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Ex-Post Evaluation Report on the Project for Establishing Government Integrated Data Center in Nepal

한국국제협력단

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2012.12



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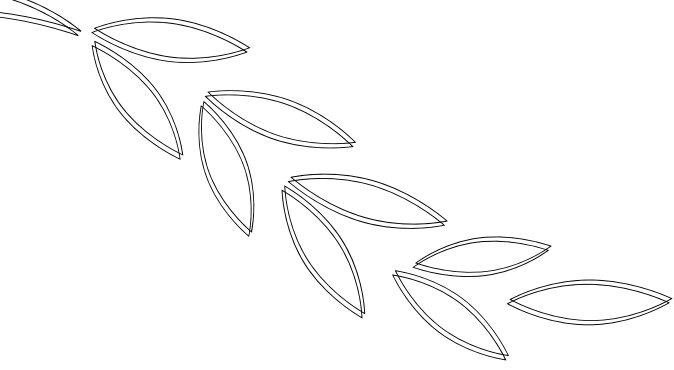
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This evaluation study was entrusted to Kookmin Institute for Strategic Governance, Kookmin University by KOICA for the purpose of independent evaluation research. The views expressed in this report do not necessarily reflect KOICA's position.

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Summary of Ex-Post Evaluation



Summary of Ex-Post Evaluation



1. Brief Summary of Ex-Post Evaluation

- Subject of this ex-post evaluation is Nepal's GIDC Implementation Project and its contents are the following:

<Nepali GIDC Implementation Project Overview>

Index		Detailed Content
Project Goals		<ul style="list-style-type: none"> ■ Improve efficiency through integrated management of government's data ■ IT intelligence training for government officials
Each Party's Duties	Korea	<ul style="list-style-type: none"> ■ Construction of a new GIDC building (US\$1,880,000) ■ Equipment (US\$1,213,000) ■ Trainees invitation (US\$88,000) ■ Dispatch expert (US\$200,000) ■ Other (US\$119,000)
	Recipient Country	<ul style="list-style-type: none"> ■ Provide building site ■ Provide infrastructure for construction
Project Area		<ul style="list-style-type: none"> ■ Kathmandu area
Grant / Period		<ul style="list-style-type: none"> ■ US\$3,500,000 / 3 years (2007~2009)
Beneficiaries		<ul style="list-style-type: none"> ■ Public and Government of Nepal
Expected Outcomes	Korea	<ul style="list-style-type: none"> ■ Improve Korea's e-Government ODA Project ability ■ Improve image of Korea as a major power in IT industry
	Recipient Country	<ul style="list-style-type: none"> ■ Build infrastructure for Nepal's e-Government ■ Improve IT ability of Nepali Government officials
Project Implementing Agencies	Korea	<ul style="list-style-type: none"> ■ Korea International Cooperation Agency (KOICA) / PMC : KT
	Recipient Country	<ul style="list-style-type: none"> ■ National Information Technology Center (NITC)



2. Evaluation Results

(1) Relevance

- Nepal's GIDC implementation Project was based on a previously established e-Government Master Plan (e-GMP). As a key element in e-Government's infrastructure, the GIDC had goals of the integration and management of the government's DB and servers, and in playing a key role for ICT support and consulting. However, considering the level of IT in the Nepali Government, it was somewhat early to implement the project. Nonetheless, the project had its relevance in the vitalization of a future e-Government project.
- During the feasibility study and consultation period, thorough analysis was carried out on the demands of the recipient country. Based on that analysis, a grant increase was made to fulfill the actual effects of the project. It seemed appropriate since the project was promoted in a performance-based way and reflecting discoveries of potential demand was necessary.
- However, political instability and changes in the state system during the GIDC project were major causes of the failure on the establishment of an institutional foundation for the smooth execution of ICT policy. Later they also became reasons for the failure in GIDC's potential growth.
- Also, during the execution period of the GIDC implementation project, many difficulties occurred including extension of the project period due to domestic political instability. However, through the efforts of the project team, the project was properly carried out.

(2) Efficiency

- The construction company which undertook the GIDC's implementation project had decades of field experience and was able to resolve problems with

efficiency.

- Due to a general election and riots during the project, scheduling of the GIDC project was difficult. However, many efforts were made to reduce the delay of the project's completion.
- After the completion, the GIDC's efficiency was evaluated with its space utilization ratio. The ratios showed a steady increase (5% in 2010, 15% in 2011, and 35% by July 2012). Since the digitalization of the Department of Business Registration is in progress and also considering many e-Government projects are on the way, the GIDC's usage ratio will increase sharply.

(3) Effectiveness

- Construction of a new building was completed by original plan and repairs for claims were also completed. So, the physical requirement for the GIDC as an integrated data center was fulfilled.
- However, frequent failures of some equipment caused difficulties in maintenance. In case of certain software failures, experts from Korea had to be dispatched to fix the problem. Nonetheless, most equipment failure was because of Nepal's poor electricity supply system (huge differences in voltage), not because of the equipment itself.
- Dispatched experts on the GIDC implementation project successfully carried out their roles and the recipient agency's satisfactory rate was generally high.
- The trainee invitation program's curriculum of the GIDC Implementation Project was proper. However, the feedback from recipient agencies showed that the training period was too short.
- Also, expected ramifications of IT training were not met due to turnover of IT experts among those who had attended the trainees invitation program.
- GIDC's effectiveness as an e-Government project can be evaluated through the central government usage rate. By 2012, the ratio is 11.5% and the number

is lower than expected. Due to Nepal's political instability, e-Government projects could not follow the schedule for 5 years after the establishment of e-GMP. Also, a lack of legal and institutional apparatus caused delay in the mandatory use of the GIDC among the government agencies. Currently, interest in e-Government is increasing and the digitalization project of the Department of Business Registration will increase GIDC's usage rate.

- According to the customer satisfaction survey during the ex-post evaluation of GIDC, internal customers' satisfaction rate was higher than external customers' satisfaction rate. This means GIDC's employees recognized the excellence of its environment and functionality; on the other hand, other government agencies had low confidence in the GIDC and did not trust its service. So, it is necessary to make an effort in gaining other government agencies trust through aggressive promotions and strengthening of GIDC's organization. However, because the survey was conducted with a limited number of people, a careful approach to survey results is required.

(4) Impact

- The GIDC project provided a foundation for e-Government vitalization. Indirect impact could be found in some government agencies which gained awareness in the importance of security, economical efficiency, and a stable supply of power.
- The GIDC project was a major part of Nepal's e-Government Project. It also contributed in the vitalization of IT support from other countries and international agencies, such as ADB. GIDC also carried out periodic IT training for the central and local government agencies and contributed in positive IT intelligence spread in the government.
- However, outside of its original purpose as a government integrated data center, GIDC has commission of server management of private banks in pursuit of profitability.

- This can cause a competitive relationship with the private sector and have a negative impact on private sector's integrated data center development. In the short-term, this can have positive effects on profitability. However, in the long-term, there is a security risk in managing both government and private sector data. So, the GIDC should be managed with the sole focus on integrated data for the government.

(5) Sustainability

- In coming years, the Government of Nepal will promote various projects relating to e-Government. Due to this, a steady increase in the demand and importance of the GIDC will be occurring.
- Since its directing agency, the Ministry of Environment, Science and Technology, has relatively low status in the Nepali government, GIDC's status was also low. This was one of the major reasons for GIDC's insufficient role as a government integrated data center.
- Also, contract workers' status in GIDC personnel was the one of the main reasons of distrust in other government agencies. This can be a potential obstacle for GIDC's sustainability.
- Also, a poor ICT infrastructure level and a low ICT level can be major hindrances in carrying out GIDC's expected role and functionality among Nepal's government agencies.
- However, the Nepali Government made efforts in supporting GIDC through various policies and it also established the Department of IT (DoIT) to ensure a legal and institutional foundation for GIDC. So, it can be expected that the sustainability and contribution of the GIDC will increase.



■ 3. Policy Suggestions

- In the case of projects like the GIDC, which needs wide consensus inside of government for maximization of its impact, a detailed training program about the roles, meaning, and the importance of an integrated data center must be advised in advanced. High government officials and policy makers can be the training program's targets.
- Also, for future e-Government related ODA projects, a mandatory commission of data server management by GIDC can be suggested. For the GIDC's placement as a total ICT consulting and supporting agency of the Nepali Government, consideration of subsequent business and dispatching of experts such as policy advisers is desirable. Also, continuing policy advice to top government officials is necessary for e-Government projects' integrated and stable exaction.
- In the e-Government ODA Project, equipment and its installation are key factors in successful completion of the project. During the feasibility study and consultation period, it is necessary to include checking of domestic IT retail markets. Especially Korean made ICT products' local A/S availability checking is needed.



Background for Evaluation



I

Background for Evaluation



■ 1. ODA Project and Needs for Its Ex-Post Evaluation

- Due to the elevated status of Korea's e-Government, demands for ODA in this field are sharply increasing. This ex-post evaluation can provide a crucial guide line for the current and future projects.
 - Ex-Post evaluations of The Korea International Cooperation Agency (KOICA) contribute to the effective and efficient execution of the limited ODA grant and maximize the benefits of the ODA projects by systematically examining the processes and the outcomes of the ODA projects that are already implemented.
- In 2010, the UN officially recognized Korea as one of the most advance e-Governments. Ex-Post evaluations of KOICA's e-Government projects will judge the proper transfer of technical know-how to the recipient country.
 - Since e-Government is not a fixed notion but a concept that evolves in various environments including information and communications technology (ICT), a long-term comprehensive assessment of the effect on the social and economical impact of the recipient country is needed.
- Since ODA on Nepal regarding various e-Government projects is increasing, KOICA will contribute to the efficiency and effectiveness of the ODA projects through conducting a preliminary survey, interim evaluation, completion evaluation, and ex-post evaluation.
 - From 1991 to 2009, total grant for the ODA projects in Nepal was about US \$29.8 million, an average of US \$1.57million per a year. From 2009,

Nepal has been selected as an important partner for KOICA and its support has been sharply increased.

- KOICA supported a project in implementing a Government Integrated Data Center (GIDC) in Nepal (2007-2009).
 - The project budget was US \$3.5million for the construction of a new building for the GIDC, equipment, invitation of trainees, dispatching of specialists, etc.
- Also KOICA is undertaking a project to modernize Nepal's Customs Clearance Services and is considering additional ODA for various e-Government projects including implementation of the Disaster Recovery Center. Thus the evaluation for the e-Government ODA Project becomes more important.
- In the UN's E-Government Development Index, Nepal is ranked in the 2nd stage and is promoting growth through the knowledge-based industries established through ICT. Evaluating whether this kind of increase of demands in the recipient country is well reflected in how the ODA project will promote mutually beneficial development cooperation.
- Thus it is necessary to establish a systematical performance management system to evaluate Nepal's e-Government ODA Project according to professional and objective OECD DAC standards.
 - The reports and materials of Nepal's e-Government ODA Project will be used to enhance effectiveness for future e-Government ODA projects and similar projects.
 - By analyzing tangible and intangible outcomes of informatization, not just using quantitative measurement but also using qualitative research, this evaluation can be used as a tool for effective analysis and judgment of e-Government ODA projects.



2. E-Government and ODA

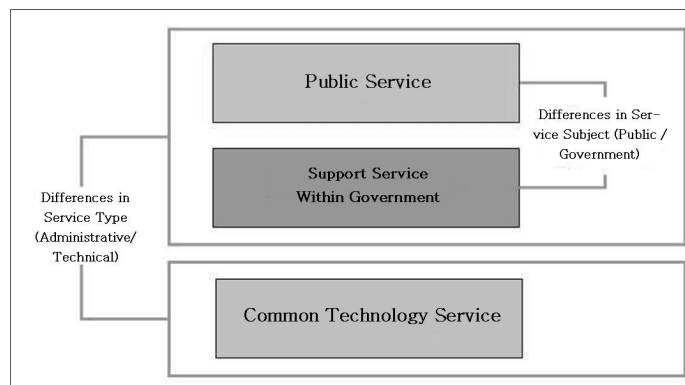
A) Concept of E-Government

- E-Government can be defined as a form of government at the information age, which utilizes ICT in public administration to increase efficiency and productivity and provides better quality service to the public.
- The purpose of utilizing ICT is using its speed, accuracy, and transparency to overcome government's inefficiency, undemocratic elements, and corruption. Also, it's to actively involve the public in their government's administrative services.

B) E-Government Services

- E-Government services which utilize ICT can be identified as 3 types: E-Government service to citizens, e-Government service within governments, and common technology services. The GIDC is part of common technology services which are used commonly within government organizations and provide a common environment.

<Figure 1> E-Government Service Field Classification

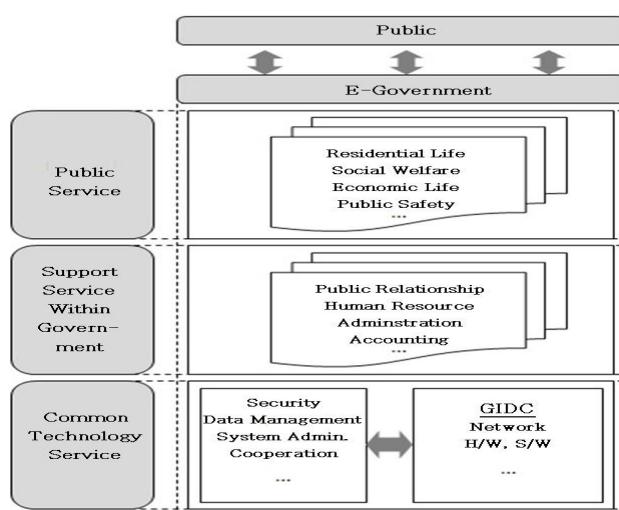


Source: Ministry of Public Administration and Security, National Information Society Agency, Service Reference Model 2.1, 2011.08

C) E-Government and GIDC

- The Government Integrated Data Center (GIDC) is the integrated data center of individual data centers of various government agencies. The GIDC is part of common technology services in the e-Government service reference model and can be managed by private operators.
 - The data center is basically a complex which host server for digital administration and data storage devices.
 - To implement a successful data center, consideration of application behavior regarding application flow, scalability, redundancy, load balancing, migration, management, and security must begin from the planning and design stage.
- Like the GIDC, when integrating several data centers into one, making a list of migration server and other devices is necessary. By doing so, approximation of the estimated size of complexity is possible.
 - In general an integrated data center needs rack space which can accommodate 5~10 times of expansion.
 - Primary reasons of integrating data centers are cost reduction of network infrastructure, standardization and concentration of resources, virtualization of network resources, performance protection, etc.

<Figure 2> Relationship between E-Government and GIDC



D) ODA Effect of E-Government

- The arrival of the information society in the 21st century emphasizes the importance of the ICT world wide and the digital divide emerges as the new inequality.
 - According to the UNCTAD, one of the main reasons for more than the huge 60 times of income disparity between sub-Saharan African countries and developed countries is the accumulation of information technology.
 - Many developing countries are committed to their national informatization and are requesting ODAs in e-Governmental areas.
- The purpose of e-Government programs is to increase efficiency, transparency, and reliability of public service but also to contribute to the revitalization of the domestic ICT industry.



■ 3. E-Governments of Donor and Recipient Countries

- According to an e-Government Survey¹⁾, Korea has been ranked as one of the highest developed countries regarding e-Government, while Nepal has maintained the lowest level.

<Table 1> UN e-Government Index Each Year (Korea and Nepal)

Year(Country)	2005		2008		2012	
	Korea	Nepal	Korea	Nepal	Korea	Nepal
e-Government Index (Ranking)	0.8727 (5th)	0.3021 (126th)	0.8317 (6th)	0.2725 (150th)	0.9283 (1st)	0.2664 (164th)
On-Line Service Index	0.9769	0.4000	0.8227	0.2876	1.0000	0.2876
IT-Infra Index	0.6713	0.0063	0.6886	0.0119	0.8356	0.0597
Human Capital Index	0.9700	0.5000	0.9841	0.5176	0.9494	0.4521

Note : Values for on-line service indices for 2005 and 2008 are those of Web Measure Indices.
Source : UNDESA E-Government Survey, selected years.

1) From 2002, The United Nations Economic and Social Council Announced E-Government Development Index. The Survey assesses the 190 member states of the UN according to composite index based on Online Service Index, Telecommunication Infrastructure Index, and Human Capital Index

- Korea's e-Government index was 0.8727 (5th place) in 2005 and increased to 0.9283(1st place) in 2012, while Nepal's e-Government index was 0.3021(126th place) in 2005 and declined to 0.2664(164th)in2012).
- However, Nepal's IT infrastructure index rose from 0.0063 in 2005 to 0.0597 in 2012²⁾.
- According to the Global Information Technology Report by the World Economic Forum, the Nepali government has been increasing awareness of the importance of ICT over the years. However, ICT priority within government and ICT procurement are declining.

<Table 2> Nepali Government ICT Readiness Index

Year	2007-2008		2008-2009		2009-2010		2010-2011	
	Points	Ranking	Points	Ranking	Points	Ranking	Points	Ranking
ICT Priority with in Government	4.15	109 (134)	3.79	119 (133)	3.71	122 (138)	3.6	124 (142)
ICT Procurement	2.77	120 (134)	2.69	126 (133)	2.62	132 (138)	2.6	133 (142)
Importance of ICT in Future Vision	2.89	125 (134)	2.96	123 (133)	3.07	126 (138)	3.2	115 (142)

Note : Points are the average points of the Executive Opinion Survey using a seven-point scale. Figures in the parenthesis are the number of countries evaluated.

Source : World Economic Forum, The Global Information Technology Report

- Every 4 years, the Nepali Government announces 'IT policy' which lists national tasks, priorities and goals in the IT field and enabling e-Government as one of its main contents. The information released in the year 2010, as follows:
 - Employment growth by developing more cost-effective IT outsourcing than India
 - 3 major outsourcing fields: Business Outsourcing, e-Services, Remote Maintenance,

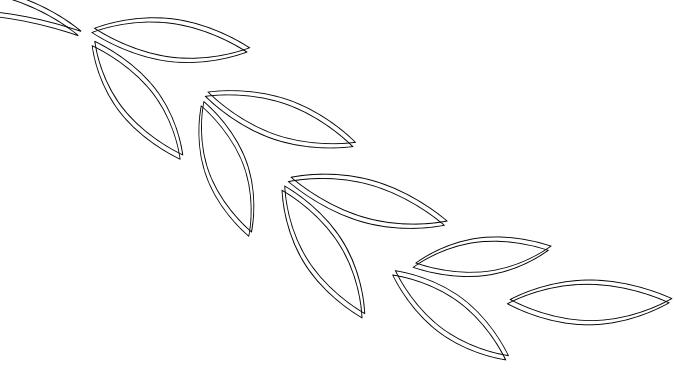
2) One of the main reasons for Nepal's lower e-Government index ranking after GIDC is that due to the political instability, continuous promotion of informatization and e-Government policy was difficult. Especially, in the same period, other countries promoted more informatization policies. Nepal's ranking was relatively low.

- More extensive utilization of IT to enable e-Government
 - Use of IT in health, education, and commercial fields
 - Increase transparency of policy regarding domestic economic activities
 - Sequential IT policy fields: Intellectual property rights, e-Trade, e-Commerce, VOIP, information security, broadband communications, wireless networks, and open software.
- Though Nepal maintains a very low level e-Government index, recent increase of the Internet using population will stimulate a gradual increase of demand for e-Government.

<Table 3> Nepal's Internet Using Population Data Each Year

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
Internet Users	80	100	120	225	318	400	500	580	2,376
Growth Rate, Year-by-Year	33.3	25.0	20.0	4.2	41.3	25.8	25.0	16.0	309.7
Number of Users Among 100	0.31	0.38	0.45	0.83	1.14	1.41	1.73	1.97	7.93

Source : World Bank (Country Meta Data)



Evaluation Methodology



II

Evaluation Methodology



1. Evaluation Period

- Ex-Post evaluation for the implementation project of the GIDC in Nepal has been conducted from May 21st to November 20th, 2012. Several mile stones during this period areas follows:
 - Presentation for the beginning the project : June 7th,2012
 - Mid-term presentation: August 23rd,2012
 - Presentation of the final report: September 20th,2012
 - End of the project: November 24th,2012
- Main research activities in this period are summarized in the table below:

<Table 4> Main Activities Undertaken for Each Project Period

	Period	Main Activities
Preparing and Designing Field Research	May 21 – June 10	Schedule setting Contract with local specialists Launching the project
Field Research in Korea	June 11 – July 8	Interviews with PMC people Literature review
Field Research in Nepal	June 9 – June 13	Visit and conduct interviews
1 st Field Research in Mongolia	Aug. 5 – Aug. 11	Visit and conduct interviews
Analyzing Outcomes of Field Research	June 13 – Aug. 22	Summarize research outcomes and draw implications
Mid-Term Report	Aug. 23	Mid-term presentation
Revising Evaluation Outcomes	Aug. 24 – Sept. 19	Additional research, domestic and abroad

<Table 4> continued

	Period	Main Activities
Final Presentation	Sept. 20	Final presentation of field research outcomes
2 nd Field Research in Mongolia	Oct. 17 – 20	Visit and conduct interviews
End of Evaluation	Sept. 21 – Nov. 20	Writing final report
End of Project	Nov. 20	Printing final report

* This ex-post evaluation was simultaneously conducted in Nepal and Mongolia.

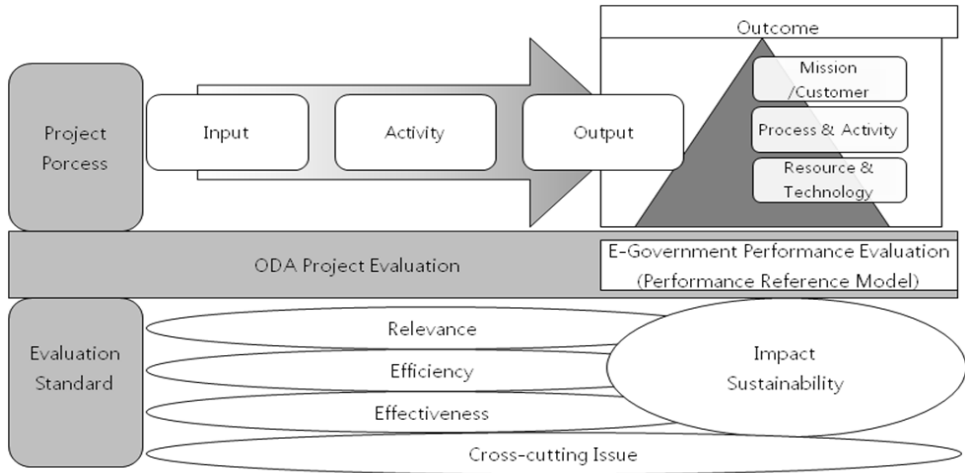


■ 2. Model of Evaluation

A) Brief Summary of Evaluating Models

- Generally ex-post evaluation for ODA projects is undertaken in certain periods after the completion of the project. Thus, the project has to be evaluated in 2 aspects: ODA aspect and the project contents aspect.
 - From the recipient country's request to the donor country's output completion, ODA aspect evaluation is needed. After completion of the outcome, it should be evaluated in the aspect of the ODA project contents.
 - For the criteria for evaluation in the former, OECD DAC standards can be adopted. However in the latter, it is needed to adopt a different evaluation model depending upon the types of ODA projects.
- Hence, the ex-post evaluation for the e-Government ODA project can use the evaluation criteria by OECD DAC standards. However, the content of the ODA project is about e-Government, therefore it is necessary to set up a separate evaluation model.
 - A figure for a conceptual framework for evaluating an ODA project in the field of e-Government is as follows:

<Figure 3> E-Government ODA Project Ex-Post Evaluation Framework



- In ex-post evaluation for the e-Government ODA project, the purpose of evaluation is to increase mutual cooperation and aid effectiveness between donor and recipient countries, and the purpose of outcome evaluation for e-Government is to contribute to an improvement and reformation of the public sector service of the recipient country's e-Government.
- The outcome evaluation in the field of e-Government can be different depending on the various project contents: Information infrastructure, G2G, G2B, G2C, etc. It is necessary to adopt different evaluation standards and criteria accordingly.
- The GIDC implementation project is about establishing an information infrastructure. So, it is needed to set up evaluation standards and criteria to accommodate the characteristic of the integrated data center.

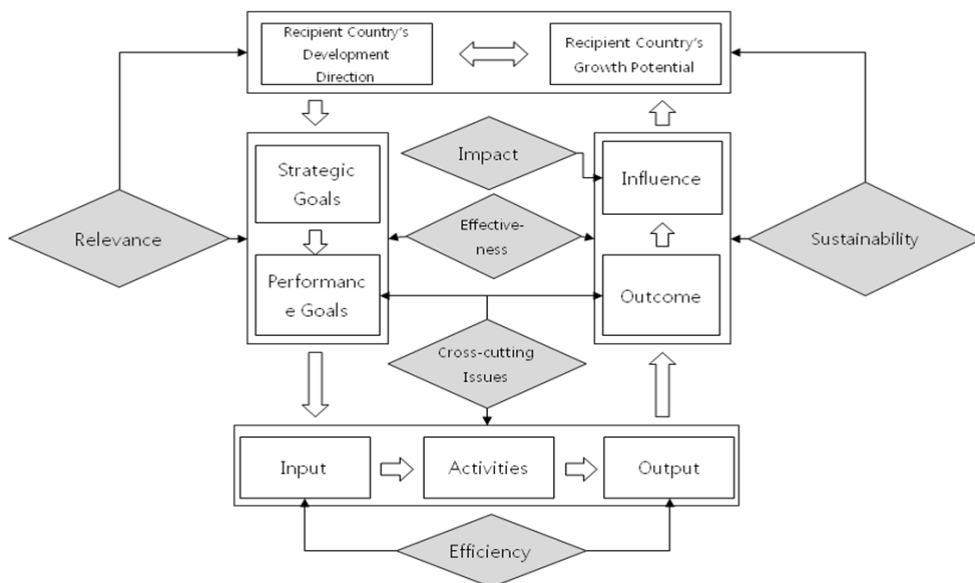
B) Development of ODA

(1) Evaluation Model for ODA Project

- OECD DAC standard provide six criteria for ODA project evaluation: Relevance,

efficiency, effectiveness, impact, sustainability, and cross-cutting issues.

<Figure 4> ODA PRM - OECD DAC Evaluation Criteria



<Note> ◇ : Evaluation Criteria ⇔ : Flow of Project

- Relevance means that the ODA project should serve MDGs as well as the policy of donor and recipient countries.
 - That is, the performance goal of the planning stage is to meet both the goal of international development cooperation and the goal of related countries' policy.
- Efficiency evaluation criteria is in comparison between input elements and output elements in the project. Input may include budget, time, and manpower. Output can be tangible and intangible outcomes, time-required, and capacity of beneficiaries.
 - In order to increase efficiency, efforts in minimizing input and maximizing output is needed.
- Effectiveness means the extent that the intended goals are achieved. It means evaluation of the project outcomes.

- The outcome of project, are namely the results formed in the completion of the project. On the other hand, goals of project are formed in the planning stage.
- Hence, to measure effectiveness, the goals of the project need to be set up in measurable ways. The outcomes of the project also need to be measured fairly and objectively.
- Impact means the direct and indirect influence of the outcomes or project itself to their surrounding environment.
 - Mostly impact is intended through performance goals and effects. However, there can be unintended consequence in the middle of execution processes or the project itself.
 - Impact should include the negative impact, not just the positive impact.
- Sustainability means evaluation of the continuity of outcomes from project.
 - Sustainability should be evaluated in the standard of recipients. Independent self sustainability is final goal.
 - Hence, evaluation should include the possibility of the independence of the recipient.
- Cross-cutting issues evaluation means that it evaluates where the project touches on general principles of mankind such as gender equality, environmental protection, protection of minority, and so on.
 - Hence, evaluation for cross-cutting issues should be carried out separately from other evaluation standards.
 - Evaluation of legal cross-cutting issues should find each element (gender, environment, minority, etc.) in the project and should be carried on by experts, using objective data.

(2) E-Government Performance Evaluation Model

- Ex-Post evaluation for the e-Government ODA project is centered on the final outcomes of the project. Thus, the outcome and impact performance

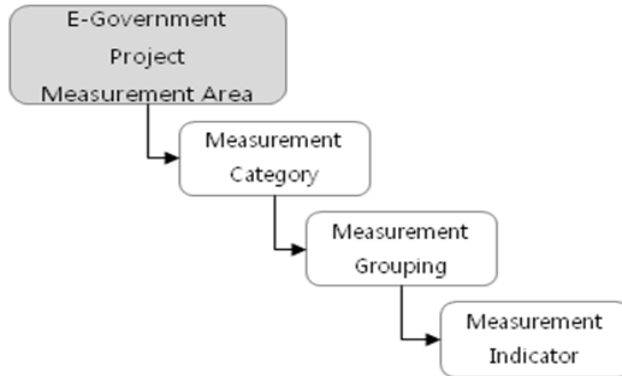
evaluation of the ODA project can be overlapped with the performance evaluation of e-Government.

- In other words, the outcomes and impact of the ODA project can be considered as outcomes of e-Government.

A. Brief Summary of Performance Evaluation of E-Government

- Due to the advancement of ICT and the wide spread of the Internet since the year 2000, many governments of the world put an effort into implementing e-Government service which enables administrative service regardless time and place.
 - As a result, a few advanced countries, including the U.S. and Korea, implemented e-Government services in every field. However, many countries only have limited e-Government works like digitalization of administrative works and implementation of computer systems for specific public services.
 - Hence, there is no standardized model for evaluating the performance of e-Government.
- In general, the Performance Reference Model (PRM) which was developed in the US is one of the most widely used reference model's.
 - PRM is a framework to measure the performance of major IT investments and their contribution to program performance. It helps government and public agencies in evaluating IT investment's direct and indirect outcomes and their effects. By doing so, governments and agencies can provide strategically better control and support to their service.
- PRM is structured around Measurement Areas, Measurement Categories, Measurement Groupings, and Measurement Indicators, as shown below:

<Figure 5> PRM Measurement Classification and Its Hierarchy

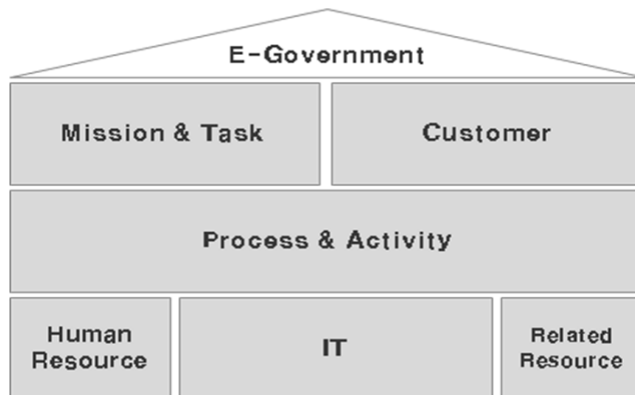


Source: Performance Reference Model 2.1, p.8. National Information Society Agency (2011), Ministry of Public Administration and Security

○ Details of the structure are as below:

- Measurement areas: E-Government
- Measurement Categories (6): Mission and Business Results, Customer Results, Processes and Activities, Human Capital, Technology, and Other Fixed Assets.
- Measurement Grouping (16): Administrative Service, Customer Satisfaction, Quality of Service, Area of Service, Finance, Productivity, Work Quality, Security, User Support, System Quality, Standards, Information and Data, Application, ICT Policy, Legal System for e-Government.

<Figure 6> E-Government Measurement Categories by PRM



Source: Performance Reference Model 2.1, p.4. National Information Society Agency (2011), Ministry of Public Administration and Security

B. Performance Indicator Development for GIDC Project in Nepal

- Performance goals for Nepali GIDC can be divided into 5 groups, based on the goals which were established by NITC:

<Table 5> GIDC Goals and Performance Goals

No	GIDC Goal*	Performance Goal**
1	Minimize investment cost by using GIDC based common facilities	Performance Goal 1: Information Facilities
2	Improve stability and efficiency through concentrated central management within Data Center that provide Internet access and management for e-Government	Performance Goal 2: Stable Management of System
3	Minimize operation cost by means of centralized GIDC	Performance Goal 3: Minimize Expense
4	Offer easy expansion and upgrade for increasing demands	Performance Goal 4: Technical Expansion Ability
5	Offer basic environment for government co-location and integrated government mailing service	Performance Goal 5: Integrated Mailing Service

* GIDC Goal : Goals established by NITC, management agency of GIDC (<http://nitc.gov.np>)

** Performance Goal: Goals driven by evaluation team, based on GIDC Goals

<Table 6> e-Government Performance Indicators and Measurement Methods

Performance goal	Performance Category	Performance Grouping	Performance Indicator	Measurement Method	Unit	Note
Infrastructure	Mission & Service	Administration Service	Central Government Utilization Rate	(Number of Government Agencies Using GIDC/Total Government agencies)x100	%	
	Other Fixed Assets	Management System	Mandatory Use of GIDC	Legal Mandatory of Use of GIDC	-	
Stable Management of System	Customer	Customer Satisfaction	Customer Satisfaction Rate	Customer Interview & Survey	-	
	Process & Activity	Security	Manual for Security Incident	Development of Manual for Security Incident	-	
	IT	System Quality	Average Voltage Maintenance Rate	(Actual Voltage / Required Voltage)*100	%	
	Other Fixed Assets	Organization Culture	IT Expert Turnover Rate	(Turnover IT Experts / IT Experts)*100	%	

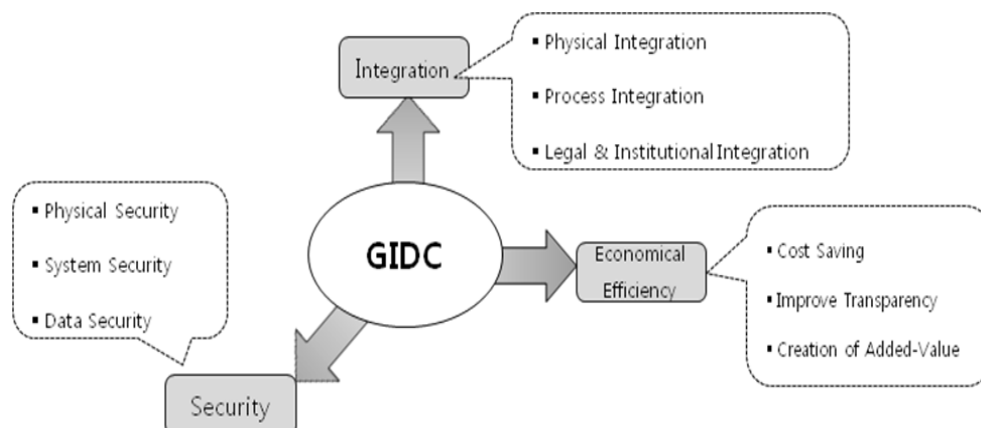
<Table 6> continued

Performance goal	Performance Category	Performance Grouping	Performance Indicator	Measurement Method	Unit	Note
Minimize Expense	Process & Activity	Utilization	Space Utilization Rate	(Utilized Space / Available Space)*100	%	
		Productivity	Number of Agencies per Person	Number of Utilized Agency / IT Experts	Number / Person	
			Number of Agencies on Budget	Number of Utilized Agency / Budget	Number / \$	
Technical Expansion Ability	Human Resource	User	Number of Trainees	Number of Trainees	Person	
		Man power	Percentage of IT Experts	(Number of IT Experts / Total Personnel)*100	%	
Integrated Mailing Service	Mission & Service	Administrative Service	Government Email Hosting Rate	(Number of Email Hosting Agencies / Number of Total Government Agencies)*100	%	

Note: ① Central Government Agency : Government agencies (26) under administration of Minister
 ② Government Agency: Government Agencies including Central Government Agencies, Local Administrative Agencies (5 Regions, 14 Zones, 75 Districts)
 ③ Utilized Agency: Government and private agencies

- Considering its infrastructure characteristics, evaluation using survey for the GIDC set up integration, economic efficiency, and security as its guidelines.
 - Integration can be evaluated by whether various government agencies utilized their e-Government systems and programs with the Government Integrated Data Center or not. It can be divided into physical integration, process integration, and integration of law and systems.
 - Economic efficiency evaluates economical effect caused by e-Government related projects. It can be divided into cost savings, transparency, and creation of added value.
 - Security evaluates how equipment and data are secured to maintain stable e-Government. It can be divided into physical security, system security, and information security.

<Figure 7> Nepali GIDC Survey Measurement Criteria



3. Evaluation Matrix

- Evaluation categories according to the ODA performance evaluation model can be generated as below:
 - Evaluation categories for relevance can be sorted as demands and conditions of the ODA project recipient country, strategy of the ODA project donor country, relevancy between the ODA project and MDGs, and processes of the ODA project.
 - Evaluation categories for efficiency can be sorted as use of human resources in the ODA project, budget efficiency of the ODA project, minimization of the ODA project period, and productivity and efficiency of the GIDC.
 - Evaluation categories for effectiveness can be sorted as achievements of ODA project goals, improvement of ODA project effect, and achievements of the GIDC, and customer satisfaction of the GIDC.
 - Evaluation categories for impact can be sorted as positive and negative impact.
 - Evaluation categories for sustainability can be sorted as generation of demands

for GIDC, organizational capability of GIDC, policy support of the Nepali Government, and technical level of Nepali society.

- Evaluation categories for cross-cutting issues can be sorted as environmental problems, gender equality, and human right issues.

<Table 7> Ex-Post Evaluation Matrix

Evaluation Criteria	Evaluation Category	Evaluation Question	Evaluation Ground & Indicator	Method
Relevance	Demands & Conditions of ODA Project Recipient Country	Did Nepali government have policy demands for GIDC?	IT Policy of Nepali Government	Literature Research
		Did the GIDC project reflect the demands of Nepali government well?	Proposal & Consultation Report	Literature Research
		Did the Nepali Government have suitable agencies to accommodate the GIDC Implementation Project?	IT Organization Chart of Nepali Government	Literature Research
		Was there any internal problem in the Nepali Government for GIDC Implementation Project?	Political Situation of Nepali government	Literature Research
		Did the Nepali Government have suitable level of technology for GIDC Implementation Project?	Level of Informatization of Nepali Government	Literature Research
	Strategy of ODA Project Donor Country	Did the GIDC Implementation Project agree with the ODA policy of Korea?	ODA Supporting Policy of Korea	Literature Research
	Relevancy btw. ODA Project & MDGs	Was there a relevancy between the GIDC Implementation Project and MDGs?	Performance Goal / MDGs	Literature Research
	Processes of ODA Project	Did the planning process for the GIDC Implementation Project properly undertake?	Reports (Feasibility Study, Consultation Report)	Literature Research
		Was the execution of the GIDC Implementation Project proper?	Interim Assessment Report	Literature Research
		Was the completion of the GIDC Implementation Project proper?	Exit Assessment Report	Literature Research

<Table 7> continued

Evaluation Criteria	Evaluation Category	Evaluation Question	Evaluation Ground & Indicator	Method
Efficiency	Use of Human Resource in ODA Project	Did the GiDC Implementation Project utilize given human resources?	Reports (Interim Assessment, Exit Assessment)	Literature Research
	Budget Efficiency of ODA Project	Did the GiDC Implementation Project properly utilize its budget?	Reports (Interim Assessment, Exit Assessment)	Literature Research
	Minimization of ODA Project Period	Did the GiDC Implementation Project utilize the given project period?	Reports (Interim Assessment, Exit Assessment)	Literature Research
	Productivity & Efficiency of GiDC	How many agencies handled by one GiDC IT expert?*	Number of Agencies per Personnel	Reference Research
		How many agencies are there in terms of GiDC budget?	Number of Agencies Relating to Budget	Reference Research
		What is the average voltage in the GiDC?*	Average Voltage Rate	Reference Research
		What is space utilization rate at GiDC?*	Space Utilization Rate	Reference Research
Effectiveness	Achievement of ODA Project Goals	Was the building constructed to accommodate the GiDC?	Related Documents and Building	Spot Survey
		Was the equipment provided efficient enough to manage the GiDC?	Related Documents and Equipment	Spot Survey
		Were the experts properly dispatched to manage the GiDC?	Related Documents and Interview	Interview
		Was the invitation of trainees helpful in managing the GiDC?	Related Documents and Interview	Interview
	Improvement of ODA Project Effect	What kinds of efforts were made to increase the GiDC Implementation Project?	Related Documents and Interview	Interview
	Achievement of GiDC	What is utilization rate of Nepali central government agencies?	Central Government Utilization Rate	Literature Research
		What is the email hosting rate for Nepali Government GiDC?	Government Email Hosting Rate	Literature Research
		Is there manual for security incidents?	Manual for Security Incidents	Literature Research
	Customer Satisfaction of GiDC.	What is satisfactory rate of government agencies using GiDC?	Customer Satisfactory Rate	Interview

<Table 7> continued

Evaluation Criteria	Evaluation Category	Evaluation Question	Evaluation Ground & Indicator	Method
Impact	Positive Impact of GIDC	What kinds of positive impacts did the GIDC project have?	Related Documents and Interview	Interview
	Negative Impact of GIDC	What kinds of negative impact did GIDC project have?	Related Documents and Interview	Interview
Sustain-ability	Generation of Demands for GIDC	What is expected demand for GIDC in the future?	Related Documents and Interview	Interview
		How many trainees attended the GIDC training class?	Number of Attendees	Reference Research
	Organizational Capability of GIDC	What are the status and position of the GIDC and its employees?	Law and Regulations	Literature Research
		What is the percentage of IT experts among GIDC employees?*	IT Expert Retention Rate	Reference Research
		What is the turnover rate for GIDC IT experts?	IT Expert Turnover Rate	Reference Research
	Policy Support of Nepali government	Did the Nepali Government establish a proper legal support policy?	Mandatory Policy	Interview
	Technical Level of Nepali Society	Did the Nepali Government have proper technology to sustain the GIDC project?	Informatization Level of Nepali Government	Interview
Cross-cutting Issues	Environmental / Gender / Human Right issue (Did the GIDC project cause any cross-cutting issues? (Environmental problem / Gender inequality problem / Human rights problem)	Related Documents and Interview	Interview	

* : Performance Reference Model Evaluation Question



■ 4. Evaluation Method

- This ex-post evaluation was conducted through various methods like literal research, and domestic and foreign interview surveys. Also it was based on objectively verified facts.

- Since there was some gap between the starting point of the project and this evaluation, there were some difficulties in acquisition of literal documents and in confirming the facts.
- Also, since interviewing all the parties involved in the project's implementation was impossible, some parts of the evaluation were based on some of the key contributors' subjective opinions.

(A) Literature Review

- Literature review started by making a list of necessary documents. Domestic documents were collected through donor agencies and implementing agencies. Collection of foreign documents was done by local experts through recipient agencies and related agencies.
- Documents and materials for literature review will be used in generating conclusions, while considering the characteristics of the project and countries involved. To confirm the facts, all documents and materials were cross checked.
- In this study, literature review can be divided into reviewing all the related output and reports of the project and reviewing of various documents for ODA project evaluation.

List of ODA project related output and reports:

- Proposal Report
- Project Feasibility Study and the Results Report
- Project Consultation Report
- Project Management Plan
- Project Execution Plan
- Interim Assessment Report
- Project Completion Report
- Exit Assessment Report

- R/D (Record of Discussions)
- PDM (Project Design Matrix)
- List of related literature of ODA evaluation indicators and methods:
 - 2011~2015 International Development Assistance Field Master Plan (2010)
 - KOICA Development Assistance Project Evaluation Guidelines (2008)
 - Project Planning, Monitoring, and Evaluation Methods (2009)
 - Evaluation Report of The Paris Declaration on Aid Effectiveness (2009)
 - Gender Impact Assessment of Korean ODA Project (2010)
 - Evaluation and Performance-Based Management Glossary (2010)
 - ODA Project Efficiency Measures in Human Resource Field (2008)
 - Trainee Invitation Project Effectiveness Evaluation Report (2010)
 - 2011 ODA Project Recipient Country Satisfaction Survey (2011)
 - KOICA Environmental Mainstreaming Guidelines (2012)
- List of Nepali Government Reports:
 - Nepali Government Enterprise Architecture - Main Report (2011)
 - Information and Communication Technology for Development: ADB Experiences (2010)
 - Nepal's MDGs, an Unfinished Agenda: Paths to 2015 (2012)
 - UNESCAP Report on "Towards a Single Window Environment in Nepal (2011)

(B) Domestic Interview

- Domestic interviews were conducted on key personnel related to the project. They were carried out with following steps: Interviewee selection, question development, request for interview, interview, and results classification.
 - Interview questions were developed based on the evaluation purpose. Interviewees were informed in advance for preparation. Also, interview guidelines were followed and interviews were recorded.
- Interviewee and questions are listed as below:

<Table 8> List of Domestic Interviewees - Nepal GIDC Project

	Classification	Interviewee (Position)
Nepali GIDC	Dispatched Expert	Im Eug-Su (Exe. Director, Mum Engineering)
	Project Management Consultancy (PMC)	Kim Su-Hyun (KT Project Expert Group Manager)
	GIDC Expert	Lee Won-Jae (Exe. Director, Anjin Accounting)
	Trainee Invitation Expert	Lee Eug-Ju (Team Leader, NGN Korea)

<Table 9> Domestic Interview Major Questions

Interviewee	Major Survey Contents (Question Category)
Dispatched Expert	Background, Goals, Objectives Support of recipient country/ Agency (Administration, policy, etc) Positive/negative experiences of the project process Satisfaction of oneself/ Recipient country and agency Expected outcome of recipient agency after the project Any references for future projects
Project Management Consultancy (PMC)	Support demands of recipient country/ agency Level of comprehension among participants of recipient agency Support of recipient agency (Service accommodation Positive/negative experiences of the project process Any references for future projects
GIDC Expert	Status of GIDC inside of Nepali Government GIDC implementation of other countries Key elements for successful GIDC implementation Problem of GIDC management in Nepal Any references for the GIDC evaluation
Trainee Invitation Expert	Attitude of trainees and IT specialty Management policy of trainee invitation Follow up action for trainees Any helpful reference for improvement

(C) On-Site Interview

- An on-site interview was conducted from July 9 to July 13. Schedule and major interview questions are listed below:

<Table 10> Schedule for Nepal Field Survey

Date		Site
July 9 (Mon)	AM	Depart) Incheon → Kathmandu (12:55 Arrival)
	PM	Site1) KOICA Nepal Office
July 10 (Tue)	AM	Site2) NITC/GIDC
	PM	Site3) Sambu Construction
July 11 (Wed)	AM	Site4) Ministry of Foreign Affairs, Passport Dept.
	PM	Site5) Ministry of Finance, Customs Service
July 12 (Thu)	AM	Site6) Ministry of Industry, Business Register Dept.
	PM	Site7) Office of Prime Minister, IT deputy Dir. Site8) NITC/GIDC (Center Chief)
July 13 (Fri)	AM	Site9) KOICA Nepal Office
	PM	Kathmandu (13:30 Depart) → Incheon

<Table 11> List of Subject Agencies and Major Questions

Agency	Key Survey Content (Questions)	Notes
NITC/GIDC	<ol style="list-style-type: none"> ① Was the goal of GIDC implementation accomplished? ② What kinds of problems are occurring in GIDC management? ③ Is performance management carried out at GIDC? ④ Are the human resources and budget proper for GIDC management? ⑤ What kinds of efforts are being made for GIDC's advertisement? ⑥ Was there a legal device for GIDC? 	
Nepali Government Agencies & Related Companies	<ol style="list-style-type: none"> ① What is the level of digitalization and computerization of Nepali Government agencies? ② Are users satisfied with the use of GIDC? ③ What are inconveniences of GIDC? ④ Is there increase of productivity caused by the use of GIDC? ⑤ What can be improved in GIDC? ⑥ What are the reasons not using GIDC? 	Ministry of Foreign Affairs, Passport Dept. Ministry of Finance, Customs Service Ministry of Industry, Business Register Dept. Office of Prime Minister, IT Deputy Dir. Sambu Construction



Project for Evaluation



III

Project for Evaluation



1. Background for the Project

- Since 2000, the Government of Nepal set the promotion of the IT industry as its top priority. ‘IT Policy 2000’ and ‘Telecommunication Policy 2004’ were established and propelled.
 - IT Policy 2000: Promotion of Founding of Dedicated Organization, Human Resource Training, Policy Making in Each IT Fields.
 - Telecommunication Policy 2004: Support and establishment of network between government departments, communication service for informatization, underprivileged group.
- In order to support the commitment in promoting the IT industry, the Nepali Government established e-GMP (e-Government Master Plan) with aid from the Korean Government in August 2008.
 - E-GMP is a plan prioritizing 7 detailed tasks including the e-Government portal and resident registration.
 - Hence, the Ministry of Environment, Science and Technology (MOEST), a ministry directing Nepal’s e-Government Project, emphasized the necessity of implementing a Government Integrated Data Center (GDIC). The GDIC will secure the safety and flow efficiency of critical data which is currently managed independently by each department.
 - Also, Nepal’s National Information Technology Center (NITC), an equivalent of the National Information Society Agency in Korea, is carrying out annual IT training for government officials. However, it is managed by a private

training facility since a public training facility does not exist.

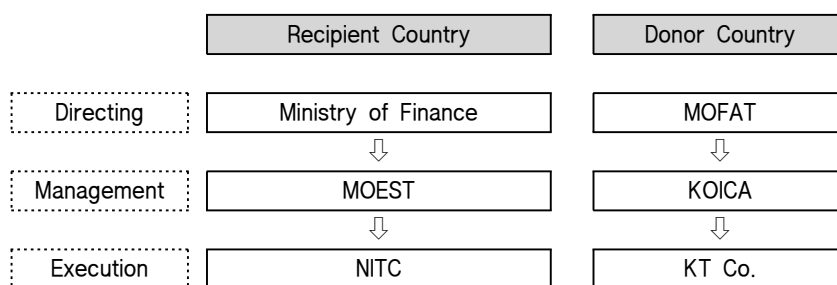
- For this reason, NITC forecasted more demands in IT training of government officials and requested the establishment of an IT education and training center which can accommodate hands-on IT training.



2. Hierarchy of Project Management

- The hierarchy of GIDC project management is similar to general ODA project management hierarchy. It is divided into donor country and recipient country and formed with a project directing government agency, project management agency, and project execution agency.
- Each agency of donor and recipient countries are shown in the figure below:

<Figure 8 > Nepali GIDC Project Execution Hierarchy



3. Brief Summary of Evaluation Subjects

A) Brief Summary of the GIDC Project in Nepal

- Brief summary of GIDC project in Nepal as shown in table below:

<Table 12> Brief Summary of Nepal GIDC Implementation Project

Classification		Detailed Contents
Project Goal		<ul style="list-style-type: none"> ■ Improve efficiency through integrated manage of government's data ■ IT intelligence training for government officials
Obligations of Each Country	Korea	<ul style="list-style-type: none"> ■ Construction of a new GIDC building (US\$1,880,000) ■ Equipment (US\$1,213,000) ■ Trainee Invitation (US\$88,000) ■ Expert Dispatch (US\$200,000) ■ Other (US\$119,000)
	Recipient Country	<ul style="list-style-type: none"> ■ Provide building site ■ Provide Infrastructure for construction
Site		<ul style="list-style-type: none"> ■ Kathmandu area
Budget / Period		<ul style="list-style-type: none"> ■ US\$3,500,000 / 3 years (2007~2009)
Recipient		<ul style="list-style-type: none"> ■ Public and Government of Nepal
Expected Outcome	Korea	<ul style="list-style-type: none"> ■ Improve Korea's e-Government ODA project ability ■ Improve image of Korea as a major power in IT industry
	Recipient Country	<ul style="list-style-type: none"> ■ Build infrastructure for Nepal's e-Government ■ Improve IT ability of Nepali Government officials
Implementation Agency	Korea	<ul style="list-style-type: none"> ■ Korea International Cooperation Agency (KOICA) / PMC : KT
	Recipient Country	<ul style="list-style-type: none"> ■ National Information Technology Center (NITC)

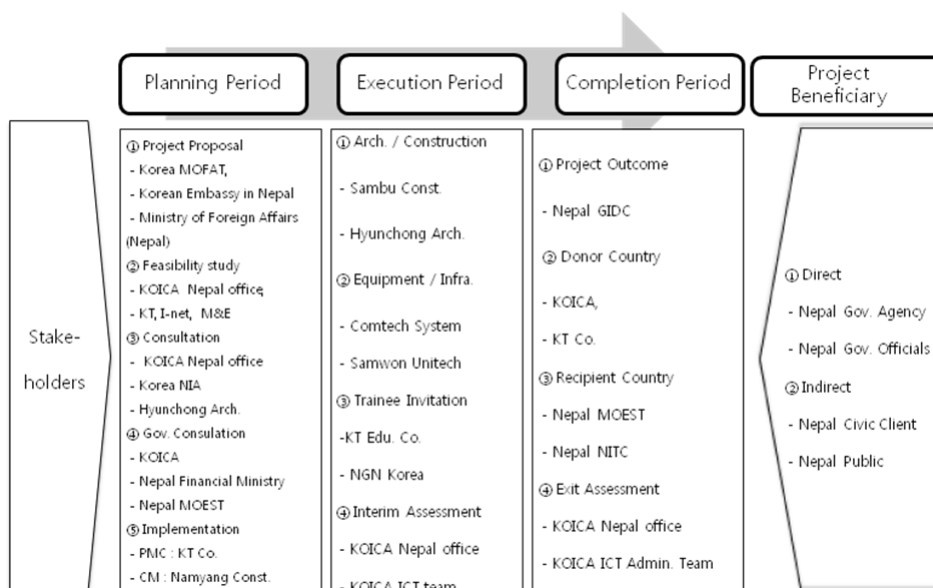
B) Stakeholders for Each Project Stage

- Recipients and stakeholders for the Nepali GIDC projects are as below:
 - Planning stage stakeholders: Korean Ministry of Foreign Affairs and Trade, Embassy of the Republic of Korea in Nepal, Nepali Ministry of Finance, KOICA, Korean National information Society Agency, Hyunchoong Architect.
 - Project execution stage stakeholders: KT Co., Sambu Construction, Hyunchoong Architect, Comtec System, Samwon Unitech, KT Education Co., NGN Korea, KOICA Nepal Office, KOICA ICT Team.
 - Project completion stage stakeholders: Nepali GIDC, KOICA, KT Co., Nepal Ministry of Environment, Science and Technology, Nepal National Information

Technology Center

- Recipients: Agencies and officials of Nepali Government, public of Nepal, public service petitioner

<Figure 9> Nepali GiDC Implementation Project Stakeholders and Recipients



- The ex-post evaluation examines the project from year 2006 in which the Nepali Government submitted an official project proposal for the establishment of GiDC, to July 2007
- The ex-post evaluation is based on a feasibility study report, interim assessment report, exit assessment report, and other related reports. It also uses data from the interviews with experts and related personnel. OECD/DAC guidelines and e-Government PRM were followed.



Major Findings and Evaluation Results



IV

Major Findings and Evaluation Results



1. Relevance

(A) Demands and Conditions of ODA Project Recipient Country

- Nepali Government IT policy was established through 'IT Policy 2000 (2000)', 'Telecommunication Policy 2060 (2004)', and 'e-Government Master Plan (2006)³⁾'. All those policies contain a strong demand for GIDC.
 - Especially, in the 'e-Government Master Plan', the GIDC, enterprise architectures, a government portal, and groupware were presented as top priority policies. <Figure 11>
- According to the project proposal that was submitted in August 2006, the Nepali Government suggested establishment of the GIDC and IT training center with US \$2million.
 - However, through the feasibility study and consultation, thorough analysis was carried out on demands of the recipient country. Based on that analysis, the project scale was expanded with a grant of US \$3.5Million to substantially increase the effects. <Table 13>
 - Since the project was promoted in a performance-based way and reflecting discoveries of potential demand was necessary, it was the appropriate action.

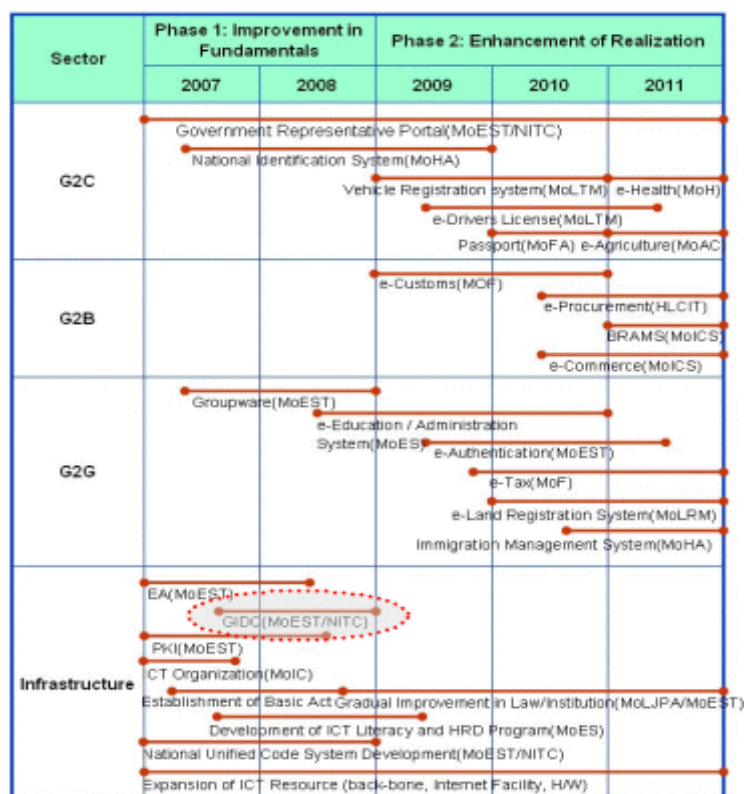
3) 'E-Government Master Plan' is Nepali Government's master plan for an e-Government project. It is called 'e-GMP'.

<Table 13> Changes in Nepal GIDC Project Grant

Classification	Grant		
	Proposal Report	Feasibility study	Consultation Report (execution plan)
Construction	100.0	200.0	188.8
Equipment	77.4	20.0	121.3
Trainee Invitation	3.0	8.0	8.0
Expert Dispatch	19.6	12.0	20.0
Project Management	-	10.0	11.9
Total	200	250	350

- Hence, the GIDC project well reflected the demands of recipient country, Nepal.
- According Nepal's e-GMP, the GIDC project was scheduled for years 2007-2008

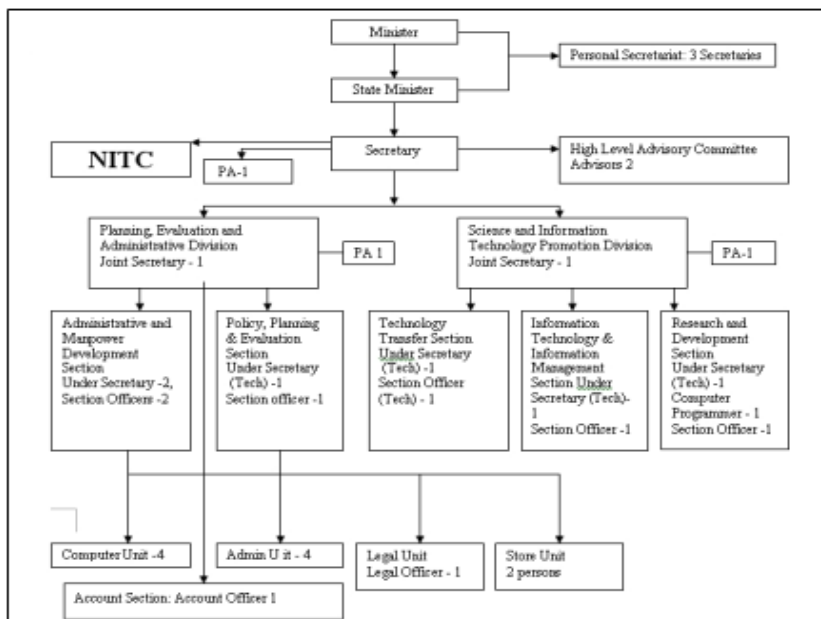
<Figure 10> Nepal's e-GMP



Source: Nepal e-GMP Consulting Report, 2005, p186, KIPA

- The GIDC project was propelled by the Ministry of Environment, Science and Technology in Nepal. The National Information Technology Center (NITC) and High Level Commission for Information (HLCIT) performed the roles of implementing agencies
 - The Ministry of Environment, Science & Technology, which started as The Ministry of Science & Technology in 1996, announced 'IT Policy 2000', the first IT policy of Nepal.
 - The National Information Technology Center was established in 2001, under MOEST. It is responsible for Nepal's IT promotion.
 - The High Level Commission for Information Technology was established in 2004, with the prime minister as its chairman. It is responsible for the execution and evaluation of each government agency's IT plan⁴).
- Hence, it can be evaluated that the Nepali Government had the appropriate organization to pursue the GIDC project in the planning stage.

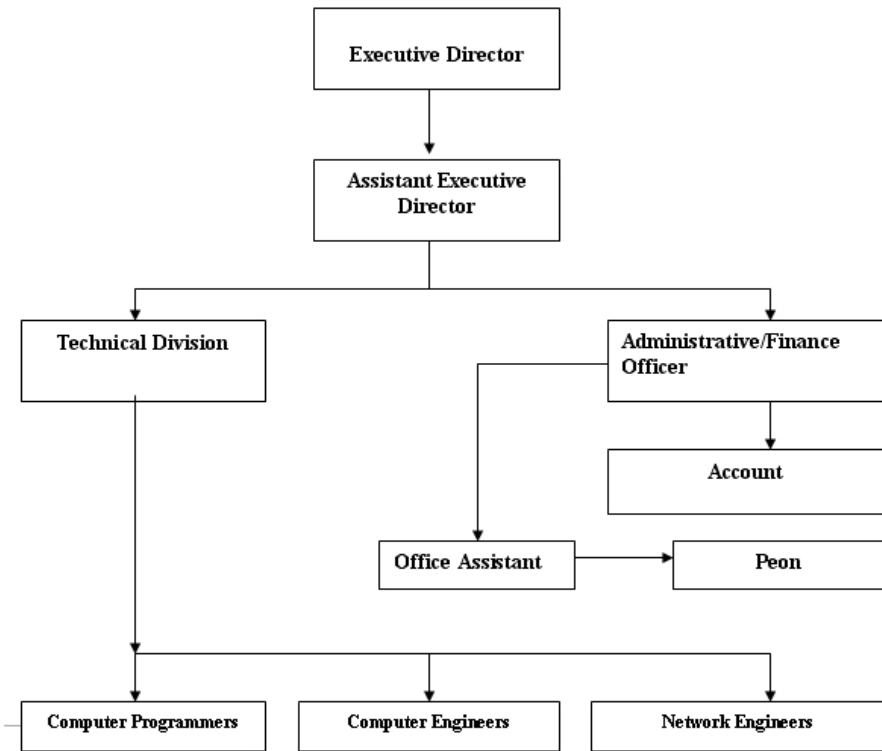
<Figure 11> Organizational Chart for Nepal's MOEST



Source: GIDC Project Consultation Report, 2007, p13, KOICA

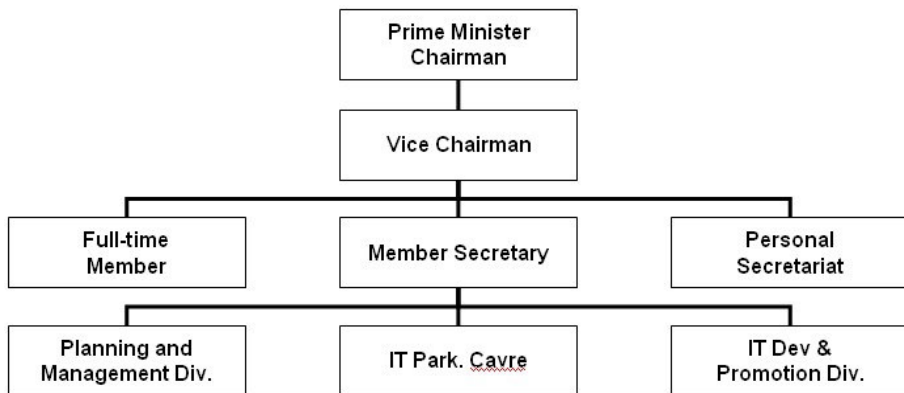
4) HLCIT was dismantled in 2012.

<Figure 12> Organizational Chart for Nepal's NITC



Source: GIDC Project Consultation Report, 2007, p13, KOICA

<Figure 13> Organizational Chart for Nepal's HLCIT



Source: GIDC Project Consultation Report, 2007, p13, KOICA

- However, political instability deepened during the GIDC project and related legislation was unprepared for the project. <Table 13>
- In 2006, the Government of Nepal submitted a project proposal report to the Korean Government as a recipient country and KOICA dispatched a preliminary survey team. Around that period, the privileges of the king were deprived and the succession to the throne was abolished in Nepal, as well as the composition of the new government was incomplete. Due to this unstable political situation, commitment of the Nepali Government in the GIDC project was not totally reliable.

<Table 14> Major Project Events and Domestic Situation of Nepal

Year	Major Project Event	Domestic Situation in Nepal
2005		<ul style="list-style-type: none"> ■ Feb. Declaration of State of Emergency ■ Sep. Opposition Party and Rebels Against Monarchy
2006	<ul style="list-style-type: none"> ■ Aug. Receive Project Proposal ■ Dec. Dispatch KOICA Preliminary Survey Team 	<ul style="list-style-type: none"> ■ Apr. King Announces Power Transfer ■ May Deprive the Privileges of the King ■ Jun. Abolish the Succession to the Throne
2007	<ul style="list-style-type: none"> ■ Apr. Report GIDC Project Plan ■ Jun. Select CM Company ■ Jul. Dispatch Conduct Consultation Team, Sign ROD ■ Sep. Select PMC, Agreement Signed btw. Governments 	<ul style="list-style-type: none"> ■ Jan. Interim Constitution Passed ■ Mar. Regional Conflicts (130 dead) ■ Apr. Launch Provisional Government (Cabinet Reshuffle) ■ Jun. General Election Postponed
2008	<ul style="list-style-type: none"> ■ Jan. Ground-Breaking Ceremony for GIDC. ■ May Laying of a Cornerstone ■ Jun. Shipment of Equipment for Construction and Infrastructure ■ Nov. Interim Assessment 	<ul style="list-style-type: none"> ■ Feb. India Blockaded Border ■ Apr. General Election (Composition of the Constituent Assembly) ■ May Proclamation of the Republic ■ Jul. Elect First President
2009	<ul style="list-style-type: none"> ■ Feb. Opening Ceremony GIDC 	<ul style="list-style-type: none"> ■ May Prime Minister Resigned
2010	<ul style="list-style-type: none"> ■ Sep. Exit Assessment 	<ul style="list-style-type: none"> ■ Jun. Chancellor Resigned
2011		<ul style="list-style-type: none"> ■ Feb. Elect New Prime Minister ■ May Postpone New Constitution Enactment

Source: Evaluation Team

- In early stages of the GIDC project, the IT level of the Nepali Government was in a primitive stage and most of the administration work was not digitalized. Due to this, only a few DBs and servers were used.
- In 2005, only 23 applications and software were used in the Nepali Government and IT human resources were limited in number. <Table 14>
- However, the Nepali Government had already established a master plan for e-Government and had strong commitment for its implementation. For early realization of the plan, the GIDC project was highly necessary.

<Table 15> Nepali Government's Major DBs and Servers in 2005

Dept.	DB	DB Size	Server	IT Staff
EC(1)	IVRS (Integrated Voter Registration System)	3.6GB	IBM	90
	DVRS (District Voter Registration System)			
FCGO(2)	DECS (District Expenditure Control System)	125MB	PC	10
	FMIS (Financial Management Information System)	162MB	Dell	
	PMIS (Personnel Management Information System)	15MB	Dell	
HLCIT(3)	DMS (Document Management System)	100MB	-	12
	GAS (Government Accounting System)	-	Dell	
MoF(4)	BMIS (Budget Management Information System)	-	Dell	2
MoLD(5)	ArcView	3.5MB	Intel	7

(1) Election Commission

(2) Financial Controller General Office

(3) High Level Commission for Information Technology

(4) Ministry of Finance

(5) Ministry of Local Development

Source: Nepal e-GMP Consulting Report, 2005, p39, KIPA

<Table 16> Nepal's Secure Internet Server Numbers Each Year

Year	2005	2006	2007	2008	2009	2010	2012
Secure Internet Servers	12	17	26	26	31	45	59
Secure Internet Servers (Per 1 million people)	0.44	0.61	0.92	0.90	1.05	1.50	1.94

* Secure Internet servers : Servers which use encryption technology in Internet connections

Source : World Bank (Country Meta Data)

(B) Aid Policy of ODA Project Donor Country

- Korea selected Nepal as an ODA priority partner country and has been supporting them ever since. Nepal was in the beginning stage of ICT and Korea selected the establishment of an ICT system and human resource training as main focusing fields⁵).

<Table 17> Korea's ODA Grant on Nepal Each Year

Year	2005	2006	2007	2008	2009
Nepal ODA Grant	1,565	1,609	4,074	5,398	4,728

US \$1,000

source : KOICA Statistical Data Survey

- The GIDC project was based on ‘e-GMP (2006)’ which Nepal established with support of the ADB. Since the Korean Software Engineering Center (currently annexed to National IT Industry Promotion Agency) implemented e-GMP, Korea had the capability to provide its competitive edge in ICT.
- Therefore, it can be concluded that the GIDC project agreed with Korea’s Nepal ODA support policy.

(C) Relevance between ODA Project and MDGs

- The GIDC project is related to MDGs 8th goal: Develop a global partnership for development. MDG star get 8.F stated that ‘in cooperation with the private sector, make available benefits of new technologies, especially information and communications.’
- The GIDC project started relating with MDGs but only contributed indirectly with MDGs detail goals.
 - The Government Integrated Database Center Project did not affect MDGs detail goals. However, it had an indirect but long-term contribution in

5) KOICA Business Sector / Pan-sector (Environment/Women/ICT/ Human Rights) Basic Direction.
(<http://www.koica.go.kr>)

MDGs through governance reforms, such as the realization of e-Government, information diffusion, information and communication training.

(D) ODA Project Progress

- Relevance in Project Planning Stage
 - During the planning stage of the GIDC project, e-Government experts analyzed actual policy demand of the Nepali Government. For the project's successful execution, its contents and size were properly adjusted.
 - During the project consultation period, Nepal requested a US \$2 million grant. After a feasibility survey, it increased to US \$2.5 million, and after consultation, it increased to US \$3.5 million.
 - It can be judged that while the project's details and size were materialized, increase of the grant was necessary to ensure the success of the project.
 - <Table 13>
 - However, for the specialization of the GIDC, GIDC's IT training function was weakened from the original plan. The IT training related function was substituted with the establishment of an IT related university (Tribhuvan University IT Center).
- Relevance in Project Execution Stage
 - In the project execution stage, GIDC had many difficulties due to Nepal's domestic problems. Its project period was extended and other obstacles occurred. However, the project was properly executed overall.
 - In spite of the unstable domestic situation and customary administrative delays, Sambu Construction smoothly completed the construction. Also the cooperation with NITC went smoothly, in spite of political instability⁶⁾.
- Relevance in Project Completion Stage.
 - During its completion stage, the GIDC project finished a test on completion

6) GIDC Project Interim Assessment Report's evaluation results were verified through on-site research.

and taking-over process. The opening ceremony was held with attendance of honored guests in Nepal.

- In May 2009, the tests on completion of the building and taking-over process on infrastructures were carried out. In September, the GIDC opening ceremony was held successfully⁷⁾.
- After the opening, extra experts for GIDC management and IT training were dispatched⁸⁾.
- However, it can be concluded that more efforts on policy establishment of GIDC should have been made due to the huge possibility of disorder in ICT policy in Nepal.
- After the opening, it was necessary to make strong demands for legislation that guaranteed the status of GIDC and its personnel as a government agency and its workers. However, demand was insufficient and other agencies could not rely on the GIDC entirely. Also, other management risks in personnel management and organizational loyalty occurred.
- Problems caused by lack of institutional foundations and GIDC management keep continuing. However, since the causes of the problems are clear, revitalization of GIDC will be easily carried out with the commitment of the Nepali Government.



■ 2. Efficiency

(A) Efficiency of ODA Project's Human Resource Use

- Donor country's experts (IT experts and construction experts) and recipient country's trainees were selected based on the person's experience in each

7) Exit Assessment Report Project Log

8) Exit Assessment Report Project Log

field. They were utilized in terms of project period and its contents.

- The IT experts which were dispatched by KT Co., a project execution company, were certified experts on related fields with sufficient field experience. Their role was critical in improving GIDC project efficiency.
- Superintendent from Sambu Construction Co. had decades of field experience in Nepal. As an experienced expert, he handled many difficulties efficiently⁹⁾.

(B) Efficiency of ODA Project Budget Use

- Due to riots, inflation, and exchange rate fluctuations¹⁰⁾ during the project period, there were factors for increase in the project's budget. However, proper action by project management consultancy managed efficient distribution of the project grant.
 - PMC, construction related companies, and equipment providing companies cut costs by using domestic products with excellent price-performance ratios¹¹⁾.
- Actual total cost used in the GIDC project was 99.4% of its plan. Efficient usage of the grant can be concluded. <Table 18>
 - The Nepal-India border blockade in April of 2008 caused inflation on fuel prices and building materials. The construction field budget was increased to 111.1% of the originally planned amount and project management costs also increased to 164.3%. However, by cutting costs from other fields, the total budget was balanced.

9) Verified through ex-post evaluation and on-site interviews

10) After 2008, value of won/dollar exchange rate raised significantly. In May 2009, it reached 1579.6 won, which was a 70% increase in comparison with average exchange rates in 2007.

11) Exit Assessment Report Project Budget Evaluation

<Table 18> Project's Budget and Actual Cost

Index	Budget (a)	Actual Cost (b)	Ratio (b/a)
Design and Construction	188.0	208.9	111.1
Equipment	121.3	94.0	77.5
Experts Dispatched	20.0	18.1	90.5
Trainee Invitation	8.8	7.8	88.6
Project Management	11.9	19.2	164.3
Total	350.0	348.0	99.4

Source : Nepali GIDC Implementation Project Exit Assessment Report

(C) ODA Project Period

- Due to riots and general elections during the project period, following the project schedule was very difficult. However, many efforts were made to shorten the project period.
 - Originally the project was to start from the 3rd quarter of 2007 and to finished by the 2nd quarter of 2009. However, the project act usually started in the 4th quarter of 2007 and completed in the 3rd quarter of 2009. Overall delay was one quarter of a year¹²⁾.
 - However, considering the domestic situation of Nepal, it can be considered as a reduction of the project period¹³⁾.
 - In general, 2 or 3 years is required to build the same size building in Nepal. However, the Korean company finished in only 8-9 months¹⁴⁾.

(D) GIDC's Productivity and Efficiency

- Currently, July 2007, GIDC's productivity and efficiency can be measured by the number of agencies per person, number of agencies per budget, average

12) Exit Assessment Report Project Period Evaluation

13) Nepal's Monarchy virtually ended on May 15, 2007 and a transitional government was established. On May 28, 2008, The Federal Democratic Republic of Nepal started.

14) GIDC stakeholder interview

voltage rate, and space utilization rate. <Table 18>

- Measured values are not higher than the expected ones. Nonetheless, it can be concluded that there is meaningful progress when considering Nepal's domestic instability and its governmental changes, and the unstable status of GIDC personnel.

<Table 19> E-Government REM Index Value (2012) - GIDC's Productivity and Efficiency

No	Measurement Index	Rate	Value	Note
1	Number of Agencies Per Person	Agencies/ Person	0.60	
2	Number of Agencies Per Budget	Agencies/ US\$10,000	0.26	
3	Average Voltage Rate *	%	-	Stable
4	Space Utilization Rate **	%	35%	Early 2010 5% March 2011 15%

Note : ① June 2012 Number of Agencies Using GIDC: 9 Agencies

② June 2012 Number of GIDC IT Experts: 15

③ 2012 GIDC Budget: US\$350,000

* Interview with Experts from KOICA (No Detailed Data)

** Ex-Post Evaluation Local Field Interview



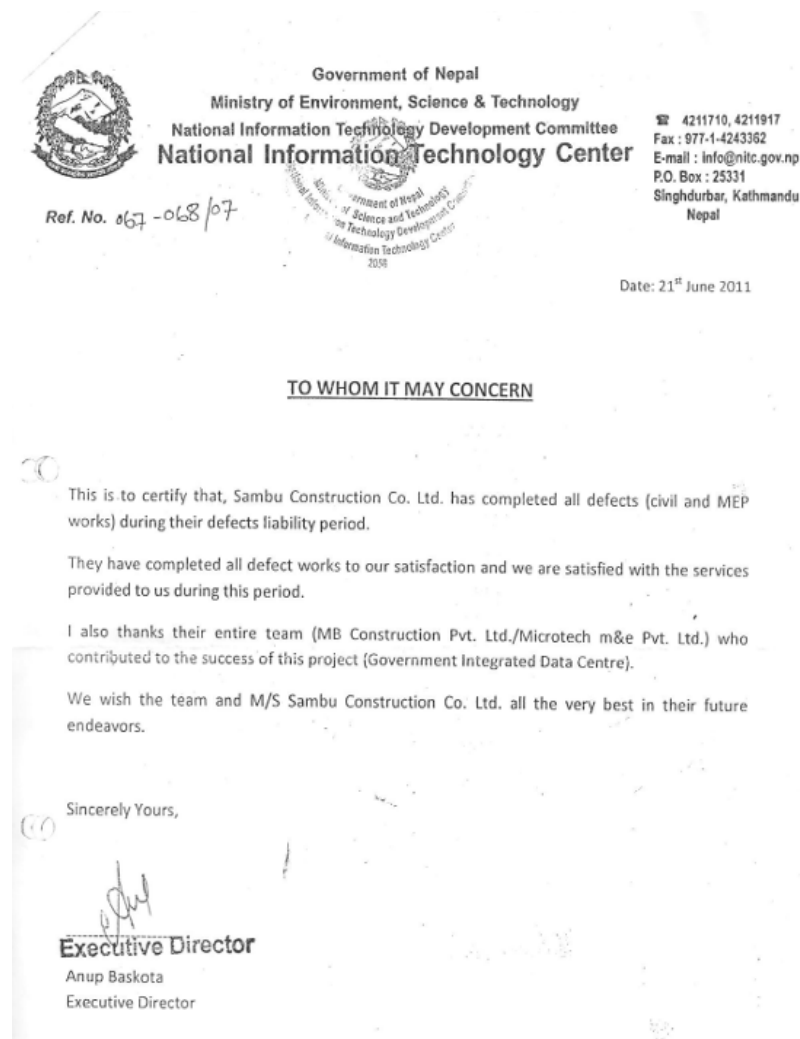
■ 3. Effectiveness

A. ODA Project's Accomplished Goals

- Construction of a New Building
 - Construction of the GIDC building was completed as original planned and all repair claims were resolved within the warranty period.
 - There were claims for wall cracks and toilet leaks but Sambu Construction completed repairs. After the two year warranty period, the certificate of completion was obtained. <Figure 15>

- According to the certificate of completion, in June 2006, the NITC was satisfied with the completion of the building within the legal period. Therefore, it can be said that the ODA project goal on the construction of the new building was achieved.
- By 2012, there are continuing problems with cracks and leakages. However, those problems have to be solved by routine maintenance.

<Figure 14> Certificate of Completion of GIDC Building



Source: Internal Document from Sambu Construction Co.

- During the field survey of the ex-post evaluation, it was confirmed that GIDC had sufficient conditions (humidity, temperature, security, etc) as an integrated data center. Also, all related equipment was functioning properly.
 - However, one monitor which showed the system's operational status was broken¹⁵).
 - In the case of physical security, a military base located in the GIDC's perimeter provided enough security.
 - During the GIDC project management process, effectiveness was improved by changing project content on the IT training center.
 - Originally the GIDC project contained the establishment of the IT training center but, considering local demand on IT education, the IT training center was replaced with the GIDC training center. Instead, efforts on construction of new building, equipment, and systems were made to improve the project's effectiveness.
 - By June 2009, a total of 1,600 public officials were trained.
- Equipment Supply
- Due to some equipment's frequent malfunctions and its difficulties in maintenance, it can be judged that the project goal was not matched.
 - The electricity condition in Nepal is extremely poor. Frequent power failures and unstable voltage are the main curses of equipment's deterioration and its shortened duration. Since the GIDC has an uninterruptible power supply system, instability of the power supply is not a problem. However, unstable voltage and the low quality of electricity are cases of malfunction of varied equipment and its shortened life span¹⁶).
 - During the field survey of the ex-post evaluation, the display part of protective relays failed and monitoring of the system was not possible¹⁷).

15) The problem monitor was a Korean product (Samsung Elec.) The product itself had excellent quality. However, due to poor power supply, failure had occurred. At the time of on-site research, there was no Samsung A/S center or agency. Currently, waiting for export permission for this

16) Interview with an expert who was dispatched after the completion of GIDC.

17) The monitor from Samsung Elec

- Also, in the case of a major failure in the power system, if the supply of replacement parts failed, a serious situation could occur¹⁸).
 - Also, among the provided software for GIDC project, some were unfamiliar products in Nepal. If problems occurred in that software, experts had to be dispatched from Korea and fix them¹⁹).
- Experts Dispatch
- Dispatched experts for the GIDC project carried out their given tasks, and satisfactory rates of recipient agencies are generally high. So, it can be concluded that the project goal was achieved.
 - Experts for GIDC management were dispatched twice²⁰) and recipient agencies are satisfied with their performance²¹).
 - However, an analysis on the view point of the donor side is necessary to check whether utilization of the experts' field activities and operations were accomplished²²).
- Trainee Invitation
- In the GIDC project, the curriculum of the trainee invitation program was appropriate. However, the training period was too short and some trainees transferred after the training. In conclusion, ramifications of the training did not meet the expected outcome.
 - According to the trainees, trainee invitation to 3 courses²³) took place on October 2008 for 15days. With the exclusion of arrival and departure day, field tour, and holidays, the actual training period was very short and training contents were also insufficient. They also said a minimum of

18) Interview with a senior expert who was dispatched after the completion of GIDC

19) Interview with GIDC related personnel.

20) 1st dispatch: Aug. 2008 (15days, 3 people), 2nd dispatch: Sep. 2009 (15days, 3 people)

21) Interview with GIDC related personnel.

22) Interview with a senior expert who was dispatched after the completion of GIDC

23) 3 courses: GIDC administration manager level course, GIDC infrastructure course, GIDC system administrator course.

4weeks of training was desirable²⁴).

- By July 2012, 3 out total 9 trainees transferred from the GIDC.
- Hence, extensions of both the training period and number of trainees is needed to prevent problems caused by turnover and the lack of experts.

(B) ODA Project Effectiveness Improvement Activity

- The Nepali GIDC Project made various efforts in maximizing effectiveness and minimizing risks.
 - Considering Nepal's poor power supply system, the GIDC building was constructed inside of the unified government complex which had the most stable power supply.
 - For the chief manager of GIDC, a deputy-director level expert with a doctoral degree in IT was invited to increase understating of the project progress and to minimize difficulties in communication.
 - The Importance of the GIDC is continuously publicized among related government officials.
- After completion of the Nepal GIDC Project, post-management was followed to increase the effectiveness of the project.
 - Donor agencies conducted post-management²⁵) twice after the completion of the Nepal GIDC Project. This exerted positive effects in increasing the outcomes o f the ODA project and the satisfactory rate of the recipient agencies were very high.

(C) Outcomes of the GIDC Project

- By June 2012, outcomes of GIDC project by the e-Government evaluation can

24) Interview with GIDC trainee invitation program participants.

25) First post-management was conducted with trainee invitation and experts dispatch on December 2010. Second post-management was conducted with trainee invitation and equipment support on October 2012.

be measured by the central government’s usage rate and the government’s email hosting number. <Table 20>

- The numbers do not match with expected outcomes but, considering the e-Government project is still in progress, the future usage rate of the central government agencies are expected to increase.

<Table 20> E-Government REM Index Value (2012) - GIDC’s Outcomes

No	Outcome Index	Unit	Value	Note
1	Central Government’s Usage Rate	%	11.5	Number of Agencies Using GIDC/Total Number of Agencies
2	Number of Government Email Hosting	Number	100	

Note: ① Number of Central Government Agencies Using GIDC, June 2012: 3
 ② Number of Total Government Agencies in Nepal, June 2012: 26
 ③ Number of Government Agencies using GIDC Email Hosting, June 2012: 100

(D) GIDC’s Customer Satisfactory Rate²⁶⁾

- An official customer satisfactory survey for the GIDC was not officially conducted. However, according to the ex-post evaluation field survey, there were inconsistent opinions among GIDC using agencies.
 - The Department of Business Registration will use the GIDC for a backup server for its current ADB supported project, digitalization of data and systems improvement. Also, the Customs Service Department will give permission to GIDC for their digital Customs Service system server.
 - The major reason for not using the GIDC was uncompleted digitalization of many government agencies.
 - Electric installation was the top reason for satisfaction and the GIDC’s overall facilities and equipment were also in the satisfactory level.
 - Because of the status of the GIDC and the fact that its personnel were not official government employees, many related agencies distrusted the GIDC.

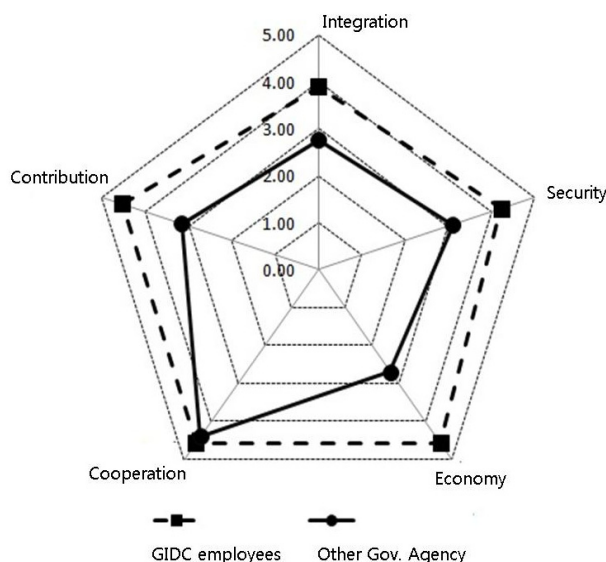
26) Evaluation on ‘Customer’ field, based on e-Government Project Reference Model (PRM model)

Once this problem is resolved, GIDC will be vitalized more.

○ Survey result of GIDC employees and GIDC using government agencies are following²⁷⁾:

- Total of 18 questions were divided into Integration (Server, Data, Business Process, Organization, Budget, Legislation and Policy), Security (Physical Security, System Security, Information Security), Economy (Cost Reduction, Improve Efficiency, Creation of Added-Value), Relevance (Nepal's Development Priority Consideration), Level of Cooperation (Participation of GIDC stakeholders, Stakeholders from each country), and Contribution (e-Government, IT industry, Nepal's Economic Development).
- In the survey results, huge differences were showed between the GIDC employees and government agencies in the fields of integration, security, economy and contribution. However, there was no meaningful difference in the level of cooperation. <Figure 15>

<Figure 15> GIDC Survey Result - GIDC Employees and External Government Agencies



27) Interview was conducted with 7 GIDC personnel and 5 officials from external government agencies (Department of Customs, Ministry of Land Management, Rapti Engineering College).

- Especially low assessment among the outside users shows that the GIDC potential in practical use will not be improved in near future.



■ 4. Impact

- The GIDC project provided a cornerstone for vitalization of the e-Government in Nepal. Some government agencies realized the importance of security, economical efficiency, and no power failures.
 - Currently the Department of Business Registration is speeding up its digitalization project. After the completion, it will move its server to the GIDC, in consideration of GIDC's superior facilities (Power system, Security, and Data Compounding).²⁸⁾
- The GIDC which implemented e-GMP has the most advanced facilities in Nepal. Many government agencies are using the GIDC. <Table 21>
 - According to GIDC's internal documents, 12 systems (servers and others) are in operation in the GIDC and 7 additional systems will be added.
 - It can be analyzed that the reasons for the low utilization rate in government agencies are because of the low digitalization rate and sectionalism in government agencies.
- The GIDC project was a major project among Nepal's e-Government projects. It has a positive impact on other countries and international organizations like ADB, supporting Nepal's IT industry.
 - The GIDC was a major reason for ADB's decision on supporting Nepal's National ID (NID) project.²⁹⁾
- The GIDC training facility is carrying out periodic IT training programs for central and local government officials and has a positive impact on the wide

28) Interview with a representative from the Business Register Department.

29) UNESCAP Report on "Towards a Single Window Environment in Nepal (2011), p. 81.

spread of information technology. <Figure 17>

- Also, the GIDC has a positive impact on the increase on the IT intelligence of government official and the general public.
 - Since the Nepali Government recognized the importance of the GIDC project, it was possible to construct a building in the major part of the unified government complex. Also, GIDC utilization of the Customs Service and Department of Business Registration had positive effects on the IT intelligence of government officials and the general public.³⁰⁾
 - Due to the awareness of the importance of data, promotion of the Disaster Recovery Center in the GIDC was also a part of the positive impact.

<Table 21> GIDC Integrated Management Status

No	System (Server and Others)	Agency	Current Status
1	Government ISP	National Information Technology Center	Working
2	MRP Backup Server	Department of Passport/ Ministry of Foreign Affairs	Working
3	Nepal Stock Exchange Servers	Nepal Stock Exchange	Working
4	Credit Information Bureau Backup	Karja Suchana Kendra Limited (KSKL)	Working
5	RWASH Project	Ministry of Physical Planning and Works	Working
6	Statistics Server	Central Bureau of Statistics	Working
7	Disaster Management System	Ministry of Home Affairs	Working
8	Foreign Employment Record System	Department of Foreign Employment	Working
9	System and Mail Server	Ministry of Foreign Affairs	Working
10	Public Key Infrastructure	Office of Controller of Certification	Working
11	Business License e-Portal	National Information Technology Center/ IFC	Working
12	E-Procurement	Public Procurement Monitoring Office	Completed Implementation

30) Interview with GIDC personnel.

<Table 21> GIDC Integrated Management Status

No	System (Server and Others)	Agency	Current Status
13	Government Portal	NITC	Completed Development
15	Company Registration System	Company Registrar's Office	On Test
17	Ministry of Finance and Inland Revenue Department Servers	Ministry of Finance and Inland Revenue Department	MOU Signed
14	Village Portal Network	NITC and MOEST	In Progress
16	Clearinghouse Application Server	CDS and Clearing House Ltd.	In Progress
18	Department of Customs System	Department of Customs	In Progress
19	GIDC Servers and System from ICT4D Project to Host	NITC and 4 Other Agencies	In Progress

Source: GIDC Internal Document

<Figure 16> Picture of GIDC IT Training Class



* Note: Picture taken on July 10, 2012

- Currently, outside of its original purpose as a government integrated data center, GIDC has commission on server management of private banks.
 - This can cause a competitive relationship with private sectors and have a negative impact on private sector's integrated data center development.
 - However, considering the poor power supply system in Nepal and the quasi

public characteristics of banks, it can also have positive side.

- Nonetheless, in the long term, the GIDC should be managed with the sole focus of integrated data for the government.



■ 5. Sustainability

(A) Demand Generation for GIDC

- In coming years, the Government of Nepal will promote various projects relating to e-Government. Due to this, a steady increase of demand on the GIDC will occur.
 - According to e-GMP, from 2007, the Nepali Government is carrying out 22 large-scale e-Government projects from stage 1 to stage 3, including GIDC.
 - Specially, in 2012, the GIDC KOICA's Customs Service Modernization Project will use the GIDC for its network facility, server, and DB.
- Following the e-Government outcome evaluation, GIDC's demand generation can be judged by the number of training attendees. In June 2012, about 1,600 trainees attended the training which can have a positive effect on the sustainability of the GIDC. <Table 22>
 - Since its establishment in 2010, there was a steady increase in the number of trainees and it also has a positive effect on the generation of GIDC demand.

<Table 22> E-Government REM Index Value- GIDC's Demand

No	Measurement Index	Unit	Value	Note
1	Number of Training Attendees in 2010	Person	500	
2	Number of Training Attendees in 2011	Person	700	
3	Number of Training Attendees in 2012 (Future Estimate)	Person	800	400 by June 2012

(B) GIDC's Organizational Capacity

- Status of GIDC and its employees³¹⁾
 - Due to the legal status of the GIDC and its personnel, a negative impact was discovered.
 - Since its directing agency, the Ministry of Environment, Science and Technology, has low status in the Nepali Government, the GIDC's status was also low. Also, contract workers status of GIDC personnel was the one of the main reasons of distrust in other government agencies.³²⁾
 - Also, the dismantling of the High Level Commission for Information Technology (HLCIT) which led to the establishment of the GIDC was the major cause³³⁾.
 - In spite of its location on the unified government complex, some departments did not recognize the GIDC properly³⁴⁾.
 - After the completion of the GIDC, its utilization by government agencies was delayed. Moreover, deterioration of equipment is progressing rapidly and currently, there is some GIDC equipment already in out-dated status.
 - There is a necessity for early replacement of equipment, in preparation for `` virtualization and cloud computing³⁵⁾.
 - According to the current e-Government Master Plan, it was expected to use all the available space. However, due to political instability and other reasons, the e-Procurement project was postponed. The NID project was also delayed. Overall the plan was delayed 2 years longer than its original schedule.³⁶⁾
 - Following the e-Government outcome evaluation in June 2012, GIDC's organizational capacity can be measured with its IT expert workforce retention

31) Evaluation on Related Resource field, based on e-Government Project Reference Model (PRM model)

32) Agreed opinion of all related personnel during the ex-post evaluation on-site research period

33) Interview with representative from Customs Service Department, Ministry of Finance,

34) Interview with GIDC personnel

35) Interview with GIDC personnel

36) Interview with GIDC personnel.

rate and its turnover rate. <Table 23>

- IT expert workforce retention rate was 55.6%, since there were 15 IT experts among 27 GIDC employees.
- However, the turnover rate of IT experts was 0.0 % in 2012.
- When considering Nepal’s IT manpower situation, GIDC’s organizational capacity is very high.

<Table 23> E-Government REM Index Value (2012) – GIDC’s Organizational Capacity

No	Measurement Index	Unit	Value	Note
1	IT Experts Retention Ratio	%	55.6	(IT Experts/ Total Employees)
2	IT Experts Turnover Ratio	%	0.0	(Number of Separation/ IT Experts)

Note : ① Number of IT Experts in GIDC by June 2012: 15
 ② Number of Total Employees in GIDC by June 2012: 27
 ③ Number of Separated IT Experts in GIDC in 2012: 0

(C) Support Policy of Nepali Government

- Since the Government of Nepal is aggressively making legal and institutional apparatuses for the vitalization of GIDC, the project’s sustainability does not have a major problem.⁵
 - In 2010, enactment of the Electronic Communication Fundamental Law formed the basic background for government agencies usage in GIDC.
 - Also, total support of GIDC’s budget by the Nepali Government is also a positive aspect for the project sustainability.³⁷⁾
- If GIDC could be transferred to the new IT department which will be established under the direction of the office or prime minister in near future, the credibility problem will be resolved greatly. Status rise of GIDC’s personnel also will be helpful.³⁸⁾
 - By June 2012, credibility of the GIDC and its employees among the government agencies was very low.

37) In 2011/2012, GIDC budget was a total US \$350,000

38) Interview with a deputy director of Office of Prime Minister.

(D) IT Standard of Nepali Society

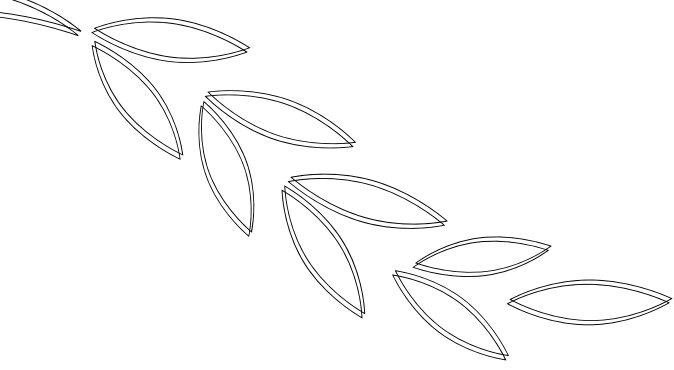
- Poor ICT infrastructure and its inferior ICT level are major obstacles in sustaining the GIDC project.
 - By June 2012, only 2.1% of the total population of 28,560,000 have telephones and only 1.75% have Internet services. Only 0.48% use computers and 13.85% use mobile phone service. The literacy rate is only 56.6%, and these will be continuing parts of the negative aspects in sustaining the GIDC project.³⁹⁾
 - ICT experts are only 0.04% of its population, which is only 0.13%, including trainees. Due to this, it is hard to expect a rapid growth in the ICT field.



■ 6. Cross-Cutting Issues

- As a result of the GIDC project, data exchange and integration among the participating agencies increased gradually and caused reduction of unnecessary physical movement. Also separate server rooms were no longer necessary. Throughout this project environmental contribution through energy saving is expected.
- Also, after the establishment of the GIDC, widespread of e-Government infrastructure will affect long-term increase of government activity, participation of minorities, including women and disabled.

³⁹⁾ Purusottam Kharel, Subarna Shakya (2012), "E-Government Implementation in Nepal: A Challenge," International Journal of Advanced Research in Computer Science and Software Engineering



Implications and Policy Suggestions



Implications and Policy Suggestions



1. Planning and Project Starting Period

1) Major Implications

- In 2006, Nepal established e-GMP (e-Government Master Plan) with support from the Korean Software Engineering Center. Based on the plan, the recipient country and donor country agreed on early establishment of the GIDC as e-Government infrastructure.
- During the feasibility study for the demand of the recipient country, in general, recipient countries have the tendency to determine their demands by donor country advice and support, instead of determining its own demand.
 - In 2006, discussion for the establishment of GIDC was started. At that time, national IT level and the government's digitalization level were not sufficient to manage GIDC. However, considering simultaneous establishment of 11 e-Government projects based on e-GMP, implementation of the project proceeded.
- Considering abolishment of the monarchy and establishment of a constitutional assembly in 2008 and 5 years of rule by an interim government and other domestic instability, current usage rate of the GIDC qualifies for a satisfactory level.
- The biggest hindrance was the chaos in IT policy enforcement hierarchy, caused by Nepal's domestic political problems.
 - HLCIT which was a major agency for e-Government project enforcement

was disassembled and the NTIC, GIDC's directing agency, was under MOEST which has low political impact. Moreover, GIDC's legal status as a semi-government organization and its employees' quasi-governmental official status were also major obstacles in improving usage of the GIDC.

- Since those obstacles were outside the scope of KOICA's control, fundamental solutions cannot be found.
- According to the interview which was conducted in the local field, most of agencies considered GIDC's characteristics and its employees unstable status as major difficulties in trusting GIDC's credibility.

2) Suggestion for Improvements

(A) KOICA

- For a project like GIDC which is in need of wide consensus in government, dispatching of experts to train high government officials and decision makers about the importance of the project is suggested.
- Also, inviting high government officials and politicians for the field tour to the Korean Government's integrated data center and training on IT and IT related government policy will be necessary.

(B) Cooperation with Recipient Country

- Legal and institutional improvements (for example, mandatory management of main server maintenance by GIDC in the e-Government system, and legislation of the legal status of GIDC's rights and duties) have to be written as prerequisites during the RD, feasibility study, and consultation process period.
- For the future e-Government ODA project, mandatory consigning of data sever management to GIDC is recommended. Also, in the mid and

long-term, continuing support including dispatching of policy advisers is needed for the stable establishment of GIDC as an ICT consulting and supporting agency in the central government.



2. Selection of Project Implementing Agency and Implementing Period

1) Major Implications

- The project implementing agency was selected through a turnkey base, in competition with KT and LG CNS. KT was selected as the implementing agency.
- Overall evaluation on the project implementing agency was good but there were complaints about the new building.
 - Major reasons for the complaints were that intervention of recipients were impossible and the occurrence of wall cracks.
 - Sambu Construction did its best in finishing construction, in spite of huge financial losses due to the world financial crisis and increase in the exchange rate. The GIDC was also satisfied with A/S in the 2 year period.
 - In conclusion, the problems occurred due to lack of proper efforts in maintenance by the recipient country after the A/S period.
- Overall, equipment and its installation were at a satisfactory level. However, since all the products were made-in-Korea, there was a difficulty in repairs.
 - The quality of Korean products was excellent. However, they have shortcomings in an environment like Nepal, which has a low quality of power supply (especially affecting monitors).
 - Since domestic repair was impossible even within the A/S period, the products had to be sent to Korea. However, complication in procedures prevented

repairing of the products for months.

- The recipient country was generally satisfied with the dispatched experts. However, there were some opinions that effort on maximizing utilization of experts was insufficient.
- Due to its short period, the trainee invitation project had difficulty in carrying out a substantial training program. Also, 3 out of 8 trainees separated from the project. It was due to political instability and other personal reasons.

2) Suggestions for Improvements

(A) KOICA

- Most of obstacles in the e-Government ODA project were caused by A/S of Korean equipment and installation. It can be resolved with following suggestions:
 - In e-Government ODA projects, equipment and its installation are a critical issue. Therefore, a survey on the recipient country's domestic retail market is needed in the preliminary survey and consultation period. Specifically when using of Korean made ICT equipment, the possibility of local A/S has to be checked.
 - Also, it is necessary for the project implementing agency to include an A/S plan for provided equipment and its installation in the project execution report or local procurement of A/S has to be provided.
- Targets for the trainee invitation program has to be selected among the government officials. Also, through the increase in quality of its curriculum, trainees can grow into key personnel in GIDC's management.

(B) Cooperation with Recipient Country

- In overall processes of the project, including the construction project,

KOICA hired an independent surveyor from PMC to ensure strict supervision and recommended maximum reflection on recipient country's needs.

- Unclear responsibility between PM, CM, district surveyor, and partner companies can cause major hindrances in project execution and claim repairs. So, in the case of the construction project, thorough preparation is needed.
- KOICA's change in avoiding turnkey based project implementation and selecting each fields' implementation companies and managing by its own is desirable.



■ 3. Post-Implementation Period

1) Major Implications

- After the GIDC implementation, government email hosting and 12 government agencies servers are commissioned.
 - In spite of political instability and the interim government's weak commitment to e-Government, major outcomes were achieved. However, the GIDC is not trusted by many governmental departments and its additional utilization is limited.
 - Especially segmented promotion in government policy, which is often found in developing countries, is one of the major reasons for GIDC's low usage rate.
- To show its role as an infrastructure of e-Government, high government officials' are needed to understand GIDC and promote the e-Government project systematically.

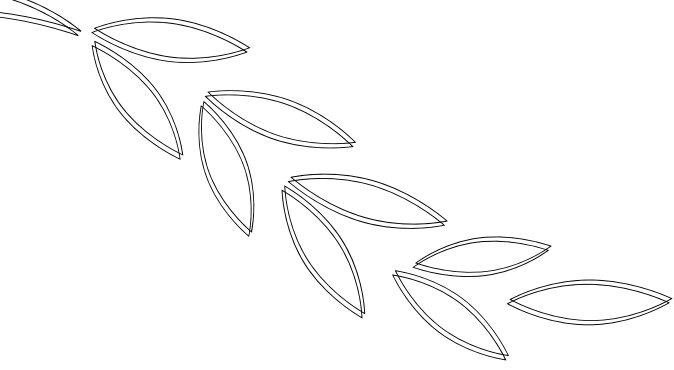
2) Suggestions for Improvements

(A) KOICA

- Through continuing of current dispatching of senior experts, it is advised to accurately reflect the needs of recipient country.

(B) Cooperation with Recipient Country

- Under MOEST, establishing process of Department of IT (DoIT) is on the way. KOICA is advised to dispatch IT experts as high-level IT policy advisers to regulate and advise the whole process of the e-Government project.
 - Serialized implementation is very important in the e-Government project. Continuing expert dispatching is necessary for the recipient country's high government officials.
 - High-level IT policy advisers are needed to establish a close network with high government officials (Ministers, Deputy Directors, and Department Directors) and provide continuing advice and monitor the project's progress.



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Appendix

Appendix

A. On-site Interviewee List

No	Name	Organization	Dept. / Position	Note
1	Anup Baskota	NITC*	Executive Director	NITC chief
2	Bikal Paudel	NITC*	Deputy Director	
3	Sunil Poudel	NITC*	Assistant Director	
4	Dibakar Luitel	NITC*	Administrative Officer	
5	Ram Sharan Gayak	NITC*	Computer Engineer	
6	Ramesh Prasad Pokhrel	NITC*	System Administrator	
7	Tej Narayan Ray	NITC*	Computer Engineer	
8	Khadka Bahadur Thapa	NITC*	Account Officer	
9	Pralove Tandukar	NITC*	Computer Engineer	
10	Sudeep K.C.	NITC*	Electrical Engineer	
11	Purna Bahadur Kuwar	NITC*	Computer Engineer	
12	Shambhu Narayan Yadav	NITC*	Computer Engineer	
13	Samjhana Poudel	NITC*	Content Development Officer	
14	Prakash Thapa	NITC*	Administrative Assistant	
15	Bhuban Maharjan	NITC*	Electrical Overseer	
16	Devaki Nepal	NITC*	Computer Operator	
17	Prem Kumari Ghimire	NITC*	Deputy Administrative Assistant	
18	Bikash Shrestha	NITC*	Electrical Sub-Overseer	
19	Deepak Kumar Adhikari	DoC**	IT Officer	
20	Yadav Adhikari	DoC**	IT Consultant	
21	Yadav Khanal	DoP***	Director General	
22	Keshav Thapa	OCR****	Company Registrar	
23	Dae Bong Lee	NITC*	Advisor International Volunteer	Dispatched from KOICA
24	Kyung Sup Lee	Sambu Construction	Superintendent	

Note : *NITC :National Information Technology Center

**DoC : Department of Customs

***DoP : Department of Passport

****OCR : Office of the Company Registrar



■ B. On-site Interview Results Summary

1) GIDC Surrounding Environment Analysis

Classification	Key Survey Contents
Political Situation	<ul style="list-style-type: none"> ■ While the GIDC project was in progress, chaotic political transition from monarchy to republic occurred. ■ Political turmoil continued without enactment of new constitution. To establish institutional foundation for IT policy, some time is needed.
Commitment to E-Government and IT Policy	<ul style="list-style-type: none"> ■ For many years, the Nepali Government made an effort to reduce corruption through the e-Government project. Also, the Information Act was enacted for governance reforms. ■ In this process, IT was introduced as a means of government reform and was used to improve efficiency and transparency of administrative services. ■ Even though the government recognized the importance of IT, computerization and data digitalization speed varies among different government departments. So it will progress gradually.
Government Reform & GIDC's Institutional Base	<ul style="list-style-type: none"> ■ Recently, the Department of IT, under MOEST, was founded by the deputy director under the Prime Minister's Office and IT director. It will take an advisory role for IT related policies and take charge of IT related ODA projects. ■ NITC(GIDC), under the Department of IT, will be transferred and move its servers and will integrate data. ■ The government department in charge of the GIDC is under the Ministry of Environment, Science and Technology where its officials' political capability and influence are lowest in the government. ■ However, if a problem occurs in doing its job as the Department of IT because of MOEST's lack of capacity, moving the Department of IT under other department can be considered.
Relationship between Government Agencies and GIDC	<ul style="list-style-type: none"> ■ In association with the GIDC, since there is no control tower to stimulate IT policy and GIDC, each department and agencies use IT in their own way. (GIDC was utilized poorly, around 35% in 2011. Comparison data under the original plan is currently being collected.) ■ Since other government agencies view GIDC as incompetent and most of its personnel are contract workers (all contract workers in GIDC, only 2 governmental employees in NITC), full potential for its facilities has not been reached. ■ Because of this, many departments and agencies within the government cannot trust entirely. Especially not gaining the trust of the Ministry of Finance is becoming a major issue. ■ Consequently, each department is pursuing their own projects and physical integration of servers are progressing slower than expected. ■ This is the main reason why the Department of IT was founded under the direction of the office of prime minister. GIDC will be moved under DoIT and a deputy director will be in charge of IT policy. More computer engineers will be hired to extend GIDC's facilities and equipment.

2) GIDC Client Evaluation

Classification	Key Survey Contents
Department of Passport, Ministry of Foreign Affairs	<ul style="list-style-type: none"> ■ Before 2010, passports were issued manually but, from 2010, the Ministry of Foreign Affairs reorganized as a department. After extending as a department, the decision making process sped up and administrative works were integrated. Most of all, personnel shift became more convenient and mobilization of human resources was easier. ■ Since ICAO is recommending issuing of electronic passports by 2014, the e-Passport Project is currently on-going. GIDC can act as information hub but the possibility of associating with GIDC projects is unclear. Specifically, government data integration is needed but consideration is also needed that the GIDC is still in the beginning and conceptualization stage. ■ Currently, servers are located in GIDC and are fully satisfied. Internally, servers are kept for intranet and are not shared with other departments.
Department of Customs, Ministry of Finance	<ul style="list-style-type: none"> ■ With KOICA's support, a customs administration information system is under development. Both the Department of Customs and the Inland Revenue Department don't want to keep the servers in GIDC but it was part of KOICA's aid term. (Transfer is scheduled in October). ■ While admitting the necessity of GIDC, there weren't enough efforts to enact GIDC related registration for organization administration and institutional foundation. ■ Also, in administration, HLCIT was dismantled and problems occurred in managing human resources. For example, security reliability is low. If problems occur, the GIDC cannot take responsibility. Currently, GIDC is not an official government agency but semi-official agency. If GIDC moved its department to Department of IT, the server can be relocated (Currently being promoted). Particularly, personnel of the GIDC are not official government employees but contract employees. Due to their unstable status, other government agencies have difficulty in relying on them. As a result, enough consensus about importance of GIDC have not been built even among IT related government officials. ■ If GIDC changes its affiliation to the Department of IT and starts establishing its institutional foundation, it is expected to contribute greatly in e-Government.
Office of the Company Registrar, Ministry of Industry	<ul style="list-style-type: none"> ■ Office of the Company Registrar has a plan to move its server to GIDC by the end of July. Uninterruptible power supply service which provides stable electricity is the main reason of server transfer. Also, in terms of cost saving in maintaining servers, entrusting servers with GIDC was considered beneficial. (Currently in testing stage. About cost, not agreed yet.) ■ With support of World Bank's IFC, Office of the Company Registrar started to develop a system which can manage company data more efficiently. By doing so, company data can be related and used with other government data and GIDC's excellent security and maintenance can be used. ■ Because of GIDC's excellent infrastructure, the Department of Roads will transfer its server as soon as possible. ■ Since there isn't enough excellent IT manpower, the GIDC is doing an important role in the e-Government project. However, even though the government has interest, the general public has not realized its importance. ■ For the future development of the GIDC, it is suggested that they should have backup servers. Also, there are hopes GIDC can do SW development, IT human resource training, and connect with regional offices.

3) GIDC Outcomes and Problems

Classification	Key Survey Contents
GIDC Current Status	<ul style="list-style-type: none"> ■ Currently hosting 12 departments' servers, reaching 35% of center usage rate. Trying host private servers in near future. ■ 20 government officials are working, all contract based. ■ In e-GMP, critical decision making is centered around Office of Prime Minister, Ministry of Environment, Science and Technology, and Ministry of Information and Communications. ■ In currently planning the DRC (Disaster Recovery Center), only some key servers will be backed up. ■ Most IT projects relied on foreign aid. ■ For the last 10 years, the government has been trying to receive aid from organizations such as ADB. However, due to dismantling HLCIT in 2012, EA, Government Portal, and Village Portal network projects had to be transferred to NITC. Department of IT will be founded under the Ministry of Environment, Science and Technology.
GIDC Aid Project's Inputs & Outputs	<ul style="list-style-type: none"> ■ With aid from KOICA, building and utilities were well equipped and IT hardware were all installed by original design. ■ A lecture wing was designed for training and now is being used as a space for periodic IT training for central and local government officials. (So far 1,600 people were trained). ■ Rating for equipment and facilities is 5 (5 being highest). Due to the poor power supply system and its quality, electronic equipment damage has occurred sometimes. The display part which operated protective relays (a kind of electro tome) failed. In this case, the computer system could not be protective. It was made in Korea by Samsung affiliates and had to be sent to Korea for service. However, due to institutional constraints, it could not be sent. In case of power system failures, finding replacement parts was a serious problem. (Replacement parts could not be found even in India). There was a firewall problem among equipment, and it was suspect as a software problem but since the product was not used in Nepal, there was no solution. The product was purchased in Korea and its warranty is limited to Korea. ■ Some equipment had failed due 2-3 years of usage and repair records had been made. There were some failures in TVs (Samsung) and monitors (Jooyon Tech) and it was presumed due to sudden high-tension electricity. To receive A/S, time consuming official government lines had to be followed, and since there was no A/S network in Nepal, the products had to be sent to Korea. ■ The building construction had many problems. Many cracks occurred. 2 points out of a 5 point scale (5 being highest). In the case of the building construction in an aid project, the recipient country's intervention is impossible. For a year after the transfer of the building, painting was frequently done but after the warranty period, solving problems were done internally. There were considerable cracks and leakage in bathrooms

Classification	Key Survey Contents
	<p>and toilets. Those were repaired.</p> <ul style="list-style-type: none"> ■ There were some cracks in the building, but recently there was a great earthquake occurring in northern Nepal. For their own self-management after the warranty period, support of the government is needed. ■ KOICA Nepal Office had acted actively to process the project in accordance with the designed schedule.
<p>KOICA Support, Expert Dispatch & Trainee Invitation</p>	<ul style="list-style-type: none"> ■ Commonly, in Nepal, building a structure of this size takes 2 to 3 years. However, Korea finished within 8 to 9 months. Generally, every participant worked hard in a kindly manner. 2 computer experts and 1 senior expert were dispatched and they contributed greatly in the establishment of GIDC. (Dr. Lee Jung-Goun, Mr. Im Eung-Soo and others were dispatch by the request of the GIDC from KOICA. ■ Senior experts' activities were greatly helpful for technology transfer and advice. The experts who came to GIDC after the project completed also had a positive effect. ■ However, there is a question whether the experts were well utilized or not. (Mr. Lee Dae-Bong, a KOICA volunteer's opinion) ■ Training curriculum of the trainee invitation program was properly made but it was absolutely difficult to train network operation in 2 weeks. Curriculum contained all the contents for the GIDC management but 4 weeks of training was recommended.
<p>GIDC Usage Rate</p>	<ul style="list-style-type: none"> ■ According to the e-Government Master Plan, it was expect that all the available space would be occupied, but due to the political instability, the e-Procurement project was delayed and the NID project was postponed. Overall there was about 2 years more delay than the original plan. ■ Nonetheless, all the current projects are processing smoothly and after 45days, usage rate will reach about 75%. By the end of the year, it is expected that all the server rooms will be occupied and a spare room will be extended. ■ However, currently, the servers of the Department of Customs in the Ministry of Finance will be transferred. Many efforts are being made to reach 60 to 70% of usage rate.
<p>GIDC's Influence</p>	<ul style="list-style-type: none"> ■ In 2007, KIPA proposed e-GMP. According to that 11 projects were completed or are in progress. ■ The GIDC is the center of all e-Government projects. Because of the establishment of the GIDC, many countries and organizations, including ADB, are actively supporting aid programs in IT. The National ID Project (pilot study supported by ADB) was possible thanks to GIDC. ■ Also, because of GIDC, many projects like Electronic Vehicle License Registration System (ADB), National Portal Project, Automat-ion of Land Information and Management System, Electronic Procur-ement System, Public Service Commission Automation Project (ADB project) IT Training Project (Ministry of General Administration), and PKI were possible.

Classification	Key Survey Contents
	<ul style="list-style-type: none"> ■ Currently village network and broadband projects were canceled, due to the possibility of competition with the private sector. EA and interoperability framework were also delayed. ■ Generally speaking, because of GIDC's role as infrastructure, other IT projects could progress smoothly. ■ The general public's IT intelligence is also getting higher. It was possible to select a prime central site to construct the building because of the awareness of the importance of the project. Also it was possible to select a prime site in the southern area for the construction of DRC. ■ Since there were no big factories or companies in Nepal, it is hard to say how GIDC contributed to Nepal's economy. However, it can be judged that it contributed indirectly through hosting servers for the Department of Customs and others (Deputy Director).
GIDC's Internal Capacity & Sustainability	<ul style="list-style-type: none"> ■ NITC is issuing permissions for multinational companies entering Nepal. The Nepali Government is investing US \$5.4 million in the IT field. Currently, due to the progress of the ADB project (Inland Revenue), the servers will be transferred within 6 months. Also, NID is planning to move its server, but due to limited space, is currently conducting research. Also, to generate revenue, the plan to host private sector servers is in the designing state. After 2014, due to the increase of servers, it is expected there will be a space problem but currently no solution is suggested. ■ Some equipment is already out-of-date. For virtualization and cloud computing, effort is being made to have financial support from the government and outside agencies. For the sustainable progress, efforts are being made to generate revenue from providing services. ■ The biggest obstacle in Nepal is changing management. In other words, having experience and confidence in IT is a problem. Ministers and vice-ministers realized the importance of the GIDC by visiting the Korean Government Integrated Data Center. However, locally GIDC has not reached that level of importance and talented workers are moving out of Nepal (Brain drain).



■ C. On-site Interview Survey Questions

Questions about the Outcome of E-Government Projects

※ Personal Questions about Interviewee

Name

Gender

Department

Title

Main Task

Education

Years at Work

Whether attended GIDC training program or not

※ Please answer following questions about GIDC in a scale of 5 (5 being highest)

■ Questions about GIDC's Integration Level

1. To what extent are facilities related to GIDC integration? ()
2. To what extent is data related to GIDC integration? ()
3. To what extent is business related to GIDC integration? ()
4. To what extent are organizations related to GIDC integration? ()
5. To what extent is budget related to GIDC integration? ()
6. To what extent are policies related to GIDC integration? ()

■ Questions about GIDC's Security

1. To what extent did GIDC improve physical security? ()
2. To what extent did GIDC improve data security? ()

■ Questions about GIDC's Economic Efficiency

1. To what extent did GIDC achieve cost savings? ()
2. To what extent did GIDC improve efficiency in government administration? ()
3. To what extent did GIDC create added value? ()

※ The achievement of the objectives of e-Government, economic development contribution, IT industry development contribution through GIDC:

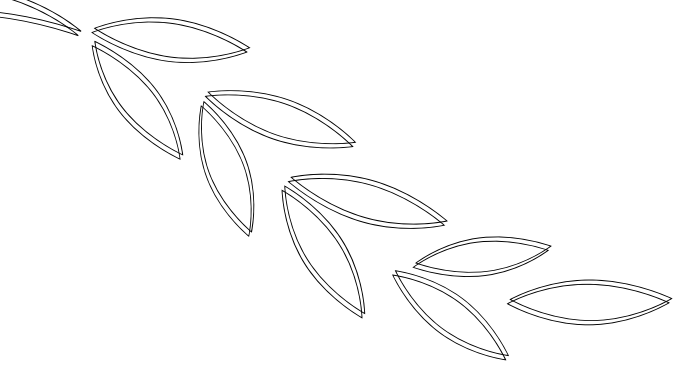
1. To what extent did the establishment of GIDC contribute to e-Government advancement? ()
2. To what extent was GIDC established with participation of various government stakeholders? ()
3. To what extent was GIDC established with cooperation from various stakeholders in Korean and Nepali Governments? ()
4. To what extent did GIDC progress with consideration for Nepal's development related strategy and priority? ()
5. To what extent did the establishment of GIDC contribute to Nepal's economic development? ()
6. To what extent did the establishment of GIDC contribute to Nepal's advancement in ICT industry? ()

Survey results will be used for research purpose only

Thank you for your kind cooperation

Director of Kookmin Institute for Strategic Governance

Prof. Hong Sung Gul and Evaluation Team, Kookmin University



Supplements



Supplements



E-Government ODA Project Checklist for Each Period

1. E-Government ODA Project Checklist – Planning and Beginning Period

Index	Checklist
Relevance Evaluation on Recipient Country's Demand	<ul style="list-style-type: none"> ■ Is the recipient's IT level sufficient to carry out the project? ■ Is the recipient's communication infrastructure sufficient to carry out the project? ■ Is the network between government agencies sufficient to carry out the project? ■ Is the government's digitalization sufficient to carry out the project? ■ Is the recipient's ICT level sufficient to carry out the project? ■ Does the recipient have a sufficient ICT human resource training system and can it be used in local ICT industry development through the project's implementation? ■ Is the level of IT intelligence among government officials high enough to achieve the project's goals? ■ Are the high government officials putting high priority in ICT and e-Government projects?
Commitment of Recipient Government	<ul style="list-style-type: none"> ■ Is the level of commitment among top government officials high enough to achieve the project goals? ■ Are they committed to used ICT in eradication of poverty or making an economic development plan?
Previous and Future ICT Related Project Policy and Evaluation	<ul style="list-style-type: none"> ■ What is the relationship between the already carried out or aided project and the suggested project? ■ Can synergy effect be generated in connection between the current project and the future projects? ■ Did the accurate assessment on the recipient country's situation (ICT level, project size, human resources) occur during the feasibility survey and consultation period?
Suggested Project Impacts Evaluation	<ul style="list-style-type: none"> ■ What is expected ramification of project's successful completion? ■ What is the plan for synergy effect maximization in relationship with previous projects? ■ What is the plan to maximize the ripple effect on local economy or ICT industry?

Index	Checklist
Legal and Intuitional Policy Apparatus for the Project Impact Maximization and Technical Support	<ul style="list-style-type: none"> ■ Are the legal systems, such as e-Government law, electronic signature law, e-Commerce law, validation of e-Documents, and integrated mandatory management of the server and DB, well prepared for the maximum effect of the e-Government project? (If not, what can be the alternative plan for establishment of a legal system before the project completion?) ■ Does the recipient country have proper institutes (IT lab, university, company) to receive technical support for the project?
Possibility of Achieving Project Goal and Obstacle Evaluation	<ul style="list-style-type: none"> ■ What are the obstacles blocking achievement of the project goals? ■ What are the solutions to remove the obstacles? (In needs of recipient country's cooperation to resolve the obstacles, it has to be stated in the project plan with specific timeframe.)
Effective PMC Selection and Guidelines	<ul style="list-style-type: none"> ■ Does the PMC not only have technical ability but also have passion for the project, based on broad understanding about the ODA project and developing country?

2. E-Government ODA Project Checklist – Project Execution Period

Index	Checklist
Relevance in Selection in Project Implementing Agencies (PMC and others)	<ul style="list-style-type: none"> ■ Do project implementing agencies have sufficient project implementation capacity and have passion and commitment in taking responsibility in A/S?
Relevance in Project Execution	<ul style="list-style-type: none"> ■ Was the demand of the recipient country continuously reflected during the project implementation period? ■ What was the recipient agency's satisfactory rate during the interim assessment? (Interim satisfactory survey is needed). ■ Did the final outcome of the project match with the quality requirement in the contract? ■ Was the demand of the recipient country in the scope of the project? ■ Did the PMC and other implementing agencies maintain proper communication? ■ (In the case of co-operation project with other agencies like ADB), was the communication among project implementing agencies well maintained? ■ Was the cultural characteristic of recipient country considered? Was the institutional policy followed?
Equipment and Other Products Local A/S Availability	<ul style="list-style-type: none"> ■ Was there a plan for local A/S for the Korean made equipment and their installation? ■ Was there a plan for proper A/S after the warranty period?

Index	Checklist
Relevance in Trainees Invitational Program	<ul style="list-style-type: none"> ■ Was there a quality invitation training program to achieve the project's goal? ■ Was the training period sufficient to convey its contents? ■ Were trainees selected with proper qualifications to achieve the project's goal? ■ Did the contents of the training program contain sufficient technical expertise to achieve the project's goal?
Relevance in Construction	<ul style="list-style-type: none"> ■ Did the construction of the building follow the recipient country's supervision? ■ Was the building properly constructed to achieve the project's goal? ■ Did the completed building conform with PMC's contract? ■ Were there abnormal complaints or claim after the completion of construction? ■ If so, what was the reason? And what is the solution?
System Design and Development	<ul style="list-style-type: none"> ■ Did the system accurately reflect the demand of the recipient country and agency? ■ Did the design and development consider convenience in system usage? ■ Were proper and accurate explanations on the system carried to the recipient country and agency?

3. E-Government ODA Project Checklist – Project Completion and Post Management Period

Index	Checklist
A/S Related Obstacles	<ul style="list-style-type: none"> ■ Were the A/S requests within the normal scope? ■ Was A/S provided in a timely manner? ■ What is a common obstacle for A/S? What is the solution? ■ Is there a plan for the repair and A/S for the equipment after the warranty period?
Dispatched Experts	<ul style="list-style-type: none"> ■ Did dispatched experts have sufficient expertise to carry out given tasks? ■ Did dispatched experts have sufficient understanding about ODA and have passion and commitment in helping the developing country? ■ Did dispatched experts have outgoing personality to build social network in the recipient country?
Dispatch of Volunteers for Post Project Management	<ul style="list-style-type: none"> ■ Did volunteers have sufficient expertise for post management? ■ Did volunteers have commitment and passion?
Maximizing of Project Outcomes	<ul style="list-style-type: none"> ■ What is the obstacle in maximum usage of the project outcome? And what is the solution? ■ Are there considerations of this project's outcome in related projects or in other e-Government project's planning stages? ■ What is the obstacle in maximizing the project's impact? And what is the solution? ■ Is there a performance management system to increase the impact of the completed project?

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