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Ex-Post Evaluation Report on the Two E-Government Projects in Mongolia

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한국국제협력단

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The Korea International Cooperation Agency (KOICA) performs various types of evaluation in order to secure accountability and achieve better development results by learning.

KOICA conducts evaluations within different phases of phases of projects and programs, such as ex-ante evaluations, interim evaluations, end-of-project evaluations and ex-post evaluations. Moreover, sector evaluations, country program evaluations, thematic evaluations, and modality evaluations are also performed.

In order to ensure the independence of evaluation contents and results, a large amount of evaluation work is carried out by external evaluators. Also, the Evaluation Office directly reports evaluation results to the President of KOICA

KOICA has a feedback system under which planning and project operation departments take evaluation findings into account in programming and implementation. Evaluation reports are widely disseminated to staff and management within KOICA, as well as to stakeholders both in Korea and partner countries. All evaluation reports published by KOICA are posted on the KOICA website.
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1. Mongolian NDC Project

1) Project Overview

○ Overview of the Mongolian NDC Project is as follows:

<Overview of the Mongolian NDC Project>

Classifications		Details
Project Purpose		Building a national data center for implementation of e-government Government-wide integrated management of computational resources
Burden of the two sides	Korea	Constructing a new building for NDC($ 1,548,000) Providing facilities and equipment($ 3,265,000) Inviting trainees($ 102,000) Dispatching specialist($ 150,000) Project management($ 135,000)
	Recipient Country	Providing building site and infrastructures for construction, etc. $ 700,000
Project Area		Ulaanbaatar area
Scale/Term		$ 5,200,000 / for 3 years (2007~2009)
Beneficiaries		Government of Mongolia and the people
Expected Effects	Korea	Sharing advanced experience and technology in building integrated data center to enhance national image and as an IT powerhouse, and establishing the foundation for advancing foreign market of domestic companies
	Recipient Country	Increased efficiency through resource integration management Improve the reliability and transparency of government through the establishment of e-government system
Implementation Agency	Korea	Korea International Cooperation Agency(KOICA) / PMC : KT
	Recipient Country	ICTA

2) Evaluation Results

(1) Relevance

○ The Mongolian NDC project was timely and appropriate because it was carried out in accordance with the already-established E-GMP plans in the year 2005, which gave high priority to the NDC Project in Mongolia. It was also important to note that the NDC project was requested by the Government of Mongolia.

○ Mongolia is putting a lot of effort in e-Government implementation and informatization within government agencies through NDC. Partly due to these activities, the rank of Mongolian e-Government in the UN evaluation has risen significantly.

 - However, ICT policies of the Government of Mongolia is in a situation of not being a huge help in NDC activation partly due to the lack of policy coordination.

○ Initial preparation of the project was a little bit delayed due to the land claims of property owners at the designated site. Due to this, the location of the NDC had to be changed, which took more time and efforts in construction of the building of NDC.

○ There were significant differences between donor and recipient agencies regarding the technical factors of construction and later the conditions of maintenance responsibilities. This had been the case because there happened cracks in the building. Due to this, NDC kept asking to do some significant support to upgrade the building, but later on both parties agreed that the project was well completed after jointly conducting a structural safety inspection hiring an independent engineering company. But this kind of inter-agency communication problem should be considered more seriously in the future.

(2) Efficiency

○ The declaration of the martial law, increase in raw material prices, exchange rates, a variety of external expense increasing factors and design changes, additional requests from institutions, and internal expense increasing factors occurred in the process of the projects. Despite those factors, the PMC could successfully undertake the whole project with a small cost increase, approximately 2.2 billion won. This indicates that the project was efficiently managed and well completed.

○ However, the building completion period can be evaluated as it had a small amount of inefficiency for being delayed a little bit longer than the original plan in terms of duration.

(3) Effectiveness

○ Even though the statutory maintenance period completion for architectural buildings will end soon, NDC's request for additional defect repair about the structure of the building is not appropriate because an independent engineering company undertook a structural safety inspection upon the request of both parties and it turned out to be that no major defects were found in the building. However throughout the past two to three years, NDC and PMC have had different opinions on this issue, and this has created somewhat uneasy distrust between donor and recipient agencies.

○ Most of the equipment is properly installed and functioning, but adverse effects occurred in some parts of the product due to a problem in the situation of replacing the product itself.

○ Dispatched Korean experts performed their duties faithfully and effectively, but the training courses that were provided to the invited trainees were not fully satisfied by the participants due to the short training period and easy contents.

○ Physical and cyber securities seem to be very well protected given a 24-hour real-time monitoring system and complete security regulations, which are quite often complained by clients.

　- The actual confirmation of being equipped with exhaustive physical security systems from the perspective of the evaluator on NDC is impossible, but this is becoming a reason to hesitate in the practical use of the NDC from the users' perspective.

　- Especially the fact that government agencies using NDC can not access their sever or DB freely is a fatal weakness that detract from NDC's effectiveness.

○ Customer satisfaction survey for the NDC has not been done.

　- During the ex-post evaluation period, analysis through on-site interviews and surveys for government agencies using NDC found that satisfaction level is not quite high in general.

　- The research showed that the reason for low customer satisfaction of NDC is low stature, low reliability to members, physical distance from the NDC, excessive access control, etc.

(4) Impact

○ The NDC project has been promoted as a core part of e-Government ODA for Mongolia by KOICA, and gave a positive effect on other countries and international organizations such as ADB in supporting ICT ODA for Mongolia.

○ Through a variety of activities, including seminars, forums and education, NDC is interacting with ICT experts in the public sector and contributing to improving informatization mind among public officials in Mongolia.

○ When NDC was created, some government agencies began to worry about the possibility of reducing their own IT personnel. But after NDC was established, we could not find any evidence that these concerns became a reality.

(5) Sustainability

○ The Mongolian Government is implementing various policies at the national level to improve e-Government services, and has been receiving supports from various donor countries.
  - Therefore, it is expected that the number of government agencies which can use NDC will be increasing continuously. Because the ICT-related policy promoting system has not been built yet in the Mongolian Government, NDC activities to invite more government agencies would be difficult in the foreseeable future.
○ The NDC has a staff for IT training, and it has been a positive factor for the sustainability of the NDC.
○ NDC organization's low status within the Mongolian government and the fact that NDC employees are not regular public officials can serve as a negative factor in increasing the popularity of NDC among government agencies.
  - In addition, despite the fact that the informed application is being given low privilege to the Mongolian ICT top-level policy institutions, it is unable to contribute significantly to the sustainability of the NDC due to the lack of political leadership.
○ The use of NDC is mandatory, yet the law has not been implemented properly due to the departmental egoism according to the Enacted National Register of the Framework Act in 2010.

3) Policy Suggestions

○ A wide range of internal government agencies, along with the NDC that have essential sympathy in a project's case, and high-ranking government officials or policy makers that target the advanced education programs need to operate from the planning stage for a successful project.

- Core officials or politicians in the line of policy decisions targeting domestic invited excursions need to operate in the case of e-Government initiatives as well as the officials of corresponding departments.

○ E-Government initiatives consider the characteristics of a project in prior consultation or conducted consultation process and relevant government agencies need to receive explicit commitments that are targeting their mandatory roles.

- E-Government initiatives are not just simply IT equipment or buying the programs. They are projects that need to be changed fundamentally in their forms or ways of operation.

- Therefore, the digitization of the work, information related to legislation and revision, and the diffusion of information mind are essential and needed in advance before promoting e-Government projects with respect to these activities.

○ Since equipment and materials are very important to the performance of the project to e-Government initiatives, the contents of recipient countries' information and communication equipment retail market inspection in pre-feasibility studies or conducted consultation stages need to be included, and especially Korean information and communication devices' verifications for local A / S possibilities are required.

○ Standards or regulations about architectural buildings are very different depending on the recipient countries, and need to be addressed by actively participating in local projects regardless of the institutions that are conducting project in ODA projects.

- Since licensing problems of underdeveloped and developing countries are often more dependent than technical levels according to legal information or national characteristics, leaving them to local projects is appropriate.

- Defect repair or A/S problems have many unexpected variables, which can cause catastrophic situations, and correct settings about liability coverage are required after the completion of the project.

○ KOICA needs a consulting role to perform for the promotion of e-Government initiatives in Mongolia by dispatching high ranking ICTPA that is targeting the Information, Communications Technology and Post Authority (ICTPA) or the corresponding e-Government policy sponsored departments and coordinate information on the entire e-Government initiatives.

- Especially the Copper Adviser should form a close network and needs to perform the ongoing consultation and monitoring of the project implementation process with the high-ranking Mongolian Government officials (secretary or assistant secretary, director, etc.).

2. Mongolian e-customs Project

1) Project Overview

○ Overview of the Mongolian e-customs Project is as follows:

<Overview of the Mongolian e-customs Project>

Classifications		Details
project Purpose		Contribute to the modernization of the Mongolian Customs Administration through analysis and building of Mongolian Customs's Tariff Administration's information system and external linkage system
Burden of the two sides	Korea	Providing facilities and equipment($ 450,000) System development($ 1,821,000) Dispatching specialist($ 134,000) Inviting trainees($ 63,000) Etc.($ 32,000)
	Recipient Country	Equipment transportation, duty-free costs, office and fixtures support
Project Area		Ulaanbaatar area
Scale/Term		$ 2,500,000 / for 2 years (2008~2009)

Classifications		Details
Beneficiaries		Mongolian Customs and the Ministry of Finance Mongolian Customs visitors, Mongolian enterprises and foreign enterprises, government-related agencies
Expected Effects	Korea	Promote friendship and cooperation, and customs administration system export, and establish the foundation for advancing the foreign market of domestic companies
	Recipient Country	Shorten the clearance time due to the customs administration information system, Enhance the transparency of the administration Enhancement of Mongolia's national competitiveness through modernization of customs administration
Implementation Agency	Korea	Korea International Cooperation Agency(KOICA) / PMC : KT NET, SK C&C
	Recipient Country	Mongolian Customs General Administration

2) Evaluation Results

(1) Relevance

○ The e-customs project has adequately reflected the policy demand of the Mongolian Customs Service.

- Mongolian Customs had been operating the self-developed customs administration system, named GAMAS, developed in 2003. But, because it was composed of C/S base, the Mongolian Customs Service was feeling the functional limitations of the system.

○ In the Mongolian e-customs project, it was appropriate for a donor agency to analyze the demand of the recipient agency thoroughly to maximize project effects.

- At first, recipient agencies required equipment dualization, search engines, computer equipment, SMS/NMS, etc. However, donor agencies had set priorities considering the importance and urgency of the project, scale

and its entirety.

- But, the start of the project was somewhat delayed on account of cooperation problems with ADB, reflecting the needs of the system users.

○ On the other hand, there were slight responses in the CAIS users interview that the system had not been developed from the user's perspective. It has been decided that considerations for users were slightly insufficient in the project executive phase. However, the system user, who is the Mongolian Customs also neglected to seek improvements in terms of user interface in the period of acceptance tests after building the systems.

○ The usage of data's growing trend is rapidly increasing compared to the original plan and the resulting server capacity expansion is necessary in the Mongolian electronic tariffs' case.

- In addition, performance checks, tuning, and a variety of activities are required despite their own lack of efforts for the stable use of the system.

(2) Efficiency

○ The entire budgets that were actually used for developing and operating the Mongolian e-customs system were 90.88% of the original plan and the budgets can be reduced, but an excessive budget will be avoided for the performance of the project.

○ Actual services were began about six months later than the original plan, which were in part caused by the adaption of the system to actual Mongolian Customs project environment.

○ E-customs duties of productivity and effectiveness, which can be determined as the shortened clearance time, customs procedures of national competitiveness index, and burden index can be evaluated in general as positive according to the current e-Government's performance evaluation in August 2012.

(3) Effectiveness

○ Mongolian e-customs have successfully developed a system and can state that effectiveness is high since they are using it; however, ongoing system improvements are required from the user's point of view.

○ Due to this project, the newly built system demonstrates considerable accomplishments in spite of the front-line users that do not see or feel significant effects of the new system compared to the previous system.

  - In particular, the manifest, customs, import and export-related work that can be performed, and that have been lacking from the previous systems has contributed significantly to improve customs administration tasks' transparency and accuracy of improvements; on the other hand, the users do not see or feel that.

○ Due to this project, the increase of customs revenues is a very important outcome among the effects; however, the trade volumes have increased significantly at the same time to determine the project effects and increase of customs revenues' causal relationship.

○ Dispatched experts faithfully performed their work and are generally satisfied about dispatched effects during this project period; however, there was a lot of room for improvement in terms of duration and contents in invited training in Korea's case.

(4) Impact

○ The e-Government had demonstrated positive effects to projects along with Mongolian e-customs that highlight the importance of Mongolian Customs and related agencies, which leads to subsequent projects as well.

○ Mongolian Customs Administration's systems integration within Mongolian e-customs had been done. As a result, importance has been highlighted in the surrounding systems and it gave a positive impact for being able

to focus on information capabilities.

(5) Sustainability

○ This evaluation project has been applied only to the part of the Mongolian Customs, and the demand for further application of the system will be occurred continuously because it will be expanded to all customs offices.

 - As the trade increases, the electronic customs system will be sustained for transparent and accurate customs administration.

○ Continuing cooperation with other agencies such as ICTPA is an important factor in improvement and sustainability.

3) Policy Suggestions

○ Detailed investigations and counter plans are needed for the scope and its contents at the planning and feasibility study stages, and clear performance indicators must be set up before actual implementation, which allows continuous monitoring throughout the whole project period including ex-post evaluation.

 - The number of units processed per hour, the average clearance time, tariff increase and growth might be important indicators to measure the performance of the e-customs system.

○ The training program should focus more on delivering practical knowledge, which can be directly applied in operating the e-customs system. Selection of trainees should be more carefully undertaken in order to target the appropriate technical personnel rather than politically influential figures.

 - In addition, a customized training program should be developed based upon the initial skills and knowledge of the trainees. Training program should also allow the trainees to become skilled system operators when they go back to Mongolia, and they should be able to educate those who are remained in their home country.

- The length of the training period also should be reconsidered. One week is simply too short to provide enough education to operate the e-customs system.

○ System development projects start from the analysis of the needs of customers of all levels, but more active potential requirements and suggestions for a better system are needed along with an appropriate cost estimate for the project.

- From the very beginning, it is advised to try to reflect the expressed users' requirements as much as possible through fixed expenses rather than develop a system and then focus on the customer level based on experiences of system implementation; develop the optimum system, and appropriate expenses should be priced appropriately.

○ Also, it is recommended to do not the limit the range of customers to the recipient agencies, and the final beneficiaries to users should be expanded.

Background for Evaluation

Chapter
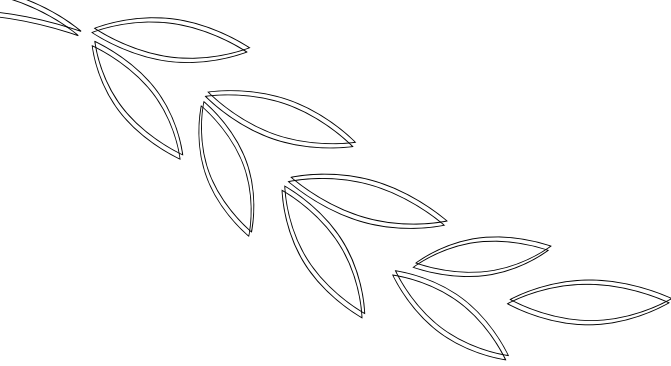
I   Background for Evaluation

1. Needs for Ex-Post Evaluation in ODA Projects

○ South Korea is recognized for its government agencies maintaining a higher level of informatization as the world's best e-Government realization state by the United Nations.

○ E-Government-related project is steadily increasing in the area of ODA projects and the future of ODA is expected to grow as a core project area.

  - However, despite an increase in e-Government ODA projects, comprehensive inspections and ex-post evaluation are experiencing many difficulties since they did not function correctly.

  - Therefore, the ex-post evaluation related to e-Government ODA projects is an activity not only for the a single project, but is absolutely necessary in the next e-Government initiatives' continuous expansion.

○ In general, the Korea International Cooperation Agency's (KOICA) ex-post evaluations are being conducted by checking processes and outcomes systematically while conducting limited ODA budgets' efficient enforcement and on the improvement of aid effectiveness for its purpose.

○ The ex-post evaluation regarding KOICA e-Government projects is being evaluated by Korea's e-Government know-how as to whether the level of development in the developing countries has been properly suited.

  - E-Government is an evolving concept of Information and Communication Technology (ICT) rather than a fixed concept based on several environmental factors.

- Therefore, the ex-post evaluation of e-Government ODA Projects is more long-term than the economy of the recipient countries and the impact on social development. It should face this as a comprehensive perspective.

○ The current KOICA is proceeding with a variety of e-Government related ODA projects, while the efficiency of these projects and advanced research, interim evaluation, termination, and evaluation of the activities are being carried out in order to enhance their performance.

- In these circumstances, the e-Government ODA Projects' ex-post evaluation is an activity with previous research, evaluation, the effectiveness of aid and enhancing performance as well as are absolutely necessary in terms of influence and sustainability.

○ KOICA supported Mongolian Government Integrated Data Center (NDC) Development Project (in years 2007-2009), and the Mongolian electronic customs clearance system (e-customs duties) development project (2008-2009).

- NDC building construction supported with $520 million in NDC project, equipment supports, invited trainees, dispatched experts, and project management.

- The e-customs duties project supported with $250 million on equipment supports, systems development, dispatch of experts, invited trainees, and more.

○ In addition, KOICA has a association with the Mongolian electronic government to promote the "State-owned Property Management Information System Project" (2013-2014), the "Congressional Legislative Activities Supporting System Development Project" (2013-2015), the "Immigration Control System Modernization Project" (2013-2015), and more projects totaling about 9 that have been scheduled, so the ex-post evaluation has become more important than in other countries.

○ As Mongolia entered in the second stage of the UN standards of the Development Process of Electronic Government, the country is also promoting the development of the economy and society through ICT-based knowledge

industries. These development demands of the recipient countries have been properly reflected in the ODA projects to evaluate the mutual gains reciprocally for the promotion of development cooperation are required.

○ Therefore, Mongolian e-Government ODA Project should be evaluated by professional and objective evaluation criteria that are officially provided by OECD/DAC so that it can be used as basic data for constructing a systematic performance management system of the ODA project.

- Ex-post evaluation data for the Mongolian e-Government ODA Project will be used as material for enhancing the effectiveness of other similar ODA projects.

- Obtainable types of intangible results are evaluated not only through quantitative measurement, but with qualitative analysis as well to utilize them through a method of analysis and evaluation of the effectiveness of e-Government ODA projects in Mongolian electronic government projects.

- Suggestions for conducting project's features and the improvement of the efficiency of joint projects in the future during the process of other donor agencies and joint investment's cooperation projects will be expected.

2. E-Government and ODA

A) Concept of E-Government

○ E-Government is defined as a form of government in the era of the information age, in which information and communications technology (ICT) is widely adopted and utilized in public administration. Generally speaking, the adoption of ICT in public administration allows a dramatic increase of efficiency and productivity in providing administrative services. It also increases overall transparency within governments, and allows interactive services for citizens'

demands.

○ By having advanced e-Government systems through ODAs, the recipient countries can increase public productivity and transparency, which is expected to make the government work much better. This in turn, is expected to contribute to achieve economic and social development, and thus eventually enables the recipient countries to get out of chronic poverty. Most developing countries are also benefitting from the potential opportunity of developing local ICT industries which can be stimulated by running e-Government systems in the public sector.

B) Services Configuration of E-Government

○ Government uses of ICT to the citizens and projects that provide administrative activities can be divided into three areas: Public services, government support services, and common technology services in terms of e-Government. NDC common technology services and the electronic customs duties are applicable to public services.

<Figure 1> Classification Criteria for E-Government Services Sector
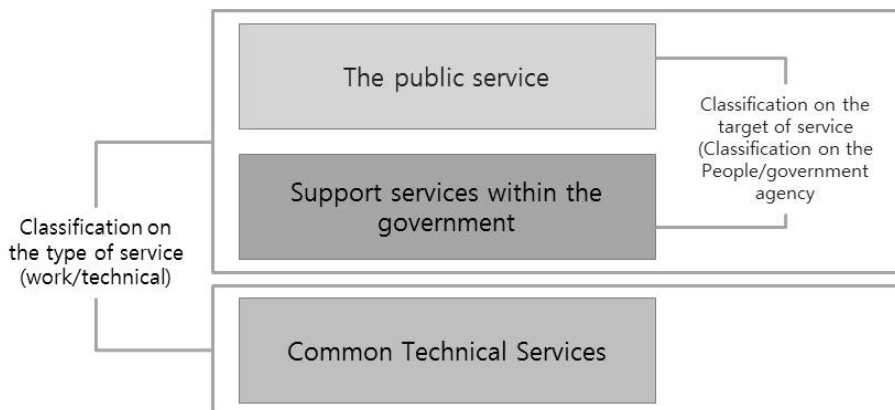
Source : Ministry of Public Administration and Security - National Information Society Agency, Service Reference Model 2.1, 2011.08

C) E-Government, Integrated Data Centers, e-customs System

○ Integrated data centers can consolidate each agency's data center data among the e-Government's service classification belonging to the Common Technical Service, and even private operators can operate integrated data centers as well.

- Data centers are basically complex facilities hosting digital project servers, databases, and data storage devices.

- In order to build data centers successfully, keep the planning and design steps, and the behavior of the applications in mind and consider issues such as application flow, scalability, redundancy, load balancing, migration, management, and security.

○ If multiple data centers that can accommodate integrated resources just like the integrated data center are unified into one, in order to gauge the size of the facility, servers that are migrating and a list of other devices need to be cleaned up.

- In general, the integrated data centers are growing rack spaces 5~10 times that can accommodate extensions to have facilities built.

○ The main aim of integrated data centers include network infrastructure, lower costs, standardization and centralization of resources, virtualization of network resources, and performance protections.

○ E-tariff customs systems are designed to handle necessary customs duties for imports and exports electronically as a public service for projects.

- Rapidity and simplicity is considered as important for the customs clearance for both import and export in the perspective of general public or enterprises. It is required to build a system that is consistent with the electronic project for this purpose.

- On the other hand, accuracy and integrity is important for customs clearance for import and export in the perspective of the nation, while project' electronics and real-time data management are required for this purpose.

- Electronic tariff clearance systems are produced in order to meet rapidity, simplicity, accuracy, and integration.

<Figure 2> Relation Diagram Between E-Government and Integrated Data Center.
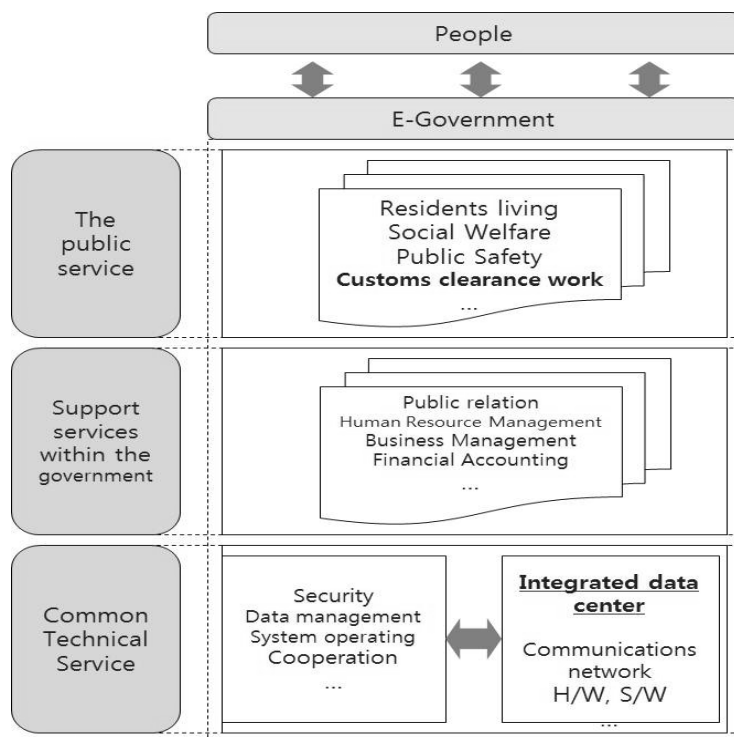
D) Effect of E-Government ODA

○ E-Government ODAs are expected to be one of the new areas of ODA, which began to receive more attention from the international community in recent years.

- Since digital divide is viewed as one of the main reasons for the huge income disparity among sub-Saharan African countries, many developing countries began to consider having more ODAs in the field of e-Government.

- Many developing countries have been trying to put political efforts into national informatization and are actively requesting ODA projects in Korea, an information developed country.

○ E-Government programs have a purpose to improve the efficiency of public services, transparency, and reliability.

3. E-Government Levels of Donor and Recipient Countries

○ According to the e-Government survey[1] by the United Nations (UN), South Korea has been named as one of the highest developed countries regarding e-Government, while Mongolia has maintained a lower-middle level of e-Government.

- Korea was ranked in 5th place (0.8727) in 2005, but it quickly moved to the 1st place (0.9283) in 2012. Mongolia, on the other hand, was ranked in 93rd place (0.3962) in 2005, 82nd place (0.4725) in 2008, and moved up to 76th place (0.5443) in 2012.

<Table 1> UN e-Government Index of Korea and Mongol.

Year(Country)	2005		2008		2012	
	Korea	Mongolia	Korea	Mongolia	Korea	Mongolia
e-Government Index (ranking)	0.8727 (5th)	0.3962 (93th)	0.8317 (6th)	0.4735 (82nd)	0.9283 (1st)	0.5443 (76th)
On-line Service Index	0.9769	0.2308	0.8227	0.4214	1.0000	0.5882
IT-infra Index	0.6713	0.0679	0.6886	0.0911	0.8356	0.1758
Human Capital Index	0.9700	0.8900	0.9841	0.9097	0.9494	0.8688

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

○ According to the ICT readiness index announced by the World Economic Forum every year, Mongolian readiness for ICT has gradually decreased over time since 2007-2008.

○ ICT priority within government has changed from 5.07 points (2007-2008) to 4.87 points (2008-2009), 4.78 (2009-2010), 4.90 (2010-2011).

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1) E-Government Survey of UN Economic and Social Council have examined the levels of e-Government of 190 UN member countries since 2002. The results of the evaluation has been announced in the form of "e-Government Development Index," which consists of an online service index, telecommunication infrastructure index, and human capital index.

○ ICT procurement has changed from 3.50 (2007-2008) to 3.37 points (2008-2009), 3.31 (2009-2010) 3.40 (2010-2011).

○ Importance of ICT in future vision has changed from 4.00 (2007-2008) to 3.82 points (2008-2009) 3.76, (2009-2010), 3.70 points (2010-2011).

<Table 2> Government ICT Readiness Index of Mongolia Selected Years

(Unit : person, %)

Year	2007-2008		2008-2009		2009-2010		2010-2011	
	Points	Ranking	Points	Ranking	Points	Ranking	Points	Ranking
ICT Priority within Government	5.07	39 (134)	4.87	54 (133)	4.78	58 (138)	4.9	53 (142)
ICT Procurement	3.50	70 (134)	3.37	84 (133)	3.31	93 (138)	3.4	89 (142)
Importance of ICT in Future Vision	4.00	72 (134)	3.82	88 (133)	3.76	80 (138)	3.7	82 (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

○ Overall, the Mongolian society shows rapid increase in terms of internet-using population and the number of PCs, which is expected to stimulate gradual increase in using e-Government services.

<Table 3> Number of Internet Users, PCs, and ICT Workers in Mongolia 2006-2010

(Unit : one item, per person)

Year	2006	2007	2008	2009	2010
Internet Users	26,000	30,000	42,000	106,000	199,800
Number of PCs	99,600	116,500	150,900	187,500	-
ICT Workers	6,850	6,950	7,000	7,150	7,320

Source: ICTPA, White Paper On ICT Development, Mongolia - 2011,

Evaluation Methodology

Chapter

II Evaluation Methodology

1. Period for Evaluation

○ The ex-post evaluation for the Mongolian NDC building project and the e-customs upgrading project has been conducted from June 1 to November 20, 2012. Several milestones during this period are as follows:

- Presentation for the beginning the project, June 7, 2012

- Mid-term presentation, August 23, 2012

- Presentation of the final report, Nov. 20, 2012

○ Main research activities in this period are summarized in the table below.

<Table 4> Main Activities Undertaken

	Period	Main Activities
Preparing and Designing Field Research	21 May – 10 June	Schedule setting Contract with local specialists Launching the project
Field Research in Korea	11 June – 8 July	Interviews with PMC people Literature review
Field Research in Nepal	9 July - 13 July	Visit and conduct interviews
Field Research in Mongolia	5 August - 11 August	Visit and conduct interviews
Analyzing Outcomes of Field Research	13 July – 22 August	Summarize research outcomes and draw implications
Mid-term report	August 23	Mid-term presentation
Revising Evaluation Outcomes	24 August – 19 Sept.	Additional research, domestic and abroad
Final Presentation	20 Sept.	Final presentation of field research outcomes
2nd Field Research in Mongolia	17 Oct. – 20 Oct.	Visit beneficiary agency
Final Report	21 Sept – 20 Nov.	Writing final report
End of Project	20 Nov.	Printing final report

* This ex-post evaluation of Nepal project and Mongolian project has been done at the same time
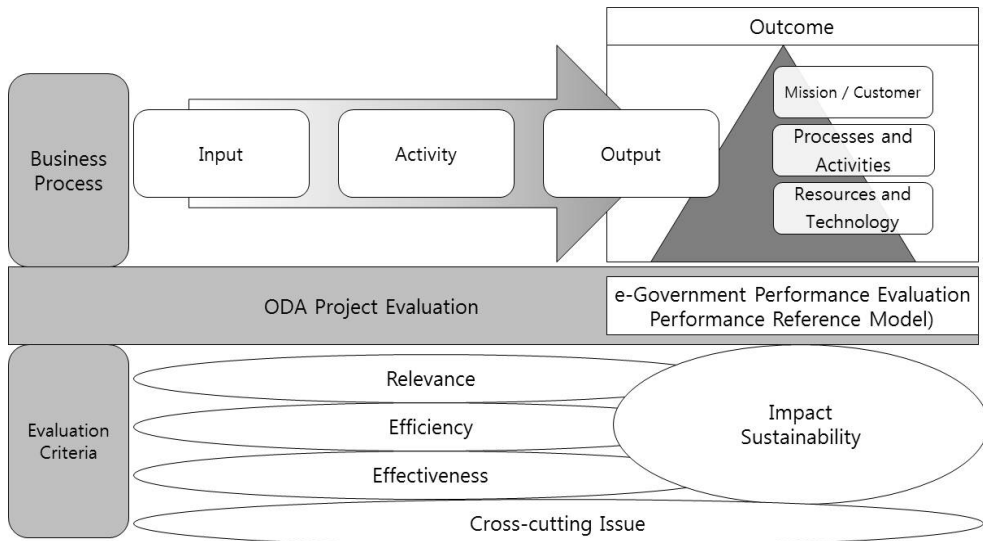
2. Models for Evaluation

A) Brief Summary of Evaluating Models

○ Ex-Post evaluation for ODA projects is generally undertaken several years after the project has been completed. Therefore, the ex-post evaluation has to include two aspects of the project: an ODA perspective and an e-Government project perspective.

- From the recipient country's request for the project to the donor country's output completion, ODA aspect evaluation is needed. After completion of the output, it should be evaluated from the viewpoint of the project.

- The first part can use the evaluation criteria that are officially provided by OECD/DAC, but the second part should adopt different evaluation models depending upon the types of the project.

○ Therefore, ex-post evaluation for Mongolian e-Government project is originally evaluated by the evaluation criteria of OECD/DAC. However, the content of the ODA project is about e-Government, so it is necessary to set up a separate evaluation model.

- Ex-Post evaluation for e-Government ODA projects can be charted as follows: <See Figure 3>

<Figure 3> A Conceptual Framework for Evaluating ODA Projects in
the Field of e-Government

○ ODA project evaluations are carrying out for the increase of mutual cooperation and aid effectiveness between donors and recipient countries. In addition, e-Government performance evaluations are conducted in order for the recipient countries' e-Government to contribute to public sector reforms and service improvements.

- And there can be various types of e-Government performance evaluations, such as information infrastructure, G2G, G2B, G2C, and so on depending on the contents of the project and accordingly, the evaluation criteria and evaluation items should be set up differently.

○ Since the Mongolian NDC building project assigned an integrated data center as information infrastructure, the characteristics that meet the criteria and evaluation of the integrated data centers should be set.

○ The Mongolian e-customs project is about improving the existing electronic customs systems, which corresponds to G2B, the Mongolian Customs Administration information system and external linkage analysis of system designs, and the assessment criteria and assessment items should be set from
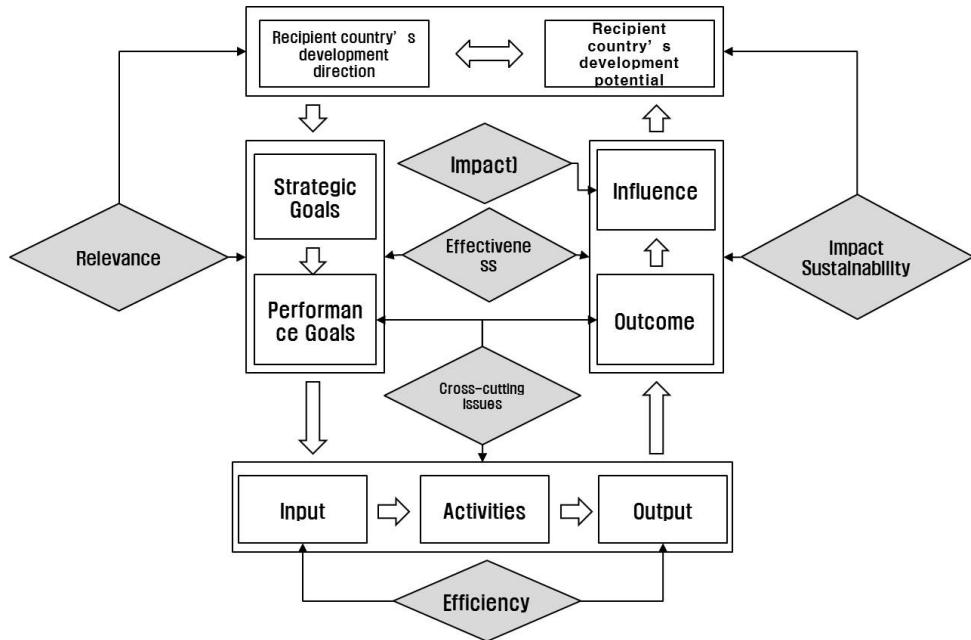
the perspective of the customers (projects) with the project of building.

B) The Development of Evaluation Model

(1) ODA Project Evaluation Model

○ ODA project evaluation criteria include relevance, efficiency, effectiveness, impact, sustainability, and cross-cutting issues when they are drawn in accordance with OECD/DAC criteria as they are shown in figure 4 below.

○ 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.

○ Valuation basis of effectiveness points out as an evaluation that relates to the results of a project in whether project objectives are achieved from performances.

  - 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.

<Figure 4> OECD DAC Evaluation Criteria and Models for ODA Projects

<Introductory Remarks> ◇ : Evaluation Criteria , ⇨ : project Process

○ Valuation basis of impact mean the direct and indirect influence that the project has upon the surrounding environment. Impact is usually intended from the beginning of the project, but there can be unintended consequences, which may have positive and/or negative 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.

○ Valuation basis of the cross-cutting issues refer to evaluating where the project touches on general principles of mankind such as gender equality, environmental protection, protection of minority, and so on.
  - Thus, the cross-cutting issues should be evaluated independently 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.

C) E-Government Performance Evaluation Model

○ Since the e-Government ODA projects ex-post evaluations have been 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, both the results and the impact of ODA projects can be considered as outcomes of e-Government.

(1) Outlines of E-Government Performance Evaluation

○ Since the year 2000, countries all around the world have been putting a lot of effort into e-Government, which makes it possible to have administrative services available anytime and anywhere with the development of ICT and the Internet regardless of time and place.
- As a result, a handful of the developed countries, including South Korea and the United States has already implemented e-Government in all sectors, but many of the developing countries are still in need of basic things toward e-Government such as the digitalization of public documents and implementation of computer systems for specific public services.
- Therefore, there is no standardized model for evaluating the performance of e-Government.
○ However, PRM (Performance Reference Model) is being used widely among the developed reference model in the United States, the currently most e-Government advanced country.
- In the Performance Reference Model there 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 performance of the classification systems have goals, areas, items, and hierarchy of performance indicators if they are conceptualized as figure 5 shows below.

<Figure 5> PRM Performance Classification System and Structure

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

○ Main performance areas of e-Government PRM is shown in <Figure 6>.
  - Performance goals : E-Government
  - Performance area (6) : Missions and projects, customers, processes and activities, human resources, information technologies, and associated resources
  - Performance items (16) : Administrative services, service levels, customer satisfactions, range of services, finance, productivities, work qualities, securities, user support, system qualities, standards, information and data, utilization, ICT policies, e-Government legislations.

<Figure 6> E-Government Performance Area by PRM

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

(2) Development of Performance Indicators

A. NDC Project

○ The performance goals of Mongolian NDC can be divided into three categories based on established PDM during ODA projects' process below:

<Table 5> Mongolian NDC's project Objectives and Performance Goals

PDM Development Goals (Top Goals)	Performance Goals*
Ensuring the security and safety of the system and enabling integrated management of departmental information systems by constructing Government Integrated Data Center	Performance Goal No.1 : Integrated management of system Performance Goal No.2 : Ensuring stability of system Performance Goal No.3 : Ensuring security of system

* Performance goals : The goals that were derived from the Development Goals (Top Goals)
               by the evaluation team

B. e-customs Project

○ The e-customs duties building project's performance goals in ODA projects process can be divided into three categories as follows:

<Table 6> Mongolian Electronic Customs Clearance System's project
Objectives and Performance Goals

PDM's Project Goals	Performance Goals*
Shortening of the clearance time and ensuring transparency of the administration through customs administration information system Strengthening Mongolia's national competitiveness through modernization of customs administration	Performance Goal No.1 : Shortening of the clearance time Performance Goal No.2 : Ensuring transparency of the administration Performance Goal No.3 : Strengthening national competitiveness Performance Goal No.4 : Technological improvement of e-customs

* Performance goals : The goals that were derived from the project objectives of
the project plan by the evaluation team
(Performance Goal 4 was added by evaluation team)

○ These performance goals that are based on derived performance indicators
are given below:

<Table 7> Performance Indicators and Measurement Methods of Mongolia NDC

Performance Goals	Performance Area	Performance Items	Performance Indicators	Measurement Method	Unit	Note
Integrated Management	Mission and Work	Administrative Services	Utilization rate of central government agencies	(The number of central government agencies using NDC/The number of entire central government agencies)x100	%	
	Process And activities	Utilization	Rate of space utilization	(Space that is used/Available Space)*100	%	
		Productivity	The number of used institutions per capita	The number of used institutions/IT professionals	Unit/Number of persons	
			The number of used institutions compared to budget	The number of used institutions/Budget	Unit/$	
	Human Resources	User	The number of participants in user training	The number of participants in user training	Number of persons	
	Associated Resources	Management System	Regulations about mandatory of using NDC	Check whether law that mandates government agencies to use NDC is made or not.	-	

Performance Goals	Performance Area	Performance Items	Performance Indicators	Measurement Method	Unit	Note
Maintaining Stability	Customer	Customer Satisfaction	Customer satisfaction measurement	Customer satisfaction surveys and interviews	Survey	
	Human Resources	Support Personnel	Retention of IT professionals	(The number of IT professionals/Total number of employees)*100	%	
	Associated Resources	Organizational Culture	Turnover of IT professionals	(Turnover IT professionals/IT professionals)*100	%	
	Information Technology	System Quality	Average voltage retention	(Actual supply voltage/specified voltage)*100	%	
Security	Process And activities	Security	Manual for information security incidents	Development of the corresponding manual whether it is about the information security incidents	-	
			Security spending ratio	(Cost of the security program/budget)*100	%	
	Human Resources	Support Personnel	Security training ratio	(Security training time/The entire training time)	%	

Note: ① Central government agency : A government agency where the Minister is a head of agency (14 institutions)
② Government agency : All government agencies, including central government agencies, local authorities (21 Aimag, 315 Sum)
③ Used institutions : Both government agencies and private institutions (Simple tasks like issuing domains, email accounts, etc. will be excluded from the organization which uses)

<Table 8> Performance Indicators and Measurement Methods of Mongolian Electronic Customs Clearance System

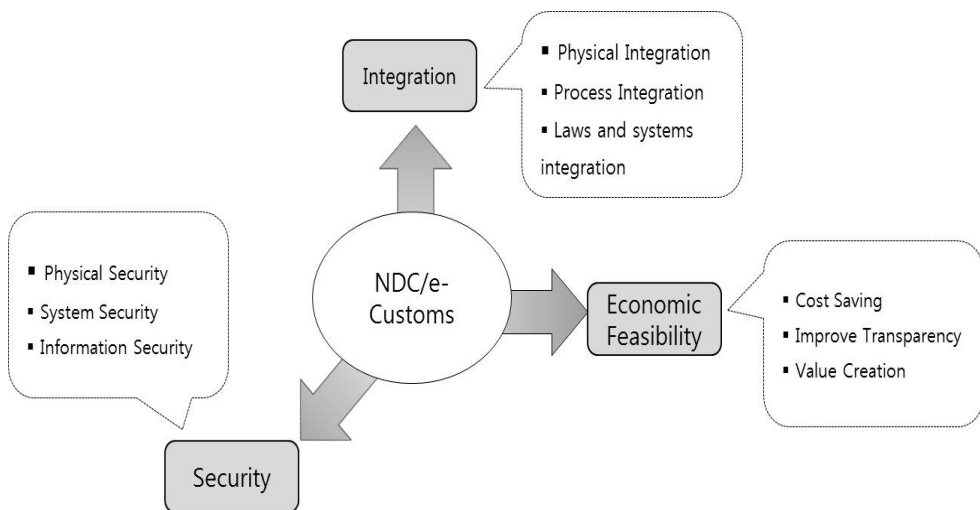| Performance Goals	Performance Area	Performance Items	Performance Indicators	Measurement Method	Unit	Note
Shorten the clearance time	Process and Activities	Productivity	Reduce rate of clearance time	[(Current clearance time - Previous clearance time)/ Previous clearance time]x100	%	
			Clearance data collection Reduce rate of collection time	[(Current collection time – Previous collection time)/ Previous collection time]x100	%	
		Work Quality	Efficiency of customs procedures	WEF (World Economic Forum) Efficiency index of customs procedures	-	

Performance Goals	Performance Area	Performance Items	Performance Indicators	Measurement Method	Unit	Note
Ensure the transparency of the administration	Customer	Customer Satisfaction	Customer satisfaction measurement	User satisfaction of the system	-	
Improving national competitiveness	Mission and Work	Administrative Services	Competitiveness Index of Customs Administration	WEF (World Economic Forum) Competitiveness Index of Customs Administration	-	
	Mission and Work	Administrative Services	Increase in tariffs and trade	Growth rate of customs revenue and trade volume	%	
Technology improvement of Electronic tariff	Human Resources	Support Personnel	Ratio of IT professionals	[(The number of IT professionals/The number of tax administration agent]*100	%	
	Associated Resources	Organizational Culture	Turnover rate of IT professionals	(The number of person out of work /The number of IT professionals)*100	%	

○ Integration, economics, and security were set as valuation criteria according to the evaluation of the Mongolian NDC Projects' survey.

- The integrated properties assessment criteria can be distinguished as physical integration, process integration, laws and institutional integration based on whether each government agency, which have unified with the e-Government systems and programs to the Government Integrated Data Center, are used or not.

- Economical ratings can be classified as cost savings, transparency, and value creation with the occurring economic effects that are decided by e-Government related projects.

- Security properties assessment criteria are determined how safe facilities and data are from hazards in order to realize the safe electronic government, which can be divided into physical security, system security, and information security.

○ The evaluations by the Mongolian e-customs' survey considers the enormous

character of the national service, and integration, economical, and security were set as valuation basis.

- Integrated properties assessment standards can be determined whether each service under the customs is unified as the used or not web-based Internet, and those standards can be divided into physical integration, process integration, and laws and institutional integration.

- Economical ratings through the electronic customs duties project can be classified as cost savings, transparency, and value creation for determining the arising economic effects.

- Security properties assessment standards are determined how safe the facilities and data are from hazards in order to realize the safe customs duties, which can be divided into physical security, system security, and information security.

<Figure 7> Evaluation Criteria for Survey of Mongolian NDC / e-customs Project

3. Evaluation Matrix

○ Evaluation categories can be drawn as follows according to the ratings of the ODA project area evaluation model:

- Evaluation categories for relevance can be sorted as demands of the recipient countries, donor country's assistance strategies, association with MDGs, and the process of projects.

- Evaluation categories for efficiency can be classified as utilization of human resources, budget reductions, and shortened periods.

- Evaluation categories for effectiveness can be classified as achievements of project objectives, customer satisfactions, and effective improvement activities.

- Evaluation categories for impact can be divided as a positive or a negative impact.

- Evaluation categories for sustainability can be classified as sustainable demands, social conditions, and technical levels.

- Evaluation categories for cross-cutting issues can be classified as environmental issues, gender equality issues, human rights violations, and governance realization.

○ E-Government performance areas of an evaluation model's assessment items can be drawn as follows:

- The mission and work of the evaluation items means to achieve the policy objectives of a project.

- Customer rating items can be divided into customer satisfaction, service levels, and the range of services.

- Evaluation of processes and activities can be divided into finance, productivity, work quality, and security.

- The evaluation of information technology can be distinguished as the qualities of a system, standards, information and data, and utilization.

- The evaluation of the human resources can be distinguished as users and

support staff.

- The evaluation of the associated resources can be divided as management systems and organizational cultures.

<Table 9> The Evaluation Matrix of NDC Project in Mongolia

Valuation Basis	Assessment Criteria	Question	Evaluation Indicator and Base	Research Methods
Relevance	Demand and conditions of recipient countries in ODA project	Were the policy demands for the NDC met in Mongolia?	Mongolian Government IT Policy	Literature
		Are the needs of Mongolia properly reflected in the NDC Project?	project requests, and implementing consultation report	Literature
		Do they have an organization that would promote an NDC Project of the Mongolian Government?	IT-related organizational chart of Mongolia Government	Literature
		Were there problems with the progress of the NDC Project of the Government of Mongolia?	Political situation of the Mongolian Government	Literature
		Was the informatization level of the Mongolian Government appropriate to promote the NDC Project?	Informatization level of the Mongolian Government	Literature
	Donor country's strategy of ODA project	Was the NDC Project consistent with the strategy of Korea's ODA support for Mongolia?	Korea's ODA support strategy	Literature
	Relevance between MDGs and ODA projects	Is the NDC Project relevant with MDGs?	project objectives/MDGs	Literature
	ODA process of the project	Was the NDC Project planning done properly?	Report(Validity research, implementing consultations)	Literature
		Was the implementation of the NDC Project properly done?	Midterm evaluation report	Literature
		Was the completion of the NDC Project done appropriately?	Final evaluation report	Literature

Valuation Basis	Assessment Criteria	Question	Evaluation Indicator and Base	Research Methods
Efficiency	Utilization of human resources in ODA project	Were NDC personnel who participated in the project utilized efficiently?	Report(Midterm evaluation, Final evaluation)	Literature
	Budget reductions of ODA project	Was the budget used effectively in the process of the NDC Project?	Report(Midterm evaluation, Final evaluation)	Literature
	Period shortening of the ODA project	Was the period efficiently used during the implemention process of NDC Project?	Report(Midterm evaluation, Final evaluation)	Literature
Effectiveness	Goals of ODA projects	Were buildings built to function as the NDC?	Related documents and buildings	Spot survey
		Was the equipment effectively provided for NDC to operating its system?	Related documents and products	Spot survey
		Were the experts dispatched effectively for NDC operation?	Relevant documents and interviews	Interview
		Were the contents of invitation training helpful for NDC operation?	Relevant documents and interviews	Interview
	Activities to improve the effectiveness of ODA project	What efforts have been done to increase the effectiveness of the NDC Project?	Relevant documents and interviews	Interview
	NDC's performance	How much did the central government agencies use the NDC?	Utilization rate of central government agencies	Data research
		How much did the NDC invest for security?	Security budget spending ratio	Data research
		Does NDC have an Information Security Incident Response Manual?	Information security incident Response Manual	Literature
		How much security-related training does the NDC staff get from NDC?*	Percentage of security training time	Data research
	Customer satisfaction of NDC	What's the degree of satisfaction of the government agencies using the electronic tariff?	Customer satisfaction measurement	Interview

<p style="text-align:center"><Table 9> continued</p>

Valuation Basis	Assessment Criteria	Question	Evaluation Indicator and Base	Research Methods
Influence	Positive impact of the NDC	What was the positive impact of the NDC Project?	Relevant documents and interviews	Interview
	Negative impact of the NDC	What was the negative impact of the NDC Project?	Relevant documents and interviews	Interview
Sustainability	Demand occurs in the NDC	How much demand for NDC has arisen?	Relevant documents and interviews	Interview
		How many students does the NDC user training class have?	The number of user training participants	Data research
	Effect of the support of the Government of Mongolia	Did the Mongolian Government lay the legal scheme to support the NDC?	Laws and policies of Mongolian Government	Interview
Cross-cutting issue	Environment / Gender equality / Human rights	Did the cross-cutting issues (Environmental issues, gender issues, human rights issues) occur due to the NDC project?	Relevant documents and interviews	Interview

* : These are questions of evaluation of model (PRM) for performance evaluation of e-Government

<p style="text-align:center"><Table 10> The Evaluation Matrix of e-customs Project in Mongolia</p>

Valuation basis	Assessment Criteria	Question	Evaluation Indicator and Base	Research Methods
Relevance	Demand and conditions of recipient countries in ODA project	Were the policy demands for the e-customs met in Mongolia?	Mongolian Government IT Policy	Literature
		Are the needs of Mongolia properly reflected in the e-customs project?	project requests, and implementing consultation report	Literature
		Did the customs have enough intention to pursue the project?	Recipient attitude of customs	Literature
	Donor country's strategy of ODA project	Was the e-customs Project consistent with the strategy of Korea's ODA support for Mongolia?	Korea's ODA support strategy	Literature
	Relevance between MDGs and ODA projects	Is the e-customs Project relevant with MDGs?	project objectives/MDGs	Literature

Valuation basis	Assessment Criteria	Question	Evaluation Indicator and Base	Research Methods
	ODA process of the project	Was the e-customs Project planning done properly?	Report(Feasibility study, implementing consultations)	Literature
		Was the implementation of the e-customs Project properly done?	Midterm evaluation report	Literature
		Was the completion of the e-customs Project done appropriately?	Final evaluation report	Literature
Efficiency	Budget reductions of ODA project	Was the budget efficiently used during the implementation process of the e-customs Project?	Report(Midterm evaluation, Final evaluation)	Literature
	Period shortening of the ODA project	Was the period efficiently used during the implementation process of the e-customs Project?	Report(Midterm evaluation, Final evaluation)	Literature
	Productivity and efficiency of e-customs	How much clearance time was saved by the electronic customs clearance system?*	Reduction rate of clearance time	Data research
		How much efficiency was improved by the electronic customs clearance system?	Customs procedures cost index (WEF)	Data research
Efficiency	The attainment of ODA project's goal	Did the system development of the e-customs Project meet the customer's requirements?	Related documents and buildings	Spot survey
		Was the equipment effectively provided for operating a system?	Related documents and products	Spot survey
		Were the experts dispatched effectively for system operation?	Relevant documents and interviews	Interview
		Were the contents of invitation training helpful for e-customs operation?	Relevant documents and interviews	Interview
	Activities to improve the effectiveness of ODA projects	What efforts have been done to increase the effectiveness of the e-customs Project?	Relevant documents and interviews	Interview
	Performance of e- Customs	How many tariffs and trade has been increased since the e-customs Project?	Tariffs and trade growth ratio	Data research

Valuation basis	Assessment Criteria	Question	Evaluation Indicator and Base	Research Methods
		Did the e-customs Project improve the competitiveness of the customs administration?	International Competitiveness Index (Customs Administration)	Data research
	Customer satisfaction of-e Customs	What's the degree of satisfaction of the user using the electronic tariff?	customer satisfaction measurement	Interview
Influence	Positive impact of e- Customs	What was the positive impact of the electronic customs project?	Relevant documents and interviews	Interview
	Negative impact of e- Customs	What was the negative impact of the electronic customs project?	Relevant documents and interviews	Interview
Sustainability	Related system improvements of e-customs	Have the logistics and administration systems which supported e-customs been improving?	Relevant documents and interviews	Interview
		How has the system maintenance associated with the e-Tariff system been doing?	Relevant documents and interviews	Interview
Cross-cutting issue	Environment / Gender equality / Human rights	Did cross-cutting issues (Environmental issues, gender issues, human rights issues) occur due to the e-customs Project?	Relevant documents and interviews	Interview

* : These are questions of evaluation of model (PRM) for performance evaluation of e-Government

4. Evaluation Methods

○ The ex-post evaluation was carried out through literature reviews, domestic and international interviews in a variety of ways, and was investigated based on the verified facts in a discrete way.

- However, there were difficult times for verifications of bibliographic data acquisition and fact relevance of the survey results due to the existence of the temporal differences between the project start-up time and ex-post

evaluation.

- In addition, there are also dependent sections of the parties that participated in the project process which did not meet subjective judgments of some of the key contributors.

A) Literature Reviews

○ The literature reviews from the research team started out writing the necessary bibliography in accordance with the evaluation purposes. As for domestic literature, data collection was formed through donor agencies and conducting project institutions while materials of the international institutions and agencies were collected by utilizing local experts for international literature.

○ The collected data will draw conclusions of the targeted project' characteristics, consider national characteristics through a literature survey and has conducted cross-examination on data reviews to confirm the facts.

○ In this study, literature reviews associated with project are divided into various artifacts, reviewing reports, and reviewing the many resources available for the evaluation of ODA projects.

○ Artifacts related to ODA projects and reports are as follows:
  - project letter of request
  - Project pre-feasibility study resulting report
  - Resulting report of project conduct consultations
  - Project implementation plan
  - project executive plan
  - Intermediate evaluation results report
  - project or project conclusion report
  - Conclusion evaluation results report
  - R/D (Record of Discussions)
  - PDM (Project Design Matrix)

○ ODA evaluation indicators and literature related to assessment methods are

as follows:

- 2011~2015 International Development Cooperation Basic Plans (2010)
- KOICA Development Cooperation Evaluation Guidelines (2008)
- Project Planning, Monitoring and Evaluation Methodologies (2009)
- Report on the Implementation of the Paris Declaration System Evaluation Studies for Aid Effectiveness (2009)
- Gender Impact Assessment (GIA) for Korea ODA Projects (2010)
- Assessment and Performance-based Management Glossary (2010)
- Human Resource Development in the Field of Official Development Assistance (ODA) Projects Efficiency Measures (2008)
- Effective Evaluation Report of an Invited project's Trainees (2010)
- Grant Aid Projects of Recipient Countries' Satisfaction Survey Results Report in Year 2011 (2011)
- KOICA Environment Mainstreaming Guidelines (2010)

○ Mongolian electronic government-related reports are as follows:
- E-Government Master Plan in Mongolia (2005)
- White Paper: Information and Communications Technology Development in Mongolia (2011)
- World E-Government Rankings (2011)
- Current Status of ICT Sector in Mongolia (2012)
- Mongolian Customs Modernization Project (2010)

B) Domestic Interviews

○ Domestic interview methods were conducted among project-related core stakeholders and proceeded as target selection → development of the interview questions → interview requests → interview conducted → organizing results.
- The necessary basic questions for evaluation purposes will be created, with advance preparation being allowed by notifying the interviewer, and the interview guidelines will be prepared and interviews were recorded.

○ Domestic interview's subjects and question contents are as follows.

<Table 11> A List of Domestic Interviewees

Classifications	Subject (Company)
Implementing agency of Mongolia NDC projects (PMC)	Kim, SooHyun (KT manager)
Implementing agency of Mongolia e-customs projects (PMC)	Lee, WonJae (Deloitteanjin Co.) Joo, ChungRyeon (KTNET External Relations Team Deputy) Yang, HeeChul (SK C & C Director)
E-Government Expert	Lee, WonJae (Deloitteanjin Co. Managing Director)
Invitation Expert	Lee, Eungju (NGN Korea Team Manager)

<Table 12> Major Questions for Domestic Interview

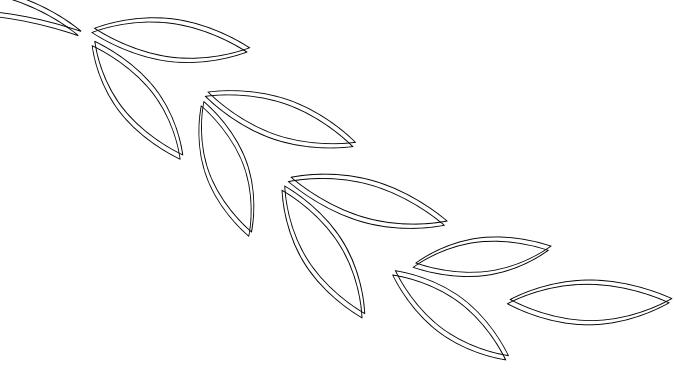| Target of Survey	Main Questions
Dispatching Experts	① Implementation background of the project, purpose, goal, ② Degree of support from recipient countries for projects (administration, institution, etc.) ③ The best part in the process of projects / difficult thing ④ Level of institution / recipient country / recipient agency satisfaction after the end of project ⑤ Expected outcome of recipient agency after completion of the project ⑥ Things to keep in mind when evaluating other project
Implementing Agency (PMC)	① Support request for project from recipient country / recipient agency ② Understanding the project details of the recipient agency participants ③ Degree of support from recipient countries for projects (work convenience, workforce, etc.) ④ The best part in the process of projects / difficult thing ⑤ Things to keep in mind when evaluating other project
E-Government Expert	① Status of the NDC in the Government of Mongolia ② Present construction situation of NDC of other countries ③ Key element for a successful deployment of the NDC ④ Mongolian NDC operational problems ⑤ Things to keep in mind when evaluating other NDC project
Invitation Expert	① IT expertise and attitude of the participants in inviting training ② Operating way of inviting training ③ Follow-up measures for the participants in inviting training ④ Improvement measure of inviting training

C) Field Research

○ The field research for visiting in Mongolia was scheduled from August 5th (Sunday) to August 10th (Friday) for the first round, and the second round was from October 17th (Wednesday) to October 20th (Saturday).
- The survey schedule and the principal investigator are as follows:

<Table 13> Schedule for Field Research

Classification	Date		Activities
1st Field Research	Sun, August 5	PM	Departure) Incheon -> Ulaanbaatar
	Mon, August 6	AM	Visit1) KOICA Mongolia Office
		PM	Visit2) National Data Center (NDC)
	Tues, August 7	AM	Visit3) Information and Communication Postal Service
		PM	Visit4) Stock market Visit5) Ministry of Finance
	Wed, August 8	AM	Visit6) Customs
		PM	Visit7) Ulaanbaatar Station Customs
	Thurs, Aug. 9	AM	Visit8) Genghis Khan Airport Customs
		PM	Visit9) National Registration Authority
	Fri, August 10	AM	Visit10) KOICA Mongolia Office
		PM	Arrival) Ulaanbaatar -> Incheon
2nd Field Research	Wed, October 17	PM	Departure) Incheon -> Ulaanbaatar
	Thurs, October 18	AM	Visit1) KOICA Mongolian Office
		PM	Visit2) National Data Center (NDC)
	Fri, October 19	AM	Visit3) National Supervision Committee
		PM	Visit3) Information and Communication Postal Service*Interview Failures
	Sat, October 20	AM	Interviews) KTNET
		PM	Arrival) Ulaanbaatar -> Incheon

<Table 14> Target Institutions and Questions in Field Research

Target Organization	Main Questions	Note
NDC/ Customs	Have project objectives (PDM) been achieved? Was the performance management from NDC / Customs made? Did the NDC / Customs have the appropriate operating personnel? Did the NDC / Customs have the appropriate operating budget?	
Mongolian Government Agencies and Related Organizations	Are you satisfied with the use of e-customs / NDC? What are the inconveniences due to the e-customs / NDC? Has the performance of the administrative work increased due to the electronic tariff? What are the improvements of the e-customs / NDC? What are some reasons for not using e-customs / NDC?	Information and Communication Postal Service Stock Exchange The Ministry of Finance Customs National Registration Office

Projects for Evaluation

III   Projects for Evaluation
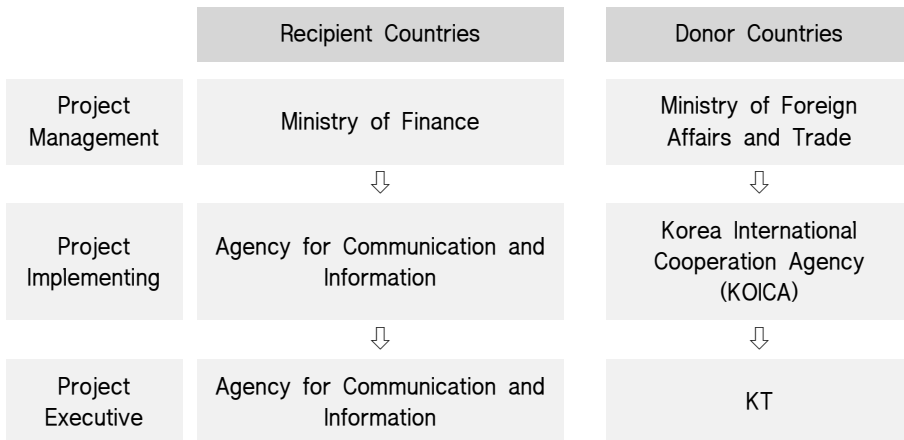
Section 1. Mongolian NDC Project

1) Background for Implementation of the Project

○ The Government of Mongolia established 22 detailed projects by creating a roadmap for e-Government construction and selected the Government Information Center Project's related project among the projects as a top priority.

○ This project has the purpose of meeting the demands of the ever-increasing e-Government system construction by building a government integration data center with the latest technologies, where the computing devices from each government departments and the newly built systems are thorough with integrated operations and management on which to construct the Pan Government network.

○ The Government of Mongolia requested the project to the Korean Government through the construction of the Mongolian Government Integrated Data Center with the server rooms, all-source situation rooms (ASSR), PR (public relations) departments, conference rooms, generator centers, UPS, thermohygrostats, and H/W, S/W, N/W computational-based environment construction centers.

2) Project Implementation System

○ Mongolian NDC project execution agencies of recipient country are as follows:
- Project Management: Ministry of Finance
- Project Implementing and Executive: Information & Communications Technology Authority[2]
○ And the agencies of the donor country in the project conduct system are as follows:
- Project Management: Ministry of Foreign Affairs and Trade
- Project Implementing: Korea International Cooperation Agency (KOICA)
- Project Executive: KT Corporation

<Figure 8> Implementation System for the NDC Project

	Recipient Countries	Donor Countries
Project Management	Ministry of Finance	Ministry of Foreign Affairs and Trade
	⇩	⇩
Project Implementing	Agency for Communication and Information	Korea International Cooperation Agency (KOICA)
	⇩	⇩
Project Executive	Agency for Communication and Information	KT

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2) It has been renamed the Information and Communication Postal Service

3) Overview of Evaluation Subjects

(A) Overview of the Mongolian NDC Project

○ Overview of the Mongolian NCD Project is as follows:
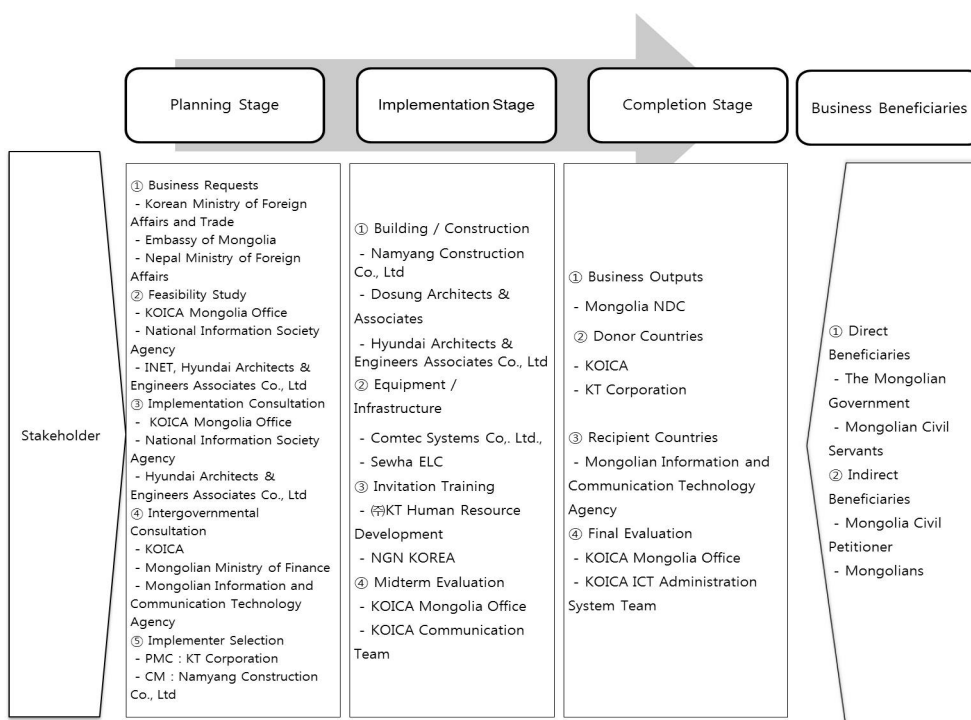
<Table 15> Overview of the Mongolian NDC Project

Classifications		Details
project Purpose		Building a national data center for implementation of e-Government Government-wide integrated management of computational resources
Burden of the two sides	Korea	Constructing a new building for NDC ($ 1,548,000) Providing facilities and equipment ($ 3,265,000) Inviting trainees ($ 102,000) Dispatching specialist ($ 150,000) Project Management ($ 135,000)
	Recipient Country	Providing building site and infrastructure for the construction, etc. $ 700,000
Project Area		Ulaanbaatar area
Scale/Term		$ 5,200,000 / for 3 years (2007~2009)
Beneficiaries		Government of Mongolia and the people
Expected Effects	Korea	Sharing advanced experience and technology in building integrated data center to enhance national image and as an IT powerhouse and establishing the foundation for advancing foreign market of domestic companies
	Recipient Country	Increased efficiency through resource integration management Improve the reliability and transparency of government through the establishment of e-Government system
Implementation Agency	Korea	Korea International Cooperation Agency (KOICA) / PMC : KT
	Recipient Country	ICTA

(B) Project Stakeholders

○ The stakeholders and beneficiaries of the Mongolian NDC Project are as follows:

- Project planning stage stakeholders: Ministry of Foreign Affairs and Trade in Korea, Mongolian Embassy of the Republic of Korea, Mongolian Ministry of Foreign Affairs, Mongolian Ministry of Finance, Mongolian Agency for Communication and Information, KOICA, Korean National Information Society Agency, Architects & Engineers Associates Co., Ltd, Comtec Systems Co., Ltd
- Project executive stage stakeholders: KT Corporation, Namyang Construction, Conductive Construction, Architects & Engineers Associates Co., Ltd, Comtec Systems Co., Ltd, Samwon-Tech Co. Ltd., KT Human Resource Development Center, NGN Korea, KOICA Mongolia office
- Project completion stage stakeholders: Mongolian NDC, KOICA, KT Corporation, Mongolian Information and Communications Technology Agency
- Project beneficiaries: Mongolian Government agencies, Mongolian officials, Mongolian civil petitions, Mongolian general public

<Figure 9> Stakeholders and Beneficiaries of the NDC Project

Section 2. Mongolian e-customs Project
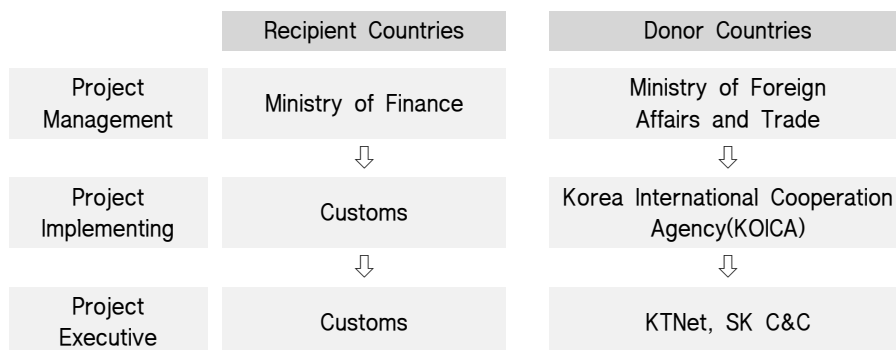
1) Background for Implementation of the Project

○ Mongolian Customs operated GAMAS, the self-developed customs administration system, but functional limitations were recognized in the configured GAMAS system, which is based on C/S (Client and Server). Thus, the expansion of the system and sophistication were needed for the appropriate customs clearance in international standards. In addition, the upgrade of the system was urgently needed due to the rapidly increasing trade volume for smooth processing of the increasing tariffs work.

○ Recognizing Korea's electronic customs clearance systems' excellence and requesting support for this project from the Korean Government.

○ In addition, the necessity was increased for the infrastructure integration of the world economy that aims for the trade infrastructure compositions for this project as a part of the Mongolian national development strategy.

○ The two countries' customs services hold the first Korea-Mongolia Commissioner of Customs Conference in Ulan Bator and the Korea-Mongolia Customs Mutual Assistance Agreement was concluded after the ongoing relationship evolved through this meeting in July, 1993.

○ The Mongolian Customs requested project promotion of ADB loans and KOICA grant aid in the form of co-financing, ever since the Mongolian Customs Administration modernization projects were promoted in the year 2003 by the Asian Development Bank (ADB) undersecretary.

2) Project Implementation System

○ The project performing agencies of the recipient countries are as follows:
  - Project Management: Ministry of Finance
  - Project Implementing and Executive: Mongolian Customs General Administration

○ The agencies of the donor countries are as follows:

  - Project Management: Ministry of Foreign Affairs and Trade

  - Project Implementing: Korea International Cooperation Agency

  - Project Executive: KT Net, SK C&C

<Figure 10> Implementation System for e-customs Project

	Recipient Countries	Donor Countries
Project Management	Ministry of Finance	Ministry of Foreign Affairs and Trade
	⇩	⇩
Project Implementing	Customs	Korea International Cooperation Agency(KOICA)
	⇩	⇩
Project Executive	Customs	KTNet, SK C&C

3) Overview of Evaluation Subject

(A) Overview of Mongolian e-customs Project

○ Overview of Mongolian e-customs Project is given below:

<Table 16> Overview of the Mongolian e-customs Project

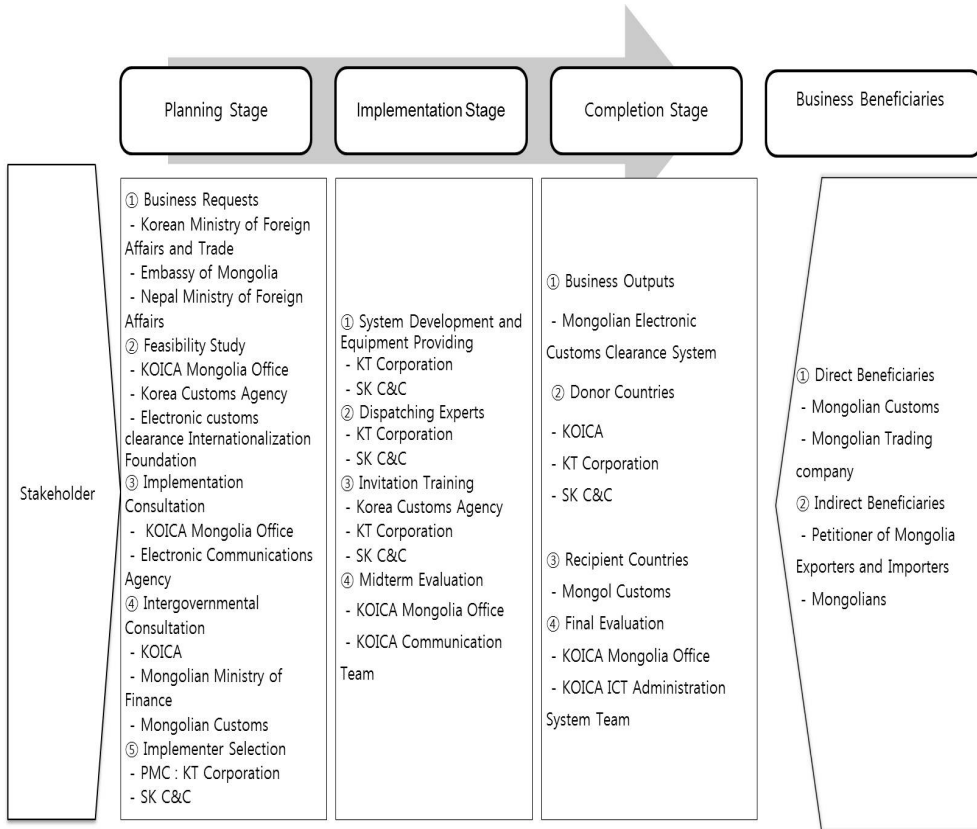| Classifications		Details
project Purpose		Contribute to the modernization of the Mongolian Customs Administration through analysis and building of Mongolian Customs's Tariff Administration information system and external linkage system
Burden of the two sides	Korea	Providing facilities and equipment ($ 450,000) System development ($ 1,821,000) Dispatching specialist ($ 134,000) Inviting trainees ($ 63,000) Misc. ($ 32,000)
	Recipient Country	Equipment transportation, duty-free costs, office and fixtures support

Classifications		Details
Project Area		Ulaanbaatar area
Scale/Term		2,500,000 / 2 years (2008~2009)
Beneficiaries		Mongolian Customs and the Ministry of Finance Mongolian Customs Visitors, Mongolian enterprises and foreign enterprises, government-related agencies
Expected Effects	Korea	Promote friendship and cooperation, and customs administration system export, and establishing the foundation for advancing the foreign market of domestic companies
	Recipient Country	Shorten the clearance time due to the customs administration information system, Enhance the transparency of the administration Enhancement of Mongolia's national competitiveness through modernization of customs administration
Implementation Agency	Korea	Korea International Cooperation Agency (KOICA) / PMC : KT NET, SK C&C
	Recipient Country	Customs (Mongolian Customs General Administration)

(B) Project Stakeholders

○ Stakeholders and beneficiaries of the Mongolian e-customs Project are as follows:

- Stakeholders of project planning stage : Ministry of Foreign Affairs and Trade of Korea, Embassy of the Mongolian People's Republic in Korea, the Ministry of Foreign Affairs of Mongolia, Mongolian Ministry of Finance, Mongolia Customs, KOICA, Electronic Customs Clearance Internationalization Foundation

- Stakeholders of project implementation stage : KTNet, SK C&C, Korea Customs Agency, KOICA Mongolia Office

- Stakeholders of project completion stage : Mongolian NDC, KOICA, KT Corporation, Mongolian Information and Communication Technology Agency

- Beneficiaries of project : The Mongolian Government, Mongolian Civil

Servants, Mongolian Civil Petitioner, Mongolians

<Figure 11> Stakeholders and Beneficiaries of the e-customs Project

Planning Stage	Implementation Stage	Completion Stage	Business Beneficiaries
Stakeholder			
① Business Requests - Korean Ministry of Foreign Affairs and Trade - Embassy of Mongolia - Nepal Ministry of Foreign Affairs ② Feasibility Study - KOICA Mongolia Office - Korea Customs Agency - Electronic customs clearance Internationalization Foundation ③ Implementation Consultation - KOICA Mongolia Office - Electronic Communications Agency ④ Intergovernmental Consultation - KOICA - Mongolian Ministry of Finance - Mongolian Customs ⑤ Implementer Selection - PMC : KT Corporation - SK C&C	① System Development and Equipment Providing - KT Corporation - SK C&C ② Dispatching Experts - KT Corporation - SK C&C ③ Invitation Training - Korea Customs Agency - KT Corporation - SK C&C ④ Midterm Evaluation - KOICA Mongolia Office - KOICA Communication Team	① Business Outputs - Mongolian Electronic Customs Clearance System ② Donor Countries - KOICA - KT Corporation - SK C&C ③ Recipient Countries - Mongol Customs ④ Final Evaluation - KOICA Mongolia Office - KOICA ICT Administration System Team	① Direct Beneficiaries - Mongolian Customs - Mongolian Trading company ② Indirect Beneficiaries - Petitioner of Mongolia Exporters and Importers - Mongolians

Major Findings and Evaluation Results

IV Major Findings and Evaluation Results

Section 1. Mongolian NDC Project

1) Relevance

(A) Demands and Conditions of ODA Project Recipient Country

○ The need for the establishment of the NDC was highlighted in terms of the various e-Government projects that were proceeding in each department according to Mongolia's e-Government Master Plan, which actively began in the year 2000.

  - The Mongolian Government showed high interests in improving its governance through the establishment of e-Government; These plans and wills are available at KIPA (Software Foundation, Information and Communication Industry Promotion Agency) in South Korea and completed at "e-Mongolia Master Plan (e-GMP) 2005~2010."

  - The Mongolian Government established 22 detailed projects using the e-GMP Roadmap and the Government Information Center Project was selected among the top priorities as the associated projects of government information systems.

According to the e-Government Master Plan, NDC's buildings were setting up as e-Government-based project between the years 2007 and 2009 from G2G services. See figures 12 and 13 below.

<Figure 12> Mongolian e-GMP

Total (22 +3)	Phase 1: Improvement in Fundamentals			Phase 2: Enhancement of Realization		
	2005	2006	2007	2008	2009	2010
G2C (4)			Government Representative Portal Real estate Registration System	Social Insurance System Passport Registration System		
G2B (5)		e-Customs	Business Registration and Approval Management system Intellectual Property Management System	e-Procurement	Recruitment and Employment Information system	
G2G (7)	NID (National Identification) System	e-Tax Integrated Gov't-wide Information System	Administration Portal (e-Approval, KM, e-Document) EA (Enterprise Architecture) Immigration Management System	e-Educational Administration System		
Infrastructure (6)		Enhancement of ICT Organization National Unified Code System Development	Establishment of Basic Act & Gradual Improvement in Law/Institution Development of ICT Literacy and HRD Program Information Protection System	Expansion of ICT Resource (back-bone, Internet Facility, NDC)		

Source : e-Government Master Plan in Mongolia, 2005, pⅣ-8, KIPA

○ Over the past few years, the Mongolian Government put a lot of effort into the improvement of governance through e-Government projects and the rankings from the UN e-Government also increased significantly among Mongolia's recent high economic growth.

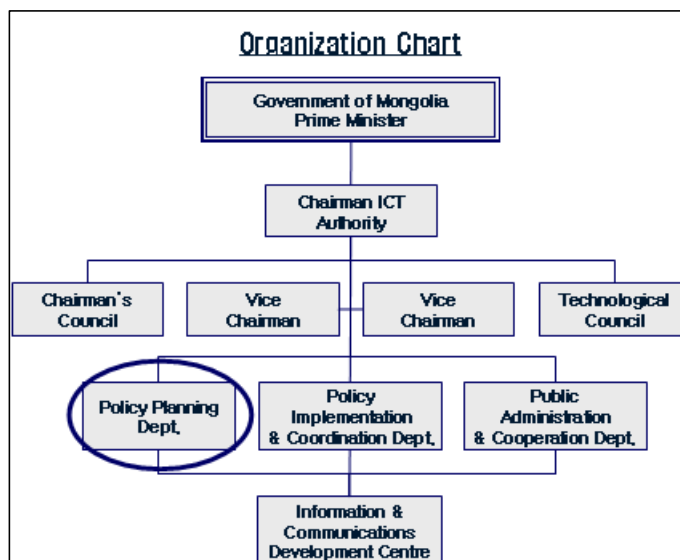<Figure 13> A Conceptual Framework for Basic Development of the Mongolian e-Government

Source : ICTA & KIPA 2005, e-Government Master Plan in Mongolia, p. 349.

○ The Government of Mongolia requested a total of $590 million (520 million in Korean won, 70 million in Mongolian dollars) for the construction of the GIC (Government Information Center)[3] to the Government of South Korea through the Project Proposal on October 4, 2005.

- After the feasibility study in November 2006 and Mongolia's requests[4] were adequately reflected during the process of the conducted consultation in July 2007, the construction groundbreaking ceremony was held on May 22, 2008.

- However, there was a temporal difference of 2 years and 7 months that occurred between the time of submitting the letter of request for project from the Mongolian Government and the starting time of the construction. This was originally organized under the inflation of prices, which became a fluctuation factor of the working expenses.

○ The ministries who oversee the ODA project in Mongolia was the Ministry of Finance, and there was the ICTA (Information & Communications Technology Authority) at that time as an organization to pursue NDC construction, equipped with a propulsion system for the government integrated data center project as figure 14 shows below.

- The Mongolian International Center for Technology Assessment (ICTA) is the core department overseeing the ICT Policy of the Government of Mongolia, but policies coordinating functions are considered to be vulnerable due to lower status within the government, and no construction professionals inside ICTA makes construction problems.

- project premises were changed as a result of a claim of local projects' ownership of land in NDC Project's initial site selection process.

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3) GIC refers to the Government Integrated Data Center and unified into NDC after the project was completed as a requested project designation during the initial times of a project in Mongolia.

4) Mongolia's request was stable and reliable as operating information resources were a redundant investment prevention due to building government's individual data center, and technical skills improvement of IT-related manpower and reinforcement specialization.

<Figure 14> Organization Chart of the Mongolian Information and
Communication Agency (November 2006)

Source : Mongolian NDC Project Conducted Consultation Report, p20

○ Protests against election frauds and emergencies have occurred after conducted Mongolian parliamentary elections, but Mongolian political situations were stabilized and fundamental change situations that affect NDC project did not occur at the end of June 2008.

○ The Mongolian Government was progressing e-Government-related project steadily during the Mongolian NDC Project, so NDC's availability is expected to increase.

- According to the data in August 2007, the Mongolian Government departments and main agencies planed to transfer their server to NDC before 2012.[5]

(B) ODA Strategy of Donor Country

○ Mongolia is assigned for KOICA's IT partner countries, so the NDC project meet donor country's aid strategy priorities.

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5) However, most projects did not proceed during the survey period according to the plan.

(C) Relevance between ODA Project and MDGs

○ NDC project is related with the global partnership for development, the 8th goal among the MDGs.

○ NDC project started with MDGs, but there is a little bit of difference between the goals and the project in detail.

- In other words, the NDC project does not give direct influence on achieving MDGs targets, but contributed to the attainment of the MDGs in the long term, by improving the governance through the realization of e-Government, information diffusion, information and communications educational training, etc.

(D) ODA Project Progress

○ NDC has raised the issue of non-compliance of the construction standards with ground subsidence due to the lack of preparation for the project planning stage's geological survey and local building laws.

- The price instability was caused by emergency declaration in July 2008 during NDC construction and the Beijing Olympic Games, causing boom of China's construction markets has relatively resulted in Mongolia's architectural markets to shrink.

- Despite these practical challenges, projects were completed by an increase of only about 2.2 billion won, while reflecting on the design changes and the agency's additional requests.

○ Ever since foundation ground effects occurred and the cracks on the wall inside the building had been revealed from a specialized company (reconstruction) after the completion of NDC's buildings in July 2009, defect repair was carried out from August to October 2010 along with a 2 year warranty period for the future buildings, and the repair has received a completion inspection letter from the National Professional Auditing

Management Administration's Pre-delivery Inspection Committee on November 2, 2010.[6]

○ The ex-post evaluations verified the opposing claims about NDC Project completions between institutions and donor agencies in the field research process.

- The current NDC, related to buildings, received defect repair from the contractors about the encountered various problems; however, the same problems occurred again and they appealed for being inconvenienced as to use, seeing how they were recognized as at a serious level.[7]

- The national professional audit committee is aware of having not adequately considered the flooding and climate conditions in Mongolia during NDC building's course of construction as well as insisted in taking actions to prevent use of the buildings if identical problems occur continuously in the future.[8] And the Mongolian National Professional Audit Committee expresses their position to identify the problems and that reinforcement work should be carried out for the proper use of the NDC through precise diagnostics of the buildings.

- On the other hand, defect repair was properly done within the A/S period while experts of Mongolia submitted their written opinions that stated that this matter of the current problems may have occurred within the tolerance range of the National Professional Audit Management Agency according to the donor countries' agency.[9] Both PMC and KOICA officials wrote in their reports that raised issues in May 2010, while the completion inspection took place in November 2010 and described that all precautions

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6) Both KOICA and KT are responsible for the occurring NDC building repairs due to faulty workmanship according to the meeting record of the pre-parties for pre-delivery inspections. It is also expressed that after the 2 year warranty period the KOICA hopes to give support at the time of the occurrence for future large problems of the buildings.
(KOICA meeting record, November 1, 2010)

7) NDC recognize the problem of the cracks on the walls as the problem of the foundation soil; on the other hand, contractors recognize them as a simple problem that is unrelated to the foundation soil.

8) Interview that KOICA experts dispatched to the NDC (Second field research)

9) Interview that KOICA experts dispatched to the NDC (Second field research)

have been processed with completion inspection authorization.

- The disputed portion of the development collaboration between Korea and Mongolia alone is something that could give distrust in the future. Therefore, the construction-related professional investigators accredited to Mongolia's progress suggest the need for further investigation and regained trust.

2) Efficiency

(A) ODA Project's Human Resources Efficient Utilization

○ The invested construction sector's professionals in the NDC Project did not have enough understanding of the construction of the Mongolian local environment or relevant laws and regulations and it was evaluated as somewhat inefficient in terms of operating.

- NDC Project's construction and companies who were responsible for the construction in Mongolia can be classified as Korean companies that have no field experience by the PMC, but this general level of effort would not have been attempted if the encountered problems were considered afterwards by Mongolia's architectural experience in the construction sector through the recruitment of great professional manpower or outsourcing, including taking the countermeasures that were necessary.

- Mongolia's construction-related laws and regulations are expressly different from the regulations in Russia, and despite the different regulations of the Russian Federation the dispatched construction professionals in Korea lacked background regarding these issues. Countermeasures were not prepared in order to compensate.[10]

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10) NDC interview

(B) Efficiency of Budget Spending

○ The Mongolian NDC Project had a lot of fluctuation factors for projected costs in the process of its projects, yet the project was relatively efficient and able to finish with only a small increase.

- Especially in the project start-up phase, there was chaos in the declaration of martial law, increase in raw material prices because of the Beijing Olympic Games, exchange rates from the financial crisis and the rising factors for the various working expenses, which occurred after Mongolia's parliamentary elections. There were also design changes, the additional requests from institutions, and the rise of construction costs as well, yet the amount of increase of only about 2.2 billion won can be evaluated as a significantly higher rate of efficiency in using project budgets.

○ On the other hand, it was considered as somewhat inefficient in aspects of the budget preparation input ratios within the working expense distribution.

- The investment expenses on architectural design and construction were less than the budgets, while the output (buildings) showed a limit that do not exactly meet the customers' expectations, although the commitment is more than the budgets on the project management part. On the other hand, there was a problem with the calculation (project management) in that it did not function properly. The point that the budgets preparation investment expenses of project management items is 371.1%, is because it deals with the cost prediction related to inaccuracies and can be considered as a range that can be accepted beyond the figures.

- The itemized working expense budgets and the severe deviation of the ratio that relates to the actual investment expenses can be the distribution of inefficiencies,

<div align="center"><Table 17> Budgets and Actual Expenditure for NDC</div>

<div align="right">(Unit: Million dollars,%)</div>

Classifications	Budget (a)	Investment Expenses (b)	Ratio (b/a)
Architectural designs and construction	221.2	160.9	72.7%
Major utility services	118.6	147.1	124.0%
Equipment supports	131.5	123.9	94.2%
Dispatch of experts	17.9	13.7	76.5%
Invited training	17.3	19.9	115.0%
Project management	13.5	50.1	371.1%
Total	520.0	515.6	99.2%

Source : Mongolian NDC Project Finished Assessment Report

(C) Shortened Period of ODA Project

○ The actual construction of the Mongolian NDC Project was stated in the document as completed at the three-quarters of the year 2009, but completed inspection was accomplished in November 2010. Judging from these facts, it is clear that the project period was a little late. The project period was shorter on paper, but it can be considered that the project period was actually lengthened since the time the building received completed permission was in November 2010.

- According to the plan of the project, the project was expected to start from the third quarter of 2007 and complete in the fourth quarter of 2009. But, according to the final evaluation report, the project started from the third quarter of 2007 and completed in the fourth quarter of 2009.

- But it has not been determined that the delay of completion caused a serious disruption in the operation of the NDC.
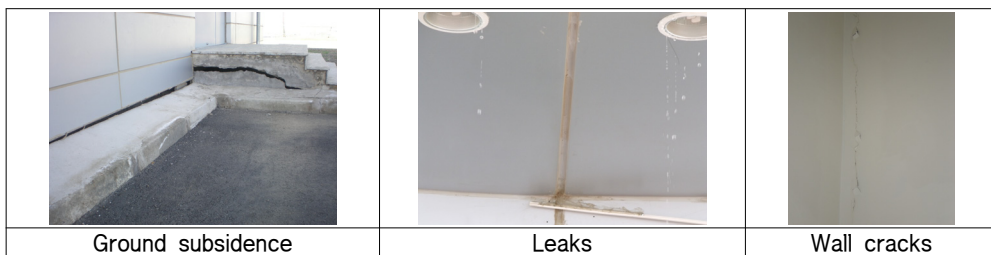
3) Effectiveness

○ Given the current status of Mongolian e-Government and the active policies, constructing the NDC seems to be relevant and on time. But the effectiveness may not be readily measurable due to the lack of performance indicators especially in quantitative forms. Qualitative indicators were not set at the beginning of the project either.

- The purpose of Mongolian NDC projects is described as "provide the infrastructure for the realization of e-Government in Mongolia," but setting project goals as an non-quantitative indicator with the Government Integration Center's (e-government) basic plan and standard operating guide causes difficulties to objective effectiveness measurements.

(A) Achievement of Goals for ODA Project

○ Although there were leaks in buildings and unsatisfactory cracks, PMC did appropriate follow-up actions among the achievements of this project. However, the conflicting claims of agencies, national professional audit management agencies, donor agencies, and PMC's side requires finding an objective verification and solution for this problem as previously mentioned.

<Figure 15> Cracks and Leaks Claimed by NDC Before the Repair done in June 2012

| Ground subsidence | Leaks | Wall cracks |

Source : Mongolian NDC offers (Taken at August 9, 2011)

○ The provided materials, with a total of 32 items, were installed perfectly

according to the original plan in the Mongolian NDC; however, there are some problems for some products.

- There were problems especially with a large number of PC monitors when they were replaced and some parts had been neglected in a broken condition even in the ex-post evaluation period.
- The monitors with problems were all replaced during the period of post-management; however, the same types of problems have occurred with other monitors afterwards.[11]

○ Experts dispatched from KOICA faithfully performed the duties and NDC are generally satisfied with the effects of them.

- There were two system experts and two security professionals dispatched. The ex-post evaluation showed that the institutions prepared thoroughly in advance before the experts were dispatched and it was investigated that they are satisfied about their activities as well.

○ The educational contents and the training period of the training needs to be improved.

- 10 people were chosen among the staff that will join the NDC and get trained: 2 for management (2 weeks), 2 for security (2 weeks), 4 for systems (4 weeks), 2 for infrastructure (4 weeks).
- The education contents were appropriate to obtain general understanding and basic knowledge; however, there were a lot of classes were about theories and field experience was insufficient.
- The training period was especially short; appropriate human resource development (certifications, etc.) may need at least 2-3 months in the data center operations.
- However, it is not just a matter of budget, and cautious approach would be necessary because it would be difficult for Mongolian government to send public officials for such a long time.

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11) For the reason that the same problems occurred in a large number of monitors is due to defects in the product itself.

(B) Activities to Improve the Effectiveness of ODA Project

○ Here are some factors for improving the effectiveness and minimizing risks for NDC projects.
  - The NDC is in the middle of promotional activities for server inducement at institutions other than government agencies, where a server is not required. In addition, the NDC is trying to be in charge of the institutions' server management through its own servers that have law revision for agencies that have a separate or additional server.
  - They have held regular seminars, forums, and education in which an IT specialist shared the latest technological trends and they are helping the NDC promote its role among other things.
○ Acquiring confidence as a unified data center, adding broadband access and additional mechanical equipment is being planned.

(C) NDC's Security

○ The NDC had physical security in place so that the evaluation team was unable to open the server room. Thus, the evaluation team could not confirm security equipment or programs. This excessive security was negative from the perspective of agencies of the NDC.
  - However, dispatched experts of KOICA said that MNDC had not properly purchased the latest cyber security equipment and programs due to cost issues.

(D) Customer Satisfaction of NDC

○ A customer satisfaction survey for the NDC has not been done.
  - During the ex-post evaluation period, analysis of the NDC through the on-site interviews and surveys for government agencies found that
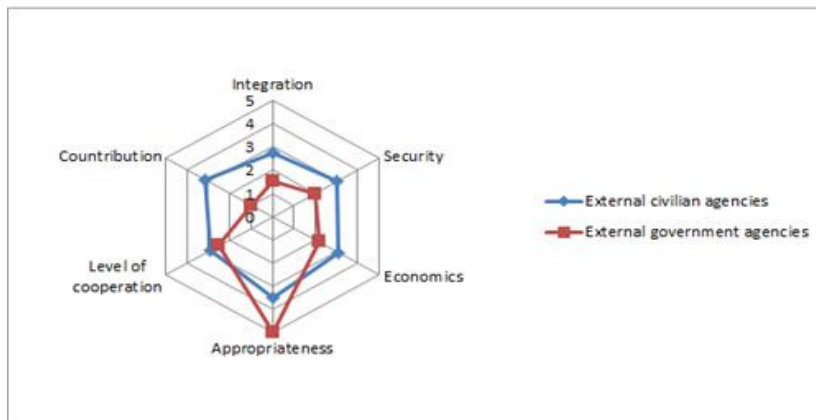
satisfaction is generally low.

- The research showed that reasons for low customer satisfaction of the NDC are low status, low reliability to members, physical distance from the NDC, excessive access control and so on.

○ Mongolian NDC's excessive emphasis on physical security is becoming a cause for lowering utilization.

- The government agencies that are using the local NDC also complained of the limited access due to the use of excessive security.

- The departments that use the buildings and the departments that control building are different from each other, and the departments that control the buildings are national intelligence services.

- NDC is in a situation as being national infrastructure, in which it has characteristics within the government service agencies, require operating manual improvements of the adjusted Mongolian Government and directly determine the required personalities of the issues in donor agencies.

○ There is negative feedback about the use of the NDC seeing how the location of the Mongolian NDC is far in distance from the main government institutions.

- Physical distance occurred when the Mongolian NDC was installed on the outskirts of the city and it is becoming a reason for government agencies to reject the use of the NDC.

○ For the reason that the Mongolian NDC is reserving the most excellent facilities and equipment in Mongolia, the government agencies stated that it could be an important factor in the earlier systems of NDC. Some government agencies' information representative stated that the NDC is not reliable because it is composed of contract public officials.

○ The interview results of the field study are given below:

- The National Registration Authority utilized the NDC for the management of the voters in the past general elections; however, it was testified that costs incurred and work productivity degradation and administration

services quality degradation had occurred seeing how it was difficult to access.

- The Ministry of Finance regards the reliability of the NDC as low and did not feel its effects that much, while the Ministry of Finance maintains its own server rooms.

- The stock exchange, a private agencies, located its backup servers in the NDC and pay the monthly fees. At the moment, the man who is in charge of this said that he is satisfied with NDC's service, yet complained about the excessive access controls in September 2011.

○ The surveyed contents for visiting agency's representatives during the field study are given below in figure 16.

<Figure 16> Survey Results on NDC

- The collected surveys from a employee of the Ministry of Finance and National Registration Department, and 4 employees of the stock exchange were analyzed. Because the number of personnel who participated in the survey was less than the initially expected number, results should be accepted in a limited sense.[12]

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12) The reason why the respondents of the survey have few opinions is due to the recipient countries that have the national characteristics of socialism (excessive departmental egoism). Even organizations like the NDC used the reason that they are a state agency to express that it is possible for leaking from outside if the general data they hold must be approved by the top organizations that relate to information security.

- The surveys are as follows: Integration (server, data, project processes, organization, budget, laws and institutions), security (physical security, system security, and information security), economics (budget savings, increased efficiency, and value creation), relevance (consideration of e-Government development, consideration of Mongolian development priority), the degree of cooperation (participation of Mongolian stakeholders, bilateral stakeholder participation), contribution (e-Government, IT industry, economic development).
- 5 points Likert scale was used for a total of 19 questions, and the respondents were able to respond freely to semi-structured questions.
- Private institutions are more appreciated than the external government agencies, except for their relevance to the NDC,
- Government agency officials gave the lowest point in the section of contribution. Although they agreed with the thought that the NDC is an e-Government-based project, they also suggest substantial contribution will be low if there is not much more interest in the IT sector at the national level.

4) Impact

○ The NDC project as the core project of the Mongolian electronic government gave a positive impact while it was invigorating other nations or ADB's international organizations of IT supports as project.
- Promoted e-Government projects are confirmed while the NDC was the primary management authority for this program in April 2012, and is expected to enter the top 10 in Asia before the year 2016 according to plan if it proceeds.
○ Awareness on the data center has been increasing through promotional activities by inviting the government ministries of IT representatives in order to attract the recent servers. However, there are somewhat reluctant atmosphere among government organizations due to the unstable status of NDC officials.

○ The professionals of the IT industry in public sectors have activated exchanges through seminars, forums, education, etc. and the Government of Mongolia's informatization minds have improved after the NDC established itself through them.

○ By establishing Mongolia's private enterprise data center, the awareness about the importance of the data center has improved.

○ There were concerns of each government institutions' IT workforce reductions according to the Mongolian NDC establishment.

  - However, there are no investigated materials showing whether these concerns became real after the NDC was established.

5) Sustainability

(A) Demands for NDC

○ Mongolia has a large number of projects that are proceeding slowly in respect of e-Government, expecting the utilization of the NDC will increase in the future.

  - However, the Government of Mongolia, ICTPA, and the partnership between the competent departments' own systems found that the ICT propulsion system does not function properly for determining the relationship between the ongoing new projects and the NDC.

  - For having servers among 3500 government agencies, only 300 servers of the government agencies have been secured among 1,000 estimated government agencies.[13]

○ The Ministry of Finance and Customs has been operating a significant amount of servers independently, and ICTPA does not have the power and momentum that can integrate these into NDC.

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13) The currently 3,500 government agencies in August 2012 of the server does not have about 70% of the authority.

○ Approximately 11 intelligence agencies with a high level of informatization and holing its own servers do not participate in integrated management, and among these, two are linked together with NDC.

○ The supporting e-procurement systems of the server in the current KOICA with the addition of managing on their own are scheduled from the Ministry of Finance and expected to leave the backup server to NDC.

  - The Ministry of Finance pointed out that these are because of the incomplete legal environment, but they in fact wanted to hold the rights of the management server consistently.

  - In addition, the organizations that relate to the Public Procurement Service (PPS) within information and communication systems, have configured and will decide matters on their own after those organizations have configured.

○ The Mongolian NDC is conducting IT education through its own superintendent that is periodically targeting central and local government officials, making it quite possible that the efforts to increase the sustainability of the NDC have raised significantly.

(B) NDC Organizational Capabilities

○ NDC organization's legal status is low, and their employees are not civil servants.[14]

○ The low status of both the organization and employees' loyalty has been acting as a barriers to the activation of the NDC.

  - They can be regime replacers, yet both the director and deputy director did not come to work even though their long vacation has ended.[15]

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14) An evaluation related to the PRM model's 'human resources' area, which is the e-Government performance evaluation model.

15) The Associate Director was interviewed in the second field research, but the manager waited for a long time despite the fact that he or she was able to meet.

(C) The Supporting Systems of the Mongolian Government

○ The most important high-ranked agency in the Mongolian NDC management system is the ICTPA, which is responsible for managing the implementation of government policy areas of IT in Mongolia, policy adjustments, consultations, etc.

○ ICTPA failed to perform important roles in NDC's sustainability even though it is the top-level Mongolian organization which is responsible for coordinating ICT and e-Government policies.

○ The Government of Mongolia confirmed the new e-Government projects in April 2012 with the new NDC competent authorities.

  - According to this plan, the aim is to raise the level of Mongolian's e-Government to the top 10 in Asia by 2016 and the NDC will be able to obtain trust through the Government of Mongolia's active support as Mongolia's general data center.

○ The support laws of the Mongolian NDC were prepared; however, they were not implemented by the government agencies. The use of the NDC is mandatory according to the constituted National Registration Framework Act of 2010, but is refused by each government institution.

○ There is not enough capacity in the government departments in Mongolia to oversee the information from the entire country's e-Government.

  - According to the field study of the ex-post evaluation, Mongolia's current source applications oversee the entire country's information plan, but it was found that their rights and roles were investigated for being insignificant.

6) Cross-Cutting Issues

○ Interagency data exchange and integration that were involved in the project will be gradually increasing as a result of the NDC project. Thus, contribution

to the environmental aspects of energy savings will be expected due to reducing unnecessary physical movements and leaving the server room separate.

○ In addition, government's IT awareness, women, people with disabilities, including minorities' government activity participation, will be expected to increase in the long term through the diffusion of e-Government infrastructures after the NDC's establishment.

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■ Section 2. Mongolian e-customs Project

1) Relevance

(A) Demands and Conditions of ODA Project Recipient Country

○ In 2007, the Mongolian Customs requested for support for the e-customs Project.
  - Mongolian Customs was operating a self-developed customs administration system (referred to hereafter GAMAS), but there was a functional limitation because of its Client & Server-based system. Thus, they had been promoting an extension and advancement of a system for a smooth process of tariffs works that will be increased in the future.[16]

○ Also, Mongolian Customs' vision to modernize customs administration in the global economic environment was actively set to cope with the realization of the e-customs and Mongolian electronic tariff project matched with the demand as development of the electronic customs systems were needed from the recipient countries for this purpose.
  - New systems were built into the e-customs Project that can be considered

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16) Content of interview with customs officials during project requisition form, post evaluation for field research.

a modernization of customs administration because it has online-based risk management and much more.

○ In May 2007, an e-Government project for modernizing Mongolian Customs was requested by the Mongolia Government with a budget of $2 million US dollars.

- The project started in June 2008 and the agreement between the two countries occurred in April 2007 through exchange after the pre-feasibility study in July 2007.

○ Meanwhile, Mongolia signed a contract, which it proposes to KOICA and ADB's parallel-financing and distinguishes each support services for its electronic customs duties construction.

<Table 18> Project Division between KOICA and ADB for the Project

KOICA's Sphere of Project	ADB's Sphere of Project
① Equipment related to the customs administration systems ② External connection system construction-related equipment	① Outside of the portal building ② Development of integrated information system ③ Providing other materials

Source : Conducted Consultation Results Report

○ While Mongolian Customs operated the existing GAMAS, customs officers, licensed customs agents, forwarders, brokers, etc. acquired the basic knowledge about operating computerized systems and basic IT infrastructure and human resources were in a secured condition for constructing electronic tariff clearance systems.

- In particular, thermohygrostat and UPS (Uninterrupted Power Supply) have been confirmed to accommodate enough positions for even the burdens on Mongolian side as being its own computer room equipment in Mongolian Customs.[17]

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17) KOICA Information Communication Team (2008), Mongolian e-customs Project implementation plan (draft), 2008,03, p4.

(B) ODA Strategy of Donor Country[18]

○ Since the Mongolian electronic customs duties construction used to be a project of the IT sector along with the Mongolian NDC Project, the donor country's support strategy of the e-customs project can be the same with that of the NDC project.

(C) Relevance between ODA Project and MDGs[19]

○ Since the Mongolian e-customs project used to be a project of the IT sector along with the Mongolian NDC Project, MDGs relevance of the e-customs project can be the same with that of the NDC project.

(D) ODA Project Progress

○ Mongolian e-customs project has complied with project requisition form submission, feasibility study, conducted group dispatch, and general procedures in ODA projects, while priorities were supported in the project planning process for detailed project information.
  - Mongolian Customs originally demanded for equipment redundancy, search engines, ITS equipment, and SMS/NMS; however, priorities were supported by considering the challenges of the importance and urgency of the fully supported scale.
  - In other words, provide high-priority equipment redundancy, SMS/NMS, ITS equipment (rack, monitor sharing system) right away, while the low-priority external linked servers combine the two, and some ITS equipment (thermohygrostat, UPS) that have low efficiency search engines and secured internal budgets are going to be excluded from the project.[20]

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18) e-customs duties project strategy of donor countries is identical as NDC Project.
19) e-customs Project relevance of the MDGs is the same as NDC Project.
20) Report of actual consultation for Mongolia e-customs Project

○ Mongolian electronic tariffs building project conducted the entire project cost using the Parallel Financing method that was supported from both KOICA and the ADB. As a result, financial risk occurs when a single agency support was distributed. In addition, the two supporting agencies chose the same projects (KTNet) as implementing agencies to resolve communication problems occurring in the separation of the supporting agencies.

 - A cooperative relationship other than financial assistance between the two supporting agencies has not been made although joint support for the same projects has been made and it was unclear whether errors that occurred from the course of operation were included or not in supported ranges of any agency after system deployment.

○ The Mongolian e-customs Project decided to carry forward using the Parallel Financing method with ADB, and the MOU conclusion has started between the parties (KOICA, ADB, the Government of Mongolia) in February 2008. In this process, the embarking point was somewhat more delayed than what was already scheduled and using the system in the actual customs was delayed for about 6 months beginning July 2010 even though the time of completion was the end of December 2009.

 - The reason of the system introduction being delayed is because the institutions' project completion became somewhat delayed due to problems were found, such as: Some of the features that were available in the existing GAMAS system became impossible for the new CAIS system, and it was taking a considerable amount of time for data retrieval in the local testing process of the new systems. These are in the process of being fixed.[21]

 - Also, the transmission capacity grew in spite of the past speed of the network (64 Kbps), retaining the speed at a slow level, so the institutions requested upgrading the speed from what they were originally expecting; however, it was difficult to accept the requests since it was not included

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21) Customs officials interview

in the project plan and they allowed it to increase to the current speed (256Kbps) through the testing process.[22]

- In the Mongolian Customs' case, they are partially admitting their responsibilities that relates to failing to submit the required data and information actively.[23]

○ On the other hand, it was judged that consideration was slightly lacking in the perspective of some users who responded that it has not been developed as for the project enforcement steps concerning the users in the interview for the conducted CAIS users during ex-post evaluation field research.

- The developed programs were in fact overly complex at the beginning of project and there were mismatched sections of Mongolia's tariffs' relevant laws for it did not adequately reflect the feedback of the field in the development process of the CAIS system.[24] On the other hand, system users can state experiencing neglect in excavation improvements that relate to the aspects of User Interface during the acceptance testing period after system deployment.

○ There are some improvements regarding the raised issues in the project executive phase after the project is complete; on the other hand, there are situations that require continuous improvements that relates to the inconvenience to users.[25]

- PMC has checked the Mongolian Customs Administration system's overall monitoring, network performance checks (inspection), and so on and have solved serious disorders of the system. The Internet telephone in the Mongolian Customs Service is installed for the task of detecting

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22) The network speed improvements are defined as the role of the recipient countries, which were not included in this project, and project developers designed their limited speed not to affect the project implementation consultation stage.

23) Customs officials interview

24) Customs officials interview

25) There are situations where the existing system and the current system are slow, seeing how CAIS's external environment (network, DB, etc.) use the system in an ill-formed state. In addition, there are discomforts about using the scroll bar seeing the web page is too long.

difficulties, and remote-free technical supports were conducted in April 2012.[26]

○ Therefore, signing a formal contract for its own efforts and the maintenance for system improvements are necessary. It is mandatory to maintain the system after the normal systems were developed; however, the Customs Service has not signed a formal contract for both system developers and maintenance.

  - In case of Mongolian electronic customs duties, the original server's capacity calculation and the capacity of the server should be expanded while the efforts must be parallel for improved performances through ongoing performances of the servers, such as checking, tuning, etc. according to the remarkable increase in capacity.

2) Efficiency

(A) Efficiency of Budget Spending

○ The budget committed to e-customs project accounts for 90.88% of the budget that had to occur, which is why the budget reduction occurred.

○ Due to the shortening period of expert dispatch, the budget committed to expert dispatch was saved to 52.3% of the original plan. This became the main cause of user discontent later because the dispatched experts might not be able to listen more opinions from various field settings. Later it became clear that the dispatched experts actually visits many local Customs offices.

  - Therefore, avoiding excessive budget cuts that affect the output performance is necessary.

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26) PMC interview

<Table 19> Budget and Actual Expenditure for e-Customs Project

(Unit: Ten-thousand U.S. Dollars,%)

Classifications	Budget(a)	Input costs(b)	Ratio(b/a)
System	172.5	163.4	94.7%
Facilities and equipment	48.9	46.3	94.7%
Inviting trainees	8.0	7.9	98.8%
Dispatching specialist	16.4	8.6	52.3%
project management	4.2	1.0	23.8%
Total	250.0	227.2	90.88%

Source : Mongolia e-customs Project Final Evaluation Report

(B) Shortened Period of ODA Project

○ This evaluation of the planned projects were performed over the project periods and those project that are shut down.
  - The e-customs built project was supposed to open in January 2010, but it was postponed until July 2010 due to a problem that occurred in the field application of the system, which made the normal operation finally begin in October 2010.

(C) Productivity and Efficiency of Electronic Customs System

○ The risk management modules' introduction of CAIS is compared with the past GAMAS systems, originating in certain improvements.[27]

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27) D.Oyunchimeg, Mongolian Customs Deputy Commissioner, UNESCAP Reported data, p. 19.
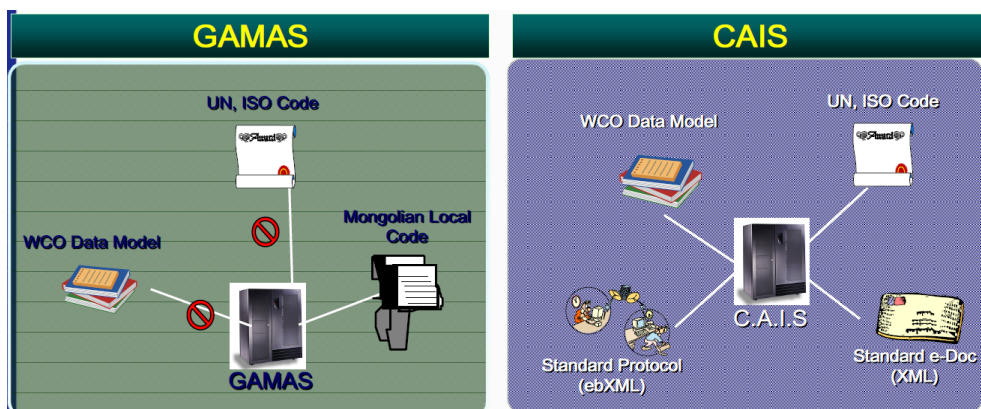
<Figure 17> Concept of the Mongolian e-customs Systems

Source : Mongolian Customs Modernization Project

<Table 20> Comparing GAMAS and CAIS

Classification	GAMAS System	CAIS System
Customs Administration Priority	Customs [tariff] Revenue	Trade promotion and social safety
Quarantine, etc.	100% Inspection	Risk management and differentiated inspection according to the utilization of Post Clearance Audit
Border Management	Border-specific individual management	Integrated border management
Passage of Logistics	Bottleneck Phenomenons at the Borders	Became possible to control co-customs duties with China

○ The thing that the distributed GAMAS has failed to change is all customs information at once, unlike CAIS, which was able to modify customs data all at once. See figure 18 below.

<Figure 18> Comparison of GAMAS and CAIS

Source : Mongolian Customs Modernization Project

○ The productivity and the efficiency of electronic tariffs can be assessed by the evaluation of e-Government performance through the shortening rate of clearance time, shortening rate of clearance data acquisition time, and the burden index of clearance procedures. See figure 21 below.

<Table 21> E-Government Performance Evaluation Measurements (2012)
- Productivity and Efficiency of e-Customs System

No	Performance Indicators		Unit	Measurement	Note
1	Shortening rate of clearance time*	Import	%	87.6%	- GAMAS Import clearance time : 3 hours 6 minutes - CAIS Import clearance time : 23 minutes
		Export	%	90.7%	- GAMAS Export clearance time : 2 hours and 20 minutes - CAIS Export clearance time : 13 minutes
2	Customs Procedures Cost Index**		-	3.3	# 117 of 144 countries

* : It is calculated on the basis of 'Case Studies on Aid for Trade : Loan and Grant Administration Customs Modernization Project (Mongolia)' from ADB.
** : World Economic Forum, The Global Competitiveness Report (National Competitiveness Index)

3) Effectiveness

(A) Achievement of Goals for ODA Project

○ The system development of the electronic customs duties have successfully built and demonstrated the outcomes, but the improvements have been found from the user's point of view.

○ Patrons were in situations of having problems over the transmission (GeT*Mate) of the electronic customs systems, when the arrivals that were sent online did not arrive.

- However, due to this network equipment's operational issues and the lack of the system's hard disk, the operational capacity reinforcements of the system and the hardware need to expand in order to resolve these unanticipated problems.

○ The L4 switch has been exchanged with another one after the A/S period when it broke down and things got a little better by extending the server capacity, but the frequency of the occurred problems increases when server utilization gets closer to 100%. There are also complaints of problems due to the low speed of the system seeing how rebooting takes about 5-10 minutes in general. (Expected to be an issue associated with the operating software).

○ It was stated that nothing has improved significantly regarding clearance time, clearance volume, increased customs revenue, and transparency improvement, etc. There are also complaints from the users that it takes more time in entry papers evaluation after the introduction of the systems.

- The user of the new system (CAIS) states that using the previous system (GAMAS) takes more time in the customs evaluation and its recognized tasks, such as manifests that were unable to submit in the previous system, customs declaration, and for being able to bring in or remove reports on the new system.[28]

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28) PMC Interview

- However, the reason for being able to carry out manifests, customs, bringing in or removal's related tasks on the system is the significant improvement of both the transparency and accuracy of the customs administration tasks.

○ The growth rate of the trade volume grew significantly; however, it was difficult to judge the effects that are caused by the arrival of the information systems of the customs administration.

- During this period, because there is a significant increase in the trade of mineral resources, the analysis is that this is a major cause of the incomes that cover 30-40% of the exchequer in the customs service in Mongolia.

○ IT hardware was originally designed to fit in the installation, and user's satisfaction ratings generally appeared.

- But, the feasibility studies were done in 2008, and the project was completed in 2010, so that the type and capacity of the various equipment was already more than 80 percent in the state.

- Although, in the course of project, there was effort such as expanding the capacity, there is a need to plan sufficient capacity in advance through future predicting.

○ The expert dispatched from KOICA faithfully performed the duties, and is generally satisfied with the dispatch. Through the personal relations with dispatched experts, unofficial feedback is received when the expert has a problem.

○ During the trial phase, dispatched experts worked two times in one week, for two weeks. As the dispatched experts worked mainly at the main office, they couldn't improve the problem of the enforcement agencies like the Ulaanbaattar Customs.

- Although PMC said that in order to improve the problem of running the new system and operating process, dispatched experts who instructed personnel in customs and local customs-charge reflected improvements

in many parts, in the ex-post evaluation process, the users of the new customs system still asserted that there is room for improvement.
- It is considered that the test for operating the systems and education is for the provider-centered, not the real user-centered (=Mongolia Customs).
○ There are improved comments in the contents and duration during inviting training period.
- The customs department performed the maintenance tasks within itself while new technology and equipment tasks were conducted during the inviting training.

(B) Activities to Improve the Effectiveness of ODA Projects.

○ There were no special efforts for improving the effectiveness and minimizing risks for e-customs built project.

(C) Outcomes of the Electronic Customs duties

○ CAIS collaborates with ADB in order to raise the effectiveness of the customs administration by establishing integrated systems of the customs administration system in terms of enhancing the integration of the customs administration as figure 19 shows below.

<Figure 19> Division of Scope Between KOICA and ADB for e-customs Project
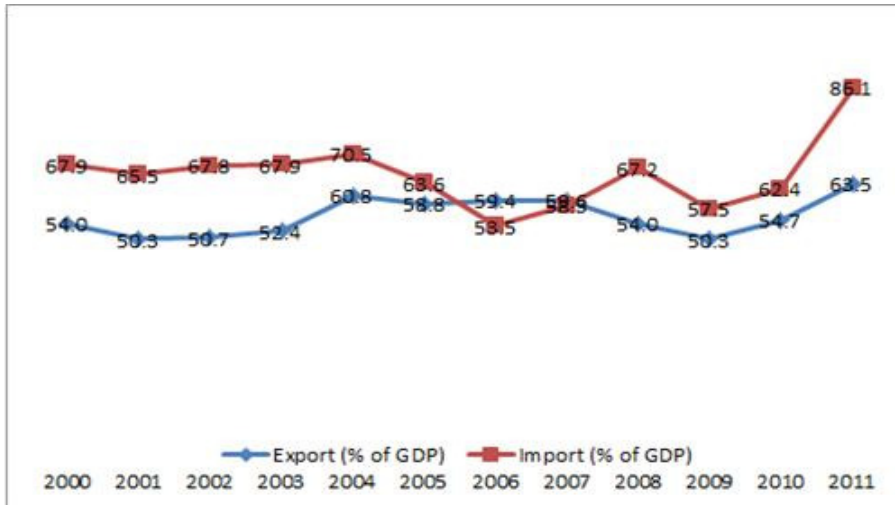

○ The analysis report regarding the Mongolian Customs Administration, which has used the GAMAS systems, recommended for Mongolia to build integrated systems in April 2006 for trade facilitation.[29]

○ Logistics and logistics systems, individual local unit customs duties systems, and additional improvements from China's and Russia's information exchange systems are all necessary.

○ In the outcomes of the administrative services that regards mission and work of the electronic customs duties, the customs administration has progressed as 100% web-based, and CAIS use from July 2010 was an average of 23 minutes (3 hours 6 minutes for GAMAS) for imports, exports were reduced to 13 minutes (2 hours and 20 minutes for GAMAS), and the administrative charges have reduced to 3%.[30]

  - Thanks to these times, the increased tasks were able to be handled

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29) UNESCAP, 2006 The Mongolia National Action Plan for Trade and Transport Facilitation
30) ADB, Aid-for-Trade Case Story: Mongolian Customs Modernization Project, OECD Report, p. 2
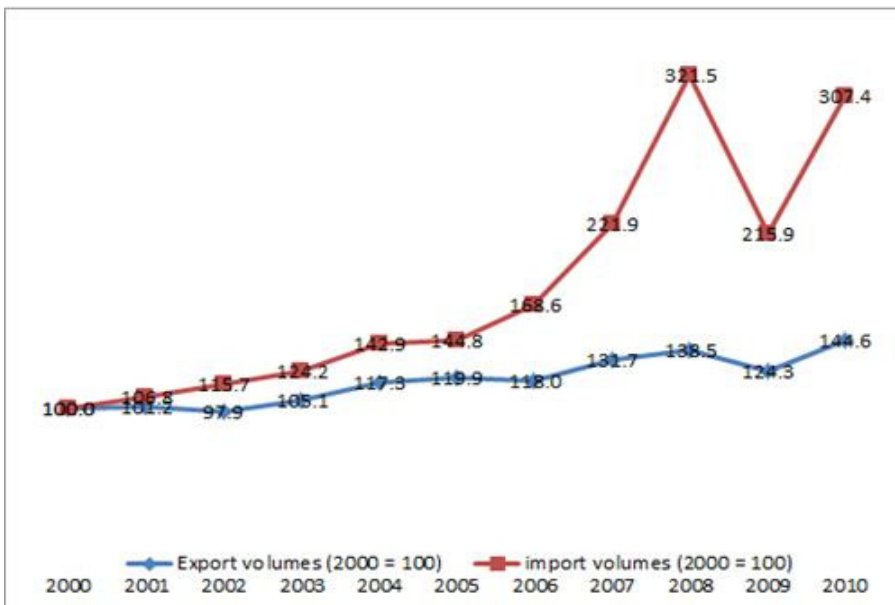
efficiently due to the dramatic increase in trading.

<Figure 20> Mongolian Imports and Exports Ratio Compared to GDP

Source : World Bank Dataset (Search Day 16 September 2012)

<Figure 21> Annual Import and Export Volume Change of Mongolia(The Year 2000=100)

Source: World Bank Dataset (Search Day 16 September 2012)

○ According to the report of the World Economic Forum, Mongolia's national competitiveness index is as follows:
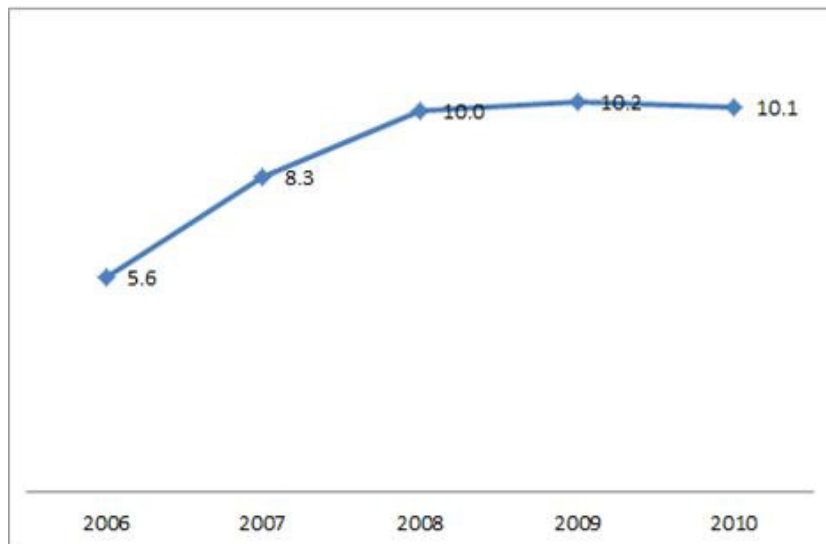
<Table 22> National Competitiveness Index of Mongolia

Classifications		2007-2008	2009-2010	2011-2012
National Competitiveness Index	Index (7-point scale)	3.9	4.2	3.9
	Rank (The number of entire country)	82 (131)	62 (133)	96 (144)

Source : World Economy Forum, The Global Competitiveness Report

○ According to the international competitiveness index rankings of the customs administration, it was ranked 123rd in 2009, ranked 122nd in 2010, and ranked 117th in 2011 as it has been improving gradually.[31]

<Figure 22> Yearly Mongolian Customs Revenue (% of GDP)

Source : World Bank Dataset (Search September 16, 2012)

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31) The Global Competitiveness Report 2012–2013, p. 261.

(D) Customer Satisfaction for e-customs project

○ At first, the employees had difficulties with the new systems since they were not used to them, but the difficulties exist no more as the they got familiar with the new systems. Clearance time got shortened a lot more than before.[32]

○ In the system of on-site users' perspective, the fact that the scroll bar has to move back and forth to keep moving seeing how the web input window is too long, phenomenons of crashing of Mongolian Customs during typing, having it hard to find sections before there are required to be changed in the main office as opposed to typing it once and modifying, and taking a considerable amount of time in retrieval of a point that can be checked for the past month are the major complaints.

 - These problems over an excessively long input window among the complaints were requests from the Mongolian Customs, and phenomenons of some crashing at Mongolian Customs was due to the use of the MONKEY font rather than standard character codes. Also, for the reason that the searching function was limited for a month is why it can give a fatal impact on the system performance in case of searching for more than a month.[33]

 - These problems occurred from considering recipient agency as a priority rather than user requirements in the system development process. project costs and time limits also have been the cause of the problem.

○ Even in HS Code lookup functions' case, HS Code was requested by GAMAS, which provided it in Mongolian, Russian, and English. There are inconveniences of where licensed customs agents often viewed the HS Code data sheet frequently at the time when only Mongolia was queried.

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32) There is a situation that the quantitative indicators management does not systematically manage in the Mongolian Customs.
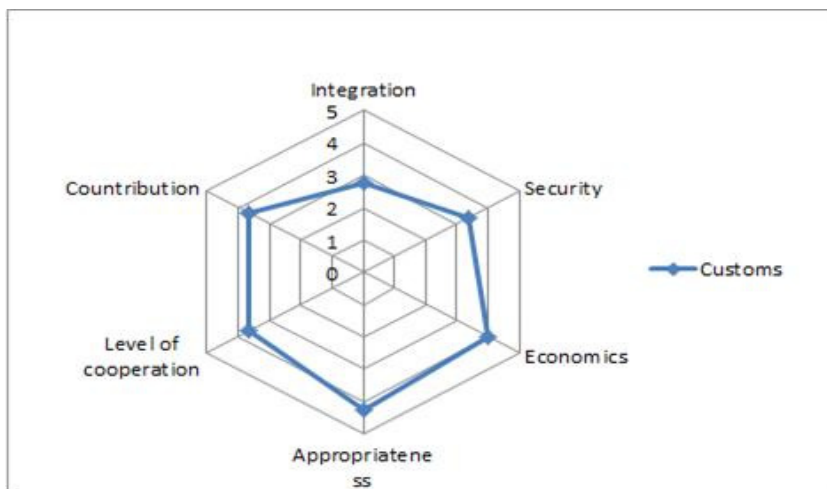
33) PMC interview

At first, Mongolian Customs Service was asking that the HS Code to be requested by Mongolia only. The issues had not been raised in the test period.

- At first, Mongolian Customs Service was asking for the HS Code can be provided in Mongolian only. The issues had not been raised in the test period.

- However, English is the default language for HS item checks in general and Mongolia borrowed the Russian language. Both of these languages were allowed to be used considering the fact that they were already being used.

- Customer needs analysis can be interpreted as a passive result in the system development process.

○ In addition, inserting no HS Code lookup functions could mean the need for further developments.

- Having many requests for HS Code lookup functions regarding recent post-assessment of new system users in an interview suggests to include HS Code lookup functions in the future customs' system development

○ A survey of customs, customs officers, and brokers in field research of ex-post evaluation is as follows.

- The results of this survey was obtained from the customs: 7 customs officers, and 10 user groups as brokers. All of the 10 patient brokers have experience using GAMAS.

- A total consisting of 19 questions were asked of all customs and customs officials. The 19 questions constituted this questionnaire: Integration (facilities, data, project, organization, budget, laws and institutions), security (physical security, system security, and information security), economic feasibility (customs processing time, customs revenue, reduced corruption), appropriacy (relevance of time, consideration of development priority), the level of cooperation (Mongolian stakeholder engagement, the two stakeholder engagement), and contribution (e-Government, IT industry, and economic
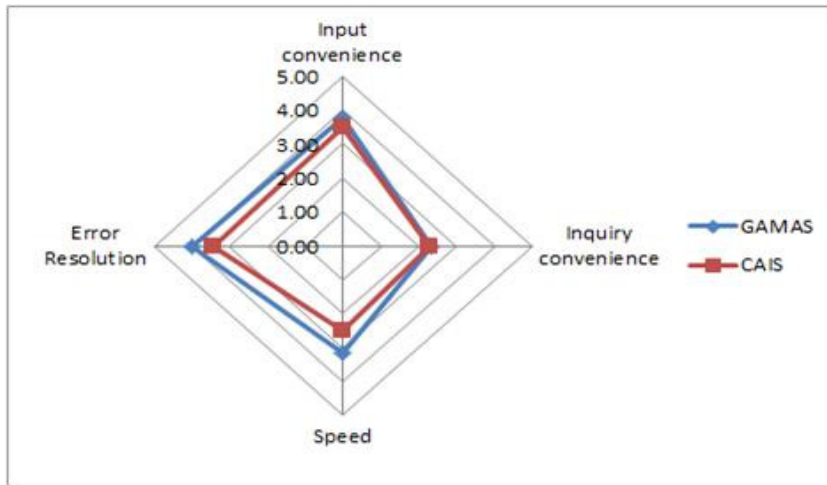
development).

- Among the other items from the survey results, appropriateness was the highest and integration was the lowest. Although integrated systems were manufactured, information that can be utilized by the user is limited or it was pointed out that there is a problem somewhat related to organizational integration or cooperation.

<Figure 23> Survey Results of Customs Service and Customs Officials

- Serviceability (data entry, data query, speed, error) was compared between GAMAS and CAIS, the previous systems, and were questioned if they were used by the user group brokers.
- Serviceability that relates to both input and lookup are being evaluated in the survey results from the brokers that there is no huge difference between the two systems as well as stating that GAMAS is the better one while the solution of errors and the entered reaction rates still exist.

<Figure 24> Survey Results Brokers Comparing GAMAS and CAIS

4) Impact

○ The Mongolian Electronic Customs Project brought the importance of e-Government a positive effect to the Mongolian Customs and the related institutions and companies from the results of the subsequent projects.

○ Considering Mongolia's economic growth rate, there is a good chance that the surrounding systems and the increase of trade and the rapid modernization of the network are likely to continue at a faster pace, so the efficiency of the new customs administration system stood out.

○ Due to the integrated customs administration system, it becomes a problem for other surrounding systems and their competencies that could be considered as a positive point.

 - However, Information and Communication Postal Service's policy will have to be strengthened more than the technical aspects in order to promote this.

○ In particular, the Customs Administration can have a very positive impact if it can have the capability regarding the integration and management of

database and statistics during real time.

○ The customs' overall improvement was small in number after the system changed for not having personnel relocations or organizational changes.

- The number of workforce just increased in system management (2 to 7-8) from changing of increasing import and export volume.

5) Sustainability

○ The project was about a small portion of the Mongolian Customs so demands are expected to increase.

○ In addition, with commerce increasing, electronic customs systems shall be sustained continuously for the transparent and precise customs administration.

○ Therefore, partnerships between ICTPA and other policy intuitions are required for a project's sustainability.

- Even though there was consultation with the Ministry of Finance's Bureau of Foreign Aid, it was confined to funds.

○ Coordinating functions or improvements of the appropriate legal system for the digital society, etc. must be preceded.

○ The Mongolian Customs Service is continuously carrying out education for external users of electronic customs systems.

6) Cross-cutting Issues

○ Such issues in Mongolia (environmental, gender, human rights) did not occur due to the project.

Implications and Recommendations

Implications and Recommendations

Section 1. Implications and Recommendations: Mongolian NDC Project

1) Stage for Project Planning

(1) Major Implications

○ Interest and commitment of the Government of Mongolia for e-Government are estimated to be very high. NDC project was well-timed and had meaningful choices as an e-Government infrastructure.

- The project planned from the previous e-Mongolia Program have performed to 70-80% in 22 projects during 2010-2012, while more than 100 e-Government-related projects (legal, etc.) will be performed until 2016.

- In addition, they are setting a comprehensive plan (technologies, human resources, etc.) for 10 years and will submit the proposal to the congress by receiving support from the government.

○ The Information and Communication Postal Service (ICTPA) has performed the coordinating function of the e-Government, but lacked of IT leadership and political influence compared to other departments, making it difficult for ICTPA to promote systematic e-Government and information policy.

○ The main reason that Mongolia's major government ministries did not use MNDC is due to the lack of leased lines and strict regulations.

- However, leased lines were constructed at a recent date and legislation

for government agencies to enforce the use of MNDC has been submitted to Congress for the expected increase of the MNDC utilization rate.

(2) Suggestions for Improvement

A. KOICA

○ Since NDC cannot perform the functions in the planning and confirmation step as a common technology service without the participation of other government agencies for the realization of e-Government, a government within a broad consensus must be formed in order to maximize the effects.
 - Therefore, it is recommended to conduct a pre-training program to educate the high level government officials or policy-makers about the importance of NDC project by the dispatched experts.
 - Inviting some high-level politicians to Korea and letting them visit the country's National Computing and Information Agency, and conduct training that relates to informatization along with e-Government policies will be necessary.

B. The Cooperation of KOICA and Recipient Country

○ For the maximum utilization of NDC, in the step of joining R/D and the feasibility study, legal systems maintenance after project completion are needed.
○ The administration of a data server should be entrusted to the NDC in the promoting e-Government ODA projects.

2) Stage for Project Implementation

(1) Major Implications

○ KT was selected from PMC as a turnkey to conduct project. South Seas Construction, responsible for construction, is in a tough situation in regards to Mongolia's bitter complaints stating that both design and construction were lacking. Even though the A/S maintenance period ended, the National Supervision Committee still denies supervision, causing it to have absolutely no official registrations.

○ The installation of equipment and materials, etc. deals with monitors for filing complaints. Most of the monitors that are provided from JOOYONTECH are broken down, defective products and it was tried to replace them, yet seeing how there are still a lot of problems left, the monitors replaced are from Dell in the United States with some of its own local budgets now being used.

○ Satisfaction for mechanical equipment cannot be raised seeing how there were problems, such as having breakdowns within two to three years and sending back to Korea for repair whenever there was a breakdown, and re-importing took about 6 months or so. Involved with the quality of electricity (voltage problems, etc.), Mongolia is mainly using Russian electrical technology, yet the electrical maintenance is being judged because it was built in the Korean style. Satisfaction also cannot be raised since A/S is impossible in the region for Korean products.

○ In general, recipient country is gratified with the results of the project of dispatching experts. However, the invited training period was short and as the contents were basic, there were requests to provide advanced technical training in addition to the necessary qualifications for operating NDC.

(2) Suggestions for Improvement

A. KOICA

○ The most problems arising from use of Korean equipment and materials in the e-Government ODA projects are A/S difficulties. This can be improved in the following ways:
  - Equipment and materials from the e-Government ODA projects are very important to the performance of the project. So, there is a need to include the task of checking recipient country's information and communication equipment distribution market in the phase of feasibility study and project consultations. In particular, Korean information and communication devices' local after service system check is required.
  - And to include provided equipment and apparatus' A/S measures or enforcement plan after the completion of the project for project operators, A/S needs to adopt a possible local procurement approach in the recipient country.

○ Targets of the Inviting Training Program should be selected as civil servants around technical personnel, and the level of educational content should be increased so that they can be core personnel for the operating center.

○ In ODA project, because the standards or regulations for buildings is very different depending on the recipient countries, local projects need to actively participate without regard to implementing agencies.
  - Especially it is appropriate for local projects to assume the licensing issue because the licensing issue of underdeveloped and developing countries is dependent upon the nation's characteristics and legal problems.
  - Because of many unexpected variables, defect repair or after service problems can cause an incident after the completion of project. So the correct settings for liability coverage will be required.
  - Increase the accountability of the promoter: It is recommended to

strengthen regulations on liability and compensation in case of occurring machinery and equipment failure for more than a certain percentage.

- Even when the contract is signed with the turn-key base, KOICA should be able to control the whole processes of actual implementation of the project.

- The PMC should maintain enough communication with the recipient countries, and the project implementation should be considered for understanding the requirements of the recipient country. In order to examine whether the PMC is carrying out its duties properly, an introduction of the independent intermediate evaluation system might e considered.

B. The Cooperation of KOICA and Recipient Country

○ As criteria or regulations for buildings are quite different depending on the recipient country in ODA projects, local projects will need to actively participate regardless of the implementing agencies.

- In particular, seeing how there are a lot of situations where the licensing problems of the underdeveloped and developing countries are influenced, depending on the legal or national characteristics more than technical levels, leaving it to local projects is appropriate.

- Defect repairs or A/S problems have many unexpected variables, leading catastrophic situations to occur after the completion of the project, and so the exact settings are required that relate to the scope of responsibilities.

3) Stage after Project Implementation

(1) Major Implications

○ Although the servers of the government institutions entrust the NDC by increasing the utilization rate through law revisions in 2012, the servers'

integration management, standardization, etc., the features of NDC are not fully demonstrating enough.

- In order for NDC to function as e-Government infrastructure properly, the senior policy-makers should understand everything about the NDC and be able to pursue the e-Government policies systematically.

- As NDC serves as a Government Integrated Data Center, it displayed functions, lacked road-maps for sustainable development and leadership for fulfilling its own mission, thereby being stuck in a situation of having a lot of distrust and complaints from the members of the organization.

○ Seeing how the physical security in MNDC is fairly intensive, even the MNDC internal staff is in accordance with the provisions of being approved in order to get access to the server room.

- On the other hand, because of this reinforcement of the physical security in the user's (customer's) perspectives, their inconveniences have grown into harsh complaints giving negative impact on using MNDC at such times.

- Especially with the government institutions that are using the current MNDC due to excessive physical security and problems that occur in the operating information systems phase, rapid coping is expressed as impossible with dissatisfaction seeing that it will serve as a very negative factor in the activation of the next MNDC.

(2) Suggestions for Improvement

A. KOICA

○ Residing about a year or so after completing a project, maintaining the future roles and functions of NDC as the next e-Government infrastructure that can be used to supervise and advise the dispatch of the technical advisors are recommended. Matching with the areas of expertise of the present's despatched senior experts' will be an alternative.

B. Cooperation of KOICA and Recipient Country

○ Domestic senior communications policy advisers who can do the whole coordinating and advisory service should be dispatched to the Information and Communication Postal Service or corresponding e-Government policy department.

C. Recipient Country

○ Close network formation with a senior official of the Government of Mongolia (Secretary or Assistant Secretary, Director, etc.) and ongoing advisory and monitoring of the project implementation process should be performed by the adviser.

Section 2. Implications and Recommendations: Mongolian e-customs Project

1) Stage for Project Planning

(1) Major Implications

○ The Mongolian Customs Service and the Customs Office have been using C/S based GAMAS within a situation of requiring real-time customs administration's handling and data integration ever since 1992. Hence, both ADB and KOICA were in association within the idea that the customs administration modernized projects were very well timed and meaningful projects.

○ First it was organized by the Customs Service and the e-Government initiatives of the Mongolian Government that summarizes the participation

in the Information, Communications, Technology and Post Authority (ICTPA) as promoted project got relatively weaker. When it comes to discussing project, attending the meetings once or twice during the entire phase of the government administration for e-Government policies promotion is a difficult handling situation.

○ Reflecting on the regional characteristics in Mongolia, the local customs and the communications network office are both associated with the pre-survey and for preparing some countermeasures, which causes problems in operating speed limits after completing the system.

(2) Suggestions for Improvement

A. Cooperation of KOICA and Recipient Country

○ The range of the project in regards to its contents during the planning and confirmed stages and seeking more detailed investigations and countermeasures are necessary.

 - Especially the section that ADB has undertaken and the offered ones from KOICA (Korea International Cooperation Agency) combined together as one system in order to accomplish efficiency, specific responsibilities of each part of the range need to be clarified further.

 - There is a necessity to clarify the specific responsibilities of each part of the range even further in order to achieve efficiency, especially the ADB's undertaken sections and KOICA's provided portions combined as one system.

 - This project, in fact, was KTNET that took over both parts in ADB and KOICA, but it had difficult aspects in spite of carrying out seeing how inter communications were good enough.

○ A project must be planned by taking into an account the anticipated problems in post management after the completion of the projects in the

planning stage. For example, reflecting on the uniqueness of the Mongolian administrative process and recommending the participation of local projects in Mongolia needs to be included for the continuous A/S. (It was not successful even though the participation of the local projects is expected).

B. Recipient Country

○ It is recommended that making it mandatory for setting the indicators (for example: processed unit number per hour, the average of the clearance time, increasing tariffs and the growth rate) for performance management and doing continuous monitoring after the introduction of the system.

2) Stage for Project Implementation

(1) The Main Implications

○ KTNET was selected as a PMC, and had been proceeding to run the project with a turn-key method.

○ In the course of performing project, there was a problem that lack of on-site centered understanding of demand and Mongolian Customs Administration process was not sufficiently considered. As a result, the complete system could not fully reflect the uniqueness of the Mongolian Customs Administration.

- The system was also developed in Russian, not just in Mongolian and the frequency of using English and Russian names in the import and export of items' was very high in spite of not including these two languages, especially in the Cyrillic characters' case. The HS Code should not be inherent and need be to physically checked one by one seeing the users' discomfort and discontent are relatively high, caused by the provider-oriented developments.

○ Recipient countries have been largely satisfied regarding the project of dispatching experts. But, the period of invitation training project was short and covered only basic things.

(2) Suggestions for Improvement

A. KOICA

○ It is recommended that reflecting the needs of the recipient countries by designating a supervision authority that would supervise the process of doing project and satisfaction for a complete system should be increased as well.

○ The target of the inviting training program should be selected as public officials focused on technical professionals for operation of the center. Also, we should assist them by increasing the quality of the educational content so that they can be as the core of the operating of the customs administration information system.

 - Also, restrictions are really mandatory in terms of time and expenses when it comes to the invited training to Korea in the project of electronic tariffs. Local visiting education may be appropriate, but it is necessary not to limit it just for the invitees considering the level of IT training institutions in the recipient countries and as well as developing educational training program in order to have it in institutions in the recipient countries with the use of independent systems operations.

 - Even if you sign a contract with the turnkey, each actual project practitioner in the selection process is able to intervene so that KOICA (Korea International Cooperation Agency) provides a basis. (For instance: Participating in the selection process, a separate independent supervision of institutions, etc.). It is desirable to avoid the latest turnkey base project.

○ The implementers of the recipient country maintain enough communication,

understand the considered requirements of the recipient country in the project implementation, and the introduction of the independent intermediate assessment system must be revised in order to review whether the project is performing and so on.

○ Although it initiates from the analysis of demand of the customers in the case of system development projects, more proactive potential demands as well as suggestions for a better system are necessary, along with the requirement of having appropriate expenses estimation.
  - In other words, it is appropriate to reflect the customers' requirements through the determined expenses, develop an optimal system rather than developing one based on experiences of the implementation, and pricing the correct expenses properly.

B. Cooperation Between KOICA and Recipient Country

○ In addition, not limiting the range of the customers to the institutions and the final beneficiaries or the final users must be extended.
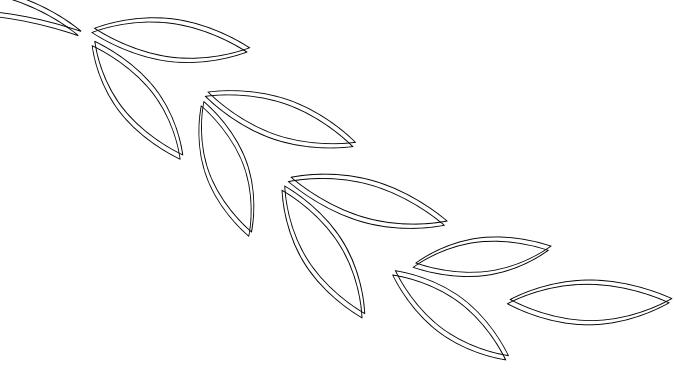
3) Stage after Project Implementation

(1) Main Implications

○ There are inconveniences compared with the existing systems and the actual processing time did not decrease dramatically.
  - The system adaptation process takes time, yet, it was judged for it did not basically reflect the needs of the user quite fully.
○ Because there are no IT companies that can undertake maintenance and continually upgrade in Mongolia, maintenance of the system can't be made in a timely manner. Now, an information technology team at customs service is in charge of this.

(2) Suggestions for Improvement

○ After the A/S expiration, dispatching technical advisors who can supervise maintaining roles and functions of the NDC area are recommended so that it can be used as a future e-Government infrastructure for a year.

○ KOICA may need to perform an advisory role and orchestrate the entire project by dispatching a senior information and Communication Policy Adviser to the Information and Communication Postal Service ministries or the corresponding agency that oversees e-Government policy.

  - In particular, the adviser should form a close network formation with the senior official of the government of Mongolia (Secretary or the assistant secretary, director, etc.) and perform an ongoing consultation and monitor the project implementation process.

○ After the relocation of the system for recipient countries, it is recommended that after a certain period (1-2 years) converge satisfaction of recipients or modification requirements, and include the terms that can fix the satisfaction or requirements above from the time of order to be included.

○ Subdivide e-Government training projects, one of the inviting training for developing countries by KOICA, into three parts: Elementary, middle, and advanced. And recommend maximizing the effect of promotion by including operating personnel in middle or advanced courses and continuing ongoing manpower training.

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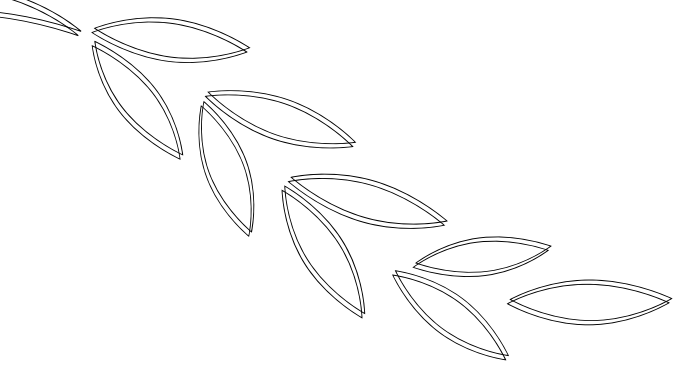
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Appendix

Appendix

Field Research Questionnaire

(1) Questionnaire Related to NDC

Questions Related to the Business Performance of the NDC

※ Questions regarding the respondent's personal characteristics

- Name
- Gender
- Department/Ministry
- Position
- Main Tasks
- Education
- Working Years
- Participation in NDC Training Program

※ These are questions related to integration of the NDC. Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance. (1 being low and 5 being high)

1. How many servers of the government ministries (departments) have been combined in the NDC?
   => What points can you give for the level of integration? ( )

2. How much data of government agencies have been integrated in the NDC?
   => What points can you give for the level of integration? ( )

3. Are the government ministries' work processes well-coordinated with each other?

   => What points can you give for the level of integration? ( )

4. Do the government agencies and organizations related to NDC cooperate well with each other?

   => What points can you give for the level of integration? ( )

5. Is NDC's budget enough for maintaining the servers of the government agencies?

   => What points can you give for the level of integration? ( )

6. How much NDC-related laws and institutions have been prepared?

   => What points can you give for the level of integration? ( )

※ These are questions related to NDC's security properties.
  Please write brief comment(s) and fill in the brackets out of 5 for
  each question related to the performance.

1. How much did NDC improve the physical security of the servers?

   => What points can you give for the security level? ( )

2. How much did NDC improve the security of the system?

   => What points can you give for the security level? ( )

3. How much did NDC improve the information security?

   => What points can you give for the security level? ( )

※ The following questions are related to NDC economics.
  Please write brief comment(s) and fill in the brackets out of 5 for
  each question related to the performance.

1. How much did NDC achieve cost reductions?

   => What points can you give for the economics degree? ( )

2. How much did NDC improve the efficiency while operating the government?

   => What points can you give for the economics degree? ( )

3. How many additional values did NDC create while operating the government?

   => What points can you give for the economics degree? (   )

※ The following questions are based on achievements of the objectives of e-Government, contribution to economic developments, and Mongolian ICT industry development contributions through NDC. Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance.

1. Was it appropriate that NDC establishment has considered the development of Mongolian e-Government?

   =>   What points can you give for the adequacy of the NDC establishment period?( )

2. How much did the NDC establishment contribute for the purpose of Mongolian e-Government developments?

   => What points can you give for the level of contribution that relates to the development of e-Government? (   )

3. Has the NDC establishment been in progress within the Government of Mongolia's variety of stakeholders' participation?

   => What points can you give for the participation of the stakeholders of the Government of Mongolia? (   )

4. Has the NDC establishment been in progress within the Korean and Mongolian Government's variety of stakeholders' participation?

   => What points can you give for the level of cooperation? (   )

5. Did the NDC establishment progress by considering Mongolia's development strategies and priorities?

   => What points can you give for development strategies and priorities? (   )

6. How long did the NDC establishment contribute to Mongolia's economic development?

   => What points can you give for the degree of contribution to the economic development? (   )

7. How long did the NDC establishment contribute to the developments of Mongolia's information and communications industries?

=> What points can you give for contributions to the telecommunications industry? (   )

Responses will be used for research purposes only.
Thank you for answering the questions.
Kookmin University Institute for Strategic Governance
Director Sung Gul Hong and Evaluation Team

(2) Questionnaire Related to e-customs

1) Questions Related to the Performance of the Business

Questions Related to the Business Performance of the e-customs Clearance System

※ Questions regarding the respondent's personal characteristics
  • Name
  • Gender
  • Department/Ministry
  • Position
  • Main Tasks
  • Education
  • Working Years
  • Participation in Custom Modernization Training Program

※ These are questions related to the integration of the e-Custom clearance system. Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance.

1. How many facilities of the e-Custom clearance system have been integrated?
   => What points can you give for the level of integration? (   )

2. How much data of the e-Custom clearance system has been integrated?

=> What points can you give for the level of integration? (　)

3. How much related work of the e-Custom clearance system has been linked?

=> What points can you give for the level of integration? (　)

4. How many related organizations of the e-Custom clearance system have been integrated?

=> What points can you give for the level of integration? (　)

5. Is e-customs clearance system's budget enough for maintaining the servers of the government agencies?

=> What points can you give for the level of integration? (　)

6. How many of e-customs clearance systems-related laws and institutions have been prepared?

=> What points can you give for the level of integration? (　)

※ The following questions are based on the security of e-customs clearance systems. Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance.

1. How much did the e-customs clearance systems improve physical security?

=> What points can you give for the degree of the physical security improvements? (　)

2. How much did e-customs clearance systems improve the system security (eg., security against hacking, etc.)?

=> What points can you give for the degree of system security improvements? (　)

3. How much the did e-customs clearance systems improve the information security (eg., the security of personal information)?

=> What points can you give for the level of contribution for the information and communications industries? (　)

※ The following questions are based on the economics of e-customs clearance systems.

Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance.

1. How much did e-customs clearance systems shorten the customs processing times?

   => What points can you give for the customs processing time? (   )

2. How much did the e-customs clearance systems contribute to the growth of the customs revenue?

   => What points can you give for customs revenue growth contribution? (   )

3. How long did e-customs clearance systems contribute in reducing corruption and increasing government trust?

   => What points can you give for the degree of reducing corruption and increased government trust? (   )

※ The following questions are based on purposes of e-Government, contributions of economic developments, and Mongolian information and communication industry development contributions of the e-customs clearance systems.

Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance.

1. Has the e-customs clearance systems' installation time been in progress at the appropriate time in the development of Mongolia's e-Government?

   => What points can you give for the time of the adequacy? (   )

2. How long have the e-customs clearance systems contributed to the purpose of the development of Mongolia's e-Government?

   => What points can you give for the degree of a contribution in the development of e-Government? (   )

3. Have the e-customs clearance systems been in progress within the a variety of stakeholders' participation from the Mongolian Government?

   => What points can you give for the degree of participation of the stakeholders of the Government of Mongolia? (   )

4. Have the e-customs clearance systems been in progress within the participation of a variety of stakeholders from the Korean and Mongolian Governments?

    => What points can you give for the level of cooperation? (   )

5. Did the e-customs clearance systems progress by considering Mongolia's development strategies and priorities?

    => What points can you give for development strategies and priorities consideration degree? (   )

6. How long did the e-customs clearance systems contribute Mongolia's economic development?

    => What points can you give for contribution degree in the economic development? (   )

7. How long did the e-customs clearance systems contribute to the developments of the Mongolia's information and communications industries?

    => What points can you give for contribution degree of the information and communication industry? (   )

Responses will be used for research purposes only.

Thank you for answering the questions.

Kookmin University Institute for Strategic Governance

Director Sung Gul Hong and Evaluation Team

2) Questionnaire Related to the Use of CAIS – Broker

Questions Related to the Business Performance of CAIS

※ Questions regarding the respondent's personal characteristics
- Name
- Gender
- Department/Ministry
- Position
- Main Tasks

- Education
- Working Years
- The using period of CAIS
- Do you have any experience in using the GAMAS system?

1. The following questions are based on the current CAIS. Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance.

1-1 Do you think data input of the current e-customs clearance systems is convenient? (   )

1-2 Do you think data inquiry of the current e-customs clearance systems is convenient? (Time, Input quantity)

1-3 Do you think current e-customs clearance systems are able to respond quickly to the demands of the commissioned companies? (   )

1-4 Do program errors occur frequently in the current e-customs clearance systems? (   )

2. These questions are for those who have experience in using GAMMAS. Please write brief comment(s) and fill in the brackets out of 5 for each question related to the performance.

2-1 Do you think the data input of the currently used e-customs clearance systems is convenient compared with the previous e-customs clearance systems (GAMMAS)?

2-2 Do you think the data inquiry of the currently used e-customs clearance systems is convenient compared with the previous e-customs clearance systems (GAMMAS)? (Time, Input quantity)

2-3 Do you think the currently used e-customs clearance systems are able to respond quickly to the demands of the commissioned companies compared with the previous e-customs clearance systems (GAMMAS)?

2-4 Any program error occurring frequently in the current e-customs clearance systems compared with the previous e-customs clearance systems (GAMMAS)?

2-5 Please specify the contents in the following blanks.

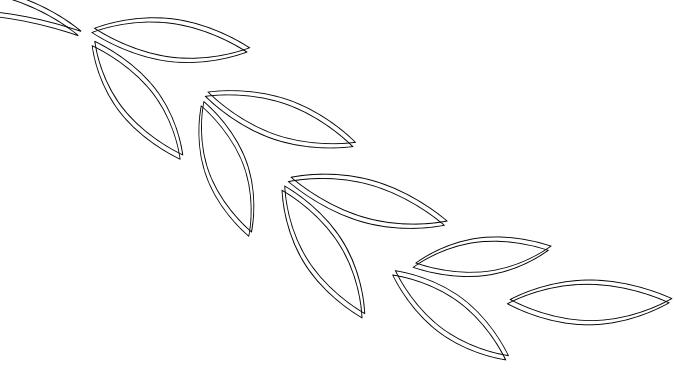| Classification	Current e-customs Clearance Systems (CAIS)	Previous e-customs Clearance Systems (GAMMAS)
Advantages		
Disadvantages		

3. Which one would you choose between the current e-customs clearance systems (CAIS) and the previous e-customs clearance systems (GAMMAS) to use?

Responses will be used for research purposes only.

Thank you for answering the questions.

Kookmin University Institute for Strategic Governance

Director Sung Gul Hong and Evaluation Team

Supplements

Supplements

E-Government ODA Project Checklist for Each Period

1. E-Government ODA Project Checklist - Planning and Undertaken Steps

Classifications	Checklist
Relevance review for needs of recipient countries	Is the informatization level of the national society appropriate to perform the proposed project? Is the level of the telecom infrastructure appropriate to perform the proposed project? Is the level between government institutions and network business suitable for project implementation? Is the digitalization level of the government appropriate to the business's executions? Is the level of the telecommunications industries in a recipient country suitable towards achieving the objectives of the proposed project? Can the ICT workforce system and the level in a recipient country contribute to the development of the local ICT industry through implementation of the proposed project? Is the level of the minds of public officials high enough for achieving business purposes? Are the senior officials prioritizing for ICT and e-Government projects?
Confirmation of the recipient country's government's willingness	Is the level of highest authority of the e-Government and ICT policies high enough for achieving business objectives? Are either economic development plans or poverty eradication sufficiently high for taking advantage?
Review for leading and the next ICT-related policies and business	What sort of relationship is there between recipient countries that have already performed or the e-Government that received assistance and ICT-related policies and businesses and the proposed business? Can the synergy effects that are in progress or proceeding in the near future through connection and the confirmed or upcoming businesses be created? Is the status of the recipient country (technical level, volume, human resources, etc.) in pre-feasibility studies and conducted consultation processes identifying accurately?

Classifications	Checklist
Analysis of the proposed project's ripple effects	What about the ripple effects of the proposed businesses' successful performances? What are the alternatives for maximizing synergy effects through the leading e-Government businesses and the associations? What are the plans for maximizing the ripple effects on local economy or the ICT industries and markets?
Legal system's maintenance and confirmation as well as technical support plan prepared for maximizing the effects of the proposed project	Are there legal systems for electronic government, electronic signature act, e-Commerce law, the effect of electronic documents, DB, and mandatory integrated management of the server, including maximizing the performance of e-Government projects maintaining? (If there are not, what are the relevant legal systems that can maintain a plan before the project is completed?) Any specialized agencies (IT institutes, universities, enterprises, etc.) that receive technical support of the proposed project in the recipient country?
Analysis of business purposes' achievability and obstacles	What are the elements that interfere with achieving the aims of the project? What is the proper way to resolve these impediments?(For the resolution of the disturbing factors in case of recipient countries to cooperate with each other, specify them n the business plans and should set the deadlines.)
Effective PMC selection process, criteria, and application	Does PMC have passion based on for business but for broad understanding of ODA businesws and understanding for developing countries as well as techical skills?

2. E-Government ODA Project Checklist – Project Implementation Phases

Classifications	Checklist
Appropriacy of the implementers (PMC, sectoral operators)	Besides for performing, A/S, and so on, are there determination, passion, and abilities for taking clear responsibilities?
Relevance for project implemention process	In the course of performing businesses, are the demands of the recipient countries reflected continuously? How satisfied are the agents of the recipient countries with the extent at an intermediate stage in the process of conducting business? (Intermediate satisfaction survey is required) According to the contract, are the final outcomes of the business equal to the level of the quality? Are the demands for requirements of the recipient countries within the range of a business necessary? Do PMC and sectoral concession companies maintain their proper

Classifications	Checklist
	communication? (In case of joint businesses with ADB and other agencies') Maintaining close communication with other businesses? From the businesses' performance and the calculated results, are the institutional regulations obeyed considering the cultural characteristics of the recipient countries?
A/S possibilities of the equipment and materials' region	Are there any ways of using A/S occasional skills to secure in the region in case of using equipment or materials from Korea? Any repairing measures of the equipment and the materials after the period of the regular A/S?
Suitability for invitation training project	With the aims of achieving the project, are the necessary levels of the training projects for the invitation businesses being fulfilled? Is it capable enough to pass the contents of the training during that time? Is the target or the object of the invitation chosen suitable enough for achieving the purpose of the business? Is professionalism sufficient enough to achieve the aims of the project for the training content?
Appropriacy of the construction industries	Have the buildings been constructed appropriately for the recipient countries? Have the buildings been constructed suitably for the purpose of achieving in business? Have the final buildings been identically constructed in agreement with the PMC? Any high levels of complaint(s) or dissatisfaction from the institution after the completion? What are the reasons and the alternatives for elimination?
System designs and the development	Accurately reflecting the needs of systems in recipient countries and its agencies? The convenience of using the system with the consideration of the designs and the development? Any accurate descriptions to the recipient countries and its agencies about developed systems?

3. Checklist for E-Government ODA Project - Post-Management Steps Followed by the Completion of the Project

Categories	Checklist
A/S related problems	Any fulfilled or completed normal A/S requirements within the range? Are all adequate A/S requirements accepted on time and provided appropriately? What are the factors that make it difficult to do after service? What are the alternatives to solve it? Any alternatives that can handle equipment and its malfunctions promptly after the completion of the contracted regular A/S period?
Dispatched expert problems	Is the expertise of the dispatched experts sufficient to perform the work? Sufficient levels of the expertise of dispatched experts to perform the work? Do the dispatched experts have enough understanding about the ODA and the passion to support the developing countries? Are the dispatching experts from dispatching nations extroverted enough to embark in voluntary human network construction?
Dispatching a voluntary agency for post management	Have the volunteers sent for post management equipped with the necessary expertise? Do the volunteers have sufficient will and passion?
Maximization of outcome of business	What are the factors that hinder the utilization of business performance, and how to solve it? What are the alternatives? Are related business or other e-Government projects' performance of this business in the planning stages considered enough? What are the barriers that inhibit maximizing the effect of business, and the alternatives to solve them? Do they have performing management system to increase the effectiveness of a business that was completed?

Ex-Post Evaluation Report on the Two E-Government
Projects in Mongolia