



Technical Assistance Report

Project Number: 43221-01
Regional–Capacity Development Technical Assistance (R-CDTA)
September 2009

Improving Public Services through Information and Communication Technology (Cofinanced by the Republic of Korea e-Asia and Knowledge Partnership Fund)

Asian Development Bank

ABBREVIATIONS

ADB	– Asian Development Bank
DMC	– developing member country
ICT	– information and communication technology
MOPAS	– Ministry of Public Administration and Security
NIA	– National Information Society Agency
TA	– technical assistance
TOR	– terms of reference
UN-APCICT	– United Nations Asian and Pacific Training Centre for ICT for Development
UNESCAP	– United Nations Economic and Social Commission for Asia and the Pacific

TECHNICAL ASSISTANCE CLASSIFICATION

Type	– Regional – capacity development technical assistance (R-CDTA)
Targeting Classification Sector (subsector)	– General Intervention – Transport, and information and communication technology (information and communication technology)
Themes (subthemes)	– Economic growth (knowledge, science, and technological capacities), capacity development (organizational development)
Location impact Partnership	– National (high impact), regional (high impact) – Republic of Korea's E-Asia and Knowledge Partnership Fund; Ministry of Public Administration and Security of the Republic of Korea; United Nations Asian and Pacific Training Centre for ICT for Development

NOTE

In this report, "\$" refers to US dollars.

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I. INTRODUCTION

1. Information and communication technology (ICT) serves as a mean to connect within and across government, business and communities; to handle complex business process; and to facilitate effective communication, interaction and innovation, which contributes to improving efficiency, transparency, and competitiveness. Because of this benefit, ICT has been applied to and integrated with a wide range of human activities. The Asian Development Bank (ADB) recognized the importance of ICT for development in its ICT strategy in 2003¹ and in its long-term strategic framework 2008–2020 (Strategy 2020).² ADB has responded to increasing demands from its developing member countries (DMCs) by providing assistance in establishing ICT infrastructure and by using ICT as a project component in various sector programs. This assistance has contributed to national ICT and electronic government (e-government) development in DMCs. Despite some innovative features, however, the application of ICT is often found to lack the prerequisite preparatory assessment, a realistic road map for development, and appropriate skills and competence. This has led to a piecemeal approach in various ICT projects, and resulted in overlapping efforts, poor information sharing, incompatibility among different ICT applications, and failure to exploit synergies.

2. To address these challenges, this regional capacity development technical assistance (TA)³ is proposed to complement ADB's ICT-supported sector programs. It will take a countrywide approach to enhance the capacity of concerned ministries and agencies in three focus countries (Mongolia, Philippines and Viet Nam) in better applying ICT for national and sector development. These three focus countries have the highest number of ADB ICT-supported projects, but the proposed TA will be beneficial to other DMCs. Implementation of the TA will be linked to ADB's strategies and business opportunities for the three focus countries. Fact-finding missions in the focus countries were carried out in June and July 2009 to firm up the impact, outcomes, outputs, implementation arrangements, cost, and financing arrangements of the TA, as reflected in this report. The TA design and monitoring framework is in Appendix 1.

II. ISSUES

3. ADB has experienced several challenges and learned various lessons in implementing various ICT-supported projects.

- (i) Although many DMCs have national-level ICT strategies or policies, the one for a sector-specific ICT or e-government is often lacking or inadequate. Rapid technological progress and change in ICT makes continuous ICT improvement and upgrading inevitable in any organization. The strategy to introduce or improve ICT should depend on an organization's level of ICT maturity, and should aim to help the organization increase its ICT maturity in stages. A maturity-based ICT road map is a critical starting point for successful e-government projects, but these are rarely developed.
- (ii) Coordination among various development partners is often poorly organized and executed. ICT is most effective when operated as part of a networked system that integrates data, business processes, and information from different offices,

¹ ADB. 2003. *Toward E-Development in Asia and the Pacific: A Strategic Approach for Information and Communication Technology*. Manila

² ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila. This strategy recognizes that insufficient ICT is depriving many economies of private investment and included communication as core infrastructure on which ADB should focus.

³ The TA first appeared in the business opportunities section of ADB website on 10 June 2009.

meaning that the existence of appropriate institutional arrangements for effective coordination and cooperation are vital.

- (iii) The introduction of ICT in government should entail changes in policies and processes, organizational changes across government institutions, and reforms to the mindsets and practices of government officials; it should not be limited to simply introducing ICT or replacing paper with digital documents. Significant resources and effort need to be directed to institutionalizing changed business processes, increasing the awareness of government officials, and building their capacity for behavior change.
- (iv) Stakeholders and beneficiaries often lack ICT access, and have limited appreciation for and capacity to use ICT and e-government services, which highlights the importance of enhancing ICT accessibility and capacity of stakeholders and beneficiaries.
- (v) Awareness building—among both the general public and the private sector—is an important facet of ICT development and implementation, and needs to focus on both ICT supply and activities that create demand for ICT.

4. Specific issues and challenges in the focus countries—Mongolia, Philippines, and Viet Nam—are summarized below.

5. In Mongolia, the Government is committed to improving administration and public services through ICT. ADB has provided significant ICT components in various sector programs, including through three education sector projects, with aims that include (i) the integration of ICT into pedagogy, curriculum and teacher training; and (ii) improved education sector management at provincial, district, and school levels using ICT. Two ADB health projects have used ICT to expand and improve rural health services and health sector management. ADB has also assisted with customs modernization that seeks to improve customs management practices through the use of ICT. Although these projects have included some innovations, and produced results on a sector or project level, the efforts are not properly coordinated or implemented under a national framework. The Information Communications Technology and Post Authority was established in 2004 under the auspices of the Prime Minister as a coordinating and leading agency for ICT policies and implementation in Mongolia. The Information Communications Technology and Post Authority has drafted an e-government policy and framework but these have remained in draft form for several years and urgently need to be finalized so that they can provide guidelines and steps for various ICT applications developed by different ministries and agencies.

6. In the Philippines, the Government recognizes that ICT can improve the speed and delivery of public goods and services, and result in greater transparency and efficiency in government operations. In this regard, the government has been engaged in national e-government development since 2000. The enactment of an e-commerce act in 2002 established a major legal framework. Almost all of central and local government units has the website to provide access to publicly available information. ADB has used ICT for several administrative reform and improvement projects, with the goal of increasing efficiency in financial management and regulation in both national and local governments. ADB has also assisted with the development of electronic procurement services. The Commission on Information and Communications Technology has led and coordinated overall e-government development and is responsible for ensuring standards and interoperability across the different ICT systems developed by individual government units. The experience of the Philippines with e-government varies significantly, and uneven progress between the central and local governments, and across local governments, is a major challenge.

7. In Viet Nam, the Government has made significant attempts to use ICT for development. The World Bank has provided \$110 million in assistance to the government of Viet Nam since September 2006 to support ICT and e-government development. ADB's assistance in using ICT in sector programs has been significant. ADB has assisted the public administration reform program, and part of program targeted administrative simplification and modernization through ICT. In education, ADB has supported the introduction of ICT in classroom teaching and learning, and development of an education information and management system. ADB has also assisted with the provision of agriculture technology and market information services through a web portal site and mobile phones, and better resource management and planning through a geographic information system. The Office of Government formerly coordinated overall e-government efforts, but the Ministry of Information and Communications assumed this role in 2007. Given this recent transition, further strengthening of the institutional and governance structure for e-government development is needed. Although there is an e-government committee, the planning, development and approval process for ICT projects within ministries—as well as inter-ministry coordination—are weak. For example, the e-government standard and enterprise architecture, which was developed under the World Bank-funded project, was not fully made available for ICT projects in other ministries. The e-government and strategy, developed by the Office of Government has not been further used by Ministry of Information and Communications. As such there is yet official e-government framework that governs ICT projects in all government offices and ministries.

8. These experiences and challenges demonstrate the urgency of enhancing the capacity to use ICT within government in a coordinated and organized manner, which involves a range of activities, from policy formulation (e.g., national e-government frameworks and sector-specific ICT road maps) to ICT project management in specific sectors. In this regard, the proposed TA will enhance the required capacity of the government through the development of tools and provision of learning programs both country-specific and regional-wise with a particular focus on Mongolia, Philippines, and Viet Nam.

III. THE TECHNICAL ASSISTANCE

A. Impact and Outcome

9. The TA aims to help improve the contribution of ICT in national and sector development by enhancing the capacity of the governments of Mongolia, Philippines, and Viet Nam. The TA will improve the knowledge, skills and awareness of policy-makers, line ministries, project managers, and other stakeholders in these three DMCs to formulate, direct and/or implement ICT policies and programs by applying appropriate ICT maturity assessment, participating in the learning programs, and developing road map and strategies.

B. Methodology and Key Activities

10. The TA will maximize existing knowledge and learning resources through partnerships and collaboration with notable development agencies such as the National Information Society Agency (NIA),⁴ which is a subsidiary of the Ministry of Public Administration and Security

⁴ NIA has been managing the Korea IT Learning Program, designed to promote international cooperation to build human capacity among developing countries, with the financial support of MOPAS. From 1998 to July 2008, NIA organized 180 learning courses, attended by 2,600 trainees from 106 countries. The main subjects cover current topics related to information technology, such as national information policies, e-procurement, e-government system integration, telecommunication policies, and information security.

(MOPAS) of the Republic of Korea, and the United Nations Asian and Pacific Training Centre for ICT for Development (UN-APCICT).⁵ Given the complexity and high cost of many ICT projects, it is important to learn from the experience of countries with more advanced ICT when implementing various e-government projects. The Republic of Korea has been recognized as an example of best practices and a rich source of ICT and e-government projects. With this background, ADB and MOPAS has a strategic partnership for ADB's DMCs in the field of ICT for development,⁶ and under this partnership framework, the MOPAS will contribute the financial and technical resources for this TA.

11. The TA will have three major components: (i) study of e-government maturity and practices and road map development, (ii) development of an ICT project guidebook and online platform, and (iii) learning programs.

12. **Component 1.** A framework will be researched and developed that consists of e-government best practices and a maturity model. Based on the framework, the e-government maturity of the governments of Mongolia, Philippines, and Viet Nam will be assessed, with a particular focus on those sectors where ADB provides significant assistance (such as administration, education, agriculture, and finance). Based on the assessment results and the maturity level of the particular government (i) an e-government and sector-specific ICT road map will be developed; (ii) appropriate international and regional benchmarking practices will be collected; (iii) associated capacity needs, gaps, and challenges will be identified, and a capacity development plan developed; and (iv) business opportunities in relation to ADB's country strategy and operations will be identified. In addition, case studies on e-government practices in the three countries will be carried out.

13. **Component 2.** The ICT project guidebook will be developed for ADB's regional departments and the governments of ADB's DMCs, and broader external networks established by UN-APCICT. The ICT project guidebook will consider the ICT maturity levels of each organization. It will include ICT project management guidelines (ranging from design, procurement, management and implementation of ICT projects to monitoring and evaluation), simple maturity assessment tools, standard ICT project consultant terms of reference, a standard template for requests for proposals, and other ICT project-processing tools that apply to various government sectors (e.g., administration, education, health, and agriculture). An ICT online platform will be developed to share various ICT project products (applications, software, publications, etc.) within and across the countries, including products funded by ADB. In addition, all project outputs including good practice studies, country studies, local case studies, localized modules and programs will be made available online through enhancements to UN-APCICT's e-Collaborative Hub, and Virtual Academy. An appropriate mechanism will be established to enhance, update and localize content on an ongoing basis, and to encourage participants to share knowledge through the online platform.

14. **Component 3.** In the course of implementing components 1 and 2, the overall learning programs will be developed, localized and provided to the governments of participating

⁵ UN-APCICT is a regional institute of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and is mandated to build human and institutional capacity for ICT among UNESCAP member countries. It has developed a comprehensive core ICT curriculum (the Academy of ICT Essentials for Government Leaders), supported national training institutes and government agencies in the region to rollout the Academy at the national level, and facilitated networking among national Academy partners.

⁶ ADB and MOPAS signed the letter of intent on 21 August 2009 for this partnership which aims to support (i) design and delivery of knowledge-sharing and human resource development programs; and (ii) provision of technical assistance and the carrying out of feasibility studies and policy consultations, among others.

countries. Existing national and regional ICT knowledge and learning resources—including but not limited to UN-APCICT's seven training modules of the Academy of ICT Essentials for Government Leaders and NIA's existing training programs—will be collected and analyzed. The learning program will include a program in the Republic of Korea and an in-country program: (i) the Republic of Korea program will be implemented with the participation of representatives from Mongolia, Philippines, and Viet Nam and Korean resource persons who will share their experiences and learn Korean experiences in e-government to increase general awareness of high-level government officials and policy makers of those three countries; and (ii) in-country programs in Mongolia, Philippines and Viet Nam that will assist the governments in applying maturity model and developing road map for their e-government and sector ICT developments. The in-country programs will be provided in partnership with national ICT academies.

C. Cost and Financing

15. The estimated total cost of the TA is \$700,000 equivalent, of which \$500,000 will be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund and administered by ADB, with \$150,000 financed by the Government of the Republic of Korea through MOPAS' in-kind and cash contribution, and \$50,000 financed by UN-APCICT through in-kind contributions. Detailed cost estimates are in Appendix 2.

D. Implementation Arrangements

16. ADB will be the Executing Agency. The implementing agencies for the respective country components will be the Information Communications Technology and Post Authority in Mongolia, the Commission on Information and Communications Technology in the Philippines, and the Ministry of Information and Communications in Viet Nam. Within the country, a project steering committee will be established comprising representatives from concerned line ministries and agencies and chaired by the respective implementing agency. Within ADB, a project advisory committee will be established comprised of the project officers of the concerned ICT projects from the regional departments and resident missions, and coordinators from RSDD and OIST, to provide direction and supervise project implementation. ADB will closely collaborate with NIA and UN-APCICT in implementing the TA. Collaboration with ADBI and other specialized ICT-training institutes and other private sector partners will be pursued as necessary and as relevant.

17. The TA will require a total of 50 person-months of consultant services. The consultants will have expertise in ICT and experience in e-government projects, will provide 8 person-months of international consulting services and 42 person-months of national consulting services, and will be engaged on an individual basis in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time). The outline terms of reference for consultants are in Appendix 3. The TA will be implemented over 18 months, commencing in September 2009.

IV. THE PRESIDENT'S DECISION

17. The President, acting under the authority delegated by the Board, has approved ADB administering technical assistance not exceeding the equivalent of \$500,000 to be financed on a grant basis by the Republic of Korea e-Asia and Knowledge Partnership Fund for Improving Public Services through Information and Communication Technology, and hereby reports this action to the Board.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impact Improved sustainability of ICT operation and success rate of ICT project used by government for national and sector development</p>	<p>Number of ICT project successfully supported and used after the implementation as well as ICT project delivered in time and budget with original scope and objective to be met</p>	<p>Progress, completion or evaluation reports of ADB-supported ICT projects and other government ICT projects</p>	<p>Assumption The government officials in participating DMCs are strongly committed to applying the knowledge acquired through training.</p> <p>Risk Frequent changes in government personnel and resultant discontinuity of government officials in project implementation units.</p>
<p>Outcome Improved knowledge, skills, and awareness of ICT of the governments of participating DMCs</p>	<p>Policy makers, project managers, and trainers in participating DMCs gain the knowledge, skills, and appreciation needed to formulate, direct and/or implement ICT policies and programs.</p>	<p>ADB project completion report</p>	<p>Assumptions Key government officials in charge of the relevant areas participate.</p> <p>Participants are well prepared and committed to contributing to knowledge sharing and capacity development.</p> <p>Risks Lack of general ICT absorptive capacity and specialized government technical capacity</p> <p>Lack of ownership and commitment on the part of national ICT academies to provide training programs to governments</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Outputs</p> <p>1. e-government maturity model and practices, and road map development</p> <p>2. ICT project guidebook and online platform</p> <p>3. Learning programs</p>	<p>Country-specific e-government maturity reports and road maps for Mongolia, Philippines, and Viet Nam</p> <p>Report on e-government case studies and practices in Mongolia, Philippines and Viet Nam</p> <p>Business opportunities for ADB in relation to ADB's country strategy and operations</p> <p>ICT project guidebook that considers all ICT maturity levels and includes ICT project management guidelines, simple maturity assessment tools, standard ICT project consultant terms of reference, a standard template for requests for proposals, and other ICT project-processing tools</p> <p>ICT online platform to share project products (applications, software, publications, etc)</p> <p>Republic of Korea programs developed and implemented for high-level government officials and policy makers in Mongolia, Philippines, and Viet Nam</p> <p>Localized learning programs developed and implemented for government officials in Mongolia, Philippines, and Viet Nam</p> <p>Performance indicators of learning programs identified and measured</p>	<p>Project monitoring and progress reports</p> <p>Consultant reports</p> <p>ADB review missions</p> <p>Steering committee meeting minutes</p>	<p>Assumption</p> <p>Strong stakeholder coordination and cooperation within and outside ADB in carrying out TA activities</p>
<p>Activities with Milestones</p> <p>1. Develop e-government maturity model and ICT project guidebook within 4 months of the start of the TA.</p> <p>2. Prepare learning programs within 6 months of the start of the TA.</p> <p>3. Develop an online platform to share ICT project guidebook within 10 months after the start of the TA</p>			<p>Inputs</p> <p>Total financing of \$700,000, of which \$500,000 is financed by the Republic of Korea e-Asia and</p>

Activities with Milestones	Inputs
<ol style="list-style-type: none"> 4. Localize learning programs for Mongolia, Philippines and Viet Nam within 10 months of the start of the TA. 5. Implement in-Korea learning program and in-country learning programs in Mongolia, Philippines and Viet Nam within 12 months after the start of the TA. 6. Assess the e-government maturity level, collect good practice examples, and develop road map in Mongolia, Philippines and Viet Nam within 14 months of the start of the TA. 7. Identify business opportunities in relation to ADB's country strategy and operations in Mongolia, Philippines and Viet Nam within 16 months after the start of the TA. 8. Enhance UN-APCICT's e-Collaborative Hub and Virtual Academy using the project outputs within 18 months after start of the TA. 	<p>Knowledge Partnership Fund and \$150,000 is financed by MOPAS (a \$100,000 cash-contribution and \$50,000 in-kind); and \$50,000 is financed by UN-APCICT (in-kind contribution)</p> <p>A total of 50 person-months of consultants services (8 person-months international and 42 person-months national services) is required</p>

ADB = Asian Development Bank, ICT = information and communication technology, MOPAS = Ministry of Public Administration and Security, TA = technical assistance, UN-APCICT = United Nations Asian and Pacific Training Centre for ICT for Development.

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Total Cost
A. Republic of Korea e-Asia and Knowledge Partnership Fund^a	
1. Consultants	
a. Remuneration and Per Diem	
i. International Consultants (8 persons-months)	160.00
ii. National Consultants	
3 consultants in focus DMCs (24 persons-months)	48.00
1 consultant in the Republic of Korea (8 persons-months)	32.00
1 consultant in ADB (10 person-months)	25.00
b. International and Local Travel	36.00
2. Training, Workshops, and Conferences	
a. In-Korea Program	60.00
b. In-Country Program (Mongolia, Philippines, and Viet Nam)	60.00
3. Reports and Publications	5.00
4. Web Tools	20.00
5. Local Language Translation	10.00
6. Contingencies	44.00
Subtotal (A)	500.00
B. Ministry of Public Administration and Security Financing^b	
1. In-Korea Program	100.00
2. NIA Technical Support (in-kind contribution)	50.00
Subtotal (B)	150.00
C. United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development Financing^c	
Subtotal (C)	50.00
Total	700.00

ADB = Asian Development Bank, DMC = developing member country, NIA = National Information Society Agency

^a Administered by the Asian Development Bank.

^b Both in-kind and in-cash contribution

^c In-kind contribution

Sources: Asian Development Bank, Ministry of Public Administration and Security, and United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. International Consultant

1. Information and Communication Technology Specialist (8 person-months, intermittent)

1. The information and communication technology (ICT) specialists will be responsible for (i) development of e-government best practice and maturity-assessment framework, (ii) development of the ICT project guidebook, (iii) development of learning programs, and (iv) assessment of maturity level and development of e-government and sector-specific road map for three countries. The international consultants will work under the supervision and guidance of the Asian Development Bank (ADB) in cooperation with National Information Society Agency (NIA) and United Nations Asian and Pacific Training Centre for ICT for Development (UN-APCICT), and will be assisted by ICT research consultant and national ICT specialists.

2. The consultant will require an advanced university degree and extensive understanding in a subject related to ICT in general and e-government in particular. The consultant should have strong research skills and experience relating to ICT and development. The consultant should have an excellent command of English (written and oral), and proven ability to communicate results. A good knowledge of and experience in the Republic of Korea, Mongolia, Philippines, and Viet Nam is preferable.

3. The consultant will:

- (i) develop an e-government best practice and maturity-assessment framework, methodology, and analytic tools for ADB approval, and based on the approved framework, methodology, and tools, develop detailed terms of reference (TORs) for the national ICT specialists from Mongolia, Philippines, and Viet Nam;
- (ii) develop an ICT project guidebook that considers all ICT maturity levels and includes ICT project design guidelines, simple maturity assessment tools, standard ICT project consultant TORs, a standard template for requests for proposals, and other ICT project-processing tools that apply to various government sectors (e.g., administration, education, health, and agriculture);
- (iii) using the study results and ICT project guidebook, assist developing and implementing learning programs in the Republic of Korea, Mongolia, Philippines, and Viet Nam in consultation with the country implementing agencies and develop the performance indicators and related assessment tools to be used prior to and after the learning programs;
- (iv) assist the assessment of the maturity level of the governments of Mongolia, Philippines, and Viet Nam, particularly in those sectors where ADB provides significant assistance (such as administration, education, agriculture, and finance) using inputs from national ICT specialists;
- (v) based on the assessment results and given the maturity level of the respective government, assist the development of an e-government road map and sector-specific ICT road map for each country; collect appropriate international and regional benchmarking practices; identify associated capacity needs, gaps, and challenges; develop a capacity development road map; and identify business opportunities in relation to ADB's country strategy and operations;

- (vi) develop various knowledge products based on the studies and knowledge-sharing results; and
- (vii) carry out any other duties in their specialty as may be assigned to them by ADB, NIA, and UN-APCICT.

B. National Consultant

- 1. Information and Communication Technology Specialist** (a total of three specialists, with one each in Mongolia, Philippines, and Viet Nam; 8 person-months each for a total of 24 person-months, intermittent)

4. The national ICT specialists will work under the supervision and guidance of each country implementing agency, the international consultants, NIA, UN-APCICT, and ADB.

5. The consultants will require an advanced university degree in a subject related to education and ICT and substantive knowledge and experience in consulting with respect to their country's ICT development and e-government implementation. The consultant should have strong research and analytical skills. The consultant should have an excellent command of English (written and oral), and proven ability to communicate results.

6. The consultant will:

- (i) carry out the work specified in the TORs that will be developed by the international ICT specialist and conduct the country study under the supervision of the international ICT specialist and implementing agency;
- (ii) provide the international ICT specialists, ADB, NIA, and UN-APCICT with local knowledge, input, and up-to-date information regarding the national situation, conditions, policies, and issues to assist with completion of the country study;
- (iii) assist the implementing agency in applying maturity model and developing road map;
- (iv) assist localizing and customizing the learning programs and organizing the local learning programs;
- (v) carry out any other duties in their specialty as may be assigned to them by the country implementing agency, international ICT specialists, ADB, NIA, and UN-APCICT.

- 2. ICT Capacity Building Specialist** (8 person-months, based in the Republic of Korea, intermittent)

7. The ICT capacity building specialist will work under the supervision and guidance of UN-APCICT.

8. The consultant will require an advanced university degree in a subject related to ICT and substantive knowledge and experience in international ICT capacity-building and knowledge-sharing initiatives, particularly in the area of e-government.

9. The consultant will:

- (i) assist UN-APCICT in developing and implementing the learning programs targeting the government leaders and policy makers in the three countries using UN-APCICT academy module in accordance with the learning needs defined by the ADB;
- (ii) lead the process of localizing and customizing the learning programs both developed by UN-APCICT and ADB to assist the country implementing agencies and national ICT academies and UN-APCICT and proactively coordinate the activities and act as central point of contact;
- (iii) assist country implementing agencies, the international ICT specialist, national ICT specialists, ADB, NIA, and UN-APCICT with the literature review, documentation and study on e-government maturity and practices;
- (iv) package and document the process and results of local learning programs in Mongolia, Philippines, and Viet Nam; and
- (v) carry out any other duties in their specialty as may be assigned to them by UN-APCICT and ADB.

3. Information and Communication Technology Research Specialist (10 person-months; based in ADB; intermittent basis)

10. The ICT research specialist will work under the supervision and guidance of ADB and international consultants.

11. The consultant will require an advanced university degree in a subject related to education and ICT and substantive knowledge of and experience with ICT projects.

12. The consultant will:

- (i) monitor project progress by interacting with all project stakeholders including ADB, NIA, UN-APCICT, country implementing agencies, and consultants as well as other ADB project officers, executing agencies, and implementing agencies involved in ADB's ICT-supported projects in Mongolia, Philippines, and Viet Nam;
- (ii) assist ADB in reviewing and finalizing the study on e-government best practice and maturity-assessment to be carried out by the international ICT specialist;
- (iii) provide the necessary information and inputs related to ADB's projects to consultants, NIA, and UN-APCICT and provide the necessary feedback to ensure that any needs are reflected in the development of the learning programs;
- (iv) assist ADB in guiding and providing feedback to the international ICT specialist in the course of drafting ICT project design guidelines, standard ICT project consultant TORs, and other ICT project-processing tools by providing appropriate support related to ADB's own business process, procedures, and practices;
- (v) assist ADB in developing an online platform to share ADB ICT project products (applications, software, publications, etc.);
- (vi) prepare the progress reports as required by the Republic of Korea e-Asia and Knowledge Partnership Fund and carry out knowledge management for ADB's

ICT website and for the Republic of Korea e-Asia and Knowledge Partnership Fund; and

- (vii) carry out any other duties in their specialty as may be assigned to them by ADB.