Republic of Fiji

Ex-Post Evaluation of Japanese ODA Grant Aid Project

"The Project for Construction of Information and Communication Technology Center at the University of the South Pacific"

External Evaluator: Keisuke Nishikawa, Japan Economic Research Institute Inc.

## 0. Summary

In this project, Information and Communication Technology (hereinafter referred to as 'ICT') / distance education facilities and a research and development environment were developed at the University of the South Pacific (hereinafter referred to as 'USP') to improve ICT education and training functions and human resource development functions in the ICT sector in the Pacific region. This project was consistent with the development plan and needs of Fiji and the entire Pacific region, as well as the priority areas of Japan's ODA policy. Therefore, the relevance of this project is high. With regard to project implementation, while the project components were implemented mostly as planned, the project cost exceeded the plan due to a surge in construction costs, associated with a substantial extension of the project period. Consequently, the efficiency was judged to be low. With respect to project effectiveness, quantitative targets expected at the time of planning were achieved as a whole, and other qualitative effects, such as an improvement in lectures and actual practices, utilisation of newly constructed Multi-purpose Theatre and commencement of international research projects, were also observed. It was confirmed as an impact that the ICT Centre made significant contributions to the development and production of ICT professionals in the region. Therefore, the effectiveness and impact of this project is high. In terms of sustainability, no particular issues were identified in institutional, technical and financial aspects as well as the current status of operation and maintenance, meaning that the sustainability of the effects of this project is considered to be high.

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

## 1. Project Description
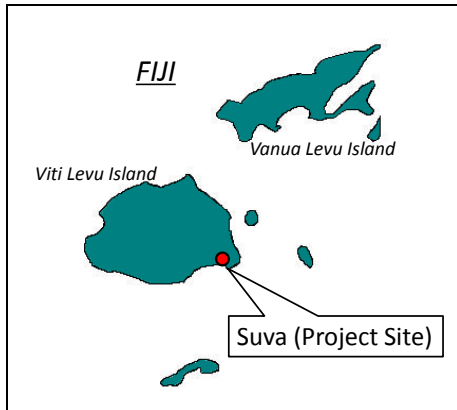


Project Location



Information and Communication Technology Centre developed in this project

### 1.1 Background

In the Pacific region, digital divide was obvious due to its peculiar geographical conditions in which islands were scattered across the vast ocean area, resulting in slow development of communication networks. It was regarded important to further develop the ICT sector for socio-economic development of the region and necessary to develop infrastructure and human resources for that purpose.

ICT education in the Pacific region had been centred around USP which was co-established in 1968 by 12 island countries and territories. However, enrolment numbers were continuously growing in recent years and there was a shortage of facilities and equipment. In particular, the facilities and equipment of ICT-related programmes had not been developed to accommodate the increase in student numbers (from approximately 9,000 in 2002 to over 10,000 in 2005), and especially the lectures of the Department of Computer Science were provided in hurriedly constructed wooded buildings. In addition, the university did not have a theatre which could accommodate a large number of audience, which required divisions of a large group into smaller classrooms and the use of facilities on different campuses. Although the curriculum required a use of the theatre for 79 hours a week, the existing theatre (with a capacity of 242 people) could be used only for 40 hours a week. As a result, there were restrictions on the number of classes and larger burdens on students and lecturers, leading to insufficient quality and quantity of ICT education required for USP.

### 1.2 Project Outline

The objective of the project was to improve ICT education and training functions and human resource development functions in the ICT sector by developing ICT / distance

education facilities and a research and development environment at the University of the South Pacific in Fiji.

| Grant Limit / Actual Grant Amount | Detailed Design: 75 million yen / 75 million yen<br>Phase 1: 2,201 million yen / 2,140 million yen<br>Phase 2: 857 million yen / 855 million yen |
|---|---|
| Exchange of Notes Date / Grant Agreement Date | Detailed Design: February, 2008 / None<br>Phase 1: May, 2008 / None<br>Phase 2: November, 2009 / November, 2009 |
| Implementing Agency | The University of the South Pacific (USP) |
| Project Completion Date | Phase 1: April, 2010 / Phase 2: September, 2011 |
| Main Contractors | Construction: (Phase 1 & 2) Konoike Construction Co., Ltd.<br>Procurement:<br>(Phase 1) LOT1: Konoike Construction Co., Ltd.<br>LOT2: Kanto Bussan Co., Ltd.<br>(Phase 2) Konoike Construction Co., Ltd. |
| Main Consultant | (Phase 1 & 2) Azusa Sekkei Co., Ltd. |
| Basic Design | January, 2006 |
| Detailed Design | January, 2009 |
| Related Projects | [Technical Cooperation]<br>  The Project for Upgrade of USPNet Communications System (2000 – 2002)<br>  Information and Communication Technologies (ICTs) Capacity Building at the University of the South Pacific (2002 – 2005)<br>  ICT for Human Development and Human Security Project (2010 – 2013)<br>[Other Donors]<br>  (Australia) Curriculum Improvement Project<br>  (New Zealand / EU) Financial Cooperation<br>  (Other (Taiwan, etc.)) Computer Laboratory Improvement Project, etc. |

## 2. Outline of the Evaluation Study

### 2.1 External Evaluator

Keisuke Nishikawa (Japan Economic Research Institute Inc.)

**2.2 Duration of Evaluation Study**

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

Duration of the Study: August, 2014 – July, 2015

Duration of the Field Study: November 7 – 19, 2014 and February 27 – March 5, 2015

**3. Results of the Evaluation (Overall Rating: B[1])**

**3.1 Relevance (Rating: ③[2])**

3.1.1 Relevance to the Development Plan of Fiji

At the time of project planning, Fiji's national development plan 'Strategic Development Plan 2003-2005' listed a medium term strategy to 'Rebuilding Confidence for Stability and Growth to achieve a Peaceful, Prosperous Fiji'. In this strategy, universal access to internationally competitive information and communication technology services was specified as one of the goals to be achieved. Additionally, at the sector level, the 'Fiji Information and Communication Technology Policy 2003-2005' also set a target to make Fiji a centre of ICT in the Pacific with its digitalised economy and ICT-capable citizens.

USP has a character as a jointly operated higher education institute not only for Fiji but also the Pacific region. From the regional perspective, not just for Fiji, at the 2005 Pacific Islands Forum[3] (hereinafter referred to as 'PIF'), member countries approved the 'Digital Strategy' to disseminate and develop distance education with ICT, which indicates that this project was consistent with the direction of the entire region at that time. In addition, USP formulated the 'USP Strategic Plan 2006-2010' to promote effective utilisation of the USPNet, a shared network in the region.

In the 'Roadmap for Democracy and Sustainable Socio-Economic Development 2010-2014', Fiji's national development plan at the time of ex-post evaluation, greater use of ICT was deemed essential for social and economic development and the goal was set to achieve universal access to information and competitive telecommunication services. At the sector level, the 'Fiji National ICT Policy', prepared in 2012, sets out seven key objectives including the one to achieve accessible and affordable communications for all.

From the regional perspective, according to the PIF Secretariat, the Digital Strategy was still effective at the time of ex-post evaluation and the improvement of education

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[1] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[2] ③: High, ②: Fair, ①: Low
[3] Pacific Islands Forum (PIF) is a forum of dialogue annually held among the political leaders of the Pacific islands, where regional interests such as political, economic and security issues are broadly discussed. The secretariat is located in Suva, capital of Fiji.

with the use of ICT continued to be important at all educational levels. The 'USP Strategic Plan 2013-2018', the utilisation of ICT was also listed as the 'Priority Area 4' with four objectives, such as 'Ensure that ICT provision adequately meets the University's needs' and 'Take a lead role in the region's ICT development'. Moreover, it was observed that USP was trying to enhance its research environment by utilising ICT, as seen in the 'Knowledge Hub Concept', a plan to pursue the sophistication of research platforms with the utilisation of ICT.

As seen above, it was confirmed that, both at the time of planning and ex-post evaluation, Fiji set a national policy target to disseminate ICT and the ICT sector-specific policy also had a target to promote the utilisation of ICT by the people. At the regional level in the Pacific, it was also confirmed that the importance of education with the utilisation of ICT was set out as the direction of regional development and that USP, a regional higher education institute, always had a strategic plan to enhance education and research by utilising ICT. Therefore, this project can be judged to be highly consistent with these development plans.


3.1.2 Relevance to the Development Needs of Fiji

At the time of planning of this project, digital divide in the Pacific region was obvious and the quality and quantity of ICT education were not ensured at USP though it had more than 10,000 students in 2005, as the development of information and communication facilities and equipment was not catching up with it. For example, a server room was too small to make additional installation while the improved reliability of the campus network was much desired. The ICT education environment needed to be improved qualitatively and quantitatively as the computer rooms for the Department of Computer Science were absolutely insufficient (approximately 60% sufficiency) and a lecture theatres were overcrowded.

The number of students at USP has continued to increase after that, and so is the number of students by country of origin at the School of Computing, Information & Mathematical Sciences (hereinafter referred to as 'SCIMS') as shown in Table 1.

Table 1: Number of Students by Country of Origin
at the School of Computing, Information & Mathematical Sciences

| Country of Origin | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| Cook Islands | 6 | 6 | 3 | 2 | 1 |
| Federated States of Micronesia | 4 | 4 | 2 | 7 | 5 |
| Fiji | 997 | 981 | 1,010 | 1,080 | 1,135 |
| Kiribati | 52 | 54 | 46 | 47 | 52 |
| Marshall Islands | 4 | 3 | 1 | 1 | 0 |
| Nauru | 2 | 2 | 3 | 6 | 5 |
| Palau | 0 | 1 | 3 | 2 | 1 |
| Papua New Guinea | 0 | 2 | 4 | 4 | 1 |
| Samoa | 27 | 22 | 24 | 23 | 49 |
| Solomon Islands | 136 | 165 | 164 | 153 | 142 |
| Tokelau | 3 | 1 | 0 | 1 | 1 |
| Tonga | 87 | 106 | 113 | 129 | 116 |
| Tuvalu | 25 | 26 | 30 | 33 | 24 |
| Vanuatu | 65 | 68 | 84 | 91 | 95 |
| Other | 3 | 1 | 0 | 4 | 4 |
| 合計 | 1,411 | 1,442 | 1,487 | 1,583 | 1,631 |

Source: Data provided by USP

From the above table, it is clear that the majority of SCIMS consists of Pacific students, whose number has gradually been increasing every year. It can be inferred that the needs for human resource development on ICT in the region have consistently been high from the time of planning till ex-post evaluation.

The data traffic has also increased as the number of these students became larger. In response this change, USP enhanced communication processing capacities four times faster from the time of planning, to speed up data communications. USP will further keep improving the communication environment by reflecting the needs in education and research. This project, which supported the improvement of communication environment, is consistent with the needs for ICT education.

As a result of implementing this project, the shortage of facilities and equipment seen at the time of planning had been resolved by the time of ex-post evaluation. However, it was heard from the university staff that as further increases in student numbers and technology advancement are expected, it will be important to keep developing ICT-related facilities and equipment. If they occur, the facilities developed in this project are also considered to become boxy.

3.1.3 Relevance to Japan's ODA Policy

In the leader's declaration adopted at the Fourth Japan-Pacific Islands Forum Summit Meeting (commonly known as PALM) held in 2006, Japan presented to the Pacific island countries five key priority areas, economic growth, sustainable development,

good governance, security and people to people exchange, and announced its intention to support these areas. This project supported the higher education sector in the Pacific and 'Education' is included in the 'Sustainable development', one of the key priority areas of Japan to the Pacific at the time of planning. Assistance in the education sector had a listing of equipment for distance education and the improvement of knowledge at USP. Therefore, this project can be said to have been consistent with the policy.

In the ODA policy at that time, grant aid projects needed to be implemented as a regional project to benefit neighbouring countries as Fiji had high income levels. While this project was a grant aid project for Fiji, it was also a regional project to benefit other Pacific island countries. Therefore, this project was judged to have been consistent with the ODA principles

### 3.1.4 Appropriateness of Project Planning and Approach

This project was implemented by considering the high needs for ICT education at a higher education institute benefiting the Pacific region, and its project planning and approach did not seem to have had any problems, without negative items to be pointed out in particular.

The development of USPNet, a basis to enhance distance education in each Pacific island country, was an area Japan cooperated for many years. It can be said to have been an adequate planning and approach that this project was implemented according to the needs for ICT education in the Pacific were captured through the long-term cooperation. University staff members highly regarded the realisation of further utilisation of the USPNet by developing the ICT Centre in this project.

It was confirmed that this project was consistent with Fiji's development plans and needs during the planning and ex-post evaluation, as well as Japan's ODA policy at the time of planning. In addition, project planning and approach were considered as appropriate.

In light of the above, the relevance of this project is high.

## 3.2 Efficiency (Rating: ①)

### 3.2.1 Project Outputs

In this project, ICT-related Building A (Common Areas / IT Service Division), Building B (Department of Computer Science / Department of Engineering) and Multi-purpose Theatre were planned to be constructed on the existing premises, and necessary equipment was planned to be procured. The planned and actual project components are as shown in Table 2 and Table 3

Table 2: Planned and Actual Contents of the Facilities Developed in This Project

| Building name (Structure / No. of floors) | Area | Principal facility contents |
|---|---|---|
| Building A (RC structure, 4 floors) | Plan and Actual: 2,602m$^2$ | Common area<br>IT Service Division<br>Department of Computer Science |
| Building B (RC structure, 3 floors) | Plan and Actual: 2,810m$^2$ | Department of Computer Science<br>Department of Engineering<br>Research and Development Section<br>Connecting bridges |
| Multi-purpose Theatre (RC+S structure, 3 floors) | Plan: 1,247m$^2$<br>Actual: 1,250m$^2$ | Multi-purpose Theatre<br>Foyer |
| TOTAL | Plan: 6,659m$^2$<br>Actual: 6,662m$^2$ | |

Source: Implementation Review Study Report, JICA Internal Document

Table 3: Planned and Actual Contents of the Actual Equipment Procured in This Project

| Target field | Name Equipment |
|---|---|
| Common-use equipment | LCD projector (large)<br>Remote-controlled TV camera<br>Audio system for Multi-purpose theatre<br>Video system for Multi-purpose theatre<br>Audio-visual system for video-conferencing room<br>Audio-visual system for conference room |
| Department of Computer Science | Server / rack set<br>Personal computers |
| IT Service Division | Servers (advanced type, ordinary type)<br>Tape backup system<br>Uninterruptible power supply unit<br>Equipment rack<br>Personal computers<br>System for USPNet control room |
| Department of Engineering | Analogue communications practice system<br>Antenna technology practice system<br>Micro-wave technology practice system<br>Digital communications practice system<br>Server / rack set |

Source: Implementation Review Study Report, JICA Internal Document

It was confirmed that the facilities and equipment of this project were constructed and procured almost as planned and that major equipment was all utilized during the site survey of the ex-post evaluation. No facilities or equipment with troubles were observed. Among the major equipment, as more than five years had passed since the personal computers were procured in this project, they were gradually being replaced with USP's own budget.

| Computer Room | Inside the Multi-purpose Theatre |

In addition to the items developed by Japan, the Fiji government and USP were expected to undertake some work such as ground levelling of the construction site, laying of equipment necessary for power and water supply into the construction site and processing of tax-exemption arrangement. According to USP and the consultant of this project, these items were all implemented by the Fijian side. At the time of ex-post evaluation, no negative influences of implementing these items on the generation of project effects were observed, and it can be said that there were no problems as a whole.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The approximate cost of this project to be borne by Japan was planned to be 2,276 million yen (75 million yen for the detailed survey and 2,201 million yen for the construction), with another 205 million yen planned as implementation expenses to be borne by Fiji.

Table 4 summarises the actual costs contributed by Japan.

Table 4: Actual Project Costs

(Unit: million yen)

| | | Phase 1 | Phase 2 | Total |
|---|---|---|---|---|
| Construction | Direct construction | 1,385.0 | 512.3 | 1,897.3 |
| | Other construction | 518.0 | 227.6 | 745.6 |
| Equipment | LOT1 | 37.0 | 31.0 | 190.6 |
| | LOT2 | 122.6 | | |
| Design and supervision | | 77.6 | 84.8 | 162.5 |
| TOTAL | | 2,140.2 | 855.8 | 2,996.0 |

Source: Prepared from JICA's internal document

As the project cost borne by Japan significantly exceeded the cost expected at the time of planning due to the hike in construction costs following a surge in worldwide

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material prices after the implementation review study was conducted, the construction of the Multi-purpose Theatre was excluded during the detailed design stage, which was implemented in the second phase of the project by re-signing the Exchange of Notes. The comparison to the plan shows that the actual cost was a total of 3,071 million yen (75 million yen for the detailed study and 2,996 million yen for the construction), which exceeded the plan (135% of the plan).

On the other hand, the cost borne by Fiji could not be obtained accurately since the expenditure data specific to this project had not been sorted out and stored. Consequently, the evaluation of the project cost was based on the comparison of the Japanese portion.

3.2.2.2 Project Period

The period of this project was expected to be a total of 25 months (February, 2008 – February, 2010), including a detailed design and tender period of 7 months and a construction and procurement period of 18 months. The actual period was 44 months from February, 2008 to September, 2011, which exceeded the planned period substantially. It was caused by the re-signing of the Exchange of Notes after the construction of the Multi-purpose Theatre was separated as the second phase due to the significant increase in project cost, as described earlier. As a consequence, this project was divided into 'The Project for Construction of Information and Communication Technology Center at the University of the South Pacific' in which Building A and B (including the bridging corridor) were developed and 'The Project for Construction of Information and Communication Technology Center at the University of the South Pacific (Phase 2)' in which the Multi-purpose Theatre was constructed[4].

The project period significantly exceeded the plan by 76%. However, it can be highly evaluated that the construction of Building A and B under the budget constraint, which would have had direct influences on actual lectures and practices, was prioritised so that project effects would be generated sooner.

In light of the above, the outputs of this project were mostly as planned, but the project cost exceeded the plan due to increasing in material prices and the project period significantly exceeded the plan. Therefore, the efficiency of the project is low.

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[4] The implementation review study was not conducted for Phase 2, and the initial detailed design contents were followed.

## 3.3 Effectiveness[5] (Rating: ③)

### 3.3.1 Quantitative Effects (Operation and Effect Indicators)

By implementing this project, it was expected as operation indicators that the number of ICT-related curricula, possible hours of ICT-related courses for adults, number of countries that were be connected simultaneously among large classrooms would increase. It was also expected as effect indicators that the number of graduates from the Department of Computer Science and the number of employment in ICT-related jobs would be increased.

Table 5: Operation and Effect Indicators of This Project

| Indicator | | Baseline | Target | Actual | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 2010 | 2011 | 2012 | 2013 | 2014 |
| | | Baseline Year | 2 Years After Completion | Before Completion | Completion Year | 1 Year After Completion | 2 Years After Completion | 3 Years After Completion |
| Operation Indicators | Number of ICT-related curricula | 49/year (2004) | 88/year | 70/year | 80/year | 85/year | 90/year | 90/year |
| | Possible hours of ICT-related courses for adults | 24/week (2004) | 48/week | 40/week | 60/week | 60/week | 60/week | 60/week |
| | Number of countries that can be connected simultaneously between large classrooms | 3 countries (2006) | 6 countries | 12 countries | 12 countries | 12 countries | 12 countries | 12 countries |
| Effect Indicators | Number of graduates from the Dept. of Computer Science | 90 (2006) | Increase | 115 | 100 | 109 | 127 | - |
| | Number of employment in ICT-related jobs | 97 (2004) | Increase | No data | | | | |

Source: Data provided by USP

Note 1: The Building A and B opened in April 2010 and the Multi-purpose Theatre opened in September 2011 at the ICT Centre. In the above table, 2011 was indicated as the completion year as the entire project was completed in that year.

Note 2: As the Department of Computer Science was reorganised into various programmes, it was difficult to make a direct comparison. In the above table, the number of awardees in the programmes related to the ICT Centre was re-sorted and indicated to enable comparisons. The 2014 data had not been made available at the time of ex-post evaluation.

The target year for each indicator set at the time of planning was regarded as 2013, two years after 2011 when data for the full academic year could be obtained after the project was completed in 2010. According to the data provided by USP, it was confirmed that all operation indicators achieved their planned target figures set during the planning stage and that the effect indicator regarding the number of graduates also achieved its target. With respect to the number of counties that can be connected simultaneously between large classrooms, all USP campuses became able to be

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

simultaneously connected right after the completion of the Phase 1 since the communication system was upgraded together with the implementation of this project.

Among the effect indicators, the number of employment of graduates in ICT-related jobs could not be obtained quantitatively as USP had not conducted sufficient surveys. However, interviews with the ICT Centre staff as well as the graduates in Fiji and Tonga revealed that the graduates from the Department of Computer Science and Information Science are highly sought after in the job market and the supply was always short. While the data were not accurate, at least over 90% of the students secured their employment at the time of their graduation, according to the ICT Centre. Therefore, it can be judged that this indicator has also been achieved.

3.3.2 Qualitative Effects (Other Effects)

At the time of planning, it was expected that the following qualitative effects would be generated by implementing this project.

1)   Provisions of efficient and effective classes to USP students will become possible.
2)   The Multi-purpose Theatre will be utilised in various occasions (e.g. for international conferences), not just internally within the university, which will promote cooperation among industries, academia, and the government in and outside the region.
3)   Servers and their installation environment in the IT Service Division will be improved and reliability of network environment within the campus will be higher.
4)   The Research and Development Department conducting joint research and development with external organisations will be upgraded and strengthened.

With regard to 1), it was observed from the interviews in Fiji and Tonga with graduates who majored in ICT that the improvement of facilities and equipment enabled efficient and effective lectures and practices. In a beneficiary survey[6] with students, 90% of them replied in the same way that effective and efficient lectures and practices had been realised. It can be considered that this effect has been achieved as a whole.

Regarding 2) the Multi-purpose Theatre, it became clear that the theatre was used by a total of 57 groups, when the status of utilisation between January and October 2014 was counted during the ex-post evaluation (1 – 9 days each time). Since the theatre is positioned as a high-quality facility equipped with audio equipment, it has not been used

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[6]  A questionnaire survey was conducted with 100 students currently studying at the School of Computing, Information and Mathematical Sciences. The survey concerned the level of satisfaction with the facilities and equipment at the ICT Centre, the Internet environment, efficiency and effectiveness of classes utilising ICT, etc.

for lectures for students so as to maintain the facility in best conditions. It was not necessarily intended to increase the number of days used and the theatre has been used for international academic conferences, music concerts, cultural events, seminars, etc. It was heard from USP's Oceania Centre, a most frequent user, and other university staff that the quality of various events improved significantly compared to the past by using the Multi-purpose Theatre, and the theatre was being utilised as a facility to promote cooperation and interaction within and between the regions.

As for 3), servers were upgraded in this project, and the USPNet, connecting USP with other campuses, also became stable. In addition, servers were strengthened further by USP and communications using optic fibre cables have become possible with Marshall Islands and Tonga. The ICT Centre is seen as a facility underpinning the significant improvement of communication environment. With these upgrades, a network use limit imposed on USP students (a system in which excessive communication traffic would be charged) was abolished, making it possible for current students to use the network environment without limitation.

With respect to 4), it was confirmed that the Research Office was established at USP, which created a high performance computing unit to start promoting better access to super computers at other universities and various simulation researches by utilising the functions of the ICT Centre. At the time of ex-post evaluation, no major collaborative projects with companies within the country or region were observed and the advancement of researches utilising ICT was still at its initial stage. As the ICT environment improved through this project, international researches are expected to be progressed.

Based on the above, it can be evaluated that the qualitative effects 1) – 4) expected at the time of planning have sufficiently been achieved after this project was implemented.


**3.4 Impacts**

3.4.1 Intended Impacts

At the time of project planning, the following points were expected as the impacts of project implementation.


1) Human resources with ICT skills will be supplied so that the Pacific island nations will be able to take part in a global information society easily.
2) A new department of information engineering will be established to supply engineers that are lacking in the Pacific region.
3) As USP is the top tertiary educational institute in the Pacific, established by 12 member countries, the effect of this project will prevail in Fiji and throughout the

Pacific.

USP is the only regional tertiary institute in the Pacific and many of the ICT technicians in the government and private sectors in each Pacific island countries are likely to be the USP graduates. Along with the widespread use of the Internet and mobile networks in recent years, demand for ICT experts has been very high. In the interviews with the graduates with ICT major, it was heard that the majority of graduates find it easier to find jobs than the graduates from other schools, and they are working in the sectors related to ICT. The demand has been felt by students, as shown in the beneficiary survey that approximately half (49%) of the current students with ICT major consider that they have more job opportunities than students in other schools. Therefore, it is assumed that this project played a great role in terms of the production of human resources to respond to the information society.

After this project was implemented, no programme with the name of Information Engineering was established, but it was confirmed that various human resources with ICT skills were being developed at the ICT Centre by newly establishing the Netcentric and Software Engineering programmes.

Moreover, the 'ICT for Human Development and Human Security Project' was implemented for three years from 2010, as JICA's technical cooperation project to develop capacities on ICT education. In this project, one of the outputs to be achieved was 'Operational policy and services of the Japan-Pacific ICT Centre are established'. While a section in charge of operation and management of the ICT Centre was established and guidelines on the use of Multipurpose Theatre facilities were formulated, incubation space cannot be said to have been fully utilised as each room was smaller than what was needed by private companies. Formulation of the operational policy of the ICT Centre itself was yet to be completed. While it is desirable to consider countermeasures to the underutilised incubation space, the ICT Centre has been adequately operated and maintained by the IT Service Division as described later, and no major problems have occurred in practice.

Based on the above, it can be judged that the overall impacts of this project have been generated in terms of the contribution to the supply of ICT experts and the information society in the entire Pacific region.

3.4.2 Other Impacts
  3.4.2.1 Impacts on the Natural Environment
    At the time of planning, it was considered that this project would not cause any undesirable impact on the natural environment as this project was to be implemented

within the existing premises. Under the Environment Management Act of Fiji, it was not obliged to conduct an environmental impact assessment of this project.

When environmental impacts were checked with USP during the ex-post evaluation study, no negative impacts on the natural environment were observed during and after the project, and no particular instructions were given by the ministry in charge of environment. Comments from the project consultant were also obtained that there were no particular environmental impacts caused by this project.

Based on the above, it can be said that there were no problems, since no negative environmental impacts were caused as initially expected.

### 3.4.2.2 Land Acquisition and Resettlement

At the time of planning, neither resident resettlement nor land acquisition was expected as the components of this project were to construct facilities and procure equipment within the existing premises. It was confirmed at the time of ex-post evaluation that there were no problems as all the facilities were constructed within the existing premises and no resident resettlement or land acquisition was identified.

With regard to the indicators expected at the time of planning of this project, while the quantitative data on the number of employment in ICT-related jobs could not be obtained, target figures were achieved as a whole, and qualitative effects were observed in terms of the improvement of lectures and practices, utilisation of newly constructed Multi-purpose Theatre and commencement of international researches. Concerning the impact, it was seen that the ICT Centre was making a great contribution to the development and supply of human resources with ICT skills in the region. It was also confirmed that no negative impacts on the natural environment, resident resettlement or land acquisition were generated.

In light of the above, this project largely achieved its objectives; therefore, the effectiveness and impact of the project are high.

## 3.5 Sustainability (Rating: ③)
### 3.5.1 Institutional Aspects of Operation and Maintenance

USP, the implementing agency, is a regional tertiary education institute (university) in the Pacific with a total of 24,986 students[7] and 1,584 staff members. In addition to the main campus in Suva, it has a total of 14 campuses including those in 12 member countries.

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[7] This figure is the head count, and the full-time equivalent number is 13,648.

The ICT Centre is positioned under the Vice President and its operation and maintenance is undertaken by the IT Service Division (hereinafter referred to as 'ITS'). Under the Director, ITS has four managers in charge of user services, systems and networks, etc. It has a total of 86 staff and allocates 15 student interns at the Helpdesk.

According to ITS, the structure has been strengthened by increasing staff numbers as needed after this project was implemented, and there were no issues in terms of the institutional aspect of operation and maintenance of facilities and equipment. At the time of ex-post evaluation, actual operation and maintenance status did not indicate any particular concerns on the number of staff and the organisational structure.
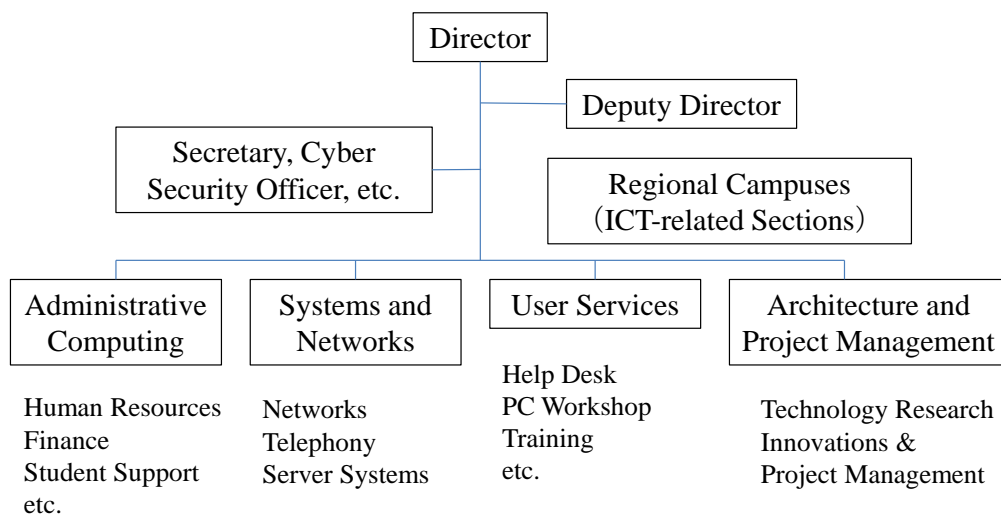


Source: Prepared Based on the Information Provided by USP

Figure 1: Structure of Information Technology Services (Simplified Version)

3.5.2 Technical Aspects of Operation and Maintenance

ITS had highly skilled technicians from the planning period of this project and they were judged to have had sufficient techniques and experiences in developing a intra-campus local area network (LAN), building a server system, maintaining and inspecting the USPNet, etc.

Checked during the ex-post evaluation study, facilities and ICT-related equipment provided in this project were being used without problems, and no concerns were observed in terms of technical aspects on utilising the equipment. According to ITS, staff in charge of operation and maintenance of equipment were likely to be the graduates who studied ICT at USP and had sufficient knowledge in those areas. It was also confirmed that the Director and other managers all had related academic qualifications higher than master's degrees, with over 20 years of working experiences.

As for training, capacity development efforts were being made by providing training

on network technologies to all staff members within the campus, and also higher-level training to engineers on an irregular basis.

## 3.5.3 Financial Aspects of Operation and Maintenance

USP is a regional tertiary education institute in the Pacific, and subsidies from each government were the major source of revenue. However, while the subsidies from each government have grown at a sluggish pace, revenues from tuition fees, foreign aid and other revenues have been increasing. Due to the increase in student numbers and payroll costs, various expenses for university operations also increased simultaneously, but management with a favourable balance has basically been secured. In 2013, a temporary deficit was posted as losses were registered due to the change in the accounting method to be in line with the international accounting standards regarding the treatment of donated asset. However, it bounced back to a surplus again in the first half of 2014. It is considered that there are no problems as a whole.

The financial conditions of USP in recent years are shown in Table 6.

Table 6: Financial Balance of the Entire USP

(Unit: 1,000 Fijian Dollar)

|  | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|
| **Revenue** | **144,158** | **164,532** | **172,249** | **92,761** |
| Government subsidy | 47,946 | 47,946 | 47,946 | 24,782 |
| Tuition fees, etc. | 35,439 | 37,379 | 39,265 | 24,183 |
| Foreign aid | 32,254 | 45,846 | 51,083 | 26,142 |
| Other revenues | 28,518 | 33,360 | 33,954 | 17,653 |
| **Expenditure** | **137,913** | **157,086** | **174,004** | **85,800** |
| Compensation to faculties | 60,792 | 65,869 | 76,739 | 38,156 |
| Management support | 1,904 | 1,856 | 2,107 | 1,141 |
| Utilities, land-related and maintenance expenses | 6,939 | 7,947 | 10,173 | 4,792 |
| Communications cost | 3,421 | 3,960 | 4,331 | 2,500 |
| General education expenses | 3,463 | 5,105 | 4,220 | 2,637 |
| Other expenses | 54,714 | 63,074 | 66,997 | 31,337 |
| Reserve fund | 6,680 | 9,275 | 9,437 | 5,237 |
| **Balance** | **6,245** | **7,446** | **-1,755** | **6,961** |

Source: Data provided by USP
Note: Figures for 2014 are for the first 6 months (January –June) only.

The recent operation and maintenance budget of ITS, in charge of operation and maintenance of the ICT Centre, is shown in Table 7 (payroll costs excluded).

Table 7: Operation and Maintenance Budget of ITS

(Unit: 1,000 Fijian Dollar)

| | 2012 | 2013 | 2014 |
|---|---|---|---|
| Internet Lease Line Charges | 960.0 | 1,100.8 | 1,100.8 |
| Satellite Lease | 1,540.3 | 1,978.9 | 2,000.0 |
| Software Licenses | 977.9 | 875.3 | 1,616.6 |
| Other Operation and Maintenance Costs | 487.8 | 488.0 | 832.7 |
| TOTAL | 3,966.0 | 4,443.0 | 5,550.1 |

Source: Data provide by USP

While much of ITS budget is being directed to lease charges and license costs, other operation and maintenance expenses have also increased in recent years. Along with the enhancement of communication environment, overall operation and maintenance expenses have been increasing, but it is a result of the enhancement in line with the university's management direction and no comments were heard that the budget was insufficient. It is considered that a sufficient amount has been allocated.

Since the communication environment was not adequate at the time of project planning, it was planned in 2007 to achieve a sound financial balance by developing and operating a system in which an upper limit of students' Internet usage was set and the excess charges needed to be paid when the usage exceeded the limit. This system was actually implemented. After the Internet line was augmented, there is no more need to set a limit on the usage by students, and no excess charges are collected.

Based on the above, it can be judged that there are no problems in the financial status of the entire university and the budget for operation and maintenance of the ICT Centre.

3.5.4 Current Status of Operation and Maintenance

During the field visit in the ex-post evaluation, all the facilities and equipment developed were generally used. As described above, it was confirmed that appropriate maintenance of facilities and equipment had been conducted in line with the replacement plan, as seen in the case of PCs being replaced after five years had passed. Various manuals were sorted and stored in the Director's office, which were ready to be referred to when necessary.

As for the procurement of spare parts for ICT-related equipment, no problems were identified in terms of the procurement routes or budget constraints. There was no major equipment broken down and unused. When breakdowns occur, internal staff undertakes repairs and there were no particular issues seen during the field visit in the ex-post evaluation.

In light of the above, no major problems have been observed in the institutional, technical and financial aspects of the operation and maintenance system. Therefore, the sustainability of the project effects is high.

## 4. Conclusion, Recommendations and Lessons Learned

### 4.1 Conclusion

In this project, ICT / distance education facilities and a research and development environment were developed at the USP to improve ICT education and training functions and human resource development functions in the ICT sector in the Pacific region. This project was consistent with the development plan and needs of Fiji and the entire Pacific region, as well as the priority areas of Japan's ODA policy. Therefore, the relevance of this project is high. With regard to project implementation, while the project components were implemented mostly as planned, the project cost exceeded the plan due to a surge in construction costs, associated with a substantial extension of the project period. Consequently, the efficiency was judged to be low. With respect to project effectiveness, quantitative targets expected at the time of planning were achieved as a whole, and other qualitative effects, such as an improvement in lectures and actual practices, utilisation of newly constructed Multi-purpose Theatre and commencement of international research projects, were also observed. It was confirmed as an impact that the ICT Centre made significant contributions to the development and production of ICT professionals in the region. Therefore, the effectiveness and impact of this project is high. In terms of sustainability, no particular issues were identified in institutional, technical and financial aspects as well as the current status of operation and maintenance, meaning that the sustainability of the effects of this project is considered to be high.

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

### 4.2 Recommendations

#### 4.2.1 Recommendations to the Implementing Agency

Development of Information on Job Placement and Career Path of Graduates

In this study, it was uniformly heard in the interviews with those who were concerned with this project that the ICT Centre was making a great contribution to the development of human resources with ICT skills in the region, and it was observed that the demand for ICT experts was also high across the region. However, no comprehensive survey on the carrier path of graduates, which made it difficult to show the effects quantitatively. By conducting a survey on the employment of graduates, it is assumed that a concrete level of contribution of the ICT Centre will become visible and such information will be attractive and useful in recruiting new students. Therefore, it is

desirable that key roles of graduates be regularly captured as quantitatively as possible.

<u>Utilisation of Incubation Facilities</u>

In this ex-post evaluation study, it was confirmed that the incubation space in the ICT Centre was not sufficiently utilised as it was not large enough for private firms. It is considered to be important to formulate a utilisation policy of the space by fully understanding their needs and generate further added-values of the ICT Centre, because USP, positioned as a regional tertiary educational institute in the Pacific, has started an effort to sophisticate research activities by utilising ICT, led by the Research Office, and several firms have shown interests in industry-university collaboration.

4.2.2 Recommendations to JICA

None

## 4.3 Lessons Learned

<u>Importance of Assistance Plan after Verifying the Effects and Issues of the Past Assistance</u>

Japan had provided a long-term assistance to ICT education at USP, and contributed to the realisation and enhancement of higher education not only in Fiji, where the headquarters of USP is located, but also in each member country in the Pacific region. This project was implemented against that background. Therefore, at the time of planning of this project, it is assumed that a plan on the development of ICT education at USP, a tertiary education and research institute of the entire region, and a capacity of USP in properly undertaking operation and maintenance when facilities and equipment were developed, were already captured.. It is considered that this relatively large investment project was planned by understanding these directions and capacities to solve the problem that the education environment (facilities and equipment) conducive to the development of ICT experts required by each member country in the higher education sector in the Pacific region was inadequate. Therefore, when a new project is planned for an implementing agency with the past assistance record, it is considered to be important for JICA to verify the effectiveness, impact and sustainability of the previous assistance to consider the optimal size of the new project, effective components and appropriate methods in implementing the project.

(End)