11 e-government projects and 31 projects of participatory e-government. Services are effectively provided by the Korean e-government system because it is comprised of ubiquitous computing which allows the consumer to access the computer system at any time and from any place.

Mr. Hwangbo introduced the topic of PKI initiatives by indicating that although e-commerce offers numerous advantages, payment by credit card presents a dilemma. He said that credit card payments are risky because the customer's private financial information is not kept confidential, and can easily lead to crime. Therefore, identification, authentication, and authorization are critical issues. Identification can be defined as identifying who you are. Authentication means whether your identification is true, and authorization allows the transactions to be performed. Mr. Hwangbo stated that it is easy to identify and authenticate the person who conducts transactions in a store. However, over the Internet, the person behind the transaction is not directly identifiable. In the process of identification and authentication, several methods can be employed. However, each method has obstacles or limitations (figure 7).

Mr. Hwangbo explained that identification and authentication methods range from simple methods such as user names and password, to PKI which allows the agency to verify user identity. PKI can be said to be the

Identification and Authentication			
Methods	Description	Case	Obstacles
Password	What you memorize	ID, Residence Registration Number, Credit Card Number	Memory Limit, Outflow
Token	What you have	IC(Smart)Card, USB, CD-Key	Lost
Bio-information	The Features of human body	fingerprints, Eye Retina, Voice Analyzer, DNA etc	Immature Technology, Privacy Infringement
Location	Where you are	Global Positioning System(GPS)	Much Cost to establish the facilities
Certificate	Certificate that CA issues	Accredited Certificate	Expansion and Using

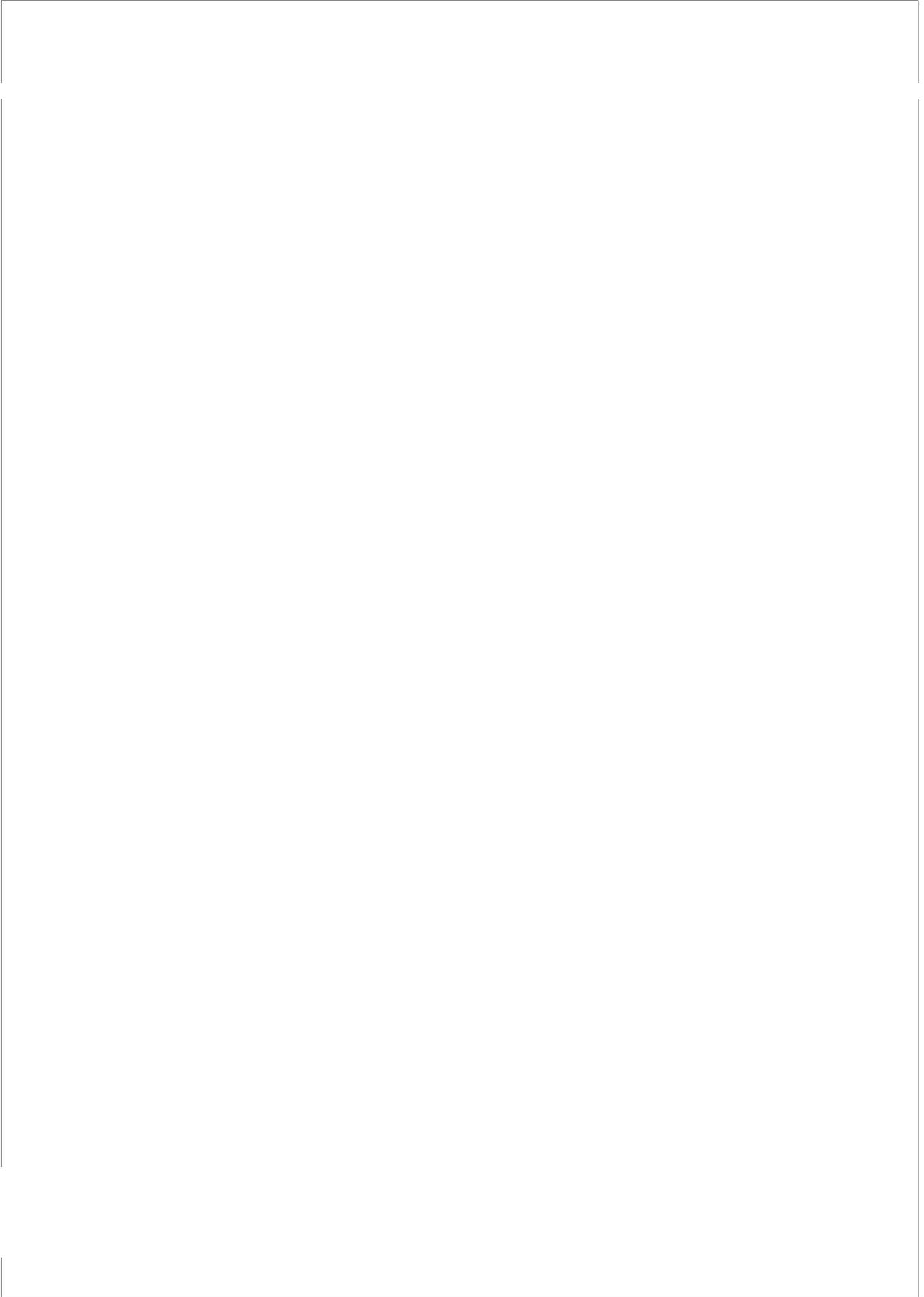
✓ Which is the best method of these for e-transaction?

Figure 7. Methods of identification and authentication

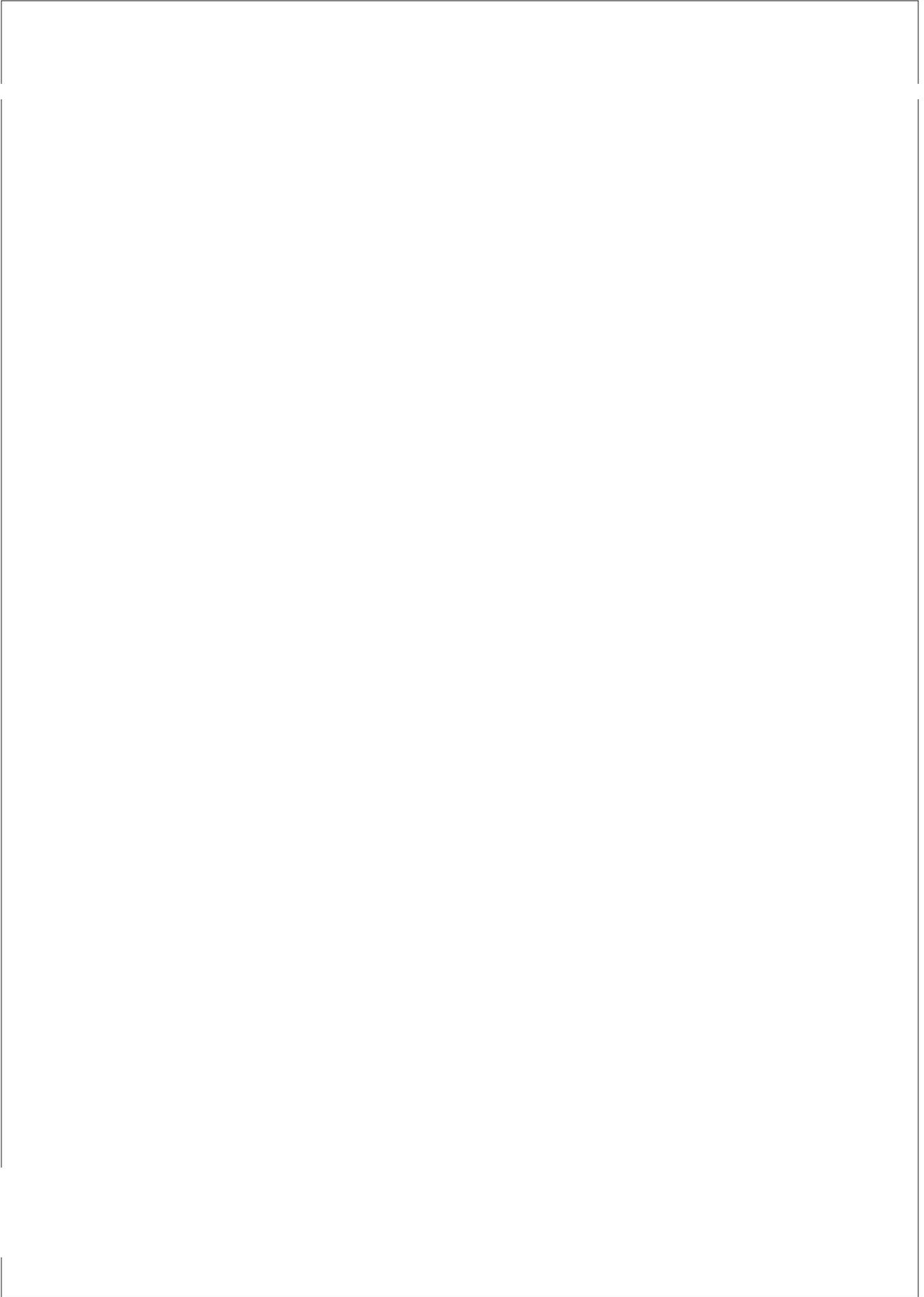
best method of ensuring identification and authentication. Mr. Hwangbo provided a brief overview of the operation mechanism of a PKI system. He said that in the past, encryption was done through algorithms. However, algorithm method is not possible for cyber transactions. Therefore, current encryption mechanisms are based on a key system. In the case of the Republic of Korea, PKI is divided into two systems: a government PKI, and national PKI. Such a system includes a certificate authority system that provides accredited digital certificates ensuring the safety of online transactions. Mr. Hwangbo emphasized that although digital certificate structure may be different depending on the situation of individual country, the acceptance of PKI is a must in the era of information society. However, successful implementation of a PKI system requires not only technology, but necessitates legislation and appropriate applications.

Due to time limitations, Mr. Hwangbo very briefly discussed cyber taxation in e-Asia. He said that the Internet has had a significant impact on tax administration, providing opportunities as well challenges. The challenges are difficulty of identity, obscure jurisdiction, difficulty of proof, obscure tax point, move to tax haven, and offshore banking. Such challenges create a serious dilemma in which tax evasion results in financial losses for a country. In conclusion, Mr. Hwangbo said that it is necessary to collaborate among Asian countries. In collaboration, proposals for relevant technology should be submitted to the Committee on Fiscal Affairs of OECD. Lastly, test-beds of Asian countries for global electronic commerce need to be established.

In the discussion session, a participant commented that multitude certificate authorities, as in the case of the Republic of Korea, might create confusion. Mr. Hwangbo replied that constructing a certificate authority system is determined by the specific attributes of a country, thus the number of certificate authorities might vary depending on the conditions and situation in the country. In order to avoid confusion, the most important component is interoperability between the system of the certificate authorities. A participant mentioned that political leaders in his country are reluctant or unable to make commitments to modernize government organization, which is one of the OECD guiding principles. Mr. Hwangbo said that in the case of the Republic of Korea, the educational sector and the government came together under the decision of the president to form a committee on e-government.



PART TWO
Summary of Country Reports



SUMMARY OF COUNTRY REPORTS

On the first day of the workshop, participants presented reports on the current ICT and e-government developments in their countries. The following section includes a summary of each country's report.

A. Bangladesh

ICT has been declared as one of the thrust sectors by the Government of Bangladesh. The prime minister heads a national ICT Task Force that includes members of the government, industry, and academia. The objectives of the National ICT Policies are to achieve transparency in all sectors of society, promote good governance, facilitate use of ICT, and develop, and deploy a large pool of world-class ICT professionals. The National ICT Policies aim to promote use of ICT by providing special allocations for ICT projects in the public sector, and training decision-makers in ICT use. The Government of Bangladesh aims to establish a legislative and regulatory framework for ICT issues such as intellectual property rights, security and protection of data, digital signature, and electronic commerce. The goals are to extend Internet facilities to all the district headquarters and subdistrict levels; provide the Internet in educational institutions and libraries; and ensure public access to information by setting up cyber kiosks in all post offices, subdistricts and union complexes.

Bangladesh has begun to pave the way for the implementation of e-government services. For example, the Finance Division has developed customized software for budget planning, sensitivity and impact analysis, and financial projections. The Bangladesh Bureau of Educational Information and Statistics (BANBAIS), the statistical wing of the Ministry of Education, has created a geographic information system (GIS). This map based software provides information on the density of educational institutions and other useful educational statistics. The Planning Commission has also established an Intranet file sharing facility through LAN, video conferencing, electronic notice board, and a digital library that stores policies. There are service centres for telecommunication in 64 districts and 464 sub-districts.

However, rural areas still lack access to adequate telecommunication services. Proper initiatives will have to be taken to utilize ICT systems in agro-based industries and agricultural research for dissemination of agricultural technology and agro-business development. A step-by-step plan is in operation. Numerous actions are planned to facilitate the introduction and implementation of e-government.

B. Cambodia

In August 2000, the Government of Cambodia established the National Information Communication Technology Development Authority (NiDA). In 2001, the Government of Cambodia enacted the e-Government Project. As a result, 27 ministries and governmental institutions are connected by one online network, and 76 communes and seven districts of the Phnom Penh Municipality are connected by the Internet. NiDA has offered ICT training courses to government officials, Phnom Penh municipality, and schools. An electronic approval system (EAS), resident registration system, vehicle registration system, and real estate information system will be introduced to execute the government administrative tasks. The population of Cambodia is 13 million people, and there are approximately 800,000 telephones. The total number of fixed line telephones in Cambodia is quite small with approximately 30,000 subscribers. Four mobile phone operators serve a total of 710,000 subscribers. Finally, there are six operating Internet service providers serving around 12,000 Internet subscribers.

The Government of Cambodia has promoted the establishment of the ICT infrastructure by encouraging investments of the public and private sectors. Most public servants are unable to carry out their duties properly due to the lack of basic facilities such as phone or e-mail services. In order to create a conducive environment for ICT development, the government of Cambodia need to focus on development of infrastructure, human capacity, enterprises, and contents and applications including use of local language and computer literacy.

C. China

China has recently undergone significant transformations in ICT development. In July 2004, the number of telephone subscribers exceeded 600 million, among which 299 million are fixed telephone, and 310 million are mobile phone subscribers. Internet service has been in operation since 1993. In July 2004, the number of Internet users increased to 87 million. The increase in Internet usage has been propelled with the presence of more value added service (VAS) providers. In 1995, there was just one VAS provider, but by the year 2000 there were more than 100 VAS providers. Policies and regulations have been established to create an environment conducive to the development of an ICT infrastructure. The Computer Information Network Link Policy Act was passed in 1997, China's Telecom Regulations was enacted in 2000, and an E-signature Act will take effect in April 2005. Approximately 303 cities out of 336 (90.2 per cent) have their own web site. Information service is still the main function of the web sites, and two-way interactions (online transaction) are still limited.

The Golden Projects are China's telecommunication and information infrastructure initiatives. These projects aim to expand the use of technology and build networks in the following areas: fiscal, tariffs, tax, audit, agriculture, social insurance, and employment services. Challenges towards implementing e-government include geographical inequalities and resources. For example, more than 20 per cent of cities in Western China do not have a web site. In the future, the Government of China plans to bring into operation a central government web site, reinforce IT training and education for civil servants, and popularize the use of technology among students and society.

D. India

The Ministry of Communications and Information Technology which was formed in 1999 is the nodal agency under which various related organizations work towards development of initiatives for advancement of IT in the country. The Information Technology Act 2000 of India, has provided legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication, commonly referred to as electronic commerce. The Government of India has set up a Centre for e-Governance (CEG). The primary activities of the Centre are to showcase the best practices in the area of e-governance, conduct programmes for creating awareness among decision makers in the central and state Governments, demonstrate the feasibility of concepts in e-governance to the decision makers through workshops, help the central and state Governments in defining and implementing policy changes, and to enrich the repository of best practices through continuous interaction with subject experts from India and abroad. India ranks at number 59 out of 71 countries on the E-governance Index (2004), and at number 50 on the Network Readiness Index (2002). In 2005, the Government unveiled the National E-Governance Plan (NEGP) with the following vision: "All Government services accessible to the common man in his locality, throughout his life through a one-stop-shop (integrated service delivery) ensuring efficiency, transparency, and reliability at affordable costs to meet the basic needs of the common man." Some examples of e-government services currently available in India are the following: land records are accessible at the village level through web-enabled GIS based records; and application, registration, tax returns, and payment of bills are conducted online. All Government ministries and departments have web sites. A National Informatics Centre has set up kiosks in remote parts of the country to advance the goal of computer education and to increase awareness on ICT. Research and development in e-governance has also been the focus of the government.

However, some issues need to be addressed for the actualization of the e-India dream: implementation of e-governance initiatives is very slow with long gestation periods and coordination among ministries in implementing e-government programmes is inefficient. Funding of all e-initiatives need to be sustainable in the long term. Issues of privacy and authentication also need sensitive handling. One of the major challenges to implement e-governance in India is providing e-services to 70 per cent of the Indian population that lives in rural areas. Future plans aim to deliver a SMART Government to the people i.e. (S) Simple, (M) Moral, (A) Accountable, (R) Responsive and (T) Transparent Government. The Government of India is committed to the actualization of the e-India.

E. Indonesia

In comparative terms, the provision of Indonesia's telecommunication infrastructure is underdeveloped. Singapore, Malaysia, Brunei, Thailand, and the Philippines have reached penetration rates of 125.84 per cent, 62.36 per cent, 65.92 per cent, 36.55 per cent and 23.29 per cent respectively, total as of December 2003. In Indonesia there were about 8.48 million fixed telephone lines and 18.65 million mobile telephone subscribers at the end of 2003, marking a 3.54 per cent penetration rate. As for the Internet user penetration rate, Indonesia reached only about 3.77 per cent, while those five countries mentioned previously achieved 50.43 per cent, 34.53 per cent, 10.23 per cent, 9.64 per cent, and 4.40 per cent respectively. The Government of Indonesia has advanced the following vision in regards to ICT development. It aims "to bring into reality a modern information society, which is prosperous and highly competitive, strongly supported by ICT". In order to realize this vision, the Government of Indonesia established the Ministry of Communication and Information (MCI) that has the responsibility to coordinate, formulate, and disseminate national policies and strategies for ICT development, promote usage of ICT, and oversee the implementation. The Government of Indonesia also formulated the National Information System Conceptual Framework ("Konsep Pengembangan Sistem Informasi Nasional – SISFONAS 2010"). This framework will provide the guideline for national and local government organizations in developing their infrastructure and information systems. The related implementation programme called the "e-Indonesia Programme" puts the priority on digitizing all the transactions and information for the National General Election Committee (KPU), Information System Programme for General Election, the National Cabinet (e-Cabinet) Programme, and the Financial System Programme (e-Finance). The Government of Indonesia is also preparing the "One School, One Computer's

Laboratory (OSOL)” for all schools in Indonesia. The Ministry of Communications and Information has successfully passed the Broadcasting Law No.32/2002. This law regulates the overseeing of broadcasting affairs through the Indonesian Broadcasting Commission (KPI) that is in the process of being established.

Despite significant progress in the development and use of information and communication technologies, Indonesia is still concerned with the growing digital divide. Some key issues include: raising awareness to create a new mindset; budget constraint; legal and regulatory framework suitable for a knowledge-based society; building an affordable infrastructure; providing affordable IT tools; creating a competitive investment environment for sustainable ICT development for the poor; expanding access-mastery-content of ICTs; and building human capacity in all fields of ICT. Indonesia has yet to build a national Internet gateway, and there is a shortage of relevant material in local languages.

F. Lao People’s Democratic Republic

In April 2001, Lao People’s Democratic Republic established the Telecommunication Act. Lao’s telecommunications development objectives are as follows: increase the deployment of national telecommunications infrastructure especially in regional and remote areas; provide the viable telecommunications sector with financial support from the private and public sectors, and aid agencies; improve the efficiency and effectiveness of telecommunications services delivered to end user; improve the cost effectiveness and to provide telecommunications services at affordable prices; and strengthen regulatory capability within the Government so as to ensure a high standard of sector governance and oversight of market participants. The basic ICT infrastructure of the country is still very limited and mainly available in urban areas. The current penetration rate of total telephone density (fixed and mobile) is 8 lines per 100 inhabitants. In order to upgrade the Lao broadband infrastructure, an optical fiber transmission network backbone has recently been commissioned. This provides 1,780 kilometers of fiber-optic cables linking all the major cities and trading centres of the country. This network will support high-speed communication and the extension of the provision of broadband services. The national telecom network is also supported by 155 megabit per second (mbps) microwave linkage throughout the country. Currently, fiber-optic cables are being installed throughout the country which will provide the basis for a future network of telecommunications centres. Despite these initiatives, the operation of e-government services is constrained by inadequate infrastructure, insufficient financial and human resources, low literacy, lack of awareness, and lack of coordination between governmental agencies.

G. Mongolia

Today, the Government of Mongolia considers the development of ICT infrastructure as one of the key factors for fostering economic development of the country. Foreign investments, technical assistance, and cooperation with technically advanced nations have enabled Mongolia to achieve significant progress in ICT development. In February 2000, a National ICT Committee headed by the Prime Minister laid out principal strategies to further ICT development by 2010. A legal framework consisting of IT general law, transaction law, e-government law, and e-signature law are currently in the drafting stage. The government of Mongolia, with assistance from the World Bank, has recently introduced the Government Financial Management Information System (GFMIS)

At present, Mongolians communicate locally and internationally using different telecommunication services that include: fixed line network (copper line and fiber optics), wireless communication (microwave links and cellular phones), and very small aperture terminals (VSAT) (Intelsat and Intersputnik systems). Cellular communication, which covers all provinces, is expected to grow at a faster rate than fixed line telephones. All provinces are connected to the capital city by digital technology and high-speed fiber optic transmission. Most state, city, and provincial administrations have their own web sites. The private sector, foreign donors, and non-governmental organizations play a major role in the development of ICT. Mongolia aims to bridge the digital divide through institutional capacity building of ICT policy and regulation, human resources development, outsourcing, building of infrastructure in rural area, and participation in the "Asia Broadband Programme".

H. Myanmar

As a member of the e-ASEAN framework agreement, Myanmar is carrying out expansion and modernization programmes in the ICT sector. An e-Application Committee under the leadership of an e-National Task Force has been active in promoting computer literacy through educational programmes. In sponsorship with the Ministry of Economy, Trade and Industry (METI) of Japan, an e-learning centre was opened at the Myanmar Information and Communication Technology Park (MICT Park) in Yangon. There are two Internet Service Providers (ISPs). One is fully governmental, and the other is semi-governmental. There are over 15,000 narrow-band (dial-up) users and over 7,000 broadband (asymmetric digital subscriber line (ADSL), wireless, satellite, LAN) users. Fourteen departments and organizations have web sites, and dial-up Internet users are currently registered in 20 towns, but the majority are in Yangon and Mandalay cities. The Ministry of Education has established e-learning centres with the aid

of satellite technology, and the Ministry of Health has networked hospitals and medical institutes in Yangon and Mandalay through fiber optic technology. Engineering and Computer Science universities under the Ministry of Science and Technology are utilizing dial-up access. The Ministry of Defense has started creating a wide-area network with fiber optic systems. However, the telecommunications network in Myanmar is limited in terms of bandwidth as most of the long distance links are analog and digital microwave radio is intended for voice communication. Telephone penetration is still low, below 1 per cent. To meet the bandwidth requirement for IT applications, cross-border land links, satellite links, and submarine fiber cable are planned. Myanmar intends to participate in the Great Mekong Sub-region Internet Infrastructure Development Programme, with cross border links planned at 2.5 gbps. In addition to financial constraints, commercial power shortage also creates obstacles for establishing mobile systems.

I. Nepal

The Government of Nepal's IT policy 2000 set out the following objectives: provision of computer education and Internet facilities for all by 2010; creation of computerized system and web sites for all governmental departments; promotion of e-commerce, e-education, and e-health; transfer of technology to rural areas; use of IT in all governmental activities; and provision of enabling legal frameworks. The policy vows to legalize e-commerce, introduce computer education in primary and university level curricula, and to create a fair environment conducive to IT development. Nepal Telecom, a government owned company, and six private companies provide fixed telephone, Internet, VSAT, satellite phone, and wireless local loop (WLL) systems. There are 23 Internet service providers (including dial up), and two broad band service providers. Nepal has 30 higher education IT institutes producing almost 500 IT engineers each year. However, several issues must be addressed such as limited telephone density, urban oriented PC ownership, low computer literacy, limited infrastructure, expensive connectivity, and unavailability of technical expertise.

For the infrastructure development, the National Information Technology Centre (NITC) is focusing on three areas such as: (i) development of IT Park where Nepalese and international IT companies can start operation for research and development; (ii) establishment of high speed connection throughout all the government bodies, having fiber optic backbone and VSAT connection, to support the quicker delivery of services to the citizens; and (iii) computerization and WAN link of Ministries, Commissions, Departments, and other government bodies. In the future, the Government of Nepal plans to establish broadband connectivity; develop databases and institutional capacity; create Intranet and transfer of technology; adopt in-house and vertical connectivity; and expand online services.

Likewise, 'Unicode' Nepali font, developed by *Madan* library, will be expanded in the public offices for standardization. Accessibility will be increased to the rural poor through rural telecommunications centre.

J. Pakistan

The e-government programme in Pakistan is an initiative under the National IT Policy that was approved by the Federal Cabinet in August 2000¹. The main objectives of this programme are: to provide greater access to government information and services; improve the internal efficiency of government operations, enhance public participation, and make government more accountable to citizens. It is expected to take 5-7 years to establish the basic infrastructure of e-government because of financial constraints as well as inadequate skills within the government to undertake system re-engineering of different government departments to minimize the use of paper-based systems. The Ministry of IT & Telecom assigned implementation of e-government to the Electronic Government Directorate (EGD), established in October 2002. The Electronic Government Directorate has evolved a strategy for preparation and implementation of e-government projects. Every year, a few projects falling in the below mentioned categories are implemented. The categories are: (i) providing government information and services through the government's web portal; (ii) enhancement of government functionaries' IT skills; (iii) setting up communications infrastructure within government organizations; and (iv) system re-engineering, and automation of government organizations. Realizing that the backend processes need to be streamlined for end user services, a major project is underway to connect all the Federal Ministries, and high impact applications have been initiated such as electronic access to statutory & case laws at District Bar Associations, and online recruitment system for Federal Public Service Commission (FPSC).

Considerable progress has been made to implement and enhance fiber optic connectivity in all parts of Pakistan as well as enhance the Internet backbone connectivity of the country. Internet access has augmented to more than 2,000 cities from just 29 cities five years ago. To facilitate e-commerce and other online transactions that require digital signature and authentication, the Electronic Transaction Ordinance was promulgated. Projects aimed at bridging the digital divide include the development of software in Urdu language, and establishment of rural kiosks at accessible locations. Challenges within the government are lack of technical expertise within the government, low technology absorption capability of the government, lack of familiarity with IT tools, and resistance to change. Therefore, numerous high principled actions are planned in the future.

K. Philippines

The development of ICT in the Government is traced to the issuance of Executive Order (EO) No. 322 on June 12, 1971 creating the National Computer Centre (NCC) under the Office of the President. In the 1990's, efforts by the Government of the Philippines brought important developments in the country's ICT environment, and strategic applications of ICT in government. In 2000, as amended by EO 18 dated January 2001, the Information Technology and Electronic Commerce Council (ITECC) was created by the merger of the National Information Technology Council (NITC) and the Electronic Commerce Promotion Council (ECPC). Executive Order No. 265 dated 12 July 2000 provided the adoption of the Government Information Systems Plan (GISP) or the Philippine Government Online as a framework and guide for all computerization efforts in the government. It envisions an electronic bureaucracy that is widely and readily accessible to the Filipino people. The Republic Act No. 8792 or the Electronic Commerce Act dated 14 June 2000 provides for the creation of an information-friendly environment to support the universal use of electronic commerce. Executive Order No. 269 dated 12 January 2003 created the Commission on Information and Communications Technology (CICT), the country's highest policymaking body on ICT. As of 31 December 2004, NCC reports that 99.5 per cent of national governmental agencies have web sites, 79 per cent of national government agencies (NGAs) are connected to the Internet while 50 per cent only have intranet facility. On monitoring of Information Systems Strategic Plan (ISSP), the NCC reported that 221 of the total 362 NGAs have submitted their ISSPs. Out of the 221 ISSPs submitted, 68 or 19 per cent are active, 97 or 27 per cent have lapsed, and 56 or 15 per cent are still under evaluation. Numerous online services that facilitate G2B and G2C transactions are available.

While much has been done to improve the state of ICT development in the country, e-government still has much to achieve to cascade down the benefits of ICT to the poor, vulnerable, and disadvantaged sector of the society. The following projects are planned to enable greater access to ICT for the poor. Machine Readable Passports and Visas Project under the Department of Foreign Affairs (DFA) intends to generate e-passports to Filipinos that is compliant to international standards. This would replace the long process under the existing passport system, and would benefit millions of overseas Filipino workers and marginalized Filipinos seeking employment in foreign countries. The computerization project of the Commission on Elections (COMELEC), a computerization of the election process, will streamline the present electoral process. Also planned are the establishment of an updated and centralized databank on poverty situations in all 16 regions of the country, online application for identification cards, and online registration of NGOs.

L. Sri Lanka

The Council for Information Technology (CINTEC) in Sri Lanka introduced the basic concepts of e-government through the National Computer Policy. Although CINTEC worked with many government organizations to introduce e-government, it could not achieve its goals due to limited mandate, and the lack of an e-government vision. In November 2002, the Government of Sri Lanka launched the e-Sri Lanka initiative with the objective of using ICT in all its aspects for the benefit of the people of Sri Lanka and to further the socio-economic development of the nation. One of the main strategies of achieving the e-Sri Lanka initiative is the Re-Engineering Government (Re-Gov) Programme. The Re-engineering Government Programme aims at improving the delivery and access of Government information and services to citizens, business, government employees and to Government agencies. Re-Gov Programme adopts six strategies to achieve its vision. These include: (i) collaborate with the administrative reform bodies and bring about a new governance framework that is enabled by ICT; (ii) ensure public service personnel are imparted with appropriate ICT skills; (iii) ensure that the stock of ICT equipment required for an efficient and effective e-government programme is available; (iv) interconnect government agencies to achieve a higher level of productivity through improved interaction; (v) create a “single window” for the citizens to access e-services making public services “truly citizen-centric”; and (vi) ensuring geographically non-discriminate delivery. Before the Re-Gov Programme was established, a few e-government services were actively supporting the citizen, business, employees and government organizations to obtain their information and services through ICT based channels. For example, the Department of Immigration and Emigration provides information and forms online, and all government publications are available through Intranet and/or Internet.

The low ICT awareness in the government sector is the biggest obstacle for implementing e-government in Sri Lanka, therefore within the next two years, intensive training will be provided to the public servants and major information hubs will be developed.

M. Thailand

In March of 2004, an e-government summit chaired by H.E. Prime Minister Thaksin Shinawatra and comprised of Ministers, Permanent Secretaries and senior officials was held with the purpose of establishing a list of priorities for the development of e-government. Achievements have been made, most notably: a government portal, <ecitizen.go.th> has been set up to provide services to citizens, every government agency has its own web site including e-procurement for citizens, introduction of smartcard identity

document (ID) cards, the reengineering of the back office, a central electronic document management system in operation. Currently, work is well underway to break down the data silos of the government agencies and build a truly integrated government information system. By the end of 2004, a nationwide data network will enable agencies to have their own virtual private networks. TOT Corporation, a recently privatized former state-agency, has launched a Certificate Authority (CA) business unit and all senior officials will have their own legally binding digital certificate by which to enable secure, trusted e-mail, and e-transactions. Digital signatures will be expanded to all government agents by 2007.

The National Statistical Bureau and the Ministry of Information and Communication Technology with financing from international donor agencies have conducted research through surveys and focus groups to assess the information needs of the Thai citizens. In 2004, a single stop portal was launched and intends to serve as a gateway to all government services. A total of 21 government forms have been digitized and currently offered through the e-citizen portal. In February 2004, 769 information kiosks were established throughout the country. It has been decided that a framework for further development in G2C, G2B and G2G projects be developed. "Government for Tomorrow" (G4T) will be the next step to be taken and will involve reengineering government with a citizen-centric view.

N. Uzbekistan

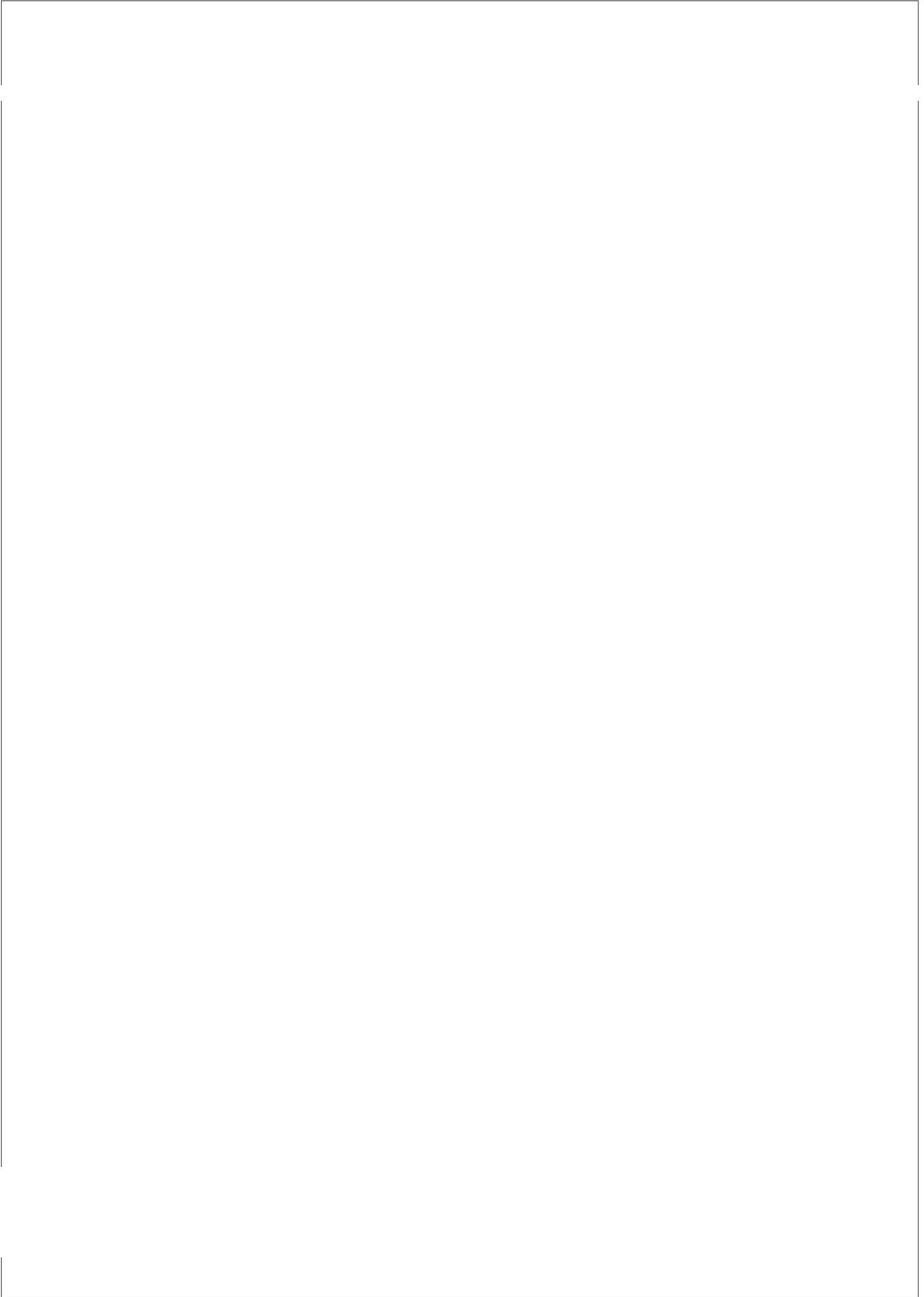
The Government of Uzbekistan has taken initiatives towards making government more efficient and accountable. E-government was seen as a major tool in rendering government more transparent and in enhancing relations with civil society. In 2002, the President of the Republic of Uzbekistan declared ICT a priority to further the country's development. The government drafted a "Programme of Introduction of Electronic Technologies into Governance for the Period of 2003-2010". This aims to introduce electronic document circulation in governance, improvement of services provided to individuals, and openness of government decision-making. All public administration and government bodies have been instructed to design their own active web sites, set up local computer networks, and train their senior staff to work on modern ICT means. However, as of May 2003, the development of the e-government was in its initial phase. State agencies are only beginning to publish information on their activities in their web sites. Only 15 per cent of all web sites of state agencies are updated periodically, and 23 per cent of web sites have access problems. On the average, there are 300 state servants per one computer. Approximately 2.5 out of 100 staff members have access to the Internet from their PC, 2.8 with access to the Internet from some other computers, and 3.2 with an e-mail address. There are approximately 9 to 10 state

servants per one computer in state agencies. As of May 2003, only 3 per cent of computers belonging to state agencies are connected to the Internet. Issues that need to be addressed are lack of access to the Internet for governmental agencies, insufficient level of ICT training for managers, insufficient development of databases in departments, incompatible technologies and software used in departmental and regional office work, lack of clear-cut regulations. Future plans include Intranet of state agencies, securing full participation of all state agencies and local authorities, approve and develop a programme to introduce electronic and Internet technology.

O. Viet Nam

Viet Nam is in the initial stages of expanding ICT access and usage. A permanent countrywide network was established in November 1997. The network connects 61 provinces, cities, and nearly 40 ministries and governmental offices. ICT in Viet Nam recorded a 29 per cent growth rate in 2003. Computerized management is available in 50 per cent of domestic enterprises, but only 30 per cent of businesses have Internet access. Approximately half of Viet Nam's government ministries have their own web sites, but information is not updated regularly. Approximately 52 out of 64 provinces have operating web sites, but only five of these have two-way interactive communication. More than 300 out of 6,776 post offices in communes across the country are connected online. Currently, 7.9 per cent of the population uses the Internet, and the rate of penetration is below 1.85 per cent. Although efforts are being made to strengthen the IT sector, numerous challenges remain. The infrastructure remains underdeveloped, a definition of e-government has yet to be established, government officials and citizens lack training and IT knowledge, and capacity is still low. In the future, Viet Nam plans to spend D 20 billion to facilitate the establishment of an Internet-based network, and streamline administrative procedures. By 2010, the government plans to handle many of its administrative services online, with a web site for every state agency.

ANNEXES



ANNEX I

WORKSHOP AGENDA

Monday, 28 March 2005

- | | |
|---------------|---|
| 09:00 – 09:30 | Registration |
| 09:30 – 10:00 | Opening Ceremony
Welcome Remarks by: Chief, ICT Applications Section, Information, Communication and Space Technology Division, UN ESCAP
Opening Remarks by Peter McCawley, Dean, ADBI
Election of Officers
Group Photo Session |
| 10:00 – 10:30 | Coffee Break |
| 10:30 – 11:20 | Introduction to the Workshop, Participants and Resource Persons by Jeoung-Keun Lee, Senior Capacity Building Specialist, ADBI |
| 11:20 – 13:00 | Enabling Local Governments to Offer e-Services to Poor Citizens: Progress and Challenges, Clay G. Wescott, Principal Regional Cooperation Specialist, ADB |
| 13:00 – 14:00 | Bento Lunch provided by ADBI |
| 14:00 – 15:40 | Country Reports: Bangladesh, Cambodia, China, India, Indonesia, Lao People's Democratic Republic, and Mongolia (Chairperson) |
| 15:40 – 16:00 | Coffee Break |
| 16:00 – 17:50 | Country Reports: Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Uzbekistan and Viet Nam (Chairperson) |

Tuesday, 29 March 2005

- | | |
|---------------|---|
| 09:30 – 11:00 | Factors and Procedures to be Considered in Designing e-Government Programmes for the Poor by Stephen Braim, Government Programmes Executive, IBM Asia Pacific |
| 11:00 – 11:30 | Coffee Break |
| 11:30 – 13:00 | Stakeholder Participation in Designing and Implementing e-Government Programmes by Yoo, Chief, ICT Applications Section, UN ESCAP |

Annex I: Workshop Agenda

- 13:00 – 14:00 Lunch
- 14:00 – 15:30 Developing Local e-Government Portals by Sosakul Teeratep and Panrit Tosukhowong, IT Consultant, ADBI
- 15:30 – 16:00 Coffee Break
- 16:00 – 17:30 Small Group Work on Developing e-Government Portal (Sosakul Teeratep and Panrit Tosukhowong)

Wednesday, 30 March 2005

- 09:30 – 11:00 Citizen-centric e-Government Programmes and Success Factors by Jonathan Kushner, Global Strategic Accounts Executive, Microsoft
- 11:00 – 11:30 Coffee Break
- 11:30 – 13:00 How to Draft Project Proposals by Hun Kim, Director, SASS, Asian Development Bank
- 13:00 – 14:00 Lunch
- 14:00 – 15:30 Job Training and Job Placement Services for the Rural Economy Development by Kyohsuke Yoshimura, Learning Solutions Executive, IBM Asia Pacific
- 15:30 – 16:00 Coffee Break
- 16:00 – 17:00 E-government and Digital Divide: Beijing Experience by Zhu Yan, Director General of the Beijing Municipal Office of Information
- 17:30 – 18:30 Welcome Reception by ADBI

Thursday, 31 March 2005

- 09:30 – 11:00 Building e-Government in Japan by Shuichi Takano, Director, Ministry of Internal Affairs and Communication, Japan
- 11:00 – 11:30 Coffee Break
- 11:30 – 12:15 Methods of Assessing Information Needs of the Poor by Wimal Gunawardena, Chairman, TEAMS
- 12:15 – 13:00 Conducive Policy Environment for e-Government by Peter Chong, Corporate Attorney, Microsoft
- 13:00 – 14:00 Lunch
- 14:00 – 15:15 Case Study: Yokosuka City Government by Satomi Hirokawa, Chief, Information Policy Division, Yokosuka City Office, Japan

- 15:15 – 15:30 Coffee Break
- 15:30 – 17:00 Public Key Infrastructure Initiatives for e-Asia by
Yeoul Hwangbo, Professor, Korea Advanced Insti-
tute for Science and Technology
- 17:00 – 18:00 Presentation of Project Proposals (Hun Kim)

Friday, 1 April 2005

- 09:00 – 11:30 Presentation of Project Proposals (Hun Kim)
- 11:30 – 12:30 Finalization of the Action Plans and Workshop
Evaluation (Jeoung-Keun Lee)
- 12:30 – 13:00 Closing Ceremony
- Closing Remarks by Raymond Z. Renfro, Director,
 ADBI
- Handing Out Certificates
- Vote of Thanks by Participants

A. Group activity one: identifying information services that can be provided to the poor via e-government

Mr. Jeoung-Keun Lee, ADBI led the Workshop in a discussion exercise. The Workshop participants were asked to make a list of information services that can be provided to the poor via e-government. The participants were divided into 4 groups and each group designated a rapporteur to report the list back to the Workshop.

Group 1

Rapporteur: Ms. Chongchith Chantharanonh

Information services (total 12):

- Market and price information
- Weather information
- Medical information including medicines and hospitals
- Financial information including credit, banking, and microfinance facilities
- Commodity information including viability of the shops and farmers
- Education information
- Local government news including policies and regulations
- Job opportunities
- Project availability including what kind of projects or donors
- Geographic information including accessibility to roads and hospitals
- News
- Communication centre

Group 2

Rapporteur: Mr. Suresh Chandra Gupta

- Farm related information
- Price of agricultural inputs
- Availability of inputs
- Market price of outputs
- Weather
- History of disasters in local area
- Land cost

- Farm electricity regulation and electricity availability
- Banking- credit facility and link to local bank
- Information on off farm and off season jobs
- Vocational training programmes
- Price of consumer items
- Information on bargain sales, and government controlled prices
- Electoral rules, names of registered voters
- Citizenship cards
- System in which you can communicate with elected political leaders-local, provincial, and national assembly members
- Payment of utilities
- Health services
- Education
- Education interface between teacher and parent
- Application forms: passport birth, income, licenses
- Food entitlements
- Current status of road conditions

Group 3

Rapporteur: Mr. Santisouk Simmalavong

- Market access information
- Transportation access
- Health care
- Primary education
- Information for clean water
- Agriculture, livestock, fisheries
- Gender information
- General information
- Employment
- Information for disease prevention like SARS, avian flu
- Law and regulation of government
- Welfare
- Legislative transactions

Group 4

Rapporteur: Mr. W. K. Wasantha Deshapriya

- Community news
- Market input and exchange on agriculture, fisheries, and forestry
- Information on immigration, passport, citizenship
- Licensing
- Tax payment
- Education
- E-health
- Registration for birth, marriage, death, divorce, immigration
- Transportation information
- Consumer protection information
- Product information
- Social welfare information

Mr. Lee, ADBI congratulated the participants on their contributions to this activity and suggested that these items be included in the portals that will be developed through the group activity two.

B. Group activity two: discussion on revenue-generating schemes for the sustainability of an e-government portal

Group 1

Rapporteur: Ms. Phontip Warunyooratana

Schemes for sustainability (total 7):

- Registration fee
- License and certification fee
- Transfer of land or property fee
- Training fee
- Advertisement
- Listing fee
- Service charge such as for fax, e-mail, printing

Group 2

Rapporteur: Mr. Tormarbulang Lumbantobing

- Charge bidders
- Advertisement
- Project owner pays for service

- Sell information about business opportunities
- Charge for issue of certificates such as birth and marriage

Group 3

Rapporteur: Mr. Santisouk Simmalavong

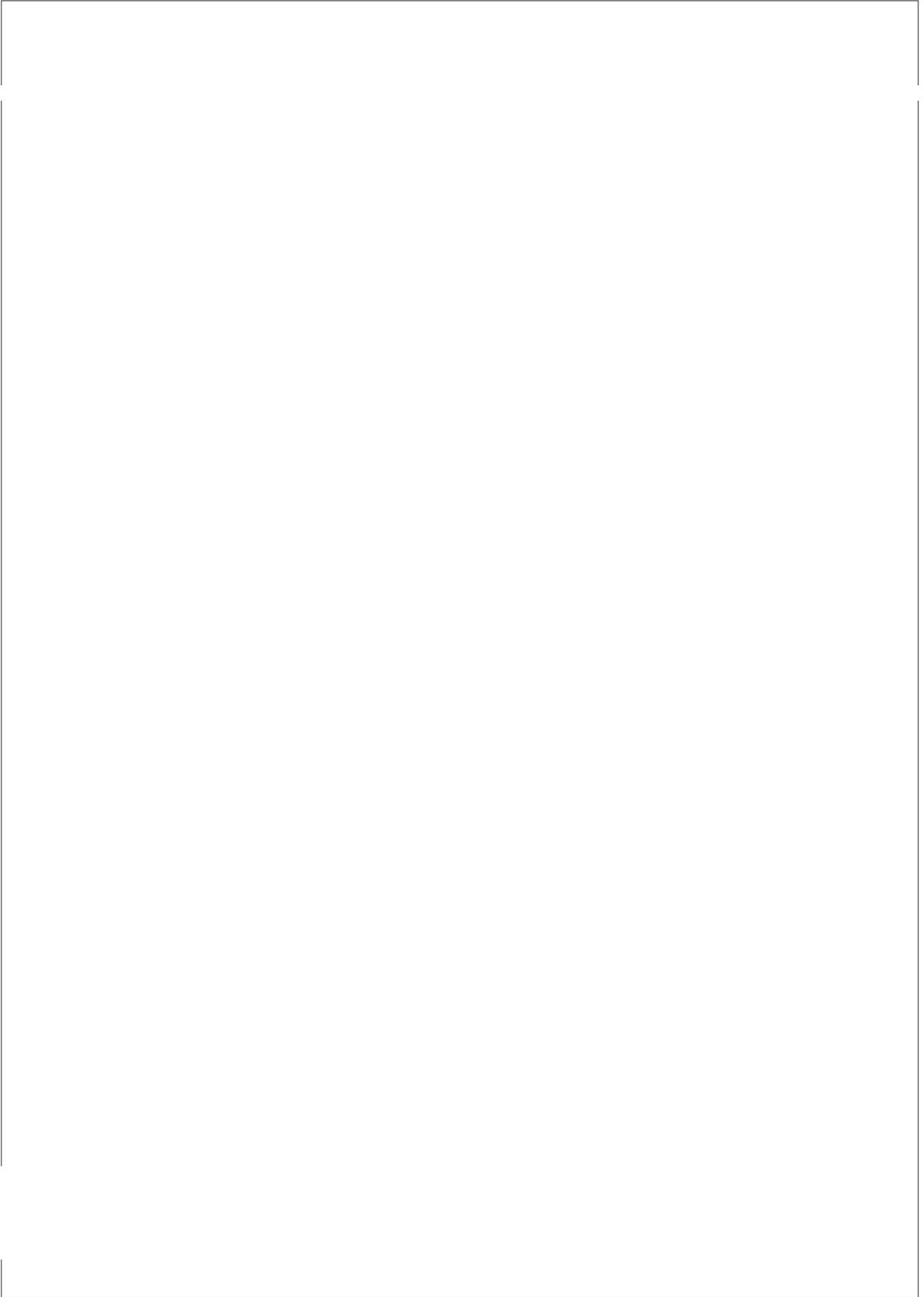
- Advertising
- Service fee to be charged for G2C transaction, and G2B transaction, but subsidized for poor
- Service provider contributes in form of rebate
- Local government shares cost of maintenance and start up costs
- Selling items online
- Private company sponsorship

Group 4

Rapporteur: Mr. Surya Prasad Acharya

- Service charge such as for photocopy and e-mail
- Registration fee
- Advertisement
- Budget support from local government
- Private company sponsorship

Mr. Lee suggested utility computing as another mean to financially sustain a portal. Mr. Kushner said that utility computing is a popular and efficient method, however, the procurement guidelines set forth by donor agencies are often inadequate for the private sector. Mr. Wescott said that ADB is currently considering using project funds for operation and maintenance, but that this was a risky method. He suggested that a better model for financing is private-public partnership such as share and savings scheme in which a private company invests and provides funding for maintenance and technical expertise. Mr. Hwangbo said that in the case of the Republic of Korea's smart card system, private-government partnership has proved to be effective. Mr. Gunawardena said that people, especially the poor, recognize the usefulness of ICT services so that utility computing can be feasible.



ANNEX II

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ANNEX III

SUMMARY OF ACTION PLANS/PROJECT PROPOSALS

Country	Project Title	Proposer
Bangladesh	Technical Linkages (TECHLINK): an effort for institutional strengthening	Mesbah Ul Alam
Bangladesh	Agrobangla-network	S. M. Zakir Hossain
Bangladesh	E-village communities	Hasanur Rahman
Cambodia	Government administration information system (GAIS)	Zeng Dehua
China	E-school and family linkage	Zeng Dehua
India	SIKKIM e-government project	Suresh Chandra Gupta
Indonesia	E-on-lending in Ministry of Finance	Tormarbulang Lumbantobing
Indonesia	E-learning in community access points (CAP) in assisting the learning process for students in rural areas	Mohammad Rudy Salahuddin
Lao People's Democratic Republic	Information centre for official development assistance (ODA) to Lao People's Democratic Republic	Chongchith Chantharanonh
Lao People's Democratic Republic	E-government project proposal of Lao People's Democratic Republic	Santisouk Simmalavong
Lao People's Democratic Republic	G4DP Project (E-Government for Development Planning)	Virya Dalaloy
Mongolia	Mongolian e-government	Oyunbaatar Sharkhuu
Myanmar	Connecting rural Myanmar	Htun Aung
Nepal	Decentralized management information system (DMIS) for local governance	Surya P Acharya
Nepal	Rural information centre (RIC) to the remote poor: an initiative towards promoting e-government	Shyam Chalise
Pakistan	Baseline e-government applications within the Federal Government	Asad Sibtain
Philippines	Database of economic and social profile of Barangays	Mateo G. Montano
Sri Lanka	E-land services	W. K. Wasantha Deshapriya
Thailand	Building a tourism information network for the home-stay project	Phontip Warunyooratana
Thailand	Local initiative for a system of e-quality education (LIFE)	Tharntham Uprawongsa
Uzbekistan	E-government	Shukhrat Atamukhamedov
Viet Nam	E-government in Viet Nam	Nguyen Manh Cuong

Title: **Technical Linkages (TECHLINK): an effort for institutional strengthening**

Proposer: **Mr. Mesbah Ul Alam, Joint Secretary, Ministry of Science and Information & Communication Technology**

Country: **Bangladesh**

Date: **March 2005**

I. INTRODUCTION

The Ministry of Science and Information & Communication Technology (MOSICT) of the Government of Bangladesh is responsible for promoting science and technology for the good of society. The ultimate goal is to alleviate poverty by spreading science and ICT to remote areas of the country. The national ICT policy was passed in 2002 in order to build a knowledge-based society by the year 2006, and to achieve the Millennium Development Goals (MDGs). The Ministry has been striving to establish technological linkages with the attached departments, such as Bangladesh Computer Council (BCC), Bangladesh Council of Scientific and Industrial Research (BCSIR), Bangladesh Atomic Energy Commission (BAEC), Bangladesh National Scientific and Technical Documentation Centre (BANSDOC), and the National Museum of Science and Technology (NMST). It is envisaged that an established electronic linkage among the departments, and between the Ministry and the departments would enhance the speed of communication and the decision making process; make the whole process of governance more transparent and accountable; help improve efficiency; reduce wastage of resources; enhance planning; raise the quality of services; and contribute to the establishment of e-government in Bangladesh.

II. ISSUES

After reorganization and renaming of the Ministry of Science and ICT (from the previous Ministry of Science and Technology) in the year 2002, there has been a major revision in the Rules of Business of the Ministry. Attention has been paid to formulation of National ICT Policy and enactment of an ICT Act. Along with these steps, the Ministry has been trying to integrate efforts of the departments through establishment of e-government within this Ministry. The TECHLINK is an e-government solution with the objective of ensuring efficiency and transparency in governmental work.

An established automated system has yet to be created in any of the departments. All departments, within the computer system, have been able to develop a computerized database on their own organization and activities, but without a provision for integration into a grid. All stakeholders cannot access pertinent information, and the decision-making process is

delayed. All departments have their LAN and WAN within the office premise, but due to the shortage of IT personnel, there are often disruptions in the network. The ICT infrastructure in Bangladesh is still in its infancy. Inter-continental and inter-ocean submarine cable is yet to connect Bangladesh with the information super highway. By the end of this year, it is expected that Bangladesh will receive the linkage with submarine cable. However, the internal infrastructure is yet to be constructed.

In order to establish technological linkages with the departments, in the absence of optical fiber sub marine cable, various technological options for high-speed data communication have become available in Bangladesh. A choice can be made from amongst the options on the basis of the specific situation, reliability, nature of work, location of work, and the financial value.

Asymmetric Digital Subscriber Line (ADSL) connection for long distance is not suitable for MOSICT as the Ministry and none of its departments deal with such maintenance (maintenance of cable line on city streets) and manpower. A Digital Data Network (DDN) connection is a point-to-point solution and needs support as it runs through a third party – Bangladesh Telegraph and Telephone Board (BTTB). It is also quite expensive. Radio link connections through VSAT may confront interference in their line of sight because of high-rise buildings, and are also vulnerable to natural calamities, but the high speed data communication is quite reliable and the cost is reasonable. A network can be increased by 200 to 300 per cent through VSAT-hub and bandwidth can also be increased for remote locations.

III. PROPOSED PROJECT

A. Objective and scope

The goal of the project is to provide all stakeholders with a common network. The proposed electronic linkage will provide virtual proximity for all official interaction, video conferencing, data sharing and transfer, and instant executive decision making. It will help the executives to get access to the informatized executive information system and database instantly, individually, and collectively. All citizens, as well, will be able to access information from research institutions.

The proposed TECHLINK or technological linkages, envisages a coordinated network among the departments of the MOSICT and gradually extend its facilities to other relevant government departments on the basis of subscription. Ultimately there will be an electronic linkage with the general public on matters of their interest. The scope of this effort will therefore be as follows:

- MOSICT data communication network through Radio Link with BCC

- An integrated network of IT infrastructure covering all the departments under MOSICT
- A TECHLINK portal

B. Cost estimates and financing plan

**COST ESTIMATES
(US\$ million)**

Component/item	Foreign fund	Agency	Total cost
1. Consultants		0.00	
a. International consultants	0.02		0.02
b. Domestic consultants	0.01		0.01
2. ICT Infrastructure	15.00	0.00	15.00
3. Equipment and software	0.10	0.00	0.10
a. Development of web portal			
b. Customized software			
4. Training	0.03	0.00	0.03
5. Contingencies	0.00	0.05	0.05
6. Unforeseen	0.00	0.02	0.02
Total	15.16	0.07	15.23

Financing plan

- Ministry and all concerned departments will provide necessary workspace, and administrative supports for maintenance and operation
- It is proposed that ADB will provide a loan of US\$ 15.16 million, and the rest of the amount will be provided by the Government of Bangladesh

C. Implementation arrangements

On behalf of the Ministry of Science and ICT, the BCC will be responsible for implementing the project. The Ministry will appoint a project director with a strong ICT and project management background. The technical expertise and equipment support will be fully utilized in this project. A project steering committee comprising of all the heads of attached departments under MOSICT and headed by the Secretary, Ministry of Science and ICT will monitor the progress of the project in their regular monthly meeting. They will try to provide solutions to any problem that hinders the progress of the project activities. A project technical committee headed by the project director and consisting of technical representatives from different departments under MOSICT, and technical experts from the Prime Minister's Office, Telegraph and Telephone Board (T&T Board), and Bangladesh University of Engineering and Technology (BUET) will be

formed. The technical committee will formulate plans for implementing the project, provide technical support, and make recommendations to the Executive Director.

Activities of the project will be conducted by the Technical Assistant Project Proforma/Portfolio Project (TAPP/PP) passed by the Government of Bangladesh and as per financial allocation made therein. The existing laws will support it, rules and regulations and all procurements will be made as per Public Procurement Regulations, 2003 of the Government of Bangladesh.

Various steps would be required to be followed to ensure a reliable path of achievement:

- A situation report in regard to the coordination, cooperation and decision-making among the Ministry and the departments will be prepared to understand the current status of the decision-making process.
- Technical needs assessment will be conducted. A competent technical team will conduct the assessment and prepare a technical proposal for integration and interconnection among the departments and the Ministry.
- A policy framework containing precise descriptions of dos and don'ts of day-to-day activities will be prepared to use as a guideline. The policy will also provide clear instruction on information security, coordination network principle, entitlements, and responsibilities on the part of different stakeholders at different levels.
- A general consensus statement of contents would be prepared in order to make all stakeholders know the pertinent information that they can access, and the information that they need to upload on the network.

There will be a conducive atmosphere within the project administration to allow private ICT sector entrepreneurs to participate in the implementation of the project. Private sectors can support preparation of necessary customized software, and implementation of data communication infrastructure such as Radio Link, ADSL or DDN connections.

D. Implementation schedule

The project will be implemented within a period of one year commencing from January 2006 and ending in December 2006.

E. Sustainability and benefits of the project

Strategically, the implementation of the project will provide online facility for the electronic delivery of government information and services. It will cover the departments of the Ministry of Science and Information &

Communication Technology. The project will improve efficiency, transparency and accountability of the government, and positively impact the poorer sections of the economy.

Design summary	Performance indicators	Monitoring mechanisms	Assumptions and risks
<p>Goal</p> <p>To provide all stakeholders in MOSICT with a common network</p>	<p>An integrated system network that enables uninterrupted flow of information</p>	<p>Steering Committee meetings</p> <p>Project evaluation reports</p> <p>Visual inspection</p>	<p>Government approval at the Executive Committee of National Economic Council (ECNEC) and allocation of necessary funds</p>
<p>Purpose</p> <p>A data communication and Management Information System network for MOSICT that will connect all its departments is established</p>	<p>An established and reliable system of network</p> <p>Confidence in the upper echelons of the Government on the use of ICT</p>	<p>Ministry and Departmental access to sharing of documents and interactions</p>	<p>Government approves the project and allocates funds timely</p>
<p>Outputs</p> <p>Government officials oriented on utilization of integrated network</p> <p>Confidence in sharing of information amongst the ministry and the departments developed</p> <p>Capacity of ICT personnel within the ministry and departments built</p> <p>Policies for effectively using such network formulated, relevant laws, and regulations are prepared</p> <p>Local content prepared</p> <p>Data communication and management information system network installed</p>	<p>Confidence in using integrated network</p> <p>Self-reliant in using the link</p> <p>Ever ready to take up assignments even by substitutes</p> <p>Articulated memorandum of understanding</p> <p>Public awareness of the ICT laws</p>	<p>Open discussion on the effective utilization of the network</p> <p>Review of interactions and decisions</p> <p>Performance appraisal</p> <p>Research on the field and dissemination of ideas</p> <p>Physical verification</p> <p>Web portal physical verification</p>	<p>Capacity of facilitation</p> <p>Soundness of technology</p> <p>Sufficiency of resource persons</p> <p>Political will to provide a support for enactment</p>

Design summary	Performance indicators	Monitoring mechanisms	Assumptions and risks
Activities Appoint consultants Holding of need assessment meetings Development of local contents Preparation of training modules Procurement and installation of software and hardware	Procedure starts for appointment of consultants Need assessment work starts Local contents developed Training modules developed Tender floated for purchase of machineries	Progress reports Review meetings Office documents	Concerned authority remains interested and committed
Inputs Funds Consultants appointed Need assessment survey Equipment machineries	Fund allotment letter Consultant appointed Operation of survey Inventory of equipment	Office documents Physical verification	Timely availability of funds, consultants, equipment, and machineries

Title: Agrobangla-network

Proposer: Mr. S. M. Zakir Hossain, Senior Assistant Secretary,
Ministry of Planning

Country: Bangladesh

Date: March 2005

I. INTRODUCTION

Bangladesh is still an overwhelmingly rural society and agricultural economy. Approximately 80 per cent of the labor force is involved in agriculture. A key challenge in agri-business activities is the limited capacity to acquire information about the worldwide market situation leading to a lack of knowledge on which crops are most profitable to cultivate. Due to this lack of information, farmers most often cultivate and produce the same traditional crops. As a result, most crops and products are seasonal. Due to the lack of demand of that product in a specific area, the price decreases. The middleman takes advantage of this opportunity and buys large quantities of the over supplied product at a low price. He then sells the product at a higher price in an area where demand is greater and reaps the profit. This process is largely disadvantageous to the farmer who is unable to receive a fair price for his product. If the farmer was aware of the worldwide market price for his product, then the farmer could bargain with the middleman, and maximize his earning potential.

II. ISSUES

- People have limited access to agricultural resource and market information
- Crop diversification is necessary to reduce imports of potentially producible crops
- Farmers do not get a fair price
- Government should connect all growth centres with district headquarters

III. PROPOSED PROJECT

A. Objective and scope

The electronic interconnection of the growth centres will enable access to national and international markets. Adequate information and practices will enhance productivity, lead to crop diversification, and furnish opportunities for farmers to receive a reasonable price for their products. The project will be implemented throughout the country in 464 districts. The activities are as follows:

- Establishment of communication centres in every growth centre
- Day to day price list of the commodities will be provided online

B. Cost estimates and financing plan

COST ESTIMATES (US\$ million)

Component/item	Government	Donors	Total cost
1. Consultants			
a. International consultants	0.00	0.02	0.02
b. Domestic consultants	0.01	0.00	0.01
2. Equipment and software	0.01	0.04	0.05
3. Building and furniture	0.05	0.20	0.25
4. Training, seminars and conferences	0.01	0.04	0.05
5. Research, development and surveys	0.01	0.04	0.05
6. Miscellaneous, administration and support costs	0.01	0.46	0.47
7. Contingencies	0.02	0.08	0.10
Total	0.12	0.68	1.00

C. Implementation arrangements

The Department of Marketing of the Ministry of Agriculture will be the Executing Agency of this project. A Steering Committee will be responsible for implementation the project. The committee will be formed by the Ministry of Agriculture and will include related people of the relevant ministries. A project implementation office will be established and the project director will be responsible for managing the project. The project will be executed within a 5 year period.

D. Benefits

The services will benefit the farmers directly, enhance productivity, and alleviate poverty.

Project framework

Design summary	Performance indicator	Monitoring mechanisms	Assumptions and risks
Goal To establish effective marketing system for agricultural products	Farmers are satisfied with agricultural production	Central coordination system	Many factors such as transportation
Purpose To interlink the growth centres electronically	Goods are bought and sold in different places	Reporting	System may collapse

Bangladesh

Design summary	Performance indicator	Monitoring mechanisms	Assumptions and risks
Outputs Provide information on prices of agriculture products in different places Encourage crop diversification	Fair prices for commodities Crop diversification occurs	Survey Survey	
Activities Encourage people to use ICT	Farmers acquire sufficient information	Access to information system	

Title: E-village communities
Proposer: Mr. Hasanur Rahman, Deputy Secretary, Ministry of Science and Information & Communication Technology
Country: Bangladesh
Date: March 2005

I. INTRODUCTION

Information and knowledge are prerequisites for development. Access to information and knowledge strengthens civil society, and leads to poverty reduction by allowing individuals and communities to expand their choices. Information and knowledge is linked to financially viable markets and income generating opportunities, or availability of government services, education, and skills development programmes. In addition, recognition and dissemination of indigenous knowledge, especially that of women, can contribute to development, competitiveness, and productivity. Knowledge empowers people and provides them with the opportunity to make informed choices.

One of the significant challenges to ICT expansion is the spontaneous participation of rural people in electronic village communities. Approximately 80 per cent of the total population of Bangladesh lives in poor rural areas where access to ICT is limited. Lack of information about the market and agricultural production affects the farmers' potential earnings. ICT enabled services could be employed to disseminate the necessary information and help rural communities to better confront development challenges.

Among the various models of e-community centres including civic telecommunication centres, telecommunication centre franchises, phone shops, and multipurpose community telecentre, public telephone shops are common in Bangladesh. Telephone, fax, e-mail and Internet service centres are in operation in some urban areas of Bangladesh. The number of such centres is rapidly growing, which in turn promotes ICT usage, and local and foreign entrepreneurship. Grameen Phone and other mobile phone companies have expanded their telephone services to the majority of villages in Bangladesh. However, rural areas still lack ICT-enabled service and the proper ICT infrastructure.

Bangladesh has service centres for telecommunications in 64 districts and 464 sub-districts. The number of fixed line telephones is 0.83 million, and the number of mobile telephones is about 3 million. There are 4 Ground Satellite Stations, 2 International Trunk Exchange, 80,000 ISP subscribers, and 145 ISPs. There are 67 VSAT users, and 27 VSAT providers. There are 0.50 million PCs, and approximately 0.082million internet connections. A fiber optic submarine cable network is expected to be available next year.

II. ISSUES

- Lack of telecommunications infrastructure
- Low literacy rate
- Low ICT literacy rate
- Political instability
- Lack of awareness
- Lack of technology and resources
- Absence of initiatives

III. THE PROPOSED PROJECT

A. Objective and scope

The proposed project is to establish 10 e-village community centres. The objective of the project is to empower rural people by increasing ICT accessibility and providing ICT applications to be utilized for their socio-economic activities.

Bangladesh consists of six administrative divisions varying in size, population, and geographical nature. Two community e-centres (CeCs) will be established in each of Dhaka, Chittagong, Rajshahi, Khulna divisions, and one CeCs will be established in each of Sylhet and Barisal divisions. Needs assessment will be conducted to select locations for the e-community centres. Existing national initiatives, resources, and services relevant to community information will be identified. ICT applications and local contents for local communities will be developed, and operators of the centres will be selected. Projects will be on a pilot basis, and if the performance of these are found satisfactory, more projects may be undertaken.

B. Cost estimates and financing plan

The cost estimates refer to the amount necessary for a period of two years for one centre.

COST ESTIMATES (US\$ million)

Item	Quantity	Government	Donors	Total cost
1. Consultants	1 for 6 months			
a. International consultant		0.00	0.05	0.05
b. Domestic consultants		0.00	0.006	0.006
2. Manpower		0.0048	0.00	0.0048
3. Equipment and software		0.00	0.024558	0.024558
a. Equipment				
b. Software				

Item	Quantity	Government	Donors	Total cost
4. Buildings and furniture				
a. Building		0.004	0.00	0.004
b. Furniture		0.00	0.0027	0.0027
5. Training, seminars and conferences		0.00	0.005	0.005
6. Research, development and surveys		0.00	0.003334	0.003334
7. Miscellaneous administration and support costs		0.003334	0.00	0.003334
8. Contingencies		0.001667	0.00	0.001667
Total		0.013801	0.091592	0.105393

MANPOWER

Position	Number of employee	Salary/month	Total (24months)
1. Manager	1	80	1,920
2. Computer operator	1	70	1,680
3. Menial level subordinate staff (MLSS)	1	50	1,200
Total	3		4,800

EQUIPMENT AND SOFTWARE (US\$)

Items	Quantity	Cost	Total cost
1. Computer	4	850	3,400
2. Switch/Hub (16 port)	1	350	350
3. Network accessories	LS	150	150
4. Radio link connection			
5. Tower with antenna			
6. Router			
7. Radio modem			
8. Other accessories for radio link connection			
9. Connectivity fees			
10. Laser printer	1	420	420
11. UPS	4	90	360
12. Scanner	1	85	85
13. Web camera	1	50	50
14. Digital camera	1	650	650
15. Digital camcorder	1	650	650
16. Photocopier	1	3,400	3,400

Items	Quantity	Cost	Total cost
17. Fax	1	330	330
18. Telephone (land + mobile)	2+2	–	850
19. Multimedia projection TV	1	1,200	1,200
20. DVD player	1	250	250
21. Multimedia projector + projection screen	1	2,500	2,500
22. Audio system	1	500	500
23. Multi system radio	1	84	84
24. Software	LS		3,334
Total			24,558

C. Implementation arrangements

The Ministry of Science and ICT will implement the project.

IV. BENEFITS OF THE PROJECT

The proposed project will be implemented on the basis of recommendations from the consultants. The interest of the local people will be taken into consideration so that the project will be viable. The citizens will acquire necessary information regarding their commodities. As a result, social and economic conditions in the country will be positively impacted.

Project framework

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
Goal	Poverty reduced, rural community empowered	Survey, office records	–
Purpose	10 CeCs established, socio-economic activity increased	Local inspection, survey	Stable political commitment, law and order maintained
Output	Village Communities identified Location of CeCs selected Community needs identified Hardware and software purchased and installed Local contents developed Local operators identified Skill training for operators	Office documents, local inspection, survey, meeting, study tour, training programme	Law and order remains normal Types of ICT applications and content are relevant to farmers Infrastructures are able to support CeCs

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
Activities	Community needs assessment meetings Local contents developed Training modules developed Survey conducted Work orders issued CD-pVAT paid	Office documents, meetings, physical verification, survey, progress report	Participating communities and entrepreneurs remain interested and committed
Inputs	Consultants appointed, tenders floated	Office documents Physical verification	

Title: Government Administration Information System (GAIS)

Proposer: Mr. Voun Chhoun, Deputy Secretary General National
ICT Development Authority (NiDA)

Country: Cambodia

Date: March 2005

I. INTRODUCTION

In 2001, the Government of Cambodia adopted the e-Government Project, which created the Government Administration Information System (GAIS) and brought governmental institutions into an online network. Currently, 27 ministries and governmental institutions are connected with the e-government network, and the electronic approval system (EAS) will be introduced. The network is equipped with modern hardware and software in order to upgrade the government processes, increase productivity, and improve quality of public services. Approximately 76 communes and seven districts of the Phnom Penh Municipality are connected via the Internet. These local authorities will deploy the resident, vehicle, and real estate information systems to perform their daily tasks more efficiently and effectively. However, this project is in a trial stage, and has been implemented only in Phnom Penh City. The government is planning to expand the project as well as applications.

II. ISSUES

The Government of Cambodia recognizes the use of information and communication technology as a tool to strengthen the local government and provide better services to citizens. Currently, GAIS is implemented in Phnom Penh. However, other cities and provinces do not have such a network and system. In the medium term, the government will consider expanding this project into the city of Sihanukvile. Sihanukvile, the second largest city after Phnom Penh, is a major tourist attraction with high revenue generating potential. The government is planning to strengthen the back office and the front office services by developing ICT.

III. PROPOSED PROJECT

A. Objectives and scope

The proposed project, the Government Administration Information System (GAIS), intends to provide an initial network for interconnection of all departments or institutions in the city of Sihanukvile. The project is expected to improve provision of services to the public. As part of this project, portals for each city and each province will be created. The project would also provide ICT training centres for government officials. The goal is to enable public access to government information and services through a

single window, and enhance efficiency of city and provincial administrations. The expected output of this project would be to improve productivity and efficiency of clerical work in governmental offices (back office service) and to provide better services to private enterprises and citizens (front office service). The government plans to create accessible databases containing various types of information. The project focuses on the development of provincial Intranet, provincial portal, electronic approval system, resident information, real estate information, and vehicle information systems. The network of provincial agencies will be directly accessible via the Internet.

B. Cost estimates and financing plan

COST ESTIMATES

(US\$ million)

Item	Foreign fund component	Agency counterpart	Total cost
1. Consultants			
a. International Consultant	0.30	0.00	0.30
b. Domestic Consultants	0.15		0.15
2. Equipment and software			
a. Hardware system	3.50		3.50
b. Software system	1.60	0.00	1.60
c. Portal development and customization of applications	0.45		0.45
3. Buildings and furniture			
a. Building	1.60	0.00	1.60
b. Furniture			
4. Training, seminars and conferences	0.50	0.00	0.50
5. Research, development and surveys	0.00	0.00	0.00
6. Miscellaneous administration and support costs	0.00	0.00	0.00
7. Contingencies	0.10	0.00	0.10
Total	8.20	0.00	8.20

The National ICT Development Authority will provide the necessary work space, administrative and technical support staffs, and necessary maintenance and operating expenses.

C. Implementation arrangements

The National ICT Development Authority will have the primary responsibility in implementation of this project. The Ministry of Interior, the Ministry of Land Management and Construction, the Ministry Public and Transportation, and the other departments and organization in the Sihaknukvile province will take part in the implementation.

F. Risks

- Lack of will to implement and cooperate
- Provide information to the public on the use of technology
- Inadequate funding for operation and maintenance
- Lack of motivation among the government agencies

Project framework

Design summary	Performance indicator/targets	Monitoring mechanisms	Assumptions and risks
<p>Goal</p> <p>To provide an initial thin network for interconnection of all government institutions in the cities and provinces and its attached bureaus</p>	<p>Integrated system interconnection</p>	<p>Inter-agency meetings and establishment of a memorandum of understanding</p>	<p>Political will to implement and cooperate</p>
<p>Purpose</p> <p>Encourage private participation particularly in assessment of technology requirement</p> <p>Provide security and privacy for government officials</p> <p>Encourage sharing of information amongst the department, attached bureaus, and agencies</p>	<p>Optimum resource and revenue information sharing and therefore serve as a model for government-wide-networking</p> <p>Increased confidence in use of ICT</p>	<p>Frequency of access made for public</p>	<p>Technology should provide service 24 hours</p>
<p>Outputs</p> <p>Establish a nationwide electronic linkage among the cities and provinces</p> <p>Local government portal will be created</p> <p>New adapted applications and databases</p> <p>Deliver efficient services to the public</p>	<p>Increased coordination between government and private entity</p> <p>Effective and efficient flow of information</p>	<p>Consultative meetings</p> <p>Timely reports</p>	<p>Private sector confident</p> <p>Government capability</p> <p>Timing and reliability of information particularly during the initial phase</p>

Cambodia

Design summary	Performance indicator/targets	Monitoring mechanisms	Assumptions and risks
Activities Networks installation for each government institutions and its attached bureaus Customize applications and develop the e-portal Conduct training Build training centre Collecting and entering data			
Inputs Human resource Software and hardware Cooperation from all local agencies International and local consultants			

Title: E-school and family linkage
Proposer: Mr. Zeng Dehua, Director of Department, Education Management Information Centre, Ministry of Education
Country: China
Date: March 2005

I. INTRODUCTION

Currently, there are 170 million students attending high school, middle school, and primary school in China. There are approximately 340 million related parents in 2,800 regions. In order to reduce the digital divide between the regions and the central government, an e-school and family linkage portal will be established.

II. ISSUES

1. Install portals in 1,600 regions including:
 - Student online registration and information
 - Access to homework online
 - News and notices
 - Student records and grades
 - Student evaluation
2. Establish mobile network system:
 - Short message service (SMS) notification to parents when child leaves or enters school
 - SMS notification of other relevant information

III. THE PROPOSED PROJECT

A. Objective and scope

The proposed e-school and family linkage project would provide a more effective method of communication and consultation between schools and parents. Students and school will be more efficiently organized and managed.

Outputs:

- Parents can receive information directly from teachers
- Parents can receive notification of student arrival and departure
- Parents can access information about student test records
- Teachers can work at home
- Teachers can receive suggestions directly from parents

- Electronic system for student records
- Local government has organized data and statistics on students
- Students can access and discuss homework online

The support platform of the system is similar to an internet business system. The system uses Windows, Java, and database mode. Such applications will ensure confidentiality, safety, stability, and extendibility. In each region, there will be 2 servers: Web server, and database server. The Web server will provide hyper text protocol (HTTP) and HTTP secure version (HTTPS) service. Structured query language (SQL) database software will be utilized in the database server. Both servers will be placed in the information centre of the local education department.

B. Cost estimate and financing plan

COST ESTIMATES (US\$ million)

Item	Cost	Quantity	Total cost
1. Consultants			
a. International consultant	0.20	1	0.02
b. Domestic consultants	0.05	1	0.05
2. Equipment and software			
a. Software	0.08	1,600	128.00
b. Web	per region		
3. Buildings and furniture			
a. Building	0.08	1,600	32.00
b. Furniture	per region		
4. Training, seminars and conferences	0.02	1,600	32.00
	per region		
5. Research, development and surveys	0.06	1	0.06
6. Miscellaneous administration and support costs	0.13	1	0.13
7. Contingencies	0.01	1	0.01
Total			184.25

C. Implementation arrangements

The project will be organized by the Ministry of Education, School Management Division, and technology experts. At the local level, the local education departments will oversee the project. As part of the implementation strategy, a region will be selected in each province for a trial. After the initial trial phase, a conference will be held, and training conducted before expanding the project to other regions.

The implementation schedule is as follows:

- Project start: 2005
- Trial completion: June 2006
- Conference: August 2006
- Training in province: October 2006
- Region system buildup: October-December 2006
- Training in province: February 2007
- Operation of regional system: March 2007
- Project evaluation: October 2007

IV. BENEFITS OF THE PROJECT

- Enhanced relations between teacher, school administration, parent and student
- Computerized student management system
- Optimized Government access to data and information

Project framework

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
<p>Goal</p> <p>Consolidate student management</p> <p>School-family information exchange by ICT</p>	<p>Improve the efficiency of student management</p> <p>Relate information to parents</p>		
<p>Purpose</p> <p>Student registration online</p> <p>Enhance communication with parents</p> <p>Student computerized management</p>	<p>Save time, reduce error</p> <p>Parents can get info about student</p> <p>Easy to analyze student data</p>	<p>Investigate the use of the system</p> <p>Reduce paper printing</p> <p>Consumes less time</p>	<p>The system operates 24 hours</p> <p>Maintain network link</p> <p>Computer client</p>
<p>Outputs</p> <p>Registration information</p> <p>Parent provided with information</p> <p>Statistic the information about student</p>	<p>Parents get SMS from mobile phone</p>		

China

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
Inputs System designer System operation System support centre Office space			

Title: SIKKIM e-government project
Proposer: Mr. Suresh Chandra Gupta, Resident Commissioner,
Government of Sikkim
Country: India
Date: March 2005

I. INTRODUCTION

Sikkim is a relatively small state in comparison to the large and highly populated areas in India

II. ISSUES

- Use of ICT in the country is imbalanced
- SIKKIM had undertaken sporadic efforts to expand ICT, but not sustainable
- Only access to information and links
- No online transactions
- Web sites are not updated regularly

III. PROPOSED PROJECT

A. Objective and scope

Objectives:

- Provide direct and effective ICT based service delivery to the citizens
- Provide services to 470 habitations, 4 districts
- Cover all functions and service between government and citizen
- Demystify government functioning, reduce delays and corruption

The project will include the following activities: creation of physical infrastructure, provision of hardware and connectivity, development of citizen friendly software, and capacity building. The impact of the project will be an efficient, transparent, and cost effective delivery of government services to the people.

The expected outcomes are:

- Use of ICT in all facets of interaction between citizens and local government

- All information needs of people met online
- People use ICT to provide feedback and communicate with government

Outputs:

- 470 village kiosks connected to four district centres and one central server with requisite back up
- Pool of trained manpower to run the system

B. Cost estimates and financing plan

**COST ESTIMATES
(US\$ thousand)**

Item	Total cost
1. Consultants	1.00
a. International consultant	
b. Domestic consultants	
2. Equipment and software	
a. Equipment	1.00
b. Software	1.50
3. Buildings and furniture	3.40
a. Building	
b. Furniture	
4. Training, seminars and conferences	1.70
	1.00
5. Research, development and surveys	0.50
6. Miscellaneous administration and support costs	1.00
7. Contingencies	1.00
Total	12.10

C. Implementation arrangements

An Advisory Committee including representatives from donor agencies, private sector partners, and community leaders will be formed to implement the e-government project. The Director will be a secretary rank officer. The District Chief will head the district team.

The following steps will be conducted to ensure successful implementation.

1. Project formulation and submission to donor agencies
2. Identification of technical partners, and hiring of consultants

3. Finalization of funding arrangements
4. Creation of physical infrastructure
5. Positioning of hardware
6. Government process reengineering in the selected areas
7. Development of portal and related software
8. Capacity building workshops, seminars, trainings
9. Sensitization and orientation of political leaders, key officials, and key community leaders
10. Operation and maintenance
11. Feedback on usage, user friendliness, and constant modification

D. Implementation schedule

The duration of the project is 27 months. The pre-implementation phase will be six months, the implementation phase will last 15 months, and the post implementation phase will take six months.

E. Technical and economic justifications

- Transformation of citizen and government interaction
- Sikkim is a small state thus it can serve as a test for other states
- Demonstration effect – other states to follow example
- Kiosks to be run by women entrepreneurs
- Enhanced trust, efficiency, transparency

Project framework

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
Impact Efficient, transparent, and cost effective delivery of government services to the people	Adherence to planned activities, implementation schedule and budget	The Mission and Advisory Committee outlined under implementation arrangement to monitor overall impact and performance	All requisite resource and policy support will be available

India

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
<p>Outcome</p> <p>Use of ICT in all facets of interaction between the people and the local government</p> <p>All information needs of people being met online</p> <p>People use ICT to provide feedback and communicate with government functionaries online</p>	<p>All village kiosks being actively used</p> <p>Gradual decline in number of visitors to offices</p> <p>Increase in number of transactions/usage by the people</p>	<p>Periodic physical inspection of the working of the village kiosks</p> <p>Keeping a track of number of transactions online and offline</p>	<p>Continued availability of power back up, communication link and upkeep of the systems in remote areas</p>
<p>Outputs</p> <p>470 village kiosks connected to four district centres and one central server with requisite back up</p> <p>Pool of trained manpower to run the system</p>	<p>Adherence to construction, procurement and training schedules</p>	<p>Mission Director and District Chief Executive Officer (CEO) to monitor physical and financial progress</p>	<p>Delay in land acquisition</p>
<p>Activities</p> <p>Project formulation and submission to donor agencies</p> <p>Identification of technical partners, and hiring of consultants</p> <p>Finalization of funding arrangements</p> <p>Creation of physical infrastructure</p> <p>Positioning of hardware</p> <p>Government process reengineering in the selected areas</p>	<p>Adherence to time schedules</p> <p>Sticking to budgets</p>	<p>Mission Director to review and monitor</p>	<p>Interdepartmental coordination may sometimes create unexpected problems resulting in delays</p> <p>Government process re-engineering may be resisted</p>

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
Development of portal and related software Capacity building workshops, seminars, trainings etc. Sensitization and orientation of political leaders, key officials and key community leaders Operation and maintenance Feedback on usage, user friendliness and constant modification			

Title: E-on-lending in Ministry of Finance
Proposer: Mr. Tormarbulang Lumbantobing, Head of Section for Foreign Loans and Grants I/D, Directorate of External Funds Management, Directorate General of Treasury
Country: Indonesia
Date: March 2005

I. INTRODUCTION

In Indonesia, regional autonomy has given more authority and responsibilities to the regions especially to districts. District authorities are expected to improve the delivery of services to the people. The Regional Law (33/2004), and the Fiscal Balance Law (34/ 2004) devolved most functions of the government except national defense, international relations, judicial affairs, policy, development planning, religion and finance to the local government, while Law 34/2004 provides the resources to finance the devolved tasks by assigning revenue sources and broad expenditures to the regions.

District authorities require a significant amount of investment to boost the local economy and to manage public services. In general, district authorities, which receive the block grants of general allocation funds and special purpose funds from the central government, do not have sufficient funds for development activities. Taking into account the difficulties of the districts authorities to obtain adequate funds for their capital expenditures, the central Government, acting through the Ministry of Finance, provides the facilities to the local government to acquire foreign financing through on-lending scheme.

II. ISSUES

To accommodate the needs of the local government for foreign financing, the Minister of Finance has issued decree number 35 in 2003, in which the local government can propose the projects to be financed by foreign debt to the Ministry of Finance and National Development Planning Agency. The project proposal submitted by the local government should be in line with the national development programme, within the local authorities, generate revenue, and must be approved by the local parliament. The project proposal will then be evaluated by the assessment team. According to the recommendations of the assessment team, the Minister of Finance decides whether to agree or disagree on the project proposed.

This is problematic because it is a time consuming process from the time the project proposal is submitted to the project implementation. Such delays are harmful because the assumptions made during the project preparation period may no longer be valid by the time the project is ready

to be implemented. In addition, the delay puts the local government in a difficult situation as citizens and local parliament put pressure on the government to implement the project. Furthermore, the delay limits economic growth in the region. The main reason behind the delay is that the process is carried out manually and involves many institutions.

The project aims to establish an online system between the Ministry of Finance and the local government. Due to the large number of districts (more than 300), the system to be built is prioritized with 76 local governments; those considered eligible for borrowing.

III. PROPOSED PROJECT

A. Objective and scope

The project will enable the Government to use ICT to speed up the evaluation process of project proposals to be financed by foreign debt, and make the process more transparent. The project will establish an online system between the Ministry of Finance and 76 local governments. Local governments can submit their project proposal online.

B. Cost estimates and financing plan

Total cost of the project is estimated at US\$ 11.6 million, of which US\$ 5.7 (49 per cent) is the foreign exchange cost, while the local exchange cost is US\$ 5.9 million (51 per cent).

COST ESTIMATES (US\$ million)

Item	Local cost	Foreign cost	Total cost
1. Consultants	1.0	1.2	2.2
a. International consultants			
b. Domestic consultants			
2. Equipment and software			
a. Software	0.0	2.0	2.0
b. Web	0.5	1.0	1.5
3. Buildings and furniture			
a. Building	2.4	0.0	2.4
b. Furniture	0.5	0.0	0.5
4. Training, seminars and conferences	0.5	0.5	1.0
5. Miscellaneous administration and support cost	0.5	0.5	1.0
6. Base cost	5.4	5.2	10.6
7. Contingencies	0.5	0.5	1.0
Total	5.9	5.7	11.6

Financing plan

It is proposed that ADB provide a loan in the amount of US\$ 9.0 million from its Special Funds resources to finance 78 per cent of the total project cost. The Government will finance the cost in the amount of US\$ 2.6 million (22 per cent of the total cost). Any overrun cost should be borne by the Government.

FINANCING PLAN (US\$ million)

Item	Government of Indonesia	ADB	Total cost
1. Consultants			
a. International consultants		1.2	1.2
b. Domestic consultants	0.4	0.6	1.0
2. Equipment and software			
a. Equipment	0.0	2.0	2.0
b. Software	0.5	1.0	1.5
3. Building and furniture			
a. Building	0.0	2.4	2.4
b. Furniture	0.5	0	0.5
4. Training, seminars and conferences	0.5	0.5	1.0
5. Miscellaneous administration and support cost	0.5	0,5	1.0
6. Base cost	2.4	8.2	10.6
7. Contingencies	0.2	0.8	1.0
Total	2.6	9.0	11.6

C. Implementation arrangements

The Ministry of Finance will be the Executing Agency of the project. A Steering Committee chaired by the Director General of Treasury will be established to coordinate all the project activities. The Steering Committee consists of:

1. Chief Technical Advisor
2. Joint Secretary, Directorate General of Treasury
3. Representative of Secretariat General of Ministry of Finance
4. Representative of Ministry of National Development Planning
5. Representative of Directorate of Information and Accounting, Directorate General of Treasury
6. Representative of Local Government Association
7. Project Director

During the implementation of the project, the lending regulations should be revised. The existing regulation suggests that only cost recovery projects are eligible to be financed by foreign debt through on-lending, while foreign debts used to finance non cost recovery projects should be granted to the local government. This regulation should be adjusted, so all projects proposed by local government can be financed by foreign debt on lent by the central government. The regulation requiring the existence of the assessment team should be abolished. Instead, the project proposal will be carried out by an institution within the Ministry of Finance at the directorate general level.

D. Implementation schedule

The project will be implemented over two years, and it is expected to start in January 2006 and be completed in December 2007 (see table).

E. Technical and economic justifications

Currently, the evaluation process of project proposals submitted by local governments involves a multitude of institutions, and requires abundant paper work. After the completion of the project, the time for evaluation of project proposals will be significantly reduced, and local governments will be well informed on the progress of their proposal. In case a project proposal may be considered not feasible to be financed by foreign debt, the local government may take another alternative to finance the project.

The main activities of the project will entail the following:

1. Formulating the data that should be submitted by the local governments intending to get the foreign financing through on-lending;
2. Setting-up a system within the existing web site of the Ministry of Finance through which the local government can submit their project proposals and their supporting data. The system should ensure that the data submitted are already validated by the concerned authorities;
3. Procure the computer workstations and their peripherals. Some of which will be distributed to the local governments considered eligible for borrowing;
4. The construction of the building and the procurement of the furniture;
5. Regulatory reform; and
6. Training for both central and local government officers dealing with finance.

The online system will ensure efficiency and transparency of the project proposal evaluation process. Most importantly, the needs of local people can be met within the time frame set up in the project proposal.

IMPLEMENTATION SCHEDULE

	2006												2007											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Setting up project management unit (PMU)	■																							
Formulating the data		■	■	■																				
Setting-up the system					■	■	■	■	■	■	■	■	■	■										
Construction				■	■	■	■	■	■															
Procure the furniture									■	■	■	■												
Procure the computers													■	■	■	■	■	■	■					
Regulatory reform						■	■	■	■	■	■	■	■	■	■	■	■							
Training																		■	■	■	■	■	■	

F. Risks

The sustainability of the system can be jeopardized if the operation and maintenance are not conducted successfully. Stakeholders that are involved in project evaluation through the old system may resist the implementation of the online system.

Project framework

Design summary	Performance indicators/targets	Data source	Assumptions and risks
Goals The acceleration of local economic growth	Increase in income of local people		
Outcome Use of ICT to submit the project proposal financed by foreign debt	Local governments can fill the forms	Number of proposals submitted	Training for local central government Local government support
Outputs Online system Regulatory reform	Linking the Ministry of Finance and 76 local government Abolishment of the assessment team	Progress report	Availability of counterpart funds
Activities Setting up PMU Formulating the data Setting-up the system Procure the computers Regulatory reform Training			
Inputs Equipment US\$ 3.5 million Building and furniture US\$ 2.9 million Consultant US\$ 2.3 million In kind contributions			

Title: E-learning in community access points (CAP) in assisting the learning process for students in rural area

Proposer: Mr. Mohammad Rudy Salahuddin, Head, Sub-Directorate for Posts and ICT, National Development Planning Agency

Country: Indonesia

Date: March 2005

I. INTRODUCTION

The low level of ICT penetration in rural areas around Indonesia (0.2 per cent) is seen as the main obstacle to the development of the Information Society. Initiatives based on the collaboration of the government, private sector, civil society and civil society groups have included numerous efforts to increase the above penetration level. Efforts have been arranged in both ways, creating the demand, i.e. creating an increased level of awareness through socialization activities, as well as, to some extent, creating the supply, i.e. providing some level of infrastructure availability – or at least creating pilot activities in making technology available.

The World Summit on Information Society (WSIS) has set the target date of 2015 for half of the world's population to have access to the Internet. Indonesia through the commitments made in December 2003 has taken this commitment and is now conducting a number of initiatives to ensure that those targets are reached. WSIS recognizes Community Access Points (CAPs) as one of the solutions in providing access to the community.

In this project, 200 CAP locations situated around schools will be selected. Collaborations will be made with teachers and lecturers to give assignments in traditional courses to students that 'forces' them to use the e-learning facilities in the CAP location. Collaborations will also be made with the CAP sites so that certain e-learning tools can be installed and the people managing the CAP sites can provide some assistance to students who use the facility.

Students or learners which are identified include: junior and senior high schools students for curriculum-based units, junior and senior high school students for non-curriculum based activities, community decision makers, and rural development professionals.

CAPs have been implemented in the past. However, implementing CAP in a controlled situation where conducive conditions are created to support effective e-learning programme in rural areas in Indonesia has not

been done before. This is part of the problem in creating a sustainable CAP, in addition to other problems such as infrastructure access, and awareness of the community.

This project requires several components: planning, purchasing equipments, setup, and the impact review process. The CAP programme will collaborate with the local government and a local NGO who will be given training to ensure they are able to facilitate the CAP facility.

II. ISSUES

The following points are issues which need to be resolved prior to the installation:

1. Selection of 200 CAP sites
2. Implementation of CAPs
3. Selection of an NGO to support the activity
4. Maintaining the equipment and facilities
5. Making available relevant e-learning applications
6. Keeping long term sustainability with revenue generated activities
7. Measuring the success of the implementation

III. THE PROPOSED PROJECT

A. Objective and scope

The project has two (2) purposes:

- To implement 200 CAPs sites for e-learning programme in a chosen rural area
- To develop supporting materials for the CAP sites

a. CAP Model

The project will be implemented based on the CAP model for e-learning of the Department of Communication and Information Technology (Depkominfo). The CAP model is composed of:

- 400 computers networked (LAN) – with the appropriate operating system
- 20 computers – networked used by the CAP facilitator – this will also act as a fax send/receive station
- 1+1 server connected to the LAN with the appropriate operating system
- 200 printers (laser printers for durability)

- 200 scanner – which will also be used as a fax sending interface
- 20 telephone line (also used as fax machine: send/receive)
- Internet connection (paid for one year for the duration of the project)
- Satellite communication
- CAP software to maintain usage and printing
- Fax send/receive software
- Relevant e-learning applications
- 20 trainer/facilitator (this must come from the NGO)
- 20 CAP maintainer (this must come from the NGO)

Outside the formal hours of e-learning usage, the CAP facility will be open for public where they will be able to use the facility for general Internet use or other revenue generating activities. There will be a minimal charge administered which will be used to pay miscellaneous costs of the CAP.

b. Methodology and key activities

The project consists of the following stages:

Stage A: Planning Stage (6 months)

- Establish a selection criteria for the 200 (two hundred) CAP sites
- Select the CAP site
- Identify a local NGO which will take part in the activity
- Arrange collaboration with the local government
- Arrange collaboration with the local NGO
- Planning and selection of CAP site (physical location)
- Planning for the application (relevant content)
- Planning for the equipment usage and room layout

Stage B: Preparation and Procurement Stage (6 months)

- Training the NGO in determining work practice
- Preparation of the CAP site
- Installation of equipment
- Installation of software

Stage C: Commissioning Stage (3 month)

- Training the NGO in determining work practice
- On-going training (every day – morning)

Stage D: Monitor and Review Process (12 months)

- Conduct review of process using a predetermined set of review measures
- Modify model and CAP site operations to reflect the measures
- Measure sustainability of the CAP site

B. Cost estimate and financing plan

Cost components:

- **International consultants.** This will be required at the start of the project to oversee the overall plan (implementation and review) and provide quality assurances input. These resources will be shared across the two hundred (200) locations.
- **Domestic consultants.** This will be done through engaging a non-governmental organization. It will oversee the implementation and the review of the project.
- **Equipment.** As described in the model above.
- **Software.** As described in the model above.
- **Building.** There will be costs for building, fixing or modifying the building.
- **Furniture.** Furniture will be required for the 400 computers (table and chairs), the facilitator's computer, printers and fax, teaching board (white board).
- **Training, seminars and conferences.** For the site, there will be an ongoing training everyday (or every other day) conducted by the NGO. That is why the training will be given to the NGO (train-the-trainer mode). After one (1) year, there will be a seminar held to display the implementation results held in Jakarta.
- **Research, development and surveys.** Research will be conducted in conjunction with an Indonesian university and donor. Surveys and other research instruments will be used accordingly.

- **Miscellaneous administration and support costs.** There will be traveling costs to the site, both air and land. This will depend on the location chosen.
- **Contingencies**

COST ESTIMATES
(US\$ million)

Item	Government	Donors	Total cost
1. Consultants			
a. International consultants	0.00	0.50	0.50
b. Domestic consultants	0.25	0.00	0.25
2. Equipment and software			
a. Equipment	0.00	8.00	8.00
b. Software	0.00	2.50	2.50
3. Buildings and furniture			
a. Buildings	0.00	0.00	10.00
b. Furniture	2.50	0.00	2.50
4. Training, seminars and conferences	1.00	0.00	1.00
5. Research, development and surveys	0.00	2.50	2.50
6. Miscellaneous administration and support costs	0.00	1.50	1.50
7. Contingencies	0.25	1.00	1.25
Total	4.00	26.00	30.00

C. Implementation arrangements

There are five (5) parties to the project:

- Donor (ADB)
- Central Government (CAP Programme Owner)
- Local Governments
- Local NGOs
- Vendor Partners (Microsoft, IBM)

IV. BENEFITS OF THE PROJECT

- To have a proven implementation of CAP for e-learning process in the rural areas
- To bring knowledge benefit to the schools around the CAP area

- To bring economical benefit to the people living around the area
- To expose the schools to technology which may benefit them in the long term
- To prepare the community to take part in the information society

Title: Information centre for official development assistance (ODA) to Lao People's Democratic Republic

Proposer: Ms. Chongchith Chantharanonh, Director, International Financial Institution Division, Department of International Cooperation, Ministry of Foreign Affairs

Country: Lao People's Democratic Republic

Date: March 2005

I. INTRODUCTION

In Lao People's Democratic Republic, Official Development Assistance (ODA) coordination is the responsibility of the Department of International Cooperation (DIC), Ministry of Foreign Affairs (MOFA). The Division of International Financial Institution (DIFI) is one of the divisions under DIC, which is responsible for international financial institutions that provide assistance to the country.

II. PROPOSED PROJECT

A. Objective and scope

The information centre will provide a solution for better coordination and sharing of ODA-related information among donors, the private and public sector community such as ongoing projects, documentations, policy, and job opportunities for the private sector. Donors, the public and the private sectors are interested in gathering information about projects availability, job opportunities, and general information to develop detailed project proposal for both loan and grants projects. An ODA information centre would be the best solution for aid coordination with donors and the private sector. The main objective is to facilitate the administering of foreign aid by providing information to all donors, the public and private sectors on the past, current and future ODA assistance in Lao People's Democratic Republic.

The project entails specific activities:

- Set up the PCs system within MOFA, Ministries, and Provincial target
- Receive technical advise to develop computer system from consultants
- Training
- Set up office equipment

The expected outcomes of the project are:

- Improved coordination and feedback through information sharing

- Improved communication among donors, public, and private sectors on ODA
- Improved and faster ICT

B. Cost estimates and financing plan

The total cost of the project is estimated at US\$ 1.2 million, of which 0.80 is the foreign exchange and 0.40 is the local cost. The cost estimate includes contingencies, but excludes tax, duties; and physical, and price contingency charges during the project implementation. It is expected that ADB, United Nations agencies, and the private sector will provide a grant of US\$ 1.2 million and the Government would contribute for the staffing, duties, and taxes.

COST ESTIMATES (US\$ million)

Component	Foreign	Local	Total
Base cost			
Information centre office equipment	0.50	0.15	0.65
Consultant service	0.25	0.05	0.30
Project administration	0.00	0.10	0.10
Contingencies	0.05	0.10	0.15
Total	0.80	0.40	1.20

C. Implementation arrangements

The Division of International Financial Institution, Ministry of Foreign Affairs will be the implementing agency.

D. Implementation schedule

The project will be implemented over a period of three years starting in June 2005 and ending in May 2008.

E. Technical and economic justifications

The project will directly benefit the public and private sectors, and donors by linking these stakeholders directly to a computerized information sharing system. This project is the initial stage of setting up an e-government network for ODA coordination.

Sustainability depends on operation and maintenance. However, after completion of the project, sustainability will rely on staff capacity, and the ability to provide better services to the citizens.

F. Risks

The risks are delays in project financing and implementation.

Project framework

Design summary	Performance indicators/targets	Data sources/ monitoring	Assumptions and risks
Goals Improve ODA coordination	Update ODA information online	Report Interview	Network malfunctions Low connectivity speed
Outcome Aid coordination and information sharing	Access to ODA information online and publications	Report Mission review	Public awareness
Outputs Computer network system is running and functioning Improved staff's ICT skills	Online electronic communication one-stop information service on ODA	Report Mission review	Training of Government staffs
Activities Set up the network facilities Online information sharing Training on the use of ICT			
Input Equipment and consulting costs			

Title: E-government project proposal of Lao People's Democratic Republic
Proposer: Mr. Santisouk Simmavalavong, Deputy Permanent Secretary, Ministry of Communication, Transport, Post and Construction
Country: Lao People's Democratic Republic
Date: March 2005

I. INTRODUCTION

In Lao People's Democratic Republic, 77 per cent of the total population lives in remote rural areas where access to telecommunications is limited. E-government could contribute to:

- Human resource development
- Rural development
- Public healthcare improvements
- Decentralization of government
- Cost-effective and transparent public service

The Government of Lao People's Democratic Republic has attempted to introduce an e-government, but it is limited to the Prime Minister's Office and a few number of provinces. Each Ministry has their own LAN network.

II. ISSUES

- Lack of infrastructure
- Lack of funding and human resources
- Low level of ICT literacy
- No linkage among ministries and governmental agencies at the central as well as at the provincial level
- Lack of public participation

III. PROPOSED PROJECT

A. Objective and scope

Objectives:

- Facilitate digital economic development
- Reduce the cost of government
- Provide quality service

- Establish an e-government infrastructure, including: e-government Centre, e-government portal, a high-speed internet network linking all government agencies with all provinces, one-stop public services

Project scope:

1. Build e-government centre;
2. Development of prototype e-government applications;
3. Electronic Approval System (EAS);
4. National homepage (Database management);
5. Electronic document distribution and exchange;
6. Electronic Document Management System (EDMS);
7. Provision of IT equipment and installation; and
8. Human resource development including user training, technical and system administrator training, and development training.

B. Cost estimates and financing plan

COST ESTIMATES (US\$ million)

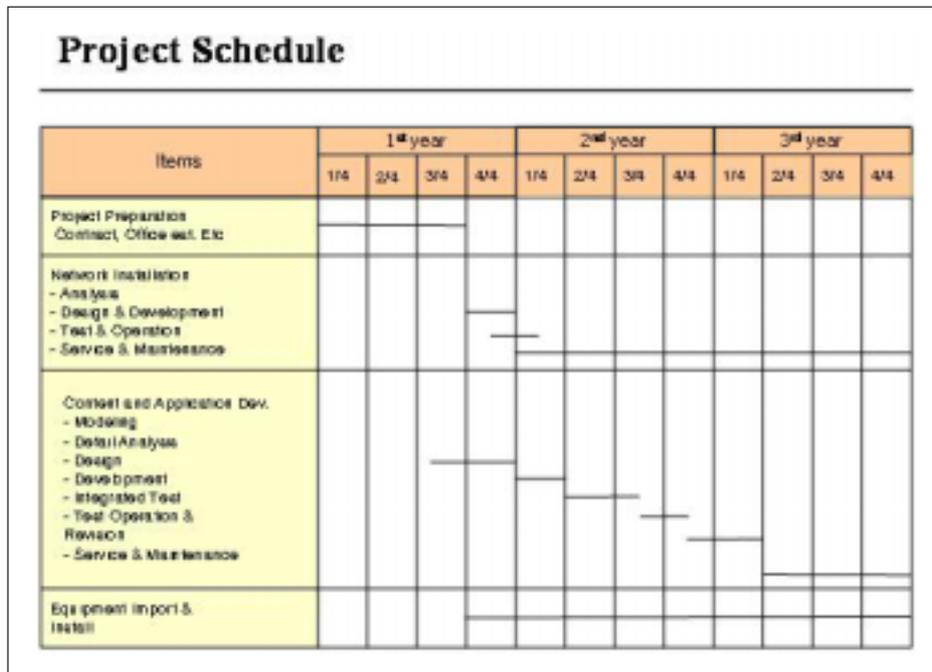
	Total	First year	Second year	Third year
Domestic fund (in kind)	0.1	0.03	0.05	0.02
Foreign fund approximation US\$ 950,000	9.9	2.97	4.95	1.98
Total	10.0	3.00	5.00	2.00

C. Implementation arrangements

The Prime Minister's office will be the Executing Agency of the project. The following ministries will be connected via Internet network. The duration of the project will be three years.

1. Prime Minister's Office, Science Technology and Environment Agency
2. Ministry of Communication, Transport, Post and Construction (MCTPC)
3. Ministry of Foreign Affairs (MFA)
4. Ministry of Information and Culture (MOIC)
5. Ministry of Education (MOE)
6. Ministry of Commerce (MOC)

PROJECT SCHEDULE



7. Ministry of Finance (MOF)
8. Ministry of National Security (MONS)
9. Ministry of Agriculture and Forestry (MAF)
10. Ministry of Industry and Handicraft (MOIH)
11. Ministry of Labour and Social Welfare (MLSW)
12. Ministry of Justice (MOJ)
13. Ministry of National Defense (MOND)
14. Ministry of Public Health (MOPH)
15. National Assembly (NA)
16. Committee for Planning and Investment (CPI)
17. Bank of Lao PDR (BOL)
18. Vientiane Capital and 17 provinces

E. Technical and economic justifications

The following expert and resource persons will conduct the implementation: one expert will assist in project management for a duration of three months; two experts will be part of the network design and

configuration; two additional experts will assist and consult in content and application development. Network and operation will require two specialists. There will be five members in the management and administration section; eight members in network design and configuration; 10 personnel in content application and development; and 18 personnel in system administration and support services. Technical training will be conducted in the ICT project management section by 40 staff members. Network design and configuration training courses will include 15 staff members. There will be 40 staffs in application development; and 40 staffs in system administration. Hardware, software, network peripherals, and content and application development equipment will be required, as well as miscellaneous office equipment and transportation.

F. Risks

- Insufficiency of awareness at the political level
- Lack of qualified technical personnel
- Lack of motivation among government agencies
- Inadequate funding for operation, maintenance, and sustainability

G. Project sustainability

- Using revenues from the advertisement of public and private companies
- Service fees to be charged from G2B transaction
- Service providers' contribution in a form of rebate
- Some portion from government contribution

Project framework

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
<p>Goals</p> <p>To provide an initial network for linking the Prime Minister Office with all ministries, government agencies and branch offices in all provinces</p>	<p>Integrated initial information system of public services</p>	<p>Prime Minister Office and Science Technology and Environment Agency (STEA) executes project</p>	<p>Lack of knowledge</p>

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
<p>Purposes</p> <p>Establish nationwide electronic linkage among public sectors</p> <p>Deliver a more responsive and effective service to the local governments</p> <p>Enhance public participation</p>	<p>Transformation of the structures and operations of the government one-stop public services to citizens</p> <p>Increased ICT literacy and confidence</p>	<p>Information access to all provinces and monitoring by the local governments</p>	<p>Technology should be available 24 hours</p>
<p>Outputs</p> <p>Transparent governance in central and local governments, leading to one-stop service for the citizens</p>	<p>Facilitate digital economic development</p> <p>Reduce cost of government</p> <p>Establish e-government infrastructure</p>	<p>E-government Centre under STEA of the Prime Minister Office</p>	<p>Inadequate funding for cooperation and maintenance</p>
<p>Activities</p> <p>Development of prototype e-government application</p>	<p>Expert and resources persons</p> <p>Technical trainings</p>	<p>E-government established</p>	<p>Lack of coordination among public sectors</p>
<p>Inputs</p> <p>Funding sources</p>	<p>Building, servers, hubs, network utilities, equipments, hardware, software</p>	<p>Management and administration support</p> <p>Network, content design, configuration and development</p>	<p>Lack of qualified technical personnel</p>

Title: G4DP project (E-government for development planning)
Proposer: Mr. Virya Dalalay, Technical Staff, Department of General Planning, Committee for Planning and Investment
Country: Lao People's Democratic Republic
Date: March 2005

I. INTRODUCTION

The Committee for Planning and Investment (CPI) plays a very important role in the oversight of short, medium and long term social and economic development plans. CPI is also responsible for the action plan of the National Growth and Poverty Eradication Strategy (NGPES). CPI has nine departments which include Department of General Planning (DGP), National Statistic Centre (NSC), National Economic Research Institute (NERI) and the Department of Internal and Foreign Direct Investment Management (DIFDIM), among others. CPI works very closely with the Ministry of Finance (MoF) in terms of budget allocation for public investment as well as with the Prime Minister's Office (PMO) in terms of approval, issuance and implementation of plans.

CPI is additionally responsible for acquiring and providing all information relevant to development planning. However, without a proper management information system (MIS), it is difficult to prepare documents within strict time limitations, and as a result, development plans are inaccurate and inefficient. The computer system currently used by CPI and other governmental agencies is out of date. The number of computers available to government administrators is limited and insufficient. Furthermore, government administrators lack adequate knowledge and skills in computer technology. Advanced technological applications are not utilized because it is not available in local language.

II. ISSUES

CPI is unable to manage information necessary to prepare projects and long term plans for economic development due to the lack of modern equipment and information management system. For example, five or ten year old legal documents are difficult to retrieve from any of the agencies. In addition to inadequate information management, there is a lack of coordination among government ministries.

The proposed project, LAOGO-LINK, aims to set up an management information system, and provide an initial network to connect CPI and its two main agencies to their provincial branches.

III. PROPOSED PROJECT

A. Objectives and scopes

The objective of this project is to enable government officials at three agencies namely CPI, MoF, PMO and 18 provincial administrative offices to have a basic standardized MIS in hard format as well as in electronic format. The purposes of the management information system is to enhance working process, reduce time consumption, improve coordination among agencies through online sharing of information, and provide better government services to the public.

In the first phase of implementation, an MIS will be set up in the three governmental offices of CPI, MoF, and PMO, and the 18 provincial branches. In the second phase, the project will establish a WAN in CPI and PMO. The WAN will be set up in each administrative province as well. The WAN will be linked through intranet based on the existing telecommunication network that will connect the three government agencies to the provinces. In the last phase, the ICT system will connect the government to the citizens, and a CPI e-government portal will be launched.

B. Cost estimates and financing plan

The total cost of the project is estimated at US\$ 20 million, of which 18.4 million (92 per cent) will be financed by donor agencies, and 1.6 million (8 per cent) will come from the counterpart fund of the government.

COST ESTIMATES (US\$)

Item	Donors	Government	Total cost
Setting up IMS (Phase I)	1,840,000	160,000	2,000,000
1. Consultants	480,000	20,000	500,000
2. Furniture	450,000	50,000	500,000
3. Capacity building	720,000	80,000	800,000
4. Miscellaneous administration and maintenance cost	90,000	10,000	100,000
5. Contingencies	100,000		100,000
Establishment of WAN (Phase II)	13,640,000	1,360,000	15,000,000
1. Consultants	970,000	30,000	1,000,000
2. Equipment and software	10,800,000	1,200,000	12,000,000
3. Capacity building	920,000	80,000	1,000,000
4. Miscellaneous administration and maintenance cost	450,000	50,000	500,000
5. Contingencies	500,000		500,000

Item	Donors	Government	Total cost
E-government development (Phase III)	2,930,000	70,000	3,000,000
1. Consultants	480,000	20,000	500,000
2. Equipment	1,800,000		1,800,000
3. Capacity building	180,000	20,000	200,000
4. Miscellaneous administration and maintenance cost	270,000	30,000	300,000
5. Contingencies	200,000		200,000
Total	18,410,000	1,590,000	20,000,000

Financing plan

It is proposed that the donor community including ADB, World Bank, UNDP, Japan International Cooperation Agency (JICA), Swedish International Development Cooperation Agency (SIDA), Gesellschaft für Technische Zusammenarbeit (GTZ) and others provide the funding. All proposed loans will have a repayment period of 30 years, including a grace period of 10 years, and will carry a very low interest of less than 0.5 per cent per annum during the grace period, and up to 1 per cent per annum thereafter. The borrower will be MoF on behalf of the Lao People's Democratic Republic Government.

C. Implementation arrangements

The Committee for Planning and Investment will be the Executing Agency for the project. A Project Steering Committee (PSC), chaired by the Vice President of CPI, will be established prior to project appraisal to direct the project and assist with intra-agency coordination of activities. A Project Implementation Unit (PIU) will be set up under the Department of General Planning of CPI. A Project Director appointed from CPI will have operational responsibility over the project management. The Project Implementation Unit will provide a monthly progress report on project implementation to donor community according to their standard requirements.

D. Implementation schedule

The project duration will be five years beginning in January 2006, and ending in November 2010. The first and third phases will last a year, while the second phase is expected to take three years.

E. Technical and economic justifications

At the present time, the development of MIS within the agencies has been carried out on an ad hoc basis by individual departments without an overall strategy to ensure that information is gathered, analyzed, processed, and disseminated in the most effective manner. The proposed project will provide a more uniform way of managing information. Advanced techno-

logical tools will improve the quality control of information, control costs, and improve government efficiencies through the adoption of international practices.

Economic benefits will be tremendous. Government officials will have fast and direct access to sources of information, and official documents and information will be available online. Government ministers and officials will receive ICT training from foreign experts. The system will improve productivity, reduce costs, and save time. As a result, socio-economic development projects will be prepared and implemented more effectively.

F. Project risks

- Lack of understanding and motivation among policy makers
- Inadequate funding for operation and maintenance
- Shortage of qualified technical staff
- Low salary of government officials

Project framework³

Design summary	Performance target/indicator	Data sources/ monitoring	Assumption and risks
Goals Efficient and effective service delivery system created			
Output MIS established Knowledge of MIS obtained			Proper funding would be continued
Activities Set up PIU Recruit consultants Train people	PIU working People learn MIS	CPI, MoF, PMO and staff from all provinces	Lack of awareness among policy makers
Inputs Staff equipment Facilities Funding	To be discussed and assigned	CPI, MoF, PMO/ provide monthly progress report	

³ This project framework refers to the summary of the first phase only due to lack of enough time for the preparation.

Title: Mongolian e-government
Proposer: Mr. Oyunbaatar Sharkhuu, IT Engineer, Information and Technology Division, Ministry of Finance
Country: Mongolia
Date: March 2005

I. INTRODUCTION

Mongolia is landlocked between two countries, the Russian Federation and China, with an area of more than 1.5 million square kilometers and a population of 2.7 million. Mongolia has a population density of only 1.8 people per square kilometer, one of the lowest in the world. Nearly one third of the total population lives in the capital city, Ulaanbaatar.

Today, the Government of Mongolia considers the development of ICT infrastructure as one of the key factors for fostering economic development of the country. High priority is given to the improvement of the ICT infrastructure, in order to implement a long-term objective of creating a viable ICT infrastructure with a high rate of return.

In the last five years, ICT was seen as a dynamic and active sector in Mongolia. Foreign investments, technical assistance, and cooperation with technically advanced nations have enabled Mongolia to achieve significant progress in ICT development. The Government of Mongolia has defined the “national ICT Vision in 2010” that lays out the principal strategies of ICT development and the Prime Minister himself heads the National ICT Committee.

II. ISSUES

- Solution to e-government has not been found
- Improve the institutional capacity building of ICT policy and regulation
- Build modern infrastructure for government and rural area
- Develop human resources by cultivating ICT knowledge and usage

II. PROPOSED PROJECT

A. Objective and scope

The project will be planned in accordance to the economic growth support and poverty reduction strategies, ICT development action plan, and e-Mongolia’s development strategy. The “Strategies for e-Government Blue-

print and Roadmap in Mongolia” funded by the Government of the Republic of Korea is being prepared.

Currently, Mongolians communicate locally and internationally through various telecommunication services, including fixed line network consisting of copper line and fiber optics, wireless communication including microwave links and mobile phones, and VSAT (Intelsat and Intersputnik systems). A mobile network covers all provinces. The Ministry of Finance, with financial assistance from the World Bank, has recently introduced the Government Financial Management Information System (GFMIS). GFMIS enables connection of the Government’s treasury account and the Government’s budget entities via a satellite network. This satellite network should be extended to tax, customs, and statistical agencies. However, the current ICT infrastructure cannot support a nation wide e-government. The current infrastructure requires extensive development and upgrading. Therefore the proposed project intends to establish an ICT infrastructure capable of supporting the launching of an e-government portal.

Infrastructure development will take place in three stages:

- Stage 1: Build and improve national communication centre (NCC) and connect Ministries and Government agencies with high speed WAN using ring topology within city
- Stage 2: Build 21 *aimag* (province) connection centres (ACC) and connect to the Government WAN using fiber optic and satellite.
- Stage 3: Build 330 *soum* (village) connection centres (SCC) and connect to the Government WAN using fiber optic and satellite.

The implementation of an e-government portal will take place in two stages:

- Stage 1: Build general e-government portal
- Stage 2: Extend e-government portal

The ministries and other government agencies will be connected to the portal and update related portal documents. Citizens residing in urban areas will connect to the Internet using modems and cellular phones. It is important the cost of Internet connection be minimized for the citizens. The citizens living in *soum* or villages use public internet centres. The nomadic stockman will use a satellite antenna and special converter.

B. Cost estimates and financing plan**COST ESTIMATES
(US\$ million)**

Project name	Period	Government	Donors	Total
<i>Project 1: Infrastructure project</i>	5 year	7.1	27.9	35.0
1 st stage – Centres and backbone	1 year	2.6	12.5	15.1
1. Consultants				1.5
a. International		0.0	1.0	1.0
b. Domestic		0.5	0.0	0.5
2. Equipment and software				8.0
a. Equipment		1.0	7.0	6.0
b. Software		0.0	2.0	2.0
3. Building and furniture				2.3
a. Building		0.5	1.5	2.0
b. Furniture		0.0	0.3	0.3
4. Training seminars conferences		0.1	0.2	0.3
5. Research development and surveys		0.2	0.5	0.7
6. Miscellaneous administration and support costs		0.1	0.2	0.3
7. Contingencies		0.2	1.8	2.0
2 nd stage – 21 centres and connections	2 years	2.0	8.3	10.3
1. Consultants				1.0
a. International		0.0	0.5	0.5
b. Domestic		0.5	0.0	0.5
2. Equipment and software				4.0
a. Equipment		0.5	3.5	4.0
b. Software		0.0	0.0	0.0
3. Building and furniture				2.5
a. Building		0.5	1.5	2.0
b. Furniture		0.0	0.5	0.5
4. Training seminars conferences		0.1	0.4	0.5
5. Research development and surveys		0.1	0.2	0.3
6. Miscellaneous administration and support costs		0.2	0.5	0.7
7. Contingencies		0.1	1.2	1.3
3 rd stage – 330 centres and connections	2 years	2.5	7.1	9.6
1. Consultants				0.8
a. International		0.0	0.3	0.3
b. Domestic		0.5	0.0	0.5
2. Equipment and software				3.0
a. Equipment		0.5	2.5	3.0
b. Software		0.0	0.0	0.0

Project name	Period	Government	Donors	Total
3. Building and furniture				2.0
a. Building		0.6	1.0	1.6
b. Furniture		0.1	0.3	0.4
4. Training seminars conferences		0.1	0.7	0.8
5. Research development and surveys		0.1	0.6	0.7
6. Miscellaneous administration and support costs		0.1	0.5	0.6
7. Contingencies		0.5	1.2	1.7

Project name	Period	Government	Donors	Total
<i>Project 2: E-government portal</i>	3 year	1.1	4.2	5.3
1 st stage	1 year	0.6	2.9	3.5
1. Consultants				0.6
a. International		0.0	0.3	0.3
b. Domestic		0.1	0.2	0.3
2. Equipment and software				1.3
a. Equipment		0.0	0.3	0.3
b. Software		0.2	0.8	1.0
3. Building and furniture				0.1
a. Building		0.0	0.0	0.0
b. Furniture		0.0	0.1	0.1
4. Training seminars conferences		0.1	0.4	0.5
5. Research development and surveys		0.1	0.2	0.3
6. Miscellaneous administration and support costs		0.0	0.1	0.1
7. Contingencies		0.1	0.5	0.6
2 nd stage	2 years	0.5	1.3	1.8
1. Consultants				0.3
a. International		0.0	0.3	0.1
b. Domestic		0.0	0.2	0.2
2. Equipment and software				0.3
a. Equipment		0.1	0.1	0.2
b. Software		0.0	0.1	0.1
3. Building and furniture				0.1
a. Building		0.0	0.0	0.0
b. Furniture		0.1	0.0	0.1
4. Training seminars conferences		0.0	0.2	0.2
5. Research development and surveys		0.1	0.2	0.3
6. Miscellaneous administration and support costs		0.0	0.1	0.1
7. Contingencies		0.2	0.2	0.4

C. Benefits

- Increased information and IT literacy
- Increased government transparency, decreased corruption
- Economic development
- Government WAN infrastructure established
- Higher position in United Nations global e-government readiness ranking

Title: Connecting rural Myanmar
Proposer: Mr. Htun Aung, Chief Engineer, Myanmar Posts and Telecommunications, Ministry of Communications, Post and Telegraphs
Country: Myanmar
Date: March 2005

I. INTRODUCTION

As a signatory of the e-ASEAN Framework Agreement, Myanmar is set on establishing connectivity and compatibility with the ASEAN Information Infrastructure. As part of the Agreement, an e-Application Committee under e-National Task Force has deemed the development of e-government a priority.

Myanmar Posts and Telecommunications (MPT), the sole provider of telecommunication services in Myanmar, has been striving to fulfill the Universal Service Obligations (USO). In recent years, the Internet has become a necessity because it enables instant access to information, efficient transactions, saves time, and reduces costs. However, lack of access to the Internet is causing a digital divide among nations, as well as within the people of a nation. Therefore, MPT is considering the provision of data services. In urban areas, Internet access has been provided with only a slight modification of existing digital equipment, but it is much more difficult to expand Internet access into rural areas. People living in rural areas cannot afford high connection fees and tariff rates, thus providing an Internet connection will be costly.

II. ISSUES

The majority of long distance facilities in Myanmar are microwave radio systems. The systems are well suited to the difficult terrain conditions, and serve to connect cities and towns, However, bandwidth is limited, and spur routes into rural areas are not efficient. Recent decreases in the price of fiber optic cable and system have helped to address the backbone bandwidth requirements. Advancements in mobile and wireless local loop (WLL) technology, and decreases in the price of wireless networking devices have resulted in the installation of a WAN, and efficient data services.

III. THE PROPOSED PROJECT

A. Objective and scope

Myanmar has recognized the potential of e-government to improve efficiency and transparency in the public sector, and launched a plan to expand e-government into rural areas. More than 70 per cent of the

population lives in rural areas without proper ICT facilities. It is necessary not only to install proper ICT facilities, but also to promote the usage of these facilities and the benefits of ICT.

The scope of the proposed project is to connect rural areas to the national ICT network, and establish multi-purpose community centres (MCC) where e-services can be provided at an affordable price. The service fees and extra capacity of the network apart from MCCs, will be utilized for the purpose of self sustainability by providing connections within the coverage area of the WLL.

The project will cover the rural areas in all of the seven states and seven divisions that make up Myanmar. Each area will be covered by 10 CorDECT wireless local loop systems, each with 200 lines capacity, 50 of which will be for both voice and data at 35/70 kbps. A total of 500 lines will connect 100 multi-purpose community centres in each state or division to the Internet. Each corDECT system will be connected to the Myanmar Posts and Telecommunications backbone via 1~3 hops Digital Microwave Radio System (4E1). Equipment for an Internet node point is also provisioned. One ipStar satellite terminal per MCC is included for backup and slack period usage. The project is for a total of 28,000 lines, and will provide 1,400 multi-purpose community centres depending on the availability of soft loans provided.

B. Cost estimates and financing plan

The total cost of the project is estimated at US\$ 92 million. Foreign sources will provide US\$ 68 million (74 per cent), and local sources will provide US\$ 24 million (26 per cent). The local component includes the costs of buildings, furniture, transmission towers, groundings, air-conditionings, chargers, batteries, local fees, taxes and duties.

The project will be financed with/in the form of soft loans from foreign governments or donor agencies such as ADB. The local component will come from the government budget and Myanmar Posts & Telecommunications.

COST ESTIMATES (US\$ million)

Component	Foreign	Local	Total cost
A. Cost per state/division			
1. MCCs (100)	2.5	0.75	3.25
2. CorDECT system (10)	1.0	0.20	1.20
3. Microwave radio (10)	1.0	0.76	1.76
4. IPStar terminal (100)	0.3	-	0.30
Sub Total (A)	4.8	1.71	6.51
B. Internet node			
1. Hardware/software	0.3	0.008	0.308
C. Contingencies	0.5	0.052	0.552
Sub total (B,C)	0.8	0.06	0.86
Grand total (14 states/divisions)	68.0	24.00	92.00

C. Implementation arrangements

The Ministry of Finance will be the Executing Agency for the project. A Project Steering Committee (PSC), chaired by the Minister of Communications, Posts, and Telegraphs, will be established prior to project appraisal. Managing Director of MPT under the Ministry of Communications, Posts and Telegraphs will be appointed as Project Manager and head of the project management unit (PMU). The Managing Director will have overall responsibility over project implementation. The PMU will provide monthly progress reports on project implementation.

D. Implementation schedule

The project will be implemented over a period of two years, commencing from the time of the loan agreement. In case full financing from foreign sources is unavailable, the project will be phased accordingly.

E. Technical and economic justifications

Despite efforts by MPT to meet the USO, telecommunication facilities are lacking in most rural communities, and the existing ones are either manual phone systems or long range cordless phone connections. Therefore, CorDECT systems are appropriate for the proposed project. The system is based on digital enhanced cordless telecommunications (DECT) standard with path to 3G (third-generation mobile telephone technology) and digital switching built-in. It serves to automatize the manual phone systems. The coverage is extended to over 25 kilometers through repeater base station, allowing WLL connections to penetrate difficult terrain and reach a reasonable number of villages.

The government of Myanmar recognizes that ICT will improve living standards and increase productivity. The leading obstacles are start up costs. The proposed project will overcome this obstacle and provide socio economic benefits. The ICT systems in the multi-purpose communication centres will be self sustainable. The estimated investment return rate of 26 per cent will be easily attained.

F. Risks

The project is void of risks because it is undertaken by the government, and the private sector.

Title: Decentralized management information system (DMIS) for local governance

Proposer: Mr. Surya P Acharya, Undersecretary, Information, Publication and Documentation Section, Ministry of Local Development

Country: Nepal

Date: March 2005

I. INTRODUCTION

In Nepal, the Ministry of Local Development (MLD) is responsible for local governance and strengthening local institutions. The Ministry's field operations are conducted through a department, 75 District Development Committees, 58 municipalities and 3,913 village development committees. Coordination between local offices and the central government is critical to good governance. A Management Information System is becoming an increasingly effective and important tool for governance, service delivery, and management.

The Government of Nepal has made considerable advancements in ICT policy. The following legislations were formulated in an attempt to advance ICT:

- IT Policy approved (2000)
- IT plan continued in 10th National Plan (2002-2007)
- Electronic Transactions Ordinance issued (2004)
- Telecom Policy (2004)
- Local Self Governance Act (1998)

The 10th plan established data distribution centres or information centres in 75 districts, and equipped one third of the districts with geographic information systems (GIS). The Local Governance Act established a district information and documentation centre.

At the local level, the Ministry of Local Development (MLD) has prepared some general guidelines for the implementation of an Decentralized Management Information System (DMIS). The proposed project will improve information management, efficiency, service provision, and planning. The project is proposed for five District Development Committees (DDC) and five municipalities on a pilot basis.

II. ISSUES

- Limited access to ICT

- Inadequate networking/connectivity
- Low institutional capacity
- Incompetence
- Limited technical knowledge
- Lack of horizontal and vertical linkage
- Lack of sustainability
- Weak monitoring and evaluation
- Limited maintenance facilities
- Lack of financial resources

The ministry's leading concerns are:

- Streamline issues relating to personnel information system and recruitment
- Management of financial system
- Utilization of funds and local resources
- Database preparation and implementation of social security system
- Management coordination
- Strong and effective horizontal and vertical monitoring system

III. PROPOSED PROJECT

A. Objective and scope

The proposed project is a Decentralized Management Information System (DMIS) for local Governance. The objective of the project is to increase effectiveness and efficiency of the local government.

Project scope:

- Setup a collaborative DMIS system to monitor, evaluate, and continuously improve different activities of the government at central and local levels
- Need for continuous update and upgrade of the activities of local governance to the central agencies
- Bring MIS such as hazardous material information system (HMIS) and electromagnetic interface (EMI) under one umbrella
- Set up an information flow system
- Strengthen the GIS database

- Prepare e-government portal for local governments
- Capacity development of local government and institutions

Technicality of linkages:

- **Horizontal linkage:** It will be a linkage between the Local Government (LG), Line Agencies (LAs) and Community Organizations (COs). Among them, LAs have technical expertise and experience working in different areas; LGs have legal provisions for coordinating development and management; and COs have hands on experience working with the communities;
- **Vertical Linkage:** It will be a linkage between local government agencies and central government. This would reduce quantity of data at the national level.

Outputs:

- Vertical and horizontal networking established
- Local governance portal created
- Capacity of local bodies strengthened
- Spatial planning and monitoring system improved
- Database system established
- Institutional capacity developed
- Research and development activities related to e-government pursued
- Information shared
- Manpower trained
- GIS tools replicated in project planning process
- Better communication system established
- Electronic access to local government enabled

B. Cost estimates and financing plan

COST ESTIMATES (US\$ million)

Outputs	Local currency	Foreign exchange	Total cost
Networking and connectivity	0.8	7.8	8.6
E-government portal	0.2	0.7	0.9

Outputs	Local currency	Foreign exchange	Total cost
Database and spatial planning system	1.0	4.0	5.0
Capacity building	0.2	0.8	1.0
Research and development	0.2	0.3	0.5
Institutional setup	0.6	2.4	3.0
Total	3.0	16.0	19.0
Contingencies (unallocated)	0.0	1.0	1.0
Total	3.0	17.0	20.0

FINANCING PLAN
(US\$ million)

Source	Local currency	Foreign exchange	Total cost	Percentage share
Bilateral donor and multi lateral grant	0	9.0	9.0	45
Local and national government	3.0	0	3.0	15
Multilateral loan	0	8.0	8.0	40
Total	3.0	17.0	20.0	100

C. Implementation arrangements

The Ministry of Local Development will take the lead role in the execution and implementation of the project. The Ministry shall form a Project Management Unit and appoint a Project Director. The Project Director will be given operational autonomy. A Project Steering Committee will be formed under the leadership of the Secretary, comprising of representatives from local associations, the Computer Association of Nepal, and technical representatives. The project steering committee will ensure that that project activities are carried out accordingly, review and approve the annual work plan and budget, provide policy guidance, address implementation issues, approve procurement decisions and evaluate progress. A Project Implementation Unit will be formed in each district and municipality.

D. Benefits

About 1,000,000 people from 10 District Development Committees, and 10 municipalities will benefit from the project. A management information system will be established within the Ministry of Local Development (MLD). A monitoring system will be enhanced and a database system established.

E. Risks

The following factors are considered as risks to the project and must be taken into account: political will and commitment from the government; compliance by NGOs and the private sector to the plan; synergy among the Ministry of Local Development, local bodies, and donors; adequate funding; and conducive policies.

Project framework

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
<p>Goals</p> <p>Increase effectiveness and efficiency of local Government</p>	<p>Self Monitoring Indicator: at least 25 per cent of stakeholders report considerable improvement towards good governance</p> <p>Service delivery status: at least 50 per cent of service receivers' report effectiveness in service delivery</p> <p>Planning process status: at least 50 per cent of time saved</p> <p>Progress reporting status: local bodies recognized by the MLD as timely reporting</p> <p>Electronic access status: at least 50 per cent LA/LG and COs reports considerable access</p>	<p>Population based survey</p> <p>Anthropological survey and rolling baseline survey</p> <p>Ministerial Data analysis</p> <p>Participatory Impact survey</p>	<p>District Development Committee, line agencies, partner NGOs private sector adopt strategies</p> <p>All stakeholders have confidence in the new technology</p> <p>Political will and commitment</p>
<p>Outcomes</p> <p>Enhanced public service delivery system</p> <p>Strengthen the planning process and management system</p>	<p>At least 50 per cent of local bodies strengthen their capacity</p>	<p>Base line survey</p>	<p>Synergy among the MLD, local bodies, and donors is enhanced and institutionalized</p>

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
Support for proper monitoring and evaluation system Access to electronic data based improved	At least 80 per cent of local bodies feel supporting in their planning process 80 per cent of local bodies have access to electronic database	Project monitoring and evaluation system Participatory monitoring system Annual statement of local bodies	Adequate funding and policy backing would be continued
Outputs Vertical and horizontal networking established Local governance portal created Capacity of local bodies strengthened Spatial planning and monitoring system improved Database system established Institutional setup of local bodies developed Research pursued	60 per cent of district and unicity linked with the MLD 25 per cent of total users benefited from government portal One third of the project district connected through Intranet At least 50 per cent of staffs trained At least 80 per cent of local bodies report database established At least 5 best practices shared from each districts	Participatory monitoring and evaluation Progress report and disbursement report Web site publication Print media Achievement book Evaluation report	Willingness of local bodies to participate and adapt Government maintains conducive environment (continuation of laws and regulation)
Key Milestones PMU established PSC Formulated PIU created National and international personnel commissioned Tools and equipment procured Point of presence (POP) prepared and implemented in each project site	Number of district connected with net work Number of soft ware developed and adopted Project staff and office established Number of staffed trained		

Nepal

Design summary	Performance indicators/targets	Monitoring mechanism	Assumptions and risks
Monitoring and evaluation information tracked Best practice shared for replication			
Inputs Consultants, equipment, connectivity, software, hardware, human resource			

Title: Rural information centre (RIC) to the remote poor: an initiative towards promoting e-government

Proposer: Mr. Shyam Chalise, Section Officer, Ministry of Information and Communication

Country: Nepal

Date: March 2005

I. INTRODUCTION

The Government of Nepal has recognized the importance of establishing Rural Information Centres in 10 districts in western and mid western Nepal. The rural information centre will provide access to ICT and enhance the citizens capacity to gather relevant information, and access to government services. Advancements in ICT offer opportunities to achieve economic and social development. Citizens in town and villages are slowly beginning to use ICT and finding that electronic services save time and reduce spending.

II. ISSUES

- Lack of accessibility: Nepal is a mountainous country where much of the population lives in remote areas. Inadequate transportation limits people from accessing the market and government services.
- Poverty: The citizens living in the proposed project areas live in poverty
- Illiteracy

Rural information centres should provide poor and rural communities with simple and easily comprehensible services and information that are relevant to their needs. In some cases, the rural information centre can serve as an education centre.

III. PROPOSED PROJECT

A. Objective and scope

The objective of the proposed project is to provide government services and market access, and promote business development in rural communities.

Scope of the project:

- E-education and training
- Market information
- Product information

- Government services
- ICT facilities
- Disseminate weather report
- Provide information about employment opportunity
- Transportation information
- Agricultural and irrigation information
- Policy information

Expected outcomes:

- Market linkage
- Awareness creation
- Generate revenue
- Networking among communities
- Best practices publication
- Linkage to districts and other communities

B. Cost estimates and financing plan

COST ESTIMATES (US\$ million)

Outputs	Local currency	Foreign exchange	Total cost
Networking and connectivity	0.1	0.9	1.0
Capacity building	0.1	0.4	0.5
E-education	1.1	0.4	0.5
Institutional setup and infrastructure	0.1	2.3	2.4
Contingencies (unallocated)	0.0	0.1	0.1
Total	1.4	4.1	5.5

FINANCING PLAN

Source	Local currency	Foreign exchange	Total cost	Percentage share
Bilateral donor and multi lateral grant	0.0	4.1	4.1	75
Local and national government	1.4	0.0	1.4	25
Total	1.4	4.1	5.5	100

C. Implementation arrangements

The Executing Agency for the project will be His Majesty's Government Ministry of Information and Communications (MoIC). The project will be coordinated with donor agencies and the Ministry of Local Development. A Project Steering Committee will be formed under the leadership of MoIC Secretary. The District Development Committee (DDC) will work as a local implementing agency, and a Project Management Unit will act as a coordinating agency. Ten districts will establish information centres.

D. Benefits

Approximately 60 thousand people are directly benefited, and the effects of the project will be extended to other parts of the country.

Project framework

Design summary	Indicators	Monitoring mechanism	Assumption/risks
<p>Goal</p> <p>To contribute to the livelihood of marginalized people</p>	<p>Self monitoring indicator: at least 25 per cent of beneficiaries report considerable improvement in their livelihood</p> <p>Service delivery status: at least 50 per cent of service receivers' report ICT as a tool of communication for their agro-forestry based industries and other communication</p>	<p>Population based survey</p> <p>District data analysis</p> <p>Participatory impact survey</p>	<p>DDC's political will and commitment</p>
<p>Outcome</p> <p>Sales of agricultural goods increased</p> <p>Access to ICT improved</p>	<p>Achievement indicators:</p> <ul style="list-style-type: none"> – At least 20 per cent of farmers use ICT as tools – At least 80 per cent of local bodies have well supported communications means 	<p>Base line survey and DDC records</p> <p>Participatory monitoring system</p> <p>Annual statement of local bodies</p>	<p>Adequate funding and policy backing would be continued</p>

Design summary	Indicators	Monitoring mechanism	Assumption/risks
<p>Outputs</p> <p>Connectivity established</p> <p>Capacity development of CO strengthened</p> <p>Institutional setup</p> <p>E-learning begins</p>	<p>60 per cent of community people linked with the e-community</p> <p>25 per cent of community users benefit from the e-centre</p> <p>At least 50 per cent of staffs trained</p> <p>At least 80 per cent of local bodies report database established</p>	<p>Participatory monitoring</p> <p>Progress report</p> <p>Media publication</p> <p>Evaluation report</p>	<p>Willing ness of local bodies to participate and adapt</p> <p>Conducive environment by the government maintained</p>
<p>Key milestones</p> <p>PMU established</p> <p>PSC formulated</p> <p>PIU created</p> <p>Staffs recruited and commissioned</p> <p>Tools and equipment procured</p> <p>POP prepared and implemented in each project site</p> <p>Monitoring information tracked</p>	<p>Number of communities connected with network</p> <p>Numbers of project staff and offices established</p> <p>Numbers of staff trained</p> <p>10 telecentres operated</p>		
<p>Inputs</p> <p>Equipment, human resource, infrastructure</p>			

Title: Baseline e-government applications within the Federal Government

Proposer: Mr. Asad Sibtain, Joint Secretary, Ministry of Information Technology

Country: Pakistan

Date: March 2005

I. INTRODUCTION

The E-government Programme in Pakistan is an initiative under the National IT Policy that was approved by the Federal Cabinet in August 2000. The vision was to launch an aggressive programme to improve efficiency and provide quality services to the citizens of Pakistan by introducing information technology at all levels of government.

The implementation of the E-government Programme is an extremely demanding task. It is expected to take 5 to 7 years to establish the basic infrastructure of e-government. This is due to financial constraints as well as inadequate skills within the government to undertake system re-engineering of different government departments to minimize the use of paper-based systems. There are numerous examples of mega projects ending in failures and wastage of public funds. A practical approach is to design modular projects that can fit in a larger framework.

The programme envisages services delivery to citizens as the ultimate aim of the government. However, in order to achieve this, a number of areas internal to the government have to be addressed. The internal efficiency of government relies upon the following components: implementation of basic networking infrastructure, intra-departmental communications, inter-departmental communication, IT skills development of government functionaries, re-engineering of government operation, and implementation of IT-based workflow systems and specialized applications.

II. ISSUES

E-government requires a clear strategy and specific objectives. E-government objectives should be established along two dimensions. They are:

1. Adding benefits to the communities
2. Adding benefits to the organization itself

E-government should not be considered as a goal itself. Rather, it is a means to achieve goals. E-government positions communities to be service deliverers and beneficiaries at the same time. Usually, governmental organizations have the following four key segments:

- Public (i.e. residents and citizens) – G2C
- Employees – G2E
- Public sector – G2G
- Suppliers and business partners – G2B

Communities' focus group discussion have repeatedly proven to be an effective tool in identifying requirements. The top four questions for communities are:

- What services communities wish to see?
- What delivery channels communities wish to use?
- What service levels communities expect?
- What benefits communities would gain?

The following communities are involved in the e-government initiative of the Government of Pakistan, and should be e-enabled to ensure success of the e-government initiative.

Government-to-Government (G2G)

This community will be enabled when all the ministries are e-enabled. Once this is achieved, the following benefits will be obtained:

- Cooperation in providing inter-governmental services
- Sharing information and data about clients (central view)

Government-to –Employees (G2E)

This community will be enabled when all the ministries are e-enabled. Once this is achieved, the following benefits will be obtained:

- On-line access to employee services
- Sharing of data internally
- Less manual processes
- Clear procedures and responsibilities

Government-to- Business (G2B)

A strategy needs to be defined on how to e-enable the business community in order for them to use these e-services offered by various ministries. Once this strategy is defined, the onus of implementation of this strategy should be placed on the business community by giving them various incentives. The following benefits can be achieved from this:

- Conducting online transactions (saving costs, time)

- Reduced number of visits to the ministries
- Online tracking of status of applications to various ministries

Government-to-Citizens (G2C)

A strategy needs to be defined on how to e-enable the citizens in order for them to use these e-services offered by various ministries. The following benefits can be achieved from this:

- Correct information about how to get services
- Access to public services

The strategy for establishing e-services will need to be defined for all the other ministries once the roll out of the e-enabled back end systems is completed. The following areas should be considered in developing the e-strategy:

- Which of the services offered by the government can be easily web-enabled;
- What benefits do the ministry key clients expect from an e-government initiative; and
- Can the existing IT infrastructure support the provision of e-government services of the ministry or will additional IT infrastructure be required.

III. THE PROPOSED PROJECT

A. Objective and scope

The main objectives of the project are to provide greater access to government information and services; improve the internal efficiency of government operations; enhance public participation in the working of the government; and make government more accountable to citizens. The scope of the project covered by the proposal is to design an integrated solution, and then to develop software applications for all working processes of the Ministry of Information Technology.

The present project will address the re-engineering and automation of the following areas, namely:

1. Internal communications and movement of files:
 - (a) Development of the Files Management system (Integration with Diary System)
 - (b) Automation of the Central Diary Register and the Dispatch Register (and their integration with the Accounts and Section Diary System) and Customized e-mail management system

- (c) Standard template/model creation for various type of documents
 - (d) Computer aided fax management system and a central contact directory system
 - (e) Directives and Assembly questions management system.
2. HR management system (employee, attendance and leave management system)
 3. Inventory and procurement management system (stationary, equipment, etc.).
 4. Budget and accounts management system (e.g. preparation, expenditure) and consolidation of development and non-development budgets
 5. Project management system (e.g. progress and monitoring feedback system).
 6. Internal automation required for dynamic portal.

The project has been outsourced to a local software company that has initiated the work. It is expected that the complete software suite will be ready at the Ministry of Information Technology in the first quarter of 2006, and replication can be initiated at other ministries shortly thereafter.

IV. BENEFIT OF THE PROJECT

The following are the key benefits both internal and external, which will be realized once e-government transformation is completed for a particular ministry.

Internal benefits:

- Improved organizational performance through streamlining of internal processes
- Introduction of transparency in the provision of Government services
- Increased levels of online integration between different departments
- Reduced levels of paper work within the ministries
- Possible increase in revenues through introduction of additional fees or processing of higher number of transactions or the provision of new services

External benefits:

- Improved levels of service to various communities (e.g. citizens, businesses) through faster service delivery cycles, reduced number of visits to the ministries for obtaining each service

- Ability to track the status of each service request online
- Quick access to information anytime anywhere thus providing more relevant information about how to obtain various services offered by various ministries

Title: Database of economic and social profile of Barangays
Proposer: Mr. Mateo G. Montano, Assistant Secretary, Department of Social Welfare and Development
Country: Philippines
Date: March 2005

I. INTRODUCTION

The poverty situation in the Philippines is the primary barrier to access to information and communication technologies. Although the Philippines has made considerable advancements in ICT development, the Philippine e-government is still underdeveloped, and a number of vital services need to be put in place before the poor can benefit from ICT. In view of the fact that ICT projects require huge investments, fund constraints will still be the primary issue in the implementation of e-government projects. Despite these, however, the national Government as well as some development-oriented local Government administrations has embarked on ICT development in pursuit of national development.

II. ISSUES

The Department of Social Welfare and Development (DSWD) is a line department and one of the key agencies under the Social Development Sector of the Government of the Philippines, which includes the Department of Education (DepEd), Department of Health (DOH), and the Department of Labor and Employment (DOLE). Under its present mandate, the DSWD, among others, shall:

1. Take the lead role in social welfare and development sector planning; and
2. Provide assistance to local government units (LGUs), non-government organizations (NGOs), other national government agencies (NGAs), people's organization, and members of the civil society in implementing social welfare and development programmes, projects and services. It is also mandated to implement community and centre-based programmes, involving specialized social services and statutory programmes such as the maintenance of centres and institutions for street children, disabled, older persons, abused women and children, youth offenders, home for girls, and others.

The DSWD has a secondary mission which is to provide social protection and promote the rights and welfare of the poor and marginalized sectors of society through empowerment and capability building programmes. The efficiency of the DSWD to deliver development programmes would depend on the availability of updated data; and information on planning, development, implementation of programme, and projects for the sector.

III. PROPOSED PROJECT

The project will establish an electronic database for economic and social profile of all barangays (villages) located in the 1,500 municipalities and 115 cities. The database will be established in 16 regional offices, and the central office of the DSWD. The DSWD central office will be the central node of this system. The data will cover basic information of the barangay (village) such as name, municipality, province, area, population, number of families, age and gender, among others. The economic data would include employment data of residents, source of livelihood, business establishments in the community, etc. Specific data on deprivations of families in the community from minimum basic needs would be included such as water system, core housing, health centre, etc. It will also include data on on-going government projects in the community.

The database system will be able to consolidate data and generate reports in various configurations for various purposes including research, planning, and programme development. National government agencies, local government units and other government agencies will be able to share the information from the database.

A. Objective and scope

The objective of the project is to assist the Department of Social Welfare and Development (DSWD) in the formulation and development of programmes and projects responsive to the needs of targeted beneficiaries. The database will also serve as information bases for determining the estimated number of affected individuals and families in case of calamities for purposes of relief and rehabilitation activities.

The project will cover about 145,000 barangays (village) nationwide. The municipalities and cities in the region will be connected with the regional offices of the DSWD and the central office through WAN.

B. Cost estimate and financing plan

The cost of the project is US\$ 14.107 million proposed to be funded from grant funds available from ADB or other donors.

COST ESTIMATES (US\$ million)

Component/item	Grant fund component	GOP counterpart	Total cost
1. Consultancy services			
a. International	0.36		0.36
b. Domestic	0.04		0.04
2. IT equipment	7.727		7.727
3. Furniture and fixtures	0.5		0.5

Component/item	Grant fund component	GOP counterpart	Total cost
4. Training	0.04		0.04
5. Conduct of survey	2.016		2.016
6. Data build-up	1.644		1.644
7. Administrative support	0.5		0.5
8. Contingency	1.2		1.2
Total	14.107		14.107

C. Implementation arrangements

The project will be implemented by the Department of Social Welfare and Development (DSWD). The Policy and Planning Bureau (PPB) and Management Information System Service (MISS) of the DSWD shall be the manager and co-manager of the project.

D. Implementation schedule

The project shall be implemented for a period of one year starting September 2005 and ending August 2006.

IMPLEMENTATION SCHEDULE

Activity	Duration	1	2	3	4	5	6	7	8	9	10	11	12
1. Organization and preparation of survey instruments	2 weeks	■											
2. Training on data survey	3 weeks	■	■										
3. Conduct of survey	3 months		■	■	■	■							
4. Systems design and programming/ installation	6 months	■	■	■	■	■	■						
5. Data build up/encoding	6 months					■	■	■	■	■	■	■	■
6. Testing/debugging	6 months							■	■	■	■	■	■
7. Operationalization													■

E. Technical and economic justifications

The project will increase the capacity of the DSWD to plan, develop, and implement more focused programmes and projects for the poor. Such programmes will empower poor communities, and improve their

financial independence. It will also serve as a resource base for all other agencies of the government, non-government organizations and the private sector.

The project will involve procurement of local service providers, consultants, furniture, and IT equipment.

F. Risks

The risk that may be attributed to the project is the inadequate budget for the maintenance and operations of the system, particularly in the updating of the data at least on a semi-annual or annual basis.

Project framework

Design summary	Performance indicators/targets	Data source	Assumption and risks
Impact Improved opportunities for the poor, disadvantaged and, vulnerable	Increased employment for the sector Improved income	Quarterly report from DSWD regional offices	Development projects implemented in the barangays
Outcomes Improved capacity for develop plans, programmes and projects for the poor, vulnerable and disadvantaged sector	Plans, programmes and projects approved for implementation with funding support from the government	General Appropriations Act	Trained staff Provision for operation and maintenance cost
Outputs Reliable data Timely and accurate information available Plans and programmes developed for the poor	Established economic and social profile of 145,000 barangays	Monthly report from DSWD regional offices	Availability of ADB or other donor grant
Activities Hiring of Consultant Creating PMO Installation of Networks Conduct of training Conduct of survey Building up data			Inputs Consultants – \$.4M Equipment – \$.72M Furniture – \$.5M Local hires – \$.2M

Title: E-land services

Proposer: Mr. W. K. Wasantha Deshapriya, Head, Reengineering Government Programme, Information and Communication Technology Agency

Country: Sri Lanka

Date: March 2005

I. INTRODUCTION

In November 2002, the Government of Sri Lanka, launched “e-Sri Lanka” as a national development initiative, with the objective of using information and communication technology (ICT) to foster social integration, peace, economic growth and poverty reduction. The principal development outcomes of “e-Sri Lanka” are anticipated to be: (i) more effective, citizen-centred, and transparent government; (ii) empowerment of the rural poor, women and youth through increased and affordable access to information and communication tools; (iii) developed leadership and skills in ICT; and (iv) employment creation through the ICT industry, ICT-enabled services, and enhanced competitiveness of user industries and services.

Re-engineering Government is one of the main programme areas of the Information and Communications Agency (ICTA), which aims to improve the efficiency of delivery and access mechanisms of the government. The objectives of the Re-engineering Government Programme are mainly to be achieved by reengineering the government business processes, and enabling those processes with ICT. The programme also prioritized all citizen services that are provided by the Government of Sri Lanka in order to identify the possible e-services. From the 12 short listed citizen services, four services have been selected to become e-services

In addition to e-services, the Reengineering Government Programme will implement a number of enabling projects which will provide the fundamental requirements necessary for successfully implementing e-services. These projects would interconnect the government, fulfill minimum ICT requirements of the government, provide a supporting application platform to deploy e-services, build the ICT capacity of public officers, fulfill policy standards and security requirements of the government, and ensure the Web presence of the government to provide information and services.

II. ISSUES

The rural sector is inherently linked to agriculture. The scarcity of land and water are two major problems faced by rural farmers. The absence of a proper land titling service aggravates the situation because a title is the most accepted collateral for agricultural loans, crop insurance etc. An additional challenge is that a multitude of separate government organizations are responsible for matters relating to land. Therefore, the

citizens have to visit several government organizations to obtain services. The citizens find it difficult to check the authenticity of titles, and how to calculate property tax.

Another challenge is the lack of a proper land management system. Local government organizations such as Municipal Councils, Urban Councils and Pradesheeya Sabhas, which are responsible for collecting property tax, are faced with several difficulties because there are no proper supporting documents to validate their charges. The government also suffers from lack of reliable information concerning land. The absence of a central geographical information system (GIS) makes land use planning extremely difficult.

III. THE PROPOSED PROJECT

A. Objective and scope

The proposed project has three components. These are:

- e-land register – create national land database, and connect it to the regional land registries. The major stakeholder would be the Department of Registrar General.
- GIS system for land information—the major stakeholders would be the Department of Registrar General and the Survey Department. The National Water Drainage Board, Ceylon Electricity Board, Department of Police, and the Fire Service will provide utility support, thus their processes should be reengineered and connected into the main project.
- Automation of the land related work of the Ministry of Lands, Department of Survey, Municipal Councils, Urban Councils and Pradesheeya Sabhas. Requires connecting all local government organizations through broadband network.

The overall objective of the project is to provide seamless government assistance related to land use and management. The project aims to digitize land records, and build the e-land register. The secondary objective of the project is to facilitate service delivery to the citizen by inducing collaboration among the government organizations and departments. This would require that all government organization, including those at the local level, be linked to the e-land register. The tertiary objective is to build a GIS system. This involves working with a wide range of government organizations to reengineer their processes, automate and link their work to the GIS system.

The Department of Registrar General, the legal authority over land registration, will initiate the implementation of the project. The department consists of 25 district land registries. The head office of the department would take the initiative to create the e-land registry by building the central land database. The second phase of the project will involve the Survey Department, which would create the GIS, and build the first layer of the GIS system. The Ceylon Electricity Board, Water Drainage Board, will

build the relevant layers of the GIS system. The third phase will re-engineer and automate the land related services offered by government organizations. The utility and basic service providers such as the Police Department, Fire Service and Ambulance Services will also automate their information systems to leverage on the GIS information.’

B. Cost estimate and financing plan

COST ESTIMATES (\$US million)

Item	Government	Donors	Total cost
1. Consultants			
a. International consultants	0.2	1.0	1.2
b. Domestic consultants	1.2	0.8	2.0
2. Equipment and software			
a. Equipment	1.4	9.8	11.2
b. Software	3.5	24.0	27.5
3. Buildings and furniture			
a. Buildings	0.1	0.3	0.4
b. Furniture	0.1	0.2	0.3
4. Training, seminars and conferences	0.1	0.2	0.3
5. Research, development and surveys	0.0	0.2	0.2
6. Miscellaneous administration and support costs	0.1	0.1	0.2
7. Contingencies	0.5	1.0	1.5
Total	7.2	37.6	44.8

C. Implementation arrangements

ICTA will play the role of facilitator and mediator by leading the initial discussion of the project. Once the stakeholders have reached an agreement on the project concept, ICTA will address the issue of financing by submitting the project proposal and securing funds. A Steering Committee should be appointed to make policy decisions for the project, and guide the project team. The members of the Steering Committee should include, but not limited to:

1. Secretary, Ministry of Home Affairs and Local Government
2. Register General
3. Surveyor General
4. Mayor, Municipal Council, Colombo
5. Chairman, Urban Council, Moratuwa
6. Chairman, Pradesheeya Sabha, Baththaramulla,
7. Assistant Director-General (IT), Cylon Electricity Board
8. Assistant Director-General (IT), Water Development Board

9. Deputy Inspector General (IT), Police Department
10. Programme Specialist of ICTA
11. Senior Project manager of ICTA
12. Project Manager
13. Senior Management Representative from Vendors

The Steering Committee meetings will be regularly convened and the project management team should report the progress of the project activities to the Steering Committee. A Project Management Committee under the Chairmanship of Deputy Surveyor General (IT) and Additional Registrar General with the participation of the project managers from both the vendor and stakeholder organizations and all project team members will be appointed to monitor day to day operations. This team will conduct weekly and ad-hoc meetings. The Additional Registrar General (IT) will guide and oversee all the management activities of the project as the Chairman of Project Management Committee.

All stakeholders shall appoint a person to supervise and liaise with the vendor for the purpose and duration of the project contract. This person acts as the counterpart to the Vendor Project Manager and can assume the role of stakeholder project manager. The vendor shall establish a project office to coordinate the performance of the contract. Physically, it should be located at the Registrar General Department. The vendor will also designate a fulltime project manager who will be responsible for directing and coordinating the supply, delivery, and installation of the system. The Vendor Project Manager shall be deemed to be the vendor's agent in all dealings with the stakeholders, or ICTA, and all actions of the vendor project manager shall be binding on the vendor. The stakeholders, or ICTA shall have direct access to the Vendor Project Manager at all times during the performance of this contract.

IV. BENEFITS OF THE PROJECT

Benefits to the citizen:

- Online land title printing facility, so people will not have to go to the district land offices to obtain copies
- One-stop service regarding all land services
- Reliable information related to land use and management
- Information on government owned land such as sanctuaries
- Citizens can obtain up-to-date data on weather and natural disasters

Benefits to the government:

- The government can have a more comprehensive and holistic view, macro level planning and management

- Increases capacity to respond to natural disaster situations
- Increases trust between government and citizen
- Increases the transparency in relation to the issues related to lands
- Increases the revenue as all lands will be in the database
- Cost reduction due to streamlined land services

Project framework

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
<p>Goals</p> <p>Good governance; improvements in transparency, accountability, inclusiveness, effectiveness, efficiency and reliability</p> <p>Efficient delivery of public services which ensures the convenience of citizens without any geographical discriminations</p> <p>Improved planning and decision making by the policy makers at the client government organizations</p>	<p>Improved public perception about the organizations under the project</p> <p>Increase in the volume of land related service applications entertained within a said period</p> <p>Number of client organizations that use land register information and GIS in the decision making process</p>	<p>Mini surveys among the beneficiaries to check their satisfaction</p> <p>Performance details of the land register, the annual performance reports of the relevant organizations and the ratings given in the performance reviews to stakeholder organizations</p>	<p>It is assumed that the information available in land Register will be used by stakeholder organizations as the common citizen information resource</p> <p>The legal and administrative concerns involved with registration of life events and issuance of relevant certificates would be addressed and resolved</p> <p>Existing management procedures and practices would evolve to use shared information for decision making</p> <p>Integration capabilities</p>
<p>Purposes</p> <p>An effective, efficient and reliable land registration system</p> <p>An effective, efficient and reliable GIS system which can support government planning</p>	<p>Average time taken to issue a land title (measures efficiency) and reduction in the number of requests for modifications (measures effectiveness)</p>	<p>Volume of applications entertained within a given period and percentage of requests for modifications compared with the same rate of previous year</p>	<p>It is assumed that the integration of land registration processes could smoothly be achieved at Registrar General's Department (RGD) and District Land Registries</p>

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
<p>Increased information sharing within the government organizations using the land register</p> <p>Reduced administration costs</p>	<p>Average time taken to issue a land tax invoice and payment</p> <p>Number of government agencies using the land information</p> <p>Reduction in the operations budgets of the organizations using land register</p>	<p>Mini surveys in the organizations using the land register information</p> <p>Annual budget details of the organizations</p>	<p>All stakeholder organizations work in tandem with the project implementation</p> <p>Policy of the Government and RGD will facilitate the resource right sizing at stakeholders</p>
<p>Outputs</p> <p>A single centralised land registry on 8.6 million lands is created</p> <p>The information 'related to lands are available in GIS system that provides location information</p> <p>A single virtual network connecting the RGD and stakeholder organizations is established</p> <p>Information access is available at all local government organizations that use the data for their operations and decision making processes</p> <p>A pool of information system literate and competent officers are created at stakeholder organizations</p>	<p>Number of records in the information system</p> <p>Number of land records in e-land registry</p> <p>Number of lands with GIS information</p> <p>Number of nodes in the information network</p> <p>Usage rate of the information by the three client organizations</p> <p>Number of trained officers who can use the system</p>	<p>Information system details list of the officers who can use the system</p>	<p>Change management process to be launched in the relevant government agencies will be successful</p> <p>At least 90 per cent of the trained staff will remain in the said organizations for a period of 3 years, till the other officers can undergo the same training</p>
<p>Activities</p> <p>Installation of the hardware and software for the e-land Register</p>	<p>Number of equipment and software applications installed</p>	<p>Hardware installation reports and software test reports, annual performance reports</p>	<p>Assumed information related to all land records are intact and can be used for data gathering process</p>

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
<p>Collating, data entering and digitising a minimum of 8.6 million</p> <p>GIS system built with minimum 3 layers and hardware</p> <p>Installation of software and hardware at local government</p> <p>Connectivity among the above organizations</p> <p>Training of (1,000) officers at stakeholder organizations</p>	<p>Number of land data records captured and number of birth, marriage and death certificates digitized</p> <p>Number of equipment and software applications installed</p> <p>Availability of communication channels connecting stakeholder organizations</p> <p>Number of officers trained</p>	<p>Number of records in the database</p> <p>Number of records in the database in GIS system with GIS info</p> <p>Hardware installation reports and software test reports, Annual performance reports</p> <p>Network installation reports, Annual performance reports</p> <p>List of the officers trained</p>	<p>The current GIS information available at stakeholders can be added to the new system</p>
<p>Inputs</p> <p>Financial funding</p>	<p>Machines running properly</p> <p>System management report</p> <p>Data hubs and relevant systems are connected</p> <p>New buildings to station server rooms built</p> <p>The consultancy reports and software delivered</p>	<p>Physical reporting</p> <p>System management and auditing</p> <p>Remote monitoring</p> <p>Physical checking</p> <p>Physical checking</p>	<p>All government stakeholders agree for the common land solution</p>

Title: Building a tourism information network for the home-stay project

Proposer: Ms. Phontip Warunyooratana, Computer technical Officer 5, Ministry of Information and Communication Technology

Country: Thailand

Date: March 2005

I. INTRODUCTION

In October 2002, Thailand's government established the Ministry of Information and Communication Technology (ICT). The ministry is responsible for developing and supporting electronic processes in government, commerce, industry, and education. The new ICT policies aim to bring IT to the citizens and ultimately, transform the economy.

The Thai government set out three strategies. These are:

1. Functional-base strategy – responsibility of government, develop ICT strategies
2. Agenda-based strategy – focuses on priority topics such as economics, tourism, and agriculture
3. Area-based strategy – focuses on specific areas such as strategy for provinces along the Mekong River

In Thailand, the use of ICT in government and among citizens is relatively underdeveloped and has not yet reached its full potential. However, recently, the Thai government has embarked on an aggressive ICT expansion and development programme, and initiated numerous e-government projects. Current projects include: e-tax, e-procurement, PKI system, ID smart card, e-loan, and Government Financial Management Information System (GFMIS).

II. ISSUES

In addition to ICT expansion within the government, several projects have been initiated that specifically target poor and rural communities such as, the e-community or telecentre project, the CATnet project, the Internet-Tambon project, and the schoolnet project. However, sustainability is not maintained. Although a few telecentres were established, they ceased to operate after the depletion of government funding. Therefore, a new strategy based on a business model suited to the Thai culture and society should be found. Such a strategy should include collaboration among government agencies and participation from the communities.

III. THE PROPOSED PROJECT

A. Objective and scope

Due to significant discrepancy in economic status between the rural and urban areas, new ICT projects should be implemented and geared at the grass-roots level. Rural people should be encouraged to operate the projects and acquire business management skills. The proposed project has three components. They are:

1. Telecentre – business centre focusing on the activities at home, or used as community centre.
2. Tourism information network – consists of back office and front office systems. Data will be sent to the operation centre at the Prime Ministers Office for analysis.
3. Human network – includes the government, private sector (travel company), educational institutes and local community.

The project will be implemented as a pilot programme in villages across five regions of Thailand. Specific criteria to evaluate the standard of the home stay accommodation such as clean water, clean room, point of sales (e.g. One Tambon One Product (OTOP), activities) will be devised. Training courses, including ICT training, will be provided according to the needs of the villagers, and the standard of the home stay services. The number of potential villages will be about 3,000 villages located in 7,400 districts that have high potential to serve as tourist destinations.

B. Cost estimates and financing plan

COST ESTIMATES (US\$ million)

Item	Government	Donors	Total cost
1. Consultants			
a. International consultants (business model)	0.00	1.00	1.00
b. Domestic consultants (logistics, local development)	1.00	0.00	1.00
2. Equipment and software			
a. Equipment (3 years)	8.50	0.00	8.50
b. Software (local software-off the shelf)	0.13	0.00	0.13
3. Building and furniture			
a. Buildings (rent 5 years)	1.25	0.00	1.25
b. Furniture	0.20	0.00	0.20
4. Training, seminars and conferences	0.25	0.25	0.50

Item	Government	Donors	Total cost
5. Research, development and surveys	0.25	0.25	0.50
6. Miscellaneous administration and support costs	0.50	0.00	0.00
7. Contingencies	1.00	0.00	0.00
Total	13.08	1.50	14.58

C. Implementation arrangements

In the initial phase of project development, a team or a section must be established to deal with the agenda of each stakeholder.

This project requires collaboration from several stakeholders:

- Project Management Office: responsible for driving the project and coordinating with other stakeholders
- Ministry of ICT: Provide information on possible areas and ICT technical assistance. Seek help from the private sector in ICT investment, and set up the community e-centre (telecentre)
- Ministry of Tourism and Sport: provide standard guideline for the project. Responsible for marketing, promotion and formulating home stay standards
- Ministry of Interior: provide support in locality services across the country
- Ministry of Education: provide ICT training in foreign language instruction
- Local government: support the project implementation in local area
- Public company: share cost, share knowledge
- Local educational institute: provide ICT training, language classes, and provide ICT maintenance

IV. BENEFITS

- Reduce poverty
- Promote Thai tourism/culture
- Local job opportunities
- Increase literacy
- Increase ICT literacy

Project framework

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
Goal To set up a tourism information network for the home stay project			Political support Community support
Impact Poverty Tourism Mobilization Literature literacy ICT literacy	Reduce poverty Promote tourism People can work in their home town Increase literacy Increase ICT literacy	Survey by Nation statistic office PMO Operation Centre National Operation Centre	Analysis model to make decision in order to improve the project performance Social impact assessment Environmental impact assessment
Outcome Income in rural areas increased Choices of tourists expanded Easy to analyze the situation from the database	10 per cent increase in income	GDP Ranking	Depends on business model and income sharing Attractiveness of locality Depends on Information flow
Outputs Telecentre Tourism information network for the home stay project Human network: includes government, private sector (travel company), education institutes, local community	3,000 telecentre (new/remodel) Information system of the project Strong collaboration among stakeholders	Project tracking system Civil society	Financial scheme Sustainability Leader
Activities Ground survey Select places Establish business model Set a tour trip Data evaluation			Time consuming

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
Income analysis Change business model			
Inputs Hardware, software Network infrastructure Office automation Business consultant ICT trainer Language instructors Regulation/guideline/handbooks PMO			High network infrastructure cost Time consuming assessments If there is no PMO, it is difficult to accomplish

Title: Local initiative for a system of e-quality education (LIFE)

Proposer: Mr. Tharntham Uprawongsa, Senior Computer Specialist,
e-Government Promotion and Development Bureau,
Ministry of Information and Communication

Country: Thailand

Date: March 2005

I. INTRODUCTION

Thailand's government has declared that aggressive policies will be devised to deal with drugs, poverty, and corruption. Policy strategies include preventive measures such as the strengthening of communities. The national Government decided that every provincial governor was to be a chief executive officer governor (CEO) or integration governor.

II. ISSUES

Khlong Toei, Thailand's largest slum community comprising of 63 small slums with a total population of 418,739 has been designated as the site for pilot projects as part of the anti-drug and poverty policy. The "local initiative for a system of e-quality education (LIFE)" has organized training and education for citizens living in these poor slum communities. This initiative has enabled the formation of slum committees. As a result, the Jedsib-rai Community in Khlong Toei, was recognized and awarded a prize as the best example of local communities working to alleviate poverty and stop drug use.

LIFE-Thailand has provided the following support to poor communities: financial assistance, meeting facilities, and organize meetings to form community development plans. The objectives of the e-quality education project are to create educational opportunities, develop management and learning quality, and raise educational standards.

III. THE PROPOSED PROJECT

A. Scope and objective

The purpose of this project is to build capacity for self development, and empower people. The project will support the development of a knowledge-based society and contribute to economic growth. The objectives of the project are:

- Strengthen access to education
- Establish an efficient system of quality education
- Raise educational standards to enhance Thailand's global competitiveness

The project will consist of the following activities:

- Conduct surveys of data (3 months)
- Organize meetings to mobilize opinions on establishing good governance (3 months)
- Implement activity supporting good governance (2 months)
- Develop technology, including hardware, software, and network (4 months)
- Conclusion of models (2 months)
- Conduct public hearings on the models of local good governance (2 months)
- Develop action plans to introduce models to target areas (2 months)

Expected outcomes:

- Models of good governance developed
- Quality education system tested
- Educational institutes develop new curricula and/or conduct research based on these models
- Central Government organizations, responsible for good governance, apply these models

B. Cost estimate and financing plan

COST ESTIMATES (US\$ million)

Item	Government	Donors	Total cost
1. Consultants			
a. International consultants	0.00	3.00	3.00
b. Domestic consultants	1.00	2.00	3.00
2. Equipment and software			
a. GIS equipment	1.00	3.00	4.00
b. GIS software	1.00	2.00	3.00
3. Buildings and furniture			
a. Buildings	1.00	1.00	2.00
b. Furniture	0.50	0.50	1.00
4. Training, seminars and conferences	0.50	0.50	1.00
5. Research, development and surveys	1.00	1.00	2.00
6. Miscellaneous administration and support costs	0.50	0.50	1.00
Total	6.50	13.50	20.00

C. Implementation arrangements

The duration of the project will be 18 months. The local government should encourage popular participation in the formation of policies and management strategies. Communities and local governments should collaborate with one another to ensure successful implementation of the project. The necessary resources for this project include technical expertise, academic assistance, financial funding, and human capital. LIFE-Thailand should facilitate cooperation among local governments and civil society organizations.

IV. BENEFITS OF THE PROJECT

- Responsibility – jointly take actions in target areas, provide financial and human resources as prescribed in the relevant action plan
- Good Governance – laws, virtue, transparency, participation, accountability and cost effectiveness
- Study Process – the study of models will be on-going, and holistic

Project framework

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
Goal Local initiative for a system of quality education	System of quality education for local or slum community	Organizing school mapping and GIS in all educational service areas	Some models are not suitable to learners and areas with special characteristics
Purpose All people are given equal access to education on a continuous basis	Educational opportunities	Organizing school mapping and GIS in all educational services areas	
Outputs Models of good governance Local networks apply these models in their areas	Implementing activities supporting good governance Developing local policies and mechanisms	Organizing school mapping and GIS in all educational services areas	

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
<p>Educational institutes develop new curricula and/or conduct research based on these models</p> <p>Central government applies models</p>	<p>Conducting public hearings on the models of local good governance</p> <p>Initiative for a system of quality education</p>		
<p>Activities</p> <p>Conducting surveys and studying local organizations' preparedness</p> <p>Holding meetings to mobilize opinions on the establishing good governance</p> <p>Developing local policies and mechanisms</p> <p>Conclusion of models governance</p> <p>Forming action plans to introduce the good governance models to the target areas</p>		<p>Organizing school mapping and GIS in all educational services areas</p>	<p>Some models are not suitable to learners and areas with special characteristics</p>
<p>Inputs</p> <p>Staff</p> <p>Equipment</p> <p>Cost</p>	<p>To be deputed</p> <p>To be purchased</p> <p>To be provided</p>		

Title: E-government

Proposer: Mr. Shukhrat Atamukhamedov, Assistant to Deputy Prime Minister

Country: Uzbekistan

Date: March 2005

I. INTRODUCTION

In June 2002, the Government of Uzbekistan approved a National ICT development programme. It established the Coordination Council for development of Computerization and Information-Communication Technology. The Government has adopted laws regulating informatization, digital signature, electronic document flow, and e-commerce. The Government is advocating the use and development of ICT. In August 2002, the Government of Uzbekistan initiated an experimental implementation of a Unified electronic information system of foreign trade operations. The implementation of the present system that has involved the State Customs Committee, Central Bank and authorized banks of Republic of Uzbekistan, State Tax Committee, as well as the Agency of Foreign Economic Activities has considerably simplified procedures regarding transit of goods and contract fulfillments by entrepreneurs. The majority of central administration bodies and regional administrations have their own web sites and local computer network systems. Within the government administration office, there is one computer per three government officials. However, only 10 per cent of government officials have access to the Internet on their computer. A significant number of central governmental administration offices as well as local departments have implemented informatization programmes. Each department develops and supports its own information system, and does not interact with systems of other departments. Overall, the current status of e-government in Uzbekistan is still in its initial stage and relatively underdeveloped.

II. ISSUES

In order to introduce, implement, and sustain e-government programmes, government must be reengineered and reorganized. This requires a transformation of the relationship between government administration and society. It is a complicated process requiring significant financial expenses and presents numerous legal, administrative, and technological issues. The leading obstacle to the expansion and distribution of ICT is poverty. The majority of the population cannot afford access to electronic technology. Therefore, electronic services should be provided to the population at a very low rate. Another issue is the lack of awareness on the benefits of ICT, and potential benefits of e-government programmes.

III. PROPOSED PROJECT

A. Objective and scope

The first objective is to establish basic G2G services. This requires that all government offices be connected through Intranet. The second objective is to enhance the capacity and to provide a range of state services through the internet to citizens and businesses. The third objective is to develop an e-democracy and to introduce an electronic system to facilitate dialogue between government and citizens. The fourth objective is to provide security.

The Governmental Intranet will include the following components:

- GOV.UZ Portal, ensuring protected access to departmental systems
- Certification and registration
- Interface between GOV.UZ portal and departmental information systems

The core of the Governmental Intranet will include a protected system for the flow and exchange of electronic documents. Human resources management, financing programmes can be included as well.

The development of an external infrastructure that provides information and services to citizens and businesses requires the following components:

- Create a state information system
- Provide free access to state electronic services

The following services will be provided to citizens online: tax filings, social security services, birth registration, marriage registration, personal documentation such as passports, property registration inquiry and delivery, notification of address change, information on job opportunities, construction permits, health services, and education information.

The services provided to businesses through an e-government portal will include: business registration, permit for development from various departments (ecology, construction, use of natural resources), renewal of licenses, organization of public procurement and payment of taxes.

The efficient provision of online services cannot be successfully sustained without security and confidentiality. A comprehensive approach is required to ensure security in e-government. The information security of state information systems, resources, and technologies must be protected by legislation and uniform protection. An authentication system must be developed to prevent unauthorized access or modification, and computer viruses.

During implementation e-government, the following components should be included to ensure security:

- Secure electronic documents flow
- Preventive measures for protection of confidential data and information
- Information protection facilities
- Clear guidelines for staff, managers, and technicians
- Monitoring and supervision of staff working with state information systems

B. Cost estimate and financing plan

COST ESTIMATES (US\$ million)

Item	Government	Donors	Total cost	Per cent
1. Consultants				
a. International consultants	0.00	2.00	2.00	6.45
b. Domestic consultants	1.00	1.00	2.00	6.45
2. Equipment and software				
a. Equipment	2.00	10.0	12.00	38.70
b. Software	1.00	1.00	2.00	6.45
3. Buildings and furniture				
a. Buildings	1.00	0.00	1.00	3.22
b. Furniture	1.00	3.00	4.00	12.90
4. Training, seminars and conferences	0.50	2.00	2.50	8.00
5. Research, development and surveys	0.50	1.00	1.50	4.83
6. Miscellaneous administration and support costs	1.00	2.00	3.00	9.68
7. Contingencies	0.50	0.50	1.00	3.22
Total	8.50	22.50	31.00	100.00

C. Implementation arrangements

The electronic government of Uzbekistan consists of two interdependent but functionally independent external and internal infrastructures.

The government intranet includes the internal infrastructure of the information system, which is used by the government for implementation of state corporate objectives. These objectives include intra-departmental and inter-departmental interactions. The main component of Government Intranet is the protected and unified transport environment ensuring the operation and the interaction of internal information systems.

The external infrastructure covers public information infrastructure ensuring the interaction between Government and citizens (G2C) and Government and businesses (G2B).

V. BENEFITS OF THE PROJECT

- Increase efficiency in government processes
- Effective use of technical resources
- Decrease in administrative costs
- Creation of new relationship between government and citizens
- Integrated information system
- Telecommunication infrastructure

Project framework

Design summary	Performance indicators/targets	Monitoring mechanisms	Assumptions and risks
Goal	Information society		
Purpose	Increasing efficiency of state structure Create new mechanism of public relationship		Cooperation among government agencies
Outputs	Social and economic development	Level of life quality Poverty reduction	Change of goal
Activities	Development of government Intranet Training government employees Implementation of e-documentation workflow Providing information and services to society	Competitive tendering Project management Information sharing Communication support Statistical programme Generic software Specific application	Deficiency of finance Lack of experience Low qualifications
Inputs	International consulting Legal instruments Readiness of ICT infrastructure Funding	Reputation or information sharing Audit Feasibility study Pilot project	

Title: E-government in Viet Nam

Proposer: Mr. Nguyen Manh Cuong, Informatics Expert, The Office of the Government

Country: Viet Nam

Date: March 2005

I. INTRODUCTION

The current status of ICT usage and distribution in Viet Nam is underdeveloped, and cannot support the implementation of an e-government. The current number of Internet users is still relatively small. According to the Viet Nam Network Information Centre, there are currently 1.54 million internet subscribers, and 6.74 per cent of the country's population regularly uses the Internet. However, Viet Nam's information and communication technologies (ICT) recorded a 29 per cent growth rate in 2003, ranking second after China with a turnover of US\$ 515 million. Most government administrative organizations, and about 50 per cent of enterprises use IT application in business operations. Approximately 10 per cent of businesses, half of the ministries, and one third of the provincial governments have their own web sites. About 52 out of 64 provinces have their own web sites. However, few cities or provinces benefit from two-way interactive communication except Hochimin City, Dong Nai, Da Nang, Ha Noi and Bac Ninh. Approximately 300 out of 6,776 post offices in communes across the country have been connected online.

II. ISSUES

- Definition of e-government has not been established and explained to citizens
- Lack of human capacity and trained ICT staff
- No standardized regulation on administrative management
- Internet access is limited
- Low IT literacy
- Poverty

III. THE PROPOSED PROJECT

A. Objectives and scope

The first objective of the proposed project is to establish and develop a national information infrastructure with large transmission capacity, and high speed technology. The information infrastructure will serve as the basis for the application and development of ICT, and modernization of the country. The second objective is to provide citizens with modern and diverse post and telecommunication services. The goal is for the number of

telephones and Internet users to attain the same level as other developed countries in the Asian and Pacific region by 2010. The third objective is to build and develop the infrastructure for the national telecommunication network. The improved telecommunication network will be reliable, ensure safety, and provide nation wide coverage including access in rural and remote areas. The infrastructure will lead to the development of a national information highway, mass media services, and most importantly, it will provide broadband access to every household. The goal is to provide service to all cities and provinces with broadband fiber optic cable by 2005. By 2010, it is hoped that over 60 per cent of households will have telephone sets, and that Internet services will be available in research institutes, universities, secondary schools, and hospitals nation-wide. It is also envisioned that the Internet will be used to provide information to the public about all state agencies, and to streamline administrative procedures. All government agencies would be expected to have a portal by 2010. The e-government network will focus on local government to offer services and information to local residents. The Government IT network will connect 61 cities and provinces, and nearly 40 key Government ministries and agencies, with 2,500 sub-servers, 180 servers, and 50 shared application programmes.

The rationale for this project is:

- Raise the management capacity of government to reach local and grassroots level
- Less paperwork
- Provide the population with information from Government agencies and public administrative services via the Internet
- Reduce annoyance with time-consuming administrative procedures

B. Cost estimates and financing plan

The total cost for this project is US\$ 5 billion. The Government of Viet Nam will provide US\$ 3.5 billion. Foreign funding will be a total of US\$1.5 billion. Base costs include the following:

Networking (servers, IT highway, network devices, etc.):	US\$ 2.50 billion
Application (operating system, software, applications):	US\$ 2.00 billion
Consulting services:	US\$ 0.10 billion
Project administration:	US\$ 0.04 billion
Training costs:	US\$ 0.20 billion
Risk costs:	US\$ 0.16 billion

C. Implementation arrangements

The Ministry of Post and Telecommunication, other ministries, and the People's Committees of provinces and cities will be responsible for the implementation of e-government. The IT highway will be set up by the Office of the Government-Intranet. The WANs (the networks of provinces) will be set up by the Offices of Provinces and will connect all government agencies in local area.

D. Implementation schedule

- By 2006, all provinces and cities nation-wide will have access to broadband fiber optic cable
- By 2008, the national information highway will span to all districts and many communes nation-wide by fiber optic cables and other broadband transmission. At least 30 per cent of the subscribers will have access to broadband Internet
- By 2010, all e-portals and shared applications in all government agencies will be in operation

E. Project risks

- Depletion of funds
- No standardized regulations on administrative management
- E-government in Viet Nam has not yet been explained and understood comprehensively
- Low computer literacy among the population
- Lack of ICT specialists among government staff

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