

AFRICAN DEVELOPMENT BANK GROUP



ZAMBIA

TELECOMMUNICATION II PROJECT

Project Performance Evaluation Report (PPER)

**OPERATIONS EVALUATION DEPARTMENT
(OPEV)**

19 October 1999

1. Project Background and Formulation

1.1 The first Bank intervention in the telecommunications sector of Zambia dated back to 1974. During this year an ADB of UA 4.2 million was extended to the Government of Zambia to construct a PANAFTEL microwave route from Lusaka to Mbeya (on the Tanzanian boarder).

1.2 The Telecommunications II project was conceived, along with the PANAFTEL project, in the then Development Programme but its implementation was delayed due to lack of resources. Government's official request for ADB financing was made in 1982. The project was then included in the subsequent five-year (1984/85-1989/90) Development Programme, which was aimed at improving the overall services through the expansion of the telecommunications systems. The total cost estimates of the programme was about UA 150 million, of which UA 30 million was local cost. The programme was sub-divided into several self-contained projects to facilitate financing from external sources and several bilateral financiers and the Bank were approached to provide the required financing. In November 1984, the Bank appraised a self-contained project referred as Telecommunication II Project. Although the project was identified much earlier, no preparation mission was carried out. During appraisal, the scope of the project was redefined and the cost was updated to take account of the time lapse.

1.3 The Bank extended a loan of UA33.80 million to the Government of Zambia on December 1985 to cover the foreign exchange cost of the Telecommunications II Project. The beneficiary and executing agency was the Zambia Posts and Telecommunications Corporation, which was later restructured as Zambia Telecommunications Company (ZAMTEL) following the split of Postal Services and Telecommunications Services.

1.4 The Project Completion Report (PCR) on this project was prepared in July 1995 by the Operations Department. The Post-Evaluation Department evaluated the PCR to be highly satisfactory. The PCR treated all aspects of the project making it sufficient to undertake only the preparation of an Abridged Project Evaluation Performance Report (APPER). This APPER was prepared on the basis of information available in project files, interviews with project and disbursement officers as well as clarifications obtained from the Executing Agency.

2. Sectoral Goals, Project objectives and Outputs

2.1 The sector goal was to improve the country's infrastructure base that would contribute towards the Government's overall development objective of achieving economic growth, improving employment opportunities and lessening the country's dependence on imported goods and services. This was to be made possible by enhancing local production and services through the provision of more efficient and effective telecommunications systems.

2.2 The objective of the project was to provide efficient and effective telecommunications services by improving and expanding the existing telecommunication systems.

2.3 The expected outputs of the project were (A) Improved grade of service of 12 transit and local crossbar exchanges; (B) Local Exchanges supplied and installed; (C) Cable Distribution Network for 50,000 new subscribers expanded; (D) Automatic Data Transfer Equipment for billing

supplied and installed; (E) Subscribers Apparatus of 40,000 telephone sets supplied and installed; (F) 1,000 Tele-printers supplied and installed; (G) Diesel Generators on four major microwave routes replaced by solar power; (H) Electronic Repair Workshop set up; (I) 78 man-months training provided; and (J) Vehicles and planning support equipment purchased.

3. Implementation and Operational Performance

3.1 It took about nine months for the loan to be effective on 25 March 1987. The reason for the delay was due to the longer time it took in processing the on-lending loan agreement. The responsibility to prepare, process and approve the subsidiary loan agreement was shared between the Ministry of Finance and National Commission for Development Planning; which accounted for the long process. The responsibility is now consolidated and entrusted to the Ministry of Finance.

3.2 Among the other conditions, the one relating to accounts receivable was not fulfilled. While the target was to achieve a level of 2.5 months billing, the level by the end of 1995 financial year stood at about 7 months of billing. It has been reported that the level has improved since then although the set target has not yet been achieved.

3.3 Procurement was carried out in accordance with the Bank rules. However, the choice of technology was sub-optimal for some components. For instance, the data capture and communications equipment acquired were of low capacity and operationally slow as it was not compatible with the digital systems later installed. The equipment was later upgraded to rectify the shortcomings. This points to the need to ensure that a long-term integrated approach is required at the design stage to avoid untimely obsolescence of certain equipment.

3.4 Some components were revised during the course of implementation. Funds allocated for purchase of spare-parts for Component A was used to increase the scope of Component B. The existing Crossbar exchanges under Component A was replaced by using the recovered equipment from Kitwe ARF exchange due to the phasing out of the outdated technology of Crossbar exchanges. The recovered equipment from Kitwe ARF exchange was cannibalised and used as spares in other areas, thus improving the services of the repaired exchanges in other areas. In 1991 the Kitwe exchange was replaced by a new digital automatic exchange with a capacity of 8,000 lines; and further expanded by 4,000 lines using the ADB loan. The funds earmarked for manpower training was used for purchase of equipment and extension of telephone exchanges. Local resources were used instead for manpower training.

3.5 Actual implementation ran from 1986 to 1994, resulting in a slippage of 5 years. This was a result of the delay in fulfilling the condition of loan effectiveness and the delay in construction of the civil works resulting from shortage of building materials in the country, delay in opening Letters of Credit and sanctions on Zambia for arrears in loan repayments as elaborated below:

- During the period 1990 and 1992, ZAMTEL experienced delays in the supply of local materials from the suppliers. There was foreign exchange scarcity to procure inputs to the industries that produce the local materials required for the civil works;

- During the same period, the Central Bank of Zambia delayed the opening of letter of credit due to procedural changes. Lack of timely communications with the Bank also added to this delay;
- The frequent sanction imposed on the country had also impacted on some of the disbursements that were not processed through letter of credit.

3.6 The project was implemented within the foreign exchange budget leaving a balance of UA0.58 million at the time of the preparation of the Project Completion Report. ZAMTEL's contribution increased by 4% mainly because of the higher duties and taxes paid on imported goods. The slippage on disbursement period was 2 years resulting from the above mentioned delays. A part of the loan balance was later used for purchase of computers and expansion of the switching equipment. The remaining balance of UA 338,612.98 was finally cancelled on 9.8.97 following Government's request.

3.7 The overall implementation performance of the project was satisfactory notwithstanding the delays and revision of some components. Operational results were also satisfactory. The number of telephone exchange lines has increased by about 16% per annum since 1974. It, however, increased by only 5% per annum between the project appraisal and completion dates since much of the effort during this period was concentrated in the rehabilitation of the existing system. A total of 36,806 exchange lines were installed of which 22,510 accounted for the project. The overall telephone density improved from 0.6 DELs/100 to 0.91 DELs/100 inhabitants. But waiting list also increased as determined from the expressed demand from 17,601 at appraisal (1985) to 68,596 at completion (1995) as shown in the Table below as a result of delayed implementation of the expansion programme and increasing demand for telecommunications services.

Table 2.1
Selected Indicators

Indicators	At Appraisal 1985	At Completion 1995
Telephone Exchange (no. of lines)	74,420	111,226
Digital		80%
Attributed to the Project (additional)		22,510
Telephone Connections (no. of lines)	37,382	79,785
Waiting list (no. of potential customers)	17,601	68,596
Telephone Density (DELs/100)	0.60	0.91
Employees/1000DELs	72	39
Telex Capacity (no. of lines)	2048	4504
Telex Subscribers	1809	1935

3.8 The increase in Telex Capacity and number of subscribers were not significant as the trend has been more for communications by facsimile rather than by telex.

3.9 The revenue base of ZAMTEL has expanded with the project's additional exchange lines. The recalculated FIRR was 22% while the EIRR was 25%. These rates are satisfactory for telecommunication services that mainly cater to urban and international customers.

3.10 Cross cutting issues, such as gender, poverty reduction, participatory approach, environment were not an up-front development concern at the time. But the project has contributed to the efficiency of the economic and social sectors through facilitating speedy and timely communications compared to the alternative modes (by road or mail).

4. Performance of Borrower/Executing Agency and the Bank

Borrower and Executing Agency Performance

4.1 The Borrower and Executing Agency met the reporting requirements. The progress reports were submitted periodically and the quality of the reports was satisfactory. Project accounts were also kept satisfactorily. However, sanctions on Zambia for delayed loan repayments had contributed to implementation delays.

4.2 The Executing Agency was enjoying some degree of autonomy that facilitated tariff adjustments and control of operating costs. It operated on commercial basis and managed to train its staff over the years for the most part of its functions that lead to full localisation of positions. The few areas that require specialised training were in accounting procedures and determination of rates for international calls. These are being achieved on attachment basis with external Telecommunications entities.

4.3 The performance of the Executing Agency with respect to collection of bills was sub-optimal. Outstanding receivables were equivalent to about 7 months billing in 1995; much of these receivables were from Government and state owned institutions. But this has improved over the years following public sector reform programmes. Control of its installations was also sub-optimal as evidenced by the frequent thefts of Solar Power Panels and underground cables. In recent time ZAMTEL has taken measures such as using the media for public education and working in collaboration with the State Police to enhance awareness of public good and enforce legal actions on trespassers.

4.4 The Government is currently preparing to sell off 20 percent of ZAMTEL, in an effort to revitalise the operations and widen its network.¹

Bank Performance

4.5 The project was coined as a self-contained project from the Telecommunication Development Programme covering the period 1984/85-1989/90. The Bank did not undertake a preparation mission and it was during appraisal that the Bank redefined the scope of the project and up-dated the cost estimates. Adequate preparation would have served to avoid modifications and revisions during project implementation. There were adequate supervision and follow-up missions although at times the effectiveness of such missions were sub-optimal as evidenced by persisting problems such as delays in the opening of letter of credit, disbursement of funds and availability of building materials. The Bank was not also rigorous in its supervision of fulfilment of the loan condition with respect to outstanding receivables.

¹ Business in Africa- International Magazine, April-May 1999, Zambia's cautious sell-off, p. 28

4.6 The recent review process adopted in the Bank is expected to improve Bank's activities relating to project cycle.

5. Project Sustainability

5.1 ZAMTEL is a well performing telecommunications entity. Its financial performance was very satisfactory since tariffs are adjusted periodically and costs are controlled effectively. However, the accumulation of outstanding receivables in particular from Government offices and parastatal organisations was impacting negatively on the liquidity of the entity jeopardising its funding ability to expand its infrastructure. Some improvements are made in recent years following public sector review programmes.

5.2 The project has sustained itself as it generates adequate revenues to cover operation and maintenance costs. The equipment and systems installed were all functional and operated by trained manpower.

5.3 In recent years, Government has pursued effort to liberalise the telecommunications industry has brought forth a new era of cellular communications through the privately owned companies. Moreover, ZAMTEL has undertaken a 20-year development plan with an estimated cost of US\$ 710 million² to completely transform its analogue systems to digital communications and expand its services. Participation of private investors in ZAMTEL depends on the Government's openness in encouraging private sector participation and its ability to adequately exercise its regulatory and monitoring functions. It appears that the sell-off of only 20 percent of ZAMTEL may not be sufficient to encourage private sector participation.

6. Performance/Outcome Ratings

The performance/outcome ratings are presented in Annex 3. Although there was a five-year delay in project implementation, the overall implementation performance and project outcome were satisfactory. The overall Bank's performance was also satisfactory.

7. Conclusion, Feedback and Recommendations

The project was completed within the estimated costs and had delivered the expected outcome, which has contributed to improving the telecommunication services in the country. The PCR has covered all aspects of the project and has drawn appropriate lessons. Currently, public sector reform is under implementation. It is recommended that the Bank initiate dialogue with the Government to enhance the enabling environment in order to encourage private sector participation. There is also the need to set up appropriate regulatory framework for the private operators to protect the interest of the ultimate beneficiaries. The follow-up matrix is presented in Annex 4.

² Ibid.

SELECTED DATA

1. Country : Zambia
2. Project : Telecommunications II
3. Borrower : Ministry of Finance and Planning -
Government of Zambia (GOZ)
4. Beneficiary and Executing Agency : Zambia Telecommunications Company
(ZAMTEL), P.O.Box 71660 Ndola, Zambia
Telex: 33410, Tel. 260 (2) 611111,
Fax: 260 (2) 613055

A.	<u>Loan</u>	<u>Appraisal</u>	<u>Actual</u>
1.	Amount (UA million)	33.80	33.46
2.	Date of Loan Approval		10/12/85
3.	Date of Loan Signature		25/06/86
4.	Date of Loan Effectiveness		25/03/87
B.	<u>Project</u>		
1.	Total Cost	48.30	49.78
2.	Financing Sources		
	ADB	33.80	33.46
	GOZ	14.50	16.32
3.	Implementation Period	4 years	9 years
4.	Date and Ref. Of PCR		17 April 1996 ADB/BD/IF/96/108
C.	<u>Performance Indicators</u>		
1.	Cost Overrun/underrun		+12% (local), -1% (foreign)
2.	Implementation Delay		5 years
3.	Implementation Performance		Satisfactory
4.	Bank Performance		Satisfactory
5.	Project Outcome		Satisfactory

ZAMBIA: ABRIDGED PROJECT PERFORMANCE EVALUATION
RETROSPECTIVE LOGICAL FRAMEWORK MATRIX

COUNTRY: ZAMBIA
PROJECT: TELECOMMUNICATIONS II
DATE OF PCR: APRIL 1996
DATE OF APPER: JUNE 1999
EVALUATION TEAM: G. YIRGA-HALL

Hierarchy of Goals, Objective, Outputs	Objective Verifiable Indicators	Means of Verification	Main Assumptions/Risks
<p><u>Sector Goals</u></p> <p>1. To improve the country's infrastructure base by providing a more efficient and effective telecommunication systems</p>	<p>1.5 Enhanced economic growth 1.6 Improved job opportunities (measurable indicators not provided)</p>	<p>Reports from the Ministries of Industry, Planning and Finance</p>	<p>(Goal to SuperGoal)</p>
<p><u>Objectives</u></p> <p>2. To improve and expand the existing telecommunications systems in order to cater to the public's demand for telecommunications services</p>	<p><u>At Appraisal</u></p> <p>2.1 Most of the existing waiting applicants (17,600) will be served; 2.2 Telephone density will improve from the current level of 0.60DEL/100 inhabitants</p> <p><u>At Completion</u> The then waiting applicants were connected but new waiting applicants reached a level of 68,600</p> <p>Telephone density improved from 0.60DELS to 0.93DELS/100 inhabitants</p>	<p>ZAMTEL reports Bank's supervision mission reports PCR report</p>	<p>(Project Objective to Sector Goal)</p> <p>Adequate autonomy to ZAMTEL</p> <p>Availability of funds for sector development</p>
<p><u>Outputs</u></p> <p>3.1 Improved local crossbar exchanges 3.2 New local exchanges supplied and installed 3.3 Cable distribution network expanded 3.4 Billing equipment bought and used 3.5 Subscribers apparatus supplied and installed 3.6 Tele-printers supplied and installed 3.7 Solar power installed</p>	<p>Bidding launched for the procurement of goods and works for the various components, selection made and contract awarded</p>	<p>Signed supply and works contracts for the various components</p>	<p>The implemented project is the least cost solution</p> <p>ZAMTEL will properly operate and maintain the installed facilities</p>

<p>3.8 Workshop established 3.9 Manpower trained 3.10 Support equipment bought and installed</p>	<p><u>At Completion</u></p> <p>Funds allocated for 3.1 and 3.8 were used to expand other facilities. The equipment requiring spare parts was completely replaced and internal funds was used for manpower training</p>											
<p><u>Activities</u></p> <p>4.1 Procurement of cables 4.2 procurement of equipment and vehicles 4.3 Civil works 4.5 installations of cables and equipment 4.6 Training</p>	<p>Financing (UA million)</p> <table border="1"> <thead> <tr> <th></th> <th>Appraisal</th> <th>Actual</th> </tr> </thead> <tbody> <tr> <td>ADB</td> <td>33.80</td> <td>33.46</td> </tr> <tr> <td>GOZ</td> <td>14.50</td> <td>16.32</td> </tr> </tbody> </table>		Appraisal	Actual	ADB	33.80	33.46	GOZ	14.50	16.32	<p>Progress Reports Financial reports Supervision mission reports</p>	<p>The was an overall delay of 5 years in project implementation resulting mainly in shortage of local materials to complete the civil works and delays in opening the letter of credit</p>
	Appraisal	Actual										
ADB	33.80	33.46										
GOZ	14.50	16.32										

TELECOMMUNICATIONS II PROEJCT
IMPLEMENTATION PERFORMANCE

Component Indicators	Score (1 to 4)	Remarks
1. Adherence to time	1	There was a slippage of 5 years in project implementation resulting from shortage of local materials to complete the civil works and delays in the opening of letters of credit
2. Adherence to cost Schedule	3	The Project was implemented within budget although disbursements were effected over 6 years compared to a 4-year schedule.
3. Compliance with Covenants	2	The condition on outstanding receivables was not fulfilled.
4. Adequacy of Monitoring & Evaluation and Reporting	3	This was satisfactorily complied with.
5. Satisfactory Operations	2	Facilities operated satisfactorily but proper storage and control systems to safeguard the assets of the company were sub-optimal. Some equipment had to be replaced for compatibility
Overall Assessment of Implementation Performance	2.2	Satisfactory

BANK PERFORMANCE

Component Indicators	Score (1 to 4)	Remarks
1. At identification	N.A.	The project was carried over from earlier development plan already reviewed by the Bank.
2. At Preparation of project	2	Desk review of the Development Plan was carried out.
3. At appraisal	3	The Bank selected a self-contained project from the development program and cost was up-dated.
4. At supervision	2	Although there were sufficient number of supervision missions, some of these missions were not rigorous to assist the Executing Agency to resolve issues that delayed implementation of the project.
Overall Assessment of Implementation Performance	2.3	Satisfactory

TELECOMMUNICATIONS II PROJECT
PROJECT OUTCOME

No.	COMPONENT INDICATORS	SCORE (1 TO 4)	REMARKS
1.	<u>Relevance of Achievements and Objectives</u>	2.4	
i.	Macroeconomic Policy	3	The project was in line with the National Development Plan as well as the financial stabilization and structural adjustment program.
ii.	Sector Policy	3	The development of the sector was guided based on a rolling 5-year development plan.
iii.	Physical (including Production)	2	Facilities installed were operating satisfactorily; but some equipment had to be replaced to make the system compatible with the digital technology.
iv.	Financial	2	Adequate revenue but collection was weak.
v.	Poverty Alleviation & Social and Gender	2	Not considered at the conception of the project; but social service providers and families benefited from improved services.
Vi	Environmental	3	No adverse impact on the environment. Efficient telecommunications services usually have a positive impact as it reduces the need to use road transport.
Vii	Private Sector Development	2	Private operators are being encouraged and the project has contributed to improve the performance of private businesses. However, the enabling environment is still fragile.
2.	<u>Institutional Development</u>	2.7	
i.	Institutional Framework (incl. Restructuring)	3	ZAMTEL is operating commercially; and private participation is currently encouraged up to 20% of the Company's equity.
ii.	Financial and MIS (including Audit systems)	2	Adequate financial system is in place, but collection functions are still sub-optimal.
iii.	Transfer of Technology	3	Adequate training provided.
iv.	Staffing by qualified persons and Training	3	Qualified staff in place, and training is an on going activity.
3.	<u>Sustainability</u>	2.0	
i.	Continued Borrower commitment	2	The huge investment required for the sector, the limited revenue generation capacity of ZAMTEL, the slowness of the privatization process adversely impact on the long-term sustainability of the investment made so far.
ii.	Policy Environment	2	Government is limiting private sector involvement in ZAMTEL to only 20% of the Company's equity capital. This may negatively impact on the development of the sector.
iii.	Institutional Framework	2	The regulatory framework and monitoring mechanisms are not yet adequately developed to enhance private sector development.
iv.	Technical Viability and Staffing	2	Corporate norms need to be enhanced to enable ZAMTEL compete with other private operators.
v.	Financial Viability including cost recovery mechanisms	3	The ongoing training programs and after sales services of manufacturers sufficiently take care of ZAMTEL's requirements.
vi.	Economic Viability	2	Collection of receivables is still sub-optimal and the slowness of the privatization effort may impact on the financial viability of the company.
		2	There is high level of unsatisfied demand. Some customers are reverting to use mobile phones. The sector development is sub-optimal to encourage economic activities and hence enhance the economic viability of the investment made so far.

Vii	Environmental Viability	3	No adverse effects are detected in the sector but appropriate measures need to be taken during construction in undertaking future investments.
Viii	O&M facilitation	2	An integrated development approach need to be adopted to ensure compatibility of equipment installed and the availability of spare-parts and trained manpower
4.	<u>Economic Internal Rate of Return</u>	2	The sector requires high investment to improve and expand services. This may not be achievable unless the momentum towards privatizing the Company is accelerated.
	Overall Assessment of Outcome	2.2	Satisfactory

TELECOMMUNICATIONS II PROJECT
RECOMMENDATIONS AND FOLLOW UP MATRIX

MAIN FINDINGS AND CONCLUSIONS	RECOMMENDATIONS	FOLLOW-UP ACTIONS	RESPONSIBILITY
<p align="center"><u>Formulation and Project Rationale</u></p> <p>1.1 Project components were not designed based on integrated approach leading to inadequate capacity of some equipment purchased and installed.</p>	<p>1.1 Project formulation need to have integrated approach to ensure compatibility of the different equipment installed.</p>	<p>Adequate project preparation to ensure integration of facilities installed in future projects.</p>	<p>Operations Department</p>
<p><u>Project Implementation</u></p> <p>2.1 Issues not resolved in time lead to delays in the completion of the project.</p>	<p>2.1 Adequate risk analysis should be carried out in project appraisal; 2.2 Supervision missions need to be rigorous to resolve issues affecting project implementation.</p>	<p>2.1 Ascertain that risk analysis is adequately treated in appraisal reports; 2.2 Review issues paper and supervision reports critically</p>	<p>Operations Department Central Projects Department</p>
<p align="center"><u>Compliance with Loan Conditions</u></p> <p>3.1 The condition on outstanding receivables was not fulfilled.</p>	<p>3.1 Conditions should be relevant, attainable and the mechanism needs to be put in place to facilitate fulfillment.</p>	<p>3.1 Initiate policy dialogue to lay out the enabling environment prior to new intervention</p>	<p>Operations Department</p>
<p><u>Performance Evaluation and Project Outcome</u></p> <p>4.1 Overall project outcome is satisfactory. However, liquidity of ZAMTEL adversely affected by high level of outstanding receivables.</p>	<p>4.1 Measures need to be taken to reduce the outstanding receivables from state sectors.</p>	<p>4.1 Initiate policy dialogue to review progress on public sector reforms.</p>	<p>Operations Department</p>

<p><u>Sustainability</u></p> <p>5.1 The telecommunications infrastructure is not adequate to satisfy the growing demand</p> <p>5.2 High investment is required and this could only be effectively raised through private sector participation</p> <p>5.3 The enabling environment to sufficiently attract private sector participation is still inadequate</p>	<p>5.1 Appropriate enabling environment need to be provided to attract private sector participation</p> <p>5.2 External support is required to encourage the creation of an enabling environment for the sector development.</p>	<p>Initiate dialogue with the Government to enhance the enabling environment in order to encourage private sector participation more effectively</p>	<p>Operations Department</p>
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