Thailand

The Rural Public Long Distance Telephone Project

Report Date: March 2001
Field Survey: August 2000

1. Project Profile and Japan's ODA Loan

Site Map: The whole of the Kingdom of Thailand

Public Telephone

(1) Background

It is recognized in Thailand that telecommunications is am important infrastructure which underpins socio-economic development, thus Thailand has greatly expanded the telephone network to accommodate rapidly growing demand on the basis of successive Five Year Plans. There has been a strong tendency of that expansion of the telephone network to concentrate on the Bangkok capital region, where demand was growing at an extreme pace, and other urban areas. As a result, improvement of long distance telephone services has been lagging far behind in rural areas, and particularly in mountainous regions and other isolated areas. The number of telephone subscribers per hundred people was 16.33 in the capital region and 1.33 in the regions, and the information gap was widening. In an effort to develop public telephone services in these areas, the Telephone Organization of Thailand (TOT) carried out Rural Public Long Distance Telephone Project under the TOT Fifth Economic and Social Development Plan (1984 ~ 1992), and under the Seventh (1992~1996) [1]and Eighth (1996~1998) Plans. This effort was aimed to encourage correction of the information gap in remote areas. This project was one element of the TOT Seventh Economic and Social Development Plan (1992~1996).

(2) Objectives

To improve the telephone network in remote areas by installing long-distance public telephones in regions not provided with telephone services.

(3) Project Scope

This project was to install long-distance public telephone relay stations at 4,500 locations nationwide

[1] The TOT had no Sixth Economic and Social Development Plan.

(3,500 locations in mountainous regions and other remote areas, and 1,000 locations in tourist sites and expressways). Each relay station was to be equipped with one general public telephone (a commissioned public telephone able to receive incoming calls) and four coin-operated public telephones (for use in public telephone boxes). The ODA loan covered the foreign currency portion of the cost of the coin operated telephones (20,000 units). Other costs were covered by a loan from Asia Development Bank (ADB) and Thai side's own funds.

(4) Borrower/Executing Agency

Telephone Organization of Thailand (TOT) – (TOT is a state-run business organization wholly funded by the government) (Guaranteed by Thai Government)

(5) Outline of Loan Agreement

Loan Amount/Loan Disbursed Amount	¥3,888 million / ¥1,597 million
Exchange of Notes/Loan Agreement	September 1993 / September 1993
Terms and Conditions	Interest rate: 3.0%, Repayment period: 25 years (grace period: 7 years), General Untied
Final Disbursement Date	January 1999

2. Results and Evaluation

(1) Relevance

There existed an extreme economic and social disparity between the capital Bangkok and regional rural areas. The telephone diffusion rate was low in rural areas, particularly in remote mountainous areas. The Rural Public Long Distance Telephone Project was strongly needed and had a high priority for improving living standards and correcting the information and economic gaps. ODA loans from the 11th and 12th ODA loans have assisted the improvement of the rural telephone network, but with this project, under the 18th ODA loan, the Rural Public Long Distance Telephone Project addressed the needs of much more remote mountain villages. The loan agreement was signed on the basis of the Seventh TOT Plan (1992 ~ 1996), but after that the TOT revised the scale of the Seventh Plan upwards in response to the magnitude of telephone needs in remote urban rural areas. It greatly increased the number of telephones to be installed, using its own funds and a loan from the ADB. This plan led to a relevant project which was based on a strong need.

(2) Efficiency

[1] Implementation Schedule

After the loan agreement was signed, the scope of the project was partially revised in line with a Communications Ministry directive which raised the standards of the equipment and increased the numbers to be installed. The change delayed procurement procedures and necessitated repeated bidding for the domestic procurement of 20,000 telephone boxes, delaying the schedule by approximately one year in total.

The above reasons delayed the overall project, but the TOT used that experience to improve and accelerate its implementation procedures, as well as devising other measures, such as enhancing the efficiency of construction management. These efforts succeeded in preventing even longer delays.

[2] Project Cost

Project cost in the area of long distance public telephone relay stations, which was covered by the ADB loan, was increased, but the cost of the project as a whole underran by approximately 30% due to cheap bid results from competitive bidding. The employment of consultants was covered by ADB funding.

(3) Effectiveness

[1] Progress in developing the telephone network

Progress has been made in developing the TOT rural public long distance telephone network, including the installation of public telephones under the ODA loan. As Table 1 shows, great progress has been made since 1997 in developing the public long distance telephone network in rural states, yielding a considerable increase in convenience for residents in remote communities. Table 2 shows that the telephone diffusion rate has been growing steadily.

However, while the telephone diffusion rate in the Bangkok capital region reached 54 per hundred people in 1999, equaling the rates in developed countries, rural districts only had six telephones per hundred people. The numbers of public telephones were 6.4 per thousand people in Bangkok, but only 1.6 in rural districts, and the number of subscriber telephone lines was even lower. These figures show that it will still take a long time to overcome the bad telecommunications situation in the regions.

Table 1 Movements in Rural Public Long Distance Telephone Lines for TOT as a Whole

Units: Lines

	1995	1996	1997	1998	1999
Nationwide	4,459	6,102	20,451	27,094	38,742
Bangkok capital region	23	79	130	249	249
Rural states (for ODA loan portion) (Note)	4,436 -	6,023 -	20,321 （14,000）	26,845 (20,000)	38,493 (20,000)
(Reference: No. of telephones of card/ coin type etc.)	＝18,222＝	＝22,161＝	＝28,595＝	＝38,956＝	＝48,149＝

Source: TOT: Telephone Statistical Report 1999

Note Some of the coin-operated telephones installed under ODA loans have been converted to coin/ card operation or card-only operation. Those are included under “card/ coin type etc.”

Table 2 Telephone Diffusion rates in Thailand

Upper level: Telephone line capacity per 100 people
Lower level: Public telephone line capacity per 1,000 people

	1992	1992	1994	1995	1996	1997	1998	1999
Nationwide	3.78	4.57	5.97	7.37	11.06	11.41	12.12	12.31
	n.a	n.a	n.a	0.83	0.96	1.50	1.85	2.24
Bangkok	n.a	n.a	24.39	29.61	45.08	52.53	54.16	54.19
capital region	n.a	n.a	n.a	2.77	3.03	5.19	5.83	6.38
Rural states	n.a	n.a	2.70	3.38	4.86	5.15	5.79	5.98
	n.a	n.a	n.a	0.48	0.58	0.94	1.25	1.61

[2] Financial Internal Rate of Return (FIRR)

The FIRR was recalculated on the same assumptions used at the time of the appraisal to reflect figures recorded after project completion. Table 3 shows the conditions used in the FIRR recalculation, and the results. The lower result than that calculated at the time of the appraisal can mainly be attributed to stagnation in revenue from telephone charges.

Table 3 Comparison of FIRR Plan and Actual Scope

	At the time of appraisal (1993)	Recalculation
Project life	15 years	Same as left
Cost	Investment amount of this project+Maintenance cost	Same as left
Benefit	Telephone charge revenue (Realization of benefits scheduled to start from 1995)	Same as left (Some benefits realized from 1996)
FIRR	6.91%	4.1%

Notes
1. At the time of the appraisal the calculation used a figure of average monthly revenue per set in the calculation of benefits. The figure (for 1992) was 5,400 Baht, but according to the TOT the number of installed sets was substantially increased after completion of the project, pushing the average monthly revenue per set down to 2,400 Baht in urban areas and 4,050 Baht in rural areas.
2. The additional project scope (increased installation of public telephones, paid for from the TOT's own funds or using ADB funding) is excluded from the calculations.

The Rural Public Long Distance Telephone Project was envisaged as projects of high public benefit, rather than as revenue building projects for the TOT. From the business point of view of the TOT, these projects never offered the prospect of high profitability for the scale of the investment, but they have a substantial social impact.

This project was completed and went into operation in April 1998, amid the Thai economic crisis which began in mid-1997, and only two years of actual operation have elapsed. At present the average annual profit is down approximately 40% from the planned level, comparing the 740 million Baht recorded in 1999 with the 1.27 billion Baht planned.

The low level of telephone charge revenue in FY 1999, after the project began operating, was due to the economic crisis which happened to begin in mid-1997. The crisis meant that the workers from rural areas who left to work in Bangkok and other cities lost their jobs, and from 1998 increasing numbers returned to their home villages. By 1999, when the project effectively began operation, the use of public telephones in rural areas was no longer at a high level. Numbers of users can be expected to grow as the economy recovers, but as the revenue situation for the TOT as a whole was poor in FY 1998 and 1999, it has to look very seriously at measures to deal with this project. The TOT is aware of a need to change the locations of

public telephones and make charge collection methods more efficient. The rural economy has entered a recovery phase since 2000, and the usage rates for TOT public telephones are expected to rise.

(4) Impact

The three qualitative impacts of the project raised at the time of the appraisal were diffusion and improvement of telecommunications services, improvement of rural living standards, and social and economic stimulation of rural areas. The TOT offers these examples of the social impact of this project.

- The villages concerned have begun their discussions more active than ever before through telephoning, inviting supervisors, consultations in areas such as tourism, transport, commercial activities, grasp of agriculture and market prices of agricultural products, distribution by conveyance of cultivating method, and promotion method of education. The Ministry of Agriculture earns a high rating among the related agencies.
- Villagers who go to work in Bangkok can contact their families, which helps to calm their fears. (However, many of those villagers returned to their villages following the economic crisis).
- Rural doctors can consult with doctors in major urban hospitals over specialist treatments, enabling them to provide suitable treatments (impact in improving medical treatment). Therefore the Ministry of Health hopes that this project will be promoted. The ability to call for an ambulance enables rapid medical treatment, and some farmers bitten by snakes can be saved by prompt treatment.
- Teachers in rural schools can learn from their urban counterparts, helping to raise the level of education. Therefore the Ministry of Education hopes that this project will be promoted.
- Tourists can freely contact their homes and communities, enabling them to embark on regional trips with peace of mind.

As this is a communications project, no adverse environmental impact has been reported. The facilities are small and their construction had no adverse impact on local communities.

(5) Sustainability

[1] Operation and Maintenance Scheme

The TOT operation and maintenance scheme differs from that in use at the time of the appraisal because of structural reform. The country has now been divided between nine regional Telephone Services Departments in order to enable quicker responses in the field.

Operations are now being reorganized and streamlined amid an awareness of efficient management in preparation for privatization, and further structural reforms can be anticipated. A holding company wholly owned by the government will be set up for the period 2001~2006, under which the TOT divisions will go on operating. It appears likely that companies will be set up to handle operation and maintenance in each region.

TOT is now studying managerial methods with a view to carrying on operation and maintenance, within the privatization policy, under a scheme with some form of public financial backing for rural long distance public telephones.

[2] Maintenance expenditure and budget

Two years have passed since the completion of the project, but no data has been gathered on the maintenance costs of the facilities, making it impossible to ascertain the related costs at this stage. At present repairs are only made when a problem occurs.

The TOT has generated profits to date, which have been paid to the national coffers. Its reinvestment plans must gain the approval of the Ministry of Finance and related agencies to receive a budget allocation to proceed. In a sector such as telecommunications, where the pace of progress is very rapid, issues such as the realization of reinvestment plans, which require a high degree of independent managerial judgement, will have to be examined in future. Privatization will be one of the things considered.

[3] Technical innovation and the impact of privatization

The Thai economy has achieved remarkable progress in recent years, and the cities have been central to that process. The rapid progress of communications technology is reflected in the country's movement from the use of public telephones to an age of personal cellular telephones. Public telephones have moved from coin operation to pre-paid card operation. There is a strong need for public telephones in rural areas, and the propagation of cellular telephones in those areas is still in the future. However, in many areas those two services can come into competition. The maintenance and management of public telephones in rural areas will require a prudent view of public telephone operation methods in future.

The communications industry must adapt to new technologies and improve the efficiency of its management amid international competition, and privatization is the trend of the times. The privatization of the Telephone Organization of Thailand (TOT), which is the executing agency, is already moving into the detailed planning stage. This project was based on the government's policy of improving the rural communications situation. The TOT management will have to reconsider how to sustain the rural public telephone projects, which offer a high level of public benefit, on the knife edge between maintaining low-profit divisions of high public interest and pursuing profit as it moves towards privatization. This project is a rural telephone project highly oriented towards social development, and it is not highly profitable. As such, it currently receives financial support from the government, but even after privatization there will still be a strong need for rural long distance public telephones, given the current state of the country's economy. Thus it is important to increase diffusion by a wide margin and improve the state of maintenance, and the TOT sees a need to determine the means of supporting such work within the privatization plan that is to be drawn up.

Comparison of Original and Actual Scope

Item	Plan	Actual
①Project Scope		
(1) Relay station (radio transit trunk)		
-Ground relay station (TDMA)	4,000 stations (Digital MAS type)	Same as left
-Small-scale satellite earth station	50 stations	Same as left
(2) User facilities		
-Coin-operated public telephones (for use in public telephone boxes)	20,000	Same as left
-General public telephones (commissioned public telephone able to receive incoming calls)	4,500	Same as left
(3) Consulting service	5M/M	Same as left
②Implementation Schedule		
(Public telephone coin box)	Sep. 1993 ~ Nov. 1993	Oct. 1993 ~ Jan. 1994
• Bidding	Jun. 1994 ~ Jul. 1994	Sep. 1994
• Loan agreement	Jan. 1995 ~ Sep. 1996	Dec. 1994 ~ Aug. 1997
• Construction		
(Telephone sets)		
• Bidding preparation ~ bidding	Oct. 1992 ~ Sep. 1993	Jul. 1994 ~ Nov. 1994
• Loan agreement	Sep. 1993 ~ Oct. 1993	Nov. 24, 1994
• Construction	Feb. 1994 ~ Sep. 1996	Nov. 1994 ~ Jan. 1995
(Public telephone booths)		
• Bidding preparation ~ bidding	Mar. 1993 ~ Sep. 1993	Oct. 1997 ~ Jun. 1998
• Loan agreement	Sep. 1993 ~ Oct. 1993	Oct. 8, 1997
• Construction	Feb. 1994 ~ Sep. 1996	Dec. 1994 ~ Aug. 1997
(Ground relay station)		
• Bidding	Jan. 1993 ~ Sep. 1993	Feb. 1993 ~ Dec. 1993
• Loan agreement	Sep. 1993 ~ Oct. 1993	Dec. 30, 1993
• Construction ~ test operation	Jan. 1995 ~ Dec. 1996	Oct. 1994 ~ Aug. 1997
• Land purchase	Sep. 1992 ~ May 1996	
(Domestic portion of satellite system)		
• Bidding	Aug. 1994 ~ Mar. 1995	-
• Loan agreement	Mar. 1995 ~ Apr. 1995	Aug. 31, 1994
• Construction	Jan. 1996 ~ Sep. 1996	Dec. 1994 ~ Mar. 1996
(Completion of construction)		
(Completion date of acceptance test)	Dec. 1996	Aug. 1997
③Project Cost		
Foreign currency	¥16,929 million	¥10,621 million
(for ODA loan portion)	(3,888)	(1,597)
Local currency	¥22,851 million (5170 million Baht)	4,212 million Baht
Total	¥39,780 million	¥29,236 million
(for ODA loan portion)	(¥3,888 million)	(¥1,597 million)
Exchange rate	1 Baht＝¥4.42 1US$ = ¥112 (Jun. 1993)	1 Baht＝¥4.3 (Average for 1996)

Note The additional project scope (increased installation of public telephones, paid for from the TOT's own funds or using ADB funding) is excluded from the calculations.