Indonesia

Extension and Improvement of Telecommunications Networks in Expanded Jakarta Areas (1) (2)

Field Survey: August 2003

1. Project Profile and Japan's ODA Loan

Jakarta region

A project-procured switchboard

1.1 Background

In 1991 Indonesia had one of the lowest telephone density[1] rates at 0.68 per 100 head of population in comparison to other ASEAN countries (Malaysia: 8.87; Thailand 2.32). Moreover, at 29 percent, the call completion rate (CCR) [2], an indicator of the quality of communications services, was also hovering below the levels seen in other ASEAN countries (Malaysia: 46%, Thailand: 40%).

The local CCR, 20.6 percent in Jakarta as compared to approximately 40 percent in other ASEAN cities, was also exceptionally low, with the low rate of 26.1 percent representing the national average CCR for long-distance calls. In view of the fact that around 70 percent of the long-distance calls made from all Indonesia's cities are placed either in Jakarta or Surabaya, it was considered that upgrading the telephone networks in these two major cities had the potential to contribute to improvements in communication conditions across the nation[3].

1.2 Objectives

In undertaking comprehensive extensions to and improvement of the communications network in the Jakarta region, the objectives of this project were to meet demand for communications services in the region and improve the CCR for long-distance calls from other regions accessing Jakarta, and thereby to contribute to improving communication conditions throughout Indonesia.

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[1] Telephone Density = the ratio of telephones to 100 head of population.

[2] The Call Completion Ratio (CCR) = the ratio of calls placed to calls connected.

[3] The "Extension and Improvement of Telecommunications Networks in Urban Surabaya (I) (II)" project was implemented under yen loan funding between October 1992 and November 2000 with the aim of improving communications services in the Surabaya region.

1.3 Outputs

[Target Regions]

- ♦ Central and suburban Jakarta and the Bogor region.

[Project Components] (see Figure 1)

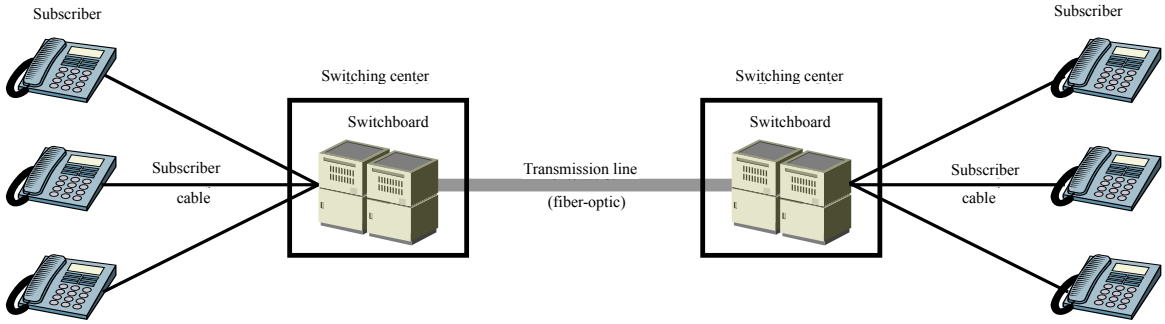
Phase I

- ・ Switchboard: 5 centers, 44,500 terminals
- ・ Subscriber cable: 1 switching center, 12,500 pairs
- ・ Switching center buildings: 30 locations

Phase II

- ・ Switchboard: 27 centers, 132,000 terminals
- ・ Subscriber cable (new): 23 switching centers, 91,000 pairs
- ・ Subscriber cable (repair): 3 switching centers, primary 4,400 pairs, secondary 73,000 pairs
- ・ Transmission lines (center): 26 districts
- ・ Transmission lines (suburbs): 21 districts

Figure 1: Conceptual Diagram of the Project



1.4 Borrower / Executing Agency

The Republic of Indonesia / TELEKOM Indonesia (P.T. Telekomunikasi Indonesia)

1.5 Outline of Loan Agreement

[Phase I Project]

Loan Amount Loan Disbursed Amount	3,587 million yen 3,366 million yen
Exchange of Notes Loan Agreement	October 1993 November 1993
Terms & Conditions Interest Rate	 2.6%

Repayment Date (Grace Period) Procurement	30 years (10 years) General untied
Final Disbursement Date	December 2000

[Phase II Project]

Loan Amount Loan Disbursed Amount	13,766 million yen 13,290 million yen
Exchange of Notes Loan Agreement	November 1994 November 1994
Terms & Conditions Interest Rate Repayment Date (Grace Period) Procurement	 2.6% 30 years (10 years) General untied
Final Disbursement Date	December 2001

2. Results and Evaluation

2.1 Relevance

The project was consistent with Indonesia's fifth five-year national development plan (REPELITA V: FY89 – FY93), which defined as its goal the "expansion of communications networks and improvement of service quality" and the project's plans were devised to support the realization of these goals.

At the ex-post evaluation point, the project was consistent with the national development plan (PROPENSAS: 2000-2004) goal "to develop IT infrastructure and improve access", and with the goal of the executing agency's long-term plan (Corporate Strategic Scenario) "to improve and expand telecommunications services", and is considered to have retained its relevance.

2.2 Efficiency

2.2.1 Outputs

Where necessary, the outputs were modified to reflect rapid growth in service demand in the target areas and the telecommunications business expansion plans of the executing agency. The major changes made during Phase I and Phase II included: (1) an increase in the number of switchboards from 32 to 111, and (2) an increase in the number of subscriber cables from 180,900 pairs to 209,600 pairs.

2.2.2 Project Period

Under initial plans, the entire execution period for both Phase I and Phase II projects was scheduled to be undertaken during a 98-month period spanning November 1993 through December 2001; however, the work was in fact completed within 96 months, i.e. two months

ahead of schedule (November 1993 through October 2001).

2.2.3 Project Cost

Under initial plans, total project costs were set at 4,454 million yen for Phase I and 16,313 million yen for Phase II; however, actual costs were 4,208 million yen and 15,113 million yen, respectively. The main reasons for the cost under runs during the two phases were: (1) the depreciation of the local currency (rupiah) in excess of inflation; and (2) the competitive bidding process, etc, which resulted in efficient ordering.

2.3 Effectiveness

2.3.1 Extension of Communications Infrastructure

The execution of Phases I and II of this project resulted in the construction of 111 new switching centers with switchboards comprising a total circuit capacity of 360,080 terminals. The aforementioned additions to terminals equate to 37 percent of the target of 968,000 terminals set forth in Indonesia's sixth five-year plan (1994-1998). Added to which, the number of available lines in the Jakarta metropolitan area was increased by 209,600 pairs between 1998 and 2002 (Phase II), which is equivalent to 60 percent of the 351,163 subscriber cables that were added during the same period. Phone penetration in metropolitan Jakarta was 7.8 percent in 1998 but increased to 9.8 percent in 2000 and to 10.7 percent in 2001.

Figure 2: A newly constructed switching center

2.3.2 Qualitative Improvements in Communications Services[4]

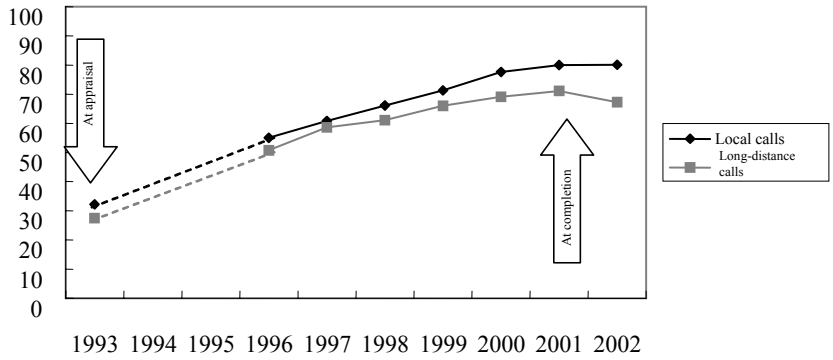
CCR for both local and long-distance calls placed from metropolitan Jakarta have improved dramatically as compared to at project appraisal. As Figure 3 illustrates, between appraisal in 1993 and project completion in 2001, the local CCR climbed from 32.2 percent to 80.0 percent, whilst long-distance CCR rose from 24.5 percent to 71.1 percent, with these substantive improvements evidencing that qualitative improvements in communications services are being realized. There has also been a remarkable improvement in the fault ratio[5], an indicator of service reliability, which decreased from 1.5 percent in 1993 to 0.5 percent in 2002[6].

[4] The World Bank assisted "Telecommunications Sector Modernization Project" (Board approval: November 1995; final disbursal: June 2002) represents a key communications sector project that was being executed in metropolitan Jakarta while this project was in progress; it is thus difficult to assert that the improvements cited herein are solely attributable to this project.

[5] Fault Ratio = the number of faults per 100 calls per month

[6] The "Telephone Outside Plant Maintenance Center (OPMC) (I) (II)" project was implemented under yen loan funding between December 1990 and December 2001, targeting improvements in the reliability of communications services and

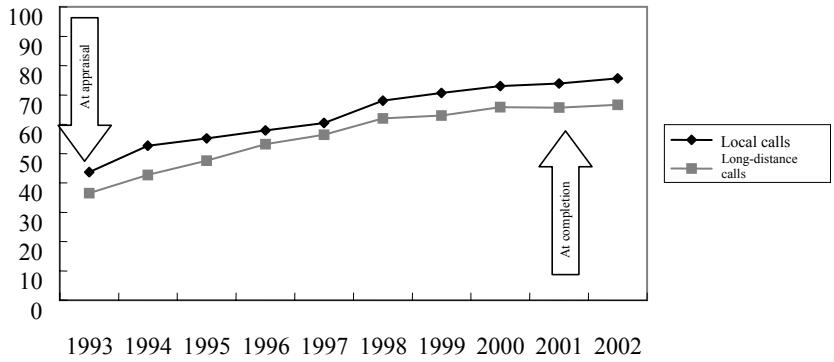
Figure 3: CCR in Metropolitan Jakarta (1993-2002) (%)



Source: TELKOM, World Bank

As with the Jakarta region, there have been major improvements in both local and long-distance CCR throughout Indonesia since appraisal (1993). As Figure 4 illustrates, between appraisal in 1993 and project completion in 2001, the local CCR climbed from 43.7 % to 73.9 %, whilst long-distance CCR rose from 36.5 % to 65.7 %, with these substantive improvements evidencing that qualitative improvements in communications services are being realized.

Figure 4: CCR in Indonesia (1993-2002) (%)



Source: TELKOM, World Bank

In order to ascertain what improvements, if any, had been made in calls being placed in metropolitan Jakarta from outside the area, attempts were made to obtain CCR data on calls placed in Jakarta, without success. Nonetheless, approximately 70 percent of all long-distance calls are either made from or to Jakarta, and given the dramatic improvements in long-distance CCR (nationwide) discussed hereunder, this would seem to suggest a similar upward trend in calls from outside the region.

2.3.3 Recalculation of Financial Internal Rate of Return (FIRR)

At appraisal, the FIRR for the entire project (Phases I and II) was calculated at 8.14 percent

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the quality of customer services.

(after tax) assuming revenues from line installation, basic charges, call charges and others as project benefits, and operation and maintenance (O&M) and replacement costs as project costs. It was recalculated for this evaluation at 7.53 percent (after tax) using the same assumptions, whose result is slightly lower than the appraisal figure. This is the result of increases in local currency-denominated project costs.

2.4 Impact

2.4.1 Improved Convenience for Local Residents & Stimulation of Commercial / Industrial Activity

A beneficiary opinion survey was undertaken as part of this evaluation with the aim of ascertaining the nature of the contribution that the improvements in communications services generated by this project have made to stimulating commercial and industrial activity and to furthering development in the region. In cooperation with the executing agency employees, we established "an area which had become able to receive communications services" as the result of project implementation and "an area where communications services had improved"; questionnaire-based interviews were then conducted with 50 residents and 5 companies in each area[7].

[Improved Convenience for Local Residents]

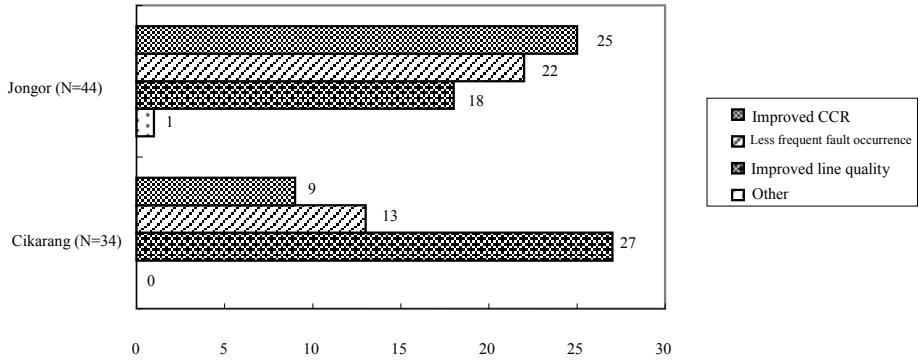
Satisfaction with Communications Services

More than 60 percent of residents polled in both Jongor and Cikarang responded that they were either "greatly satisfied" or "satisfied" with the overall level of current communications services, indicating general satisfaction with current call conditions. In Jongor, the new service area, 88.0 percent of respondents expressed satisfaction.

When this group of residents (Jongor: 44; Cikarang: 34) was asked to indicate with which specific service results they were satisfied: "improved call completion rates (it has become easier to get a connection", "less frequent faults" and "improved line quality" were all highly evaluated by respondents in Jongor, whilst in Cikarang, praise focused on "improved line quality" (see Figure 5).

Figure 5: Satisfaction with Communications Services (# people) (multiple answers possible)

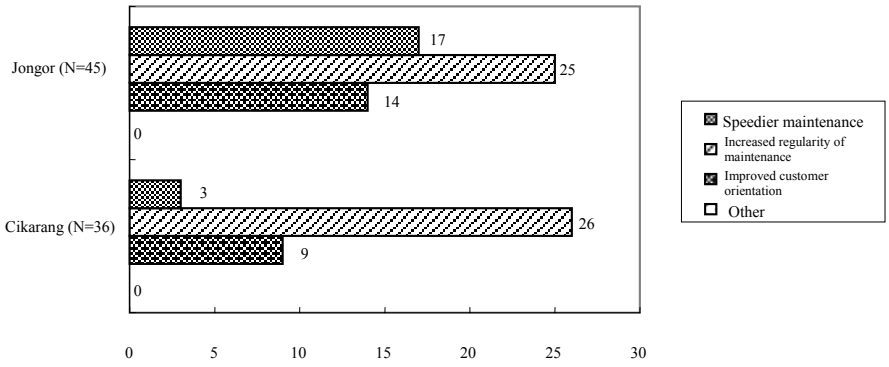
[7] The Jongor district, which is served by the Kandatel Bogor Cibinong station (MCS), was selected as the new service area, and Ciakarang district, which is covered by Kandatel Bekasi, as the ongoing service area, and interviews conducted in each.



Satisfaction with Customer Services

More than 70 percent of residents polled in both Jongor and Cikarang responded that they were either "greatly satisfied" or "satisfied" with the current quality of customer services, which as with overall service levels, indicates that local residents are broadly satisfied with the current state of affairs. When this group (Jongor:45; Cikarang: 36) was asked to indicate with which specific customer service results they were satisfied: the "increased regularity of maintenance"[8] was highly evaluated by residents in both areas (see Figure 6).

Figure 6: Satisfaction with Customer Services (# people) (multiple answers possible)



[Stimulation of Commercial / Industrial Activity]

The 10 companies polled[9] in the Jongor and Cikarang districts regarding the improvements

[8] This refers to a higher rate of periodic maintenance work being undertaken by the executing agency.

[9] Corporate interviews in the Jongor district focused on businesses in the light / retail industries: furniture manufacturers, food retailers, etc., whilst heavy industries predominated in the Cikarang district, with companies from the electrical and petrochemical industries. Between 1995 and 1996 a large number of industrial estates were constructed in the Cikarang district; these are currently occupied by the factories of major companies operating in electrical goods, chemicals and textiles industries, etc. The executing agency provides more advanced services to these tenant companies in response to higher-level demand for multimedia services than usual.

Figure 7: Cikarang Industrial Estate

that the project had yielded in communications services responded that there had been "major improvements" or that services had "improved", with nine expressing "satisfaction" with the current conditions. There was particularly high praise among these respondents for the improvements in line quality that had accompanied the improvements in CCR following project implementation. Again, all corporate respondents stated that the project had "made a major contribution" or had "contributed" to improvements in the business environment. Conspicuous among these were the assertions that smoother telephone and fax transactions with customers and affiliated companies had made it easier to conduct business.

2.4.2 Environmental Impact

Seventeen plots of land were acquired for the construction of switching centers. Compensation was provided upon reaching agreements with the landowners and leaseholders. The project did not necessitate any relocation of residents.

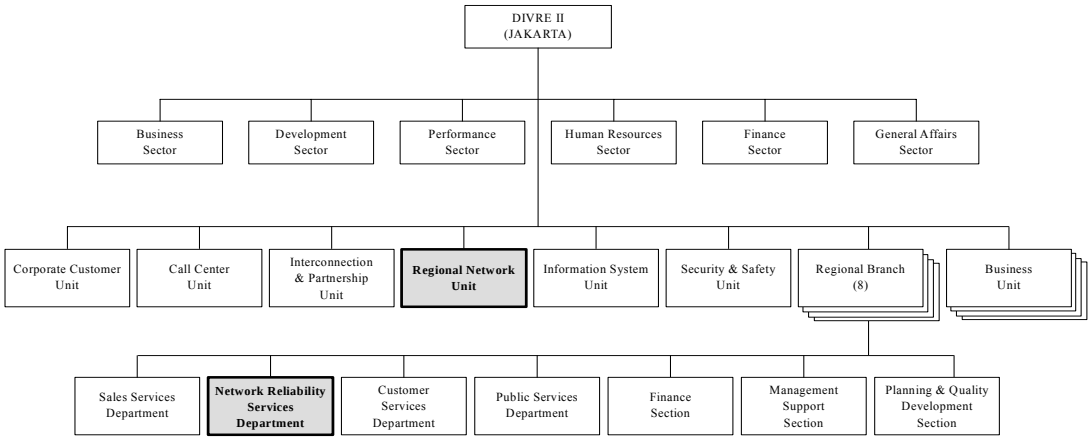
2.5 Sustainability

2.5.1 Operation and Maintenance (O&M)

Responsibility for the O&M of the facilities and equipment that were procured under this project falls to DIVRE II (Divisi Resional II), the regional division of the executing agency that serves Jakarta (see Figure 8). The TELKOM head office (corporate office) is chiefly responsible for formulating operational policy and strategy, whilst DIVRE II is charged with the dispatch of a wide range of duties within the Jakarta region, including the O&M of facilities and equipment, equipment planning, demand forecasts, marketing and so on. DIVRE II has eight branch offices (Kandatel)[10], which are responsible for the day-to-day O&M of facilities and equipment (predominantly to subscriber cables) as well as for marketing tasks. The departments responsible for the O&M of project facilities and equipment are the Regional Network Unit and the Network Reliability Services Department for the DIVRE II region.

[10] Namely: Kandatel Jakarta Central, Kandatel North, Kandatel East, Kandatel South, Kandatel West, Kandatel Bekasi, Kandatel Bogor and Kandatel Tangerang.

Figure 8: DIVRE II (Jakarta region) Organizational Chart



Source: TELKOM

As of the end of 2002, the executing agency employed a workforce of 34,678, of which 8,433 were assigned to DIVRE II. With the aim of establishing a more efficient operating system, the executing agency is currently implementing a three-year early retirement scheme targeting the pensioning off of 7,000 employees between 2002 and 2004 as part of its efforts to reduce its workforce.

2.5.2 Current O&M Status

The facilities and equipment that were procured using project funds are in a good state. No problems were identified during the site visits that were made to the Jongor district switching center (Kandatel Bogor) and the Cikarang district switching center (Kandatel Bekasi) during this survey.

Operation and maintenance tasks are conducted on the basis of Standard Operating Procedures (SOP) and Standard Maintenance Procedures (SMP), which have been certified by the International Standards Organization (ISO). The executing agency reports that workers have sufficient skills to undertake operation and maintenance work, and that there are no problems in this area. However, the average age of all workers is over 40 and the workforce is aging rapidly. To this end, TELKOM is providing training within its Education and Training Department with the aim of improving the technical skills of its operation and maintenance staff. In addition, where necessary, workers are being dispatched to training centers both within Indonesia and abroad. The executing agency requires that workers who have completed training make positive efforts to transfer their knowledge to others, and is promoting the sharing of skills and know-how within the organization. Recent increases in demand for communications services have also resulted in some shortages of operation and maintenance workers at individual branch offices, thus the work is being outsourced where necessary.

2.5.3 Financial Status of the Executing Agency

With the objective of improving communications services, in 1991, P.T. TELKOM, the executing agency, was transformed from a state-owned public service corporation into a commercially-based government-owned limited liability corporation. Major organizational reforms were undertaken in 1995, with the earlier regional operating offices (WITEL) being reorganized into the seven regional divisions (DIVRE) and network divisions of today, and the launch of a scheme for commercial entrants[11]. Moreover, in November of the same year the government sold off some of its shares to realize a partial privatization of the company's stock. Under the new organizational structure the executing agency has subsequently been working steadily towards the strengthening of its business through efforts to expand the scope of its services, improve customer services and the execution of sound financial management.

Revenues from its telephone business are central, accounting for approximately 70 percent of P.T. TELKOM's gross earnings; this breakdowns into dividends from commercial entrants companies, plus revenues from its interconnections, network, data transmissions / Internet businesses. As evidenced in Table 1, operating revenues have posted annual growth during the last five years, whilst operating margins and current term profit ratios are fluctuating within a stable range. ROA (Return on Assets)[12], which indicates the overall profitability of a corporation, is increasing year-on-year and had reached 19.7 percent in 2002. Moreover, although the company's liquidity ratio[13], an indicator of short-term stability, and its equity ratio[14], an indicator of long-term stability, have both fluctuated during the past five years, they are moving within a certain range (see Figures 9 and 10). As this demonstrates, and based solely on a judgment of the balance of TELKOM's accounts in recent years, the financial capabilities of the executing agency are extremely favorable, a factor that bodes well for the sustainable development of project effects.

Table 1: P.T. TELKOM Profit and Loss Statement (1998-2002) (Rp10bn)

	1998	As % of	1999	As % of	2000	As % of	2001	As % of	2002	As % of

[11] Aiming to expand communications services outside major urban areas, under KSO operational rights were awarded to private-sector contractors with financing and technological strengths under revenue sharing arrangements with TELKOM; the scheme was executed in all regions except DIVRE II and V. However, the inability to secure planned profits in KSO regions and government restrictions, which served to impede the operational freedom of the private contractors, has led to moves to return these regions into the TELKOM fold and the scheme is to be abolished.

[12] Return on Assets (ROA) = profits / gross production (indicates overall profitability)

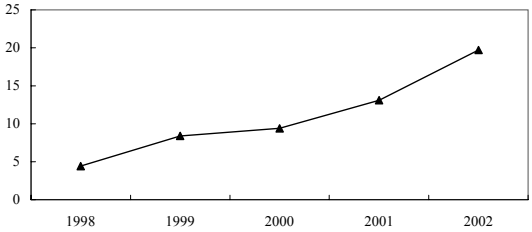
[13] Liquidity ratio = liquid assets / current liabilities (indicates ability to make payments)

[14] Equity ratio = equity capital / aggregate capital (indicates the stability of procurement funds)

		revenue		revenue		revenue		revenue		revenue
Operating income	**7,590**	**100%**	**9,386**	**100%**	**12,112**	**100%**	**16,131**	**100%**	**21,400**	**100%**
Fixed-line business	4,894		6,278		8,068		11,123		14,554	
Dividends from KSO companies	1,592		1,677		2,267		2,220		1,638	
Interconnections business	412		706		981		1,387		3,026	
Network business	354		343		340		415		326	
Data transmissions / Internet business	32		54		108		673		1,572	
Other	306		327		348		312		284	
Operating costs	**4,824**	**64%**	**5,645**	**60%**	**6,434**	**53%**	**8,515**	**53%**	**11,998**	**56%**
Personnel costs	904		1,225		1,610		2,028		4,124	
Fuel costs	2,468		2,627		2,419		2,829		3,504	
O&M costs	726		1,146		1,386		2,150		2,432	
General administrative costs	675		571		872		1,288		1,558	
Business development costs	51		76		147		220		380	
Operating profit	**2,766**	**36%**	**3,741**	**40%**	**5,678**	**47%**	**7,616**	**47%**	**9,402**	**44%**
Non-operating profits / costs	-1,340		-166		-889		-928		2,941	
Pre-tax profits for current term	**1,426**	**19%**	**3,575**	**38%**	**4,789**	**40%**	**6,687**	**41%**	**12,343**	**58%**
Tax	258		1,009		1,466		2,071		2,746	
Special profits / costs	-15		-162		-313		-367		-1,252	
Current term profit	**1,153**	**15%**	**2,404**	**26%**	**3,010**	**25%**	**4,250**	**26%**	**8,345**	**39%**

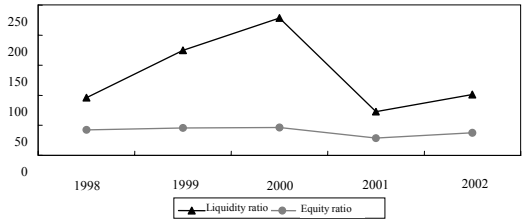
Source: P.T. TELKOM

Figure 9: Return on Assets (ROA) (%)



Source: P.T. TELKOM

Figure 10: Liquidity ratio / Equity ratio (%)



Source: P.T. TELKOM

Figure 12: A poster announcing the launch of P.T. TELKOM's international call services

2.5.4 Forthcoming Telecom Services

Under government regulation, the executing agency was granted exclusive rights to the provision of local and long-distance telephone services; however, with the enforcement of the New Communications Law (Law 36 issued in 1999) came the transition of Indonesia's communications services to a competitive market. Local call services were deregulated in August 2002, with long-distance services following in August 2003, and private-sector corporations have begun to provide services in both markets meaning that TELKOM has lost its monopoly. On the other hand, the executing agency began offering international call services after they were deregulated in August 2003 and is welcoming the age of market competition.

3. Feedback

3.1 Lessons Learned

None in particular.

3.2 Recommendations

None in particular.

Comparison of Original and Actual Scope

Item	Planned	Actual
1. Outputs		
IP-413: Phase I Project		
1. Switchboards	5 centers, 45,000 terminals	25 centers, 206,570 terminals
2. Subscriber cables	1 center region, 12,500 pairs	—
3. construction of switching center buildings	Center construction: 30 locations	Center construction: 17 locations
IP-429: Phase II Project		
1. Switchboards	27 centers, 132,000 terminals	86 centers, 153,510 terminals
2. Subscriber cables (new)	23 center regions, 91,000 pairs	43 center regions, 209,600 pairs
3. Subscriber cables (repaired)	3 center regions, 4,400 pairs, 73,000 pairs	—
4. Transmission lines (suburban districts)	21 districts	119 districts
5. Transmission lines (central districts)	26 districts	Integrated with 4 above
2. Project period		
IP-413: Phase I Project		
1. L/A conclusion	November 1993	November 1993
2. Consultant selection	July 1993 – March 1994	July 1994 – November 1994
3. Tender / contract	April 1994 – January 1995	June 1995 - February1996
4. Procurement / installation / construction	January 1995 – June 1996	April 1996 – September 2000
5. Consulting services	June 1994 – December 1998	November 1994 – October 2001
IP-429: Phase II Project		
1. L/A conclusion	November 1994	November 1994
2. Consultant selection	August 1994 – November 1994	January 1995 – May 1995
3. Tender / contract	August 1994 – October 1995	June 1995 – February 1996
4. Procurement / installation / construction	November 1995 – December 1997	April 1996 – September 2001
5. Consulting services	June 1994 – December 1998	November 1994 – October 2001
3. Project costs		
IP-413: Phase I Project		
Foreign currency	2,477 million yen	2,371 million yen
Local currency	1,977 million yen	1,837 million yen
Total	4,454 million yen	4,208 million yen
ODA loan portion	(3,587 million yen)	(3,366 million yen)
Exchange rate	Rp1 = 0.059 yen (as of April 1993)	Rp1 = 0.034 yen (weighted average over the project implementation phase)
IP-429: Phase II Project		
Foreign currency	9,487 million yen	10,773 million yen
Local currency	6,826 million yen	4,360 million yen
Total	16,313 million yen	15,133 million yen
ODA loan portion	(13,766 million yen)	(13,290 million yen)
Exchange rate	Rp1 = 0.050 yen (as of April 1994)	Rp1 = 0.019 yen (weighted average over the project implementation phase)

Third Party Evaluator's Opinion on
Extension and Improvement of Telecommunications Networks (1) (2)

Dr. Pande Radja SILALAHI
Commissioner
Commission for The Supervision of
Business Competition Republic of Indonesia

Scope of the Project:

Undertaking comprehensive extensions to and improvement of the communications network in the Jakarta Region.

Loan Amount / Disbursed Amount:

Phase I Project: 3,587 million yen / 3,366 million yen
Phase II Project: 13,766 million yen / 13,290 million yen

Implementation Schedule : November 1993 to December 2001
Field Survey : August 2003

The Relevance

Building of comprehensive extensions to and improvement of the communications network in the Jakarta Region has very high relevance. Through this project the demand for communications services in the region can be fulfill. This project also contribute to the improvement of the call completion rate (CRR) for long-distance calls from other regions accessing Jakarta, and thereby to contribute to improving communication conditions throughout Indonesia. This project Consistent with the goal of Indonesia's sixth five-year national development plan: REPELITA VI (1994-1997) to "increase the efficiency and reliability of telecommunications services", and coinciding with the goal of the national development plan: PROPENAS (2000-2004) to "develop IT infrastructure and improve telecommunications access" and the goal of the executing agency's long-term business plan to "improve and upgrade telecommunications services".

Efficiency

The report pointed out that the actual cost in each Phase was much lower than the estimate at the time of appraisal (about 5.5% for Phase I and 7.4% for Phase II). The cost under-run resulted mainly from depreciation of the local currency (Rupiah), which exceeded inflation, and competitive binding process which enabled in efficient ordering. The output of this project were modified and the major changes made during Phase I and Phase II included : (1) an increase in the number of switchboards from 32 to 111, and (2) an increase in the number of subscriber cables from 180,900 pairs to 209,600 pairs. The report pointed out that the project was completed 2 months ahead of schedule which indicated efficiency in managing this project. However, the report did not explain whether or not the project was cost efficient.

Effectiveness

Through this project the switching capacity increased (approx. 360,000 terminals added in Phase I and Phase II. Equivalent to 37% of 6^{th} 5-year plan target). Besides, the Telephone density, line availability, Call Completion Rates (CCR) , Fault ratios, Sound quality, also improved or Increased. The report states that the FIRR at appraisal of the entire project (Phase I and II) was calculated at 8.14% (after tax) assuming revenues from line installation, basic charges, call charges and others as project benefits, and operation and maintenance (O&M) and replacement costs as project costs. at appraisal. However, by using the same assumptions during ex-post evaluation the FIRR reduced to 7.53% which slightly lower than the appraisal figure. Since the FIRR may be seen as indication of the effectiveness of the project it might be said that effectiveness of this project decreased due the increases in currency-denominated project cost.

Impact

The report pointed out that this project had positive impacts on local economic activities, and non-quantifiable positive socio-economic impacts on the regions. The report pointed out that more than 60% of interviewees in Jongor and Cikarang (50 people in each area) stated that they were “highly satisfied” or “satisfied” with telecommunication service content (improved CCR, etc.); more than 70% stated that they were “highly satisfied” or “satisfied” with customer service content (faster repair response, etc.). Furthermore, in interviews with 10 companies in the above areas, all companies stated that telecommunication service content had “improved dramatically” or “improved”; 9 companies expressed “satisfaction with current services”. Even though seventeen plots of land were acquired for the construction of switching centers, the project did not necessitate any relocation of residents.

Sustainability

The report considers three factors, i.e., Technical capacity, Operation and Maintenance System, and Financial status. The report points out that the employees assigned to perform technical operation and operation and maintenance work have sufficient skills to undertake operation and maintenance work and there are no problem in this area In addition, where necessary, workers are being dispatched to training centers both within Indonesia and abroad. The report pointed out that under new organizational structure, the executing agency has subsequently been working to strengthen its business through effort to expand the scope of its services, improve customer services and improve the health of it finances. Since 1998 until 2002, Operating Revenues, ROA improved significantly. At the same period, although the company’s liquidity ratio and equity ratio fluctuated, they are moving within a certain rage.

Under new regulation (Law Number 36, 1999) the Indonesia’s communications service enter a competitive market.