India

FY2016 Ex-Post Evaluation of Japanese Grant Aid Project
"The Project for Strengthening of Electronic Media Production Centre
in Indira Gandhi National Open University"

External Evaluator: Tomoko Tamura, Kaihatsu Management Consulting, Inc.

0. Summary

This project was implemented to improve the efficiency and quality of video programme production[1] for students of the Indira Gandhi National Open University (hereinafter referred to as "IGNOU") in India, by renewing and digitalizing the equipment necessary for production of videos; thereby contributing to the students' learning and expanding usage of the video programme of the university.

The project has been highly relevant to the development plan of India, which aims to improve the enrollment rate in higher education and to promote distance and open education; to the development needs of the Electronic Media Production Centre (hereinafter referred to as "EMPC"). EMPC, which is attached to IGNOU and engaged in production of audio-visual programmes, needed to maintain and enhance its capacity to produce videos that would meet the needs of students who want to watch video programmes. The project has also been highly relevant to Japan's ODA policy, which places importance on assistance that increases educational opportunities for poor and socially vulnerable people. Therefore, the relevance of the project is high.

Procurement of equipment was conducted as planned. Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

At the time of the ex-post evaluation, EMPC was producing more than 200 video programmes per year, which was the target figure for the project. Efficiency of video production had improved as a result of equipment procured by the project. Impacts of the project include expansion of the usage of the video programmes produced by EMPC in various ways. For example, video programmes were uploaded to the digital library on the IGNOU website, and distributed through the online programme and satellite broadcasting programme, which were newly introduced by the Indian government. Therefore, the effectiveness and impact of the project are high.

There were no problems with the operation and maintenance of the equipment introduced by the project in terms of institutional aspects. Staff of EMPC have the basic technical know-how to utilize the equipment introduced by the project, and have taken necessary measures for further improvement of techniques. There was no problem with the financial status of IGNOU or EMPC. Most of the equipment procured by the project was continuously utilized well. Repairs were being arranged for any equipment that had problems. EMPC was taking necessary

[1] The summary of the ex-ante evaluation report of this project states "improve efficiency of production of the audio-visual programme and expand usage of the programmes". Audio-visual programme includes audio (radio) and video programmes. In this sentence, "video programmes" was used instead of "audio-visual programmes", because there was no assistance from the project for radio programmes.

steps to arrange an annual maintenance agreement. In this way, there were no problems with the operation and maintenance of the equipment introduced by the project in terms of institutional, technical and financial aspects. Therefore, sustainability of the project effects is high.

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

1. Project Description

Project location

Equipment introduced by the Project

1.1 Background

IGNOU is a national university for open and distance education established in 1985, with its head office in New Delhi. It aims to provide people from every segment of society with better access to higher education, and offers high quality and innovative programmes to meet various needs of the people. In addition to the head office, there are 67 Regional Centers, which assist students with administration, including enrollment and examinations; 2,981 Learner Support Centers, where counseling sessions are conducted during weekends; and 12 overseas partner institutions, which mainly assist Indian nationals living abroad to study at IGNOU (numbers of institutions are as of 2016). IGNOU conducts certificate, diploma, bachelor's degree, master's degree and PhD programmes, as well as adult and community education courses. There are around 3 million students in India and overseas.[2]

Students at IGNOU mainly learn from textbooks (so-called self-learning materials) provided by the university. They can use audio-visual materials and participate in tele-conference session, which are conducted by broadcasting media, to supplement this textbook learning. Academic counselors[3] conduct face-to-face classroom sessions for students during weekends at the Leaner Support Centers.

Students can watch and listen to audio-visual materials by national satellite broadcasting, an FM radio station dedicated to educational purposes, and the IGNOU website. The audio-visual materials are kept at the Regional Centers and Learner Support Centers of IGNOU, and are sold to students who request them.

EMPC's main work is production of audio-visual materials for IGNOU. However, at the time of planning the project they found it difficult to produce video programmes because the

[2] Source：IGNOU website (www.ignou.ac.in). Accessed on July 7th, 2016.

[3] Teachers of other universities and educational institutions are appointed as academic counselors on a part-time basis. They are not full-time teaching staff of IGNOU.

equipment was old and decrepit. Therefore, it was necessary to renew the equipment for EMPC to continue video production.

The Japanese government had provided EMPC with equipment for editing and production of video programmes through two grant aid assistance programmes in 1988 and in 1993 – 1994.

IGNOU（Vice Chancellor's Office）

EMPC

Regional Center (Delhi III)

Learner Support Center

1.2 Project Outline

The objective of this project is to improve the efficiency and quality of video production for students at IGNOU in India, by renewing and digitalizing the equipment necessary for video production; thereby contributing to students' learning and expansion of usage of the video programme of the university.

E/N Grant Limit / Actual Grant Amount	787 million yen/ 752 million yen
Exchange of Notes Date/ Grant Agreement Date	July 2010/ July 2010
Executing Agency	Indira Gandhi National Open University (IGNOU)
Project Completion	July 2013
Main Contractor	(Equipment) Mitsubishi Corporation
Main Consultant(s)	NHK Integrated Technology Inc.
Basic Design	October 2009 - May 2010
Related Projects	Grant aid assistances - The Improvement of Educational Technology Equipment of the Indira Gandhi National Open University (1988) - Project for Improvement of Educational Media Production Facilities to Indira Gandhi National Open University (The first phase in 1993 and the second phase in 1994)

2. Outline of the Evaluation Study

2.1 External Evaluator

Tomoko Tamura, Kaihatsu Management Consulting, Inc.

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule:

Duration of the Study: July 2016 – July 2017

Duration of the Field Study: November 6th - 18th, 2016, February 27th - March 3rd, 2017

2.3 Constraints during the Evaluation Study

The results of the beneficiary survey conducted for the current and former students as part of the ex-post evaluation cannot be generalized because the sample size was only 139, whereas there are 3 million students in the university; the sampling was made by judgement sampling method. (Details of the survey method are described in footnote 9).

3. Results of the Evaluation (Overall Rating: A[4])

3.1 Relevance (Rating: ③[5])

3.1.1 Consistency with the Development Plan of India

At the planning of the project, *the Eleventh Five-year Plan* (2007 - 2012) of India placed emphasis on improving the enrolment rate in higher education and expanding distance learning education. It also prioritized upgrading facility of IGNOU. Improving the enrolment rate in higher education and expanding distance learning education were also an important policy in *the Twelfth Five-year Plan* (2012 - 2017) at the time of completion and ex-post evaluation of the project. It places emphasis on enhancing education conducted by open and distance education institutes, including IGNOU, and improving people's access to adult education. The enrolment rate in higher education of the country was 11 percent and 17.9 percent in 2005[6] and 2011-12[7] respectively. The country aims to increase it to 25.2 percent by 2020-2021.

At the time of the ex-post evaluation, the Indian government had introduced Swayam MOOCs[8], which is a system for massive open online courses of education, in order to actively further promote open and distance learning in accordance with the development plan.

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[4] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

[5] ③: High, ②: Fair, ①: Low

[6] The rate was very much lower than the world average of 23.3 percent and average of Asian countries of 22 percent at that time. (Source: The preparatory study of this project)

[7] Financial year of India is from April to March the following year. In this report, the financial year from April 2011 to March 2012 is described as 2011-12, for example.

[8] MOOCs became popular in the U.S.A. at the beginning. MOOCs in India uses a platform called Swayam. The programme on this platform is described as Swayam MOOCs in this report. In addition to IGNOU, universities under the University Grants Commission and National Open Education Institute and others provide programmes to Swayam MOOCs. Uploading of video programmes for 2,535 courses was completed as of March 2017. Learning methods of the courses include video programmes, downloaded textbooks, tests and quizzes for self-evaluation, and online questions and answers. Once a Swayam MOOC course is completed, it is recognized as a credit at existing educational institutions.

As mentioned above, improving the enrolment rate in higher education and promoting open and distance education were important areas in the development plans of India from the time of project planning to the ex-post evaluation. Therefore, this project, which aimed to assist learning at the open university, is highly consistent with the development plans of the country at the time of planning and ex-post evaluation of the project.

3.1.2 Consistency with the Development Needs of India

At the time of project planning, some of the equipment of EMPC had been used for more than fifteen years, and exceeding the expected life of the equipment. It was difficult to find spare parts, and some of the equipment often became out of order or unable to use. Sometimes video recording would be interrupted and had to start again from the beginning - for example, when they could not change cameras smoothly by video switchers, or could not zoom out or zoom in at the time of capturing close-ups of the performers, due to a problem with the motor of a camera. There was concern that the old equipment would become unusable in a few years, and EMPC would find it very difficult to produce video programmes.

Furthermore, it was necessary to renew the equipment to maintain and enhance capacity of EMPC for video programme production - the need for video production remained high, as the number of academic programmes and students enrolled at IGNOU were rapidly increasing at that time, as shown in Table 1. There was also a need to produce video programmes for satellite TV broadcasting.

Table 1 Number of Schools of Studies, academic programmes, students, etc. of IGNOU

Items	At project planning (2008-09)	At project completion (2013-14)	At ex-post evaluation (2016)
Schools of Studies	21	21	21
Academic programmes	175	226	228
Students registered	2,000,000	2,810,958	3,100,000
Students newly registered during the year	555,310	722,000	796,127
Academic counsellors	Not available	33,212	43,785
Regional centers	59	67	67
Learner support centers	2,250	2,667	2,981

Source: Sources of figures at project planning, project completion and ex-post evaluation are the preparatory study of this project, IGNOU website and a document provided by EMPC respectively.

Distribution of video programmes by internet and satellite TV broadcasting stagnated for around three years from October 2013, just after the completion of the project, due to a review of the operation and policies of the university. However, from May 2016 the university came up with a policy to use video programmes actively again to promote more effective and learner-friendly teaching. At the time of the ex-post evaluation, distribution of video programmes through the internet had been re-activated, and there was a prospect of satellite TV broadcasting being re-activated in June 2017. As mentioned earlier, there was also a need to

produce video programmes for Swayam MOOCs, which were introduced by the Indian government in 2016. The HD (high definition) equipment provided by the project is essential for production of video programmes for MOOCs, as the ministry instructed that the programmes should be produced in HD.

A beneficiary survey was conducted as part of the ex-post evaluation, with samples of 82 current students and 57 former students - 139 in total.[9] It was found from the results of the survey that the students of IGNOU highly appreciated video programmes, as they lead to better understanding of their studies. It was also found that there is a strong need for video production in the future. As shown in Figure 1, 40 percent and 20 percent of former and current students respectively had watched video programmes. Current students had a lower ratio than former students in watching video programmes, as distribution of video programmes by satellite TV broadcasting stagnated from October 2013, as mentioned earlier.

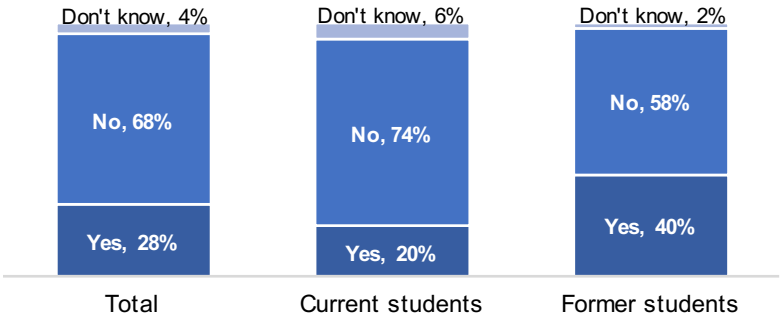

Figure 1 Have you watched any of IGNOU's video programmes?
(n=139 including 57 former students and 82 current students)

Source: Beneficiary survey

The survey team asked students who had watched video programmes if the video programmes were useful for their studies. It was found that video programmes assisted students' learning, because 99 percent of former students replied, "very much useful" or "useful", and 69 percent of current students replied "useful", as shown in Figure 2. This tendency was more significant among former students who were studying at the university when satellite TV broadcasting was on air.

[9] The face-to-face questionnaire survey was carried out for the current students, who were studying at the university in December 2016, and the former students, who were in the university from 2013 to 2014. The Schools of Studies and programmes that were utilizing video programmes to a certain extent were selected for the survey by obtaining cooperation from the student registration division of IGNOU and EMPC. For current students, those students studying at the Schools of Computer and Information Science (44 persons) and Sciences (38 persons) were surveyed by visiting two learning support centers in and around Delhi, when the counselling sessions for these courses were conducted. The survey team distributed the questionnaire forms to students who attended the session, and obtained valid replies from 82 students (complete survey). The School of Agriculture was selected for the survey of former students. Several former students of the Awareness Programme on Dairy Farming were asked to get together for the survey; the survey team obtained 25 valid responses. E-mails were sent to 104 former students of the Diploma on Food Safety and Quality Management of the School of Agriculture, as it was difficult to get them together. The survey team obtained a student list from the Administration Division of IGNOU for this. The team obtained valid responses from 32 persons. The number of samples for the survey was 139 in total. 70 percent of them were male (97 in total - 73 for the complete survey and 24 for the e-mail survey) and 30 percent were female (42 in total - 34 for the complete survey and 8 for the e-mail survey).

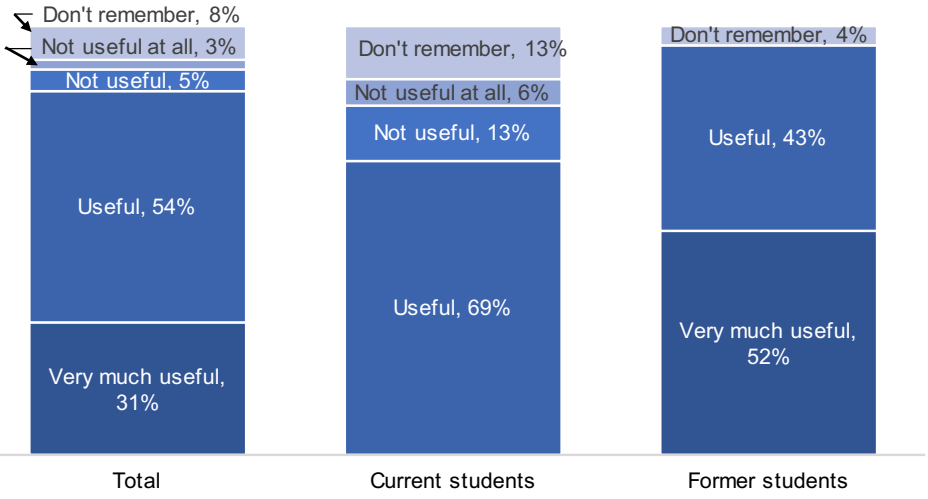

Figure 2 Were the video programmes useful for your study?

(n=39, including 23 former students and 16 current students, who have watched video programmes)

Source: Beneficiary survey

The survey team asked 16 current students who had watched video programmes, "Do you think it is good if more video programmes are available?". All of them replied "Yes" (see Figure 3). The survey team also asked current students who had not watched the video programmes or did not remember whether they have watched them or not, "Do you think it is good if video programmes are available?" 83 percent of them replied "Yes, I think so very much" or "Yes, I think so". (See Figure 4)

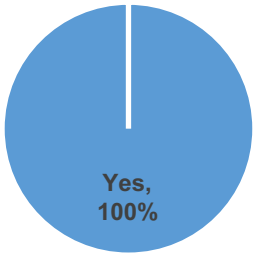

Figure 3 Do you think it is good if more video programmes are available? (n=16, current students who have watched the video programmes)

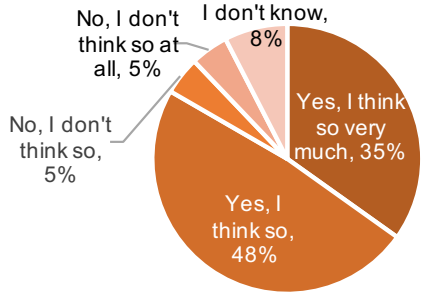

Figure 4 Do you think it is good if video programmes are available in future?

(n=66, current students who have not watched the video programmes or did not remember)

Source: Beneficiary survey

In this manner, the requirement for production of video programmes was increasing again at the time of the ex-post evaluation, and students were expecting to have more video programmes. Therefore, the necessity to renew or maintain the equipment for video production was high.

In this way, the need for video production at the university was high both at the time of planning and ex-post evaluation of the project; this project, which aimed to renew the

equipment for video production, was highly consistent with the development needs of the country throughout the period from planning to ex-post evaluation of the project.

3.1.3 Consistency with Japan's ODA Policy

The Country Assistance Policy of India at the time of project planning stated that reduction of poverty was an important target, and that it was necessary to expand opportunities for education to poor and socially vulnerable people to achieve this target. This project aimed to contribute to expanding the opportunity for higher education and advancement into society to the relatively vulnerable people of the country. Therefore, this project was consistent with the Japanese ODA policy.

This project has been highly relevant to the development plan and development needs of India, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Efficiency (Rating ②)

3.2.1 Project Outputs

This project introduced digital HD media, established a video sharing network, and a virtual studio.[10] In order to make the transition process from analog to digital smoothly and use and maintain the equipment to be procured well, a conversion system that enabled EMPC to convert existing analog recording media tapes into digital and save them on discs; measurement equipment for maintenance of the digital equipment; and a preview system for projecting recorded digital video programmes to a screen before broadcasting or duplication for evaluating quality of picture were introduced. As shown in the following table, there was no change in procurement and installation of the equipment; and the outputs were in accordance with the original plan.

[10] A system for digital real time synthesis of recorded images and computer graphics. It can combine the images of performers recorded in the studio and the background produced by data.

Table 2 Equipment procured by the project

Name of the equipment	Numbers
Video Programme Production Studio -1 (Virtual Studio System)	
Digital SD/HD color cameras	3
HD digital disc recorders	3
HD digital video system	1
HD character generator	1
Digital audio system	1
Video sync systems	2
Monitoring system	1 set
Intercommunication system	1
On-air light and tally system	1 set
Virtual set	1
Lighting equipment	90 (installed) +340 (spares)
Field recording system	
Digital camera system	3 sets
9-inch video monitors	3
UHF synthesizer transmitters	3
UHF synthesizer tuners	3
Microphones	12
Microphone cables	4 kinds x 3 sets
Stereo headphones	3
Portable lighting equipment	3 +18 (spares)
Portable audio mixer	1
Mini DV/HDV camcorders	3
Digital still cameras	3
Routing switcher system	
Routing switcher	1
Video sync system	1
Patch panels, A/D converters, D/A converters	7, 2, 2
Video sharing network (video server system)	2
SD/HD ingest terminals	2 each
Non-linear editing system	4
Multi format video server, etc.	1
DVD duplication system	1
Computer graphics systems	2
Measuring equipment	1 set
Analog/ digital format conversion system	1
SD/HD preview system	1
Spare parts	

Note: SD stands for standard definition.

Workstation for the virtual studio

Virtual studio

Terminal for computer graphics

Video equipment

Video server (left) and
routing switcher (right)

Analog/ digital formats converter

Source: Photos taken by the External evaluator

The consulting services, including assistance for tender procurement and installation management, was conducted as planned. There was no capacity development program (soft component); the manufacturer of the equipment provided training for staff at EMPC on basic operation of the equipment after installation.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The project cost was planned as JPY 851 million in total, which included JPY 787 million from the Japanese side and INR 32 million, equivalent to around JPY 64 million,[11] from the Indian side. Actual cost was JPY 789 million, which included JPY 752 million from the Japanese side and JPY 37 million[12] from the Indian side. The actual cost was within the planned cost (93 percent against the plan). The cost of the Indian side was reduced mainly because custom duties, demurrage fees and container usage fees at the harbor for import of the equipment were less than the planned amount as a result of IGNOU negotiating with the custom department and others several times.

3.2.2.2 Project Period

The project period was planned as fifteen months from September 2010, the commencement of the detail designing, to November 2011, completion of the operational training.[13] It was actually thirty-five months, from September 2010 to July 2013, and was significantly longer than planned (233 percent against the plan). The project period largely exceeded the plan mainly because there was a long delay in the administrative procedure for issuing various kinds of the Authorities to Pay (APs) by the Ministry of Human Resource Development. For example, EMPC could not use the equipment for around one year after it was imported and delivered to EMPC, because the consultant team could not install and hand over the equipment until the AP was issued. The delay in the project was also due to manufacturing of the equipment being delayed for around two months because some of the factories of companies engaging in manufacturing were damaged due to the Great East Japan Earthquake in March 2011. Another reason was that payment of custom duties by the Indian government was delayed for around three months.

IGNOU was the executing agency of the project, but the Ministry of Human Recourse Development, which was supervising IGNOU, had to make necessary arrangements for issuing APs and paying custom duties by making contacts with the Ministry of Finance and Custom Department. The Ministry took much longer than planned to make these arrangements despite EMPC repeatedly facilitating the Ministry in doing it, because the Ministry did not have a sense of ownership to the project, and was not familiar with the procedure.

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[11] Converted at the exchange rate at the time of project planning, INR1 = JPY1.97 (source: Report of preparatory study of the project).

[12] This consists of JPY36,200,000, the cost of custom duties, which was estimated as 5 percent of the contract amount of the equipment; and JPY793,251, the cost of hiring a project coordinator. The cost of the project coordinator was converted to Japanese yen by using the average exchange rate of IMF during the project period, INR1=JPY1.65.

[13] The project period stated in the report of the preparatory study of this project did not include the period from signing of the grant aid agreement to the commencement of the detail designing. Therefore, the planned and actual project periods were defined from the commencement of the detail designing to the completion of the operational training.

Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

3.3 Effectiveness[14] (Rating: ③)

3.3.1 Quantitative Effects (Operation and Effect Indicators)

＜Operation Indicators＞

The number of video programmes produced per year was identified as an operation indicator of the project at the time of planning. The number of video programmes produced in the target year was set as 200, because the project planned to provide equipment that could produce around 200 video programmes per year. This was the number of videos produced per year at the time of planning of the project. As shown in Table 3 and Figure 5, the number of video programmes produced three years after completion of the project in the target year, was 351; therefore, the indicator was achieved.

Table 3 Operation indicators (Number of video programmes produced (number/ year)

Items	Baseline	Target	Actual			
	2008	2014	2013-14	2014-15	2015-16	2016-17*
	Baseline year	3 years after completion	Completion year	1 year after completion	2 years after completion	3 years after completion
Number of video programmes produced (number/year)	200	200	159	72	117	351

*Note: Number of videos produced in 2016-17 was as of February 16th, 2017. Financial year of IGNOU is from April to March following year.

Source: Figures of the baseline and the target were from the preparatory study of the project. Actual figures were documents provided by EMPC.

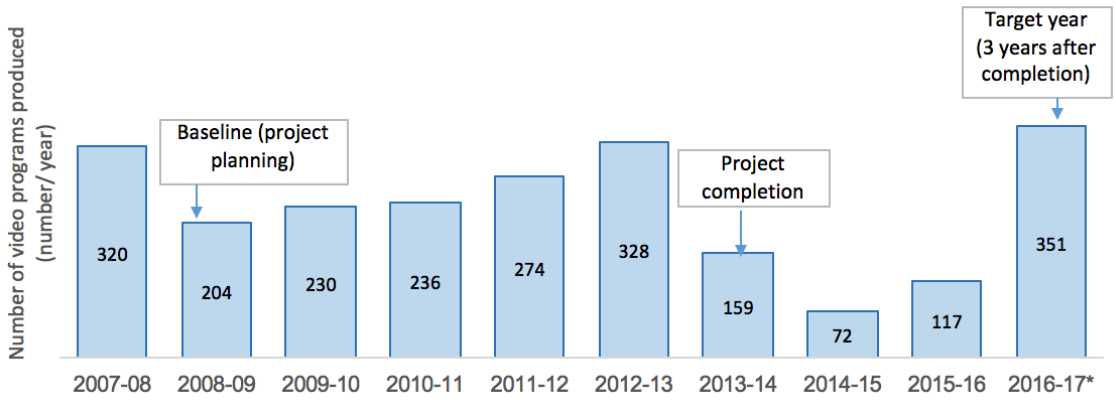

Figure 5 Number of video programmes produced (number/ year)

*Note: Number of videos produced in 2016-17 was as of February 16th, 2017.

Source: Document provided by EMPC

[14] Sub-rating for Effectiveness is to be put with consideration of Impact.

EMPC is producing video programmes in response to requests from the Schools of Studies. The requests increase especially, for example, when new courses are being formulated. Requirement for production of video programmes also increases when new educational programmes are commenced in accordance with the policy of the supervising authorities, including the Ministry of Human Resource Development. In this way, the number of video programmes produced by EMPC depends on requests from the Schools of Studies and national policies for the educational sector.

For three years after the project was planned in 2008, the number of video productions had been on an increasing trend. This was mainly due to commencement of new courses. As mentioned in the section of Relevance, distribution of video programmes almost ceased from October 2013 to May 2016, when several functions and courses of the university were stopped because of a review of functions of the university. It is due to this that the number of productions for the period from 2013-14 to 2015-16 is lower than that at project planning and completion.

The need for production of video programmes increased again in 2016-17, at the time of the ex-post evaluation. The actual number of productions for the year was as many as 351. This was mainly because preparation of Swayam MOOCs was commenced in 2016. IGNOU is going to offer ten courses in Swayam MOOCs. At the time of the ex-post evaluation, EMPC was producing large number of video programmes for these courses by utilizing the equipment introduced by the project.

＜Effect Indicators＞

At the time of project planning, "working days necessary for producing 200 video programmes was reduced from 365 days to 210 days" was proposed as an effect indicator. However, it was found that this indicator is not suitable for measuring efficiency of video production. It is because the working days used as the baseline data, which was 365, does not indicate the exact status of working days necessary for producing video programmes at that time[15]; and efficiency cannot be measured by the number of videos produced and the days needed for that, as the number of days needed to produce a video programme depends on the content of the programme. For reference, the average working days per year for an EMPC staff at the time of the ex-post evaluation was 210, the same as the standard working days in the country.

Therefore, in the ex-post evaluation it was decided that improvement of efficiency in production of video programmes, which was the objective of the project, shall be used as an effect indicator for this project. A questionnaire survey[16] and interview survey[17] were

[15] When the external evaluator asked the Director of EMPC about the number of working days of the staff at the time of project planning, he replied that "365 days in average" would be a misunderstanding, although satellite TV and FM radio were broadcast even on Saturdays and Sundays in those days, and the staff in charge of the broadcasting had to attend the work in turn.

[16] The external evaluator distributed questionnaire forms to all the 21 staff of EMPC who were involved in video production and had been in office for 4 years or more at the time of the ex-post evaluation (6 females and 15 males).

conducted with staff of EMPC to find out the status. It was found in the questionnaire survey conducted for 21 production and technical staff of video programme of EMPC that 91 percent of respondents stated that "Work efficiency of video production was improved as a result of the introduction of the new equipment" (Figure 6). They also appreciated that the technical specification of the new equipment procured by the project was satisfactory, and the equipment fulfils their needs in production. (Figures 7 and 8)

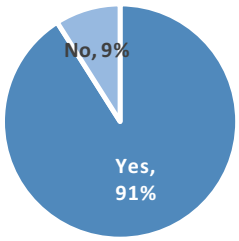

Figure 6 "Was work efficiency of video production improved as a result of introduction of the new equipment?"
(n=21, production and technical staff for video programme)

Figure 7 "Are you satisfied with the technical specification of the new equipment?"[18]
(n=10, technical staff for video programme)

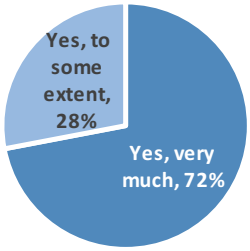

Figure 8 "Does the new equipment fulfil your needs in video production?"[19]
(n=18, production staff of video programme)

Source: Beneficiary survey

During the interview survey, the staff of EMPC mentioned the following examples of improvement of work efficiency in production of video programmes:

<Virtual Studio System>

- We do not have to build and install a studio set after the introduction of the virtual studio system. The number of days needed for preparation of the recording decreased on average at least to one-third, although we cannot exactly

A video programme for the food science course produced with the virtual studio system

She requested them to fill in the forms, and collected them subsequently. Among the 21 staff, there were 11, 3 and 7 who were engaged in production, technical matters, and both production and technical matters for video production respectively. Therefore, the number of replies to the question shown in Figure 7 was 10 (technical staff), and those for the question shown in Figure 8 was 18 (production staff).

[17] A group interview was held for 17 out of the 21 EMPC staff who were engaged in production of video programmes and reported for work on the day of the interview.

[18] There were five options for the question: "I'm very much satisfied", "I'm satisfied", "I'm not satisfied very much", "I'm not satisfied at all" and "I don't know".

[19] There were five options for the question: "Yes, very much", "Yes, to some extent", "No, not much", "No not at all" and "I don't know".

mention how many days were saved as the time needed for building a set depends on what it is.

- It was necessary to procure materials, such as wood and others, to build a studio set. It was costly, too. We had to wait until necessary approvals were given after we submitted a budget proposal for material procurement. The virtual studio system does not require any cost, and there is no need to apply for budget and wait until approval is given.
- We needed to discard the studio sets after use. Another advantage of the virtual studio system is it does not generate any waste.

< Non-linear editing system >

- Editing work became efficient through introduction of the non-linear editing system. Before the project, we used to do linear editing, copying pictures from one video tape to another using more than two video cassette recorders. We can select the necessary parts to be edited easily after the introduction of the non-linear editing system. We can add, delete and replace video data in a moment.

<No inconvenience due to breakdown of the equipment>

- We used old equipment before the project. There was inconvenience in production of video programmes as the equipment was sometimes out of order. We do not have this inconvenience after renewal of the equipment by the project.

In this way, work efficiency in production of video programmes was improved because of the equipment procured by the project; therefore, the effect indicator was achieved.

3.4 Impacts

3.4.1 Intended Impacts

It was expected that usage of the video programmes would expand as an impact of the project. As shown in Table 4, the number of Schools of Studies using video programmes, and the number of video programmes in the library - that is, the total number of video programmes produced so far - had increased. The video programmes are uploaded in Swayam MOOCs, for which test broadcasting started in 2017; and are broadcast in Swayam Prabha[20], which is a new dedicated educational satellite broadcasting channel introduced by the government of India in 2016 as well.

However, the number of copies of video programmes distributed has been decreasing. Until several years ago, IGNOU copied the video programmes to video CDs and DVDs and distributed them to the Regional Centers and Learner Support Centers. In those days, students watched the programmes in groups at the centers. However, satellite TV broadcasting receivers, computers and internet facility became widely available in people's homes in recent years; it became popular for students to watch video programmes at home by using the equipment and communication facility. Therefore, it became less meaningful for the head office of IGNOU to

[20] Swayam Prabha is a new DTH (Direct-to-home) satellite broadcasting hosted by the Ministry of Human Resource Development. There are 32 channels which are showing a series of lectures for students. Test broadcasting was on air at the time of the ex-post evaluation in February 2017.

distribute video programmes to the centers uniformly. The uniform distribution of video programmes to the centers was discontinued as a result.[21]

IGNOU established a digital video library called eGyankosh on the website of the university in 2015 to meet the needs of the students who wished to watch video programmes through the internet. It contained more than 27,000 items in total at the time of the ex-post evaluation.[22] In addition to the video programmes produced by EMPC, assignments and workbooks of academic courses of the university were uploaded. The students can access these materials by inputting their e-mail address and password to the website. As mentioned earlier, distribution of the video programmes by eGyankosh stopped in October 2013, because several functions of the university were under review. During this period, the Schools of IGNOU uploaded a lot of their current video programmes to YouTube, to fulfil the needs of students wanting to watch the video programmes. These uploaded video programmes are now gathered in the "Video archive (YouTube)" in the website of the university.

Table 4 Indicators on utilization of the video programmes

Indicators		Baseline (2008-09)	At the time of the ex-post evaluation (November 2016)
Number of School of Studies using video programme		15	21
Number of video programmes in the library	Master video for academic programme	3,200 pcs.	4,734 pcs.
	Tele-conference recorded	3,853 pcs.	9,000 pcs.
	Programmes purchased from other institutes	400 pcs.	650 pcs.
	Total	7,453 pcs.	14,384 pcs.
Number of copies of video programmes distributed	Distributed to Regional Centers and Learner Support Centers (video CDs)	3,600 pcs.	No uniform distribution to the centers
	Sales to students (video CDs or DVDs)	5,000 pcs.	Around 120 pcs.

Source: Source of the baseline figures is the preparatory study of this project; and the figures at the time of the ex-post evaluation is the document provided by EMPC.

In summary, the use of video programmes produced by EMPC expanded in various ways. It can be said that the project enabled EMPC to continue production of video programmes, and created an impact of expansion of the usage of video programmes.

This project aimed to support learning of students of the university by promoting usage of video programmes. Therefore, the ex-post evaluation tried to understand the way in which the video programmes support students' learning, to confirm the relationships between the project and the learning of the students.

Among many Schools of Studies of the university that utilize the video programmes, the Schools of Agriculture, Health Science, and Sciences seem to utilize them most actively as these are some of the schools that place more emphasis on practical lessons in addition to

[21] EMPC sells DVDs and video CDs of the video programmes if the students and the centers request them.
[22] List of contents of the eGyankosh (http://egyankosh.ac.in/), accessed on March 12, 2017.

theoretical ones. In the ex-post evaluation, the external evaluator conducted interviews with teaching staff working at the head office of IGNOU who are engaged in development of study materials and monitoring of the academic courses conducted by these schools. As a result, the following examples were found to show that the video programmes support students' learning:

＜An example from the School of Agriculture＞

IGNOU actively offers opportunities for vocational training and training for starting businesses. For example, there are courses of three-month duration conducted by the School of Agriculture, with collaboration of the Ministry of Agriculture, for vocational skill development. "Awareness Programme on Dairy Farming for Rural Farmers" aims to support self-employment of the youth. "Awareness Programme on Value-Added Products from Fruits and Vegetables" aims to support farmers, people engaging in food processing and rural youth, who wish to engage in agriculture or food processing. Figures and photos were abundantly used in the textbooks of these programmes, because it is essential to understand practical lessons in these programmes and there are students who are not very proficient in English or Hindi. Moreover, the teachers place emphasis on video programmes for assisting understanding and learning of students, especially in lessons about production and processing as they can show pictures with movement.

A scene in the video programme for "Awareness Programme on Dairy Farming for Rural Farmers" (Artificial insemination)
Source: IGNOU Archive（YouTube）

＜An example from the School of Health Science＞

The School of Health Science utilizes video programmes positively, especially for clinical education. The external evaluator watched a video programme on clinical education for the Post-Doctoral Certificate in Dialysis Medicine. This was a video showing scenes from an operation on kidney disease and dialysis, teaching their process and points to remember. According to the producer of EMPC, who produced this video programme, video programmes are crucial for explaining medical equipment and teaching treatment techniques, and assisting understanding of students, because textbooks often cannot explain these matters sufficiently.

3.4.2 Other Positive and Negative Impacts

There was no impact on the natural environment, resettlement or land acquisition by the project.

This project has mostly achieved its objectives. Therefore, effectiveness and impact of the project are high.

3.5 Sustainability (Rating: ③)

3.5.1 Institutional Aspects of Operation and Maintenance

EMPC is an institute attached to IGNOU both at the time of project planning and the ex-post evaluation. There was no significant change in the number of staff (around 100) and organization structure of EMPC at the time of the ex-post evaluation, compared to the time of project planning. Places of responsibility of operation and maintenance of the equipment are clear. There was no vacancy in the managerial posts of EMPC. There have been no problems with operation and maintenance of the equipment procured by the project due to staff shortages. There is no full-time post for editors of the video programme, therefore external personnel are currently engaged on a part-time basis for this work. EMPC has a large amount of editing work at the moment due to the need to produce video programmes for Swayam MOOCs. As this situation will continue for some years in future, EMPC is proposing the university to employ three full-time editors to accelerate and stabilize the editing work.

As mentioned earlier, for around three years after completion of the project the system for distributing video programmes produced by EMPC was minimized. However, eGyankosh, the facility for students to watch video programmes through the internet, was re-activated on an instruction from the Ministry of Human Resource Development in February 2016. Distribution of video programmes by Gyandarshan, the national satellite terrestrial TV broadcasting, is likely to be re-activated in June 2017. Distribution of video programmes by Swayam MOOCs and Swayam Prabha started from 2017 and 2016 respectively. In this manner, the system for distributing video programmes of IGNOU was re-expanding at the time of the ex-post evaluation. (Table 5)

Table 5 Status of distribution of video programmes

Items		At the time of completion of the project (July 2013)	After completion of the project (August 2013 onwards)	At the time of the ex-post evaluation (February 2017)
Satellite broadcasting	Gyandarshan 1[23]	Available 11 hours per day	Off air from June 2014	IGNOU has signed an MOU with the national satellite broadcaster for reactivation. Likely to be reactivated in June 2017.
	Gyandarshan 2[24]	Available 9 hours per day	Off air from June 2014	
	Doordarshan 1[25]	Available 30 minutes per day	Available 30 minutes per day	Available 30 minutes per day
	Swayam Prabha (DTH satellite broadcasting)	Not available	Not available	A new programme. Test broadcasting was started in December 2016.
Internet	eGyankosh	Accessible	Disconnected from June 2014	Became accessible from February 2016. Functions and contents are being expanded.
	IGNOU archive (YouTube)	Accessible	Accessible	Accessible
	Swayam MOOCs	Not available	Not available	A new programme. Test use was started in January 2017.

Source: Document provided by EMPC

As mentioned in the item of Relevance of this report, the beneficiary survey found that 80 percent of current students who participated in the interviews (61 persons) had not watched a video programme. 71 percent (45 persons) replied that they did not know there was a video programme when asked about the reason for not having watched a video programme. (Figure 9) There is a mention in the course guidance of IGNOU that video programmes are available on the IGNOU website and satellite broadcasting. However, there is no detailed information on it, such as titles and contents of the course- and curriculum-related video programmes and broadcasting schedule. Video programmes were rarely introduced or promoted in the weekend counselling sessions. It was acceptable that information about availability of the video programmes was not provided to the students widely because the predominant means of their distribution was not functioning at this time, as shown in Table 5. However, there is a need to improve the system for providing information about the utilization of the video programmes when distribution re-starts.

[23] Gyandarshan is a national satellite terrestrial TV broadcaster in India. IGNOU and other universities are offering programmes to Channel 1.
[24] Channel 2 is a dedicated channel for IGNOU. Only IGNOU is offering programmes for the channel.
[25] Indian national terrestrial DTH satellite broadcaster. DTH satellite broadcasting is widely used in India.

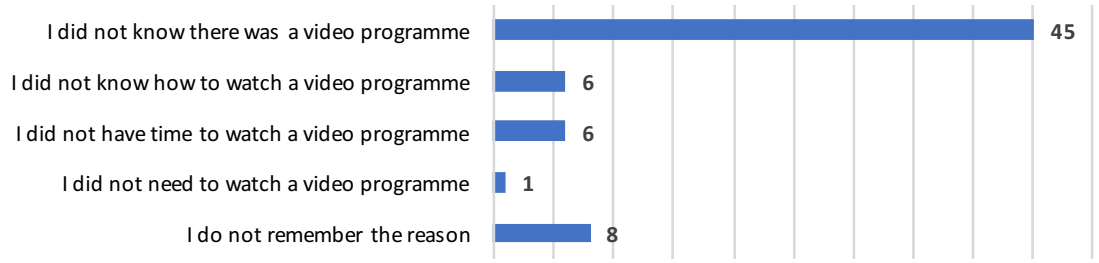

Figure 9 "What are the reasons why you have not watched a video programme?"
(n=61, multiple answers allowed, current students who have not watched a video programme)
Source: Beneficiary survey

3.5.2 Technical Aspects of Operation and Maintenance

Graphic, Engineering and Camera Units of EMPC were operating the equipment procured by the project at the time of the ex-post evaluation. Maintenance of the equipment was conducted by the Maintenance Section of the Engineering Unit. Staff of EMPC have mastered basic operation of the equipment. There have been no problems due to technical issues.

EMPC has conducted training programmes after completion of the project by inviting specialists in various subjects according to the need, as shown in Table 6, for improving technical level of the staff.

Table 6 Staff training programmes conducted after completion of the project

	Topics of the training	Duration	Trainer
1	Video production by HD camera	1 week	An eminent HD cameraman
2	Sound recording and mixing	3 days	A university professor
3	Aesthetics of Programme Production, Research and Technology Upgradation of educational Television	7 days in total	A Vice-President, Discovery Channel
4	Trouble-shooting of virtual studio system	1 day	A well-known film maker

Source: Document provided by EMPC

The project introduced digital HD equipment, while most of the equipment owned by EMPC before the project was analog SD (standard definition). Digital HD equipment was introduced because there was a world trend of audio-visual equipment changing from analog SD to digital HD at that time. EMPC did not experience a problem in transferring analog SD to digital HD. They are using both systems according to the need at this moment. EMPC has produced 395[26] and 322 video programmes by using digital HD and analog SD equipment respectively during the time from completion of the project to the ex-post evaluation in February 2017. The staff mastered basic operation of the virtual studio system. They have produced video programmes by using the facility. However, according to staff of the Engineering Unit, they have currently

[26] In addition to this, there were 605 video programmes that were recorded by digital HD and scheduled to be edited.

mastered only some of the functions of the software for the system out of a diversity of them. They feel a need of technical training on the system because of this. EMPC was proposing the training institute of the Indian National TV Broadcasting, OEM[27] agencies and others to conduct training programmes for further improvement of their technical skills in operation and maintenance of HD video equipment, including the virtual studio system.

In summary, currently the staff of EMPC have basic technical skills to utilize the equipment procured by the project; several measures are being taken to further improve their skills. Therefore, there was no problem of sustainability in terms of technical aspects.

3.5.3 Financial Aspects of Operation and Maintenance

Like other national universities, the principal revenue of IGNOU is the programme fees paid by students and budget allocation from the Ministry of Human Resource Development. IGNOU has obtained a stable revenue in recent years. The total amount of revenue of IGNOU in 2014-15 was approximately INR 5.7 billion (approximately JPY 9.9 billion[28]). It is apparent that revenue from programme fees plays an important role in the operation of IGNOU from the fact that 68 percent of total revenue was generated by programme fees paid by students in the respective year (Figure 10). The number of students and academic programmes of IGNOU was increasing or stable in recent years; therefore, IGNOU can also expect a stable amount of revenue in future. The Ministry of Human Resource Development places importance on open and distance education. Therefore, it is expected that they will also continue to allocate the necessary budget to IGNOU in the future. Expenditure of IGNOU is in accordance with the revenue every year (Figure 11). From these facts, there is no problem with the financial prospects of IGNOU.

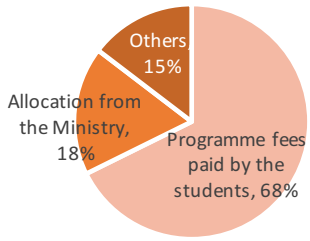

Figure 10 Revenue of IGNOU (2014−15)

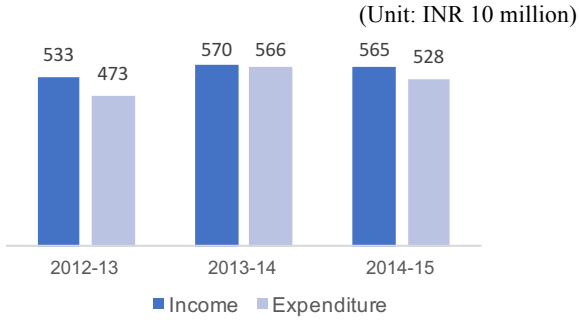

Figure 11 Revenue and expenses of IGNOU in recent years

Source: Document provided by EMPC

The necessary budget was allocated to EMPC for production and broadcasting of audio-visual programmes every year. The budget allocation of 2016-17 was INR 480 million

[27] OEM stands for Original Equipment Manufacturer.
[28] Converted at IMF rate on April 2nd, 2014 (1USD=59.65INR=103.85JPY).

(approximately JPY 810 million[29]). Budget for maintenance of the equipment and capacity development of the staff has been allocated every year (Figure 12). The amount of expenditure was very low compared to budget allocation in recent years (Figure 13) because there was no expenditure for satellite TV broadcasting and FM radio transmission, as distribution of the video programmes by these media was not in operation.

(Unit : INR1000)

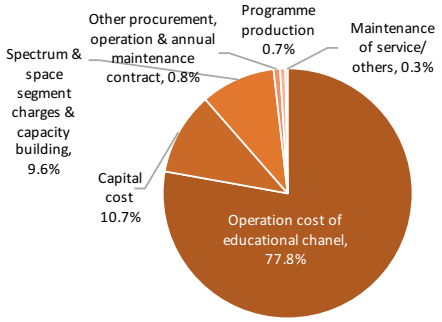

Figure 12 Budget allocation of EMPC (2016-17)

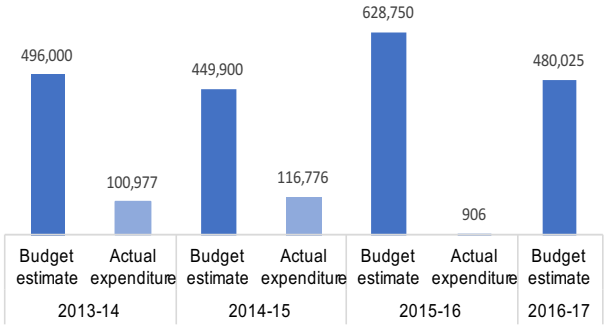

Figure 13 Revenue and expenditure of EMPC in recent years

Source: Document provided by EMPC

EMPC did not experience any financial problems regarding the operation and maintenance of the equipment procured by the project. In this manner, there were no problems in terms of financial aspects of IGNOU and EMPC.

3.5.4 Current Status of Operation and Maintenance

Most of the equipment introduced by the project was utilized well continuously. The status of maintenance was also satisfactory. Repair work was underway for the lighting system for the virtual studio and the multi effect video server system, as some of the functions of the equipment were not working.

The automated dimmer system for the lighting system for the virtual studio stopped working after they used it for nearly two years. EMPC was advised to operate the lighting system manually by the manufacturer in Japan after an e-mail exchange, since there is no local agent of after-sales for the equipment. However, manual operation is inconvenient, since they need to bring down the lighting system from high ceiling. They obtained a cost estimate for repair of the automated dimmer system from the manufacturer; they found it was very expensive as it included the cost of Japanese technicians visiting India. As an alternative, EMPC is arranging to repair the equipment through a local company specialized in lighting systems. EMPC is planning to request the Japanese manufacturer to appoint the local company as their local agent, and to purchase the necessary parts from Japan through them, and repair the equipment by receiving their technical assistance.

[29] Converted at IMF rate on April 2nd, 2016 (1USD=66.24INR=111.50JPY).

A part of the multi effect video server system stopped working due to a problem with its hardware. EMPC has been using the server by using an external hard disc instead of the central storage server in the system. At the time of the ex-post evaluation, EMPC has secured the necessary budget and called an agent for repair of the equipment; the repair work will be completed very soon.

Staff of the Engineering Unit of EMPC conducted daily or weekly visual inspections, checking basic functions, and collecting data on the status of running the equipment by taking turns. They had conducted inspection and maintenance using the measuring equipment, although it was not on a routine schedule.

EMPC was making necessary arrangements for an annual maintenance contract with agents of the manufacturers of the equipment at the time of the ex-post evaluation. EMPC had not signed an annual contract for such maintenance although they had considered about the necessity of it since 2015, because the cost of the annual maintenance contract was high and the equipment was not used very frequently at that time. Instead, they requested the agents to conduct inspections and repairs when necessary. EMPC started considering the need for a contract again in 2016, as the equipment was used more. There was a discussion at the technical purchasing committee of the university in January 2017. Thereafter, the Vice Chancellor of the university approved to have the contract. EMPC was working on a tender procedure as of March 2017.

As explained, most of the equipment procured by the project was utilized well continuously. The equipment that had had problems was in the process of being repaired. EMPC was taking the necessary steps for signing an annual maintenance contract with agents for the manufacturers. Therefore, there was no problem with the status of maintenance and management of the equipment.

As explained, there was no problem with the operation and maintenance of the equipment introduced by the project in terms of institutional, technical and financial aspects; most of the equipment is utilized effectively. There is a prospect that the equipment will be used effectively in future. Therefore, sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project was implemented to improve the efficiency and quality of video programme production for students of IGNOU in India, by renewing and digitalizing the equipment necessary for production of videos; thereby contributing to the students' learning and expanding usage of the video programme of the university.

The project has been highly relevant to the development plan of India, which aims to improve the enrollment rate in higher education and to promote distance and open education; to the development needs of EMPC. EMPC, which is attached to IGNOU and engaged in production of audio-visual programmes, needed to maintain and enhance its capacity to produce

videos that would meet the needs of students who want to watch video programmes. The project has also been highly relevant to Japan's ODA policy, which places importance on assistance that increases educational opportunities for poor and socially vulnerable people. Therefore, the relevance of the project is high.

Procurement of equipment was conducted as planned. Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

At the time of the ex-post evaluation, EMPC was producing more than 200 video programmes per year, which was the target figure for the project. Efficiency of video production had improved as a result of equipment procured by the project. Impacts of the project include expansion of the usage of the video programmes produced by EMPC in various ways. For example, video programmes were uploaded to the digital library on the IGNOU website, and distributed through the online programme and satellite broadcasting programme, which were newly introduced by the Indian government. Therefore, the effectiveness and impact of the project are high.

There were no problems with the operation and maintenance of the equipment introduced by the project in terms of institutional aspects. Staff of EMPC have the basic technical know-how to utilize the equipment introduced by the project, and have taken necessary measures for further improvement of techniques. There was no problem with the financial status of IGNOU or EMPC. Most of the equipment procured by the project was continuously utilized well. Repairs were being arranged for any equipment that had problems. EMPC was taking necessary steps to arrange an annual maintenance agreement. In this way, there were no problems with the operation and maintenance of the equipment introduced by the project in terms of institutional, technical and financial aspects. Therefore, sustainability of the project effects is high.

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

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

(1) It is recommended that EMPC acquire advanced technical know-how on operation, maintenance and repair of the virtual studio system and digital HD equipment by arranging more frequent technical training, so that the equipment would be utilized more, and production of video programmes would become more efficient.

(2) There seem to be many students of IGNOU who are not aware of the availability of video programmes. It is advisable that EMPC discuss this with senior management of the university, and facilitate them to disseminate more detailed information about course-related video programmes to the students soon after the re-activation of Gyandarshan (Satellite TV broadcasting) and full operation of Swayam MOOCs and Swayam Prabha channels.

4.2.2 Recommendations to JICA

It is recommended to make sure of the status of utilization of the equipment introduced by the project for some more years by obtaining information from EMPC, such as the number of video programmes produced per year, progress on the re-activation of satellite broadcasting, trend of new programmes, etc.

4.3 Lessons Learned

(1) Make sure of the availability of local agents for after-sales support service

EMPC had to spend a long time repairing the automated lighting system introduced by the project, as there is no agent of the Japanese manufacturer of the equipment in the country. There might be no local agent to provide after-sales maintenance support services for professional equipment of new technologies for some time until a technology becomes widely used in a country of the executing agency. The cost of maintenance support services from Japan is expensive, and not affordable for executing agencies, which are public institutions in developing countries most of the time. Therefore, at the time of selecting equipment in a grant aid project, JICA needs to make sure of the availability of local agents or professional companies with adequate technical capacity that can provide after-sales support services for all the equipment. It is always best to select equipment for which after-sales support services are available locally; however, if it is not, JICA needs to make necessary arrangements with consideration that such services will become necessary.

(2) Expedite implementation procedures of the project, including issue of Authorities to Pay

The planned project period of this project was fifteen months; whereas it was actually thirty-five months. The main reason for this long delay was a delay by the ministry that supervises IGNOU in issuing the Authorities to Pay. This was probably because the ministry did not have a strong sense of ownership of the project.

As with this project, when the institution responsible for conducting various procedures of the project is different from the executive agency of the project, it is important to involve the former in the project from the time of planning; to create a sense of ownership for the project; and to make them fully aware of their responsibility in the project and the procedures they need to implement for it, so that the project can be implemented speedily. It is also a good idea to appoint a senior officer to be in charge of the project, to clarify who is responsible for what in the institution, and to establish a structure to conduct the procedures of the project efficiently.

JICA Evaluation Department

On the Views of an Expert

In addition to performing an evaluation based on the five DAC evaluation criteria by the external evaluator, this ex-post evaluation incorporated the views of an expert in order to reflect more specialized and diverse views. The external evaluator selected the expert and gained cooperation from Hisashi Nakamura, Honorary Professor of Ryukoku University, Japan.

Prof. Hisashi Nakamura is an economist specializing in South Asian Studies. He has been a professor of the Faculty of Economics of Ryukoku University, and an affiliate professor of the Center for Southeast Asian Studies of Kyoto University. He is currently a Research Fellow of Ryukoku University. He has taught in Delhi University and Jawaharlal Nehru University in India, and has worked hard for popularizing correspondence study courses for post-graduate education in Japan.

He has written books such as *Accumulation and Interchange of Labor*, *Affluent Asia and Unhealthy Japan*, *Economics of Local Self-reliance* and *Problems of Asian People* and others.

IGNOU, which was assisted by the project, aims to provide people of various ages, professions and economic background with the opportunity of higher education; contributes to eradicating educational difference in India; and increases the enrolment rate of higher education of the country. This is a very important background and reason for JICA to conduct this project as grant aid assistance.

The analysis by the expert was conducted with the aim of facilitating understanding of the background of the project for those who read this ex-post evaluation report, including the general public. The methodology adopted for the analysis included interviews with students of IGNOU at the Regional Center of Delhi III and the Learner Support Center in Delhi Prison; exchange of opinions with and information collection from the Directors and teachers of the Schools of Agriculture, Business Management, Computer Science and Management, and Health Science, etc., and Director of Student Service Center of IGNOU and staffs of EMPC; and a review of relevant documents.

The column in the attachment is a summary of the results of the analysis.

Attachment

＜Column: Analysis of the Project by the Expert＞

Meritorious Aspects and Challenges of IGNOU

Hisashi Nakamura
Honorary Professor of Ryukoku University, Japan

1. Higher Education in India

I visited the campus of IGNOU head office in suburbs of south New Delhi, the capital city of India, in November 2016. It is the university of the national government for distance and open education established in 1985, and was named after Prime Minister Indira Gandhi.

Prof. Nakamura having an interview with students at IGNOU Regional Center, Delhi III

Near IGNOU there is a large campus of Jawaharlal Nehru University, which was named after her father. This is an elite university, which has produced a number of high-level officials and diplomats of the national government of India. On the other hand, IGNOU is a higher education institute, which offers degrees through distance education to people around the country, including those who do not have an opportunity to attend universities due to various reasons.

Indira Gandhi visited Japan in 1957 along with her father. I remember having a glimpse of her across a road when she was in a group of visitors, who came to see Nishijin-brocade in Kyoto. She was in sparkling young age, which was very impressive especially in contrast with Nehru, who was in advancing old age. I saw her again 10 years later when I visited New Delhi in 1967. She was presiding over the Republic Day as prime minister on January 26th. She was getting gray hair, probably as a result of ten years of hard work. Her hooked nose made her expression look sterner.

Ten years later, in 1979, I listened to her speak at a political assembly of the Indian National Congress when I was staying at Ashoka Hotel. She stated she would like to place more emphasis on higher education in educational policy, rather than primary and secondary education. She said she did not have adequate time for school education when she was small. She recalled that she was studying through letters sent to her from her father in jail. She further added that one can study reading/writing and calculation from your parents or siblings, or elders in villages and monks in temples. However, one cannot study advanced mathematics or quantum mechanics if you do not have access to a specialized higher education institute. I found this idea contrasted with modern Japanese educational policy, which invested most of the national budget in primary and secondary education, and did not place much emphasis on university education.

Her father, Nehru, also placed great importance on higher education, especially in science and technology. As a result, we can find a lot of Indian professors or scholars playing important roles in renowned universities in the U.S.A or the United Kingdom. Technology-related universities of India, such as the Indian Institute of Technology, are very popular among multinational companies. It is said that half the senior management of companies in Silicon Valley in U.S.A. are Indian nationals.

2. Minimize social disparities in intellectual field

As explained, while universities in India are producing talented human resources working all over the world, there are still many young people in the country who have no opportunity to study in a higher education institute. India still has social disparities, especially in the intellectual field. Brahmins, who are at the top of the caste system, used to occupy important positions in the intellectual field, not in fields of military and business affairs. After independence from the status of British colony, India enacted a new constitution and banned the caste system. However, there was a strong influence from the caste system when I visited the country for the first time in 1965. Most of the university professors and high-ranking government officials were Brahmin, who occupied less than 10 percent of the total population.

According to the constitution, scheduled castes and scheduled tribes, who are around one quarter of the total population, should be provided constitutional protection. However, there was a big difference between what was mentioned in the law and what these people were actually experiencing in daily social life. Minimization of social disparities has been one of the most important policy objectives for every government since Independence.

Establishment of IGNOU is a part of the effort for achieving this policy objective. It was established as a university so that a large section of the population, who did not have many educational opportunities, could obtain degrees even without attending schools. It is the university that is responsible for realization of the crucial policy of the second Indira Gandhi government, “Garibi Hatao (poverty eradication)” in the field of higher education, and is taking care of various difficulties in Indian society.

3. Advantages of studying in IGNOU

I was amazed to see the scale and diversity of the university when I visited the campus of IGNOU. Since its initiation, IGNOU has been expanding the Schools of Studies, area of specialties and geographical areas. It has various academic programmes ranging from certificate, Bachelors and Masters degrees, M.Phil. and PhD programmes. The number of students at the Open University of Japan is around 70,000, whereas that of IGNOU is more than 3 million. IGNOU is one of the largest institutions for open and distance education in the world.

I had an opportunity to interview some students by visiting IGNOU Regional Center, Delhi III during the field visit. IT was a popular subject among the students. Many of the students whom I interviewed were in their 30s. There were students who were studying while working. I was impressed by their self-motivated and positive manner to study. It was also found in the

beneficiary survey that was conducted to the students as part of the ex-post evaluation that "I can study while I am working" was the most popular answer when they were asked about the advantages of studying in IGNOU.

What impressed me above all was the IGNOU Learner Support Center located in Delhi prison. IGNOU was offering several programmes that can be learned by self-study with textbooks to obtain degrees and certificates. The students majored in political science, language and others. Some of them were studying more than one programme. Course fees were exempted until such time as they complete the period of sentence and leave the prison. There was a practical course on vehicle maintenance that can help their vocational rehabilitation. These courses were offered so that they can continuously study, starting from Bachelor's degree and proceeding to Master's degrees and PhD, so that they can spend their life in the prison meaningfully even they might have a long period of sentence or have little hope to be released. I was convinced through discussion with the students that the study at IGNOU made their life in prison positive.

The programme fee of IGNOU is around INR 10,000 (approximately JPY 17,000); this is very reasonable, although it depends on the kind of programme being followed. Degrees of IGNOU are recognized in all universities in India. A mutual recognition system of course records with other conventional universities is applicable for students of IGNOU. They can apply for the scholarship loan facility offered by the federal government. IGNOU offers learning opportunities to Indian nationals living abroad and foreign students living in India.

According to the policy instruction of the constitution, IGNOU reserves a certain percentage of available seats for students of scheduled castes and tribes, other backward classes, handicapped, bereaved families, Kashmiri refugees and others. There are special systems for exemption of programme fees and free scholarship programmes for the above-mentioned groups.

As a result of these eminent efforts, in 1999 IGNOU was selected as "the best institution implementing distance education in the Commonwealth countries" by the Commonwealth of Learning, which is promoting distance and open education in the Commonwealth countries. In 2010 UNESCO certified IGNOU as being "the largest higher education institution in the world".

4. Roles of the audio-visual programmes in learning in IGNOU

Students of IGNOU are mainly studying by using self-learning materials (textbooks) and participating in counselling sessions during weekends. Attendance in the counselling sessions is not compulsory. That means one can obtain a degree without attending any of these sessions. In other words, there is no face-to-face class, which is compulsory in the corresponding education of the Open University of Japan. However, in India traditional education was carried on the tradition of master-pupil relationship, in which pupils learn from their teacher directly, since the ancient time of Rigveda. The basis of learning is recitation by word of mouth, not like the learning from classical writings conducted in Chinese Civilization. Learning meant deepening

the relationship between master and pupils. This is completely different from the education method of IGNOU.

There will be a chance to create a new tradition in Indian higher education when learning at IGNOU is further popularized. However, it seems that many years will be needed to create the new tradition. In fact, many students, teachers and administration staff of IGNOU recognized it as a disadvantage that students do not have sufficient communication with their teachers. In the beneficiary survey, a lot of students pointed out "limited communication with teachers" as a disadvantage of IGNOU.

Audio-visual programmes play an important role in supplementing the above-mentioned limited communication between teachers and students. There are various means of distribution of the video programmes. Earlier, students mainly watched the programmes on cassette tapes and video tapes in groups at Learner Support Centers and Regional Centers. Recently students watch the programmes more often through satellite TV broadcasting, FM radio, internet and YouTube. A test programme was introduced that broadcasts lectures through the internet radio system, to which students log in from the IGNOU website, and send any questions to the teachers conducting the lecturers by using online chat. In this way, audio-visual programmes and communication technology enabled interactive communication, in which students can receive replies to their questions from teachers who they have not in fact met.

In the middle of 2016 the Indian government introduced a massive higher and adult education programme on the internet, Swayam MOOCs, which is a new programme for open and distance education. EMPC was producing video programmes for Swayam MOOCs at a fast pace by using the equipment introduced by JICA at the time of the ex-post evaluation. Swayam MOOCs is a new system through which anyone can learn or obtain degrees, beyond the bounds of the universities. I received the impression that this is an effective attempt in a country like India, which has a vast territory and large population, to increase the enrolment rate of higher education. It will be interesting to see the successful achievement of Swayam MOOCs in future in India.

5. Future Challenges in Management of IGNOU

The number of students of IGNOU has increased to 3.1 million in 2015. This is a good thing, as the university is reaching those previously unreached, who rarely had an opportunity for higher education; this is the aim of the university.

However, there is a risk for any organization when it becomes huge. There may be a risk of extreme centralization of power in university management, in consequence of seeking operational efficiency of many Learner Support Centers and Regional Centers located far away. Then there will be a question about the nature of the university, which would normally be an organization that is self-governed by teachers and scholars.

For the smooth operation of the university, it is necessary to promote adequate communication among the administrative divisions, more than twenty Schools of Studies, specialized units, including EMPC, Regional Centers and Learner Support Centers under the

head office. However, there is a concern that this arrangement will be more difficult when the number of these units and centers increases. To avoid this risk, it may be a good idea to transfer part of the administration function to the state-owned open universities, for example, for preventing over-expansion of the administrative set-up. This might contribute to making the status of the state-owned open universities higher.

It is also a good idea to activate research activities by teachers and students, to maintain fundamental characteristics of universities. The principal role of the teachers of IGNOU is to develop learning materials, including textbooks and video programmes, develop new academic programmes, and support learning. They do not have many opportunities for engaging in academic research. It is understandable that the role of teachers of IGNOU, which is undertaking open and distance education, is completely different from the roles in conventional universities, which are education and research. However, research is a lifeblood of a university. It would energize the operation of the university and further uplift recognition of the university once an excellent research outcome is created as a result of enhancing facility for research and experiment, and promoting joint research with students in PhD programmes.