

## Evaluation Summary

### 1. Outline of the Project

Country: Malaysia

Project Title: Project on Networked Multimedia Education System

Issue/Sector: Telecommunications

Cooperation Scheme: Technical Cooperation Project

Division in Charge:

ICT Team, Group II, Social Development Department

Total Cost (at the time of evaluation): Approx. 910 million yen

Period of Cooperation

(R/D): 1 July 2001 - 30 June 2005

(Extended period):

(F/U):

(E/N) (Grant aid)

Partner Country's Implementing Organization(s):

Ministry of Energy, Water and Communications (MEWC); Multimedia University (MMU)

Supporting Organization(s) in Japan: Ministry of Internal Affairs and Communications (MIC)

Related Cooperation: Nippon Telegraph and Telephone East Corporation; Matsushita Electric Industrial Co., Ltd.

#### 1-1 Background to the Project

The Government of Malaysia has been forging ahead with the Multimedia Super Corridor (MSC) program since it launched the Seventh Malaysia Plan 1996-2000 (7MP) as part of its efforts to promote information technology (IT) at the national level. The goal of the program is to join the club of developed countries by 2020 with this huge infrastructure for an advanced information society. To achieve this goal, the Malaysian government established Multimedia University, Malaysia (MMU) in 1999 to train engineers in the IT and multimedia fields.

The Malaysian government requested Project-type Technical Cooperation (now "a technical cooperation project) from Japan with the aim of establishing the Networked Multimedia Education System (NMES) that would build on MMU as the hub site and five regional educational institutions as remote sites.

## 1-2 Project Overview

### (1) Overall Goal

To expand the NMES and involve more institutions at home and abroad in the fields of engineering, IT and multimedia.

### (2) Project Purpose

To establish the NMES at MMU and the remote sites.

### (3) Outputs

- 1) A system will be in place for satellite-based tele-education at MMU and the remote sites.
- 2) Tele-education courses will be provided according to the curricula of MMU and the remote sites.
- 3) Effective multimedia teaching/learning materials will be used in the tele-education courses.

### (4) Inputs (until the time of evaluation)

Japanese side:

Long-term Experts: 8 experts	Equipment: 468,805,000 yen
Short-term Experts: 24 experts	Local cost: 16,564,000 yen
Trainees received: 15 persons	

Malaysian side:

Counterparts: 35 persons  
Land and facilities  
Local cost: 1,070,058 ringgit

## 2. Evaluation Team

Members of the Evaluation Team

(Role/responsibility: Name Position)

Team Leader: Nozomu GODA Senior Advisor, Institute for International Cooperation, JICA

Technology Transfer Planning: Akira IWATA Professor, Graduate School of Engineering, Nagoya Institute of Technology

Technical Cooperation Planning: Yuji AOKI Assistant Director, International Cooperation Division, International Affairs Department, Telecommunications Bureau, Ministry of Internal Affairs and Communications

Evaluation Analysis: Takako HARAGUCHI Permanent Expert, International Department Associates Ltd.

Cooperation Planning: Tomoyuki YASUDA, ICT Team, Group II, Social Development Department, JICA

Period of Evaluation: 15 May 2005 - 28 May 2005

Type of Evaluation: Terminal Evaluation

### 3. Results of Evaluation

#### 3-1 Achievement Level

The project has largely achieved the outputs. The NMES, a satellite-based system to support real-time, interactive multimedia tele-education has been in place at the hub site (MMU Cyberjaya Campus) and the five remote sites. Following the technology transfer, it is now operated and maintained chiefly by the counterparts. The Initial problems such as instability of satellite communication and malfunctions of some instruments and applications have been solved with adjustments to and replacement of the instruments. The introduction of MPEG4 in 2005 has improved the audiovisual quality and resulted in the use of less satellite bandwidth. [Output 1]

The NMES-based courses are now provided for students who wish to acquire formal qualifications and degrees approved by the Malaysian government (diplomas, and bachelor's and master's degrees). The total operating hours of NMES to date stand at 2,246 hours for classes and 836 hours for meetings, short courses and seminars. A total of 856 students have enrolled in tele-education courses and at least 5,800 people have attended short courses / seminars using NMES. [Output 2]

Because the text-based and slide-based reference materials used in face-to-face classes are considered both effective and feasible for tele-classes as well, the lecturers prepare them for tele-classes as well and update them as necessary. They have yet to prepare video-based multimedia teaching/learning materials for tele-classes. The performance of the first group of students at the remote sites compares favorably with that of those at face-to-face classes. Students in the master's courses are not so satisfied with the tele-classes; they call for higher audiovisual quality and more interactive discussion. [Output 3]

The Evaluation Team concludes that the Project Purpose has been achieved. By April 2005, 16 students, including 13 at the remote sites, completed the first NMES-based diploma course.

The implementation process of the Project was largely successful, except for the equipment installation process, in which responses to the initial system failure left much to be desired.

#### 3-2 Summary of Evaluation Results

##### (1) Relevance

The Evaluation Team Considers the Project relevant. The purpose of the Project was in line with both the development policy of Malaysia (including developing skilled workers, reducing regional disparities and meeting the need for human resources for MSC and other policies under the national development plan) and Japan's assistance policy for Malaysia (as highlighted by the government-to-government agreement on human resources development for MSC, and the use of information and communication technology in education). Demand for tele-classes and higher education at the remote sites generally remains high, but initial demand for tele-education at one remote site has decreased after it hired new lecturers for face-to-face education.

## (2) Effectiveness

The Evaluation Team considers the Project effective. The Project Purpose of establishing NMES has been achieved. For one, the first group of students in the NMES-based diploma course compared favorably with those in the face-to-face counterpart. For another, MMU now does not need to send lecturers to its remote sites due to the establishment of NMES and an accumulation of experiences in operating the system (the outputs).

## (3) Efficiency

The Evaluation Team concludes that the Project was largely efficient except for one major aspect. The project activities were sufficient for achieving the outputs. All the inputs were used for implementing the activities. The problem rested with the untimely assignment of experts from JICA. For example, the dispatch of engineers to cope with the frequent cases of initial system failure was delayed until the middle of the project period. Experts in developing teaching/learning materials were sent to Malaysia during the period of system instability, which made it difficult for them to concentrate on their original duties. Still, the integrated assignment of JICA experts in the second half of the project period helped produce sufficient outputs in the end.

## (4) Impact

The overall goal has not been achieved and there were no specific plans to involve other institutions in NMES at least at the time of the terminal evaluation. Although the Project has demonstrated that NMES provides an effective tool for tele-education, additional investment to increase its beneficiaries is essential for ensuring that the Project has an impact on the development plan of Malaysia (by contributing to human resources development). The impact of the Project on technological development in Malaysia is obvious because the Project realized the practical application of real-time, interactive multimedia tele-education for the first time in Malaysia, where asynchronous media (mail or the World Wide Web) was the norm for distant learning. Policy and budgetary commitment to increasing the participating institutions is necessary for attaining the overall goal.

## (5) Sustainability

The impact of the Project will likely be sustained at the current level at least. At the policy level, the Malaysian government (or MEWC to be precise) has committed itself to supporting the continuation of NMES and bear the repair costs of the equipment. It has already developed a plan to expand NMES. At the organizational level, MMU has shown a high level of organizational capacity. The structure and staffing for operating NMES will be maintained even after the completion of the Project. Malaysia will continue to fund the operation and maintenance of the current system. (It is unclear whether Malaysia will invest in the plan to expand the NMES as mentioned above.) On the technical front, the additional technology transfer in 2005 have allowed the counterparts to acquire system maintenance skills that are well above the levels of the system users and adequate to cope with equipment failures promptly.

### 3-3 Contributing Factors

#### (1) Concerning the project plan

Institutions with high levels of organizational and implementation capacity have been selected as the counterparts.

#### (2) Concerning the implementation process

Continued efforts toward stabilizing the system and improving tele-classes; and high levels of ownership of these efforts by the Malaysian side.

### 3-4 Inhibiting Factors

#### (1) Concerning the project plan

Unclear system specifications; the lack of arrangements for holding the contractor responsible for the initial test operations; the adoption of an application that had not been used widely even in Japan; inadequately defined measures for system maintenance; and other factors.

#### (2) Concerning the implementation process

Untimely responses of JICA Headquarters to the requests for prompt action to the initial system failures and for technology transfers for system maintenance; and a high proportion of the counterparts who left their jobs.

### 3-5 Conclusion

The Project is successful. It has achieved its purpose and demonstrated that the NMES provides an effective tool for tele-education. It is expected that the maintenance and expansion of the NMES will further contribute to the development of human resources with high levels of skills in Malaysia.

It was agreed that the Project will be completed on June 30, 2005 as scheduled.

### 3-6 Recommendations (specific solutions, suggestions and advice for the Project)

To help maintain and build on the positive effects of the Project, the Evaluation Team recommends that the Malaysian government and MMU take the following measures:

- (i) To monitor progress and achievements in tele-education courses, as the application of MPEG4 to NMES starts in June 2005 when the new semester begins;
- (ii) To continue and redouble their efforts to raise the levels of satisfaction of the users, especially the students in the master's courses, regarding the tele-education courses;
- (iii) To continue and redouble their efforts to increase the number of beneficiaries of the NMES-based tele-education;

- (iv) To study measures to stem the hemorrhage of counterpart engineers in system operation and management;
- (v) To further improve the techniques for tele-classes, including teaching/learning materials and teaching methods, as this is an aspect that began to be addressed recently after the initial emphasis on system stabilization; and
- (vi) To make policy and budgetary arrangements necessary for increasing the number of institutions participating in NMES.

### 3-7 Lessons Learned (especially those that provide information that is useful for identifying/formulating, implementing, and administering similar projects)

Major difficulties in the Project, including a long-lasting period of low quality and reliability after the provided equipment and system were put in place, and the inability to conclude a maintenance contract for the system were attributed to the inadequate process of project formulation. The Evaluation Team has therefore analyzed major problems in the project formulation process and identified opportunities for improvement as shown below for future projects in the similar sector:

- (i) Assessing the real needs of the partner country and fully understanding why it asked Japan for assistance and what kind of assistance it expected from Japan;
- (ii) Meticulously selecting equipment for the project and securing a comprehensive contract covering everything from written specifications and procurement methods to maintenance;
- (iii) Placing a premium on the track record, stability and reliability of the equipment in the specification preparation process; and
- (iv) Holding substantial consultations and then reaching an agreement with the partner country over necessary budget allocations in an equipment maintenance contract.