Evaluation of EDCF's e-Government Sector

The Export-Import Bank of Korea

(Government Agency for EDCF)

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I. Introduction

1. Purpose of Evaluation

The main purposes of this EDCF e-government sector evaluation are as follows:

1) to identify the role of e-government in development and demand for e-government adoption in developing countries;

2) to analyse global trends and characteristics of e-government support provided by major development banks, OECD DAC member countries, and KOICA in comparison with EDCF; and

3) to evaluate the performance of EDCF's e-government projects to draw lessons and policy implications for EDCF's future e-government projects.

2. Scope of Evaluation

One of the purposes of this evaluation was to advocate official development aid to e-government. Therefore, it was necessary to include an extensive literature review in the evaluation scope to assess the need for establishing e-government in developing countries in order to enhance the awareness on the e-government's role in a country's development.

For the sector performance evaluation, the scope of evaluation included the review of 26 EDCF e-government projects in 16 countries, which were approved between 1999 and 2014.

Ⅱ. Developing Countries and Needs for e-Government

e-Government is generally defined as an online government information and service system using ICT which enables the exchange of information and services among citizens, businesses, amd government agencies. This use of technology is expected to improve the efficiency and transparency within the government and its operations, and to increase citizens' participation in all aspects of policy processes and political decision makings. In this evaluation, e-government is defined as "the use of ICTs to deliver more and better government services to citizens, businesses, and other governments by increasing transparency, accountability, effectiveness, and efficiency of the government and public sectors."

e-Government requires quality technology and a high level of governance; for the effective adoption of e-government, it should evolve from simple to complex systems, and finally fully integrated services should be provided. There are various ways to classify the maturity of e-government. One of the most widely accepted criteria to measure the maturity level of e-government is the UN e-government Development Index (EGDI). The EGDI identifies four-stage model for measuring e-government maturity level: emerging, enhancement, transactional, and connected stages.

Well-functioning e-government has several components in terms of hardware and software. These components can be divided into four categories: applications (G2G, G2B, G2C), middleware (shared services, database), infrastructure (networks, user devices, servers), and governance.

The effectiveness of e-government on the economic development in developing countries has been a subject of academic discussion. However,

as shown in many cases where e-government was adopted, e-government appears to be a vital factor for increasing aid effectiveness and economic development among developing countries through improved efficiency, effectiveness, accountability, and transparency in the government as well as in society in general. Thus, e-government is considered as a prerequisite for enhancing aid effectiveness and achieving sustainable development in developing countries.

Previous studies on aid for e-government adoption have demonstrated that administrative reforms through e-government have positive effects on strengthening national competitiveness, reducing corruption in the public sector, increasing government efficiency, and improving administrative service. These, in turn, tend to bring economic and social benefits to developing countries.

Another important contribution of e-government is its potential to enhance democracy in developing countries. e-Government services tend to allow citizen participation in political and policy processes, which can enhance the levels of democracy in developing countries.

Ⅲ. Aid for e-Government Adoption

In order to understand the trends in aid for e-government worldwide, the evaluators examined key characteristics, directions, and contents of aid for ICT and e-government of the World Bank, Asian Development Bank, and other DAC donors.

One critical limitation of this analysis came from the different classification of aid-related statistical accounts. The Republic of Korea as a donor classifies aid for e-government separately from the ICT account while other donors classify it as part of the ICT account. In addition, traditional areas of aid programs can also include e-government components. Therefore, aid for e-government of other OECD/DAC donors might be underestimated. With this limitation in mind, major findings are as follows:

In general, the World Bank provided aid for e-government with a special focus on countries in Africa, Latin America, and the Caribbean. Most of these projects range from $10 to $100 million in project size. In terms of project type, significant numbers of World Bank projects were classified as applications such as G2G, G2B and G2C.

ADB projects were smaller than World Bank projects. The average size of ADB's e-government projects in dollar terms was about USD 1 million or less. Of course, all projects were undertaken in the Asian region, especially in Southeast Asia. The majority of ADB projects were consultation and technical assistance, and/or much of its project were those for local governments.

Several bilateral donors also provided aid for e-government. However, direct

comparison between Korea and other bilateral donors was not possible since donors other than Korea classified aid for e-government as aid for ICT or other sectors. Thus, the evaluators had to compare aid for ICT as proxy for aid for e-government. Korea's aid for ICT accounted for 36.75% of total aid for ICT by OECD DAC members.

In recent years, aid for e-government has been steadily increasing in accordance with the growing recognition of e-government's impact on improving aid effectiveness and sustainable development.

Korea was found to be the biggest donor that provides aid for ICT and e-government. Both EDCF and KOICA, the two biggest official development aid executing agencies of Korea, had impressive track records on providing aid for ICT and e-government. EDCF approved 26 e-government projects between 1999 and 2014, which were mostly G2G and G2C projects. The total amount of aid was approximately KRW 823 billion, which was equivalent to 47.3% of total ODA for ICT (58 projects, KRW 1.7389 trillion). Geographically, EDCF's support was concentrated on Asia. KOICA implemented 129 government projects between 2007 and 2014. Project sizes were usually about USD 1~5 million. Countries in Asian and African regions are the main beneficiaries in relative terms. As for the types of projects, the majority of them were for building infrastructure, G2C, and shared services.

Ⅳ. Summary of Evaluation

1. Methods of Evaluation

The performance of EDCF's e-government support was evaluated in two aspects: the direction of aid and project performance.

As e-government advances, the components needed for e-government change. The direction of EDCF's aid for e-government should, if it were relevant, reflect such process. Therefore, it was important to examine the direction of e-government support. All 26 EDCF loan projects were analyzed based on the components of e-government (infrastructure, applications, as well as governance) by dissecting the detailed budgets and purpose of the individual projects.

Project performance was evaluated using the OECD DAC's five criteria. At the time of evaluation, a total of 11 EDCF loan projects were completed and 4 projects among these 11 projects were evaluated. The performances of these 11 projects were analysed by using their project completion reports or ex-post evaluation reports.

2. Results of Evaluation

2.1 Relevance of e-government components

By adopting the methods mentioned above, the evaluators have evaluated EDCF e-government projects in terms of the components and types of e-government supported by EDCF. In many cases, a project contained more than one components/types of e-government. In such cases, the evaluators

identified the representative characteristics, and then auxiliary ones.

According to the representative characteristics, there were 8 infrastructure, no governance, 11 G2G, 2 G2B, and 5 G2C projects out of total 26 projects. Proportionally, expenditure on infrastructure accounted for 46% of the total costs of the projects. For applications, G2C were about 25%, followed by G2C (15%), and G2B (6%). The smallest amount of expenditure was spent on governance; governance was always treated as a 'part of project' and there was no project supported only the governance components.

It seems that a trend in EDCF's e-government projects could be identified when the past 15 year-period (1999〜2014) was divided into three periods: the first period being 1991~2004, the second 2005~2009, and the third 2010~2014. Overall, the result shows that the number and amount of EDCF e-government projects have increased over time; the number of EDCF e-government projects has increased by 237%, with the average annual growth rate, calculated with the geometric mean method, increasing by 103%. Moreover, the main characteristics of aid on e-government shifted from infrastructure building and basic G2G applications toward diverse application services such as G2C and G2B.

2.2 Project Performance

The results of performance evaluation of 11 projects that have project completion reports and ex-post evaluation reports demonstrated that EDCF e-government projects were highly relevant ($4.0 \geq 3.7$), efficient ($2.6 \leq 3.3 \leq 3.7$), effective ($2.6 \leq 3.5 \leq 3.7$), have positive impacts ($2.6 \leq 3.6 \leq 3.7$), and were sustainable($2.6 \leq 3.4 \leq 3.7$) as shown in the table below.

Classification	Project (Year)	Relevance	Efficiency	Effectiveness	Impact	Sustainability
Completion	Rehabilitation of Government Communications Network Project for Mongolia(1999)	4	3	4	4	4
Completion	Myanmar Basic e-government Project(2004)	4	4	4	4	4
Completion	National Criminal Information Center Development Project for Indonesia(2004)	4	3	4	4	3
Completion	DGA(Direccion General de Auanas) Computerization Project for Dominican Republic(2005)	4	2	3	4	4
Completion	Batam e-government Project for Indonesia(2006)	4	3	4	4	4
Completion	Government ICT Infrastructure in Angola Project(2006)	4	3	2	2	2
Completion	Government ICT Infrastructure Establishment Project for Senegal(2007)	4	3	3	3	2
Ex-post	Sri Lanka Government Network Stage Ⅱ Project(2008)	4	4	4	4	4
Ex-post	Capacity Expansion of Government Administration Information System Project for Cambodia(2001)	4	4	2	3	2
Ex-post	Re-engineering Government Component of e-Sri Lanka Project(2004)	4	4	4	4	4
Ex-post	Emergency Information Network Project for Mongolia(2006)	4	3	4	4	4
Total		4.0	3.3	3.5	3.6	3.4

2.3 Overall Results

(Relevance) EDCF's e-government projects have been evaluated as highly relevant; all projects received grade 4 out of 4. Throughout the period of conducting e-government projects from 1999 to 2014, EDCF has not only met the demands of the developing countries, but reflected the changing ICT environment and policy priorities of the partner countries. As such

EDCF e-government projects have been undertaken with shifting priorities from infrastructure to specific applications.

(Efficiency) The evaluation result regarding efficiency criterion was rated as efficient (3.3 out of 4.0). Even though it obtained the lowest evaluation score as there were delays in some projects mainly due to the difficulties on the part of the partner countries in keeping promises that were included in actual contracts, the overall efficiency was above the middle.

(Effectiveness) The effectiveness of projects was evaluated as effective (3.5 out of 4.0). In order to increase effectiveness, EDCF e-government projects should reflect the needs of developing countries as much as possible with proper consideration of e-government development stage of the partner countries.

(Impact) The average score for impact was 3.6 out of 4.0, meaning EDCF e-government projects were evaluated as positive in tenms of impact. This means that EDCF e-government projects have contributed to improve efficiency of public administration, that is, cost reduction as well as increasing benefits. They also allowed convenitent public services being provided to citizens, and in trun, have ripple effects on the economy in general.

(Sustainability) The results of evaluating sustainability was 3.4 out of 4.0. This indicates that most EDCF e-government projects were evaluated as sustainable at least for a time being. Projects with high sustainability tend to be have higher human resource development regarding the project at hand. When the partner government can secure its own budgets for supporting the ODA project, the evaluators can clearly see that such projects have higher sustainability.

V. Lessons Learned and Recommendations

1. Lessons Learned

1.1 Success Factors

High relevance of EDCF's e-government projects to the partner country's developmental strategy appeared to be one of the most important success factors. EDCF's project addressed the need of communities and government in the partner country. Such high relevance would lead to strong ownership, the critical factor in sustainability and impact of the project.

E-government projects should be aligned with the development stage of the partner country in order to achieve its full effectiveness. There were numerous evidences that the failure of e-government adoption occurred when the level of adopted e-government were too high compared to the maturity of the country.

Korea's own experience in successful e-government transition and ICT technology, along with the effective governance in partner country created synergy for positive impact of the e-government project.

1.2 Limitations

There were 'lost opportunities' of e-government in partner countries; often the e-government was considered as low priority in country's development in partner countries. This lack of awareness for the need of e-government transition often resulted in missed opportunity since the partner country would not request the official development assistance despite its urgent

need for e-government.

Necessary conditions for successful e-government transition were not often fully reflected to the partner country's development strategy. The development strategy of partner country for e-government transition, due to various reasons, may simply list up the ideal e-government structures without detailed analysis for enabling environment such as physical infrastructure and legal framework essential to e-government function. In this case, the project would fail to be effective despite its high relevance to the partner country's development strategy.

There has not been a full collaboration between the grant and loan components of the Korean aid. This might have limited the effectiveness of the e-government projects. For instance consulting the partner country on e-government transition strategy would be more suitable project for grant aid than the loan. On the other hand, installation of e-government which requires considerable sum of financial resources would be appropriate to be supported by concessional loan.

2. Recommendations

It is recommended that the priority and environment of the e-government components should be carefully assessed during the project planning phase. Also, it is important for the partner country to be aware of unmet need for e-government since the project should be initiated by the partner country.

Given the lack of human resources in maintaining and utilizing the outcomes of aid for e-government projects, it is recommended to provide more flexible duration of maintenance period after the official maintenance

period. Depending on the scope, nature, and types of e-government projects, different maintenance periods and additional post-project management support should be provided. In addition, proper human resource development program to the partner agencies should be provided.

Partner country would be better served in e-government transition of the partner country when both grant aid and concessional loan can be utilized. Therefore, it would be better for both KOICA nad EDCF collaborate better in identification and implementation of e-government projects.

Expanding the sectors of the e-government support is also recommended. EDCF's e-government support has focused on the public administration and services. However, ICT and e-government has much more to offer in traditional aid sectors like healthcare and education. Thus combining e-government aid with other sectors would create bigger benefits to partner countries.