# Summary

| I.   Outline of the Project | | |
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| **Country:** Lao PDR | **Project title:** Project for the Upgrading IT Education (Information Technology Bridging Course) | |
| **Issue/Sector:** Higher Education / IT | **Cooperation scheme:** Technical Cooperation Project | |
| **Division in charge:**    JICA Laos Office | **Total cost:** 220 million yen | |
| **Period of Cooperation** | (R/D): 4 March 2003<br><br>3 years<br><br>1 April 2003 to 31 March 2006 | **Partner Country's Implementing Organization:**<br>Faculty of Engineering, National University of Laos (NUOL)<br><br>**Supporting Organization in Japan:** Tokai University & Meiji University (partly) |
| **Related Cooperation:** | AUN/ SEED-Net Project, Diploma program NUOL-KMITL (1999-2001) | |

## 1   Background of the Project

Compared to the situation whereby developed countries and nearby ASEAN countries are utilizing Information Technology (IT) to the acceleration of economic development, the advancement of informatization in Lao PDR has been delayed. Therefore, it is a concern that the economic gap has widened. Regarding IT development policy in Lao PDR, the importance of IT education was recognized at the 7th Lao People's Revolutionary Party Congress in 2001. The utilization of IT has been promoted as a means to promote economic and national development in Lao PDR. The government of Lao PDR (GOL) recognized the necessity of the utilization of IT fields as major means to actively promote industrialization and modernization. In this regard, GOL formulated a policy on developing human resources which would contribute to the development of the market economy. This policy is part of the Fifth Five-Year National Social Economic Development Plan (NSEDP 2001-2005). In addition to this, in January 2003, the policy for industrialization and modernization stated that it is necessary to 1) focus on IT education, 2) promote socio-economic growth though the use of IT not only in the field of communication but also in the fields of tourism, transportation, health and environment.

However, because of the lack of IT engineers and technicians in Lao PDR, it was looking like it would be difficult to meet the demands for IT management and maintenance which were expected to increase in the future in terms of both quality and quantity. At the same time, GOL was facing the necessary problem of developing the education system in order to provide human resources whose skills conform to international standards in modernized systems used in governmental and private sectors. Therefore, Lao PDR urgently needs to develop human resources who are capable of applying their IT skills and knowledge.

The National University of Laos (NUOL) was established in 1996 by integrating the colleges and technical schools previously operated under different ministries. At that time it was the only university in Lao PDR. Even though the Faculty of Engineering (FE), with a quarter of NUOL students, was the biggest faculty, there were only 50 graduates with a bachelor degree in electrical and electronic engineering in 2001 and 2002. In order to develop future human resources efficiently in the IT field, it is recognized that we urgently need an education system which can produce graduates efficiently and quickly.

Against this background, the Lao government requested the cooperation of the Japanese government on this matter in relation to the FE at NUOL. Through the introduction of a bachelor's degree program in IT, this project aims to contribute to the economic development of Lao PDR by meeting the demands relating to human resources in the government and private sectors.

## 2   Project Overview

Through the upgrading of the already existing FE IT bridging course to a bachelor's degree program in IT, it will be possible to meet the huge

demands for human resources in the field of IT in both the governmental and industrial sectors in Lao PDR.

**(1) Overall Goal**

FE will be able to produce IT human resources effectively to fill the demands of governmental / industrial sectors

**(2) Project Purpose**

FE is capable to run a bachelor degree course in Information Technology field

**(3) Outputs**

1. A bachelor's degree course in IT field is prepared and developed to meet the needs of society.

2. Management capability of facilities, tools and equipment in the Department of Electronics is improved.

3. Facilities, tools and equipment for IT program are properly procured

4. A number of teaching staff in IT field is to be assigned and trained for the course.

5. Teaching manuals/ textbooks and glossary for IT subjects written in Lao Language are to be prepared and developed by the teaching staff of FE.

6. The operation and administration systems of the course is properly implemented.

7. Research capability of FE teaching staff in IT and IT related fields is strengthened.

**(4) Inputs**

**Japanese side:**

- **Long-term expert:** 1 person, 32 MM

- **Short-term expert:** 27.37 MM (Japan), 154.6 MM (third country)

- **Equipment:** 22 million yen

- **Local cost** (operating expenses of the project)**:** 52.1 million yen

**Lao Side:**

- **Counterpart (C/P):** 27 personnel

- **Land and facilities:** necessary safety provisions for all laboratories and equipment, office space for the experts, computer rooms and classrooms

- **Local cost:** 124,075,000 LAK (approximately 1.48 million yen[1])

| II.   Evaluation Team | |
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| **Members of Evaluation Team** | **Lao side;** <br> ■   Assoc. Prof. Dr. Saykhong SAYNASINE, Project Director, Vice-President, NUOL <br> ■   Assoc. Prof. Mr. Khampoui SOUTHISOMBATH, Project Manager, Vice Dean for Academic Affairs, Faculty of Engineering, NUOL <br> **Japanese side;** <br> ■   Team Leader: Mr. Shuichi IKEDA, Deputy Resident Representative, JICA Laos Office <br> ■   Cooperation planning: Mr. Hiroyuki TOMITA, Assistant Resident Representative, JICA Laos Office |

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[1] 1 LAK = 0.01189JPY as of Nov. 2005

| | ■    Evaluation planning: Mr. Hiroaki ADACHI, Program Officer, JICA Laos Office |
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| | ■    Project effectiveness analysis: Ms. Mizuno SOEKAWA, IC Net Co., Ltd |

| **Period of Evaluation** 9 to 28 November 2005 | **Type of Evaluation:** Terminal |
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## III. Results of Evaluation

### 1   Project Performance

Judging by the result of 7 outputs and their indicators set in PDM (Project Design Matrix), the project purpose was basically achieved. However some further work is needed. Outputs 1 and 3 were achieved. Regarding output 2, improvements have been verified, but the establishment of the management system should be carefully monitored in the future. Regarding output 4, there are 5 teachers who have not yet undergone training. The achievement of output 5 was not enough, because the completion rate of textbooks and teaching materials was about half.   Regarding output 6, course management was implemented well during the duration of the project, and the course was generally evaluated highly by the students. On the other hand, it remains a challenge to transfer sufficiently the management skills necessary for the course to the C/P. Regarding output 7, since actual research activities started in 2005 and the research groups have just been set up, FE research capability has not improved substantially at this moment.

### 2   Summary of Evaluation Results

#### (1) Relevance

Overall, the relevance of the project is high in terms of Lao government policy, Japanese ODA policy and Lao social needs. The project is in line with the Lao government's policy, the Fifth Five-Year National Social Economic Development Plan (NSEDP 2001-2005), which stated the importance of actively utilizing IT and human resources development for the benefit of the market economy. In this aim, Japanese ODA policy toward Lao PDR has been formulated so that the five mid-term prioritized issues have been incorporated into the Laos Country Assistance Strategy[2]. In addition, the project is reflecting very well Lao social needs in terms of IT human resources to the new curriculum revised in 2005 in accordance with the results of several needs surveys. However, the setting of the project purpose is insufficient, as well as PDM outputs and indicators and input to secure the sustainability of course management.

#### (2) Effectiveness

The effectiveness of the project is high. The bachelor degree curriculum was developed and implemented based on the already existing IT bridging course, and has produced 61 graduates (including a student of group B who is scheduled to graduate in January 2006) with a pass rate of over 80 %. The approach of this project, encompassing curriculum development, its operation and the provision of equipment to improve the working environment, seems to work well.   However, such factors inhibited the progress of the project progress, as, for example, 1) less priority was given to improving the course management capability, 2) there was a lack of qualitative indicators in PDM, and 3) Lao IT human resources needs were not well reflected in the original curriculum. An important assumption was not realized since 3 candidates for lecturing positions with master's degrees could not take up the post because they left to pursue a doctoral degree.

#### (3) Efficiency

Efficiency of the conversion of inputs to outputs was high. A long-term expert supervised the project. The third country experts, for whom there is less of a language barrier, have fulfilled the important role of implementing the daily work of technical transfer to facilitate the operation of the course. On the other hand, the Japanese short-term experts have taken on part of the advanced technical transfer

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[2]   JICA, "Country Assistance Strategy for the Lao PDR", 2005 and MOFA, "Country Assistance Evaluation of Laos", 2004

implemented on a contractual basis. This has increased efficiency levels.    Moreover, the capacity development of FE lecturers through the AUN/SEED-Net Project generated a synergy effect because they also engaged as C/P for this Project.

## (4) Impact

The project has a positive impact on Lao society:

1) About 20 NUOL members of staff were trained for the course and are expected to convey their IT skills and knowledge to students.

2) The course produced approximately 40 bachelor's degree holders, who were able to successfully apply their skills at their workplace in either governmental offices or industrial sectors.

3) FE has adopted a new recruitment system for course applicants, which was first developed during the project.

4) The realization of the project purpose is certainly expected to lead to the attainment of the overall goal, if the IT bridging course is successfully sustained.

## (5) Sustainability

The sustainability of the project is relatively low because the course is not so firmly established either in terms of the technical aspects of education and research, or the institutional aspects of administration. The IT bridging course itself will be continued after the termination of the project, since the functional and organizational framework already exists. The Ministry of Education of Lao and NUOL have agreed to continue the course. However, the quality of the course that the project aims to maintain during these 3 years might not be guaranteed. Specifically, if albeit is no longer possible to carry out curriculum revision, provide teacher training, or maintain the equipment, it might be hard for the present quality of the course to sustained. FE should consider the way to ensure the financial sustainability. Capacity development on the part of the C/P is not enough to keep the course operating independently.

## 3    Factors promoting sustainability and impact

## (1) Factors concerning planning

1) Several schemes were mixed to achieve highly-efficient support such as supporting the specific technical expertise by dispatching only 1 Japanese long-term expert, the third country experts and the contract between JICA and Japanese university. JICA-Net as a distance learning tool was also used to compensating for the absence of Japanese short-term experts. 2) The synergy effect produced by the AUN/ SEED-Net Project made the development of IT human resources more effective. Additionally, the robot contests which took place in the FE, with the support of the experts, were useful for encouraging lecturers and students to cultivate their techniques and knowledge. 3) A human network established though previous cooperative projects contributed to the smooth implementation of the project.

## (2) Factors concerning the implementation process

1) In order to meet the urgent needs of Lao society, the project is recruiting students from the relevant faculties, ministries and enterprises. These graduates successfully and immediately utilize their skills at work, which has a very positive impact on society.

2) In order to meet the real demand for IT human resources in Lao PDR, the project revised the original 2004 course curriculum to strengthen system administration subjects.

3) Several dedicated members worked hard for the project, strictly following the PO and the schedule.

## 4. Factors inhibiting sustainability and impact

## (1) Factors concerning planning

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[3]  Including the 2nd batch students expected to graduate January 2006.

1) It is too ambitious to set a project purpose given the limits of the project in terms of input and duration.

2) The PDM and the project purpose were not thoroughly understood by or made clear to all the members.

3) All administrative activities were allocated just one output in the PDM.

4) Qualitative aspects were not specified as indicators in the PDM

## (2) Factors concerning to the implementation process

1) The original curriculum for IT human resources of the IT bridging course did not reflect real needs for IT human resources in Lao PDR well.    Thus, the revised curriculum is not able to be evaluated its efficiency until 2007 when the 3$^{rd}$ batch students graduate.

2) Delay on starting the research activities due to the staff's capacity had not been satisfactory until year 2005.

3) Delay on accomplishing the material / textbooks development.

## 5. Conclusion

The project almost fulfilled the project purpose, and its outputs are highly appreciated by Lao society taking into account the limited project period and resources. Although this project is the first attempt to domestically produce IT bachelor holders, there were more than 60 successfully graduates[3]. Some of the graduates were promoted or transferred to IT related sections in their offices. Although the project still has some problems in terms of sustainability, it is hoped it can be continued in order to continue the good effects and outputs generated so far.

## 6. Recommendations

(1) In order to ensure the sustainability of the project, by the end of the project (March 2006), it is necessary to deal with the following critical points relating to both technical and administrative aspects:

1) Examine and schedule the essential tasks to be dealt with by the project

2) Clarify what the experts routinely do and did in terms of course management

3) Transfer these skills and knowledge from the experts to the C/Ps

4) Plan measures to make up for the financial shortage in order to maintain the future quality of the course

5) Prepare for the termination of the project by ensuring that the C/Ps are aware of how to operate the course independently

Sustainability will be guaranteed and the quality of the course will be maintained if specific technical and administrative aspects are urgently dealt with by the project before March 2006. For detailed recommendations relating to each outputs level, refer to the main report.

(2) In order to support the efforts on the Lao side, it is preferred that JICA continue its cooperation on some level with FE.

## 7. Lessons Learned

1) Improving the administration of the course should be considered from the beginning of the project in order to guarantee sustainability.

2) PDM logic should be well understood by the project members before the start of the project, and it should be set up properly.

3) Utilization of the third country experts and contracting out scheme highly contributes to the efficiency of such an educational project. In this case, the appropriateness should be sufficiently considered based on past experience.

4) Experts with a vast network in and experience of the partner country are preferable

5) Ensuring the sustainability of a higher education project is a challenging matter, since the level which is expected to be achieved is relatively high.