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Report No: 20717

IMPLEMENTATION COMPLETION REPORT
(03730; 37380; 3738S)

ON A

IBRD LOAN

IN THE AMOUNT OF US\$20 MILLION

TO THE JORDAN TELECOMMUNICATIONS CORPORATION

FOR A TELECOMMUNICATIONS PROJECT

July 26, 2000

**Infrastructure Development Group
Middle East and North Africa Region**

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CURRENCY EQUIVALENTS

(Exchange Rate Effective July 2000)

Currency Unit = Jordanian Dinar (JD)

JD 1.0 = US\$ 1.40

US\$ 1.0 = JD .71

FISCAL YEAR

January 1 December 31

ABBREVIATIONS AND ACRONYMS

BITS	Swedish Board for Investment and Technical Support	LSP	Letter of Sector Policy
CAS	Country Assistance Strategy	MOPC	Ministry of Posts and Communications
CLIP	Calling Line Identification Prevent	NISC	National and International Switching Center
COM	Council of Ministers	NTP	National Telecommunication Program
DEL	Direct Exchange Line	ODA	Overseas Development Agency of the United Kingdom
ECO	Expanded Co-financing Operation	PAC	Product Acceptance Certificate
EIB	European Investment Bank	PCM	Pulse Coded Modulation
EPU	Executive Privatization Unit	PDH	Plesiochronous Digital Hierarchy
FAC	Final Acceptance Certificate	PMO	Project Management Office
GOJ	Government of Jordan	PSTN	Public Service Telecommunications Network
GSM	Global Mobile System	RDLU	Remote Distribution Line Unit
ICB	International Competitive Bidding	RLU	Remote Line Unit
IP	Internet Protocol	SAR	Staff Appraisal Report
ISDN	Integrated Services Digital Network	SDH	Synchronous Digital Hierarchy
JBIC	Japan Bank for International Cooperation (formerly JEXIM)	TPD	Telecommunications Policy Department
JD	Jordanian Dinar	TRC	Telecommunications Regulatory Commission
JTC	Jordan Telecommunications Company (formerly TCC- Jordan Telecommunications Corporation)	VAS	Value-added Services
LLP	Local Line Plant		

Vice President:	Jean-Louis Sarbib
Country Manager/Director:	Inder K. Sud
Sector Manager/Director:	Jean-Claude Villiard
Task Team Leader/Task Manager	Robert Anton Mertz

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JORDAN TELECOMMUNICATIONS PROJECT

CONTENTS

	Page No.
1. Project Data	1
2. Principal Performance Ratings	1
3. Assessment of Development Objective and Design, and of Quality at Entry	1
4. Achievement of Objective and Outputs	4
5. Major Factors Affecting Implementation and Outcome	8
6. Sustainability	10
7. Bank and Borrower Performance	11
8. Lessons Learned	13
9. Partner Comments	14
10. Additional Information	14
Annex 1. Key Performance Indicators/Log Frame Matrix	15
Annex 2. Project Costs and Financing	16
Annex 3. Economic Costs and Benefits	18
Annex 4. Bank Inputs	19
Annex 5. Ratings for Achievement of Objectives/Outputs of Components	20
Annex 6. Ratings of Bank and Borrower Performance	21
Annex 7. List of Supporting Documents	22
Annex 8. Partner Comments	23

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<i>Project ID:</i> P005322	<i>Project Name:</i> JORDAN TELECOMM
<i>Team Leader:</i> Robert Anton Mertz	<i>TL Unit:</i> MNSID
<i>ICR Type:</i> Core ICR	<i>Report Date:</i> July 26, 2000

1. Project Data

Name: JORDAN TELECOMM
Country/Department: JORDAN

L/C/TF Number: 03730; 37380; 3738S
Region: Middle East and North Africa Region.

Sector/subsector: CC - Telecommunications & Informatics

KEY DATES

	<i>Original</i>	<i>Revised/Actual</i>
<i>PCD:</i> 04/28/93	<i>Effective:</i> 10/26/94	06/27/95
<i>Appraisal:</i> 01/19/94	<i>MTR:</i> 09/01/96	09/13/97
<i>Approval:</i> 05/26/94	<i>Closing:</i> 09/30/99	01/31/2000

Borrower/Implementing Agency: Jordan Telecommunications Co./Jordan Telecommunications Co.
Other Partners:

STAFF	Current	At Appraisal
<i>Vice President:</i>	Jean-Louis Sarbib	Caio Koch-Weser
<i>Country Manager:</i>	Inder K. Sud	Ram Chopra
<i>Sector Manager:</i>	Jean-Claude Villiard	Barbara Kafka
<i>Team Leader at ICR:</i>	Robert Anton Mertz	Mohammad A. Mustafa
<i>ICR Primary Author:</i>	Svetoslav K. Tintchev	

2. Principal Performance Ratings

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HL=Highly Likely, L=Likely, UN=Unlikely, HUN=Highly Unlikely, HU=Highly Unsatisfactory, H=High, SU=Substantial, M=Modest, N=Negligible)

Outcome: HS

Sustainability: HL

Institutional Development Impact: SU

Bank Performance: S

Borrower Performance: HS

	QAG (if available)	ICR
<i>Quality at Entry:</i>		S
<i>Project at Risk at Any Time:</i>	No	

3. Assessment of Development Objective and Design, and of Quality at Entry

3.1 Original Objective:

The original objectives of the project, as stated in the Memorandum of the President, were to improve the efficiency of telecommunications services in Jordan by: (a) developing a market-oriented sector policy and a transparent regulatory framework; (b) commercializing and subsequently privatizing the Jordan Telecommunications Corporation (JTC); (c) encouraging private investment in the sector; and (d) enhancing service quality, expanding network capacity and increasing coverage.

The project objectives were consistent with the Country Assistance Strategy (CAS) at the time which emphasized financial restructuring, cost recovery, commercialization and privatization of public enterprises to improve resource allocation and reduce burdens on the budget. The project was also consistent with the Bank's telecommunications sector strategy of the time which called for shifting the role of governments from ownership and management to policy-making and regulation, promoting efficiency and quality through commercialization of operational activities and competitive provision of services, and using new financial instruments (such as guarantees).

The project objectives supported the Government of Jordan's strategy for the telecommunications sector. As outlined in their Letter of Sector Policy (May 2, 1994), the strategy called for : (a) preparing and promulgating a new Telecommunications Law; (b) commercializing, corporatizing and privatizing the operations of JTC; and (c) promoting competition and private provision of services.

Although these project objectives were ambitious, given the Government's commitment and the incorporation of technical assistance (TA) in the project design to assist with sector restructuring and to assist the project management unit in JTC, the Bank had strong reasons to believe the project's goals were attainable, which proved to be true by project closing.

3.2 Revised Objective:

The project objectives were not revised.

3.3 Original Components:

Sector Restructuring Component

This component was designed to help the Government formulate and implement reforms that would lead to further development of the sector and facilitate opening up new possibilities for the private sector. Restructuring was to be implemented in two phases. The first phase, which was completed as a part of the project preparation, involved providing technical assistance to help the Government and JTC prepare proposals for a new sector policy and a draft Telecommunications Law. As a result of this work, the Government developed a new sector restructuring strategy to be implemented under the project on the basis of a time-bound action plan during the second phase. The program consisted of five distinct but interdependent activities: (i) legal changes to provide a robust legal foundation for the sector in line with the new sector policy; (ii) a Sector Policy Division to be established at MOPC; (iii) an independent Regulatory Office to be established and staffed with trained professionals; (iv) commercial management and organizational development of JTC; and (v) a strategy and an action plan for the privatization of JTC.

Although the outcome of the sector restructuring component was highly satisfactory, the preliminary timetable for the implementation of these reforms may have been overly ambitious. The initial delays in appointing sector restructuring consultants (financed under a grant from the Overseas Development Agency - ODA) and in the approval of the new Telecommunications Law by Parliament, had not been anticipated and consequently set back the timing of the reform process. The component, however, was largely completed by the time of project closing with the sale of a 40% stake in JTC to the private sector in early 2000.

Physical Component

The physical component was to comprise the following: (a) 225,172 additional lines of switching equipment; these lines included the establishment of 20 new main exchanges, 80 new remote subscriber units, the expansion of one existing main exchange and 24 remote sites; (b) microwave and optical fiber junctions to provide links between remote subscriber units and corresponding main exchanges; (c)

associated local networks for the connection of subscribers; (d) power and air conditioning equipment; (e) buildings; (f) specific initial training for operation and maintenance of switching and transmission equipment; (g) formation of an initial spare parts stock; (h) consultant services for assistance in project management and supervision of implementation; and (i) computerized customer service, billing, collection and operational support systems.

The physical component was well designed, yet very large and complex, requiring strong project management to avoid delays in procurement. To ensure that JTC would have adequate capacity to manage this component, consultants (funded by BITS of Sweden) were hired to assist JTC with project management, procurement, monitoring and reporting. An implementation plan was prepared outlining the interdependencies of the tasks to be carried out under this component, including a time schedule for implementation. Despite these measures, the physical component did experience procurement and disbursement delays, mainly due to the Borrower's initial lack of experience with bid preparation and evaluation. However, by the closing date the project had exceeded almost all of the physical targets.

3.4 Revised Components:

Procurement of the computerized customer care system using Bank funds was replaced by procurement of additional optical fiber, copper cables and cable accessories, following a formal reallocation of disbursement categories in March 1999. This reallocation, however, did not result in a project restructuring. It was determined that procurement of the customer care system could not be completed by the closing date of the loan and that it would be better to wait until the strategic partner was on board to finalize the design and selection of the system. The system is now being financed through JTC's own resources.

3.5 Quality at Entry:

The project was not reviewed by QAG. However, at the time of this ICR, the Quality at Entry is considered to have been satisfactory. As mentioned above, the project was designed in line with both the Bank's and the Government's priorities for the sector. Throughout project preparation, the Government showed strong commitment to the sector restructuring program and ensured the support of other groups (Council of Ministers, Steering Committee, private sector, Association of Engineers and JTC managers) by holding interactive workshops to debate issues and develop the sector policy.

Additionally, several measures were taken to ensure that the project would be ready for implementation upon effectiveness. Prior to negotiations, all bidding documents were prepared and issued, a detailed project implementation plan was developed and a comprehensive project management organization had been established.

It should be noted that there was a one year delay between the project Board date and project effectiveness. This was mainly due to difficulties in meeting the conditions for effectiveness. The submission of the draft Telecommunications Law to Parliament was delayed, as was the issuance of the new by-laws granting JTC autonomy. The Bank also experienced some glitches in securing firm commitments from cofinanciers and in finalizing, with JTC, the bond issue. These unforeseen delays, however, did not greatly affect the overall implementation schedule of the project, as project procurement (preparation of bidding documents, bid evaluation and award, selection of consultants, etc.) was still able to move forward without the project being effective. In retrospect, it may have been better to make the effectiveness conditions less stringent, or to have put them up front, as conditions of board or negotiations.

4. Achievement of Objective and Outputs

4.1 Outcome/achievement of objective:

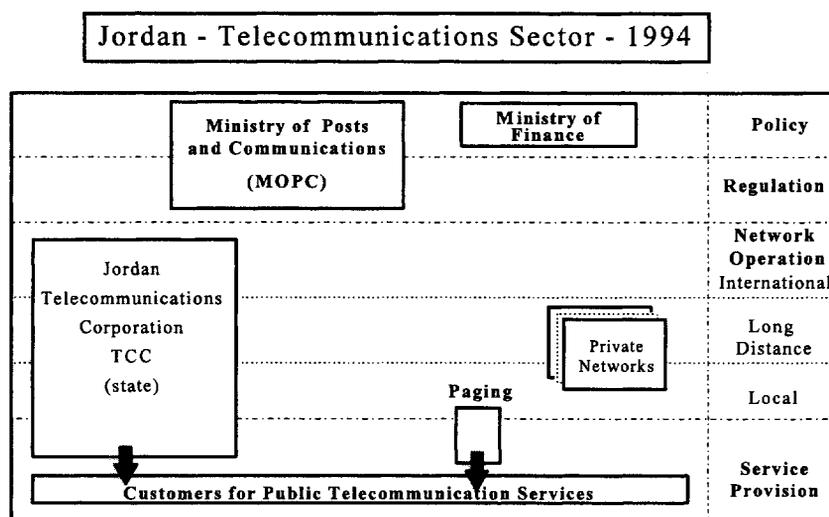
The project was highly successful in achieving its overall objective of improving the efficiency of telecommunications services in Jordan. Telephone service coverage was expanded to 25 new primary areas and 356 new villages. Teledensity (main lines per 100 inhabitants) increased from 7.7 in 1994 to an estimated 17.1 in 2000. Installed switching capacity increased from 320,000 in 1994 to 840,000 in 1999, and the number of users and connections almost doubled from 287,000 subscriber lines in 1993 to 565,000 subscriber lines in 1999. A broader range of services is now available to customers on a competitive basis, including internet, paging, cellular and payphones. The cellular market is growing rapidly. Fastlink, currently the country's sole cellular provider, has increased its subscriber base from 11,500 in 1995 to more than 150,000 by April 2000, and it is expected that the number of subscribers will double when JTC's Mobilecom begins operating at the end of 2000. The project achieved or surpassed many of the original performance indicators (Annex 1) outlined in the Staff Appraisal Report (SAR).

The project also achieved its goal to commercialize and eventually privatize JTC. After an unsuccessful attempt at privatization in March 1998, the Government re-launched the bidding process in April 1999 which successfully resulted in the receipt of three competitive bids from reputable operators. On January 23, 2000 the privatization transaction was completed, and 40% of the Company's shares, with management control, were sold to the Joint Investment Telecommunications Company (88% of which is owned by France Telecom and 12% is owned by the Arab Bank).

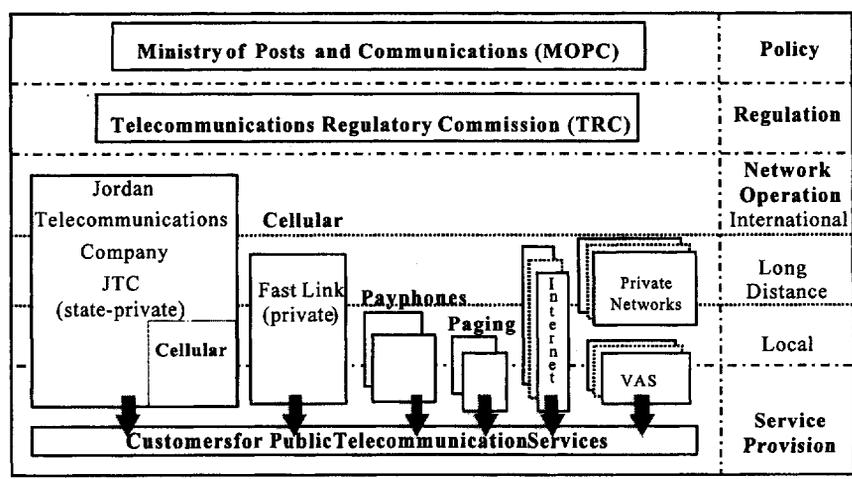
The project was also successful in terms of its policy objectives. The Government's telecommunications sector policy, as agreed and discussed with the Bank during project preparation, was issued in early 1995. The Telecommunications Law was ratified by the Jordanian Parliament in September 1995 and became effective on October 1, 1995. In November 1995, the Telecommunications Regulatory Commission (TRC) was established as an independent statutory agency for regulating and monitoring the telecommunications sector.

4.2 Outputs by components:

Sector Restructuring Component. The outputs of this component are rated as satisfactory. As depicted below, there were major changes to the sector during the life of the project :



Jordan - Telecommunications Sector- Jan. 2000



All of the reform measures initiated under the project were advanced : (a) the new Telecommunications Law, which allowed for the corporatization of JTC and the establishment of a regulatory authority, was approved by Parliament in September 1995; (b) the Telecommunications Policy Department (TPD) was established within the MOPC to provide forward-looking, long range policy advice to the Government; (c) the Telecommunications Regulatory Commission (TRC) was established and staff were hired and trained. During the life of the project, TRC built its credibility by issuing more than 16 licenses, covering the various market segments, in a transparent manner; (d) the Government's sector policy, promoting competition and private provision of services, was issued in early 1995; and (e) the privatization of JTC was successfully completed in January, 2000.

Physical Component. The outputs of this component are highly satisfactory as the project achieved the following physical results, generally exceeding the original estimates :

Switching - new digital switching equipment was installed for 22 primary centers and 81 remote switches, increasing the switching capacity to 840,000 lines (exceeding the SAR estimate of 640,000).

Transmission - PDH equipment was installed at 128 sites, SDH equipment at 49 sites, and microwave equipment and towers at 26 sites.

Local Line Plant - approximately 80% of the contracted work on the local line plant had been completed at project closing. The work thus far has allowed 40 manual service sites to be converted to automatic service and the transfer of more than 100,000 customers from the old network to the new one.

Buildings - 128 new buildings were constructed, 26 of which are main-exchange buildings for combined technical and administrative use; four of the existing primary center buildings were enlarged.

Customer Service Improvement Plan - procurement of the computerized customer care service system was halted as JTC was experiencing delays and complications with bid evaluations and it was decided that it would be better to wait until the new strategic partner was on board to make decisions regarding the design of such system. Funds for the system were then used to purchase additional optical fibre cables, copper cables and accessories.

4.3 Net Present Value/Economic rate of return:

The economy-wide benefits from the project are substantial. The project increased the level of private participation in the sector through the successful privatization of JTC and by establishing a regulator which helped to build investor confidence. The proceeds from the sale of JTC (US\$508 million) brought an amount equivalent to 159% of the average annual inward direct investment flow for the period of 1997-99. Even beyond JTC, foreign interest in the Jordanian telecommunications sector has included the sale of a 51% stake in two local ISPs to the Bahrain Telecommunications Company and the sale of a 20% stake in Maktoob.com, the leading Arabic language communications server to Egypt's EFG-Hermes. Jordan's IT conference in March 2000, attracted over 100 international and 50 local companies, including Microsoft which expressed interest in working with the GOJ in developing a computerized network connecting government departments.

New employment opportunities were generated through the development of new services and the addition of new service providers in the various market segments (cellular, paging, etc). JTC's cellular subsidiary, Mobilecom, will create 350 jobs alone in its first year. Businesses, which increasingly rely on telecommunications and internet services to enhance productivity, greatly benefited from JTC's improved efficiency, service quality and expanded network capacity. Improved telecommunications services will allow for business to have better access to international markets, creating new export opportunities and reducing purchasing costs.

A significant share of the project's economic benefits were realized by rural and low-income communities. By project closing, JTC had expanded their geographical coverage to include 356 new villages. In rural areas manual service was replaced by remote digital line units and, as a result of exchange modernization, new value-added services were introduced for the first time to rural customers. Through tariff reduction, telecommunications services became more affordable for all consumers. Competition in the mobile sector has already resulted in an average 30% reduction in cellular tariffs.

Resource mobilization was one of the main economic benefits of the project. The US\$50 million Eurobond issue helped to mobilize private sector finances from the local and international markets that would have been otherwise placed in bank accounts or invested abroad. The bond issue also helped to improve the overall image of the Jordanian economy, as reflected in the recent upgrade of the country risk rating from "C" to "B" by the Economist Intelligence Unit, *Country Risk Service Report*, June 2000.

4.4 Financial rate of return:

JTC's financial performance during the project period (1994-1999) was strong enough to generate sufficient funds from operations to cover 35% of total project costs, close to the 37% projected at appraisal, and to comfortably meet all financial covenants. However, JTC suffered pressure on revenues and profitability due to a combination of factors including a tariff rebalancing plan initiated in 1997 as part of the project, declining international revenues and a sluggish local economy. Despite strong growth in the physical telephone network with the number of subscribers increasing by 100 % to 565,000 between 1994 and 1999 and telephone traffic (minutes billed) doubling as well (with the largest gains in local and outgoing international traffic), total revenues only grew by 29%. Domestic revenues nearly doubled as the cross subsidy from high international charges was reduced through tariff rebalancing, but international revenue grew by only 1% per annum and incoming international revenue declined by 11% per annum due to declining international settlement rates. Total revenues grew by just 5% per annum, while operating expenses increased 13.5% per annum, causing JTC's gross and net operating ratios to decline. As a result of these trends, average annual revenue per subscriber declined from JD546 in 1994 to JD 342 in 1999, a decline of 37%. Further negative comparisons can be expected until the five-year tariff rebalancing

program runs its course in 2001, unless JTC is able to increase revenues through more rapid growth in cellular traffic, data and value added services.

The company's financial position - though still strong – exhibited a gradual weakening during the period (as shown in the following summary table). Accounts receivable have been a continuing problem for JTC, growing faster than revenues until 1999, and provisions for uncollectible accounts have remained high at about two-thirds of receivables. It is expected that the investment of a major private shareholder and the eventual purchase of a sophisticated customer care/billing system will have a positive effect on tighter commercial practices at the JTC and an improved financial position.

The documents showing the calculation of the FRR and ERR at appraisal could not be located for preparation of the ICR so the financial and economic rates of return on the project have been calculated on the basis of the incremental cash flows from the new investment financed by the project, over a 20-year period 1993-2013. The FRR is calculated at 20 percent, slightly less than the 22 percent calculated at appraisal, although the two calculations may not be on a comparable basis. This calculation assumes a further three percent per annum decline in the net weighted average tariff in 2000 and 2001 as part of the ongoing five-year tariff rebalancing plan. The economic rate of return has been calculated on the basis of the incremental cash flows after deducting the taxes and other fees and transfers paid by the company and on the assumption that income tax will be payable at the current rate of 30 percent of taxable income for the period 2000-2013. On this basis the ERR is calculated at 28 percent compared with 24 percent at appraisal, although again the two calculations may not be on a comparable basis.

Annual Financial Indicators (JD)

	1995	1996	1997	1998	1999
Gross Revenues	155,992,402	172,646,298	169,252,743	186,654,255	193,004,768
Increase (decrease) in Revenue	4.0%	10.7%	-2.0%	10.3%	3.4%
Operating Expenses	45,316,076	50,333,366	64,267,686	76,243,948	75,345,287
Depreciation	8,821,199	10,854,428	25,530,764	24,418,493	26,414,493
Operating Revenues	110,676,326	122,312,932	104,985,057	110,410,307	117,659,481
Net Income	93,403,120	73,738,578	79,203,250	64,603,291	73,091,859
Cash Generation from Operations	102,224,319	84,593,006	104,734,014	89,021,784	99,506,352
Capital Expenditures	35,094,180	61,252,537	42,506,433	61,245,576	50,359,887
Operating Margin (%)	70.9%	70.8%	62.0%	59.2%	61.0%
Net Profit Margin (%)	59.9%	42.7%	46.8%	34.6%	37.9%
Return on Total Assets (%)	31.9%	22.4%	22.8%	16.5%	17.9%
Return on Equity (%)	36.7%	28.1%	30.2%	22.8%	24.7%
Debt Service Coverage Ratio	19.94	33.06	49.49	24.15	18.23
Debt to Equity Ratio (%)	14.2%	19.2%	24.0%	29.2%	27.5%
Asset Turnover Ratio (%)	117.1%	123.9%	108.2%	67.4%	64.1%
Current Ratio	7.04	4.51	3.64	2.98	2.27
Accounts Receivable (gross)	56,559,329	54,790,481	66,764,611	76,381,266	76,547,609
Provisions (bad debts)	32,410,448	35,000,000	46,000,000	51,000,000	49,000,000
Provisions as % of A/R	57.3%	63.9%	68.9%	66.8%	64.0%
Provisions as % of Revenues	20.8%	20.3%	27.2%	27.3%	25.4%
Increase (decrease) in A/R	-46.0%	-3.1%	21.9%	14.4%	0.2%
A/R Turnover	2.76	3.15	2.54	2.44	2.52

4.5 Institutional development impact:

The institutional development impact of the project was substantial :

Government of Jordan / Ministry of Communications developed the capacity to design and implement the sector restructuring program. The role of the Ministry with respect to policy making was expanded with the creation of a Telecommunications Policy Department to advise on the introduction of new services and to promote and support the development of the telecommunications policy. The Government, with the assistance of the Bank, was able to successfully implement a large program which included legal, sector policy and regulation activities as well the strategy and action plan for the privatization of JTC.

JTC staff were charged with designing and implementing the ambitious National Telecommunications Plan (NTP) and managing the program's financial plan which amounted to approximately US\$250 million. Throughout the life of the project, JTC improved its capacity for financial management, as demonstrated in the financial performance ratios, which generally exceeded those stipulated in the financial covenants of the Loan Agreement. JTC also improved its capacity to carry out the procurement of goods under international competitive bidding procedures. Although initially weak in this area, by project closing, JTC had effectively reduced project costs through successful international competitive bidding and contract negotiation procedures.

TRC's institutional capacity to regulate the sector was developed under the project through training of staff, and TA provided by ODA-funded international consultants. Since its establishment, TRC has issued more than 16 licenses, including JTC's license, in a credible and transparent manner. Although, not originally envisaged under the project, it is now apparent that TRC could use further TA (study tours, workshops) and financing for the set-up of a proper frequency management system, in order to strengthen its authority as a regulator. The Bank is discussing with the GOJ possible future assistance to TRC in this capacity.

The institutional capacity developed under the project is most clearly demonstrated, however, in the ability of all three parties (Government, JTC and TRC) to learn from the mistakes of the initial unsuccessful attempt to privatize JTC, revitalize the bidding process a second time, and successfully complete the privatization transaction.

5. Major Factors Affecting Implementation and Outcome

5.1 Factors outside the control of government or implementing agency:

None

5.2 Factors generally subject to government control:

The Government's strong commitment to sector reform greatly contributed to the overall success of the project. However, there are two instances in which factors subject to Government control may have actually impeded reform progress :

(a) *Sector Policy* - after issuing its Letter of Sector Policy (LSP) in 1995, the Government proceeded to change its sector policy several times, creating uncertainty for potential investors in the sector. The original LSP indicated that competition in PSTN services would commence at the time of JTC privatization. In December 1996, however, the Council of Ministers (COM) issued a decree delaying introduction of competition in PSTN until 2002. Regarding the cellular segment, the COM issued a decree in November 1995 permitting the issuing of a second cellular license. However, just prior to JTC's privatization, the second license was granted to JTC (rather than through a competitive bidding procedure) and the Government announced it would award a third license in 2001. Although this decision may have helped to maximize the sale price of JTC, it also may have adversely impacted the

level of competition in GSM service in the sector in the long run. A more consistent sector policy may have helped to avoid delays in the reform and to increase private investment in the sector.

(b) *Privatization progress* - the initial attempt at JTC privatization was not successful for a number of reasons, some of which were subject to the Government's control : (i) the GOJ was not able to reach a political consensus among key stakeholders on the privatization strategy; (ii) the absence of a ministerial "champion" for the privatization, which may have been interpreted by potential buyers as a lack of commitment on the part of the GOJ; (iii) the GOJ did not undertake a comprehensive transactional and value analysis of other privatization transactions around the world, which could have been used as a basis for setting realistic expectations; and (iv) the inability of the Government to reconcile the issue of sovereignty and the perceived erosion of its patrimony of a key national public asset, against the urgent need to obtain management expertise and financial resources for that asset. Nevertheless, the Government was able to reconstruct its privatization strategy and re-launch the tender for a strategic investor utilizing a revised information memorandum in May 1999. Following this second round of bidding, the privatization transaction was completed successfully in January 2000, after receiving three competitive proposals from reputable operators.

5.3 Factors generally subject to implementing agency control:

The Project Management Office (PMO) in JTC carried the bulk of the responsibility for implementing the National Telecommunications Program (NTP), the physical component of the project. The PMO was well staffed with a project manager, procurement specialists and financial management specialists. The PMO benefited during project preparation and implementation from the international expertise of consultants from Telia Swedtel (financed by Swedish BITS and JTC).

Procurement management was the main factor largely subject to the control of the PMO that caused some initial delays in project implementation. In particular, procurement of the computerized customer care system was not well managed. Working with a consulting firm (Booz-Allen & Hamilton), JTC spent many months preparing the bidding documents for the system, yet in the end no bidder could adequately meet the technical specifications. Bid evaluation, also took several months and was not carried out properly, according to the evaluation criteria specified in the bidding documents. The Bank, therefore, did not give its clearance to the bid evaluation report, and given the closing date of the project, it was agreed that the purchase of the system could not be completed on time. The funds allocated to the system were reallocated for the purchase of additional fiber optic and copper cables and accessories.

5.4 Costs and financing:

The project's original financing plan, revised loan amounts and total disbursement at project closing (January 31, 2000) are shown in the table below :

(US \$ million)

	Original Financing Plan			Revised Loan Amount	Disbursed (Jan. 31, 2000)
	Local	Foreign	Total		
Internal Cash Generation	90	-	90	90	71
World Bank	-	20	20	20	15.4*
EIB	-	30	30	57	55
JBIC (Japan)	-	23	23	16	15.6*
ODA (UK)	-	6	6	6	6
BITS (Sweden)	-	4	4	2.2	2
Eurobond	-	50	50	50	36.1*
Total	90	133	223	241	201

*Disbursed as of June 28, 2000

Prior to effectiveness, the original financing plan was reduced by US\$8.8 million (the JBIC loan was reduced to US\$16 million and the BITS financing was reduced to US\$2.2 million) to reflect cost savings on tenders for equipment and technical assistance. A second loan from EIB became effective in March 1996 to help finance additional works on the Local Line Plant, thus increasing EIB's total contribution to US\$57 million. The revised overall financing for the project totaled approximately US\$241 million.

For the first time in the telecommunications sector, the project financing included US\$50 million funded through a Eurobond issue supported by an ECO Guarantee. The purpose of the Guarantee was to provide JTC with a vehicle for private sector involvement in its investment program in the form of private sector debt and subsequent equity participation. The Guarantee was specifically intended to : (i) help mobilize Jordanian foreign currency deposits held offshore and direct them back into the country for the purpose of productive investment in a priority sector; (ii) facilitate Jordan's re-access to the financial markets, following the Brady debt restructuring, thereby assisting the country to diversify its borrowing sources; (iii) establish a track record for JTC in the market by exposing the company to the rigors of market discipline, thus facilitating the commercialization and privatization process; and (iv) provide impetus to the domestic capital market, as well as help to open up a foreign institutional investor base for the country.

The use of the ECO Guarantee proved to be very successful, not only in terms of catalyzing private sector investment for the telecommunications program, but also in facilitating Jordan's access to the Eurobond market. As it was the first bond operation for Jordan, which did not have a credit rating at the time, it also helped to establish a track record for the country in international capital markets. Through the ECO bond operation, JTC became the first Middle Eastern corporation to tap the Eurobond market. Exposing the company to the commercial discipline of the capital markets helped commercialize JTC's corporate culture in preparation for privatization. In addition, the bond issue involved the participation of local banks and facilitated the mobilization of domestic foreign exchange deposits for investment in the company. Following the very successful reception of the JTC bond, Jordan was able to re-access the Eurobond market for subsequent bond operations without the Bank's support.

Throughout the project there were disbursement lags, mainly due to the initial delay in effectiveness and procurement delays and inefficiencies (in some cases bid evaluation took 4 to 6 months). The closing dates of the Bank loan and the JBIC loan were extended by 4 and 6 months, respectively in order that JTC might use balances that remained undisbursed due to delayed procurement. By project closing, however, substantial savings had been achieved. In particular the final contracts under the Bank loan for the procurement of copper cable & accessories and optical fibre cable and accessories, originally estimated to cost US\$5.7 million, amounted to only US\$1.4 million, partly due to successful use of ICB procedures by the Borrower. The remaining undisbursed balance of US\$4.6 million under the Bank loan has been canceled.

6. Sustainability

6.1 Rationale for sustainability rating:

The sustainability of the project's achievements are highly likely. The sector reform achieved under the project has already allowed for and will continue to increase private participation in the sector. The newly-privatized JTC is planning for further expansion and improvement of the network to prepare for competition, following the end of their exclusivity period. The Government intends to continue to promote competition in the sector through the award of a third GSM license in 2001, and two licenses for international operators in 2004. JTC's tariff rebalancing plan has been underway since 1997, and it is expected that the entrance of new operators in the sector will result in further tariff rebalancing as determined by the market.

All of the above should continue the progress made under the project to improve the efficiency and accessibility of telecommunications services in Jordan.

6.2 Transition arrangement to regular operations:

The Government has expressed a need for continued Bank assistance in the sector, particularly in the following areas :

- TRC - further support to strengthen the regulatory framework created under the project and improve the independent functioning of the regulator. TRC staff require additional training and a proper spectrum management system, including equipment, is yet to be put in place.
- Postal Services - support for the Ministry's recently launched Postal Sector Restructuring Project, which aims at expanding the coverage and improving the quality of Jordan's postal services. This project also includes a plan for privatization of the postal operator.
- Information Technology - assistance to the GOJ in the implementation of its recently developed National IT Strategy (REACH Initiative), and possible support for an "administration on line" initiative to improve the efficiency of public administrative systems through the use of IT.

7. Bank and Borrower Performance

Bank

7.1 Lending:

Bank performance at identification, preparation and appraisal of the project was satisfactory. The project team built on the relationship developed between the Bank and GOJ during the preparation of the First Telecommunications Project (loan 2953-JO), a project which was approved by the Board but canceled shortly after by the Government due to changes in the macro-economic conditions in Jordan which led to cancellation of the investment program for the telecommunications sector and related financing. During the 12 months of preparation, from the initial identification mission to Board approval, the Bank maintained a close dialogue with the GOJ to ensure that the project objectives were directly in line with the Government's goals for the sector.

The staff mix and continuity during preparation and appraisal were highly satisfactory. Financial analysts and telecommunications engineers provided the core expertise, while IT and Private Sector Development specialists also provided valuable input in missions and as peer reviewers. Several of the preparation missions included the participation of a Financial Officer from the Project Finance and Guarantees Department to deal with issues relating to the World Bank Guarantee. The loan amount and project execution period was well estimated at the time, although the one year delay in effectiveness was not anticipated and the project closing date was extended by four months to give the Borrower more time to complete procurement actions. It should also be noted that several of the performance indicators (Annex 1), were not in line with rapidly developing technology trends, and may have been overly ambitious given the initial level of sector development in the country.

There was clear recognition by the preparation team of the project risks, namely the potential for political interference in the implementation of the sector restructuring and the risk of delays in the investment part of the program due to procurement or insufficient institutional capacity. These risks were discussed with the Borrower during negotiations and the agreements reached to minimize these risks were reflected in the conditionalities of the project.

7.2 Supervision:

The overall supervision of the project was satisfactory. Regular supervision missions were carried out generally every six months and the documentation in the project file is adequate. A mid-term review was conducted in September of 1997, though it did not involve co-financiers. There was a change in task managers 18 months before project closing. However, this did not disrupt project supervision and had no impact on project achievements. Project performance indicators and financial indicators, as outlined in the SAR, were monitored on a regular basis and generally served as realistic measures of the project's achievements, with the exception of the quality-of-service targets, which had been over-estimated, as mentioned above. The Borrower noted that in several instances there were delays in obtaining the Bank's non-objection on procurement matters.

Following the first attempt at privatization of JTC, the Bank participated in a mission, with two external consultants, to provide the Government with a neutral and independent perspective of international experience in telecommunications privatization transactions. This mission, which was carried out at the request of the Chairman of the Executive Privatization Unit, analyzed the reasons for the failure of the first attempt and helped the Government re-think its privatization strategy in order to re-launch the bidding process with successful results.

7.3 Overall Bank performance:

Overall Bank performance was satisfactory. Bank staff worked closely with the Government and the implementing agency to push the sector reform ahead and to monitor progress on the physical component. The Bank gave strong advice to the GOJ on maintaining a consistent sector policy, in following international best practice for the privatization transaction and in establishing a credible and transparent regulatory environment. Project modifications, including extensions of the effectiveness date, a credit reallocation and one extension of closing date, were generally processed by the Bank team in an efficient manner in order to respond to the Borrower's needs.

The Bank also assisted in securing the cofinancing for the project which involved five different donors, with the loan from JBIC (formerly the Japan Exim Bank) being administered by the Bank. The project successfully piloted the use of a World Bank Guarantee in the telecommunications sector. The US\$50 million Eurobond issue was oversubscribed, illustrating a successful approach to finance a well justified investment program.

Borrower

7.4 Preparation:

The quality of the Borrower's commitment and contributions to project preparation were notable. In terms of the restructuring program, the Government and JTC took several steps to ensure the support of key stakeholders : (a) in the process of developing the sector policy, the Council of Ministers, the Steering Committee, the private sector, the Association of Engineers and JTC managers worked closely and debated issues in workshops held for this purpose; and (b) in order to ensure the ownership of its middle management, JTC established working groups to serve as "change agents" to help explain to staff the objectives, expected outcome and benefits of the reform process.

In terms of the investment component, the Borrower organized program management on two levels : (i) a Program Management Unit, responsible for strategic issues, including global scheduling, information management, financial and contractual matters, human resources planning and technical advice, was established in 1994; and (ii) a project management structure was defined to handle micro-scheduling and implement supervision of the different works (buildings, switching, transmission, outside plant), including quality and quantity control and the issuance of performance certificates.

Prior to negotiations, the Borrower had developed a detailed project implementation plan and the bidding documents for all major procurement had been prepared and issued.

7.5 Government implementation performance:

The Government, and in particular the Project Management Unit, was mainly responsible for implementation of the sector restructuring component. Although there were some hitches and delays along the way, given the overall progress made on the sector reform during the period of 1994 to the present (Telecommunications Law adopted, Sector Policy Statement issued, regulatory agency established, policy division in MOPC created, and corporatization and subsequent privatization of the telecommunications operator), the Government's performance can be considered satisfactory.

7.6 Implementing Agency:

The implementing agency's (JTC) performance was highly satisfactory. The Project Management Office provided quarterly progress reports on a regular basis with performance indicators generally exceeding expectations. Financial management of the project was carried out in a very professional manner. Audit reports were usually received on time and were unqualified, and the financial covenants, as specified in the Loan Agreement, were adhered to. Given the high level of overall funding for the NTP (US\$250 million), JTC did an excellent job of managing the various grants and loans and ensuring that funds were used properly. The success of the bond issuance (ECO Guarantee), further demonstrated JTC's maturity in financial management practices.

Procurement management, however, was a problem during the initial phase of project implementation. Multiple layers of review in the national public procurement system (JTC, national tender board, Ministry of Planning, etc.), sometimes delayed the bid evaluation process by 4-6 months, throwing off the time schedule for planned delivery and installation of goods. Due to procedural delays it was frequently necessary to update the technical specifications of the various tenders to take into account new technologies and to request variation orders to signed contracts. Although JTC noted that they felt the Bank's procurement procedures were time consuming and did not allow for flexibility, they did manage to use ICB procedures effectively to reduce equipment prices resulting in significant project cost savings.

Despite these initial difficulties, JTC's management of the physical component of the project was highly successful, and generally exceeded expectations.

7.7 Overall Borrower performance:

Overall Borrower performance and participation in both preparation and implementation is highly satisfactory.

8. Lessons Learned

The main lessons to be drawn from this project implementation experience are the following :

Sector Regulation. The support of regulatory reforms does not end with the creation of the independent sector regulator. Although the telecommunications regulator was successfully established and staffed under the project, more attention could have been given to building the capacity of the regulator through more specialized training and study tours, and in emphasizing the importance of complete separation of the regulator from the ministry, including the allocation of a separate and independent budget for the TRC.

Project Financing. The efficient implementation of different financial instruments, in particular the bond issue, not only ensured the investment program financing, but more importantly, stimulated the

enhancement of financial management skills and positive evolution of JTC corporate culture. The project provides the first "best practice" example for the use of a WB guarantee in the telecommunications sector.

Privatization. Any privatization transaction should be preceded by a well designed public relations campaign and involvement of all current and potential stakeholders in the sector. A consistent sector policy and strong display of Government commitment is crucial in attracting private investors.

Cofinancing Arrangements. Cofinancing arrangements should be secured as early as possible in project preparation. When the Bank is charged with administration of a cofinancier's loan (as was the case for the JBIC loan in this project) there is a necessity for a common supervision approach and eventual joint missions to ensure faster reaction to a Borrower's requests for extension, reallocation, etc.

Technical Assistance. The early provision of quality technical advice to the GOJ for sector restructuring and to JTC for implementation of the physical component, as well as the Borrower's capacity for absorbing and using the TA, greatly contributed to the overall success and sustainability of the project.

9. Partner Comments

(a) Borrower/implementing agency:

See Annex 8.

(b) Cofinanciers:

Comments were requested from JBIC but none were received.

(c) Other partners (NGOs/private sector):

Not applicable.

10. Additional Information

Not applicable.

Annex 1. Key Performance Indicators/Log Frame Matrix

Outcome / Impact Indicators:

Indicator/Matrix	Projected in last PSR	Actual/Latest Estimate
1. Production Targets :		
a) Customer Growth : Number of Lines 12/94 - 280,000 12/99 - 542,000	a) 12/99 - 560,000	a) 12/99 - 565,000
b) Increase in exchange capacity 271,000 (total estimated increase by end of project)	b) 6/99 - 567,000	b) 497,083 (total actual increase 1994-1999)
c) Number of new subscribers connected 230,000 (by end of project)	c) 6/99 - 350,000	c) 12/99 - 312,655
2. Implementation Targets		
a) Staff allocated to Project Management 12/94 - 47 12/99 - 16	a) 12/98 (actual) - 45	a) 12/99 - 41*
b) Staff allocated to Project Supervision 12/94 - 10 12/99 - 29	b) 12/98 (actual) - 105	b) 12/99 - 109*

* Staff reduction, as originally planned, did not take place. Existing trained staff were retained for the proposed second phase of the NTP which had been scheduled to start in Jan. 2000. Following the privatization, JTC is carrying out an overall restructuring and staff will be reallocated accordingly.

Output Indicators:

Indicator/Matrix	Projected in last PSR	Actual/Latest Estimate
3. Quality of Service Targets		
a) No. of faults per line / per year 12/94 - 0.8 12/99 - 0.4	a) 12/99 - 0.6	a) 12/99 - 0.4
b) Percentage of successful calls 12/94 - 40 12/99 - 65	b) 12/99 - 40	b) 12/99 - 43.7
c) Percentage of faults cleared the next working day 12/94 - 50 12/99 - 90	c) 12/99 - 80	c) 12/99 - 76

End of project

Annex 2. Project Costs and Financing

Project Cost by Component (in US\$ million equivalent)

Project Cost By Component	Appraisal Estimate US\$ million	Actual/Latest Estimate US\$ million	Percentage of Appraisal
Switching	50.02	41.14	82
Transmission	32.60	29.90	92
Line Plant (materials & works)	73.70	69.63	94
Cables	30.03	31.56	105
Poles	6.53	4.24	65
Customer Services Improvement Plan*	6.78	0.00	0
Buildings	12.76	19.60	153
Consultants	10.20	4.49	44
Total Baseline Cost	222.62	282.84	
Total Project Costs	222.62	282.84	
Total Financing Required	222.62	282.84	

* This component was dropped from the project

Project Costs by Procurement Arrangements (Appraisal Estimate) (US\$ million equivalent)

Expenditure Category	Procurement Method¹			N.B.F.	Total Cost
	ICB	NCB	Other²		
1. Works	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	79.71 (0.00)	79.71 (0.00)
2. Goods	20.49 (19.40)	0.00 (0.00)	0.00 (0.00)	111.62 (0.00)	132.11 (19.40)
3. Services	0.00 (0.00)	0.00 (0.00)	0.60 (0.60)	10.20 (0.00)	10.80 (0.60)
Total	20.49 (19.40)	0.00 (0.00)	0.60 (0.60)	201.53 (0.00)	222.62 (20.00)

Project Costs by Procurement Arrangements (Actual/Latest Estimate) (US\$ million equivalent)

Expenditure Category	ICB	Procurement Method ¹		N.B.F.	Total Cost
		NCB	Other ²		
1. Works	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	89.24 (0.00)	89.24 (0.00)
2. Goods	35.80 (15.30)	0.00 (0.00)	0.00 (0.00)	71.04 (0.00)	106.84 (15.30)
3. Services	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	4.49 (0.00)	4.49 (0.00)
Total	35.80 (15.30)	0.00 (0.00)	0.00 (0.00)	164.77 (0.00)	200.57 (15.30)

^{1/} Figures in parenthesis are the amounts to be financed by the Bank Loan. All costs include contingencies.

^{2/} Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

Project Financing by Component (in US\$ million equivalent)

	Appraisal Estimate			Actual/Latest Estimate			Percentage of Appraisal		
	Bank	Govt.	CoF.	Bank	Govt.	CoF.	Bank	Govt.	CoF.
Switching			50.01			41.14	0.0	0.0	82.3
Transmission		32.60			29.90		0.0	91.7	0.0
Line Plant (materials & works)		36.41	37.32		13.83	55.80	0.0	38.0	149.5
Cables	14.30	3.30	12.40	14.30	4.93	12.33	100.0	149.4	99.4
Poles		2.93	3.60		0.57	3.67	0.0	19.5	101.9
Customer Services Improvement Plan	5.70		1.09				0.0	0.0	0.0
Buildings		12.76			19.60		0.0	153.6	0.0
Consultants		2.00	8.20		2.42	2.07	0.0	121.0	25.2

Annex 3: Economic Costs and Benefits

Tables with the calculations for the ERR and FRR (as noted in section 4.4) can be found in the project file.

Financial Indicators

amounts are in Jordanian Dollars

	1995	1996	1997	1998	1999
Property Plant and Equipment	133,164,863	139,363,809	156,442,053	276,975,536	300,920,930
Investments	8,572,327	7,924,685	3,181,227	2,649,944	13,263,944
Projects In Progress*	41,750,662	67,254,813	83,706,346	-	-
Deferred Charges	958,351	1,787,319	1,450,391	1,113,463	776,536
Current Assets					
Cash on hand and at banks	42,041,777	42,286,478	25,778,320	36,150,496	35,977,706
A/R, and prepayments	37,073,518	33,553,096	32,313,124	42,408,025	48,411,790
Amounts due from other telecom. admin.	33,868,732	30,154,589	21,981,609	19,494,183	14,364,836
Current Account, Gov. of Jordan	-	-	14,111,905	19,248,006	-
Materials and supplies, net	11,117,149	18,556,054	17,243,745	12,284,920	11,454,940
TOTAL CURRENT ASSETS	124,101,176	124,550,217	111,428,703	129,585,630	110,209,272
TOTAL ASSETS	308,647,379	340,880,843	356,208,720	410,324,573	425,170,682
Current Liabilities					
Current portion of term loan	-	-	-	605,169	2,308,621
A/P and other credit balances	11,795,772	25,189,138	27,720,668	36,417,342	38,507,108
Amounts due to other telecom. admin.	5,844,519	2,441,293	2,855,397	6,415,876	7,706,949
TOTAL CURRENT LIABILITIES	17,640,291	27,610,431	30,576,065	43,438,387	48,522,678
NET CURRENT ASSETS	106,460,885	96,939,786	80,852,638	86,147,243	61,686,594
TOTAL ASSETS LESS CURRENT LIABILITIES	290,907,088	313,270,412	325,632,655	366,886,186	376,648,004
Non Current Liabilities					
Term Loans	727,242	15,038,631	27,515,359	47,482,551	45,765,262
Bonds	35,450,000	35,500,000	35,500,000	35,500,000	35,500,000
TOTAL NON CURRENT LIABILITIES	36,177,242	50,538,631	63,015,369	82,982,551	81,265,262
Shareholder's Equity					
Capital	250,154,242	223,955,787	250,000,000	250,000,000	250,000,000
Statutory (Legal) Reserve	-	-	11,117,210	20,389,969	30,648,528
Voluntary Reserve	-	-	-	12,132,963	13,341,856
Land and buildings revaluation surplus	-	34,848,032	-	-	-
Investments revaluation surplus	4,575,604	3,927,962	1,500,086	1,380,730	1,392,358
TOTAL SHAREHOLDER'S EQUITY	254,729,846	262,731,781	262,617,296	283,903,662	295,382,742
TOTAL SHAREHOLDER'S EQUITY & NON CURRENT LIABILITIES	290,907,088	313,270,412	325,632,655	366,886,213	376,648,004
TOTAL REVENUES	155,992,402	172,646,298	169,252,743	186,654,255	193,004,768
TOTAL EXPENSES	45,316,076	50,333,366	64,267,686	76,243,948	75,345,287
GROSS MARGIN	110,676,326	122,312,932	104,985,057	110,410,307	117,659,481
OTHER INCOME	4,968,514	6,769,435	8,303,296	4,064,194	7,376,725
FINANCIAL (DEBT) CHARGES	5,127,791	2,558,776	2,116,253	3,081,481	3,160,137
TOTAL INCOME	110,517,049	126,523,591	111,172,100	111,393,020	121,886,069
Other Expenses					
Exclusivity Fees	-	-	-	18,665,425	19,300,477
University additional fees	-	-	1,111,721	927,275	1,025,856
Scientific research and vocational reserve	-	-	1,111,721	927,275	1,025,856
Income Tax	-	-	29,745,408	26,269,754	27,442,021
Amortization of capitalized foreign currency differences	29,347,994	-	-	-	-
TOTAL OTHER EXPENSES	29,347,994	-	31,968,850	46,789,729	48,794,210
NET INCOME BEFORE DISCONTINUED OPERATION & EXTRAORDINARY LOSS	81,169,055	126,523,591	79,203,250	64,603,291	73,091,859
Revenue from disposal of mobile phone service, net	12,234,065	-	-	-	-
Extraordinary loss, net	-	52,785,013	-	-	-
NET INCOME	93,403,120	73,738,578	79,203,250	64,603,291	73,091,859

* Projects in Progress was accounted for as part of Property Plant and Equipment in the audited financial statements for 1998 and 1999.

Note : GOJ instituted a 10% Exclusivity Fee as of January 1, 1998.

Annex 4. Bank Inputs

(a) Missions:

Stage of Project Cycle	No. of Persons and Specialty (e.g. 2 Economists, 1 FMS, etc.)		Performance Rating		
	Month/Year	Count	Specialty	Implementation Progress	Development Objective
Identification/Preparation	June 1993	4	1 fin. analyst, 2 telecom engineer, 1 financial officer*		
	October 1993	4	1 fin. analyst, 2 telecom engineer, 1 financial officer*		
Appraisal/Negotiation	January 1994	7	2 fin. analyst, 3 telecom engineer, 1 financial officer*, 1 Informatics Specialist		
	May 1994	2	1 fin. analyst, 1 financial officer*		
	October 1994		1 fin. analyst, 1 financial officer*		
Supervision	April 1995	2	1 fin. analyst, 1 telecom engineer	S	HS
	July 1995	2	1 fin. analyst, 1 telecom engineer	S	HS
	Dec. 1995	2	1 fin. analyst, 1 telecom engineer	S	HS
	July 1996	2	1 fin. analyst, 1 telecom engineer	S	S
	March 1997	2	1 fin. analyst, 1 information mgt.	HS	S
	Sept. 1997	1	1 fin. analyst	S	S
	May 1998	2	1 fin. analyst, 1 telecom engineer	S	HS
	Dec. 1998	2	1 fin analyst, 1 telecom engineer	S	S
	June 1999	1	1 telecom engineer	S	S
ICR	Dec. 1999	2	1 telecom engineer, 1 projects assist.	S	HS

* A Financial Officer from the Project Finance and Guarantees Department participated in preparation missions specifically to deal with JTC's Bond issue.

(b) Staff:

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US\$ (,000)
Identification/Preparation	86	239
Appraisal/Negotiation	41	131
Supervision	173	596
ICR		
Total	300	966

The SAP system combines the data for ICR with Supervision

Annex 5. Ratings for Achievement of Objectives/Outputs of Components

(H=High, SU=Substantial, M=Modest, N=Negligible, NA=Not Applicable)

	<i>Rating</i>				
<input checked="" type="checkbox"/> <i>Macro policies</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Sector Policies</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Physical</i>	<input checked="" type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Financial</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Institutional Development</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Environmental</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input checked="" type="radio"/> NA

Social

<input checked="" type="checkbox"/> <i>Poverty Reduction</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input checked="" type="radio"/> NA
<input checked="" type="checkbox"/> <i>Gender</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input checked="" type="radio"/> NA
<input type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Private sector development</i>	<input checked="" type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input checked="" type="checkbox"/> <i>Public sector management</i>	<input type="radio"/> H	<input checked="" type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA
<input type="checkbox"/> <i>Other (Please specify)</i>	<input type="radio"/> H	<input type="radio"/> SU	<input type="radio"/> M	<input type="radio"/> N	<input type="radio"/> NA

Annex 6. Ratings of Bank and Borrower Performance

(HS=Highly Satisfactory, S=Satisfactory, U=Unsatisfactory, HU=Highly Unsatisfactory)

6.1 Bank performance

Rating

Lending

HS S U HU

Supervision

HS S U HU

Overall

HS S U HU

6.2 Borrower performance

Rating

Preparation

HS S U HU

Government implementation performance

HS S U HU

Implementation agency performance

HS S U HU

Overall

HS S U HU

Annex 7. List of Supporting Documents

- All Back-to-Office Reports and Aide Memoires
- PSRs
- JTC's Quarterly Progress Implementation Reports
- Staff Appraisal Report (SAR)
- Memorandum and Recommendation of the President (MOP)
- JTC Planning Department Report on Telecommunications Indicators (1998)
- JTC Evaluation Report (December 1999)
- JTC Audited Financial Statements 1995 - 1999

Annex 8. Partner Comments

JORDAN TELECOM NATIONAL TELECOMMUNICATION PROGRAM (NTP) FINAL REPORT December 1999

Summary

JORDAN TELECOM – NATIONAL TELECOMMUNICATION PROGRAM

During the period 1995 to 1999 Jordan has undertaken substantial new developments within the Telecommunications sector. The introduction of the new Telecommunications Law has: (i) promoted competition and private provision of services, (ii) facilitated establishment of the Telecommunications Regulatory Commission to ensure fair play, (iii) transformed the Telecommunications Corporation into a commercial company – Jordan Telecom, and (iv) ensured commencement of the strategic partnership and privatization process within JTC. The National Telecommunication Program has been implemented simultaneously and in harmony with these changes

The objective of the Program is to enhance service quality, expand network capacity and increase coverage. These objectives have been achieved through a substantial increase in infrastructure volume; in terms of switching and local line plant capacity the figure for 1994 was 320,000, in comparison the 1999 figure is 840,000. The number of users and connections has almost doubled from 287,000 installed lines in 1993, to 565,000 lines in December 1999.

Financing of the NTP was secured at an early stage through loans, grants and internal JTC budgetary commitments. The total investment in the NTP to date amounts to 200 million USD and covers the construction of buildings, the procurement and installation of switching equipment, associated power and transmission systems and outside plant civil works and LLP material. Jordan Telecom has internally financed a quarter of the total investment from operating revenue.

Service coverage has been extended to within the reach of 98% of the population of Jordan; in rural areas the manual service has been replaced by remote digital line units and as a result of exchange modernization new value-added services have been introduced.

The dedication of the **Program Management Office** and its staff has ensured adherence to contractual agreements and financial commitments, the NTP implementation phase has been efficiently supervised. The selection of a single supplier/contractor resulted in a simplification of coordination activities and scheduling of works. The direct involvement of several local partners in a joint venture with the main LLP contractor gave varied results. Management of both Employer and Contractor work forces must be strong and clear to ensure quality in performance and compliance with agreed standards.

The **“on-going works”** are carried out internally by JTC for network expansion in specific target areas. Four major sub-projects with a total capacity of 139,000 lines have been implemented at a total cost of 54 million USD

Further expansion through variation and continuation of work by existing suppliers is awaiting the outcome of the strategic partnership issue; expectations are that this will be concluded positively in the very near future.

The purpose of the detailed report that follows is to accurately record the latest statistics and financial figures, compare objectives with achievements and present an overall picture of implementation progress in a format acceptable to finance institutions, donors and directly concerned entities.

Background

0.1 Introduction

Preparation for the National Telecommunication Program (NTP) commenced in early 1994. A decision was taken by the Government of Jordan to expand the existing network in light of the increased demand. A World Bank appraisal mission identified the main elements of the proposed project and subsequently a WB loan, and an Expanded Co-financing Operation (ECO), was approved. WB Report No. 12788-JO Other financial institutions were approached and suitable loans and grants were negotiated to cover in all 50% of the total program cost (Heading 4)

The target period for project implementation was from 1995 to 1998. The planning and the tender documentation were prepared by TCC and released for international bidding in 1994. The NTP was divided into four disciplines, Transmission, Switching, Local Line Plant, and Buildings, with specific terms of reference for materials and services for each one. The switching contract included power systems, fire control and air treatment equipment. Supply contracts for cable and wooden poles were issued separately.

Evaluation, negotiation and award of contracts were undertaken internally, within the then TCC, in accordance with acknowledged international procurement procedures.

In mid-1995 a Program Management Office was appointed to oversee all undertakings relating to the physical implementation of the NTP, the PMO mandate extends until the final resolution of all technical and financial matters.

1 NTP Objectives

1.1 Enhance Service Quality

Achieved through:

- The introduction of new value-added services, i.e. CLIP & ISDN.
- Decentralization and increase in the number of Customer Service reception points through the addition of administrative office facilities to 26 new main exchange buildings.
- Emphasis on adherence to agreed technical specifications and work methods in the field during implementation.

1.2 Expand Network Capacity

From WB report, page 15, para. 66, The physical component will:

- *Increase infrastructure capacity from 320,000 to 600,000*
NTP contribution + 384,000
On-going works + 139,000
Infrastructure capacity increased from 320,000 to 840,000
- *By 1999 the number of subscribers expected to be between 520,000 – 540,000*
JTC achievement: 565,000 subscribers (December 1999)
- **NTP as-built quantities**
Direct exchange lines: 384,022 (annex 8.3)
Main cable pairs: 536,235 (1999-12-31)
Distribution pairs: 868,475 (1999-12-31)

1.3 Increase Geographical Coverage

The main areas covered by the NTP are Greater Amman, Central Region and North Region, in addition on-going works aim to further increase coverage across the Kingdom.

Greater Amman:
Serving 13 new primary areas and 23 new villages

Central Region (Balqa, Madaba and Zarqa Governorates)
Serving 7 new primary areas and 146 new villages

North Region (Ajloun, Irbid and Jarash Governorates)
Serving 5 new primary areas and 187 new villages

(Maps are attached for reference in the Appendix.)

2 Performance Indicators

2.1 WB Appraisal Report 1994, table 4.5

	1994	1995	1996	1997	1998	1999
<u>Production Targets</u>						
1) Increase in Exchange Capacity	13,000	40,000	80,000	74,000	64,000	
2) Nr. of new subscribers connected	10,000	20,000	40,000	50,000	50,000	60,000
<u>Quality of Service Targets</u>						
3) Nr. Of Faults per Line per Year	0.8	0.7	0.7	0.6	0.5	0.4
4) % of Faults cleared the next working day	50	50	60	70	80	90
5) Percentage of Successful Calls	40	45	50	55	60	65
<u>Implementation Targets</u>						
6) Staff allocated to Project Management	47	50	51	21	16	16
7) Staff allocated to Project Supervision	10	37	50	54	35	29

2.2 JTC/NTP Achievements

	1994	1995	1996	1997	1998	1999
<u>Production Figures</u>						
1) Increase in Exchange Capacity *)	2,236	17,930	73,364	175,166	187,017	41,370
2) Nr. of new subscribers connected	21,819	11,732	28,004	59,127	104,262	87,711
<u>Quality of Service Figures</u>						
3) Nr. Of Faults per Line per Year				0.75	0.58	0.41
4) % of Faults cleared the next working day				52	67	76
5) Percentage of Successful Calls	50.2	49.5	48.2	48.2	49.2	43.7%
<u>Implementation Figures</u>						
6) Staff allocated to Project Management		20	33	48	50	41
7) Staff allocated to Project Supervision			131	138	107	109 **)

*) The increase in exchange capacity is the combined result of the NTP and on-going works.

**). PMO and O&M staff continue to be engaged in cut-over & FAC activities

3 Financing

3.1 Program Financial Plan (1995)

External

Source	Amount '000 USD	Purpose	Current status (31 Dec. 99)
World Bank	20,000	Copper and fibre optic cable and cable accessories.	Effective June 1995 15.7 m US\$ utilised
ECO	48,500	Switching equipment.	12,7 million US\$ of the Bond proceeds are available with the Central Bank of Jordan
EIB 1	25,340	LLP Accessories, LLP Installation works, Submarine Cables, Technical Assistance	Effective March 1996, fully utilised
EIB 2	31,660	LLP Accessories, LLP Installation Works.	Effective March 1996, fully utilised
JBIC (Japan)	16,000	Copper cables (Contract 1). Poles	Effective March 1996, fully utilised
Sida (Sweden)	2,200	TA, Phase 1 TA, Phase 2 TA, Phase 3	Finalised 1996-12-31 (1,459) Finalised 1998-12-31 (636) Reallocation of funds from Phase 2
ODA UK	7,852	Sector restructuring	Finalised
Islamic bank	8,840	Switching, Transmission and LLP for Aqaba Governorate.	Effective October 1996 1,2 million US\$ utilised
Subtotal	160,392		

Internal

TCC/JTC	20,000 30,000 25,000 6,000 1,000 55,000	- Buildings - Transmission - LLP - Materials - Technical Assistance - On-going works.	(Amendment II)
Subtotal	137,000		
Grand total	289,540		

Note 1: 5.7 mUSD of the WB loan was initially allocated for a MIS. The WB has agreed to a reallocation for procurement of fibre optical cables and LLP installation accessories.

Note 2: The following loans are in denominations other than US\$:

EIB 1 20 million ECU
EIB 2 25 million ECU
JBIC Yen equivalent to 16 MUSD.

Note 3: The amount allocated by Sida is a bilateral grant for services provided by Telia Swedtel AB

Note 4: ODA (Overseas Development Authority), UK grant to Jordan for services provided by Price Waterhouse

4 NTP & on-going works costs

NTP Schedule of Costs per Discipline

Conversion rates: 1 DM = 0.465JD & 1 USD = 0.71JD & 1 USD = 7.57SEK

	As Contracted + VO's			As Built			NTP%
	JD	DM	'000\$	JD	DM	'000\$	
Switching (Annex 8.2)	979,438	65,183,893	44,070	952,715	60,767,377	41,140	20.5%
Transmission (Annex 8.4)	4,800,000	33,000,000	28,373	7,575,603	29,356,324	29,896	14.9%
LLP (Annex 8.5)	47,235,599	13,818,798	80,348	40,343,944	12,810,725	69,633	34.7%
Cables (Annex 8.7)	247,457	30,274,919	30,623	192,258	31,289,774	31,561	15.7%
Poles (Annex 8.7)	406,926	3,671,452	4,245	406,926	3,670,634	4,244	2.1%
Consultants							
RSS (JT)	892,646		1,257	878,213		1,237	
Telia Swedte (BITS + Sida) (JT)	316,992	16,656,429 5,908,740	2,200 1,227	305,971	15,723,962 5,654,670	2,077 1,178	
Total Consultants						4,492	2.2%
Buildings Main Exchange & RLU				13,919,114		19,604	9.8%
NTP SUBTOTAL						200,570	
JT on-going works (NICS1, NISC2, Mafrag, Tla' Al All)							
Switching				18,563,000		26,145	
Local Line Plant				10,425,000		14,683	
Transmission				4,759,000		6,703	
Cables & Poles				2,000,000		2,817	
Buildings				2,760,000		3,887	
Subtotal on-going works				38,507,000		54,235	
TOTAL						254,805	

5 Physical Results

5.1 Buildings

The building project for the National Development Programme started in 1995, one year in advance of system implementation. All NTP related buildings were completed by March 1999.

In total 128 new buildings have been constructed, 26 of these are main-exchange buildings for combined technical and administrative use with a floor area of approximately 1100 m², and in addition four existing primary centre buildings were enlarged. The remaining 98 buildings have approximately 108 m² of floor space and are mainly used to accommodate the remote exchanges, power and transmission equipment. One main exchange and 17 RLU buildings will be used in future network expansion.

Building type	No.	Average cost per unit in JD	Equivalent in USD
Primary exchange	26	312,000	440,000
Extensions (one floor)	4	72,000	101,000
RLU exchange	98	56,000	79,000
Units per region			
Greater Amman = 19	Central Region = 39	North Region = 48	South Region = 22

The total cost of the building construction project was 13,919,114 JD, equivalent to 19.6 million USD, this includes building permits and the connection of utilities, but excludes land acquisition costs.

5.2 Switching

The contract for the supply and installation of digital switching equipment for 22 primary centres and 81 remote switches was awarded to Siemens AG of Germany. The initial contracted switching capacity was for 300,304 Direct Exchange Lines (DEL'S). During implementation a further 76,968 DEL's, 3 main exchanges and 1 RLU, were added through 4 variation orders. An additional 4 variation orders included ISDN facilities and other hardware items. The Aqaba project has added a further 6,750 lines bringing the NTP total to 384,022.

Stand-by diesel generators were installed at 95 sites together with power plant (rectifiers and batteries) at 119 sites. Fire fighting/fire alarm and air treatment systems were installed at 94 and 100 sites respectively. Power equipment for some transmission sites is included in these figures as well as sites where existing power plant has been upgraded under the NTP.

The installation work was completed in accordance with the implementation time schedule and a final settlement for the switching contract has been agreed upon. The total as-built value for the completed switching works is equivalent to 41 million US\$. A breakdown of costs and quantities is included under Annex 8.2 & 8.3.

5.3 Transmission

The contract for the supply and installation of transmission equipment was awarded to Siemens AG of Germany. The contract includes the following:

1. PDH equipment for 128 sites.
2. SDH equipment for 49 sites.
3. Microwave equipment and towers for 26 sites.
4. 1400 km fibre optic cables, plus duct and direct buried copper cables.
5. Two network management centres.
6. Civil works for duct and excavation for direct buried cables.

The scheduled completion period was 750 calendar days, subsequently a further 151 days were allowed for specific works and delays and a final settlement has been concluded between the Employer and the Contractor. The agreed as-built cost of the transmission project is equivalent to 30 million US\$. A breakdown of equipment costs and services is included under Annex 8.4.

5.4 Local Line Plant

The contract for local line plant civil works and accessories was awarded to Siemens and Partners – Jordan, the initial implementation period was 36 months.

The bidding document was released to bidders in early 1995 with a bill of quantity (BQ) based on estimates from only 20% of the network design sites completed at that time. The final design BQ was received from JTC Planning Department on March 31, 1998, and by then the estimated quantities were far in excess of the contracted quantities. JTC was therefore obliged to initiate two variation orders to overcome the quantity increase as a consequence of the increase in the contracted switching capacity and the extended coverage to remote areas. A 12-month time extension was agreed upon with the Contractor for the completion of the work.

During the implementation of the LLP project a further increase in the as-built quantities of between 10% and 20% has caused JTC to transfer some 30 RLU sites to a "Buffer Zone", as a temporary measure. These sites will be implemented during the next phase of network expansion.

The project was divided into work-packages (WP) per exchange area and each WP subdivided into a number of jobs. Performance Certificates were issued upon completion of jobs and Preliminary Acceptance Certificates awarded per WP upon successful completion of acceptance tests.

At the time of preparation of this draft report (November 1999) 130 work packages have been completed together with 1938 jobs; 39 work packages and 220 jobs remain in progress. As of November 30th 1999 the as-built cost of the LLP works is equivalent to 68 million US\$

A breakdown of site costs and overall material usage is included under Annex 8.5.

5.5 JTC on-going works

The urgent relief projects were implemented by TCC/JTC to accommodate the demand in the rural areas by increasing the exchange capacity, modernizing the existing service from manual to automatic and by adding a new National & International Switching Centre (NISC).

Mafraq Governorate (several projects)

Works started in 1994, the main components are:

Buildings	The construction of one primary center and 24 RLU's .
Transmission	Delivery and implementation of transmission fiber optical cable routes between the primary center and the 24 RLU's
Switching	Delivery and installation of one primary switching center and 24 RLU's, total capacity of 20,000 lines.
Local Line Plant	The material for the LLP was supplied by TCC/JTC and implemented by local contractors.

NISC

Due to high national and international traffic TCC/JTC contracted Siemens for the delivery and installation of a second gate way and also to replace the existing one. NISC One has a capacity of 379 PCM systems and NISC Two 356 PCM systems.

Upgrade existing E10B switches

The upgrade of the existing switches at Ashrafiyyeh, Zarqa and Irbid, plus a new exchange at Sweileh (in total 71,000 lines) was implemented by CIT Alcatel through the French Protocol.

Tla al Ali Project

The Tla Al Ali project consists of:

Buildings	The Construction of a Main Center for NISC, local switch and customer
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	service in addition to 3 RLU'S
Transmission	Delivery and installation of the required transmission routes.
Switching	Delivery and installation a primary center and three RLU'S of a total capacity 34,000 lines.
LLP	Delivery of installation material, cables, poles and accessories and implementation of the civil work.

Ma'an Governorate Project

The Ma'an project consists of:

Buildings	The addition of one floor to the existing building and the construction of 3 new RLU buildings.
Transmission	Delivery and installation of the transmission equipment for the primary centre and the three RLU's.
Switching	Delivery and installation of one primary centre and three RLU's with a total capacity of 13,440 lines.
LLP	All the installation material was supplied by TCC/JTC, a local contractor implemented the civil work.

6 Conclusions and Recommendations

6.1 Program Management Office

An important corner stone of the Program was the establishment of a dedicated Program Management Office (PMO) in mid-1995. The PMO mandate was clearly defined and authority given to co-ordinate all NTP related activities. Responsibility was delegated to the levels where decisions were taken, both in the office and in the field. An early commitment to quality in both management and operations, through the introduction and adherence to agreed processes and formats, has given positive results.

Together with competent and motivated staff the PMO has ensured relatively problem-free procurement and implementation phases in relation to the size of the investment and the complexity of the Program. In particular the attachment to the PMO of a Finance Department for Development has contributed positively to the transparent and effective handling of all Program related financial matters.

There has been some turnover in recently trained and experienced NTP staff with their departure to other telecommunications entities in the Gulf States. While this may be beneficial to the individual and in the medium-term interest of Jordan, for JTC and the NTP it is a negative factor. Due to the current downsizing of NTP staff numbers this does not appear to be of immediate concern, however in the long-term JTC should ensure that its investment in human resources benefits both staff and employer.

6.2 Privatization and Strategic Partnership

The approaching (for the past 12 months) merger of JTC in a 60/40 partnership with an alternative telecommunications operator has caused some disturbance to the decision process within JTC upon which the NTP is dependent. For the NTP the clock is still ticking; material has to be purchased, further network expansion has to be taken into account, staff need to be gainfully employed, contractors, if they are delayed, expect to be compensated, etc. It is in the interest of both JTC and any new partner that the NTP continues uninterrupted to its logical and scheduled conclusion.

6.3 Procurement Process - JTC

The bid evaluation process was time consuming; on average it took 4 - 6 months. Some methods for pre-qualification of bidders should be considered together with realistic time frames for evaluation deliberations. Terms of reference and evaluation criteria need to be made clear to all.

JTC technical specifications require modernizing to take into account new technologies, services and developments in the telecommunications sector. The commercial conditions and procurement policy should reflect the new company's independence from previous purchasing constraints.

6.4 Procurement Process – Financiers

The rules and procedures applied by financial institutions, such as the World Bank, are considered complicated by the end user. Restraints in the utilization of allocated funds can cause the borrower (telecom operator) delay in purchasing additional or alternative goods under current loan agreements. Some flexibility should be allowed to ensure that the telco could make adjustments within an agreed framework, to take into account changes in requirements due to market or technological developments. Thus the financiers time-consuming procedures for verification and approval of changes could be streamlined.

6.5 LLP Network Design

The initial LLP design could have been more accurate; inconsistencies were mainly due to an increase in the initial exchange quantities from 220000 to 377000 lines. This in turn increased substantially the total volume of survey work and its geographic disbursement. Other factors that negatively affected the results were time constraints, a lack of design tools and methods, insufficient control and supervision of staff and the scarcity of accurate municipality maps.

More in-house training is needed for new staff before deploying them in the field. The experienced LLP designers must be given higher status. Modern tools, such as computers and quantity/design programs, must be made available.

6.6 Variations

Variations to all technical disciplines have occurred partly because insufficient time was allocated for overall planning before inviting tenders and negotiating contracts, and because the initial design was made before all priorities and changes could be taken into account. Delays in the decision process and external influences have also contributed.

Variations and changes in priority are likely to cause disturbance and disruption to a contractors sequential work schedule, and may cause delays. Where variations are considered unavoidable, or even advantageous, they must be clearly documented, priced and acknowledged by all parties.

6.7 Purchasing and Delivery

In the continuous development and expansion of a telecom network, fundamental items such as cables and poles are constantly required. While appreciating some financial benefits of "just-in-time" procurement, the "a-little-too-late" supply of basic items can cause unnecessary delay in field implementation.

In light of the knowledge gained of suppliers performance and the quality of goods supplied to the NTP, Jordan Telecom should be able to select a number of proven suppliers of standard items and negotiate regular delivery arrangements at competitive prices. Less complicated procurement procedures should reduce the need for frequent international tenders, the production of which can be both time-consuming and costly.

6.8 Further Network Expansion

Repeated 5-year major network expansion programs tend to produce "staircase" development, e.g. intense activity over relatively short periods followed by "wait-and-see" periods. Continuous linear network development, based on market forecasts, would result in smooth growth without over-straining JTC's financial and human resources.

Utilization of the knowledge and experience of the PMO staff and its organization in major network development should be continued, possibly through closer integration with the line organization of JTC i.e. the Planning and Development Division.

The current NTP network expansion will probably be fully utilized within the first two years of the new millennium. To meet the competition from a second fixed service operator JTC must plan for continued network expansion to accommodate for market driven developments in the form of IP-based technology and services.

7 Annexes

7.1 Extract from World Bank Appraisal Report, May 1994

From WB Appraisal Report Page 16

Table 4.1
Estimated Investment Program and Project Costs

1JD = 1.43USD		JD '000'			USD '000'		
Item	Local	Foreign	Total	Local	Foreign	Total	
I. On-going Works	<u>14,400</u>	<u>43,350</u>	<u>57,750</u>	<u>20,572</u>	<u>63,421</u>	<u>84,013</u>	
II. Project							
Switching	1,800	28,811	30,611	2,574	41,200	43,774	
Transmission	2,900	16,986	19,886	4,147	24,290	28,437	
Line Plant	39,129	30,490	69,619	55,954	43,601	99,555	
Buildings	7,826	0	7,826	11,191	0	11,191	
Base Cost	<u>51,655</u>	<u>76,287</u>	<u>127,942</u>	<u>73,866</u>	<u>109,091</u>	<u>182,957</u>	
Physical Contingencies	5,166	3,814	8,980	7,387	5,455	12,842	
Price Contingencies	5,928	5,690	11,618	8,477	8,137	16,614	
Subtotal	<u>11,094</u>	<u>9,504</u>	<u>20,598</u>	<u>15,864</u>	<u>13,592</u>	<u>29,456</u>	
Technical Assistance (Grants)							
- engineering	0	2,937	2,937	0	4,200	4,200	
- sector restructuring	0	4,196	4,196	0	6,000	6,000	
Subtotal		<u>7,133</u>	<u>7,133</u>		<u>10,200</u>	<u>10,200</u>	
Total Project Cost	<u>62,749</u>	<u>92,924</u>	<u>155,673</u>	<u>89,730</u>	<u>132,883</u>	<u>222,613</u>	
III. Total Investment Plan (I + II)	<u>77,149</u>	<u>136,274</u>	<u>213,423</u>	<u>110,302</u>	<u>196,304</u>	<u>306,626</u>	

7.2 Switching Costs

Conversion rates: 1 DM = 0.465 JD & 1 USD = 0.71 JD

Contract	Description	Quantity (DEL's)	Contract Sums		Total in USD	As-built Cost		Total in USD
			JD	DM		JD	DM	
71/95	Network expansion	300,304	915,890	49,837,312	33,929,916	915,890	46,981,884	32,059,811
	Contingency sum		1,470	959,641	630,568			
VO1	Abdali expansion	40,000	24,263	5,536,605	3,660,260	0	4,985,921	3,265,427
VO2	Queen Alia Int'l Airport	2,368	2,255	808,123	532,440	2,255	804,851	530,297
VO3	ISDN		0	1,816,356	1,189,585	0	1,816,356	1,189,585
VO4	Wadi Essier	33,000	4,150	3,816,871	2,505,627	4,150	3,816,871	2,505,627
VO5	Terminal blocks		0	250,960	164,361	0	250,960	164,361
VO6	Over-voltage protectors		0	73,100	47,875	0	73,100	47,875
VO7	Swaimah RLU	1,600	0	221,796	145,261	0	221,796	145,261
VO8	Equip. interface for QAIA		0	29,353	19,224	0	29,353	19,224
12/97	Aqaba	6,750	31,410	1,833,775	1,245,233	30,420	1,786,285	1,212,736
Totals		384,022	979,438	65,183,893	44,070,349	952,715	60,767,377	41,140,205

7.3 NTP Exchange quantities

Area	Parent Exchange		RDLU		Training	
	Number	Lines	Number	Lines	Number	Lines
Amman	13	221,464	8	6,256	1	32
Madaba	1	3,552	4	4,016		
Irbid	3	19,776	38	34,848		
Jarash	1	2,640	8	4,048		
Ajloan	1	2,512	6	5,616		
Salt	1	3,568	10	9,920		
Zarqa	5	53,120	7	5,904		
Aqaba	1	6,000	2	750		
Subtotals	26	312,632	84	71,358	1	32
Total Switching Lines		384,022				

Note: The Ain El-Basha site in the Salt Area is awaiting switching equipment.

7.4 Transmission Costs

Contr	Description	Contract Sums		Total in USD	As-built Cost		Total in USD
		JD	DM		JD	DM	
126/9	Transmission System	4,800,000	33,000,000	28,373,239	0	0	0
	Fibre Optic Equipment				0	7,839,274	5,134,172
	Services				134,266	30,103	208,822
	Transportation				35,446	0	49,924
	Transmission Equipment				0	17,377,126	11,380,794
	Services				452,495	2,086,620	2,003,906
	Civil Work Materials				139,680	716,932	666,272
	Services				3,520,914	718,945	5,429,892
	Transport				4,311	0	6,072
	Additional Training					393,109	257,459
	Variation Order 1				778,264	3,417	1,098,384
	Variation Order 2				4,931	66,839	50,720
	Variation Order 3				309	20,624	13,942
	Variation Order 5				0	103,335	67,677
	TR/LLP Common routes				2,504,987	0	3,528,151
Totals		4,800,000	33,000,000	28,373,239	7,575,603	29,356,324	29,896,188

7.5 LLP Costs

NTP LOCAL LINE PLANT PROJECT

Conversion rates: 1USD = 0.71JD

Contract	Description	Contract Sums		Total in USD	As-built Cost		Total in USD
		JD	USD		JD	USD	
115/95	LLP Works & Installations	19,653,161	7,012,615	34,693,123	19,653,161	7,012,615	34,693,123
	Amendment No. 1	11,578,343	4,446,928	20,754,453	11,578,343	4,446,928	20,754,453
	Amendment No. 2	16,004,095	2,359,255	24,900,234	9,112,440	1,351,182	14,185,605
	Reallocation for hardware	-923,761	1,459,998				
				0			0
Totals		46,311,838	15,278,796	80,347,811	40,343,944	12,810,725	69,633,181

Note: The as-built costs reflect financial payments up to the 31st of December 1999

7.6 Cable & Wooden Pole Costs

Conversion rates: 1USD = 0.71JD

Contr	CABLES	Contract Sums		Total in USD	As-built Cost		Total in USD
		JD	USD		JD	USD	
38/95	LG International	182,168	11,286,173	11,542,748			
V.O.1	LG International	36,177	3,901,736	3,952,690			
	LG International				163,187	15,976,493	16,206,334
77/95	Turk Siemens	13,785	3,882,935	3,902,350	13,765	3,890,688	3,910,075
78/95	METE/JR Internat	15,327	3,031,999	3,053,586	15,306	3,250,526	3,272,084
5/98	Taihan Electric		2,749,984	2,749,984		2,749,984	2,749,984
81/98	Taihan Electric		491,756	491,756		491,756	491,756
73/98	LG International		3,663,043	3,663,043			
V.O.1	LG International		1,267,293	1,267,293			
	LG International					4,930,327	4,930,327
Totals		247,457	30,274,919	30,623,450	192,258	31,289,774	31,560,560

Contr	POLES	Contract Sums		Total in USD	As-built Cost		Total in USD
		JD	USD		JD	USD	
23/96	Stella Jones	326,650	2,937,500	3,397,570	326,650	2,937,500	3,397,570
V.O.1	Stella Jones	80,276	733,952	847,017	80,276	733,134	846,199
Totals		406,926	3,671,452	4,244,587	406,926	3,670,634	4,243,769

7.7 Contract Milestones

7.7.1 Contract 71/95, Switching

Tender issued	1994-03-08	TCC 4/94
Agreement signed	1995-10-12	Contractor: Siemens AG
Effective date of contract	1995-12-01	L/C opened & advance payment paid
Completion period	24 months	97-12-01
Arrival of first equipment delivery	1996-06-17	
First PAC issued	1997-04-22	Nazal 5301
Last PAC issued	1999-09-25	Wadi Essier VO4
Variations	1 - 8	Completed

7.7.2 Contract 126/95, Transmission

Tender issued	1994-03-08	TCC 5/94
Agreement signed	1995-12-17	Contractor: Siemens AG

Advance payment paid	1996-01-23	
Effective date of contract	1996-05-13	L/C opened
Completion period	750 days	+ 151 days for agreed extensions
Arrival of first equipment delivery	1996-06-17	
First PAC issued	1998-01-05	
Last PAC issued	1999-06-07	
Variation	1 – 3	Completed 99-07-31
Variation	4/5	Pending

7.7.3 Contract 115/95, LLP Civil Works and Installation

Tender issued	94-10-18	TCC 48/94
Agreement signed	95-10-31	Contractor: Siemens & Partners
Advance payment paid	96-01-23	
Effective date of contract	96-01-15	L/C opened & advance payment paid
Completion period	By 99-12-31	
Arrival of first equipment delivery	96-05-14	Bill of lading date
First PAC issued	97-12-08	Nazal
Last PAC issued	Pending	
Variation 1	97-07-27	
Variation 2	98-09-16	

7.7.4 Material Contracts Cables

Contract 38/95	95-06-28	LG International
Variation 1 to 38/95	97-12-18	- " -
Contract 77/95	95-09-19	Turk Siemens
Contract 78/95	95-09-24	METE/JR International
Contract 5/98	98-05-10	Taihan Electric

Contract 81/98	98-09-14	Taihan Electric
Contract 73/98	98-11-10	LG International
Variation 1 to 73/98	99-03-06	- " -

Wooden Poles

Contract 23/96	96-05-29	Stella Jones
Variation 1 to 23/96	98-03-03	- " -

7.7.5 Contract 12/97, Aqaba Switch

Agreement signed	97-03-01	Contractor: Siemens AG
Effective date of contract	97-08-02	L/C opened & advance payment paid
Completion period	240 days	
Arrival of first equipment delivery		
First PAC issued	97-12-15	
Last PAC issued	98-09-09	