

Summary of Terminal Evaluation

I. Outline of the Project	
Country: Laos	Project Title: Human Resource Development in IT Service Industry at NUOL
Issue/Sector: ICT	Cooperation Scheme: Technical Cooperation Project
Division in Charge: JICA Laos Office	Total Cost: 3.8 million yen (as of Terminal Evaluation)
Period of Cooperation	Dec. 1, 2008 to Nov. 30, 2013 (60 months)
	Partner Country's Implementing Organization: National University of Laos
	Cooperation Organization (Japanese side): N/A
<p>(ア) Background of the Project</p> <p>Compared to the neighboring ASEAN countries, which utilize information technology (IT) to accelerate economic development, the utilization of IT in Lao PDR has been delayed, and concerns were raised that the economic gap may widen due to the delayed utilization of IT in Lao PDR. For this reason, a technical cooperation project "the Project for the Upgrading IT Education (Information Technology Bridging Course)" was implemented in National University of Laos (NUOL) from 2003 to 2008 to develop human resources in IT field. While the said project successfully established computer science courses at the undergraduate level mainly focusing on theory matters, it was facing difficulties to meet the strong demand from the IT service industry for developing IT practitioners (IT specialists/ engineers).</p> <p>In view of the above, the GOL requested a technical cooperation "Human Resource Development in IT Service Industry at NUOL" to the Japanese government to develop IT practitioners (IT specialists/engineers) to support the development of IT service industry in Lao PDR. The said project is being implemented from December 2008 for 5 years.</p>	
<p>(イ) Project Overview</p> <p>(1) Overall Goal IT service industry is well-developed in the Lao PDR.</p> <p>(2) Project Purpose Human resources are developed according to the IT service market through the ITSC by the IT Department of the Faculty of Engineering at the NUOL.</p> <p>(3) Output</p> <ol style="list-style-type: none"> 1. ITSC is properly operated at the IT Department of the Faculty of Engineering, the NUOL. 2. The IT Department Business Unit (ITBU) is properly operated at the IT Department of the Faculty of Engineering, the NUOL. 3. Practical skills and teaching capabilities of lecturers in charge of the ITSC and master course that is planned to be established are enhanced in the field of the software engineering. 4. ITSC and master course, which is planned to be established, are for the practical software Engineering and business skills are developed. 5. Collaboration among the government, industry, and academia is reinforced. <p>(4) Inputs</p> <p><u>Japanese side</u></p> <ol style="list-style-type: none"> a) Personnel: Long-term Experts: 3 (117M/M), Short-Term Experts: 18 (20M/M) b) Equipment: PC, projectors, IT related equipment, desks, chairs, shelves, cabinets, car, etc. c) Training in Japan: None d) Local Cost:: 25, 090,195Yen 	

<u>Laotian side</u>			
a) Personnel: 28 C/Ps b) Local Cost: 99,119,000Kip ³			
c) Facility and equipment:: 45,864,000Kip in total for PC for Testing Center (5 units), Door roll for security (4 units) and curtain (5 units)			
II. Evaluation Team			
Members	Leader: Ms. Machiko KAMIYA (Senior Representative, JICA Laos Office) Evaluation Analysis: Ms. Mayumi HAMADA (Chief Consultant, FASID) Cooperation Planning 1: Mr. Koichi TOYA (Representative, JICA Laos Office) Cooperation Planning 2: Mr. Daovanh SENGHALATH (Assistant Program Officer, JICA Laos Office)		
Period of Evaluation	May 28, 2013- 13 June, 2013	Type of Evaluation	Terminal Evaluation
III. Results of Evaluation			
3-1 Achievement of Objectives			
3-1-1 Output 1: ITSC are properly operated at the IT Department of the Faculty of Engineering, the NUOL.			
Output 1: Expected to be fully achieved by the end of the Project			
Objectively Verifiable Indicator			
1-1. Guidelines of short term courses, evaluation on lecturers, outsourcing, library use and others necessary for effective implementation of ITSC and ITBU are developed, and approved by the head of IT department.			
1-2. The recruitment, selection, evaluation of learning results, and graduation approval of students are appropriately conducted.			
Major Reasons			
<ul style="list-style-type: none"> - Most of the guidelines both for the long-term courses (ITSC/ITPM) and the short-term courses are already developed, i.e., development of 6 manuals and 1 format for library use have been completed. - Annual academic administration (such as recruitment of students, evaluation of students on their learning results, and graduation approval of students) has been done well following the University's guidelines. 			
3-1-2 Output 2: The IT Department Business Unit (ITBU) is properly operated at the IT Department of the Faculty of Engineering, the NUOL.			
Output 2: Partially achieved			
Objectively Verifiable Indicator			
2-1. The operational projects are appropriately managed according to the plan of the ITBU, whose results are reported to and approved by the head of IT department.			
2-2. The ITBU comes to be able to receive works on the system development from the government and industry for profits.			
2-3. More than 3 incubation booths at ITBU are occupied during the Project period.			
Major Reasons			
<ul style="list-style-type: none"> - Management system of ITBU is still under development <ul style="list-style-type: none"> • changes in ITBU managers twice, manager's position vacant for 2 month • Course evaluation is not utilized for course improvement - The intention of indicator 2-2 is achieved through alternative activities (fieldwork for long-term course) - 3 incubation booths are occupied. However, incubation is still at the initial stage, as giving advice to incubatees by lecturers has not begun yet 			
3-1-3 Output 3: Practical skills and teaching capabilities of lecturers in charge of the ITSC and master course that is planned to be established are enhanced in the field of the software engineering.			

³ The figure is the running cost borne by Lao side for ITSC/ITPM from January 2011 till March 2013 only. Other figures were not available, although the running cost for Short-term Courses were also basically borne by Lao side.

<p>Output 3: Almost achieved</p> <p>Objectively Verifiable Indicator</p> <p>3-1. Satisfaction ratings (evaluation) of the lecturers are enhanced by students and trainees.</p> <p>3-2. The number of the success of the system development in the ITBU is increased.</p> <p>Major Reasons</p> <ul style="list-style-type: none"> - Though there are no major changes on students' satisfaction rate over the years, evaluation of course lecturers is rather high (based on the Interview results of graduates and students at ITSC/ITPM) - The number of lecturers who have acquired international certificates increased (26 certificates in total) - The intention of indicator 3-2 is achieved through alternative activities (field work for long-term course)
<p>3-1-4 Output 4: ITSC and master course, which is planned to be established, are for the practical software engineering and business skills are developed.</p> <p>Output 4: Almost achieved</p> <p>Objectively Verifiable Indicator</p> <p>4-1. Satisfaction ratings (evaluation) of the overall ITSC are enhanced by students and trainees.</p> <p>4-2. The curriculums, syllabi, and learning materials are regularly updated.</p> <p>4-3. The curriculum board is annually held with the external knowledgeable persons (from the government and industry).</p> <p>Major Reasons</p> <ul style="list-style-type: none"> - Interview results with alumni and students at ITSC/ITPM show that their evaluation on the courses is rather high. - Teaching materials were updated in 2012. Introduced to use academic program for part of the curriculum for efficient updating. - Curriculum Board was convened once a year from 2010 till 2012
<p>3-1-5 Output 5: Collaboration among the government, industry, and academia is reinforced</p> <p>Output 5: Achieved</p> <p>Objectively Verifiable Indicator</p> <p>5-1. Joint seminars among the government, industry, and academia are annually held.</p> <p>5-2. Lectures by the visiting lecturers from the government and industry are delivered at a constant rate.</p> <p>Major Reasons</p> <ul style="list-style-type: none"> - Study sessions were held 4 times from 2009 till 2012. - Qualified 5 visiting lecturers (2 from government, 2 from industry 1 from freelance) have been teaching part of the Short-term Courses and ITSC/ITPM.
<p>3-1-6 Project Purpose: Human resources are developed according to the IT service market through the ITSC by the IT Department of the Faculty of Engineering at the NUOL.</p> <p>Project Purpose: Almost achieved</p> <p>Objectively Verifiable Indicator</p> <ol style="list-style-type: none"> 1. Evaluation of graduates and trainees working for the domestic IT service companies, governmental organizations, and IT user corporations is enhanced. 2. More than 80% of the graduates from ITSC will (re)start to work as the IT service engineers 3. The number of trainees (attending the short-term course) of the postgraduate course is increased in the Lao PDR.

Major Reasons

- In the telephone interview conducted by the project in May 2013 with 11 major companies that hire graduates of ITSC, the capacity of ITSC graduates was rated satisfactory.
- The ratio of the graduates of ITSC who are engaged with IT related work is 95%.
- The total number of the participants is making steady increase (accumulatively 774 persons as of May 2013)

3-1-7 Overall Goal: IT service industry is well-developed in the Lao PDR.

Overall Goal⁴: Unlikely to be achieved within 3 years after Project completion

Objectively Verifiable Indicator

1. The ratio of the IT services in the GDP is increased.
2. The ratio of the people working for the domestic IT service industry in the working population is increased.

Major Reasons

- Considering the number of graduates to be fostered at ITPM within 3 years, influencing the ratio of IT in GDP or the IT specialists' ratio among all the workers in Laos is not probable.
- The initial setting of the Overall Goal was too high to be realistic.

3-2 Implementation Process

(1) Activities

Activities were mostly conducted as scheduled, except for 1) the system development work from external organization to reflect the technical needs into curriculum, and to generate income as incentives for lecturers, and 2) symposium for strengthening collaboration among the government, industry and academia. As mentioned in Output 2 above, those aims were already achieved by other actions (fieldwork and Short-term Course), there was no negative effect to the project.

(2) Monitoring system

Monitoring was made based on 1) the weekly meeting among the managerial level, and 2) section-level. Each manager reports the results of the weekly meeting at the managerial level weekly meeting, to get advice from Japanese experts and Project Manager.

(3) Ownership of C/P

Most of the activities are now done by counterparts, with the support of Japanese experts such as establishing initial set-up in basic framework and format, allocation of work in updating teaching materials, giving advice on technical and managerial aspects including all the major activities such as ITSC/ITPM, Short-term Courses and Incubation activities.

3-3 Summary of Evaluation Results

(1) Relevance (Rather High)⁵

The project direction is consistent with the government policies of Lao PDR and Japan. The Seventh Five-year National Socio-Economic Development Plan (2011-2015) of Lao PDR emphasized the importance of promoting telecommunications and high-speed Internet as well as human resources development including engineers. The ICT National Policy (2009 by NAPT) places the importance on human resources development in IT sector as well as development of IT sector itself. Also on Japanese side, in MOFA's Country Assistance Policy to Laos (2012), the support in higher education and technical and vocational education is indicated in the third pillar, i.e., "establishment of educational environment and human resources development," with which JICA's assistance policy to Laos is in line with. With regard to the needs of industry, fostering IT specialists are consistent with the needs of major private companies, which led to good reputation

⁴ Probability of achieving the Overall Goal within about 3 years after the project completion

⁵ The rating was made in 4-scale rating (High as the best, Rather High, Rather Low, and Low as the worst.)

among the potential students. On the other hand, it is less consistent with some private companies' demands for securing IT specialists within minimum time range, because the project changed the duration of long-term courses from 1 year to 2 years during implementation stage, as the TISC was upgraded into ITPM, i.e., master course

(2) Effectiveness (Rather High)

All the indicators of the Project Purpose showed either almost achieved or achieved, leading to the conclusion of having the Project Purpose almost achieved. In order to achieve the Project Purpose which is to develop human resources in the IT service industry, the project was designed to have each of the four Outputs play a certain role and to make contribution to achieve the Project Purpose, therefore having a logical linkage between the Outputs and the Project Purpose.

(3) Efficiency (Rather High)

The following project design enhanced Efficiency, securing high quality of output with less input; 1) training with experts from Thailand, whose language is easier to understand by Laotian lecturers than English, 2) Utilizing academic programs such as Microsoft Academy, Oracle Academy, etc., which share about two thirds of the total teaching materials. These materials are of high quality at international standard, can be distributed to students, and are automatically updated, so that the lecturers do not consume time for updating, and 3) the teaching materials developed by other JICA IT projects were utilized for one third of the total teaching materials, which resulted in saving time for developing new teaching material, and lecturers could concentrate on other activities.

On the other hand, although a number of lecturers were assigned by the faculty, some lectures could not pass the tests at the technical transfer and thus could not remain as the Project counterparts, due to lack of experience. Also, the assignment of Manager of ITBU which is responsible for Short-term Courses was very difficult, and the post had been vacant for 2 months, and the current manager is the third person in the position. It is taking time to strengthen the management capacity of ITBU.

(4) Impact (Certain Positive Impact are observed)

Probability of achieving Overall Goal within about 3 years after termination is very low, because the initial setting of the Overall Goal was too high.

However, the following positive influence was observed at the undergraduate education at Faculty of Engineering, NUOL; 1) Improvement of education (due to enhanced capacity of the lecturers and introduction of the same teaching materials at the undergraduate level), 2) revision of Curriculum (due to enhancement of master course education, some of the modules at the master level which should have been taught at the undergraduate, will be transferred to undergraduate curriculum from September 2013), 3) Satisfaction rating of lecturers by students has been introduced at Undergraduate Level, Faculty of Engineering.

Incubation study tour to Thailand in 2013 that consists of university, government and industry led to the understanding of the concept and importance of incubation to the participants. Discussions and proposal-making have begun among the ministries on promoting incubation system in Laos regardless of the sectors. No negative impact has been observed.

(5) Sustainability (Rather Low)

As for the policy aspect, the direction of promoting IT and its human resources will continue, as the government is going to step forward to realize e-government, e-commerce, etc., which may take time but will not be totally reverse.

From organizational aspect, NUOL has a solid foundation as a national university with longest history in the country. In terms of personnel concerned, it is likely that most of the lecturers will stay at the university. However, there are some concerns such as the salary gap between the lecturers and the graduates, and the burden of workload to teach various courses, etc. are becoming too heavy. Also, it is still to be seen whether or not the management system of ITBU would be stable, and the study session would be continued after completion of the Project.

In terms of financial aspect, maintaining and improving the quality of education at IT Department and securing the number of students to be enrolled in the future is essential, as all the

running cost for conducting ITPM (the masters course) and Short-term Courses are borne by the tuition fees.

From technological aspect, the teaching capacity of lecturers is regarded to be mostly sufficient for teaching the courses. However, as the speed of technology change in IT sector is very rapid, it is essential that the lecturers keep up their knowledge with the rapid change by themselves after termination of the project to keep responding to the industry's demand. If the reputation and satisfaction level from the industry are decreased, the reputation of the Department among the students and candidates of trainees in IT industry will also be deteriorated, resulting in a possible decrease of new students/trainees.

3-4 Factors contributing to project progress/effects

(1) Factors related to Planning

Utilization of teaching materials developed by other IT projects supported by JICA, international academic programs, and experts from Thailand and Singapore, etc. contributed to enhance efficiency.

(2) Factors related to Implementation Process

The way to enhance ownership of counterpart, such as lecturers conduct actual teaching as well as upgrading teaching materials by themselves, promoted capacity development of lecturers.

3-5 Factors inhibiting project progress/effects

(1) Factors related to Planning

The setting of the Overall Goal at the time of project planning was too high. Affecting GNP ratio and the ratio of workers in the industry by human resources development project within 3 years is not realistic.

(2) Factors related to Implementation Process

The change in duration of the long-term courses from 1-year ITSC to 2-year ITPM was less consistent with some private companies' demands.

3-6 Conclusion

Based on the results of the evaluation, overall, the Project has been steadily making progress towards achieving its Project Purpose. In terms of the evaluation of IT courses, it is confirmed that the IT courses has met the expectation of many stakeholders through the questionnaire and the interviews. Moreover, guidelines have been completed and those guidelines have contributed to the proper management at IT Department of the Faculty of Engineering. Concerning the technology transfer to the lecturers of IT courses, this project has effectively and efficiently conducted the technology-transfer through inviting the IT experts from neighboring countries and utilizing the existing materials developed by JICA IT projects in other countries. Furthermore, this project has supported the establishment of ITPM, which has started in January 2013 based on the successful achievement of ITSC. Establishing a Master Course is aligned to the policy of NUOL to set up Master Course on all departments until the end of academic year 2015.

Though the Project has made many achievements, there are a few points which need attention. First, direct impact to increasing the ratio of IT service industry in GDP cannot be achieved by simply producing certain number of graduates from IT courses and ITPM. Second, to further enhance the sustainability of the Project, the quality of the IT course and the enrollment rate of the course should be carefully monitored to ensure financial sustainability. Third, ITBU/LIBIC is at its very early stage and the real function as an Incubator is yet to be seen.

Based on the above, although there are a few points which need attention, the Project Purpose is almost achieved. Therefore, it concludes that the Project will be terminated at the end of the project cooperation period, and the Lao side implementing agency will take full ownership afterwards. Possible follow-up cooperation may be considered depending on the result of the ex-post evaluation.

3-7 Recommendation

(1) In order to maintain the quality of the IT courses, systematical evaluation of overall program, including the curriculum, teaching materials, equipment and lecturers of ITPM and Short-term courses should be conducted in a timely manner. To reflect the latest needs from the IT industry,

lecturers need to continuously up-date their knowledge, and revision of curriculum is recommended for every 3 years.

(2) Monitoring the change of enrollment rate of ITPM should be conducted. Based on the results, revision of pre-requisite may become necessary.

(3) Long-term commitment from Lao side is necessary to make incubator fully established in Lao through learning from the model in Thailand.

(4) Careful attention on the management capacity of ITBU is necessary.

3-8 Lessons Learned

(1) As developing the capacity of human resources in the IT industry requires acquiring advanced knowledge, in order to have an effective and efficient technical transfer, it is very important to find out the exact level of knowledge and experience the counterpart possess when designing the project. Moreover, considering the necessity to acquire advanced knowledge and also to continuously up-date the knowledge, capacity building in IT field is very challenging and thus requires full commitment from both the partner country side as well as the development partner side.

(2) Not always the Japanese model suites the best for the partner country. In some cases, Japanese model is too advanced and neighboring countries' model suites better. When introducing a new concept (incubator) to a partner country, it takes time to have it fully established locally and commitment from the partner country is necessary.