Philippines

Regional Telecommunications Development Project in Regions I and II, Phase B

Report Date: October, 2002

Field Survey: June 2001

1. Project Profile and Japan's ODA Loan

Project Site

Transmitter

Tower

Switch and Exchange

1.1 Background

The telecommunications system in the Philippines was somewhat less developed than those in some other Asian countries. As of the end of 1985, the Philippines had a total of 870,000 sets and a telephone density of 1.59 sets/100 persons. Moreover, subscribers were concentrated in urban areas. Manila and its surrounding areas in particular accounted for 680,000 sets, or 78% of subscribers. In rural areas, telephone density was very low. Regions I and II, which were targeted in this project, had particularly low telephone density and, generally speaking, a poor telecommunications system. The average telephone density for both regions was 0.30 sets/100 persons, and there was a substantial need for telecommunications infrastructure.

To deal with this issue, the government of the Philippines has taken the initiative in implementing systematic development of telecommunications. The National Telecommunication Master Plan was promulgated in 1982, and the National Telephone Program was promulgated in 1984 under the Master Plan. The Regional Telecommunications Development Project (RTDP) was carried out as part of the National Telephone Program.

RTDP was implemented in Regions I and II, Phase A, under the Ninth Yen Loans. In that phase, microwave transmission links were built across Regions I and II, and telephones and telegraphs facilities were installed in 51 municipalities. Phase A was completed in July 1986. The government of the Philippines made a request to the government of Japan for funding for a second phase of the project, which would include expansion of the transmission lines, improvement of telephone facilities in 34 municipalities and improvement of telegraph facilities in 14 municipalities.

1.2 Objectives

This project aims to provide telecommunications infrastructure in the northern Luzon area (Regions I and II) in order to improve telecommunications and, as a result, to support the development of the local economy.

1.3 Project Scope

The ODA Loan project consists of: establishing and extending 1) telephone exchanges (total of 8,240 lines), 2) microwave transmission links, 2) UHF transmission links, and 3) trunk cable transmission links (total of 31 links); establishing telegraph stations (total of 14 stations and 19 lines), and providing consulting services (foreign 197.5 M/M, and local 155 M/M).

1.4 Borrower/Executing Agency

The Government of Republic of the Philippines / Department of Transportation and Communications (DOTC)

1.5 Outline of Loan Agreement

Loan Amount	5,735 million yen
Loan Disbursed Amount	5,691 million yen
Exchange of Notes	December 1987
Loan Agreement	January 1988
Terms and Conditions	
Interest Rate	3.0 %
Repayment Period (Grace Period)	30 years (10 years)
Procurement	General Untied (Partially untied for Consultant)
Final Disbursement Date	April 1995

2. Results and Evaluation

2.1 Relevance

Most telecommunications services in the Philippines were started by private telecommunications companies during the U.S. occupation period. The development of the telecommunications sector was somewhat distorted; not considered a high priority issue in the national development plans, telecommunication services were concentrated in highly profitable areas. Telecommunications companies also installed a variety of different technologies, which made interconnection very difficult and created regional differences in the quality of telecommunication services. The National Telecommunication Master Plan was adopted in 1982 in order to address these conditions, and the National Telephone Program (NTP) was implemented in 1984 on the basis of the Master Plan. The objective of the Master Plan was to establish a high-capacity, standardized trunk transmission network that covered the whole country, and to provide highly reliable telecommunication services. RTDP Phase B project was carried out as part of both the National Telecommunication Master Plan and the National Telephone Program.

At the moment, the equipment installed in this project (excluding the telegram equipment) is leased to a private telecommunications company (Digital Telecommunications Phils., Inc. or DIGITEL) from the executing agency DOTC, and is operated and maintained by DIGITEL. DIGITEL is making efforts to expand and upgrade the telecommunications network in order to meet demand for telephone services. As the existing equipment is replaced with new equipment, the older equipment is relocated to rural areas, where it is being efficiently and effectively reused. In that respect, the objectives of narrowing the gap in telecommunications development between urban and rural areas and of contributing to local economic development are being maintained even at the present.

2.2 Efficiency

2.2.1 Project Scope

The Project Scope was modified as follows:

a) Spare parts and materials were reduced by 50%.
b) A DRMASS system was introduced in Binalonan instead of a trunk cable system.
c) Microwave radio systems were adopted for Binalonan, Urdaneta, instead of a trunk cable system.
d) Transmission capacities were reduced at several radio units.
e) Maintenance vehicles for Radio/MUX system were cancelled.

f) Relaxation of specification was considered for support facilities and wooden poles of outside plant.

Changes a), d) and f) were made due to budget limitations. And c) was executed in order to adjust the project to the microwave transmission system for natural disaster.

2.2.2 Implementation Schedule

Initially, the planned implementation schedule ran from August 1987 to December 1990 (41 months), but this was changed to cover the period from January 1988 to October 1990 (34 months); accelerating the completion of the project by 2 months. However, as some facilities installed in this project were damaged by typhoons, earthquake, and the subversive activities of anti-government groups after the project had been finished, restoration works were made until 1992, as follows:

a) Necessary adjustment of nine (9) existing telephone exchanges and also adjustment/rehabilitation of existing radio and MUX equipment.
b) Rehabilitation of towers as Basco RS (Repeater Station) and Gonzaga RS, Trunk cable links Pata-Claveria, Gonzaga RS-Gonzaga and Tuguegarao-Enrile
c) Restoration of four (4) repeater stations, which were isolated from the RTDP network due to earthquake damage and anti-government activities.

2.2.3 Project Cost

The total project cost ran approximately 300 million yen over budget; the planned project cost was 6,372 million yen, and the actual project cost was 6,668 million yen. The cost overrun was mainly caused by the increase of the restoration cost as a result of the aforementioned natural disasters and subversive activities by anti-government groups. In addition, the price of materials rose because some were hard to obtain domestically and had to be imported. Apart from cost overruns resulting from inevitable accidents, the project was completed within budget.

2.3 Effectiveness

2.3.1 Number of Telephone Line and Telephone Density

The objective of the project was to improve telecommunication conditions in Regions I and II by expanding regional networks. The target of this project was to achieve a telephone density of 0.37 lines per 100 persons in both regions through installation of new telephone lines; the number of lines increased by 5,430 and 2,810 lines in Region I and Region II, respectively. Changes of the number of telephone lines and telephone density in Regions I and II are as shown in Table 1. The telephone density in the project area cleared the target figure, reaching 0.47 lines per 100 persons in 1993. This figure proves that the project achieved its objective quickly.

Telephone density rose drastically from 1995 to 1996 due to the liberalization of the telecommunication industry (Executive Order 109, executed in 1995), which stimulated the participation of new telecommunications companies.

Table 1. Number of Telephone Lines and Telephone Density

	Year	1985	1993	1994	1995	1996
Population (Unit: 1000 persons)	Region I	n.a.	3,878	3,954	4,031	3,862
	Region II	n.a.	2,586	2,649	2,713	2,583
	Total of I & II	n.a.	6,464	6,603	6,744	6,445
	Nationwide	n.a.	66,982	68,624	68,350	69,946
Number of Telephone Line (Unit: Lines)	Region I	n.a.	24,361	27,140	37,133	148,793
	Region II	n.a.	6,042	7,234	11,301	14,535
	Total of I & II	n.a.	30,403	34,374	48,434	163,328
	Nationwide	n.a.	941,632	1,186,002	1,877,072	3,352,842
Telephone Density (Unit: Lines/100persons)	Region I	0.43	0.63	0.69	0.92	3.85
	Region II	0.11	0.23	0.27	0.42	0.56
	In I & II	0.30	0.47	0.52	0.72	2.53
	Nationwide	n.a.	1.41	1.73	2.67	4.79

	Year	1997	1998	1999	2000
Population (Unit: 1000 persons)	Region I	3,931	4,001	4,071	4,141
	Region II	2,641	2,698	2,755	2,813
	Total of I & II	6,572	6,699	6,826	6,954
	Nationwide	71,541	73,130	74,723	76,320
Number of Telephone Line (Unit: Lines)	Region I	242,742	256,828	256,828	256,828
	Region II	23,630	41,246	41,246	41,246
	Total of I & II	266,372	298,074	298,074	298,074
	Nationwide	5,775,556	6,641,480	6,811,616	6,905,962
Telephone Density (Unit: Lines/100persons)	Region I	6.18	6.42	6.31	6.20
	Region II	0.90	1.53	1.50	1.47
	In I & II	4.05	4.45	4.37	4.29
	Nationwide	8.07	9.08	9.12	9.05

Source: National Statistical Coordination Board (NSCB)

2.3.2 Internal Rate of Return

At the time of appraisal, the Financial Internal Rate of Return (FIRR) was estimated to be 13.0 %. Unfortunately, it is impossible to calculate the actual FIRR since the executing agency did not provide all necessary data. Available figures cannot be used since they include data from the expansion and upgrading of other facilities implemented after this project.

Variables used for FIRR calculation at the time of appraisal

(1) Services
  1) Income from Telephone Services
    a) Local Call
    b) Long Distance Call
    c) International Call
    d) Utilization factor of a) to c)
  2) Income by Telegraph
  3) Miscellaneous Income (Telephone Directories)
(2) Expenditure
  1) Investment Expenditure
  2) O&M Expenditure
(3) Project Life:25 Years

2.4 Impact

2.4.1 Economic Impact

The Gross Regional Domestic Product (GRDP) per capita is shown in Table 2, and the Relationship between Telephone Density and GRDP per capita is shown in Figure 1. As there is a relationship between telephone density and economic growth, the increase of telephone density at the time of appraisal in Region I and II suggests that this project contributed to regional economic development. Although it is difficult to clearly explain relationship between telephone density and economic growth, the project is presumed to have contributed to regional economic development.

Table 2. Gross Regional Domestic Product per capita (at constant 2000 prices) (Unit: peso)

Year	1989	1990	1991	1992 :ompletion	1993	1994	1995	1996	1997	1998	1999
Region I	7,801	9,246	10,155	10,179	10,820	12,577	14,589	16,720	18,935	21,380	23,783
Region II	8,153	9,601	9,989	10,306	11,542	13,213	14,882	16,408	18,538	19,051	22,766
Nationwide	15,399	17,522	19,852	21,032	22,013	24,670	27,124	30,208	33,004	35,636	39,024

Source: National Statistical Coordination Board (NSCB)

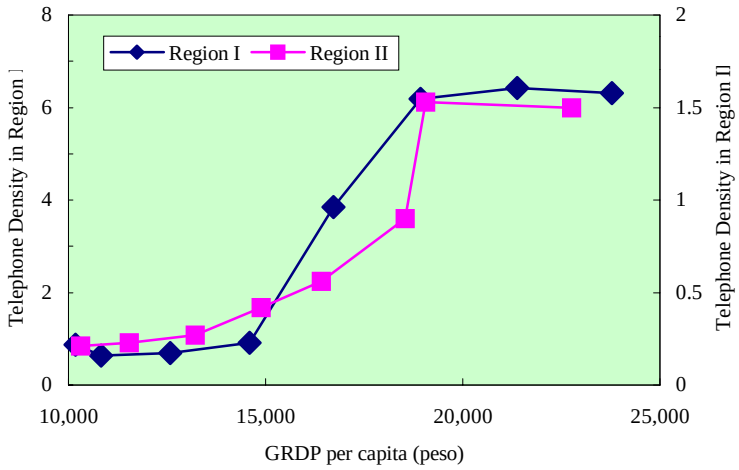

Figure 1. Telephone Density and Gross Regional Domestic Product per capita

2.4.2 Impacts on Natural Environment

According to Telecommunications Office (TELOF) under the DOTC, no negative impacts on the natural environment have been reported as a result of implementing the project.

2.4.3 Impact on Local Residents

According to TELOF, no negative impacts on local residents have been reported as a result of implementing the project.

2.4.4 Impact on Society

In an interview survey carried out to 104 residents in the project area (Region II) in June 2001, 99% of respondents said they installed a telephone at their home after the completion of this project, and 96% reported positive effects, such as “improvement in family communication”, and “improvement in working and studying conditions” (Figure. 2).

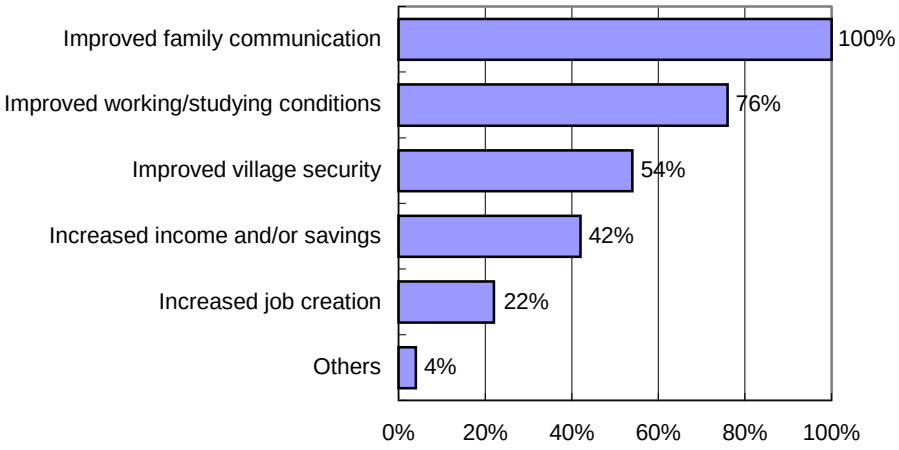

Figure 2. Impact from Installation of Telephones (Several Answers)

In addition, 99% of respondents said they are satisfied with the services of DIGITEL in general (Figure 3). Although it is not possible to conclude that DIGITEL is providing better services than TELOF, since it was only one year after the completion of the project when O&M agency was changed from TELOF to DIGITEL, it can be said that at present most subscribers tend to be happy with the services of DIGITEL.

On the other hand, high call fees and telecommunication network faults ranked numbers one and two among respondents' complaints (Figure 4). This may imply that there is still room for improvement of the services provided. Although privatization of the telecommunications sector has developed services in general, companies have not invested much in rural areas, as they are not considered profitable areas.

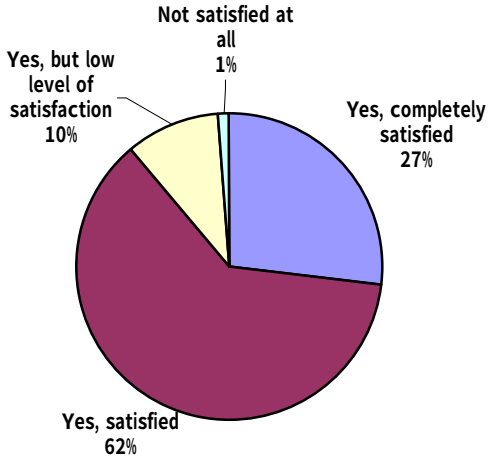

Figure 3. Grade of Satisfaction at Services of DIGITEL

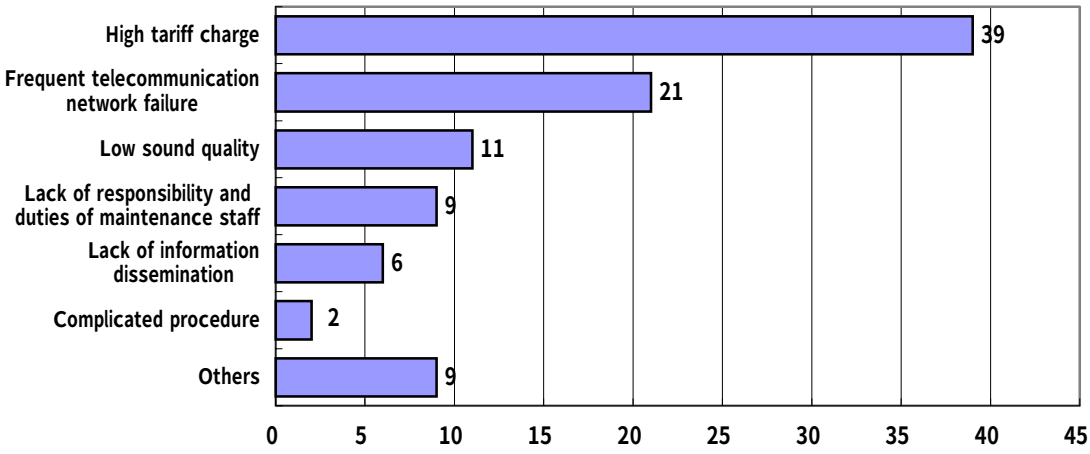

Figure 4. Complaints against Services of DIGITEL (Several Answers)

2.5 Sustainability

The facilities installed in this project have been leased to DIGITEL, a private company. The participation of a private company in the supply of telephone services has helped to improve the quality of services. The sustainability of DIGITEL is considered satisfactory in terms of organizational structure and technological level.

2.5.1 Operation and Maintenance

In line with the government thrust towards privatization, DOTC decided to proceed with the privatization of all government-owned facilities in August 1991 by leasing the RTDP Phase A and B and NTP I-1[1] facilities. On April 19, 1993, DIGITEL and DOTC entered into a Facilities Management Agreement (FMA) covering the telecommunications facilities owned by the DOTC. Under the FMA, DIGITEL has the exclusive right to operate, maintain and develop the abovementioned facilities, for which it shall pay DOTC an annual lease payment over a period 30 years.

[1] National Telephone Program, Phase I, Tranche I-1, Regions III, IV & V

DIGITEL is the second largest provider of wire lines in the Philippines in terms of working lines. Through 555 regional and local exchanges, DIGITEL telephones are available in 268 towns and cities throughout Luzon. As of the end of 2000, DIGITEL had a total of 611,000 lines system-wide. The number of installed and subscribed lines that DIGITEL managed in Regions I and II is shown in Table 3.

Table 3. DIGITEL-owned Number of Installed Lines and Subscribed Lines (Unit: lines)

	Number of Telephone Line	Subscribed Lines
Region I (Total)[1)]	120,148 (221,478)	59,030 (86,908)
Region II (Total) [1)]	21,943 (30,825)	20,571 (28,427)

Source: National Telecommunications Commission (NTC)
Note: [1)] "(Total)" include lines owned by other telecommunication firms.

DIGITEL registered a manpower growth rate of 2% in year 2000, from its 1999 manpower level of 2,423 to the year-end 2000 count of 2,479. The company also achieved a 30 % increase in the ratio of working lines per employee in 2000, from 111 lines per employee in 1999 to 147 lines in year 2000. More efficient personnel distribution has been carried out with the expansion of telephone system. According to DIGITEL, the company has sufficient manpower for O&M of the network.

2.5.2 Technical Capacity

The Human Resources Division of DIGITEL conducts in-house training courses, including seminars, workshops and technical training. Sixty five (65) in-house training programs were conducted in 2000, bringing the total to one hundred sixty (160) runs, or an average of thirteen(13) runs every month. In addition, employees are trained on-site by technical consultants and sent to seminars and training abroad. DIGITEL maintains the sustainability of technical capacity and staff skill.

2.5.3 Condition of Equipment

Rosales, Urdaneta, San Carlos and Lingayen exchanges in Region I, which were inspected for this evaluation, have switching systems, transmitting systems, and power systems installed by this project. At present, new high-performance and high-capacity equipment has been installed with funds from DIGITEL's own budget, as the equipment installed by this project has already gone out of date. The old equipment occupies only a small portion of the telephone system. Some of this equipment has been relocated to exchanges in Region II, where there is more telephone demand. Thus the equipment continues to be used effectively. However, exchange stations in Tuguegarao, Santiago and Laoag are out of order as the exchange system installed under the project is now out of date and spare parts are no longer available. The situation is the same in other locations . With the exception of these cases, the condition of the equipment is generally good.

For the telegraph system (GENTEX), the O&M agency is a Telecommunications Office (TELOF) under the DOTC. However, this service is hardly being provided any more because innovations in telecommunications have made the equipment obsolete. At present, only some telegraph stations are providing service.

2.5.4 Financial Status

Financial ratios calculated historically from consolidated financial statements of DIGITEL are shown in Table 4.

Table 4. Financial Ratios of DIGITEL

	1995	1996	1997	1998	1999	2000	2001
Return on Equity (ROE)	n.a.	9.04%	7.80%	5.49%	0.04%	0.04%	0.59%

Return on Assets (ROA)	n.a.	6.96%	4.66%	3.09%	0.02%	0.09%	0.19%
Return (Net Income) on Total Assets	n.a.	4.88%	3.72%	2.15%	0.01%	0.01%	0.26%
Return (Current Income) on Stockholders' Equity	n.a.	12.91%	9.78%	7.90%	0.05%	0.26%	0.80%
Profit (Current Income) on Net Sales	64.82%	83.05%	55.27%	28.33%	0.17%	0.61%	1.45%
Turnover Rate of Total Assets	n.a.	0.08	0.08	0.11	0.12	0.14	0.18
Turnover Rate of Stockholders' Equity	n.a.	0.16	0.18	0.28	0.33	0.43	0.55
Ratio of Net Worth	53.06%	54.45%	42.76%	36.29%	35.41%	32.56%	32.77%
Ratio of Fixed Assets	102.67%	103.53%	150.69%	191.65%	216.47%	243.92%	241.51%
Ratio of Fixed Assets to Long-Term Capital	60.37%	60.74%	71.77%	82.08%	87.72%	94.79%	102.24%
Current Ratio	416.84%	592.25%	351.16%	205.63%	193.53%	127.98%	90.14%
Cumulative Lines Installed (Unit: Lines)	81,626	204,184	374,638	484,036	603,624	611,000	n.a.
Cumulative Lines in Service (Unit: Lines)	50,694	80,586	150,688	201,459	269,600	365,476	n.a.

Source: DIGITEL

i) Analysis of Profitability

The profitability of DIGITEL is as analyzed by the looked at the figures for Return on Equity (ROE), Return on Assets (ROA), Return (Net Income) on Total Assets, and Return (Current Income) on Stockholders' Equity and Profit (Current Income) on Net Sales. These indicators all declined between 1996 and 1999, and since then have been slowly increasing. Although the Turnover Rate of Total Assets and the Turnover Rate of Stockholders' Equity are low, and the efficiency of asset management has not been good, these indicators are slowly improving, indicating that the situation is changing for the better.

The fall in DIGITEL's profitability has been caused by increases in investment in facilities and equipment, rent of buildings and facilities, and human development costs. DIGITEL's acquisition of an IT company in 1999 alsoseverely affected profits.

ii) Analysis of Financial Soundness

The Financial Soundness of DIGITEL can be measured by the Ratio of Net Worth, Ratio of Fixed Assets, Ratio of Fixed Assets to Long-Term Capital and Current Ratio. The Ratio of Net Worth has fallen below 50%, and liability exceeds Stockholders' Equity. The Ratio of Fixed Assets and the Ratio of Fixed Assets to Long-Term Capital are on the increase, and the long-term liability makes up a large proportion of this total. The amount of fixed assets in 2000 is barely below the amount of Long-Term Capital (Stockholders' Equity and Long-Term Liability). Although the Current Ratio is relatively low, no particular problem is noted for financial soundness.

Comparison of Original and Actual Scope

Item	Plan	Actual
1. Project Scope		
a) Telephone System		
- New Telephone Exchanges:	10 Exch.: 6,180 lines	11 Exch.: 6,680 lines
- Expansion of Telephone Exchanges Established in Phase A:	9 Exch.: 2,060 lines	9 Exch.: 1,560 lines
- Total :	8,240 lines	As planned
b) Transmission System Links		
- New		
Microwave Links	4 links	As planned
UHF Links	8 links	As planned
Trunk Cable Links	10 links	As planned
- Expansion		
Microwave Links	1 links	As planned
UHF Links	1 links	As planned
Trunk Cable Links	7 links	As planned
c) Telegraph System		
- New Gentex Station	14 stations: 19 lines	As planned
d) Consultancy Service		
- Foreign	197.5 M/M	215.5 M/M
- Local	155 M/M	n.a.
2. Implementation Schedule		
- Consultancy Service	April 1988 to December 1990	April 1988 to July 1988
- Main Contract	July 1988 to December 1988	September 1988 to April 1989
- Preparing Equipment	January 1989 to May 1990	April 1989 to August 1989
- Installing of Telecommunications and Telegraph Equipment	January 1987 to December 1990	November 1989 to October 1990
- Land Acquisition, Construction of Building	January 1987 to June 1988	June 1988 to September 1989
- Operations and Maintenance	July 1990 to December 1991	April 1991 to May 1992
3. Project Cost		
Foreign Currency	5,472 million yen	5,712 million yen
Local Currency	900 million yen (128.520 million pesos)	956 million yen (136.555 million pesos)
Total	6,372 million yen	6,668 million yen
ODA Loan Portion	5,735 million yen	5,691 million yen
Exchange Rate	1 peso = 7.00 yen (As of May 1987)	1 peso = 7.00 yen (As of May 1987)

Independent Evaluator's Opinion on
Regional Telecommunication Development Project in Regions I and II, Phase B

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The Philippine government is cognizant of the fact that inadequate infrastructure has stymied the country's investment and economic growth performance. Recent studies on China's rural development experience point out that rural telephones (communication) ranked second to education as the most important government measure to reducing rural poverty in China. Likewise, the remarkable growth of information technology as a driver of growth and competitiveness in the world has brought into sharper focus the importance of improving the Filipinos' access to telecommunication facilities, especially those living outside of Metro Manila. Thus, the project has been, and is still, relevant to the Philippine development strategy and policy. There is still a significant challenge to reduce the wide gap in telephone density between Metro Manila and the rest of the country. The gap is particularly wide with respect to Region II, which has one of the lowest telephone densities among the regions in the country.

The project met the target telephone density of 0.37 lines per 100 persons as early as 1993 for both projects. By 2000, the actual telephone density was more than 10 times higher than the target density. Much of the increase in the telephone density was contributed by the private sector primarily from the implementation of the service area scheme. Nonetheless, the RTDP also contributed through its catalytic role in the region.

An important insight implied by the Project Evaluation Report is that in the face of the fast technological developments in the sector, the government's decision to lease the RTDP facilities to a private corporation (DIGITEL), as a matter of policy, proved to be a boon to the projects. This is because DIGITEL invested in upgrading the facilities probably to improve the quality of service and to meet the market competition. Note that the equipment became largely obsolete after only a few years of operation.

Subscribed lines were close to the total installed lines in Region II, in contrast to the large suplus in the other regions. This suggests that the installed lines in Region II have barely been enough. The survey results are reflective of this. Virtually all of the respondents are happy of DIGITELs service despite their complaint of high call fees and telecommunication network faults. Interestingly, the survey respondents (all coming from Region II) indicate very strong positive socio-economic effects in terms of family communication, work conditions, improved village security, increased income and increased job creation. If in fact the responses are correct (and the questionnaire well specified), the survey results provide strong support for the beneficial effects of telecommunication investments in the poorer regions of the country. It would be useful to elaborate on the survey results, possibly including anecdotal descriptions of such success stories to make the survey findings more vivid and believable.