

Kyrgyz

Ex-Post Evaluation of Japanese Technical Cooperation Project  
“IT Human Resource Development in the Kyrgyz Republic (National IT Center)”

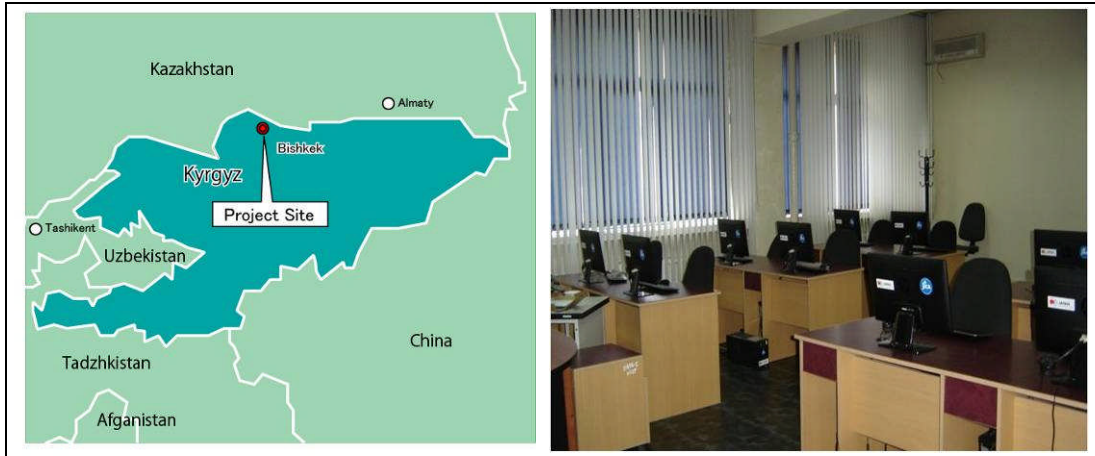
External Evaluator : Koichiro Ishimori, Value Frontier Co., Ltd

**0. Summary**

The project intended to strengthen capacities to implement training courses at National Information and Technology Center (NITC) by developing IT human resource and training curricula, and thereby contribute to providing advanced IT engineers. The objective of the project was relevant to the development policies and needs of Kyrgyz, as well as to the development policies of Japan, and means to achieve them were appropriate. Therefore, relevance of the project is high. Since IT human resource and training curricula were developed as planned, capacities to implement training courses at NITC were strengthened, and the number of trained advanced IT engineers who met the needs of the Kyrgyz IT market has been increasing. Therefore, effectiveness and impacts of the project are high. However, while the project period of cooperation was within the plan, the project cost exceeded the plan. Therefore, efficiency of the project is fair. Provisions of advanced IT engineers are still important in policies of Kyrgyz and no major problems have been observed in the structural and technical aspects of the implementing agency. However, the balance of NITC is deemed to fall into negative later. Therefore, sustainability of the project effects is fair.

In light of the above, this project is evaluated to be satisfactory.

**1. Project Description**



Project Location

Training Room

**1.1 Background**

Kyrgyz has relatively fewer natural resources than do other central Asian countries; thus, developing the knowledge industry, particularly the IT industry, became an important agenda. However, the IT industry contributed a mere 3% to the country’s GDP. There were numerous reasons for this,

including a lack of policy in promoting the IT industry. The lack of IT engineers with practical and technical skills was also a major reason. Many universities and private schools were providing IT education when the project was planned in 2003, but they taught mainly IT theories and basic computer operation skills. Therefore, they were able to produce IT engineers with basic skills, and not with practical and technical skills, such as software development and network development. It was in this context that NITC was established by presidential decree in 2004, within the office of the President, to equip IT engineers with advanced skills. However, Kyrgyz lacked the technical know-how to deliver such advanced training. For this reason, Kyrgyz requested Japan to implement it, since this country has significant experience in the IT sector.

## 1.2 Project Outline

Overall Goal		An adequate supply of highly skilled IT engineers to meet the IT market demand in the Kyrgyz Republic.
Project Objective		NITC would function properly as the training institute producing highly skilled IT engineers.
Outputs	Output 1	Counterparts' skills are improved.
	Output 2	Training course curricula are properly formulated and revised every year.
	Output 3	Proper facilities and necessary training equipment are provided.
	Output 4	Training materials and manuals are properly prepared.
	Output 5	Training courses of appropriate quality are implemented.
	Output 6	Third Country Training Program of appropriate quality is implemented.
Inputs		<p>Japanese Side:</p> <ol style="list-style-type: none"> <li>1. Experts: 30 experts 1 expert for Long-Term, 29 experts for Short-Term</li> <li>2. 12 Trainees received (12 for Japan)</li> <li>3. Third Country Training Programs for counterparts NA</li> <li>4. Equipment 94 million yen</li> <li>5. Local Cost 7 million yen</li> <li>6. Others (incl. dispatch of related missions) Mid-term evaluation, Terminal evaluation, etc</li> </ol> <p>Kyrgyz Side:</p> <ol style="list-style-type: none"> <li>1. 18 Counterparts</li> <li>2. Land, Facilities, and Equipment</li> <li>3. Local Cost 39 million yen</li> </ol>
Total Cost		490.55 million yen
Period of Cooperation		October, 2004 – May, 2008
Implementing Agency		National Information Technology Center (NITC)
Cooperation Agency in Japan		Ministry of Economy, Trade and Industry, Fujitsu Learning Media Ltd, IBM Japan Ltd, Keio University
Related Projects		Technical Cooperation Project on “Human Resource Development of ICT Specialists of Central Asian Governmental Organizations (January, 2009 – February, 2012)”

### **1.3 Outline of the Terminal Evaluation**

#### **1.3.1 Achievement of Overall Goal**

The number of trainees who completed short-term courses was increasing every year, and employers who sent them were satisfied with the quality of training. Since the project produced the IT engineers that the IT market required, the overall goal was considered achievable.

#### **1.3.2 Achievement of Project Objective**

The number of trainees who completed short-term courses was higher than anticipated, and the employers who sent them as well as the trainees themselves were satisfied with the quality of training. Besides, the yearly balance of NITC remained positive. Therefore, the project objective was judged as likely to be achieved.

#### **1.3.3 Recommendations**

The following recommendations were made with the terminal evaluation: 1) NITC must establish missions and goals and draw up a management plan that includes expanding its business into new fields. 2) NITC should hire and nurture a staff responsible for marketing. 3) NITC must improve Third Country Training Programs by balancing the number of trainees received from each country, considering the fact that certain countries were disproportionately represented in terms of the number of trainees who completed training.

## **2. Outline of the Evaluation Study**

### **2.1 External Evaluator**

Mr. Koichiro Ishimori, Value Frontier Co., Ltd

### **2.2 Duration of Evaluation Study**

The Ex-Post Evaluation Study was implemented according to the following schedule:

Duration of the Study: August 2011–June 2012

Duration of the Field Study: December 11–December 25, 2011, and February 25–March 2, 2012

### **2.3 Constraints during the Evaluation Study**

There were some limitations in terms of gathering financial information on the project during implementation of the study.

## **3. Results of the Evaluation (Overall Rating: B<sup>1</sup>)**

### **3.1 Relevance (Rating: ③<sup>2</sup>)**

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<sup>1</sup> A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

### 3.1.1 Relevance with the Development Plan of Kyrgyz

Promoting sustainable economic growth was one of 11 priorities of the Kyrgyz National Poverty Reduction Strategy (2003-2005) that, at the time the NICT project was planned, aimed to “develop infrastructures for an information society through development and promotion of information and communication technologies (ICT).”

The council on information and communication technologies in the President’s office was the highest decision-making body for the Kyrgyz IT policy for Information and Communication Technologies for Development in the Kyrgyz Republic (2002). It promoted the development of 3 E’s, that is, E-governance, E-education, and E-economy. Besides, it drew up the Human Resource Development on the Basis of Using ICT: Concept and Action Plan (2003) and made this project one of its six prioritized projects<sup>3</sup>.

The Kyrgyz Country Development Strategy (2007-2010), at the time of the project’s completion, still aimed to “develop infrastructures for an information society through development and promotion of ICT” to boost economic development as one of its four priorities.

Since there was no change in the policy on Information and Communication Technologies for Development in the Kyrgyz Republic (2002) and Human Resource Development on the Basis of Using ICT: Concept and Action Plan (2003), the importance of the project remained unchanged.

Therefore, both the development plan and the sector plan in Kyrgyz, at the time of the project’s planning and completion, prioritized the advanced training of IT engineers, and the project was judged to be relevant with the national plans of Kyrgyz.

### 3.1.2 Relevance with the Development Needs of Kyrgyz

In Kyrgyz, in addition to agriculture as the main industry, IT-related services were growing and the demand for IT services like software development and network development was increasing. However, very few IT engineers with practical and technical skills were in the IT market. It is in this context that NITC was established by presidential decree; however, Kyrgyz lacked the technical know-how to provide advanced IT training. Therefore, Kyrgyz was not able to solve the problem of the shortage of IT engineers. Under these circumstances, the project estimated that it would need to produce 72 diploma holders, with practical and technical skills, annually in the fields of software development and network development and 216 diploma holders by the end of the project<sup>4</sup>. However, the mid-term evaluation that was carried out two years after the project

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<sup>2</sup> ③: High, ②: Fair, ①: Low

<sup>3</sup> 1) Installations of computers and related equipment at elementary, junior, and high schools; 2) Internet connections at elementary, junior, and high schools; 3) improvement of the IT skills of teachers at elementary, junior, and high schools; 4) expansion of computer networks in scientific and educational fields; 5) establishment of a website for Bilim-Kyrgyzstan Education; and 6) implementation of the project.

<sup>4</sup> Since there were no IT statistics in Kyrgyz at the time of the project planning, it was difficult to forecast precisely the demand for diploma holders. The project estimated that the demand for diploma holders would increase by 2.5

began, in reassessing the implemented training and the Kyrgyz IT market, found that there was greater demand for graduates who had completed just a short course<sup>5</sup> than for the diploma holders<sup>6</sup>. Consequently, the project decided to include IT candidates who would complete just a short course of advanced IT; it then re-estimated that it would need to produce 20 diploma holders in total and 400 graduates of short courses by the end of the project. In addition, the course content and duration were modified so that they could better meet the actual needs<sup>7</sup>. In sum, the mid-term evaluation's reassessment of the implemented training and the Kyrgyz IT market resulted in the modification of the definition of IT engineers with practical and technical skills and of the project objective as well as the course content and duration. Considering that the purpose of the mid-term evaluation was to monitor progress and, if necessary, revise the ongoing project, such modifications were appropriate. Therefore, the project that was intended to produce IT engineers to meet higher levels of demand met the development needs of Kyrgyz at that time through the mid-term evaluation's reassessment of the implemented training and the Kyrgyz IT market, and the need for the project was judged to be high.

As the number of software development companies increased from 205 in 2004 to 270 in 2008 when the project was completed<sup>8</sup>, the demand for IT-related services as well as for software development and network development had grown by the time the project was completed. Therefore, the project that aimed to produce highly skilled IT engineers through NITC's capacity building met the development needs of Kyrgyz at the time of the project's completion, and the need for the project was judged to be high.

### 3.1.3 Relevance with Japan's ODA Policy

The Charter on Official Development Assistance (ODA) (2003) before the implementation of the project highlighted the importance of "cooperation for human resources development including that in the IT sector" to promote sustainable growth as one of its four priorities. The Mid-term

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times in 2010, based on the policy target that the sales income of the IT industry would increase by 2.5 times in 2010 compared to what it was in 2003, according to Information and Communication Technologies for Development in the Kyrgyz Republic (2002).

<sup>5</sup> People who complete a short course are expected to function partially as project officers for software development.

<sup>6</sup> Diploma holders are expected to perform program design, operation systems design, new development, and improvement of software as project managers in software development.

<sup>7</sup> As far as obtaining a diploma in software development (C language) was concerned, for example, the original project plan proposed that trainees would complete an SQL server course (14 days), an operation system course (8 days), a software development course (15 days), a programming course (16 days) and a workshop (17 days) and pass the final examination. It took those enrolled on the courses 70 weekdays (3.5 months if weekends were included). However, the modified plan of the project expected them to complete an MS SQL server course (5 days), a basic C language (8 days), advanced C languages (5 days) and a workshop (10 days) and to pass the final examination. It took those enrolled 28 days (about 1 month if weekends were included) to obtain the diploma.

<sup>8</sup> There is no official data on the number of network development companies. According to a communication operators' association to which network development companies belong, however, the number is increasing.

Policy on ODA (1999) before the implementation of the project highlighted the importance of “human resources development for building countries” since human resources development and their intellectual support was one of its seven priorities. In addition, the basic policy on ODA to Kyrgyz emphasized the provision of support that was specific to the needs of Kyrgyz and prioritized “human resources development for the transition to a market economy,” in keeping with the support for introducing the market economy as one of its four priorities. Therefore, the project was judged to be relevant with the Japan’ s ODA Policy.

#### 3.1.4 Appropriateness as means

The planning team of the project considered 13 universities offering computer- and IT-related programs as the implementing agency of the project. The team found, however, that a number of universities and professors were not sufficiently qualified; NITC was found to have adequately qualified staff, including the director and the project manager of NITC<sup>9</sup>. Therefore, after carefully considering the alternative, the team selected NITC as the implementing agency.

Even at the project’s completion, only NITC was able to produce IT engineers with practical and technical skills in the areas of software development and network development. Therefore, it is judged to be appropriate that the team selected NITC.

In sum, the project has been highly relevant with the Kyrgyz development plans, development needs, as well as Japan’ s ODA Policy, and there has been no problem with appropriateness of means. Therefore, its relevance is high.

### **3.2 Effectiveness and Impact (Rating: ③)**

#### 3.2.1 Project Outputs

##### 3.2.1.1 Project Output

##### 1) Output 1: Counterparts’ skills are improved

The terminal evaluation concluded that output 1 was achieved because indicators 1-1 and 1-2 below were achieved. The ex-post evaluation reassessed the results of the tests that had been conducted right before the completion of the project by experts and terminal evaluators and confirmed that indicator 1-1 was achieved. It also reassessed the questionnaires that had been collected during the project period and confirmed that indicator 1-2 was achieved. Therefore, it also concluded that output 1 was achieved.

Indicator 1-1: All counterparts achieve a level with which experts are satisfied

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<sup>9</sup> The director and project manager of NITC has a master’s degree in computer science from Brigham Young University and IT certifications related to software and network development from Sysco, etc.

According to the results of the test that the experts conducted one year before the completion of the project, all counterparts had achieved on average a level of 4.0 on a scale of 5<sup>10</sup>, and all of the counterparts (director and six lecturers) were assessed as having reached levels with which the experts were satisfied. Further, the terminal evaluation that was conducted two months before the completion of the project found that they had reached even higher levels. Through the perusal of reports by experts, the terminal evaluation, and interviews with counterparts including the project manager, the ex-post evaluation also confirms that all counterparts have reached levels of competence with which the experts were satisfied at the time of the project's completion.

Indicator 1-2: 80% of trainees are satisfied with counterparts

Out of 680 answers that were collected from the trainees during the project's implementation, 574 were found to be valid; from these, the ex-post evaluation confirms that 550 trainees (approx. 95.8%) answered that they were either very satisfied or satisfied with the counterparts.

In sum, it is judged that output 1 was achieved.

2) Output 2: Training course curricula are properly formulated and revised every year.

The terminal evaluation concluded that output 2 was achieved since indicators 2-1 and 2-2 below were achieved. The ex-post evaluation also confirms that output 2 was achieved since indicators 2-1 to 2-2 were achieved.

Indicator 2-1: From June 2005, all curricula are formulated and revised yearly.

All curricula were formulated in June 2005 and revised twice in 2006 and once in 2007<sup>11</sup>. When revising curricula, the experts and counterparts first researched the market demand for a particular technology and its likelihood of continuing demand and then consulted with all relevant parties regarding its results. Once they decided to develop a curriculum, a counterpart took responsibility for doing so with some help from other relevant parties.

Indicator 2-2: Counterparts can revise curricula by themselves.

According to the results of the test conducted by experts one year before the project's

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<sup>10</sup> 1 point: Trainees did not understand at all; 2 points: Trainees partially understood; 3 points: Trainees could be assistants; 4 points: Trainees could be lecturers with some help, 5 points: Trainees could be lecturers without further assistance.

<sup>11</sup> According to the NITC director, after 2008 when the project was completed, counterparts revised curricula not on a yearly basis, but on the basis of technical innovations and demand for particular technologies. This is because it is important to revise curricula after thoroughly considering the demand and likelihood of continued demand in the technology market, in an environment where innovations take place daily.

completion, the skill levels of all counterparts in revising curricula were on average 2.9 on a scale of 5, and it was judged that the skill levels of all counterparts were not high enough. However, another study by the terminal evaluation that was conducted two months before completion of the project judged that they were high enough to develop and revise curricula, including needs assessment. Through perusal of experts' reports, the terminal evaluation, and interviews with counterparts including the project manager, the ex-post evaluation also confirms that all counterparts were able to revise curricula at the time of the project completion.

In sum, it is judged that output 2 was achieved

3) Output 3: Adequate provision of facilities and equipment required for training is made

The terminal evaluation concluded that output 3 was achieved since indicator 3-1 below was achieved. The ex-post evaluation also confirms that output 3 was achieved since indicator 3-1 was achieved.

Indicator 3-1: The register book is revised on a periodic basis.

Facilities were properly managed and the serial codes of equipment were put into a register book whenever new equipment was introduced.

In sum, it is judged that output 3 was achieved.

4) Output 4: Training materials and manuals are properly prepared

The terminal evaluation concluded that output 4 was achieved since indicators 4-1 to 4-2 below were achieved. The ex-post evaluation also confirms that output 4 was achieved since indicators 4-1 to 4-2 were achieved.

Indicator 4-1: 80% of trainees are satisfied with training materials.

Out of 680 answers collected during implementation of the project, 574 were considered valid; the ex-post evaluation confirms that of the latter, 470 trainees (approx. 81.8%) answered that they were either very satisfied or satisfied with training materials.

Indicator 4-2: Counterparts can revise training materials and manuals by themselves.

According to the results of the test conducted by experts one year before completion of the project, the skill levels of all counterparts in revising training materials and manuals were on average 3.4 on a scale of 5<sup>12</sup>, and it was judged that the skill levels of all counterparts were not

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<sup>12</sup> 1 point: Unable to revise despite help; 2 points: Partially able to revise with help; 3 points: Mostly able to revise



high enough. However, another study by the terminal evaluation that was implemented two months before completion of the project judged that the counterparts were skilled enough to revise the training materials and manuals after a transfer of knowledge on setting objectives, selecting contents to achieve objectives, and readability and usability of expressions. Through the perusal of reports by experts, the terminal evaluation, and interviews with counterparts including the project manager, the ex-post evaluation also confirms that all counterparts were able to revise the training materials and manuals by themselves at the time of the project's completion.

In sum, it is judged that output 4 was mostly achieved.

5) Output 5: Training courses of appropriate quality are implemented.

The terminal evaluation concluded that output 5 was achieved since indicators 5-1 to 5-2 below were achieved. The ex-post evaluation also confirms through the reassessment of the questionnaires collected during the project period that output 5 was achieved since indicators 5-1 to 5-2 were achieved.

Indicator 5-1: Rate of trainees who successfully completed training rises to above 70% on average during the project period.

A total of 824 trainees took part in training during the project period, of which 570 (approx. 69.2%) completed it.

Indicator 5-2: 80% of trainees are satisfied with training.

Out of 680 answers that were collected during the project implementation, 574 were considered valid; of these answers, the ex-post evaluation confirms that 532 trainees (approx. 92.6%) answered that they were either very satisfied or satisfied with training.

In sum, it is judged that output 4 was mostly achieved.

6) Output 6: Third Country Training Program of appropriate quality is implemented.

The terminal evaluation concluded that output 6 was achieved since indicator 6-1 below was achieved. The ex-post evaluation also confirms through the reassessment of the questionnaires that had been collected during the project period that output 6 was achieved since indicator 6-1 was achieved.

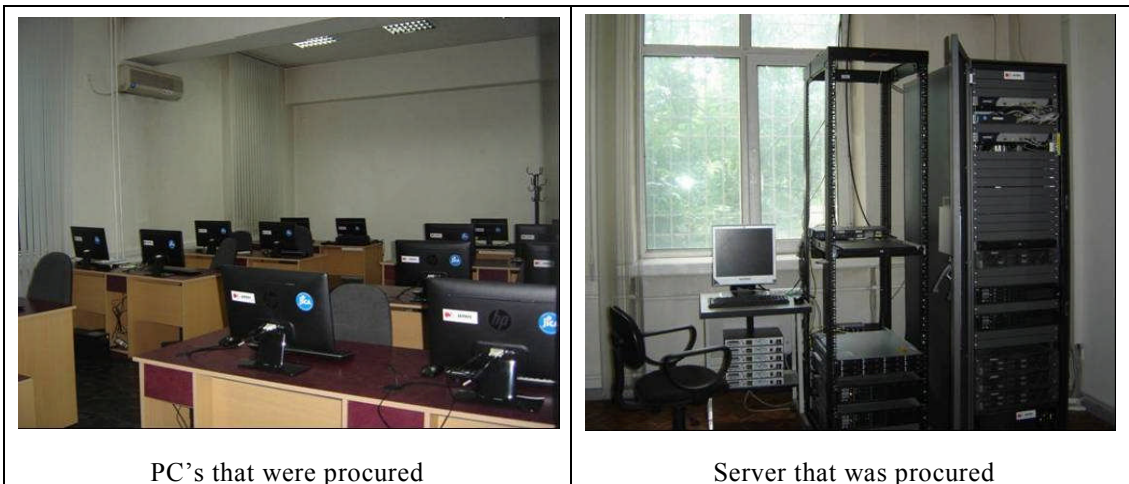
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with help; 4 points: Able to revise with help; 5 points: Able to revise without help.

Indicator 6-1: Counterparts can support Third Country Training Program<sup>13</sup>

The Third Country Training Program for the central Asian countries that was implemented in September 2007 invited 12 trainees (3, 5, and 4 trainees, respectively) from governmental organizations in Kazakhstan, Uzbekistan, and Tajikistan to NITC and provided them with four training courses related to network development over a month. According to the responses to the questionnaires that were collected after the training courses, they were happy about the quality since they rated the courses 4.7 on a scale of 5<sup>14</sup>.

In sum, it is judged that output 6 was achieved.



3.2.1.2 Achievement of Project Objective

Project Objective: NITC functions successfully as the training institute producing highly skilled IT engineers

1) Indicator 1: Over 420 trainees completed NITC training during the project period (400 trainees completed short courses and 20 obtained diplomas)

Outputs 1 to 5 were either achieved or mostly achieved, with 570 trainees completing short courses despite the planned number being 400. However, the total number of trainees who obtained a diploma was only 9<sup>15</sup>, despite the fact that the planned number had been modified

<sup>13</sup> During the project period, the Kyrgyz Office of JICA suggested that the project should implement a Third Country Training Program for promoting the project benefits in the central Asian countries. On the basis of this suggestion, the experts and counterparts conducted a needs assessment of IT training for governmental organizations including national universities in the central Asian countries and judged that NITC would be able to meet such needs even during the project period. For this reason, the project team consulted with the Joint Coordination Committee on Implementation of the Third Country Training Program for the central Asian countries that would invite trainees from those countries in March 2007 and got approval. Consequently, the indicator was newly added to the Project Design Matrix of the project.

<sup>14</sup> 1 point: Unsatisfactory; 2 points: Acceptable; 3 points: Good; 4 points: Satisfactory; 5 points: Very satisfactory

<sup>15</sup> Five diploma holders were sent from companies in the banking, communication, and electricity fields; three were

from 216 (72 each year) to 20 by the end of the project period, on the basis of the reassessment of the needs of the Kyrgyz IT market and the schedule of training planned after the mid-term evaluation carried out two years after the project began. The main reason that the target was not achieved was that completing a short course of software development and network development was sufficient to enable students to get an IT-related service job and obtaining a diploma took more time and cost than a short course<sup>16</sup>.

Overall, it is judged that indicator 1 was achieved, since the number of trainees who completed a short course and were equipped with practical and technical skills that met the needs of the Kyrgyz IT market was 142% of the planned target, though the number of diploma holders was 45% of the planned target.

2) Indicator 2: Over 75% of employers who sent trainees are satisfied with their improved capacity.

According to the terminal evaluation report that was implemented two months before completion of the project, almost all employers mentioned that sending trainees to NITC was effective, and 67% of them mentioned that they contributed to improvement in operations.

Overall, it is judged that indicator 2 was achieved, since outputs 1 to 5 were either achieved or mostly achieved.

3) Indicator 3: 80% of trainees are satisfied with NITC

Out of 680 answers collected during implementation of the project, 574 were considered valid, and of these, the ex-post evaluation confirms that 566 trainees (approx. 98.6%) answered that they were either very satisfied or satisfied.

Overall, it is judged that indicator 3 was achieved, since outputs 1, 4, and 5, in particular, were either achieved or mostly achieved.

4) Indicator 4: NITC is financially sustainable<sup>17</sup>

Since NITC maintained positive balances from 2004 to 2008, indicator 4 could be said to have been achieved.

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from governmental organizations; and one was a student. Eight diploma holders from companies and governmental organizations went back to their companies and governmental organizations, but it is unknown what became of the one student.

<sup>16</sup> It usually took 5 days and 3,000 som (approx. 9,000 yen) to complete a short course, whereas at least 1 month and 13,000 som (approx. 3,7000 yen) were required to get a diploma.

<sup>17</sup> There is no definition of what “financially sustainable” means in the PDM. However, since the operational budget of NITC during the project period was within the parameters of the governmental budget, the ex-post evaluation also considers that financially sustainable does not mean that the project was financially independent, but rather that it had a positive balance at the end.

Table 1: Profit and Loss Sheet of NITC

(unit: million som)

		2004	2005	2006	2007	2008
R e v e n u e	Gov. budget	4.4	4.1	4.7	3.6	2.6
	Operational Revenue	0	0	1.2	2.2	3.9
	Total Revenue	4.4	4.1	5.9	5.8	6.5
E x p e n s e	Human Expense	0.4	2.1	2.6	3.8	3.7
	Operational Expense	0	0	0	0	0.8
	Maintenance Expense	2.4	1.7	0.6	0.1	0.1
	Other Expense	1.6	0.3	1.8	1.2	0.4
	Total Expense	4.4	4.1	5.0	5.1	5.0
	Net	0	0	0.9	0.7	1.5

Source: NITC

Overall, all outputs were either achieved or mostly achieved and indicators 1 to 4 were all achieved.

In sum, the project has largely achieved its objective. Therefore, its effectiveness is high.

### 3.2.2 Impact

#### 3.2.2.1 Achievement of Overall Goal

Overall Goal: Sufficient highly skilled IT engineers to meet the needs of the Kyrgyz IT market are provided.

1) Indicator 1: The number of trainees who complete training at NITC increases every year.

The number of diploma holders after 2009 has been zero because of the reason mentioned in indicator 1 of the project objective. However, the number of trainees who completed a short course has generally remained at the same level as that during the project period and keeps increasing year after year<sup>18</sup>.

Table 2: Number of trainees who completed training at NITC

(Unit: person)

	2005	2006	2007	2008	2009	2010	2011
Short course	17	197	270	257	207	242	267
Diploma	0	0	4	5	0	0	0

Source: NITC

<sup>18</sup> The number of trainees who completed a short course in 2009 decreased owing to a decrease in training.

The course contents at present are as follows and can be selected on the basis of trainees' levels of preparedness. Trainees can obtain a diploma once they complete all short courses in a field and pass the exam.

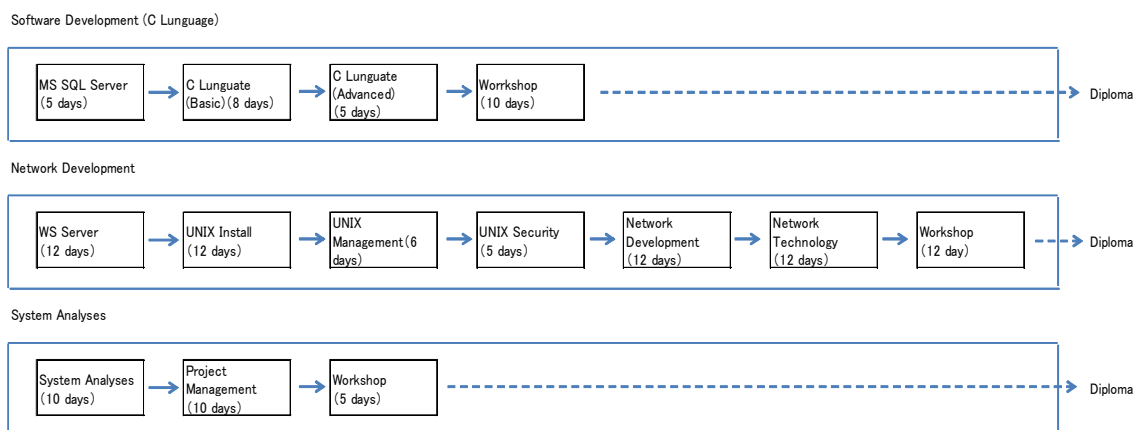


Chart 1: Course Contents

2) Indicator 2: Employers who sent trainees to NITC acknowledge that their knowledge and skills met the needs of the Kyrgyz IT market because of the training<sup>19</sup>.

According to the beneficiary survey conducted by telephone with 42 companies that could be reached, out of a total of 62 at the time of the ex-post evaluation, all employers of the 42 companies answered that training at NITC helped trainees to improve their knowledge and skills and resulted in meeting the needs of the Kyrgyz IT market. Twenty-eight employers also answered that their improved knowledge and skills contributed to improving daily operations, and 14 answered that they contributed to providing new services. Besides, 25 employers mentioned that it was the trainers' knowledge and skills that contributed to improving trainees' knowledge and skills, 28 mentioned that it was the materials, and 17 mentioned that it was the equipment (multiple answers).

### 3.3.2.2 Other Impacts

#### 1) Impacts on the natural environment

Equipment including a PC and server was installed at the existing facility and had no negative impact on the natural environment.

#### 2) Relocation and land acquisition

<sup>19</sup> The original indicator of the overall goal set in the PDM was to measure only the quantitative aspect of the overall goal. Therefore, the ex-post evaluation added indicator 2, which was to measure the qualitative aspect.

Equipment including a PC and server was installed at the existing facility without relocation and land acquisition.

### 3) Other indirect impacts

By preparing and implementing the Third Country Training Program for governmental organizations in the central Asian countries (output 6), JICA and NITC were able to grasp the IT needs of governmental organizations in the central Asian countries, get experience, and obtain feedback related to implementation of the program. This knowledge and experience that JICA and NITC acquired through output 6 eliminated the need for pre-research that is usually required when implementing a new technical cooperation project and made it possible to start smoothly and implement a new technical cooperation project on Human Resource Development of ICT Specialists of Central Asian Governmental Organizations (January 2009-February 2012). Besides, NITC implemented four Third Country Training Programs as planned from January 2009 to the ex-post evaluation and promoted the benefits of the project. Therefore, the impacts of the project were realized.

In addition, when the EU made a call in 2010 for a Central Asian Research and Education Network (CAREN) project that connects research and educational institutes in the central Asian countries by broadband and promotes mutual research and education, numerous IT organizations in the central Asian countries applied for the project. However, it turned out that NITC, which had submitted a proposal that made use of the facility and equipment installed and the counterparts developed by the project, won the bidding.

Overall, the ex-post evaluation confirms the quantitative and qualitative achievement of the overall goal through indicators 1 and 2, respectively, and other indirect impacts through indicator 3. Overall goal was achieved for its target indicators, and therefore its impact is high

In sum, this project has largely achieved its objectives, and therefore its effectiveness is high.

## 3.3 Efficiency (Rating:②)

### 3.3.1 Inputs

Table 3: Planned and actual performance of inputs

	Plan	Actual Performance
Japanese Side		
Total Cost	380 million yen	490 million yen
Period of Cooperation	October, 2004 – May, 2008	October, 2004 – May, 2008
Experts	2 for Long-Term 27 for Short-Term	1 for Long-Term 29 for Short-Term
Trainees received	9	12
Third Country Training Programs (for counterparts)	NA	NA

Equipment	NA	94 million yen
Operational Cost	NA	7 million yen
Kyrgyz Side		
Counterpart	16	18
Land, Facilities, Equipment	Offices, tables, chairs, etc	Offices, tables, chairs, etc
Total Local Cost	42 million yen	39 million yen

Source: NITC, JICA

### 3.3.1.1 Elements of Inputs

#### < Japanese side >

The total project cost increased owing to an increase in the outputs, such as the increased number of trainees received and the additional equipment acquired, including an uninterrupted power supply at the planning stage of implementing the Third Country Training Program. Moreover, the month-long stay of an additional 12 trainees invited from the central Asian countries at the implementation stage had not been included in the original plan (output 6). As a result, the costs exceeded more than 1 million yen. The total period of cooperation and other items were either as planned or almost as planned.

#### < Kyrgyz side >

Deployment of counterparts; provision of land, facilities, and equipment; and the total local cost were all almost as planned.

### 3.3.1.2 Project Cost

The actual total project cost of 490 million yen was higher than planned cost of 380 million yen (increase of 129%).

### 3.3.1.3 Period of Cooperation

The actual period of cooperation of 44 months was as planned.

In sum, the inputs were appropriate for producing outputs and achieving the project objective, while period of cooperation was within the plan, and therefore efficiency of the project is fair.

## 3.4 Sustainability (Rating:②)

### 3.4.1 Related Policy towards the Project

The Kyrgyz Medium-Term Country Development Program (2010-2014) aims to “achieve the growth and export of the IT industry via promotion of high-tech parks” to promote economic development as one of its seven priorities. Since there is no change in the policy regarding Information and Communication Technologies for Development in the Kyrgyz Republic (2002) and Human Resource Development on the Basis of Using ICT: Concept and Action Plan (2003),

the importance of the project remains unchanged. Further, since there is no change in the above 2003 plan, there has been no change in NITC’s role that was established on the basis of the plan.

### 3.4.2 Institutional and Operational Aspects of the Implementing Agency

While 18 counterparts were deployed at NITC during the project period, there remain only 6 at present (1 NITC director, 1 manager of teaching, 1 instructor, 1 assistant instructor, and 2 accountants); the remaining 12 counterparts have left NITC for new jobs at companies in and outside the country<sup>20</sup>. However, 5 staff members (1 manager of general affairs, 3 instructors, and 1 maintenance manager) have been deployed at NITC, in addition to the 6 counterparts, after the completion of the project, and they continuously implement training. Therefore, there is no major problem with the institutional and operational aspect of NITC. The terminal evaluation mentioned that NITC had neither a clear mission nor a future management plan, but NITC now has a clear vision of “being the organization to produce highly skilled IT engineers that can meet the needs of the Kyrgyz IT market as well as of advanced IT organizations in the central Asian market.” It also has a future management plan for strengthening the financial situation of NITC by expanding its business territory<sup>21</sup>.

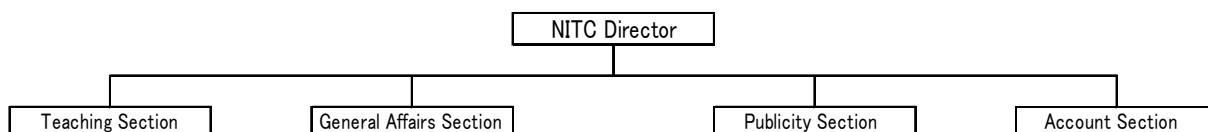


Chart 2: Organigram of NITC

### 3.4.3 Technical Aspects of the Implementing Agency

Equipment procured by the project was regularly checked twice a year, and NITC properly operates and maintains it in addition to upgrading it if necessary. Materials developed by the project are also used for training. Moreover, since NITC implements the Third Country Training Program for the central Asian countries and the EU’s CAREN project, it maintains high technical capabilities. Although many counterparts under the project have left NITC, it maintains transferrable knowledge and skills through outputs such as output 4, that of revising manuals. In addition, NITC employs people who have passed the NITC exam with the highest score as instructors and improves their capabilities by requiring them to obtain internationally recognized certificates issued by companies like Oracle and Cisco.

<sup>20</sup> The major reason for changing jobs was the low salary at NITC compared to that at companies, that is, approximately two-thirds.

<sup>21</sup> For instance, the implementation of international projects like the EU’s CAREN project and the use of NITC as the test center for TOEFL/IBT and GMAT.



### 3.4.4 Financial Aspects of the Implementing Agency

NITC maintained a positive balance for the past three years. The operating revenue of NITC showed an increasing trend owing to the expansion of its business territory in line with the management plan to take advantage of the project’s human resources, facilities, and equipment. However, the government budget of 2.7 million som per year was due to be terminated after the completion of the technical cooperation project on “Human Resource Development of ICT Specialists of Central Asian Governmental Organizations” in February 2012. It is also difficult to cut the staff costs, albeit the greatest expense of NITC, since reducing the number of staff members will hinder the daily operations and cutting the salary per person, which is already lower than that of companies, will provoke the staff to quit NITC. Therefore, the balance in 2012 is likely to be negative. Besides, the rent that NITC paid for the use of rooms including utilities in the National Science Academy building increased from 0.1 million som in 2004 to 0.6 million som in 2012. Therefore, if it continues to increase, it will further affect the balance sheet of NITC.

Table 4: Profit and Loss Sheet of NITC

		(unit: million som)		
		2009	2010	2011
Revenue	Gov. budget	2.7	2.7	2.7
	Operational Revenue	2.7	6.2	6.5
	Total Revenue	5.4	8.9	9.2
Expense	Human Expense	3.8	5.2	6.1
	Operational Expense	0.1	1.0	1.1
	Maintenance Expense	0.2	0.2	0.8
	Other Expense	0.6	1.0	0.8
	Total Expense	4.7	7.4	8.8
Net		0	0.8	1.5

Source: NITC

### 3.4.5 Likelihood of Continuation of Project Effects

As there was no change in the 2003 IT plan, there is no change in the roles to be played by NITC that was established on the basis of the plan. Although some universities and private schools operate as IT educational institutes, only NITC can provide advanced training for IT engineers in software development and network development. Further, there is no major problem with the institutional and operational aspects of NITC. However, the balance sheet of NITC is likely to be in the negative in the future.

In sum, some problems have been observed in the financial aspects of NITC. Therefore, sustainability of the project effects is fair.

## **4. Conclusion, Lessons Learned, and Recommendations**

### **4.1 Conclusion**

The project was intended to strengthen NITC's capacities to implement training courses by developing IT human resources and training curricula and thereby contribute to providing advanced training to IT engineers. The objective of the project was relevant to the development policies and needs of Kyrgyz as well as to the development policies of Japan, and the means to achieve them were appropriate. Therefore, the project is very relevant. Since IT human resource and training curricula were developed as planned, NITC's capacities to implement training courses were strengthened, and the number of trained IT engineers who meet the needs of the Kyrgyz IT market has been increasing. Therefore, the project has been very effective and has made a significant impact. However, while the project's period of cooperation conformed to the plan, the project cost exceeded the plan. Therefore, the project's efficiency is fair. The advanced training of IT engineers is still an important policy for Kyrgyz and, no major problems have been observed in the structural and technical aspects of the implementing agency. However, the balance sheet of NITC is likely to be negative later. Therefore, the sustainability of the project benefits is fair.

In light of the above, this project is evaluated to be satisfactory.

### **4.2 Recommendations**

#### **4.2.1 Recommendations to the Implementing Agency**

The law on high-tech parks that was passed in 2011 on the basis of the Kyrgyz Medium-Term Country Development Program (2010-2014) aims to achieve the growth and export of the IT industry through the promotion of high-tech parks and will give momentum to the IT industry. It is considered that the law will increase the need for NITC training as well as the operational revenue of NITC. However, NITC should strengthen its financial situation by expanding its business territory, including the implementation of international projects, in line with its management plan.

#### **4.2.2 Recommendations to JICA**

Only NITC can produce advanced IT engineers with practical and technical skills in software development and network development. Considering the importance of NITC, it is expected that JICA should monitor the management of NITC while monitoring the effects of the law on high-tech parks passed in 2011.

### **4.3 Lessons Learned**

The financial situation of an implementing agency is important in guaranteeing the sustainability of project benefits. When it is uncertain during the project planning stage whether a government budget will be allocated to the implementing agency after the completion of the project, the agency

should reconsider its financial operations and determine whether it needs to establish financial independence by time the project is completed.