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INTERNATIONAL SEMINAR ON BUILD-OPERATE-TURNOVER (BOT) FOR PROJECT IMPLEMENTATION AND FINANCING

BANGKOK, THAILAND, 2-6 DECEMBER 1991

JOINTLY ORGANIZED BY
THE ASIAN AND PACIFIC CENTRE OF
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AND

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THE TECHNOLOGY TRANSFER CENTRE
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by Anton Sarbu, UNIDO Consultant

FOREWORD

The UNIDO Secretariat in cooperation with the Asian and Pacific Centre on Transfer of Technology (APCTT) jointly organized the Seminar on Build-Operate-Transfer (BOT) for Project Implementation and Financing from 2 - 6 December 1991 in Bangkok, Thailand. The seminar was hosted in Thailand by the Technology Transfer Centre of the Ministry of Science, Technology and Energy (MOSTE). Participants included some forty-eight government and private sector representatives from sixteen countries in the Asia and Pacific region namely, Bangladesh, Brunei Darussalam, China (People's Republic of), Fiji, India, Indonesia, Iran (Islamic Republic of), Korea (Republic of), Malaysia, Maldives, Myanmar, Norway, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam.

The Seminar had the objectives of increasing awareness among countries in the region on the concept of the BOT as an alternative scheme for implementing large infrastructural and industrial projects; exchanging information on various country experiences in this field; raising issues which governments need to be aware of when deciding whether or how to implement a BOT project and suggesting possible approaches to these issues. The issues ranged from policy matters of political, legal and administrative support for the development and implementation of BOT projects to the practical issues of preparing and structuring the financial and contractual package. Special attention was also devoted to the advantages of BOT as a tool for technology transfer and technology research and its potential for enhancing national competence.

For UNIDO, the Seminar and the follow-up programme that was expected to emanate from it, was of strategic importance as it reflects on UNIDO's commitment to give due attention to new and alternative forms of business arrangements which could be a source of development opportunities for developing countries.

From the seminar discussions, it was apparent that there is now an increasing utilization of the BOT scheme for implementing large projects in the Asian and Pacific region. BOT is an alternative arrangement which offers development opportunities for countries in implementing, financing and operating large infrastructural and industrial projects. Several advantages may be available to developing countries in the use of this scheme, among which are:

- it allows implementation of projects which may not otherwise have been implemented due to national budgetary constraints;

- it encourages greater private sector participation in economic endeavours;

- it allows the possibility of shifting the debt burden from government to private sector and a certain amount of project risk from the public to the private sector;

- it has good potential for promoting continuous transfer of technology and knowhow and in enhancing national competence.

BOT is, however, a complex scheme because of the many possible variations in the scheme itself and the web of financial and contractual arrangements involved. It therefore needs careful and thorough visualization of the entire project; the various actors and their interplay as well as their respective contributions and obligations; and the safeguards that should be in place to ensure that national interests are not compromised. Because the government is the ultimate client of a BOT project, the successful development and materialization of BOT projects depends to a large extent on the availability of strong government support. Such support should be able to achieve a balance between the need to maximize the advantages inherent in the BOT scheme and the need to safeguard national interests and should have the following essential elements: a declaration of policy of government support for the use of BOT; provision of a supporting administrative environment such as through the delegation of authority to specific government agency(ies) which can carry through the development and implementation of BOT projects; and making available the legislative authority for the promotion and development of projects using the BOT scheme.

BOT is a relatively new field for most developing countries. The exchange of experiences among the participants brought to light a number of issues and problem areas which countries have been faced with in developing, negotiating and implementing BOT projects, as follows:

- preparation and evaluation of BOT proposals;
- preparation and negotiation of the letter of intent;
- appropriate guarantees and securities which governments may make available to provide a reasonable level of comfort for project sponsors and lenders;
- proper calculation/formula for tariffs, pricing and revenue and appropriate concession periods taking into account reasonable rate of return and interests of consumers;
- effective allocation of risks between government, sponsors and lenders;
- developing proper safeguards as an avenue for technology transfer and implications on local industry and creation of national competence;
- framing and structuring of the contractual package.

The complexities of the contractual arrangements and the fact that BOT could be applicable to a range of sectors with varying characteristics and requirements necessitate a thorough consideration of these issues and problem areas.

The seminar confirmed the urgent need for assistance in this field ranging from awareness building to practical tools for assisting countries in developing, negotiating and implementing BOT projects, e.g., guidelines for BOT contracting to direct advisory service at the levels of policy formulation and project implementation. Preliminarily, the Seminar produced Suggested Elements of Legislation relating to BOTs; a Framework for a BOT Project Agreement; and a List of Problem Areas in Structuring the BOT Project, partly based on the experiences of countries represented at the Seminar. The relevant materials are appended to this document of the Seminar Proceedings which contains the country papers presented at the seminar. The Seminar itself and its conclusions are seen as starting point for future follow-up work which UNIDO is committed to pursue to respond to the needs of developing countries.

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THE BUILD-OPERATE-TRANSFER (BOT) CONCEPT.

AN OVERVIEW

by Ole Steen-Olsen Professor of Law,
Legal Advisor to the Parliament of Norway (AP)

I. The BOT-concept.

BOT stands for Build - Operate - Transfer. The BOT-concept has a number of variations. All involve, however, the establishment of a private sector project company as a vehicle for ownership, financing, construction, maintenance and operation of an infrastructure project for a certain period. Thereafter, ownership is usually transferred to the public sector.

During the operation period the Project Company will charge prices, tolls, fees etc. sufficient to pay back the project debt and to provide dividends to the shareholders of the Project Company. The financing is raised by the Project Company from commercial banks, sometimes backed by export credit agencies and by multilateral and bilateral lenders. The financing of BOT-projects are normally on "a project financing" or "non recourse" basis. The lenders are supposed to look at the cash flows and earnings of the Project Company as the only source of funds from which the loans will be repaid (and to the assets of the Project Company as collateral for the loans). Relatively few BOT-projects, however, are so completely self-supporting that they can be financed without any guarantees and safeguard undertakings by the interested parties including the Host Government. Normally the governments will not provide sovereign guarantees or borrow any money on behalf of the sponsors. But support from host governments may include assurance of minimum revenues, sharing of project risks, guarantees of the performance of government agencies involved in the project, etc.

II. The structure and phases of a BOT-project.

II.1. The BOT-contract package.

The structure of a typical BOT-project can be described through the building blocks of the BOT-contract package as shown in table 1.

The primary contract is the Project Agreement (Implementation Agreement - Concession Agreement). This is the contract between the Host Government and the Project Company. It entitles the Project Company to build and operate the project facility, and imposes a number of conditions as to design, construction, operation, maintenance, etc. of the project. It fixes the operation period, the payment for the usage of the facility, the way in which payment should be effected and so on. In short: The Project Agreement is the key contract of a BOT-project, and the contractual basis from which the other contracts are developed.

The subscription of the share capital and the contractual arrangements between the shareholders are contained in a Shareholders Agreement. The majority shareholders of the Project Company are normally the private project sponsors who in turn might be private construction companies, equipment suppliers, international trading

companies and the lenders. The participation of the Host Government as shareholder (equity investor) is not unusual in some countries and in some fields such as the petroleum industry.

The Construction Contract is normally a fixed price turnkey construction contract covering all the work. If the BOT infrastructure project involves large construction work and the supply of heavy machinery and equipment, the Project Company will negotiate the construction contract with a consortium of experienced building companies and equipment suppliers to assure the timely and proper completion of the project facilities. Effectiveness of the turnkey arrangement might be a condition precedent to lenders.

In case the Host Government or a government agency is the only customer of the infrastructure project, the Project Company will negotiate a separate Purchase Agreement with the government. The agreement provides the company with an assurance of a minimum purchase by the government and arranges the price structure - often on a take- or pay basis. That means that as long as the government pays the fees, the Project Company is assured of sufficient funds to service its debt, cover its projected costs and make a profit.

A fifth major contract of a BOT-project is the Credit Agreement between the Project Company and the lenders. There is an almost infinite number of conditions, type of loans and instruments used in BOT-financing.

The risk of non-repayment of the loans is usually covered in two ways. First by standard types of safeguards, such as fixed price turnkey contracts, providing for performance bond and liquidated damages, real estate mortgage, default clauses, assignment of insurance contracts etc. Secondly by safeguards specific to BOT-projects such as guarantees by governments for the performance of government agencies, agreements on contingency loan for a limited period, escrowing agreements and shareholders and sponsors support agreements. The loan security structure will be included in the Credit Agreement.

Normally the Project Company will enter into an Operating/Management Contract with a professional operating company. The Operating/Management Contract spells out operation specifications, maintenance standards, operating costs, incentives etc. for the operation period.

An adequate insurance program (insurance policies) must be arranged for both during the construction and operation of the project. The Project Company usually has little cushion to fall back on in the event of a casuality loss except for insurance proceeds.

The contractual framework of a BOT-project as outlined here, is of course not exhaustive. Escrow agreements, service agreements, energy supply agreements,

supplementary loan agreements etc., can also be part of the legal framework governing a BOT-infrastructure project.

II.2. The phases of a BOT-project.

The case of a railway project can illustrate the BOT-concept and its application. In the first phase a letter of intent is signed by the local railway authorities (agency) and a group of potential private sponsors, followed by a detailed feasibility study of the proposed railway project.

In the second phase a project company is established with the following shareholders:

A consortium of construction and equipment companies, some domestic and foreign commercial banks, IFC and The National Railway Agency.

In the third phase the Implementation Agreements between the Project Company and the Railway Agency is signed as the basis from which the other project agreements are developed and signed.

The fourth phase is raising of funds, where the lenders are banks and the borrower is the Project Company.

The construction of the railway is phase five.

Phase six covers the operation period when the railway is run by the Project Company or its operator, and when the company expects to have a return from the railway fares which covers its debts, operating costs and dividends to the shareholders.

Phase seven is the end of the operation period when the shares of the Project Company is transferred to the National Railway Agency, which continues the operation of the railway. Hence the term "Build-Operate-Transfer".

III. Fields of application. Recent developments.

The BOT-concept is not a new financial mechanism. Variations on the BOT-approach, often known as "concessions" have been in use for a long time in the industrial and mining sectors in Europe, especially in France, Germany and the Scandinavian countries.

In more recent time various models of project financing with BOT-characteristics have been applied to infrastructure projects as different as the large EURO-Channel Tunnel and Great Belt Tunnel projects in Europe, power plants in England, United States and on Greenland, and projects in the petroleum industry. The capital intensive and high risk North Sea projects on the Norwegian sector, have all been successfully financed,

built and operated by private sponsors, and are now in the process of being gradually transferred to a government agency. During the BOT-process, national technology and skill has been developed to a fairly high and competitive level.

From the early 1980's the BOT-concept has been introduced in a number of developing countries as an alternative way to finance infrastructure projects. Such projects include road projects, power plants, port facilities, telecommunications, industrial estates, water supply and treatment systems, airports, metro railway systems etc.

A pressing need for infrastructure facilities as a condition of economic growth in many developing countries, the third world debt crisis and the present trend to develop the private sector has been cited as reasons for the interest in the BOT-concept in some developing countries. However that may be, let us have a look at some of the advantages and constraints of the BOT-concept as a technique of financing infrastructure projects in the developing world.

IV. Some advantages of the BOT-concept. Problems and constraints.

IV.1. Advantages of the BOT-concept.

A developing country might adopt the BOT-concept with several objectives in mind. Among these are:

- It contributes to expedite the construction and improvement of much needed infrastructural facilities which otherwise would not have come onstream and whose absence or delay would constrain economic development. In other words: If a developing country is not able to finance its needed infrastructure on the basis of budgetary means or sovereign borrowings, or prefers to use its resources for other needs, such as health and education, the BOT-concept is an option to be considered. - It attracts foreign capital to the country, both equity and loan.

- Since the borrower is a private company, it shifts the debt burden from the government to the private sector - a key feature of the BOT-concept. Provided the loans are made without direct government guarantee, it therefore does not appear as a public sector debt.

- It provides credibility. The willingness of experienced private sponsor companies to finance, build and operate a project over a long period, might be seen as an indication of the project viability. Credit sources and credit terms may for this reason be available to BOT-projects which would not be available to public sector projects.

- Incentives for economic performance is another key feature of the BOT-approach. If properly structured the BOT-concept will provide some very strong incentives to have the project performed contractually or above its minimum expectations. This, of course, will benefit both the Project Company and the host country.

- The project risks are to a large extent shifted from the public sector to the private sector. In addition the close and more direct identification of risk-taking with economic reward and return, which is possible through private financing, will encourage especially careful risk management.

- Public sector projects developed in the conventional way have often been marred by delay in completion, serious capital cost overruns and technical failures. Under a BOT-concept such risks are no longer a concern of the government thereby allowing government budgeting to be more accurate.

- A private project company is responsible for operation and maintenance of the project facilities for the operation period. A private company is likely to provide professional and modern management including cost and operational efficiency to the project.

- The involvement of private sponsors in a BOT-project over an extensive operation period, may promote continuous transfer of technology and know-how through the project and hence - by transfer - to the government. A BOT-project should also include a staff training program to have a trained local staff in all important positions at the end of the operation period.

- It allows the government to establish private benchmarks to measure the efficiency of similar public sector projects, and thereby overhaul established and conservative practices in managing infrastructure facilities.

- If it is the political and economic goal of a government to increase the role of the private sector in the development of the country, the BOT-concept is one way to implement a privatization policy. It should be noted that some investors, like IFC, are only willing to support a infrastructure project in a developing country if the project is run by the private sector.

IV.2. Problems and constraints.

The BOT-concept, however, is no magic flute which spirits away all infrastructural crises, and debt crises in developing countries.

Although many BOT-projects have been proposed and advertised, for example in Turkey and Pakistan, relatively few projects have actually been implemented.

The application of the concept is a complicated undertaking compared to conventional financing of public sector projects.

The outcome of BOT-negotiations are less certain partly because few criteria or standard solutions on important issues have been developed so far. Project studies and proposals that are not properly prepared, have resulted in increased costs, delays and frustration. Extreme positions on cost of construction, equipment and financing have caused difficulties and protracted negotiations. The need to work out pragmatic risk reward and security structures, has not always been properly managed to attract investors. Lack of authority or lack of legislation has delayed negotiations so long that the projects have been abandoned. Legislation and regulations needed to streamline implementation of BOT-projects and to favour private foreign participation in public infrastructure projects, does not exist in most countries.

Indeed there are many problems and bottlenecks to overcome before a BOT-project is under way. Those BOT-projects which have proceeded to the conclusion of project agreements, however, seem to have been successfully implemented and are apparently operating well. Such projects include road- and bridge projects, watersupply and treatment systems and power plants.

V. Some criteria for a successful application of the BOT-concept.

V.1. A stable and supporting political environment.

Political stability in the host country is a pre-condition for any BOT-project. Private sponsors will not invest substantial amounts of money and expertise in a BOT-project if they cannot count on political stability over the proposed operation period.

The private sectors' interest in financing BOT-infrastructural projects is considerably strengthened if the Host Government states preference for a general privatization policy which allows certain infrastructural sectors to be privately owned and operated and adopt policies for the protection of private foreign investment. Political risks including currency and foreign exchange risk must be addressed as part of a privatization policy.

Governments should also convince private sponsors and lenders of their commitments to conclude BOT-deals within a reasonable time.

V.2. A supporting legal and administrative environment.

In the absence of legislation for private participation in public sector projects, numerous approvals, permits, licences etc. from government agencies and local authorities are essential for the development and operation of a BOT-project. In some cases even time-consuming legislation in the National Parliament has been required to implement a BOT-project.

The Host Government therefore must provide a competent administrative team with decision making authority to assure expedite passage of necessary planning approvals, permits and regulations throughout the operation period. The Host Government must also assure that approvals, permits, licences, etc. will be granted in a fair and objective manner, based on laws and regulations which are ascertainable at the outset of the project development.

A general legislation to adopt a suitable policy framework for private sector investment in public sector projects, might however streamline the development of BOT-projects considerably.

V.3. **The financial viability of the infrastructure project within a BOT-structure must be shown to potential equity investors and the lenders.**

A feasibility study must conclusively demonstrate that the project is technically feasible and financially and economically viable. The study must show an assured and reasonable certain source of revenue over the projected operation period, sufficient to cover the debt and operating expences and to provide a fair rate of return for equity investors. The cash flow projections must be sufficient to service any debt contemplated, provide for cash needs, pay operating expenses and still provide an adequate cushion for contingencies.

Assumptions used in the feasibility study, of course, must be realistic. The feasibility study can be conducted by a government agency, the bidder or an outside consultant. The study will reflect the professional ability of the Government and the degree of seriousness the government assigns to the project.

V.4. **A BOT-project must have a satisfactory economic incentive for the private sponsors.**

The private sponsors should be entitled to a return commensurate with their long term project risk if they succeed in meeting the BOT-projects economic and contractual objectives. The Host Government should always remember that there is no better incentive for the success of a BOT-project than to give the private sponsors the possibility of an attractive return on their investment. Potential lenders certainly want to make sure that the project has a satisfactory economic incentive for the Project Company.

V.5. **Assurance of logistical support - at a cost consistent with the financial projections.**

In most BOT-projects host governments will provide the project site, energy supplies, supplies of raw materials and building materials, adequate communications etc. Such logistical support must be assured through the whole operation period, and at a cost

consistent with the financial projections. A BOT-project might get into serious financial trouble if the project agreement fails to protect the Project Company against rising logistical costs.

V.6. An efficient risk allocation. Pricing of risks.

At all stages BOT-infrastructure projects are exposed to risks, some of which can have serious consequences for the project.

The risks are normally divided into time frames in which the risk exposure assume different characteristics. The engineering and construction phase, the test period or start-up phase and the final operating phase, are the traditional time frames. A wide range of safeguards and undertakings by different contractors and contracts, are used in each time frame to handle the risks.

It is advisable to address the risk exposure problems at an early stage of the BOT proceedings. What tends to happen is that when the project risks have been identified, the private sector is so concerned to reduce its exposure risks and the Host Government so concerned to transfer all risks to the private sector, that the parties are unaware of how much the project in its entirety is paying for a particular risk allocation.

V.7. A fair and objective bidding procedure.

A private company cannot be expected to invest considerable time and resources to prepare a BOT-project if the process for rewarding proposals is not reasonably orderly and based on normal competitive criteria. Lack of integrity or too much shopping around after the initial bids might have hurt the credibility and thus the BOT-perspectives of at least one country considerably.

V.8. Selection of experienced and reliable sponsors and operators.

It is common place but very important that the experience, financial strength and good reputation of the private sponsors are well established. Lenders to a BOT-project seem to be extremely concerned about the choice of sponsors and their ability to manage and support a BOT-project. The contract in a BOT-project should therefore not be awarded on the basis of the lowest bid unless the low bidder satisfies this criteria.

Lenders also seem to prefer that at least one of the sponsors has the technical expertise to operate the BOT-facility. If, alternatively, an independent company is employed to operate the facility, the Operating Agreement must be structured to provide the operator with strong financial incentives to achieve the guaranteed performance.

V.9. **Adequate equity contribution and assurance of commitment.**

Attracting an adequate amount of equity is one of the key issues of a BOT-project. Normally the long term debt/equity ratio varies from 90:10 to 60:40. Governments and lenders will require the private sponsors to have a sufficient financial interest in the project throughout the operation period or life of the loan (e.g. a minimum paid-up capital in the Project Company), so that it will be difficult for the sponsors to abandon or ignore the BOT-project. Sponsors of BOT-projects are often international construction companies. Such companies are constantly seeking new opportunities. Should one of their investments not work as well as expected, the temptation to neglect the project in order to concentrate on a new one, could be strong. Governments and lenders should not give the sponsors that option.

It is also of particular concern to governments and lenders that the Shareholders Agreement contains satisfactory provisions on transfer of shares, obligations of shareholders to each other, etc.

V.10. **Independent partners in the Project Company in case of conflicts of interest.**

As noted, international construction companies and suppliers of equipment, machinery etc. have a natural business interest and ability to promote BOT-infrastructure projects. Their dual roles of sponsors and contractors, however, presents the Host Government (and the lenders) with the problem of handling the resulting conflicts of interest.

Equity participation by the host governments or by "independent" private investors not otherwise engaged in the projects, an obligation for the shareholders to appoint at least one government nominee to the board of the Project Company or the appointment of an independent engineering financial consultant to the board are mechanisms to reduce the very real concern on conflicts of interest.

V.11. **Adequate insurance arrangements.**

Adequate insurance coverage including assignment of relevant insurance policies to lenders must be available both during the construction phase, the start up phase and the operation phase of the project. An uninsured casualty loss can be a disaster for all concerned.

Note that the traditional industry insurance policies including standard business interruption insurance is not fully appropriate for insuring a BOT-project.

V.12. **Anticipated default arrangements and safeguards.**

One of the challenges of developing a BOT-project is to provide adequate security to the lenders under a project financing concept. If the Project Company defaults the lenders will have no recourse to the shareholders or the government. Few lenders will consider security in a partly built road on Greenland or in a slightly defect space rocket system as adequate.

Various techniques designed to anticipate or prevent companies' default should therefore be baked into the BOT-arrangement with the support of the Host Government. Such techniques might include off shore escrow accounts, assignment of the benefits of various contracts (e.g. turnkey contracts with performance bond, insurance contracts, suppliers warrantees etc.) to the lenders and the right to take over and exercise the right of the Project Company well in advance of a default under the loan agreements.

V.13. **The operation period. By-out terms.**

The operation period must be for a fixed term sufficient to pay back the project debt and equity investment with a reasonable return. The Project Agreement should contain satisfactory provisions on extension of the operation period, for example if the projected return to the sponsors have not been reached because of the Host Government's default on its contractual obligations.

The Host Government might reserve a right to buy out the private sponsors before the end of the operation period or to adjust certain terms in the Project Agreement. This touches on the very tricky problems of windfall profits.

V.14. **A careful structuring and drafting of the contractual framework.**

The contractual framework governing a BOT-project is very complex. The development and integration of the legal documents and tailoring their terms and conditions to meet the objectives of the Host Government, while satisfying the need of the sponsors and lenders, is a time-consuming and sophisticated challenge with many pitfalls on the road. That the Host Government must use qualified legal counsels on this journey goes without saying. Normally it is advisable that the basic terms and conditions of the Project Agreement are outlined as early as possible in the BOT-process, preferably in the offering proposals from the government, subject of course to negotiation and clarification.

At all stages and at all contractual levels it is essential to avoid surprise terms in the contracts.

These are some of the issues which have to be satisfactorily resolved if a BOT-project shall move beyond the planning stage.

Discussions of the BOT-concept sometimes tend to focus on large and complex infrastructure projects. This might lead one to the conclusion that the BOT-concept and the criteria discussed in this paper, have little relevance for small, ordinary infrastructure projects. This, however, is not the case. The BOT-concept can be used to finance and operate a major channel tunnel project as well as a minor road project. Indeed a government should be cautious about selecting a very large scheme as its first BOT-project.

VI. Some concluding remarks.

The BOT-concept is a relatively new formula for financing infrastructure projects in developing countries. Being a new concept its advantages and limitations - and criteria for a successful development - has not always been well understood or adopted.

A few unsuccessful and very expensive attempts to negotiate BOT-deals in some western parts of Asia, however, hardly deserve to be canonized as typical of the BOT-approach. As earlier noted, BOT-projects have been successfully implemented and are operating well in other parts of Asia as it has been the case in Europe and in the United States.

For countries with a reasonable credit worthiness and who are willing to apply financial, administrative and legal criteria as outlined above, the BOT-concept appears to be a workable option to conventional financing and operation of infrastructure projects.

The implementation of a BOT-project, certainly is more complicated and time-consuming than the more traditional approach. Mainly because all project financings tend to be complex.

In some cases the cost of borrowing funds may also be somewhat higher than financing of infrastructure projects with sovereign borrowings.

However, the advantages of the BOT-concept might justify the problems in structuring, financing and operating these projects.

A government considering a BOT-infrastructure project should also learn from financing methods with BOT-characteristics used in other industries. Some industries, such as the petroleum industry, have successfully been using various project financing methods with BOT-characteristics for many years. Despite important differences it appears that some techniques used in the petroleum industry, like for instance

technology transfer, have not yet been fully exploited in BOT-infrastructure projects in the developing countries. The private sponsor's commitment of substantial equity and operational management to the host country over a long period provides in some fields an excellent platform for technology cooperation between the sponsors and the Host Government. A subject which we will discuss in detail later on.

All new creations have teething troubles. As the structures, issues and potentials of BOT-projects are better understood, i.e. systematically identified and analysed, and guidelines for solution of common issues are developed, the BOT-concept should become somewhat easier to implement and a useful alternative tool for financing needed infrastructure projects in the developing world.

The contractual structure of a typical BOT-project

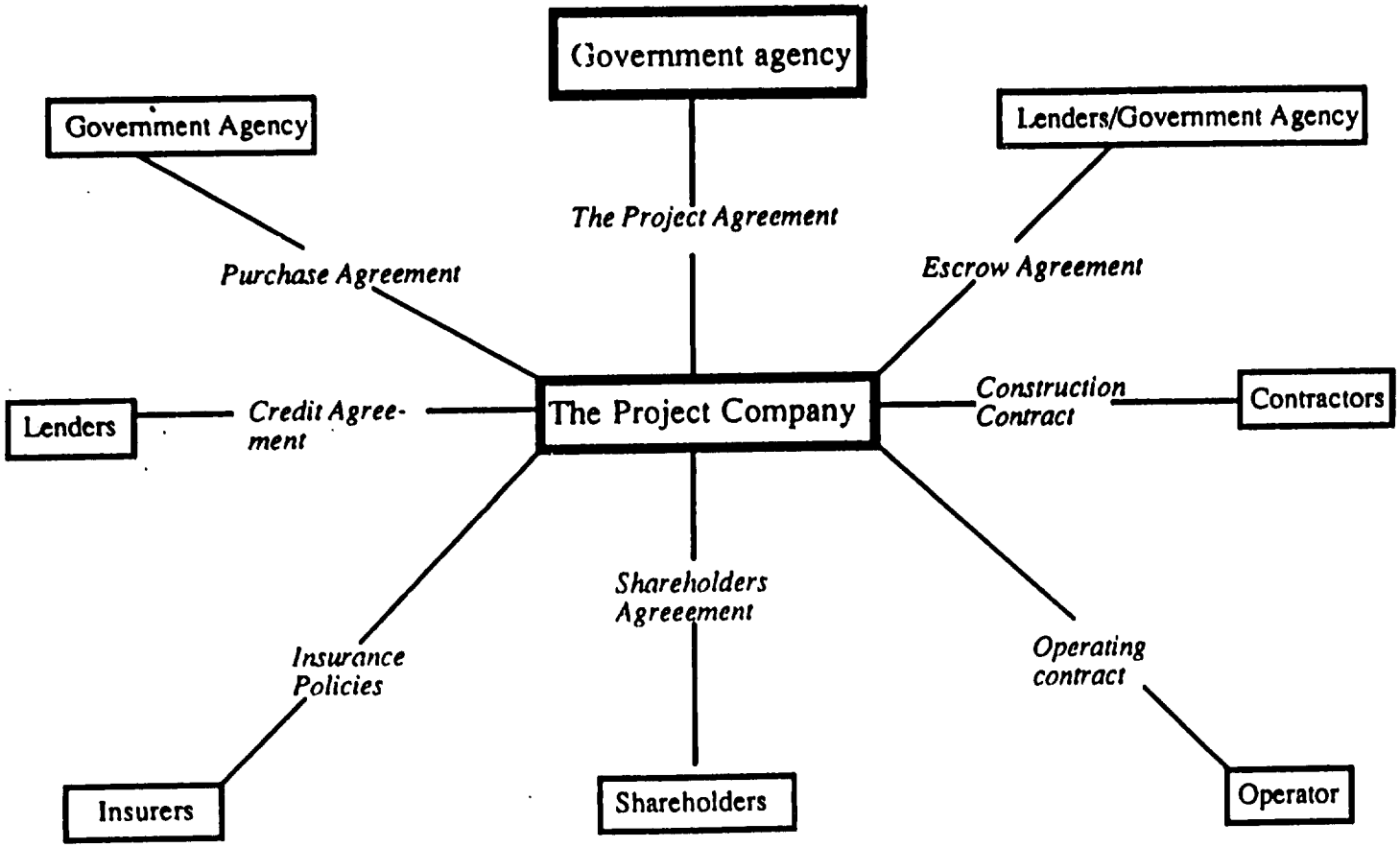

Table 1

THE BOT FINANCIAL PACKAGE

by Anton Sarbu
UNIDO Consultant

BOT PROJECT FINANCING

Structuring the Financial Package.

Allocation of Project Risks.

I. Introduction

It is UNIDO's constant policy to follow up closely and to promote the development of practices transferring new technologies.

According to this policy, increased attention is paid to study the various experience gathered up to now on relatively recent new contract formula known as Build-Operate-Transfer or BOT.

It seems that BOT type of contracts are increasingly used especially in large scale projects involving high investments. Most of such contracts appear to be useful to governments in the public sector, namely public infrastructure in power projects, industrial estates, communication systems, highways, ports, airports, various utilities etc.

In pursuing its line to assist the developing countries to benefit from BOT experience, UNIDO and APCTT are jointly organizing the present International Seminar on BOT Project Financing/Implementation.

Since there are no practical guidelines so far on how such contract should be negotiated so as to reflect the interests of all parties concerned, this Seminar represents a first attempt supported by UNIDO to try formulating proper recommendations and guidelines on BOT arrangements.

According to such a scheme, project financing is generally provided by the contractor - domestic or foreign - who will not only build but also own and operate the project over a certain period of time agreed upon and finally transfer it at the end of the contract. Thus, the contractor undertakes construction including financing of a given project or infrastructure facility, operating it over a fixed term enabling him to recover the cost of operation and maintenance, his investment plus a reasonable rate of return through charging tolls, fees, rentals etc. before transferring it when concession term is over.

Consequently, this type of arrangement will not require direct funds from the public budget nor a formal guarantee of repayment. In this way, the Government of a developing country will experience a reduced pressure of public borrowing while

allowing the transfer not only of the industrial risks to private sector but also of new technologies using innovative forms of business transactions.

BOT Financing - A New Privatization Model

The BOT scheme is a new technique to allow developing countries to execute increasingly needed infrastructure projects by providing considerable non-recourse financing, that is, avoiding resort to budgetary sources or sovereign borrowings.

As these countries have a decreasing borrowing capacity and declining budgetary resources owing to their growing foreign debt service, an increasing number of governments and multilateral lending agencies have become interested to offset such financial difficulties through stimulating the development of the private sector and privatizing public sector companies.

As a result, the BOT financing formula was conceived as a new approach to finance, build and operate large scale infrastructure projects in developing countries otherwise requiring substantial investments.

As a matter of fact, this way of financing was not all that new since similar "concession" arrangements were frequently used in the past for developing infrastructure in many countries.

Thus, in the last decades, this new formula of non-recourse financing for private large scale infrastructure projects was used predominantly in the field of oil and natural gas exploration, extraction and processing.

Recent changes in economic policies and particularly increased reaction against low state capital efficiency coupled with cutbacks in public expenditure made private sector come up with pragmatic initiatives of using a rather unique financing approach as a new variation on the privatization theme : balancing between public and private interest while accepting risk in privatising infrastructure projects.

Thus, the BOT scheme was gathering steam and, in spite of certain reserves and hesitation on behalf of industrialized countries to participate in such financial arrangements, became one of the new financing solution for cash and credit short developing countries, enabling them to implement large infrastructure projects.

As a genuine way of investment offset, the BOT formula requires the successful bidder to design, finance, build, own, manage and operate the project for a specified period to recover its investment and then turn over ownership to a public authority.

This formula calls for a foreign contractor to provide long term financing - usually between 10 to 15 years - and take a majority share in the joint-venture established with a public authority to maintain and operate the project.

The contractor - acting also as an investor - is allowed to repatriate his earnings from his equity investment at a guaranteed rate of exchange covering the cost of his engineering and construction services as well as the equipment supplied to the project. The BOT approach has been proposed and used on electric power plants, highways, telecommunication and public transportation projects, industry parks, ports, airports and housing in various countries.

Infrastructure Projects on a BOT Basis

Correctly, such an approach was initiated in Turkey, known as the "Ozal formula" (promoted by the former Turkish Prime Minister Turget Ozal) to finance several projects : the Akkuyu nuclear power plant (estimated at US$ 1,4 billion), the thermal power station and coal-handling terminal at the Mediterranean port city of Yumartalik (est. US$ 1,4 billion, contract with an Australian-led consortium), the coal-fired power plant at Tekirdag in Thrace on the Sea of Marmara (US$ 1 billion contract with a Bechtel-led consortium), a 1,200 megawatt coal-fired power plant at Hamitabat, west of Istanbul (US$ 1,5 billion contract with a consortium led by Brown Boveri & Cie.).

The BOT financing has been also considered by Turkey to cover several other infrastructure projects such as : hydro-electric works, highways, ports, housing airports, a tunnel and a free-trade zone.

However, the extensive negotiations in this country have resulted up to now only in the implementation of a very few projects, among which not a single one is apparently finished yet. Some of them have been abandoned as the Gazi power plant project.

Inspired by Turkish exercise, other countries have decided to use the same formula for major transportation projects, among them Indonesia (with a total of 1025 kilometers of new toll roads and several flyovers and interchanges), Malaysia (North-South Expressway, Labuan Water Supply), Thailand (Bangkok Second Stage Expressway) and Greece (the expansion of the Athens "metro" commuter rapid transit system and the construction of three trade zones). There also have been reports that Egypt, Pakistan and Philippines have proposed and initiated BOT financing mainly for their power plants.

A power plant project completed on a BOT basis is the 2 x 350 megawatt coal fired station located at Shajiao, Guadong Province, in People's Republic of China (US$ 520 million contract with a consortium led by Hopewell-Hong Kong Group and Bechtel.US, SAE/Italy and Brown-Boveri/Switzerland as contractors). In India bids have been invited in 1988 to build projects using BOT formula.

II. BOT Financing Strategies

The BOT projects experience to date shows that the development of this type of financing is not an easy way but, on the contrary, a very complex, costly and risky exercise not only for host Government but also for private projects promoters and sponsors. Consequently, even under the best conditions the extent to which the benefits of the private sector initiative are realised depends directly on the degree of involvement of the commercial partners and public sector.

For a private sponsor, the "sine-qua-non" starting condition have to ensure that the interested Government is firmly committed to such an enterprise by allowing the private sector to assume the responsibility in implementing a BOT project while relying upon the public sector only as a last resort. At the same time, the respective Government should stimulate the private sector through favorable incentive policy measures, observance of risk-reward principles and a realistic approach of this joint-venture by admitting even the possibility of failing to successfully finish the project.

Since a BOT contract is a very complex type of exercise, clear policies and guidelines should be strictly adopted and observed.

Specific legal provisions have to be issued granting full authority to Government infrastructure agencies to enter into contractual arrangements with private contractors. Such contracts could cover - at least theoretically, the construction, operation and maintenance of power and electrification, irrigation systems, water supply and sewerage systems, land reclamation, highways, bridges, railways, ports, airports, terminals, telecommunications facilities, industrial estates, export processing zones, Government buildings, public markets and other financially viable infrastructure projects.

UNIDO TIES system shows that while in very few cases legislation is being processed and only limited experience of BOT model contracts has been gained, an enormous amount of information and guidance is still required by many countries. The BOT concept is almost unknown in spite of the increasing interest expressed in its functioning.

Among a few countries initiating moves for introducing basic policies and precise guidelines on BOT contracts is the Philippines, introducing two bills providing proper legal framework for private sector to participate in the country's development process.

Several other countries have also shown an increased interest in the BOT formula reflected in the regulation issued to govern such financing of large scale infrastructure projects as mentioned above (Turkey, Indonesia, Greece, Egypt, Pakistan, P.R. of China, India, Malaysia and Thailand).

Sources and Forms of Financing the Project

The BOT financing model places the responsibility of obtaining credits on the successful foreign bidder, who enter into a joint-venture arrangement with a local partner to operate the facility built by the project.

A majority share is held by the main contractor in the joint company operating the facility for 10 to 15 years. The income from the sale of the facility's output and/or services is used to repay the loan prior to transferring the facility to the public ownership at the end of the contract. The returns of the foreign contractor are provided from the operating profits of the joint-venture project company (JVC). The Private sector sponsors participating in this company include usually major engineering and construction firms and an equipment supplier. The project company may also include passive equity investors and even a minority equity participation of the host Government.

The techno-economic-commercial feasibility study for the development of the infrastructure project has to establish the real need for such a project, its economic competitiveness and its ability to meet environmental requirements.

However, the main objective of the study is to assess the feasibility of obtaining the necessary amount of financing on the security of the facility output and/or services sales contract with the local partner, without credit repayment guarantee from the host Government.

The JVC will raise the most of the financing necessary for the project from commercial lenders, usually supported by export credit guarantee agencies, and from bilateral and international financial institutions.

Since the BOT formula is not a "recourse" financing, the lenders will not have a financial recourse for payment of their loans against either the project sponsors (shareholders of the JVC) or the host Government. Therefore, any recourse would be limited to the JVC and its assets, including real estate, plant and equipment as well as the project company contractual rights, performance bonds, and insurance and guarantees.

Consequently, the sources of financing the project could be: foreign equity, supplier credit by using export credit facilities and loans from specialized financial institutions. Nevertheless, the export credit agencies are usually not willing to finance BOT projects directly. It is, therefore, crucial to convince them to accept project risks to the extent generally recognized in such risk-sharing undertakings.

Major international financial institutions and banks may provide the BOT project with the necessary funds and equity. At the same time, it is advisable to identify

commercial banks willing to co-finance the project but this represents, in fact, a very limited source.
The banks could intervene in a BOT project in two ways :

- as an investor along with the project sponsors, contractor and operating company if the political risk is covered by the export credit agencies or the international specialized financial institutions (IFC, MIGA of the World Bank, OPIC); or

- as a lender to make operational traditional export credits, co-financing of the international specialized financial institutions (World Bank, European Bank for Investments, Asian Development Bank and others), and local credits.

- In case of developing countries having usually a foreign debt burden the sources of financing available for a BOT project are severely limited. Such sources could be: external equity, supplier credit secured to a maximum volume by way of export credit facilities.

The feasibility study has to focus on the development of the contractual structure and commercial and financial implementation plan, evolving into a commercial proposal to proceed with negotiating contracts for the project under the BOT formula.

Such a contractual structure - used lately to finance infrastructure projects - could be also considered as a variation of the well-known buy-back arrangements.

Since infrastructure projects do not generate usually physical returns which could cover the equipment and services provided by the foreign contractor, it is imperative to identify other alternative source of payment.

The host Government pays the foreign contractor with a share of the proceeds earned by the facility built by the contractor.

During the operation period, the JVC uses a part of its income to repay the credit provided by the foreign contractor which financed the construction of the project. Once the credit is repaid, the JVC is dissolved and the ownership of the facility is transferred to the host Government to continue its operation.

III. Main Features of BOT Project Financing

In spite of the wide variation of BOT contracts used in a diversity of conditions in developing countries, there are yet main features common, in general, to all such contracts.

Table A (annexed)[1] contains a schematic diagram of a regular BOT financed project. It shows schematically the role of various participants in the BOT project financing corresponding to their mutual relations joining them in the undertaking of the project according to three major functions/criteria:

- commercial and financing contracts;
- flux of payments; and
- system of guarantees to be applied.

The basic actors involved in a typical BOT infrastructure project are: the host Government, sponsors, the Project Company, local partners, construction Consortium.

The host Government - the key partner fully and permanently committed to such a difficult, complex, costly and risky enterprise, final client and purchaser of the project, authorizing its implementation.

An appropriate legal environment has to be ensured by issuing both the necessary legislative provisions and the specific decisions of the Government prior to any negotiation and action relating to the future BOT project.

After that legal step is made, the Government and one of its public agencies will get into a concession and implementation contract with the project company stipulating concretly all rights and obligations of all partners in the exercise.

The host Government could provide a certain portion of the project financing -- under the form of debt, equity or stand-by payments.

On the Government participants in the BOT project financing
- as provision of loans and/or equity contributions - there are still opposite views. One considers inappropriate host Government's direct participation to cover the project costs by direct loans or equity investment, admitting that the BOT formula should assure private financing only. The other opinion accepts as a positive step the presence of the host Government as a loan or equity participant to the project company.

Such a participation could be under the form of support loan for 5 to 10 years, subordinated loan in amount of a certain percentage of total estimated project cost or equity, usually up to 30 per cent of total project financing.

The host Government may also make earning assets contribution to cover capital costs, debt service and operating expenses.

[1] According to Antoine Khyr and Magdalaine Joël, Financing and Concessioned Projects (BOT Model).

Actually, the host Government participation in the project financing will reinforce the credibility and negotiating position of the Governmental agency involved in the project and will attract equity investors by assuring their reasonable returns and by apply successfully a risk-reward system shared with the Government.

Project Sponsors and Joint-Venture Project Company

The project sponsors are also essential actors - next to the host Government - contributing in a viable way to the successful implementation of the project. The sponsor or group of sponsors have to be experienced and financially strong partners in the project company.

They, generally, set up a Consortium including major international construction and engineering contractors, heavy equipment suppliers and an operating company.

The Project Company - a Joint Venture entity/KVC - is formed in the early phase of the project enabling it to negotiate with various partners involved in the implementation of the project, namely: the host Government. lenders, insurers, other equity investors, sponsors acting as construction contractors, suppliers and/or operators and others. The JVC is owned by the Government (25 to 30 per cent) and by various sponsors (70 to 75 per cent).

Local partners participating in the Joint Venture Company - JVC - of the project should consist of strong, well connected and respected private companies from the host country such as strong financial group, civil work, industrial or commercial firms, in order to facilitate dealing with the host Government, solve local issues and provide logistical support.

Construction Consortium will include the construction contractor and equipment suppliers, all reliable, experienced and financially strong firms. They could come from different countries thus attracting more financing and spreading the project risks.

The most important feature of a BOT project is its financial viability - a decisive factor attracting lenders and equity investors.

This viability is based only on a sure and precise revenue source able to cover the service of principal and interest payments on the project debt over the terms of the loans and to provide a return of and on equity commensurate with whatever development and long-term project risk the equity investors are being required to accept.

IV. Estimating Costs of Equity and Debt Ratios

A basic issue for the host Government in any project is always the cost issue. In the case of a BOT financing the matter is whether the total cost of such a project is higher than that of a usually directly financed "turn-key" project using sovereign credits/borrowings.

The next step would be, logically, if such higher costs are worthy to execute projects which could not be otherwise financed due to fiscal or budgetary restraints. A right answer would involve certain remarks on estimating costs of equity and debt.

Cost of Equity

The equity part of the BOT financing is more expensive than long-term sovereign debt.

Since the equity investors will usually take substantial project risk they will try to compensate for that risk by insisting to obtain a higher return than that sought by senior lenders.

However, for this higher cost the host Government does get the insurance benefit which the equity cushion provides to cover cost overruns during the construction and operating stages as well as the technical benefit of the investors' long-term commitment to the BOT financed project.

Normally, most of the BOT projects will provide to equity investors upside rewards and downside penalties in function of the real performance of the project, namely if the project meets, exceeds or falls short of its initial projections and expectations.

Consequently, according to information gathered on several BOT financed projects in several countries - Malaysia (Water Supply), Pakistan (Power Project), and Turkey (Power Plant) - the projected equity returns range from 16 to 20 per cent, depending on the attractiveness of the negotiated risk/reward system.[2])

Cost of Senior Debt

Generally, a higher creditworthiness of a sovereign borrower would imply a lower interest rate. Due to that, on a senior debt side, a BOT financed project would involve a cost of borrowing higher than a host Government's cost of sovereign borrowing.

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[2] see WORLD BANK WORKING PAPER, Mark Augenblick and B. Scott Custer, Jr., page 37

Yet, if the commercial lenders can get the support of the Government export credit guarantee institutions, the cost of senior non-recourse borrowings in a BOT financed project may be close to the cost of sovereign loans. Furthermore, owing to the equity part, a BOT project could have less senior debt component than sovereign borrowings in a regular "turn-key" project financed by the Government.

In deciding which approach is more convenient to the host Government, overall cost comparison and analysis between a BOT project and a directly financed project should be made rather than simply comparing returns on equity and debt of such projects.

According to the experience gained up to the present, the BOT financing approach would involve cost efficiencies compared to traditional direct financing because of long-term equity commitment required of BOT project sponsors and of their control over the project design, construction and operation.

Equity and Debt Ratio

In most cases of BOT projects proposed, initiated or agreed up to the present consist of equity provided by the sponsors combined with debt covered by commercial banks, international financial specialized agencies and bilateral Government lenders.

The equity proportion varies usually between 10 to 30 per cent. There could be cases of projects with no significant equity but offset by various levels of senior and subordinated debt.

While various senior lenders, above all the commercial banks, do not care too much about the way of supporting their senior debt - be equity or subordinated debt - the host Government will usually require the sponsors firm financial commitment on a long-term basis over the whole operating stage of the project.

This commitment may be assured in various ways such as : invested equity, equity deferred fees, subordinated debt and others.

Yet, multilateral lending institutions normally ask that traditional equity investment be assured to a substantial extent from the very beginning of the project.

The BOT financing admits different kind of risks depending on the stage of the project.

Since, there are two major stages in the implementation of the project, the construction stage followed by the operating stage, the high risk is attributed to the first stage while the low risk to the second one, called also "utility stage".

Consequently, in function of the project stage involved, both lenders and equity investors would ask for corresponding rewards and appropriate guarantees for their investment.

Another important feature of a BOT project is the ratio between local and foreign currency in both the equity and debt costs. This ratio is directly influenced by the type and nature of the project as well as by the country hosting it.

The proportion between local and foreign currency could also depend on the ability of the local banks and securities markets to attract local capital and on the availability of "blocked" local currency in foreign commercial debt which could be recycled in swap transactions.

V. The Credit Structure of BOT-Projects

When a Government decides whether to embark upon a BOT-financed project, three basis issues are the most important to be considered accordingly : the credit structure of the project, the risk-reward principles and the management of the project development process. A BOT Project Structure is provided in Table D (annexed).

The main issue to be resolved by the credit structure of a BOT-project is the security arrangements offered for the servicing of the lenders' loans. These arrangements add above 10 per cent extra costs as compared to a directly financed project.

In general, in case of a very large infrastructure project, the lenders are expected to provide 80-85 percent of the total financing meaning an unusually considerable individual exposure of such project.

This situation underlines the fact that a lender can afford a different gradual risk depending on the size of the loan.

Normally, the credit structure for a project financing is mainly determined by who the lenders are. In case of a typically large BOT-project to raise its necessary financing in a developing country would require the participation of the official export credit agencies either as direct lenders or as guarantors of commercial banks loans since no other source could offer the necessary credit capacity.

Consequently, the project credit structure determinants are composed of the host country creditworthiness, the project cost scale and the project lenders.

Hence, the BOT formula includes consideration of the host country's overall creditworthiness as a major factor in the decision of equity investors and private lenders to finance a project.

An increased support and guarantees on behalf of the host Government would make the BOT project more viable which would attract more lenders looking to the credit of the country as well as to the project for eventual repayment.

Therefore, developing countries having stronger credit rating seem to have a better chance of implementing BOT projects.

The Principles and Objectives of the Credit

Structure of BOT-Projects

In relation to the BOT project objectives and advantages its credit structure attracts new capital to the host country both in the form of private equity and in the loan financing - particularly from the commercial banks and international financial specialized institutions (IFC, MIGA, OPIC) which, without the private sponsors' involvement, would not participate in new loans to the host country.

Therefore, a private firm instead of the Government is the actual borrower.

The JVC - that is the Joint-Venture Project Company - is motivated to earn sufficient revenues to meet its debt service obligations on time and to avoid reliance on the Government for loan servicing support.

As a matter of fact the shareholders' cash generation is collected in the escrow accounts for most of the BOT term for use as the first line of recourse for JVC performance default. Any subordinated loan should be rapaid ahead of the dividends.

The recovery by the investors of their share capital principal is included in the tariff structure of the project output or services at the guaranteed performance level, and extends beyond the end of the scheduled loan-terms.

Summarizing, the credit structure developed for a BOT financed project manages to link closely the lenders' security requirement to the host Government's interest to stimulate the project sponsors by incentives to succeed in reaching the project economic and contractual objectives while still allowing the investors the opportunity to earn reasonable returns.

Government Support and Commitments

As the necessary assistance on behalf of the host Government is crucial for the success of the project, among basic support actions required are :

- bureaucratic support and favourable political climate providing specific legislative measures, delegation of authority to its executing agency and highly

competent personnel to negotiate, support and supervise the implementation of the project;

- experienced consultant services on legal, financial and technical aspects implied by the negotiation, financing, building, operation and transferring of the project facilities;

- logistical support under the form of assuring the land, access facilities, energy, raw materials and utilities necessary for the implementation of the project; and

- regulatory, fiscal and other support necessary to authorize and assist the private ownership and operation of the infrastructure project by appropriate regulations issued early in the process.

A general legal and regulatory framework favourable to foreign investment will attract and stimulate foreign equity investment and non-recourse debt financing. In this respect, it is essential to provide a special tax regime waiving the local income tax on project company during the concessioned period and to withhold tax on interests and dividends paid to foreign investors.

Among major commitments the host Government has to make for guaranteeing against the lenders' risks is the protection against any substantial project risk preventing the servicing of the senior lenders debt in case of project failure.

This protection is done by provision of subordinated loans from the host Government on a stand-by basis to cover the debt service when the project company's cash flow is not sufficient.

The Government support is also needed to cover "force majeure" risks through stand-by facility in case of shortfalls and to assure other kind of appropriate remedies allowing lenders and equity investors to recover their investment in case of non-insurable "exceptional events".

In general, the equity investors are not accepting such risks unless subsequently high returns are assured, usually around 16 to 18 percent.

VI. Structuring the Security Arrangements

The commercial bank lenders are likely to require that parties to the BOT structure or other form of ownership be acceptable to them before embarking upon project implementation. A joint-venture ownership between foreign party and host country private sector party is contemplated to run the project development.

A firm contract on a "take-or-pay" basis must be concluded by the privately owned project facility to supply a minimum quantity of its output or services to national utility, while this agreed purchase should be on a previously determined price basis.

The necessary fuel supply should be assured on an agreed price basis, ideally fixed through a "supply-or-pay" contract entered with national utility. Imported fuel could also be considered from reliable sources if this results in cheaper output or services.

Both above contracts, "take-or-pay" contract regarding output or services delivered by the project facility and "supply-or-pay" contract regarding fuel to be provided, would be only effective if project facility is capable of delivery. They should be backed by a strong guarantee or type of performance bond throughout the life of loans.

The ideal guarantor for both performance of off-take and fuel supply would be, normally, the host Government and such a guarantee should be unconditional.

The contract concluded between the BOT project and private sector parties should precisely specify the date of switching the project ownership to national utility, namely of transfer conditional or of any financial consideration involved.

Continuous operation must be assured for the purchase and distribution of the project output or services through a clear linkage.

All host Governmental consents should be in place prior to commencement of construction ownership - all Government departments, Central Bank, Monetary Board etc.

These governmental consents must be complete in terms of private sector involvement and particularly precise in terms of currencies of denomination of the output or services payment and/or convertibility terms, if appropriate. Generally, in a developing countries with foreign debt problems such a condition is a critical factor in any financing requirement for a project.

Typical BOT lender security structure is characterized by the following main features (see Table E annexed) :

- the JVC is the borrower;

- the JVC arranges all the financing needed to reach full commercial operation. This usually includes provision for funding an escrew account - called the Instalment Escrow Account - from the date of first loan drawdown until the last repayment.

The escrow balance would increase while the drawdown of the loans during construction stage, and later on decrease as the loans are paid off.

When the project facility enters the operating stage, the Governmental utility pays the JVC for all available project output or services purchased in the currencies of the company's costs for the period. This cost-recovery tariff structure is used over the BOT operating terms, usually 10 to 15 years.

Security Arrangements to Lenders

A major issue in a BOT project is how to protect non-recourse or limited recourse lenders.

No matter how different the infrastrucure projects are, similar schemes of security arrangements are usually used in BOT financing structure to protect senior lenders.

Generally, these schemes are conceived not only to ensure the financial viability of the project throughout its stages but also to protect the interest of the host Government.

According to such schemes the BOT project revenues are normally collected in escrow accounts maintained by an escrow agent independent of the JVC for payments made corresponding to priorities stipulated by the respective arrangement.

Normally, the senior lenders request from the outset of the project that a special debt reserve escrow account be established, built up and maintained sufficient to cover senior debt service for six months or more before any distribution could be made to equity investors.

As regards the benefits of the various contracts concluded by the JVC, namely turn-key construction contract, performance bonds, suppliers' guarantees, insurance proceeds and so on, they are generally assigned to a trustee for the benefit of the lenders.

In case of technical or financial default, the lenders could claim the right to take over the whole project well in advance of its "bankruptcy" and to ask - depending on the origin and nature of the default - new contractors, suppliers and operators to continue the execution of the project until its completion. This could be legally done by making the owners of the JVC's equity pledge all of their stock as security for the loans. Consequently, the lenders could become owners of the JVC for foreclosing on the respective stock.

Ultimately, as mentioned before in this working paper in a previous chapter, bilateral export credit agencies and commercial lenders may request Government commitment

to take appropriate action to provide the necessary support under the form of a stand-by subordinated loan functionalwise almost equivalent to sovereign guarantee of project risk.

The debt service component for a certain period of time equals the JVC's interest and principal payments due during that same period, assuming that the project construction stage is completed on the approved budget.

The alignment of the project output or services tariff with the actual debt service structure constitutes the first source of lenders' security and - subject to appropriate performance of the JVC and its contractors and timely payments of the Governmental utility - the revenues from this sale would be enough to meet the project debt service on schedule with no-recourse outside the JVC.

The second source of lenders' security is also comprised within the project cash flow deriving from equity servicing component of the project output or services payments; it is captured by the escrow agent for the lenders as back-up loan security and it is placed in a second and third escrow account.

The shareholders' cash generation from the project is totally allotted as security against the project's successful and timely repayment term.

The third source of lenders' security is the Government's commitment to put at the disposal of the JVC - as a subordinated loan - any necessary additional funding to maintain the committed level of the Installment Escrow Account balance. The subordinated loan is repayable at interest by the JVC from its future cash generation, ahead of escrow account additions and dividends, being used as a last-resort to bridge financially against the expectation of future improved operating performance of the project facility.

The Government's funding obligation remains in place until the final loan repayment for revenue shortfalls due to "force majeure", Government default in fulfilling its contractual obligations to the JVC, and also in case of any disputes.

Normally, the host Government Treasury has its "full faith and credit" of the country at stake when guaranteeing the payment obligations of its national utility and its subordinated lender institution.

In case the Government takes over the privately owned shares before the end of the BOT project term, the project loans become direct repayment obligation of the host country.

The risk exposure of the credit structure - the lender's risk - appears in case of project failure, but only after the project has matured, and more in form than in substance.

Consequently, by the time the subordinated loan back-up obligation falls away, the project has been already successfully built and operated for some time, so that is unlikely to create any major long-term problem. Furthermore, the escrow account security requirement should be paid for through higher capital servicing costs in the project output or services tariff system.

Security Arrangements - Summary[3]

The Security Arrangements of a BOT financed project is the crux of the contractual structure of such a project.

These arrangements provide mainly the host Government financial commitments to back up the project implementation through a system of preventive and guaranteeing measures protecting foreign investors from risk of possible loss.

A basic obligation in this respect is the provisions of a subordinated loan by the host Government to the Joint Venture Company - JVC of the project in the event of shortfalls in the debt service escrow account for the construction and operating stages of the project. A reserve fund is also created to a level equal to one year's forward debt service.

The subordinated loan obligations on behalf of the host Government will cover also any shortfalls in the debt service escrow account owing to "force majeure", Government default and causes in dispute.

The structure of the security arrangements establishes the way in which the repayment of subordinated loans are made alongwith any interest and costs associated with utilization thereof.

According to these arrangements repayment shall be borne usually in the energy tariff if such financing is required by reason of "force majeure" or Government default. For any other reason, the repayment shall be borne through dividends of investors.

Another basic feature of the security arrangements is determined by main Project Agreements in which the host Government shall take part, namely (see Table D attached):

- Implementation Agreement;
- Output or Services Sales Agreement; and
- Escrow and Subordinated Loan Agreement.

[3] see WORLD BANK W[illegible]'G PAPER, Mark Augenblick and B. Scott Custer, Jr.

Three Escrow Accounts shall be opened under the Government supervision:

(a) Public Company (National Utility) Reserve Account, funded from capital charge component of the tariff before commercial operation date and capital charge component of the tariff corresponding to the output or services purchased by the National Utility above the guaranteed annual generation level after the commercial operation date;

(b) Dividend Escrow Account collecting the investors dividends liquidated according to shareholders and senior lenders;

(c) Debt Service Reserve Account, funded equally from accounts (a) and (b) up to the necessary amount; and

(d) Installment or Debt Service Escrow Account.

The Principles and Objectives of a BOT model - Summary[4]

The basic principles of a BOT model common to all such projects should generally include (see Table D attached):

- the involvement and commitments of the host Government
  in fact the essential partner of the project; the final client and purchaser of the project facility;

- the set up of a Joint Venture Project Company/JVC
  which should design, engineer, finance, build, own, operate and maintain the project.

Project Financing is the JVC obligation but should be arranged by the project sponsors.

The construction cost overruns - except for Government default and events of "force majeure" - will be borne by JVC.

The JVC is also obliged to complete the project on schedule and within the turn-key fixed price contract, implying joint liability of the contractors in case of failure to meet these targets. In such cases, for covering debt service obligations JVC will use the secondary funds mentioned below:

. liquidated damages available from the contractor's and/or suppliers;

[4] see WORLD BANK WORKING PAPER, Mark Augenblick and B. Scott Custer, Jr.

. available insurance proceeds;

. stand-by financing to cover at least one year debt service;

. reserve fund during operation stage to cover at least one year debt service, and

. subordinate' loan of the host Government to cover one year debt service;

- a debt/equity ratio normally not higher than 80/20;

- a host Government financial contribution to the project in case such a participation is possible and accepted - under the form of loan or equity partner;

- the host Government will purchase - through its national utility - the project facility output or services on the basis of a tariff calculated on an early agreed amount.

The tariff shall comprise a capital charge, operating charge and dividends and shall be paid in the same project cost-currency:

. JVC's lenders shall provide the senior debt on the capital charge basis;

. operating charge shall cover the costs of operation and administration including insurance and maintenance reserve;

. dividends shall include return on equity sufficient to allow an internal rate of return of the JVC's equity to stimulate investors;

- the equity shall not be repatriated before all senior debt has been repaid;

- the transfer of the project facility may be made only when all senior debt has been repaid and all equity capital has been repatriated.

VII. Key Agreements

The BOT project financing, construction, operating and transfer are governed by a set of basic agreements forming the contractual structure of the project stipulating terms, rights and obligations of various actors participating or involved in the implementation of a BOT infrastructure project (see Table D annexed).

In as far as the project financing is concerned, the network of credit agreements is of crucial importance to the project.

Hence, the relevant agreements determining the credit structure of the project - otherwise the essential element for the commercial feature of the project implementation - provide the mainconditions and guarantees for the construction and operation of the project facility and the contractual provisions negotiated by the host Government authorities and other participating parties, as follows:

- a Concession and Implementation Agreement concluded between the Government of the host country or one of its Public Agencies, the Consortium and the Project Company - JVC establishing the main principles and undertakings between the parties;

- one of the key agreements is the Loan Agreement stipulating the conditions of using the lenders' loans for the project financing;

- in case of the financial participation of the host Government to the project financing, the Loan, Equity and/or Stand by Agreements providing terms and conditions of such commitments from the Government vis-à-vis the project and JVC;

- Equity Agreements with the project sponsors establishing provisions for such investment to the JVC by its shareholders or by passive equity investors;

- an Escrow Agreement between the Public Agency, the JVC, the Lenders and the Escrow Agent (an International Bank) stipulating conditions of funding the Installment Escrow Account in local and foreign currency and obligations of all these parties in their mutual relations.

The Escrow Account in foreign currency is used to cover imported equipment, operating costs in foreign currency, debt service, replenishment of the Reserved Fund if required, agreed return on equity and repayment of host Government subordinated loans if required;

- a long-term Off-Take Agreement between the JVC and the Public Agency (National Utility) committing them to sale/purchase of project facility output or services on a "take or pay" basis, coupled with the host Government guarantee towards the JVC and the Lenders.

The price of the purchased output or services should cover the operating costs, feedstock costs, debt service and a return on equity usually fixed between 15 to 20 percent.

- Guarantee Agreements providing the project system of guarantees by the Export Credit Guarantee Agencies.

The participation of the Export Credit Agencies provides for a security package resulting in the transfer of all the risks to the Government of the host country including, by way of subordinated loans, an unconditional guarantee for the repayment of all the funds disbursed under the export credit, which, in fact, voids to a great extent the advantages offered by the BOT financing model.

- an Insurance Agreement stipulating the insurance policies applied to the project by the Insurers;

- a "Turn-key" construction contract between the JVC and the Construction Consortium and the equipment suppliers establishing all obligations and conditions of main contractors participation in the project implementation.

There are also other important contracts to be concluded which provide for:

- operating and management services of the project facility specifying the obligations of the operator company during the "public utility stage"; and

- long-term supply of raw materials and energy necessary to the project by the supplier companies.

As a compulsory step to be taken by the host Government after all the above-mentioned key agreements are concluded, special legal commitments have to be issued confirming in a binding manner all Government obligations under the respective contractual structure of a BOT project.

VIII. Allocation of Residual Risks between Project Sponsors and Government

The lenders' credit structure transfers the risk of repayment onto the shareholders as first recourse for the successful construction and operation of the BOT project, and onto the host Government as first recourse for its default regarding its own obligations, contractual disputes and events of "force majeure".

While the lenders' requirements are met by the credit structure terms, the project sponsors and the host Government have to accommodate mutually the sharing of the residual risks and rewards.

In order to attract substantial capital to the project, the host Government takes responsibility for the risks considered to be out of the JVC's control.

At their turn, the JVC and its contractors would take financial responsibility - within certain limits - for the risks deemed to fall under their control.

The identifiable risks of a BOT project could be divided also in insurable - at a cost, and non-insurable. Generally, in project financing each risk must be assumed by the respective party mostly controlling it in exchange for a corresponding reward.

The most common risks in a BOT financing project are listed further down together with the appropriate way of identifying, assessing and enumerating them.

Political Risks

In a BOT financing project both external equity investors and external commercial lenders are generally seeking political risk insurance either from their own export credit agencies or international specialized financial institution such as Multilateral Investment Guarantee Agency - MIGA of the World Bank system.

This type of insurance covers usually any breach by the host Government of specific obligations included in the BOT project contract.

The most typical cases involving such a political risk - to be covered by a special political risk guarantee - are:

- changes in the legal, fiscal and statutory regime;
- cancellation of the project licence;
- embargo on imported equipment;
- civil war; and
- international conflict.

A special kind of political risk is assumed in case of strike on the construction site in which the guarantee is covered by contractor performance bond.

Commercial Risks

To cover this kind of risk, the specialized export credit guarantee agencies are currently using a special type of commercial risk insurance.

One of the prestigious agencies in the field, the U.K. Export Credit Guarantee Department - ECGD has announced last year the introduction of a new optional addition to its traditional insurance for political risks: the insurance - in certain cases - up to 60 percent of the commercial risk of approved projects.

In a similar way, the US specialized guaranteeing institutions, namely the US Overseas Private Investment Corporation - OPIC and the US Export-Import Bank -

EXIMBANK are usually providing commercial guarantees within, of course, certain limits.

Yet, according to some insurance specialists such insurance policy still needs further clarification, at least in some cases, since the same host Government asking for support in a BOT financing project is, in turn, asked by export credit agencies to provide assurance to them.

Construction Risks

The most usual risks related to the construction stage of a BOT project are the construction risks assumed in the following concrete situations:

- exceeding the previously agreed cost of the construction works;
- exceeding the previously agreed duration of the construction works;
- non-conformity of equipment used (failing to meet the previously agreed standards); and
- leaving the project site by the contractor.

One of the typical construction risks is the risk that the project will not be completed on the agreed time and for the price stated, known as completion risk.

Normally, this kind of risk is covered by liquidated damages clause stipulated in the "turn-key" construction contract. This clause includes the monetary damages payable by the contractor on account either of each day of delay in completing the project or for the completed project's failure to meet specifications.

In most of the cases this type of clause is accompanied by performance bonds, constituting together the guarantee against the completion risk.

Therefore, the "turn-key" project price is increased by a factor compensating the contractor himself for assuming this risk.

As a matter of fact, the completion risk is taken primarily by the contractor, secondarily by the JVC and only indirectly by its equity investors, their equity being gradually affected by the costs increased because of delays or cost overruns otherwise not covered by damages from the contractors.

However, the commercial and some bilateral lenders, and the export credit guarantee agencies usually guaranteeing commercial loans, are frequently reluctant to take

completion risk. Consequently, they have instead insisted that the host Government provides the necessary subordinated loans to the JVC covering the guarantee of senior debt service through project completion.

Yet, in certain cases, equity investors are pragmatically likely to accept a completion risk commitment but only in exchange for considerable rewards. In developed countries, in a private project, for instance, the expected annual returns could reach 35 to 40 per cent on equity for assuming the completion risk.

Since in developing countries such potential returns would have to be even higher, the host Government may agree to provide a standby commitment in exchange.

Performance and Operating Risks

The performance and operating risks - mainly within the control of those parties taking them - are covered by construction contractors and equipment suppliers as well as by performance guarantees stipulated in the operating and maintenance contract.

Yet, the operating risk - similarly with the completion risk - is secondarily taken by the JVC, while primarily by the operating company.

Cash Flow Risk is derived from operating risk. After the construction stage of a BOT financed project is over, some lenders agree to provide loans on a completely non-recourse basis (except for the JVC and its assets).

Thus, they will accept escrow arrangements to cover forward senior debt service and to protect in case of interruptions or variations of the cash flow.

Another solution would be for the host Government to provide a stand-by subordinated loan facility which usually could prove more economical than to let the JVC pay for a commercial insurance to cover such a cash flow risk.

Some authors seem to divide generally the BOT financed project risks in two basic categories: construction risks and operating risks.

Under the construction risks they usually include those mentioned above in this chapter differentiated by their origin and nature (See Table B annexed).[5]

Thus, in addition to the political reasons presented already before, they enumerate also economic, technical and financial reasons potentially provoking risks, as follows:

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[5] According to Antoine Khyr and Magdalaine Joël, Financing and Concessioned Projects (BOT Model)

a) economic reasons:

- changes in the economic environment of the host country;
- increase in construction cost; and
- new substituting products (of higher quality and a better price index ratio).

b) technical reasons:

- subcontractor weakness;
- low quality;
- construction fault; and
- faulty supply of raw materials.

c) financial reasons:

- lack of appropriate funds payment.

Information on corresponding covering guarantee for each kind of risk and on its respective guarantor is provided in detail in Table B (annexed).

Similarly, the category of operating risks is presented in Table C (annexed) enumerating them according to their origin and nature.

Thus, under operating risks the following risks are listed:

- technical operating risks;
- product market risks; and
- lenders and investors risks.

In turn, these operating risks may be caused by one of the following reasons or a combination of them:

- operator's inability to fulfil its obligations, due to:
  - . operator's technical inability;

. equipment not complying with specification during the commissionning;

. operator abandon;

. faulty supply of raw materials; and

. prohibition of foreign personnel entry into the host country.

- changes in statutory regime affecting regulatory conditions of operating activity due to:

. change or cancellation of operating permit;

. changes of technical norms of project functioning (pollution safety standards).

- change of profit earning capacity of the project due to:

. severe technical equipment incident;

. changes of fiscal regime in the host country;

. raw materials price increase;

. selling price decrease imposed by public authority; and

. inflation in the host country.

- risk of foreign exchange (hard currency/local money) implying:

. raw material purchasing;

. foreign debt and dividends servicing;

. capital reimbursement; and

. lack of hard currency available for transfer.

- breach of lenders and investors interest owing to:

. nationalizing of the project;

- interdiction of capital relinquishing on local and international market;
- foreign debt restructuring of the host country; and
- seizure of actual guarantee (active stocks) by public authority in the host country.

As mentioned before, a detailed presentation of operating risks and their corresponding covering guarantees is made in Table C (annexed).

Insurable and non-insurable risks

Another insurance approach to project risks is based on the actual possibility to assure a real protection against them, that is their insurability. Some risks, for instance "force majeure" risks, cannot be practically insurable or could be, but at an unreasonable cost. This is the main reason preventing export credit agencies and commercial lenders to normally take such non-insurable risks.

Consequently, these parties will usually insist that the Government of the host country should cover the non-insurable events of "force Majeure".

In certain cases, equity investors may agree to take "force majeure" risks themselves but without providing any protection to lenders for such risks.

As for insurable risks, a BOT financed project should have casualty insurance to protect its plant and equipment, insurance to compensate workers, third party liability insurance as well as guarantee to cover other commercially insurable risks, including or not - depending on the host Government's support - insurance protecting against interruption of business, irregular cash flows or other similar kinds of risks.

Among others, two insurance formulas are lately applied to protect against such risks: a traditional one, covering over-running costs and a relatively new formula of "funding" policy guaranteeing against cash flow shortfalls mostly in the pre-completion phase of a BOT financed project.

IX. Fair Rate of Return for the Sponsors Tariff and Price Structures

A BOT financing formula calls for a joint-venture enterprise involving project sponsors, lenders and host governments as main parties agreeing to co-operate in order to achieve common objectives on the basis of a reasonable contractual structure.

One of the key issues of such a structure is the assurance of a fair rate of return for the project sponsors. In this connection the tariff and price formula to be used for selling the output and/or services of the BOT project represent an essential instrument in measuring the profitability of the project and in stimulating the investors participation in the project financing.

A corner-stone role in a BOT financed project is played by the risk-reward principles. As a matter of fact, these principles along with the project credit structure and the management of the BOT project development process are the three most important factors for the Government of a host country to consider in deciding whether to embark upon the difficult, risky and long BOT journey.

The basic risk-reward principles are, therefore, decisive in attracting lenders according to their given terms conceived to protect them against additional risk exposure in low credit developing countries. Finally, all the three main parties involved in a BOT project will benefit from these basic principles: project sponsors representing the shareholders of the JVC and its contractors, the lenders and tne host Government.

Generally, any financeable BOT structure requires that each and everyone of the individual contract, layingout the whole network of contractual arrangements, stand on its own independently, while relating individual responsibility for performance to the risk and reward assumptions corresponding to that respective agreement.

Consequently, the structure of the project facility operation contract should provide financial incentives for the operating contractor enabling him to perform high availability of the project facility, using bonus-arrangement in case of availability higher than guaranteed level of performance.

On the other hand, however, it is unrealistic to provide financial penalties on the operating contractor for availability lower than guaranteed performance beyond 100 per cent of his profits at the expected availability performance level.

In other words, a basic principle of risk-reward structuring requires that the responsibilities and risks be assumed individually among the parties involved according to their experience and competence, the penalties accepted for their defaults and the compensation agreed to be paid.

Another basic risk sharing principle is related to the level of actual performance, that is to provide upside performance rewards reasonable balanced with downside performance risks.

Hence, the shareholders will earn an agreed range of compensation on their investments depending of the performance of the JVC. In case the JVC fails to observe its contractual responsibilities, the shareholders should finance, within

previously accepted limits, the project cost overruns - thus increasing their financial exposure.

The same logic applies to project cost underruns, the tariff structure providing precise incentives in such a case owing to the high interest cost savings involved. These savings could reach considerable amount per day saved for earlier than guaranteed completion of the project (in certain concrete cases averaging more than 100.000 US dollars daily in power plant projects).

Consequently, there is a basic economic interest for all three major parties involved in a BOT project to share the avoided interest cost between themselves. Thus, the tariff for the sale of project facility output and/or services allow the provisions of bonus incentives to the participants in the project, mainly to the contractor for early completion.

That is why, the tariff and price structure should provide wisely inducement for economic performance.

Summarizing, the observance of the BOT Risk-Reward Principles should allow:

- Project company to take controllable risks;
- Government and sponsors to share residual risks;
- provisions for lender security requirements;
- each of the contractual arrangements to assign responsibility, compensation and penalties to parties involved;
- incentives for higher performance; and
- downside penalties to be balanced by upside compensation.

BOT Project Tariff Structure

Once the construction stage of a BOT Project is over, the facility starts operating entering "the public utility" stage. The output and/or services are purchased by the National Utility committed to pay the JVC for all its available production according to the long-term Off-Take Agreement.

The revenue source could be different depending on the type of BOT Project, including power tariff contracted with a Government owned facility - in case of power plants, tolls generated by traffic - in case of highways, bridges and tunnels or other periodic payments by the Government or other users - in case of railroads, water distribution system etc.

In order to analyse better the tariff structure, a concrete example is taken as seen in Table F (annexed), in case of a Power Plant producing electricity (a BOT Project proposed in Turkey).[6]

The power produced is sold by the JVC - project company - to the Public Utility firm on prices calculated in the same currency of the JVC's costs for the period, assuming that the project construction stage would be completed on-budget, the plant would perform at a guaranteed capacity and fuel consumption would reach a guaranteed rate.

In the diagram of Table F (annexed) a schematic presentation of the major components of the power tariff structure is made. As seen, the tariff is expressed in constant cent/kwh on the vertical axis while the BOT project term is on the horizontal axis.

The diagram shows the various of the power price per kilowatt hour over the BOT project plant operating term of 10 to 15 years.

The power price is composed of equity service, debt service, the cost of operation and maintenance and the cost of fuel.

Consequently, the power payments to be made by the Public Utility to the JVC are calculated for a given year multiplying the power price times the actual plant availability performed during the respective year. The fuel costs and the operation and maintenance costs are at the lower part of the diagram.

The other two main components of the tariff structure are shown at the upper part under the form of capital servicing costs for paying off the project financing: the equity service component and debt service component. The latter is calculated, for a given period, on the assumption of the on-budget project completion, as a sum of the JVC's interest and principal payments during that respective period.

Examining the diagram, the delayed start of loans principal payments at the end of the grace period is shown in the up-slope during the first operating year. The further payments of the loans - arranged through commercial banks and institutional loans - and of the export credit are reflected in a steep decline after the first operating year followed by a smoothly declining curve.

As described in a previous chapter, the correlation of the tariff structure with the actual debt service structure assures the first source of security to the lenders, with no recourse beyond the JVC, provided that the plant performs and the payments by the Public Utility are made on time.

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[6] According to William E. Stevenson, "The Turkish BOT Power Project Experience"

The equity servicing component provides for the second source of security to the lenders from the project cash flow. Similarly to the debt service component, the equity service component is calculated admitting the on-budget project completion. Thus, the actual capital share to be paid corresponds to the committed rate of return of the power payments at guaranteed levels of availability and fuel efficiency of the project plant.

The escrow accounts collect all the cash generation from the equity service until their combined balance equals the outstanding debt principal. Beyond this point, any further cash generation becomes dividend of the JVC. Consequently, the shareholders' cash generation from the project is used as security against the timely repayment of the loans for the whole term of the loan repayment.

The third source of security to the lenders is provided by the host Government's commitment to release additional funding as subordinated loans to maintain the necessary level of the Installment Escrow Account in case of insufficient cash generation from the project.

This Government's commitment should be met until the final loan repayment for revenue shortfalls owing to unforeseen events of "force majeure", Government default or any dispute.

Therefore, as the final client and the buyer of the project the Government has to provide necessary guarantees to assured revenues mainly through a binding long-term contract with the JVC to buy the project output and/or services on a "take or pay" basis covering, at least, the project debt and investors equity backed by the "full faith and credit" of the Government.

In this connection, various procedures could be used such as tariff formula shown above including price escalation clause and "cost plus" tariff for both a capacity charge per unit of output or services and an additional charge for the quantity actually taken.

Another way would be to invite for bids based on a flat rate per unit of output or services of the project facility for both a capacity fee and an actual output/services fee to be set by the bidder.

In case the projections are not met, the host Government would provide subordinated loan to the JVC covering the gap up to a minimum revenue previously agreed upon. When the Government is not able to provide this loan a stand-by facility financed by a specialized financial agency could be made available. An alternative would be to obtain another revenue source to cover the difference.

Such sovereign guarantees are usually provided by the host Government for loans, project facility performance and other additional obligations on the "full faith and credit" basis stipulated in the Basic Concession Agreement between the Government and the JVC.

In addition to these guarantees, the host Government has the obligation to impose its protection from unfair competition during the entire project concession period thus allowing the equity investors to make their profits.

Inflation and Foreign Exchange Risk

In case of inflation and foreign exchange risk, both lenders and equity investors to a BOT financed project in a developing country are usually preoccupied since such risks are completely beyond their control and must be covered by the host Government.

Some authors maintain that, while the procedure to assure guarantees will vary, the basic reason to do it relies on the fact that the potential rewards to equity investors and lenders will never be sufficient to compensate them for assuming either foreign exchange or inflation risks.

These investors will, therefore, require the Government to guarantee periodic adjustments in the price of goods and/or services provided by the project to compensate for inflation.

At the same time, the Government's guarantees should also assure the convertibility, the exchange rate and the availability of enough foreign exchange.

In case the project output or services are sold to foreign users in foreign currencies, this type of support is less important.

An alternative formula would be to allow the foreign investors and their Government insurance agencies to convert local currency earnings into hard currency at a favourable rate of exchange enabling them to compensate their initial investment plus interests an/or dividends.

Generally, concrete procedures taken by the Government of the host country to guarantee against this category of risks include three basic measures:

a) payments in a basket of currencies including U.S. dollars, German mark, Swiss franc, English pound and Japanese Yen;

b) exchange risk insurance scheme (with premium); and

c) tariff adjustment of the output or services sold to cover the exchange rate variation.

Final Remarks

This working paper takes up a whole set of basic aspects confronting project financing in general and the BOT financing formula in particular.

Concluding, it seems that an important part of the large scale projects currently being implemented in the world are financed on the BOT basis.

Apparently, in the developed countries such a financing formula is not facing problems or facing very little ones.

There is, however, a different situation in the developing countries or in newly industrialized one. In those countries the exchange problems, the existence or lack of financial market, the interest expressed in BOT projects by various international specialized agencies as World Bank and others, and the attitude of public authorities on facilitating exports and implementing infrastructural projects remain the basic factors shaping an acceptable solution for the BOT financing formula.

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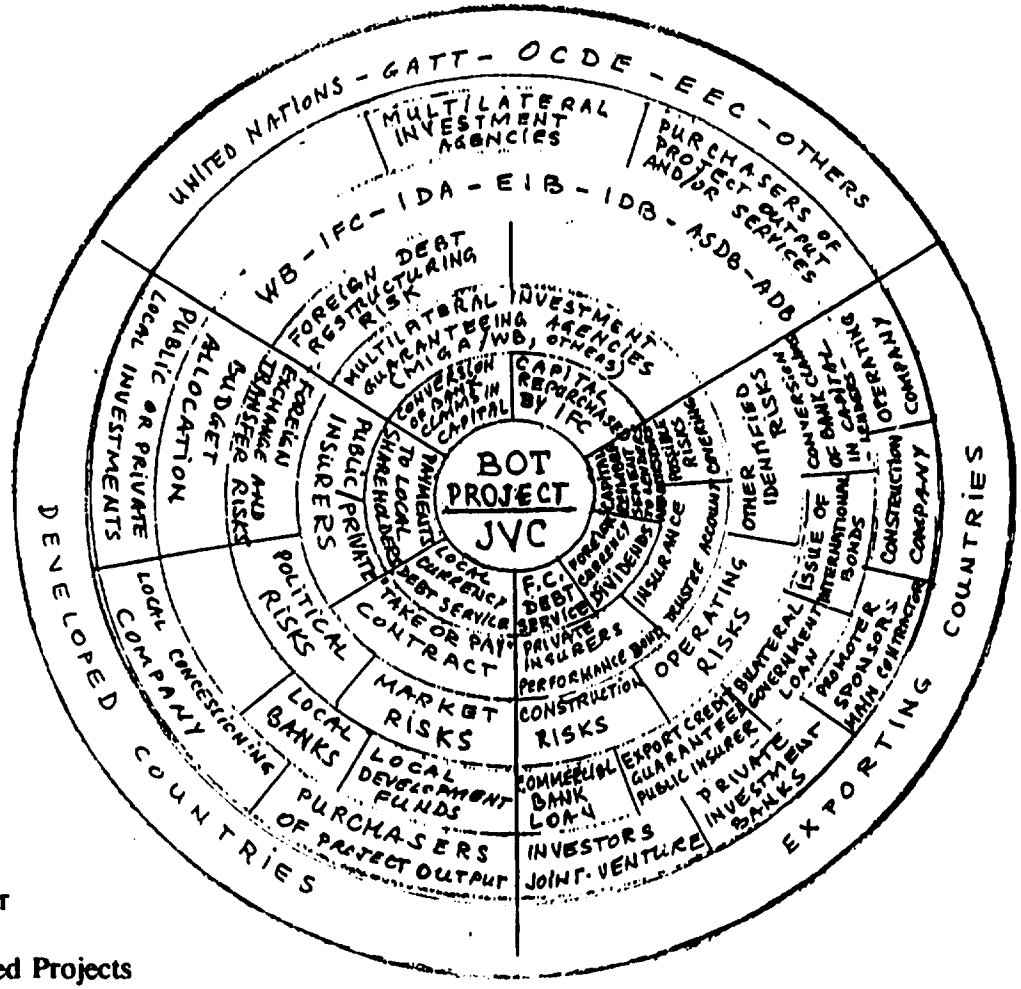
PARTICIPANTS AND RISKS IN BOT PROJECT FINANCING*)



* According to Antoine Khyr and Magdalaine Joël, Financing and Concessioned Projects (BOT Model).

Table A

Table B

THE RISKS OF A BOT-FINANCED PROJECT AND THEIR COVERING GUARANTEES X)

(to be covered in function of each operation)

PROJECT RISKS (by origin and nature) (1)	COVERING GUARANTEE (2)	WHO ISSUES THE GUARANTEE (3)
CONSTRUCTION RISKS:		
- exceeding the agreed cost of construction works;		
- exceeding the assigned duration of construction works;		
- non-conformity of equipment used;		
- leaving the project.		
Political causes/reasons		
- changes in the legal, fiscal and statutory conditions/regime;	- political risk guarantee (PRG);	- guarantor of public or private foreign credit (GFC);
- cancelling of project licence/permit;	- PRG;	- GFC:
- embargo on imported equipment;	- PRG	- GFC
- strike on the construction site;	- Performance bond of the contractor	- Public or private guarantor for political risk.
- civil war;	- PRG	- GFC
- international conflict.	- PRG	- GFC

X) According to Antoine Khyr and Magdalaine Joël, Financing and Concessioned Projects (BOT Model).

Table B

(1)	(2)	(3)
Economic causes/reasons		
- changes in the economic environment of the host country.	- Margin taken in the feasibility study.	- the project sponsor
- increase in constrction cost.	- Performance bond of the contractor.	- Private guarantor
- new substituting products (higher quality and a better price index ratio).	- leaving the project or selling price adjustment.	- Sponsor and concessioning authority.
Technical causes/reasons		
- subcontractor weakness.	- Performance bond of the sub-contractor.	- Private guarantors.
- low quality	- Performance bond and control by specia-lized office.	- Private guarantors
- construction fault	- Performance bond and control by specia-lized office.	- Private guarantors
- faulty supply of raw-materials.	- Performance bond and control by specialized office.	- Private guarantors.
"Force majeure"		
- lack of infrastructural network/support (access roads, harbour for imported raw materials and equipment).	- Host Government guarantee for excessive cost.	- Public or bank guarantee for completing infrastructure works in due time
- natural disaster.	- Guarantee for natural disaster risk.	- Private guarantors.
Financial causes/reasons		
- lack of appropriate funds payment	- Payment to the previously closed/-blocked account.	- Payment to the trustee account.

Table C

THE RISKS OF A BOT-FINANCED PROJECT AND THEIR COVERING GUARANTEES X)

(to be covered in function of each operation)

PROJECT RISKS (by origin and nature) (1)	COVERING GUARANTEE (2)	WHO ISSUES THE GUARANTEE (3)
OPERATING RISKS		
- technical operating risks.		
- product market risks.		
- lenders and investors risks.		
Causes/reasons:		
- operator inability to fulfil its obligations		
. operator techanical inability	- operator performance bond and substitution by a new operator	- penality paid by operator and/or private guarantor.
. equipment not complying during commissioning.	- contractor performance bond and control by research office/main contractor	- private guarantor.
. operator abandon	- substitution by new operator and sequestration of guarantee funds of the former operator and Performance Bond.	- using the guarantee account of the operator and private guarantor
. faulty supply of raw materials	- "supply or pay" long-term contract.	- guarantee of supplying banks.
. prohibition of foreign personnel entgry	- Political Risk Guarantee (PRG)	- Public/private guarantor.
- changes in statutory conditions/regime		
. change or cancellation of operating permit.	- PRG	- public or private international guarantor.

X) According to Antoine Khyr and Magdalaine Joël, Financing and Concessioned Projects (BOT Model)

Table C

(1)	(2)	(3)
. changes of technical norms of project functioning (pollution safety)	- PRG	- Public or private international guarantor.
- Changes of profit earning capacity of the project		
. severe technical equipment incident	- Contractor guarantee of successful conclusion and sponsor reserved funds.	- Private guarantor.
. changes of fiscal conditions/regime in the host country	- PRG	- Public or private international guarantor.
. raw materials price increase	- "supply or pay" long-term contract	- Supplying bank guarantee.
. selling price decrease imposed by public authority	- "take or pay" long-term contract/political risk	- Purchasing bank guarantee or public/private guarantor.
. inflation in the host country	- indexing of selling price through an initially pre-determined formula	- Political risk insurance.
- Risk of exchange of hard currency/local money		
. raw materials purchasing	- transfer on time guarantee and choice of hard currency payments/-receipts.	- Private banks
. foreign debt and dividends servicing	- hard currency receipts (HCR)	- exchange guarantee of the Central Bank in the host country
. capital reimbursements	- HCR	- exchange guarantee of the Central Bank in the host country
. lack of hard currency for transfer	- cash collection of hard currency	- transfer guarantee of the Central Bank in the host country

Table C

(1)	(2)	(3)
- breach of lenders and investors interest.		
. nationalizing of the project.	- PRG on investments	- International and public guarantor of the country exporting equipment and services
. interdiction of capital relinquishing on local and international market	- PRG on investments	- International and public guarantor of the country exporting equipment and services
. foreign debt restructuring of the host country	- enrollment fee exemption in the negotiations with the London Club	- special agreement and IMF agreement to preserve in the project the allocation of hard currency receipts (HCR)
. seizure of actual guarantee (active stocks) by public authority in the host country.	- PRG on investments	- public or private international guarantor

BOT CONTRACTUAL STRUCTURE

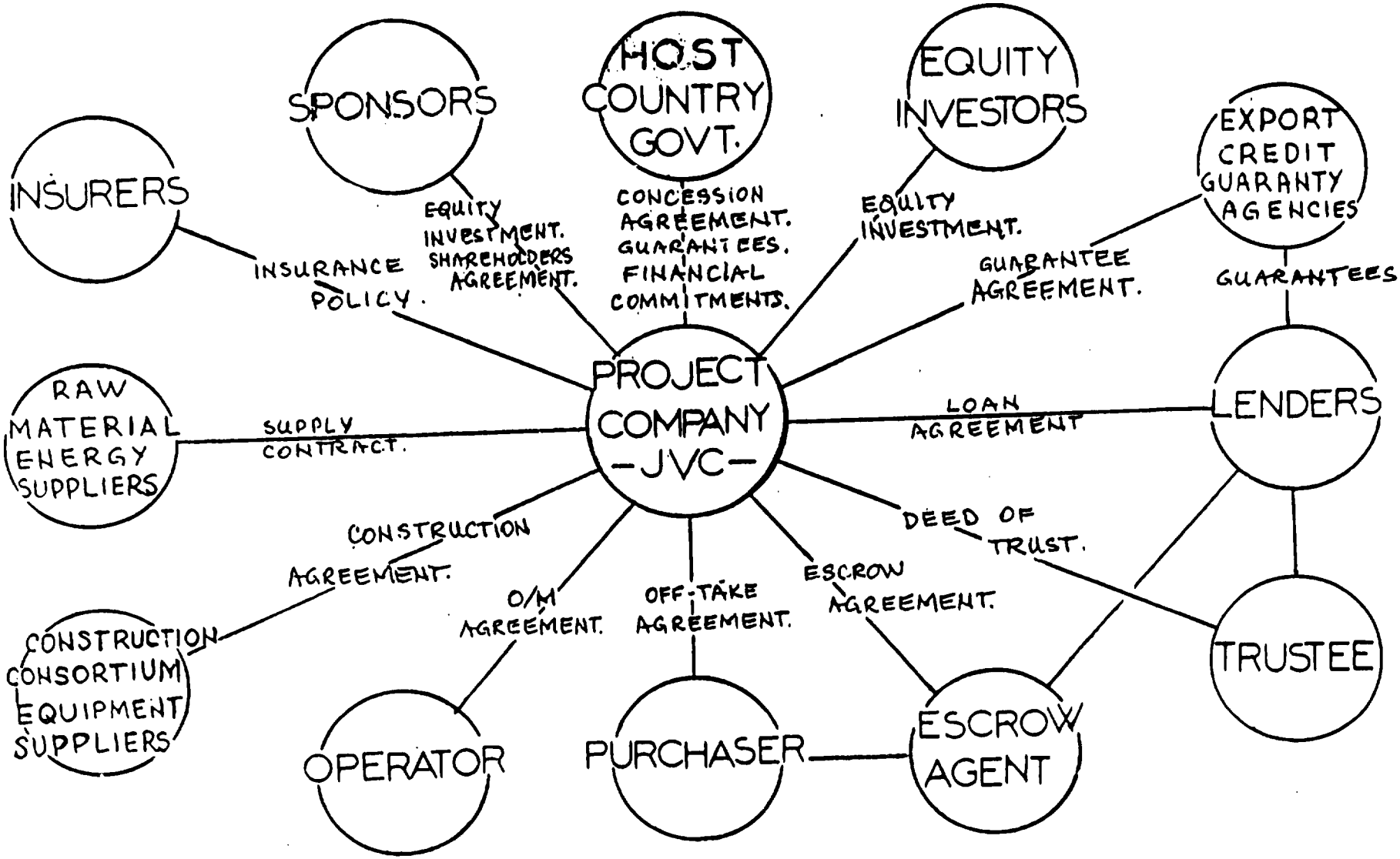


Table D

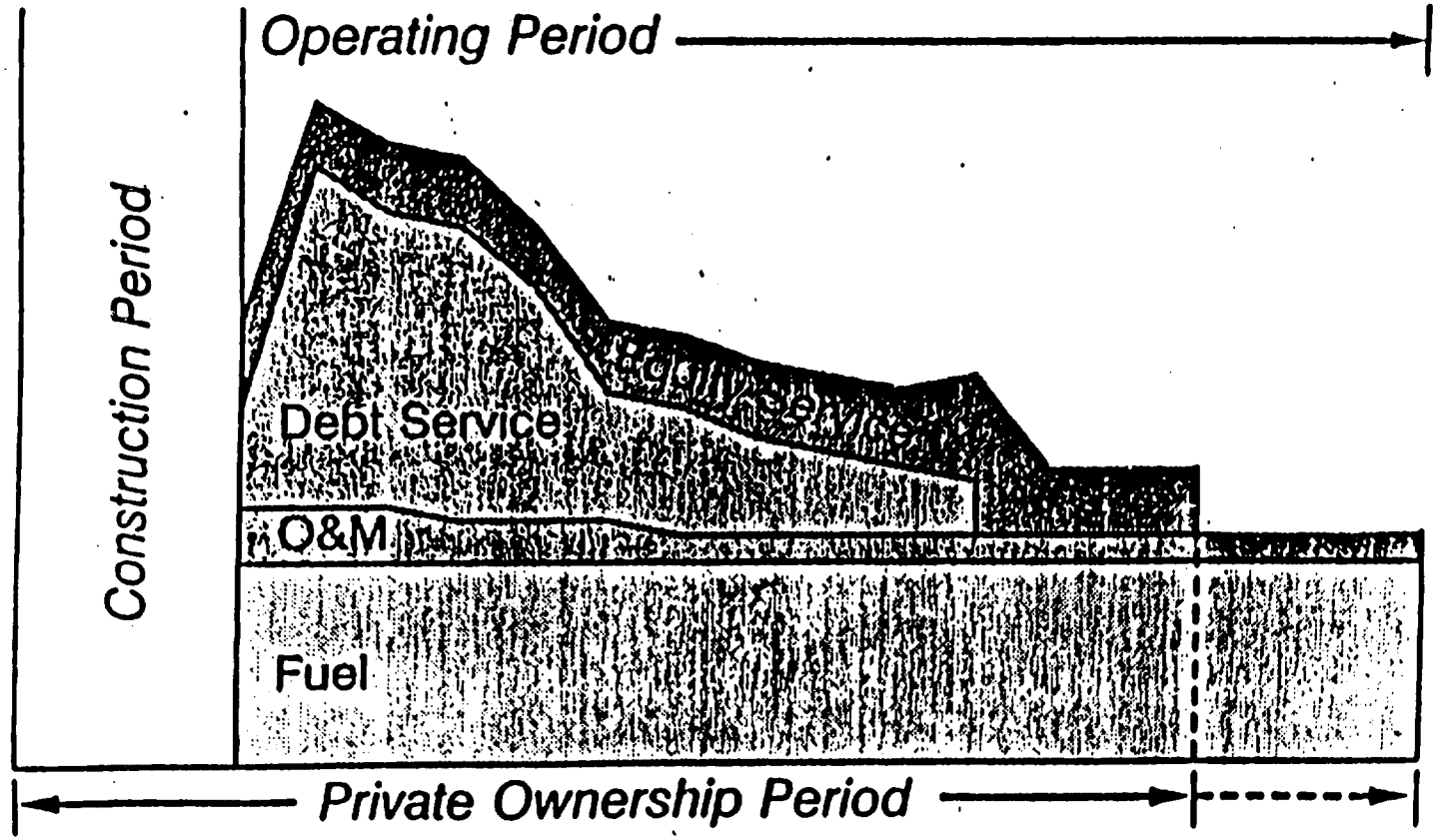
BOT Lender Security Structure*)

- Borrower is project company
- Installment escrow account
- Cost recovery power pricing
- Power payments in cost currencies
- Cash generation into escrow accounts
- Subordinated loan commitment
- Treasury guarantees payments to company
- Loans assumed in takeover

*) According to William E. Stevenson, "The Turkish BOT Power Project Experience"

BOT Power Tariff Structure *)

In Constant ¢/kwh



*) According to William E. Stevenson, "The Turkish BOT Power Project Experience"

BUILD - OPERATE - TRANSFER SCHEMES

EXPERIENCE OF IFC AND POTENTIAL ROLE

IN BOT IMPLEMENTATION

Outline of presentation made by Mr. Chung Min Pang,
Chief of Regional Mission of the
International Finance Corporation
at the UNIDO/APCTT International Seminar
on Build-Operate-Transfer (BOT)
held in Bangkok, Thailand
on 2-6 December 1991.

International Finance Corporation

Established 1956.

Member of World Bank Group.

Private sector development.

Specialising in non-recourse or limited recourse project financing.

LDC Financing Trends

Sovereign Risk - lending against state guarantees.

Corporate Risk - lending against proven corporate track record.

Project Risk - lending against project intrinsics: i.e. non-recourse project financing

Contract Risk - lending against contractual arrangements: e.g. BOT projects

Build-Operate-Transfer

In a BOT scheme, government transfers responsibility for the design, construction, financing, operation and maintenance of a major project that would normally be undertaken within the public sector, to a contractor or sponsor in the private sector. The private sector is given a "concessionary period", during which it owns and operates the project. During this period, the private sector seeks to repay all project debt and to achieve target equity returns. At the end of the concessionary period, ownership is transferred to the public sector. Depending on the project, the output or services produced may be sold:

- to a public sector organisation (eg. electricity sales from a private BOT power station to a public utility).

- direct to the final user (as in the case of infrastructure projects such as roads, bridges or mass transit systems).

BOT has become a generic term.

BOO	BOT	BTO	BOOS

Private Financing

Private Operation	Public Operation
Limited Recourse	Almost Public Guarantee

Key Characteristics

ALL BOT schemes are governed by long term contractual arrangements, committing the private sector operator to agreed performance targets (on capital costs, completion dates etc.) and the public sector to buying the project's output or allowing user charges to be levied on customers. The construction contractors and other private investors finance and operate the project.

Any facility or service that can generate revenues through user charges is potentially suitable. Existing or potential BOT schemes include:

- roads, bridges and tunnels for which tolls are charged.
- railways and urban metro schemes.
- power stations.
- hospitals.

For such projects, a special joint venture company is often created, linking the contractor and other interested parties such as the operator and banks. Typically the company is financed by a mixture of equity and debt.

IFC Experience

Primarily in Power Generation - Latin America and Asia.

Have also considered other sector projects: eg. public transport, telecommunications and waste [illegible]ent.

The Private Sector

For most private sector contractors, BOT schemes are a radical departure from their traditional involvement in construction projects, financed and owned by government or other private sector businesses. In a BOT scheme, the contractor plays three roles: as designer, constructor and equipment supplier; as project sponsor and equity investor; and as operator.

Most contractors see BOT schemes primarily as a profitable source of construction work and equipment sales. As invitations to tender for traditionally funded contracts decline, contractors are having to consider alternative means of maintaining profitable business growth. BOT schemes enable them to repackage their traditional services as well as offering opportunities for potentially profitable equity investment.

BOT schemes impose on contractors risks to which most are unused. The contractors are responsible for raising the project finance and as equity investors, bear the financing, construction and operating risks of the project. Before submitting a bid, the contractor needs to estimate the project's financial feasibility on the basis of the proposed contractual and risk distribution arrangements. For most construction projects, viability can depend on the costs of finance rather than on construction and operating costs. Although contractors are loath to consider BOT project financing on any thing but a stand-alone basis (i.e. non-recourse project financing), some exposure of their balance sheets to project debt-liability is almost invariably required by government, lending banks or both, in the form of a performance bond.

Set-up costs are high, in part because BOT schemes are a recent phenomenon. Contract drafting and negotiation with governments, public sector corporations, lending banks, equipment and raw materials suppliers can be a long and costly process.

Many of the parties involved tend to be unfamiliar with the requirements and consequently cautious. Contractors must be prepared to commit much more finance and much more managerial time to initial project definition, bid preparation and contract negotiation than in traditional project tendering.

Contractors may have limited experience in the operation and management of the project once constructed and indeed little previous business involvement in the field concerned. The contractor has to decide whether to:

- operate the plant.
- find a co-sponsor with operating experience.
- subcontract to a specialist private operator.

Finally, international construction contractors may seek specific protection from a number of risk associated with a BOT project in developing countries. These will vary according to the country's credit standing, political stability and economic position, but are likely to include safeguards against:

- force majeure events.
- exchange rate movements and currency convertibility.
- repatriation of earnings.
- restrictions on capital repatriation.

Insurance against such risks may prove to be prohibitively expensive, in which case contractors may seek binding government commitments.

The Public Sector

The interests of the public sector organization (PSO) that might otherwise have undertaken the project are important in some BOTs. For example, power station projects might normally be undertaken by the public utility to whom, in a BOT scheme, the private sector will sell the resulting output. The attitude of the PSO management to the contractor will depend largely on its view of the PSO's ability to undertake the project. If its own project implementation capability is weak, it may welcome the BOT scheme as a source of additional funds and expertise. It is likely to be less welcoming if it believes that it could run the project itself. Government may be able to exploit the situation in the interests of consumers to reduce costs and margins by arranging for public/private competition in the bidding process. If the private option is selected, the PSO becomes purchaser not competitor, and the transition is sometimes difficult to manage. Successful negotiation and implementation requires goodwill on both sides.

Project Conception

The contrast between a BOT project and a traditional public sector project begins at project conception. Traditionally, the public sector:

- identifies the need for a project.
- hires engineering consultants or uses its own technical resources to produce a detailed feasibility study and project design to meet that need.
- invites tenders from contractors to build the project to the specified design.

A BOT project may differ in all respects. First, particularly where BOTs are well established, the private sector is encouraged to take the initiative in project identification

and to come forward with novel ideas on concept and design. Second, even if the requirement for an investment project is identified by the public sector, the invitation to bid for a BOT project can precede any design work, and may only outline in broad terms the need that the project should fulfill. How that need is to be met is left to the private sector bidders. This approach has the twin advantages of drawing on each bidder's design expertise and creativity in proposing solutions to meet the perceived need and enabling each bidder to design solutions that make the most of his expertise or experience.

Project Preparation

Before contractors are invited to bid for a BOT project, some preparatory work is necessary, to establish a common framework for all contractors to make their bids. Specifically:

- a technical study to determine the technical parameters of the project, including a clear definition of the nature and size of the problem to be resolved.

- preparation of project bid documents, which draw substantially on the information generated by the technical study. These documents specify the type of bids that are required and the elements that individual bids should cover. The bid documents also specify clearly the criteria by which bids are to be evaluated.

The Bidding Process

The bidding process involves a number of steps. Initial expressions of interest are invited and reduced to a shortlist of bidders, based on their experience and expertise (pre-qualification). The shortlisted bidders are then invited to present more detailed proposals, in accordance with the requirements specified in the bid documents. In their detailed proposals, bidders are invited to specify all the key aspects of their proposed schemes. Proposals may differ significantly in some or all of the following respects:

- type of scheme and nature or level of the output or service provided.

- target completion dates.

- prices/charges for the project's output.

- performance criteria (quantity and quality of output; life of asset, etc.).

- financial returns and proposed financing structure (equity and debt).

- price adjustment formulae.

- foreign exchange arrangements.

- force majeure requirements.

- maintenance programmes (particularly important in BOT projects, since ownership of the asset is transferred to government in mid-life).

- risk distribution.

Contract Negotiation

A preliminary review is conducted of the detailed proposals, following which one or more bidders may be selected to enter into contract negotiations with the government. Contract negotiation on a BOT project is inevitably lengthy and involved, since the project stands or falls on a series of interrelated contracts that enable the private sector to raise finance for the project and the government to award the project to the preferred bidder. Both government and contractor must be prepared to commit time and resources to contract drafting and negotiation before firm agreement to proceed is made. If more than one bidder is invited to negotiate, then any differences between draft contractual terms negotiated with government may affect the ultimate choice of the winning bid. The contract between government and the private sector must:

- commit the contractor to providing the services specified in the proposal, on agreed terms.

- grant the contractor exclusivity on the project and any required permission to proceed.

- where appropriate, commit the government or a public sector organisation to purchase the project's output on the agreed terms.

The contract must be backed by and be conditional on simultaneous signature of a number of agreements required to enable the contractor to meet its commitments. The contractor must negotiate and sign:

- credit agreements with project lenders.

- a construction contract.

- equipment and material supply contracts.

- insurance contracts.

The contractor's ability to negotiate such contracts depends on the negotiated terms of the contract with government, which, from the contractor's viewpoint, provides the basic security package on which the project rests.

Bid Evaluation and Selection

To enable it to decide between the bids, government needs to have a clear definition of the overriding objective of the scheme, which may, for example, be to minimise:

- the price paid by the final consumer, or
- public expenditure, or
- the resource cost to the economy.

The chosen objective will dictate the method of project appraisal and comparison, affecting for example:

- the choice of discount rate: if a resource cost comparison is intended, the social opportunity cost of capital should be used to discount future costs and benefits; a financial interest rate - a private capital market rate - is more appropriate to a financial cost comparison.
- the treatment of taxes: these may be considered as costs in a comparison of the prices paid by the electricity consumers, but ignored in a public expenditure comparison.
- the value assigned to public sector risk shedding: the transfer of a risk to the private sector may not affect the real resource cost of a project to the economy, but gives the BOT scheme an advantage over the public sector alternative if the objective is to keep public expenditure to a minimum.

The chosen method of bid evaluation may affect the choice of proposal. Private (or public) sector bidders must be made aware at the outset of the proposed method of evaluation, so that they can design their projects and proposals accordingly.

Summary - The Steps Involved

Following is a summary of the key steps that government needs to take to see a BOT scheme through from conception to implementation:

Project identification:	By public or private sector.
Invitation to tender:	Requesting basic proposed project details and statements of experience and expertise.
Shortlisting:	According to track record and financial standing of bidders.

Bid preparation: Shortlisted companies are invited to submit detailed proposals. Bids to be submitted on the basis of bid document specifications.

Contract negotiation: Selected bidders are invited to contract negotiation, for signature if successful.

Bid evaluation: According to specified criteria.

Selection and contract signature

Build - Operate - Transfer Schemes

THE CONTRACTOR/SPONSOR'S VIEW

A BOT scheme does not happen unless there is an investor or contractor that is willing to sponsor the project (Contractor/Sponsor). Contractors are interested, largely because their market place is shrinking and because governments are able to demand more of them in a more competitive environment. For the contractor who worked for cash 10 years ago, the move from cost plus or lump sum pricing to BOT heralds a marked increase in risk exposure and a broadening of his traditional role; in particular, it requires him to act as project sponsor and to take an equity stake in the project's long-term success. Before taking on a BOT scheme, a contractor/sponsor will usually want to be assured of two conditions:

- first, firm commitment to the scheme from the government. The contractor will want to see commitment at the highest level, together with an understanding of the private sector profit-motive and the realities of risk sharing.

- second, evidence that other parties will be committed too. The relationships in BOT schemes are complex; the typical pattern is for a project company to be established and before a bid is prepared, for a series of commitments to be negotiated with the government, banks and other lenders, insurers, contractors, suppliers, shareholders and potential plant operators to be negotiated. Usually, a guaranteed or protected market for the output of the project will be sought.

The cost in terms of management time and up-front equity will be significant, as will the potential for delay. The resources required can be justified only on large and well defined projects where potential profitability outweighs the increased risk the contractor is called upon to bear.

Managing Risk

Risk shedding may be an important aim for government, but for the contractor, as sponsor and equity investors, the allocation of risk determines whether or not he will get involved. If the government seeks to shed too much risk the BOT project will not happen, or it will be prohibitively expensive. As a rule, the private group and its financial backers will take all project risk, for example cost overrun or operating failure, together with some degree of liquidated damages. But it will be reluctant to take general risks beyond its control; these must be covered through terms in the contracts, by laying off risk with insurers (where this is possible and not too expensive) or, with some political risks, through letters of comfort from government.

The most important general risks are:

- risks to the revenue stream where these are beyond the project company's control, such as demand risk when there is only one purchaser.

- exchange rate risks and the ability of a country to fund conversion to foreign currency, where revenue is earned in local currency but profits need to be repatriated.

- political risks such as expropriation or enforced contract renegotiation.

The last two are particularly relevant in developing countries, while protection against the first is a prerequisite for obtaining financing from commercial banks.

Financing

BOT schemes are usually funded by a mixture of equity, bank debt and other forms of borrowing, such as convertible loan stock. The lenders are invariably required to take a share of the project risk with contractors/sponsors. Such limited recourse project finance offers major benefits to the contractor/sponsor:

- it limits his financial exposure.

- it keeps the project off the sponsor's balance sheet.

- it reduces the average cost of finance as well as offering tax benefits - both important considerations in a competitive bid.

The growth in limited recourse financing and in the liquidity of the international capital market have both helped the contractor/sponsor to respond to BOT opportunities.

Gaining access to limited recourse financing depends on the ability to demonstrate a reliable revenue flow. Accordingly, banks look for well defined project economics and for

comfort through contract terms, or through insurance, against force majeure events or other risks to the revenue stream which are beyond the project company's control. Exclusivity or concession agreements and 'take-or-pay' arrangements are means of providing the necessary assurance. The banks may also require a mechanism for cash flow support and a limit to damages under the contract. They may ask for stabilization clauses that protect the company from changes in the tax regime. The banks will also require standby finance to be available, because a project cannot be starved of funds while a dispute is in progress. Many of these issues are raised at an early date, so contractor/sponsors consider it crucial to obtain bank participation from the outset. The bank's requirements can then be reflected in the contractor's negotiations with government.

A major difficulty in setting up project finance concerns uncertainty over timing. Infrastructure projects tend to have long lead times. Without a clear timetable, banks are reluctant to confirm their lending commitments to a project and the project company has difficulty in obtaining firm quotes from equipment suppliers.

The reluctance of banks to lend without a sovereign guarantee presents a major problem in setting up a financial package in some countries. The export guarantee agencies and the International Finance Institutions (IFIs) can increasingly provide protection against political and exchange risks, where commercial insurance would be very expensive and where hedging instruments are not available. IFIs that invest in a BOT project can provide protection through their wider role in extending credit to that country.

Public-Private Competition

In the special case of a BOT scheme in which a contractor/sponsor is competing against a public supply organization)PSO), the contractor has a number of special concerns:

- he wants those evaluating loans to give explicit recognition to the transfer of risk from public to private sector which is implicit in all BOT schemes.

- he must be given full opportunity to achieve efficiency gains in design, operation and speed of construction, because these are his opportunity to overcome the higher cost of private sector finance.

- if the PSO is to become the purchase of the output of the BOT scheme, it should not, as a competitor, be allowed to obstruct the negotiation of the purchase agreement leading up to bid submission.

Despite the last of these concerns, the contractor will want to know of the PSO's genuine contractual requirements, since they may eventually have to establish a working relationship. This can present a real conflict in objectives for the contractor as well as for the PSO.

Potential IFC Role

Financing (Investment Departments):

Equity and loan.

Non-recourse or limited recourse - cultivates prudence and discipline.

Advisory and Structuring (Investment, FIAS, Engineering and Corporate Finance):

Policy issues.

Legal and regulatory environment.

Institutional arrangements.

Contractual undertakings.

Technical configuration.

Financial structure.

Mobilization (Investment, International Securities and Syndications):

Also equity and loan.

Also non-recourse or limited recourse.

Six to one.

Honest Broker:

Political umbrella.

Commercial risk umbrella.

Credibility.

MALAYSIA'S EXPERIENCE IN BUILD OPERATE AND TRANSFER (BOT) METHOD OF PROJECT DEVELOPMENT

Paper presented by
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on Build Operate Transfer (BOT)
held in Bangkok, Thailand
on 2-6 December 1991

I. Introduction

1. BOTs represent an important feature in Malaysia's privatization programme. Before elaborating Malaysia's experience in undertaking BOT projects in more detail, an appreciation of the background to the privatization policy in Malaysia is perhaps quite useful.

II. Privatization Policy/Programme

2. The Malaysian Government enunciated its privatization policy in 1983 and began to implement it in a concerted manner in 1985. The policy was adopted with several objectives in mind. Among these are as follows:-

   (i) Relieving the financial and administrative burden of the Government;

   (ii) Reducing the size of the public sector;

   (iii) Raising efficiency and privatization; and

   (iv) Accelerating growth.

3. The Government's commitment in meeting development targets and economic growth has imposed a heavy strain on its financial resources. This has prompted the Government to find new approaches in relieving its financial burden. Privatization was considered one of the most feasible alternatives.

4. Public sector expenditure, both operating and development rose rapidly since the 70's to meet the overall development objectives and public sector revenue was never sufficient to finance both these expenditures. In 1986, revenue fell short of expectation thereby making it necessary for Government to borrow to finance even part of its operating expenditures.

5. There has been widespread dissatisfaction with the efficiency of state agencies and enterprises. Protection of several public enterprises from market forces has bred complacency and resulted in inefficiency and low productivity. The disciplines of the financial marketplace and the need to provide satisfactory returns to investors impose a more economically rational check on performance of a company compared to the often inconsistant lending and investment policy of the Government which are sometimes influenced by short-term factors rather than long term economic rationality. Efficiency will be further promoted by introducing competition where possible.

6. The privatization policy also aims to reduce the size of the public sector through the withdrawal by Government from active and direct participation in economic

activities. Government's participation in the economy has increased rapidly as a result of its goal to redress the economic imbalances in the country. Its involvement extended beyond the traditional areas of public good and social services. It increasingly expanded into the area of commerce and industry, resulting in a huge public sector and to a certain extent, crowding out private sector investments. In addition, many of these Government undertakings have met with rather miserable failures. It was felt that this trend was not healthy for the economy as a whole and the strategy of Government rollback was seen to provide a better alternative since the services will not be terminated or reduced, the workers will not loose their jobs and prices will not be allowed to increase freely in the case of privatization of monopolies.

7. An important consideration behind the policy is the need for the country to attain higher growth. Increasing the role of the private sector in development would contribute towards achieving this objective. The commercial and profit orientation of private enterprises is expected to provide the thrust for further growth. In the case of privatization of existing projects, further growth will be effected through efficiency gains and further innovations. In addition, privatization of new projects will, it is envisaged, result in further growth. Without giving the private sector the opportunity to undertake projects which are traditionally undertaken by the public sector, these projects might have to be shelved for the time being due to financial constraints faced by the Government and will deprive the country of the benefits therefrom.

8. For implementation purposes, the Malaysian Government defines privatization rather broadly. It is defined as the transfer of the Government's obligations in providing goods and services that are traditionally within its domain to the private sector. In the process, the Government transfers its ownership of assets or right to use thereof to the private sector together with its concommitant other rights and liabilities as the case may be. Based on this definition, various modes of privatization are being considered by the Government. Generally, the acceptable modes include divestment of Government's interest, leasing, contracting out and the management of Government entities. These modes are generally implemented for existing projects or activities. For new projects, the Government is amenable to the idea of 'Build-Operate-Transfer' or 'Build-Operate-Own' modes.

9. As to the beneficiaries of the policy, although the Malaysian Government encourages widespread ownership by the Malaysian public through 'offer-for-sale' mode of divestment, it does not preclude foreigners from participating in privatization projects.

10. Thus far, the Government has privatized 19 projects. These include among others, a container terminal, the national airline company, a national shipping company, road projects, a new television station, the Air Force's aircraft overhauling depot, a water supply project and a power transmission project.

III. Elements of BOT

a) General

11. BOT renders Governments the opportunity of financing its developmental projects off its balance sheet. These projects which are essential to the development of the country can be realised without increasing the sovereign debt of the Government.

12. This method of project development is generally applicable to infrastructural projects traditionally undertaken by the public sector. It involves private sector companies not only in building but also in designing, operating and owning such projects. Usually, these processes which may be undertaken by several entities are integrated and handled by one company often known as a concession company to which a concession will be granted by the Government to operate the project. A normal BOT arrangement is shown in Figure 1. At the end of the concession period, the ownership of the project and the right to operate it reverts to the Government which may then choose either to let a new concession or to operate the project itself. A number of variations of the method are possible, e.g. Build-Own-Operate, Build-Own-Sell etc.

b) Financing

13. Unlike traditional public sector projects whose capital costs are financed by loans raised on the creditworthiness of the borrowing country (particularly in the case of budget-deficit Governments), BOT projects are normally financed by a combination of debt and equity capital. The ratio between the two types of capital varies with projects. The providers of these two forms of capital are paid solely from the project revenues so that capital costs are normally financed with recourse normally limited to the projects revenue stream. Hence, the private sector bears a greater share of the risks. The revenues can either be contract-led or market-led. Market-led revenues are revenues of a service which are directly delivered to the customer. Contract-led revenues are revenues of a service which is not directly delivered to a specific consumer but through an intermediary usually a public sector agency operating a network of service. The latter will have to underwrite a minimum delivery. This form of contract is generally known as a "take-or pay contract". Compared to contract-led revenues, market-led revenues impose higher risks to the concession company.

Financing of BOT

- mainly the responsibility of the concession company;

- the shareholders of the concession company will provide a portion of the finance of the project in terms of its equity contribution;

- the lenders will provide a portion of the finance of the project; the financial commitment of the shareholders will depend on the amount of lending to be given by the lender i.e. the gearing for the project will depend on the lender;

- in addition to that the repayment of the loan to lenders and the payment of dividend to shareholders depends on the revenue cashflow of the project.

c) **Risks**

14. BOT projects are exposed to several types of risks viz, project commercial risks, country commercial risks and political risks.

(i) **Project Commercial Risks**

Project commercial risks are risks that are directly related to the project. Under this broad category, three further types can be distinguished i.e., development risk, realisation risk and operating risks, each related to a different stage in the project process.

Development risks are risks associated with competition occuring in the initial stage of the process, i.e., risk of loosing the tender to another competitor or failure to sign the concession contract resulting in the loss of development expenditures. Hence, such expenditures must be kept to a minimum.

Realization risks are risks related to actual construction of the project e.g., failure to complete the project as scheduled, in accordance with the terms of the construction contract, force majeure etc.

(ii) **Operating Risks**

Operating risks are risks resulting from variations in revenue, costs of operation, material supply etc. As mentioned above, market-led revenues are more risky compared to contract-led revenues. Cost risks are related to the technical and managerial aspects. Supply risks depend on the availability and price of +aw materials.

(iii) **Country Commercial Risks**

Country commercial risks are risks related to convertibility of revenue from the project into hard currencies and risks of foreign exchange and interest rate fluctuations.

(iv) **Political Risks**

Political risks are related to the internal and external political stability, the government's attitude towards paying profits on infrastructural projects, repatriation of profits, changes in regulation, integrity of governments etc.

d) **Allocation of Risks**

15. These risks need to be allocated efficiently to ensure the success of the BOT project. The concession company represents a mechanism to allow for such efficient allocation. Figure 2 illustrates a typical risk allocation solution for a BOT project. The contractor, constructing the project will only be willing to bear the construction risks while the operator, the operating risk. They are unlikely to agree to bear joint and several liability. The Government will also not accept several liability since this will lead to multiple agreements for the operation and construction of the concession. The creation of the concession company provides a solution to all three parties.

16. Similarly, neither the authority nor contractor nor the operator will agree to underwrite the concession company's financial liabilities. While the burden of payment for the capital expenditure is shifted from the government to the concession company which relies on the project revenue stream as its source of payment, the government or consumers may still bear some or all of the risk on the level and attainment of that revenue stream.

17. Many of these risks, such as construction risk and operating risks can be contained by various safeguards such as performance guarantees, completion guarantees, warranties from equipment manufacturers, operating guarantees, inspection of the facility by the government authority etc.

18. The private sector entities will normally accept risks that are familiar to them but will be hesitant to accept risks which are unquantifiable and which are outside their control such as unlimited demand risk, force majeure, etc. If the government still wishes to transfer the latter group of risks, to the private sector, the government must be prepared to accept the consequent higher cost of services.

e) **Advantages of BOT**

19. BOT mode of project development is mutually beneficial to both the Government and the private sector. From the Government's perspective, BOT allows it to freeze its position particularly in terms of capital and operating expenditure on a project due to the fact that the private sector is normally solely responsible for the project commercial risks and bears the brunt of the operating risks. The experience of Governments in developing project through the traditional way, many a time, has been marred by serious cost overrun. Such problems, under the BOT concept are no longer concern of the Government thereby allowing government budgeting to be

more specific and definite. In addition, the disciplines of the private sector will normally result in more efficient and better quality services. From the private sector's point of view, BOTs offers then a new opportunity for investment which normally gives a more steady and definite return.

IV. Malaysia's Experience

a) Objectives

20. As mentioned earlier, BOTs form an integral part of Malaysia's privatization programme. The government's objectives in pursuing development of projects via BOT are couched in the objectives of the privatization policy itself mentioned above. Apart from these objectives others which are peculiar to BOTs may be added. These are:-

(i) **Risk transfer and better risk management**

The government is able to transfer a substantial portion of risks to the private sector particularly those which lie within the latter's control. In addition, the closer and more direct identification of risk-taking with return possible through private financing will encourage especially careful risk management.

(ii) **Comparative benchmark**

BOT projects allow the government to establish a benchmark which can be used to measure the cost of its own project implementation and management and thereby encourage the spread of best practices in the public sector if the private sector proves to be more effective in particular areas.

(iii) **Creation of pioneering equity**

Being new to the private sector, BOT infrastructural projects help to create pioneering equity and to stimulate investor interest in such opportunities.

b) Problems and Constraints

21. In implementing BOT projects, several constraints have been encountered. These are as follows:-

(i) **Lack of understanding**

Being relatively a novelty, BOT method of project development has not been well understood and therefore not well-received particularly by Government agencies. The fear of loosing authority over such projects is another reason for resentment.

(ii) **Acceptable tariff levels**

The success of BOT projects depends on the revenue stream generated by the project in question and hence ultimately in the tariff structure proposed. Frequently, the project will operate as a monopoly, thus the government will have to regulate the tariff and ensure that it is justifiable. Tariffs need to be reasonable from the point of view of consumers so that they are not burdened by the tariffs, as well as investors so that the company in question is viable enough to keep going. Balancing the interests of these two groups is very a delicate task for the government. However, the government may decide to subsidise the service so that the consumer does not bear the full cost of the charge. Nevertheless, the decision to subsidise should be taken on broad social and economic grounds and should be independent of the decision to privatize.

(iii) **Reliability of service**

Projects that lend to BOT mode of development are normally infrastructural projects serving the public. The service must be continuously available to the consumer. Hence, the government must be sure that a private sector proposal will allow continuous supply to acceptable standards.

(iv) **Economic distortion**

Private sector resources are finite. If BOTs are seen to offer more attractive earning opportunities than do other opportunities, resources may be diverted from other priority areas of investments, such as manufacturing and agriculture which are crucial to the development of the country.

(v) **Risk allocation**

Problems have been faced in allocating risks between the government and the concession company. Transferring all risks invariably will result in increase in price of services, thereby jeopardising interests of consumers. Searching for the right balance poses some difficulties. There are no strict guidelines that can be followed thereby resulting in decisions to be arrived at on judgemental basis.

(vi) **Financing**

Being new, BOT mode of project development is also not well understood by local investors and banks. Local banks, particularly practice very conservative banking policies, always insisting on collaterals. The fact that BOT projects are actually temporarily owned by the private sector companies makes this kind of security irrelevant.

(vii) **Land**

The laws on land in the country render the transfer of the right to use a certain category of land to the private sector improbable. These are lands which need to be compulsorily acquired for the BOT project. No legal decisions have been made thus far on such cases.

c) **Involvement of the Government**

- from our experience, the lenders would like to see the commitment and the involvement of the project;

- lenders require certain commitment from government:-

  1. support loan in cases where the concession company faces a deficit in revenue collection and cannot meet the annual payment schedule to the lenders; in cases where there is a shortfall in the revenue collection the government will give a loan to the concession company to enable it to repay the loan; this support loan is repaid by the concession company to the government before the company pays dividend to its shareholders;

  2. the government looks at these requests objectively:-

     i) the government wants the project without incurring any expenses;

     ii) to ensure that the project will proceed;

     iii) dilutes part of the risk to the lenders.

d) **Project implementation in Malaysia**

1) Competitive bidding for projects already identified by the government;

2) Private sector proposal, provided the private sector meets the following requirements:-

   a) the proposal possesses a unique solution to an economic problem and offers a cost-effective solution;

   b) possesses patent rights on technical know-how which becomes essential to the BOT privatization proposal;

   c) the privatization project would not be viable if privatised on its own and its viability depends on being linked to another component of which private sector is already in possession. In such a case, the BOT

privatization project would be granted to the private party who is in possession of the main component.

e) **Progress**

22. As of 1988, of the 19 projects that have been privatized, six are of the BOT type. Some of these projects have been completed while others are still under construction. The details of these projects are shown in Table 1. Through this mode of privatization, the government had avoided a total of $4,913 million in terms of capital expenditure.

23. The debt equity ratio of capital funding for these projects varies from 99:1 to 65 :35. Equity holders are derived from within and outside the country. The largest extent of foreign participation is found in the Labuan Water Supply project. The guidelines on the privatization policy allows foreign participation to a maximum extent of 30%. Like equity capital, loan capital to finance these projects is also drawn from both sources. Since revenues are in Ringgit, projects with a high content of foreign debt are exposed to foreign exchange risk during the life of the concession or loan repayment period.

24. Risk allocation varies from project to project. While for some, the government underwrites the foreign exchange risk, for others it does not. For all projects, the project operating risks are borne by the respective concession companies. Some projects, particularly the road projects bear higher operating risks from the revenue side due to the fact that revenues are market-led instead of contract-led. However, for most of the road projects, the downside of the revenue risk is fixed at a specified minimum level through minimum traffic guarantees by the government. Most of the utility projects, however, depend on contract-led revenues streams. For most of the projects, inflation risks are being ameliorated through tariff escalation clauses being built into the concession contract. However, the escalation clauses vary from project to project. As can be seen, there is no consistent treatment of risks allocation. This is mainly due to the limited experience that has been gained in respect of BOT projects. Guidelines on BOT projects are being drawn up in order to ensure consistency in the implementation of these projects.

d) **Malaysia's Standing on Risks**

25. Several of the risks involved in BOT projects are country specific. Project commercial risks for example are affected by labour market conditions, efficiency of external trade particularly where projects involve imports of equipment and supplies. Malaysia can boast as having one of the most peaceful industrial climate in the world. Industrial disputes are relatively small in number and labour strikes are rare so that the number of man days cost is relatively small. Malaysia possesses a relatively efficient infrastructure system particularly transport and communication, thereby rendering risks in delivery of goods to be very minimal.

26. As to country commercial risks, relating to convertibility of revenues into hard currencies, Malaysia enjoys a very liberal exchange control regime which is applied uniformly to transactions with all countries except South Africa and Israel. As to foreign exchange risk, since 1985, the Ringgit suffered rather steep depreciation against the major currencies. Since then, to the present day, the Ringgit has depreciated 11.7% against U.S. Dollars, 69.1% against Japanese Yen, 31.2% against West German Deutchmark and 46.3% against UK Pound Sterling. However, the value of the Ringgit at the moment is showing signs of recovery, as the Balance of Payment position strengthens. Malaysia has been able to keep inflation at very low levels. Inflation rates since 1980 ranged from 0.4% in 1985 to 5.7% in 1982.

27. Malaysia is politically stable despite its cosmopolitan population. It has a strong and creditable Government. The policies of the Government are stable and reasonable.

Elements of a BOT Privatization Agreement:

- definitions
- contract documents
- construction of the interconnection
- concession, land rights, license and authority
- commencement date
- acquisition of land rights
- permits
- finance
- operation, maintenance and repair
- liability in the event of breakdown
- insurance
- payment to the company
- customs duties and taxes
- tax allowances
- termination clauses
- force majeure
- settlement of dispute
- vesting
- future expansion of demand
- appointment of Government agent
- miscellaneous

Conclusion

29. Being a developing country, Malaysia offers vast opportunities for BOT projects, particularly utility projects. The Government welcomes foreign participation in the development of these projects, particularly in areas where technical expertise is scarce or not available in the country.

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Table 1

BOT PROJECTS IN MALAYSIA

NO.	PROJECTS	COST (MILLION)	STATUS	CONCESSION PERIOD	CONCESSION COMPANY
1.	North Kelang Straits, Bypass	$20.50	Completed	25 years	Shahpadu Properties Sdn.Ltd.
2.	Kepong Interchange	$86.00	Completed	16 years	Seri Angkasa Sdn. Bhd.
3.	Kuala Lumpur Interchanges	$300.00	Under-Construction	12 years	Teratai K.G Sdn. Bhd.
4.	North-South Highway	$4,300.00	Under-Construction	30 years	PLUS Sdn. Bhd.
5.	Labuan Water Supply Project	$126.50	Under Construction	13 years	Labuan Water Supply Sdn. Bhd.
6.	Labuan-Beaufort Interconnection	$80.00	Under Construction	13 years	LBI Sdn. Bhd.
7.	Ipoh Water Supply*		Under Construction		
8.	Larat Matang* Water Supply		Under Construction		

*New Projects

Fig. 1 : Financing Structure

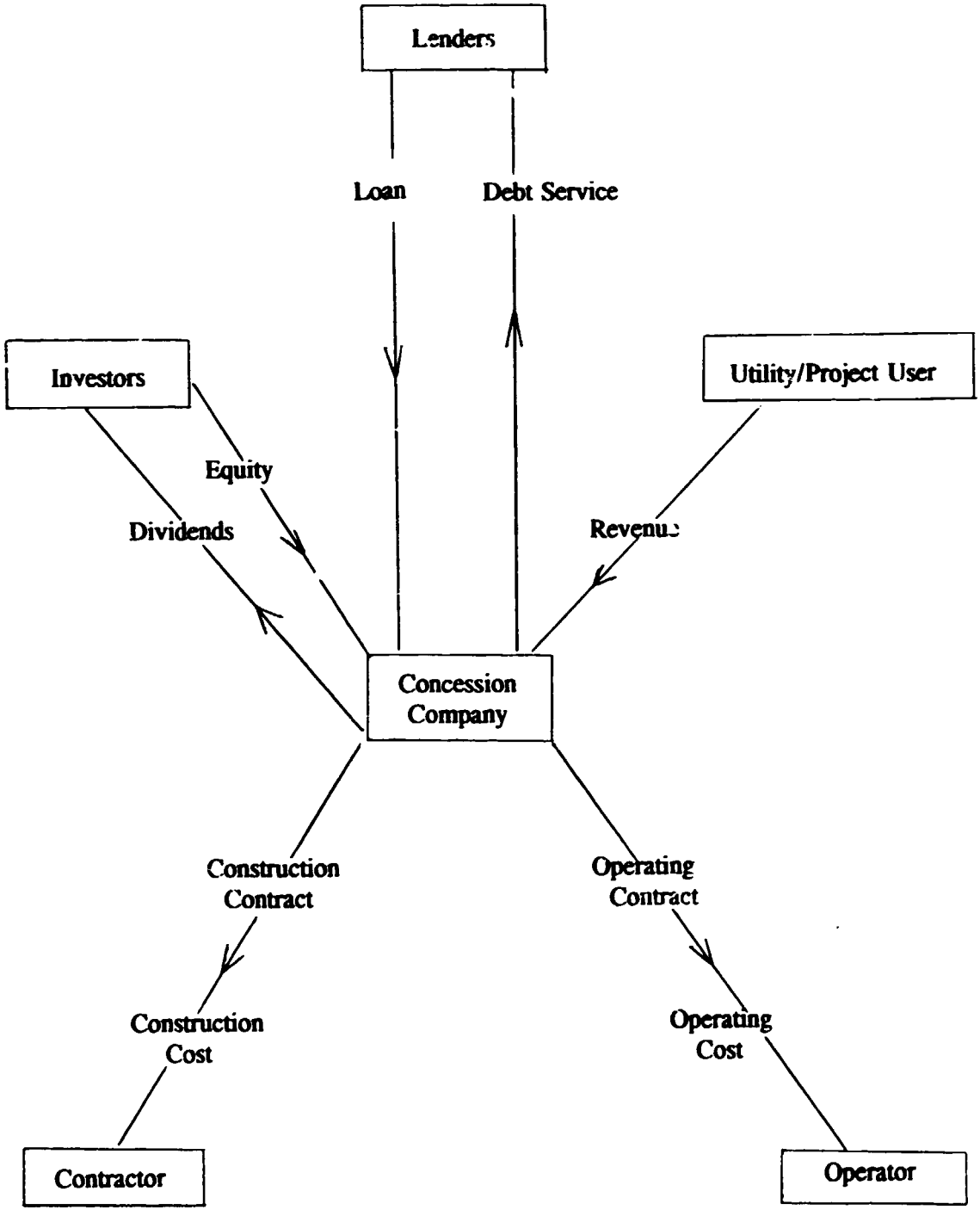
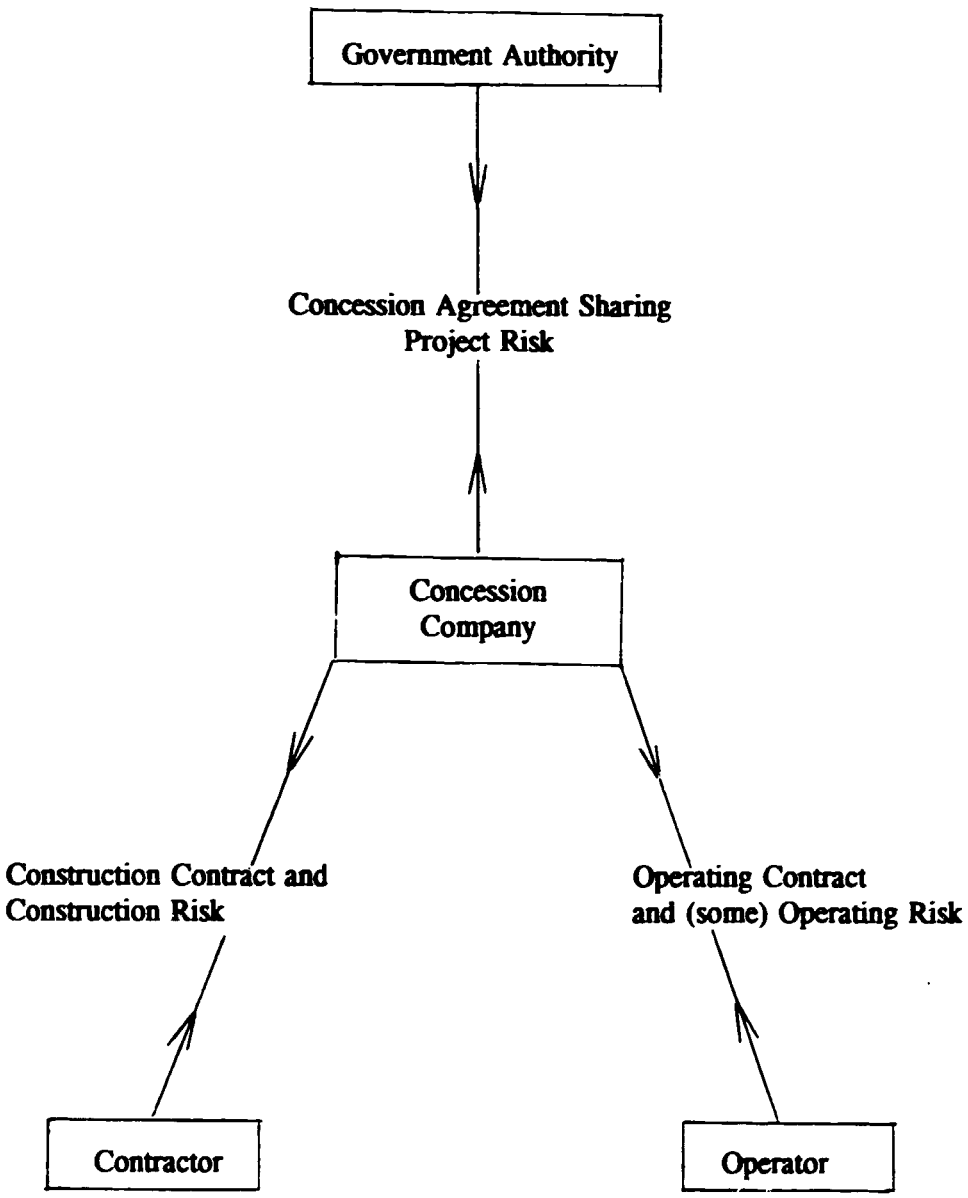


Fig. 2 : Risk Allocation



BUILD OPERATE TRANSFER (BOT) and BUILD OPERATE OWN AND TRANSFER (BOOT) EXPERIENCES IN PAKISTAN

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Introduction:

The changing international economic environment, excessive reliance on debt instrument combined with a number of other factors gave rise to the debt crisis in 1982. Since then the level of commercial bank lending to developing countries has been sharply decreasing. As a result, the Governments in the developing countries are faced with adverse economic situation. Therefore, they have been trying various options for attracting the direct foreign investment. They have been making strong efforts to attract new money through new project financing.

Pakistan has been able to maintain a steady growth rate of around five percent during the last five years. The level of domestic investment and savings are however not compatible with this rate of growth. In fact these are far too low for the ensuing annual GDP rise. One important implication is that considerable capital inflow has been supplementing the domestic investments. This, in turn, has created a number of complications, like a heavy debt burden. To combat these, the government has been trying to change the entire economic environment through major policy announcements. These range from privatisation and deregulation of economy to relaxation of exchange and payments controls and greater incentives for investment to domestic and foreign investors.

Pakistan is Open for Business

Today, Pakistan offers probably the most attractive terms anywhere in the developing world to foreign investors and entrepreneurs. It is the first country in South Asia to bring about:

- Denationalization of industry and privatisation of public utilities;
- Removal of all restrictions on dealings in foreign exchange, including banking, for both individuals and companies, foreign or local;
- Dismantling of state capitalism.

The invitation extended by Pakistan to the outside world to invest in its economy and share in its growth and development is backed by a package of measures tailored to bring about rapid privatisation, deregulation and denationalization.

Very recently, the government has freed the system of debilitating state controls, providing unprecedented incentives to private foreign and domestic enterprise, guaranteeing investment security, rolling back nationalization, privatising state-held business and industry including banking, on a massive scale and allowing the private sector complete freedom to realize its full potential.

These revolutionary steps are without precedent in the Third World, which is why the Pakistan experience is being followed with such interest in many developing countries.

Pakistan has realised that the involvement of private sector is essential for the speedy industrial development of the country. At present, the private sector is accorded highest priority. All the policy initiatives are directed for the developing of private sector. Public sector is restricting its role only to providing necessary support services and developing necessary infrastructure. Under these initiatives, all the room which was previously occupied by the public sector to install, operate and manage the industrial units have been left open for the private sector and a massive programme for privatisation of the state-owned industries and commercial units is underway. Private sector has also been offered to set up hydel stations and thermal power plants using indigenous coal and gas, furnace oil, imported coal and other economically viable resources.

Privatization in Pakistan:

The privatization commission set up by the government is working hard to dispose of a vast range of state run enterprises - from banks and insurance companies to textile mills, cement manufacturing plants, hotels and telecommunications facilities. Thirty of these units are up for sale on the market.

Two banks held in the public sector have already been privatised. While the Muslim Commercial Bank, the fourth largest in the country, has been sold to a private consortium of 12 entrepreneurs, the ownership of the Allied Bank, a comparatively smaller entity, has been transferred to its employees. Over 7,500 of them have thus become shareholders in a unique arrangements which has all the elements of success.

Next in line to go will be two of the country's largest banks - United and Habib. As someone said, "Privatisation Programme is opening up the market to enable business to grow without interference from the government."

In the aviation sector, in June this year, Paris-based Agha Khan Fund for Economic Development has been chosen from a host of foreign and domestic bidders to set up an airline in Pakistan. This airline in the private sector will compete with the state owned Pakistan International Airlines (PIA).

Twenty-two private shipping companies have already been granted operating licences, with the numbers expected to grow. These will be competing with the major state-run organization, Pakistan National Shipping Corporation (PNSC). Licences have also been issued to 19 pay phone card operating companies, thus opening the telephone network to the private sector. Two cellular mobile telephone companies are working in the private sector. Bids have already been invited by Pakistan Telecommunication Corporation (PTC) from companies to supply and install 200,000 telephone exchange lines on the basis of Build-Operate and Transfer (BOT).

BOT Mechanism:

a) General:

The Build-Operate-Transfer (BOT) is an innovative way of financing projects. It is a form of limited recourse project financing. In the recent years it has been applied in many developing countries for infrastructural projects. BOT renders Governments the opportunity of financing its developmental projects outside its budget allocation. These projects which are essential to the development of the country can be realised without increasing the sovereign debt of the Government.

b) Characteristic:

The main characteristic of BOT is that financing of the project is broken down into separate elements and the risk associated with the project is distributed to the participants, usually in rough proportion to their financial contribution. Natural candidates for BOT financing are those projects in which ownership of fixed assets and the right to earn revenue from them, is vested in the government. The model therefore works best for infrastructural projects, link roads, tunnels, bridges, power stations, etc.

The BOT concept and structure as given in Fig-1, implies the following stages of the project cycle. First, a joint venture (concession company) is established with the following shareholders: a consortium of construction and supply companies, the operator of the plant and the government through its authority. Second, the implementation agreement, which sets out the concession and sales agreement and determines the terms under which the revenue will be generated, must be signed. Third, raising of funds where the lenders are banks and export credit agencies while the borrower is the concession company. Fourth, construction of the plant and start up of the operation. Fifth, a period during which the project operates under the management of the concession company and the company hopes to receive sufficient money to pay operating costs, debt service commitments and dividends to shareholders. Sixth, after the concession period, the concession company is dissolved and the ownership of the project is transferred to the government, which continues its operation. Hence the term "build-operate-transfer" (BOT).

c) Financing:

Unlike traditional public sector projects whose capital costs are largely financed by loans raised by the Government particularly in the case of budget-deficits, BOT projects are normally financed by a combination of debt and equity capital. The ratio between the two types of capital varies with projects. The providers of these two forms of capital are compensated solely from the project revenues so that capital costs are normally financed with recourse normally limited to the project revenue stream.

Hence, the private sector bears a greater share of the risks. The revenues can either be contract-tied or market-tied. Market-tied revenues are revenues of a service which is directly delivered to the customer. Contract-tied revenues are revenues of a service which is not directly delivered to a specific consumer but through an intermediary usually a public sector agency operating a network of service. The latter will have to underwrite a minimum delivery. This form of contract is generally known as a "take-or pay contract". Compared to contract tied revenues, market-tied revenues impose higher risks to the concession company.

d) **Advantages:**

There are three main advantages of a BOT scheme. First, infrastructure projects are built with the mobilization of private sector resources and without the direct involvement of scarce budget resources; second, the government does not have to issue a formal guarantee of repayment of the debt and therefore the project debt does not appear as a public sector debt, and third, BOT is an innovative mechanism for increasing private sector involvement in economic development in general and within this context also for increasing the role of the private sector as a provider of infrastructure services which have traditionally been a public sector monopoly.

e) **Disadvantages:**

The main disadvantages of the BOT scheme are: First, it normally implies higher costs than if financed through government credit, and second, due to the extremely complex financial structure (risk sharing problem), negotiations for arranging the whole financial package are often very lengthy.

BOT - Pakistan Experiences:

a) **Energy Sector**

Private Sector Energy Development Fund (PSEDF)

As a cornerstone of the Pakistan's energy programme, the Private Sector Energy Development Fund (PSEDF) has been created with World Bank assistance. The Fund was established with money from the following contributors: the World Bank (lending worth 150 million US$), Japan's Export Import (lending worth 54 million US$), Italian government (lending worth 50 million US$). Canadian-CIDA (30 million US$ loan) and USAID (125 million US$ grant). By the middle of 1989 the Fund had mobilized around 700 million US$.

The Fund was created to provide long-term financing, covering up to 30% of the total costs of the projects to be built on a BOT basis. It is administered by the National Development Finance Corporation, Pakistan's principal development finance institution.

The resources of the Funds are being lent at prevailing market rates to BOT projects, with repayment terms of up to 23 years, including an eight years grace period. The remaining 70% is to be provided in equity form (up to 25%; half from overseas investors and half from domestic sources) and in local and offshore financing in the form of export credits and commercial loans as suppliers credits (45%). The structure therefore implies that for every 1 US$ provided by the Fund, 2 US$ will be raised by equity and debt financing. With such a financing structure, Pakistan is hoping to implement its energy development programme, eight power generation projects. Together they would be worth 2 billion US$ and have a production capacity of 2,000 megawatts.

The 23 years repayment period, has a significant positive effect on the cash flow of the project, which is extremely important, at least for the period of construction and the first year of operation. Quite a few foreign suppliers and financial institutions have entered into the Pakistan BOT energy project scheme. The Fund seems to be an innovative way to mobilize additional resources for energy sector financing in Pakistan which, under traditional schemes, it would not be possible to raise and therefore the implementation of the Pakistani energy development programme would be prolonged far into the future.

b) <u>Telecommunication Sector</u>

The importance of an effective communication system for the community development and economic progress cannot be denied. In Pakistan, the responsibility for providing and maintaining inland and overseas telecommunication facilities is assigned to the Pakistan Telegraph and Telephone (T&T) Department which became Pakistan Telecommunication Corporation (PTC) in 1991.

As on 30 June 1989, there were 2,070 telephone exchanges and 812,872 working telephones and 3,017 public call offices. The telephone density per 1000 population was 7.1 in 1988. Under a crash programme PTC decided to increase its capacity.

<u>Telephone Exchange Lines</u>:

In April 91, PTC invited bids to supply and install 200,000 telephone exchange lines, including local cable network and local junctions (hereinafter collectively called exchanges) in the cities of Lahore, Faisalabad, Rawalpindi and Islamabad on the basis of BOT. The terms and conditions of the bids were:

1) The exchanges were to be built in accordance with the PTC's standard and specification, for which a comprehensive survey was necessary.

2) The BOT contractor, before execution of the project, was to get his plan approved by PTC.

3) The contractor was to transfer the possession and ownership of the exchanges in good working order and condition to PTC, free of any charge or encumberance at the end of the specified period.

4) The contractor was allowed to interconnect his Exchanges with PTC's system and to operate them in accordance with Pakistan law, for the period agreed upon in the Contract with PTC. The quality of service provided by the Contractor to his subscribers had to be international standards.

5) The contractor was allowed to charge the same tariff from his subscribers as was being charged by PTC. In order not to put extra load on PTC's system, it was permissible for the contractor to charge a lower tariff than PTC's, nor the contractor was to subsidise the calls made by his subscribers in cash or kind, or by way of rebate or discount, or in any manner whatsoever. In case of any abnormal increase in traffic, passing through PTC's system, PTC was to have the right to investigate the matter, and to ask for such rectification as may be reasonable under the circumstances. The contractor at all times was to conduct himself with honesty in his dealings with PTC and the public.

6) In multi-exchange areas, junctions between his own exchanges was the responsibility of the contractor, without any cost to PTC.

7) For meeting the requirements of the contractor's exchanges, junctions and corresponding interface equipment in PTC's exchanges was also to be supplied and installed by the contractor at his own cost. No modification in PTC's exchanges was to be required.

8) The contractor's exchanges were to be located at independent sites (not on PTC's land or in PTC's buildings). The cable network was also to be independent of PTC's cable network and duct routes. Without any contractual obligation, PTC was to assist the contractor in finding land for his buildings.

9) All exchange buildings of the contractor were supposed to have enough space to accommodate three times the initially installed exchange capacity.

10) The contractor was to provide to PTC every month traffic and billing data, and such other information as may from time to time be required by PTC. PTC also desired to have the right, from time to time, to inspect the contractor's ..... (?)

11) In case of any material breach of the Contract, of which the Secretary, Ministry of Communications was the sole judge, PTC was to have the right to disconnect the Contractor's Exchanges from its system till such time that the cause of the complaint is removed, or to take possession of the Contractor's Exchanges forthwith. If possession of Contractor's Exchanges taken by PTC under this clause, such compensation was to be paid to the contractor as may be reasonable under the

circumstances, provided that the compensation did not exceed the depreciated value of the assets calculated at the rate of 10% straight-line depreciation per annum. For the purpose of the above calculation, the initial capital cost per Exchange line including switching, cable network and junctions, was taken to be Rs. 20,000. Thereafter, title to the Exchanges were to pass to PTC.

12) The contractor was allowed to keep 100% of the revenue from outward calls from his exchanges, provided that he paid to PTC such amount as would have been payable by PTC to foreign telecom administrations or carriers, on account of outward international traffic, originating from the Contractor's Exchanges.

13) No payment was to be due from PTC to the contractor on account of incoming traffic, including international traffic.

14) All Exchanges included in this tender were to be ready for cutover latest by December 31, 1992. Bids seeking extended time for cutover were not to be considered.

15) The bidders were to specify the date on which the Exchanges were to be transferred to PTC. Any bidder who was not willing to transfer the Exchanges within 8 years of December 31, 1992 was not allowed to participate in this tender.

Result

The project could not be given on BOT because of many reasons, however agreements have been made in principle with foreign reputed suppliers for supplying and installing Exchanges on Build-Lease and Transfer (BLT) basis.

c) Communication Sector:

Economic development and the consequent demand for mobility increases pressure on the communication system, so that it requires continuous expansion, maintenance, replacement and modernization. Yet, this sector did not receive adequate priority in the past due to pressure from other competing programmes.

Roads

Pakistan has about 115,800 km of all types of roads with an average density of about 0.2 km per sq km of area which is less than one third of the generally accepted standard of 0.5 km per sq km for developing countries with similar topography and levels of economic development. Even to the existing roads, overloading, rapid growth of traffic and induction of heavy duty trucks have necessitated large expenditure on road maintenance and development.

Now the government is according the top priority to optimal utilization of existing road system through proper maintenance, capacity improvement and rehabilitation;

construction of second carriage way along the National Highway N-5 from Karachi to Peshawar; concept of financing of roads through tolls and auction of franchises for service centres along highways; development of a modern road construction industry and improvement in road construction technology; involvement of private sector in infrastructure development and adaption of new and innovative mechanism of financing/like BOT, BOO and BOOT etc. Some of the projects under consideration of the government for which the bids have already been collected are as under:

Additional Carriageway Between Kharian and Rawalpindi

National Highway Authority (NHA) has a plan to construct an additional carriageway between Kharian and Rawalpindi (123 km) along the existing National Highway N-5, (i.e. Kharian-Jhelum-Gujar Khan-Rawalpindi Highway). The project includes construction of all structures en route including one major bridge over Jhelum river at Jhelum. Pavement width of this carriageway will be 7.3 meters. This asphalt concrete highway has an estimated value of Rs. 1200 million.

The project will be implemented on the foliowing basis:

* Built own operate transfer (BOOT)

* Finance-cum-Construction. Government Guarantee shall be available for repayment of the loan in both cases as hereunder:

    1. Self Financing: If the consortium arranges financing for itself, the GOP will guarantee the repayments.

    2. MOC/NHA as principal borrower: If the Company/Consortium provides loan to MOC/NHA, then also GOP guarantee shall be available.

Lahore-Islamabad Motorway

National Highway Authority have floated a tender for constructing a 4-lane, access controlled motorway from Lahore (by passing Sheikhupura, Pindi Bhattian, Bhera, Kalar Kahar and Balkasar) to Islamabad.

Project Length	315 kms (4-lane divided motorway)
Estimated Cost	Rs. 8512 million
Completion period	30 months

Financing:

* Private Sector parties have been asked to arrange the funding on competitive terms.

* Government of Pakistan would contribute a maximum of 50% of the project cost.

Repayment:

Following methods are being considered for repayment:

* Tolls to be collected by the bidder on the entire motorway (BOOT concept).

* NHA to collect toll itself and guarantee repayment of the loan. In this eventuality, however, no repayment was possible by NHA or the Government of Pakistan until the completion of the project and a minimum of ten years were required for repayment of the loan.

The project proposals from the interested parties (both domestic and foreign) have been collected. The contract for construction shall be awarded on design-cum-construct basis. Design and specification which conform to internationally accepted norms are being studied. These design will then be put for formal NHA's approval.

The proposals have also been collected for constructing this Motorway on turn-key basis. The proposals thus collected also include the financing and operating methodology and details of the firm or joint venture including their experience, capability, machinery holding, financial status and staff proposed for the project.

Lahore Bypass:

The Lahore Bypass project (estimated to be US$142.56 million) is planned to be completed in two phases over a period of 7 years and will generally comprise the provision of a dual 2 lane highway with 7.3 metres wide carriageway, a 2 metre wide central median and 3 metre wide shoulders. Under this project also flyovers, additional bridges at Ravi and improved functions will be constructed so as to assure smooth flow of traffic and to relieve the congestion on the existing roads. The project has been awarded to a private concern.

Since the Lahore Bypass project is structured as a build, own, operate and transfer (BOOT) project, therefore it was necessary to incorporate a privately owned limited liability company. The company would be capatilized to the extent of 25% of the total project costs. The contractual structure is given in fig-2.

The Project Company would have as its objectives the purchase of the existing bridge over the River Ravi; in phase I the construction of a new bridge over the River Ravi together with the construction of a new bypass around Lahore crossing the River Ravi at the bridge and connecting with the Jaranwala Road; a total of 18 kilometres approximately, of new roads; in phase II the construction of a second new bridge adjacent to the existing bridge , the upgrading of the Bund Road, flyovers on each side of the new bridge and a flyover over the railway crossing on the N-5, plus upgrading of the N-5 Highway through Shahdara Town. The project would seek a concession to own and operate the bridges and bypass for a minimum period of 20 years, with the estimated construction period of phase I being 36 months from the assigning of the Concession Agreement, with phase II commencing on completion of phase I and being completed at the end of year 7.

Ports

Pakistan has two main sea ports: (i) Karachi port and (ii) Port Mohammed Bin Qasim. Karachi Port handles 14.5 million tonnes of cargo and Port Qasim handles 4.4 million tonnes of cargo. For further expansion and improvement in port facilities, the government has formulated some modernization projects which also involve private sector. Some of the expansion programmes at Port Qasim which are proposed to be financed under BOT/BOOT schemes are as under:

Container Terminal:

Port Qasim Authority has collected expressions of interest from experienced Container Terminal Operator for the financing, maintenance and operation of Container Terminal at Port Qasim, Karachi, on Build-Operate-Own-and Transfer (BOOT) basis.

The existing 600 meter long multipurpose berths 5 to 7 are proposed to be converted into an integrated container terminal which shall be fitted with unloaders/loaders modern Gantry, Cranes, Transtainers, Fork Lift Trucks and allied equipment, having handling facilities of Panamax Class container ships.

The project envisages civil works; procurement, installation of equipment, operation and maintenance.

Fertilizer Terminal:

Port Qasim Authority is also considering expressions of interest submitted by experienced fertilizer terminal operators,for financing, construction, maintenance and operation of a Fertilizer Terminal under Build Operate Own and Transfer (BOOT) Concept, at Port Qasim, Karachi.

The facilities would have a maximum (import and export) capacity of handling about 3.0 millions tons of fertilizers per annum and would be capable of handling vessels upto 50,000 DWT. The project would broadly consist of a specialised berth with a design capacity

for 50,000/75,000/DWT ships for fertilizer handling unloaders/loaders, conveyers, storage sheds and allied equipment and infrastructure. The project is estimated at a cost of $60 million.

Grain Terminal:

Port Qasim Authority invited yet another expression of interest this time from experienced Grain Terminal Operators, for financing, construction, maintenance and operation of a Grain Terminal under Build Operate Own and Transfer (BOOT) Concept, at Port Qasim, Karachi.

The facilities would have a maximum capacity of handling 3.0 million tons of grain per annum, and would be capable of handling vessels upto 50,000 DWT. The project would broadly consist of a specialised berth with a design capacity 50,000/75,000/DWT ships for grain handling unloaders/loaders, conveyers, Automatic bagging plants, silos/sheds for storage of grain and allied equipment and infrastructure. The project is estimated at a cost of $ 60 million.

Sports and Recreational Facilities at Port Qasim:

Port Qasim provides unique constellation of factors favouring location of tourist industries, vast land along the shore, Network of creeks and mangroves offer potential sites for development of tourist and recreational facilities like:

a) Marinas
b) Scuba Diving
c) Beaches and Playland
d) Boating/Cruise in creeks and sight-seeing of ruins of Old Forts.
e) National Park
f) Hotels & Restaurants for tourists
g) Aquarium, Dolphinarium
h) Tourist Huts

Port Qasim Authority collected expression of interest from experienced Industrialists, Entrepreneurs, Tour Operators, Hoteliers interested in financing building, maintenance and operation of sports and recreation facilities at Port Qasim, Karachi on BOOT (Build Operate Own & Transfer) or BOT (Build Operate and Transfer) or BOL (Build Operate & Lease) Basis.

Conclusion:

Although, BOT/BOOT mechanism of project financing is a fairly new idea, it has been well received in Pakistan. It is still engendering great interest in the country, both in the public and private sector. The response from the private sector (domestic and foreign) to the bids called by the government has been quite encouraging. This shows the interest of the private sector to participate in limited recourse financing. It also shows government's intention to boost the economy through the involvement of private sector utilising BOT/BOOT mechanism. Ultimate success/failure of BOT/BOOT will depend very much on the triangular relationship of public, private sector company and the government.

Projects which will be implemented under BOT/BOOT would normally be infrastructural projects serving the public. The Government would like the service to be available to the public on continuous basis. Hence, the Government need to ensure that the private sector proposal allow continuous supply at acceptable standards.

Being new, BOT is also not well understood by local investors and banks. Local banks, particularly practise traditional banking policies, insisting collaterals. The fact that BOT projects are actually temporarily owned by the private sector companies makes this kind of security irrelevant.

To conclude "BOT/BOOT is not a one line answer to a series of problems faced by present day Pakistan's economy nor it is a substitute for more conventional means of financing. It can be applied on a highly selective basis - but that where it is appropriate it should certainly provide some well run, well managed projects which would benefit the Pakistan's Economy".

Fig. 1 : A Normal BOT Arrangement

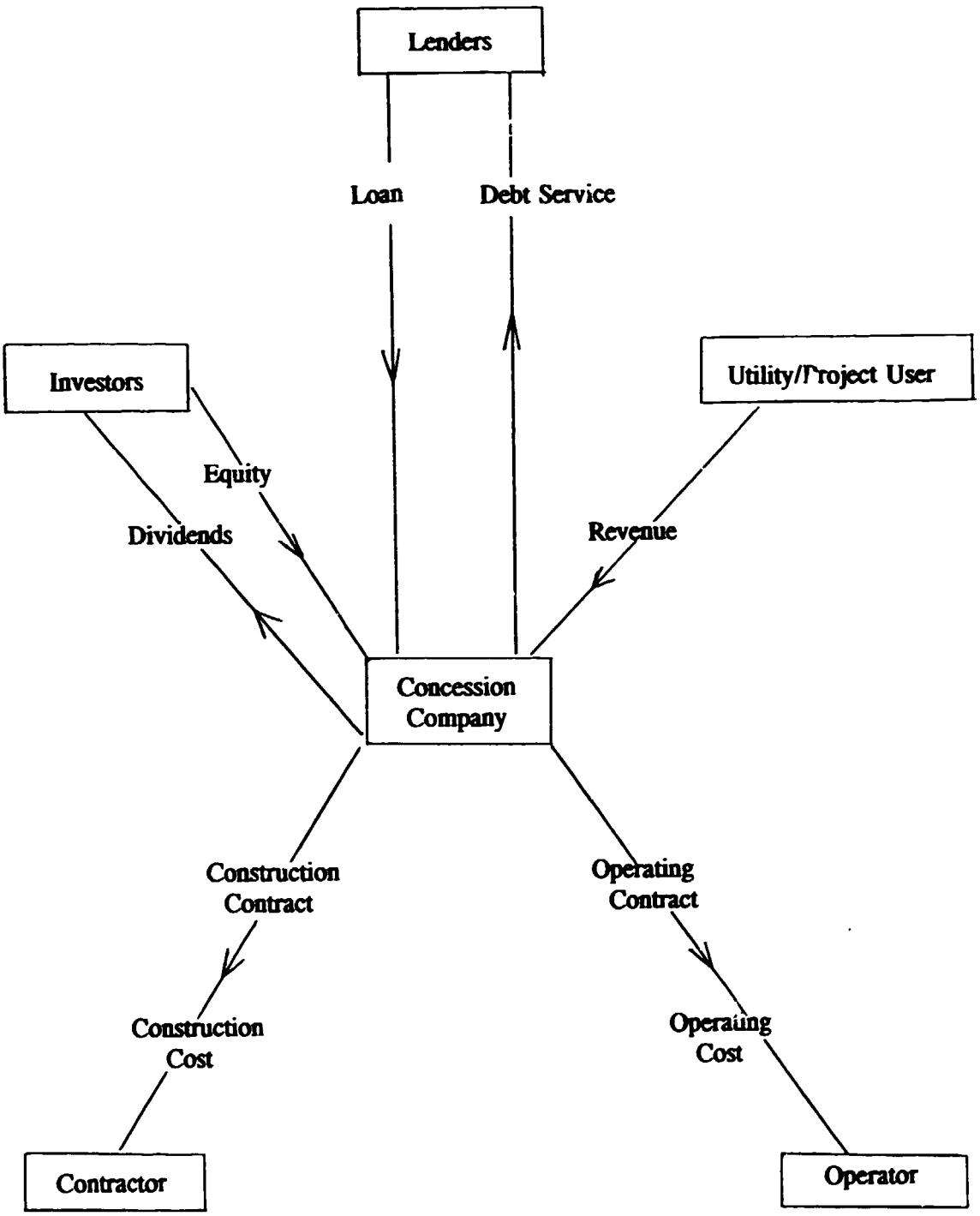
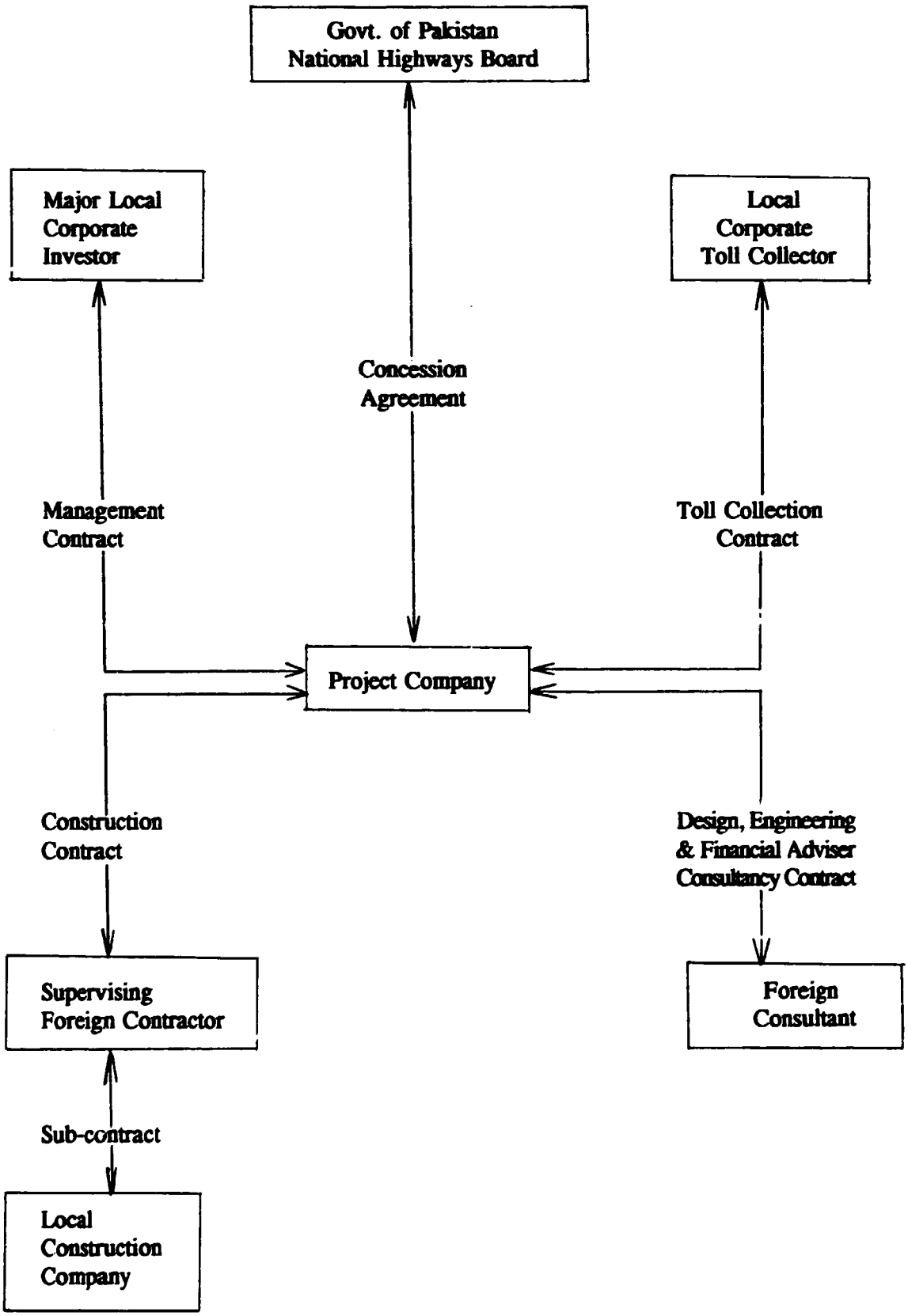


Fig. 2 : CONTRACTUAL STRUCTURE OF LAHORE-BYPASS



PHILIPPINE EXPERIENCE IN BUILD-OPERATE-TRANSFER (BOT) PROJECT IMPLEMENTATION AND FINANCING

Paper presented by Mr. Evaristo M. Medina,
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on Build-Operate-Transfer (BOT)
held in Bangkok, Thailand
on 2-6 December 1991.

The Build-Operate-Transfer (BOT) scheme in the development and operation of infrastructure projects has been adopted in the Philippines about twenty (20) years ago but the present concept of implementing BOT projects was not applied. The first two (2) projects under the BOT arrangement were our two (2) expressways which were funded and constructed by a private construction company. Though the firm still manages the operation of these projects, it is expected that these will be turned-over to the control of the government soon.

During the last two years, the private sector has been advised and widely informed of the Build-Operate-Transfer scheme which the present administration has chosen as a vehicle for private participation into construction and operation of physical infrastructure projects. It was only last year however, that the Philippine government decided to adopt the scheme on a bigger scale. This is because a lot of our much needed infrastructure projects which were proposed for foreign funding, may not be implemented due to the shortage of peso-counterpart funds and inadequate financial guarantees. Foreign lending institutions require the Philippine government to put up a counterpart fund equivalent to 20% to 25% of the cost of a project which will be financed by their loans. Hence, by adopting the BOT scheme, the government will be unburdened with these requirements since private sector funds will be used to complete these infrastructure projects. Also, it can result in lower capital and operating costs and less risk for the government.

Having fully realized the importance of the BOT scheme in the implementation of infrastructure projects, our Congress enacted a law, known as Republic Act No. 6957, tasked to authorize the financing, construction, operation and maintenance of infrastructure projects by the private sector.

Under this act, BOT scheme is defined as a contractual arrangement whereby the contractor undertakes the construction, including financing, of a given infrastructure facility, and the operation and maintenance thereof. Among the provisions of this act are the following:

- The contractor operates the facility over a fixed term during which it is allowed to charge facility users appropriate tolls, fees, rentals, and charges sufficient to enable the contractor to recover its operating and maintenance expenses, and its investment in the project plus a reasonable rate of return thereon. The contractor transfers the facility to the concerned government agency or local government unit (LGU) at the end of a fixed term which shall not exceed fifty (50) years.

- For the construction stage, the contractor may obtain financing from foreign and/or domestic sources and/or engage the services of a foreign and/or Filipino contractor.

- The ownership structure of a contractor engaged in infrastructure where operation requires a public utility franchise, must be in accordance with the

constitution. Thus, at least sixty percent (60%) of the capital of the contractor applicant must be owned by Filipino citizens.

- In the case of corporate investors in the Build-Operate-Transfer operations, the citizenship of each stockholders in the corporate investors shall be the basis in the computation of Filipino equity.

- In the case of foreign contractors, Filipino labor shall be employed or hired in the different phases of the construction where Filipino skills are available.

- The BOT scheme shall include a supply-and-operate situation. This is a contractual arrangement whereby the supplier of equipment and machinery for a given infrastructure facility, if the interest of the government so requires, operate the facility, provides process technology transfer and training to Filipino nationals.

- Financing from foreign sources shall not require a guarantee by the government or government-owned or controlled corporations.

- The financing of a foreign or foreign-controlled contractor from Philippine government institutions shall not exceed twenty percent (20%) of the total cost of the infrastructure facility or project.

The National Power Corporation, a government agency authorized to handle BOT projects, is not however governed by this provision but is separately regulated by Executive Order No. 215 which allows a 100 percent financing from the private sector. This is due to the very big capital requirements of power generating projects.

Problems Encountered in Packaging BOT Projects

In packaging BOT projects, we have encountered the following problems:

1. Unavailability of experienced equity investors and experienced project developers.

2. The inability of the government to provide the necessary level of cooperation and support. This is due to the reluctance of some government officials to accept project risks.

3. The scarcity of appropriate sources of cash equity. Although investment funds for sound projects are available, development capital is scarce.

Authorized Contracting Government Agencies

The Philippine government infrastructure entities that are authorized to enter into contract for BOT projects are as follows:

1. Department of Public Works and Highways (DPWH)
2. Department of Transportation and Communication DOTC)
3. National Irrigation Administration (NIA)
4. Metropolitan Waterworks and Sewerage System (MWSS)
5. Local Water Utilities Administration (LWUA)
6. Philippine National Railways (PNR)
7. Light Rail Transit Authority (LRTA)
8. Philippine Ports Authority (PPA)
9. Manila International Airport Authority (MIAA)
10. National Power Corporation (NAPOCOR)
11. National Electrification Administration (NEA)
12. Philippine National Oil Company (PNOC)
13. Export Processing Zone Authority (EPZA)
14. Public Estates Authority
15. Local Governments Units (LGUs)

The Department of Science and Technology (DOST), though not an infrastructure entity, might adopt the BOT scheme in the near future in implementing science-related infrastructure projects.

Eligible Infrastructure Projects

Infrastructure projects which are financially viable and can meet the other provisions of the Implementing Rules and Regulations (IRR) can be undertaken through BOT schemes including but not limited to construction. Construction include engineering rehabilitation, improvement, extension and modernization, supply of equipment and machineries, operation and maintenance of the following:

1. Highways, including expressways, roads, bridges, interchanges, tunnels and related facilities;

2. Rail-based projects packaged with commercial development opportunities, e.g., use of government facilities;

3. Non-rail based mass transit facilities, navigable inland waterways and related facilities;

4. Port infrastructure like piers, quays, storage, handling ferry services, wharves and related facilities;

5. Airports, air navigation and related facilities;

6. Power generation, distribution of electrification and related facilities;

7. Telecommunications, backbone network, terrestial and satellite facilities and related service facilities;

8. Irrigation and related facilities;

9. Water supply, sewerage, drainage and related facilities;

10. Educational and health infrastructure;

11. Land reclamation, dredging and other related facilities and utilities;

12. Industrial estates, including infrastructure facilities and utilities;

13. Markets, slaughter houses and related facilities;

14. Warehouses and post-harvest facilities;

15. Public fishports and fishponds, including storage and processing facilities; and

16. Environmental and solid waste management related facilities such as collection equipment, composting plants, incinerators, landfill and tidal barriers.

Approval of Proposed BOT Projects

The head of the concerned agency sees to it that the list of national projects proposed for BOT scheme must be part of the medium-term infrastructure programs and must be duly approved by our Congress prior to the call for bids for their implementation. For this purpose, the agency submits such list to our Congress as the need for a BOT project arises preferably once every six (6) months.

Minimum Standards and Basic Parameters

The agency/LGU lay down the minimum design and performance standards and specifications, as well as economic parameters, which shall be observed by the bidder/contractor in preparing his bid and, if successful, in building and operating the facility.

Economic Parameters

To provide a uniform basis for the preparation by the contractors of their bids and the comparison by the tendering agency (LGU) of their bids on a "Present Value" basis, the agency (LGU) prescribes the following economic parameters:

a. Inflation and discounting rate.
b. Foreign exchange rate.
c. Maximum period of project construction.
d. Fixed term for project and collection of tolls/fees/rentals/charges.

Advertisement

Upon approval by our Congress of a proposed BOT project, a notice inviting all duly qualified infrastructure contracts to participate in the bidding for the approved project is thus published in at least two (2) newspapers of general circulation once every week for three (3) consecutive weeks.

Public Bidding of Projects

In the case of BOT, the contract will be awarded to the lowest complying bidder based on the present value of its proposed tolls, fees, rentals and charges over a fixed term for the facility to be constructed, operated and maintained according to the prescribed minimum design and performance standards, plans and specifications.

Repayment Scheme

For the financing, construction, operation and maintenance of any infrastructure project, the contractor is entitled to a reasonable return on investment and operating and maintenance cost is in accordance with the bid proposal as accepted by the concerned contracting infrastructure agency and incorporated in the contract's terms and conditions.

The repayment scheme is affected by authorizing the contractor to charge and collect reasonable toll fees, rentals and charges for the use of the project facility not exceeding those proposed in the bid.

Project Supervision

The concerned government agency is tasked to handle the technical supervision of the construction operations and maintenance of all BOT projects. However, the Coordinating Council for the Philippine Assistance Program (CCPAP), a government agency under the Office of the President, is the coordinating body to oversee all infrastructure projects under the BOT scheme in the Philippines. They are directly involved in the packaging of BOT projects.

So far, the CCPAP is responsible for the identification of demonstration projects for the local government units which can be constructed through the BOT scheme. In this manner, our government will be helping not only the donor community in addressing the problems of implementation in Official development Assistance (ODA) projects but also, the local users of the ODA.

A month ago, Hopewell Energy International Ltd. of Hong Kong signed an agreement with my government to construct two (2) 300 megawatt coal-fired power plants in Quezon province, 115 kms. South of Manila. The plant which would supply electricity to Luzon will be the country's biggest. Construction will start next year on a BOT scheme.

Under the agreement, Hopewell will finance the construction of the two (2) plants at a cost of $109.5 million over a three-year period. NAPOCOR will supply the plant coal requirements. Hopewell, on the other hand, will operate the power station for twenty-five (25) years handing it over to NAPOCOR at no cost.

Another similar project to be constructed by Hopewell is a two (2) 300 megawatt, coal-fired electric plants in Zambales. The first phase of the project would cost $441 million. Financing is still under negotiation with ADB and Japan Eximbank. The Philippine government will raise $91 million as its local counterpart.

The following demonstration projects, submitted to the CCPAP by the Construction Contract Services Corporation as Consultants to the Philippine Assistance Programme Support (PAPS) projects are now ready to start the BOT process. The Pre-feasibility Studies/Feasibility Studies of these projects were already completed and these were already announced in the media.

1. <u>The Manila North Harbor Grains Terminal</u>

   The project involves the creation of a modern grains handling terminal for the purpose of lowering wastage, ship waiting time and consumer prices of basic commodities.

2. <u>The General Santos Agricultural Processing Centre</u>

   It involves the creation of a 32 hectare agricultural processing complex in General Santos City, and in South Cotabato, Mindanao. The project would provide fish, livestock and agricultural storage, marketing and processing facilities designed to add-value to locally harvested products.

3. <u>The Philvidec Industrial Estate</u>

   It involves the creation of a 313.19 hectare industrial estate in Misamis Oriental Province. The 144 million peso project would promote industrial development in the region.

The following are the Medium Term Projects that require pre-feasibility study or additional authorization to start:

1. **The South Harbor Bulk Handing Terminal**

   The project would lower the cost of bulk commodities through reduced ship waiting time, lower shipping costs and faster redistribution.

2. **Manila-Bataan Coastal Road**

   It involves the construction of a two-lane road of 30.05 kilometers from Bulacan through Pampanga to Bataan.

3. **The Alabang President Quirino Avenue Elevated Expressways**

   It involves the creation of a 16.6 km. expressway in Metro Manila from Alabang to President Quirino Avenue. The project would alleviate severe congestion in this corridor.

4. **Ninoy International Airport Miscellaneous Projects**

   These projects involve the creation of various service facilities at the present Manila International Airport.

   The following are potential projects which reflect private sector interest that will be attractive to infrastructure privatization. Only concept papers have been completed.

   1. New Manila International Airport
   2. Metro Manila Composting Plant
      It is a $25 million plant to process organic material into compost that will be sold locally or abroad.
   3. Lipa-Batangas Road
   4. Manila Light Rail III
   5. Miscellaneous Power Projects
   6. General Santos Airport

   With all these infrastructures, my government hopes to tap some $200 million worth of projects from the private sector using the BOT scheme within the next two (2) years. The amount represents 20% of the total $1 billion worth of projects eligible under the BOT scheme. The ADB and the International Finance Corporation are reportedly willing to put up the needed funding to carry out these BOT projects.

Annex 1

THE SECOND STAGE EXPRESSWAY SYSTEM (SES) BACKGROUND

1982-1983	Feasibility Study by JICA
1985	The Cabinet approved the Project
1986-1987	Review of the Previous Study, Detailed Design and Environmental Impact Assessment
1987	The Cabinet set the policy on privatization of the SES.
1987	Announcement for the SES privatization
1988	Contract Signing
1990	Construction begins.

Toll Structure

.	Urban Expressway (FES+Sector A & B)	30 Baht/pcu (50 Baht for > 4 wheel & < 10 wheel 70 Baht for > 10 wheel)
.	Suburban Expressway (Sector C)	15 Baht/pcu (20 Baht for > 4 wheel & < 10 wheel 30 Baht for > 10 wheel

Rem. 5 Baht discount for using both urban and suburban expressway

Toll Schedule

	Urban	Suburban
.	1993 30 Baht/pcu	10 Baht/pcu
.	1998 40 Baht/pcu	15 Baht/pcu
.	2003 50 Baht/pcu	20 Baht/pcu
.	Every 10 Baht/pcu 5 years Increase	5 Baht/pcu Increase

Revenue Sharing

		ETA's Share	BECL's Share (%)
.	1st 9 years	40	60
.	2nd 9 years	50	50
.	3rd 9 years	60	40

THE PRIVATIZATION OF THE SECOND STAGE EXPRESSWAY SYSTEM OF THAILAND

Paper presented by
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held in Bangkok, Thailand
on 2-6 December 1991.

Abstract

The transportation study two decades ago initiated the development of the expressway system in Bangkok, Thailand. The First Stage Expressway System with 27.1 km. in length was fully opened to traffic on December 1987. In the mean time of the implementation of the FES, the Feasibility Study of the Second Stage Expressway System (SES) was finished in November 1983, following with the Detailed Design and Environmental Impact Assessment of the SES which was concluded in May 1986. Because of the world economic recession impact in 1982, the government set a policy to privatize mega infrastructure projects including the SES. The implementation plan of the SES was studied for both alternatives, ie. by government budget and by privatization. Finally, the latter method was picked up in accordance with the government policy. At present the construction of the SES is in process with the opening date of the first in March 1993.

1. Introduction

This paper presents the development of the Second Stage Expressway System. Traffic congestion problem was noticed about two decades ago, while the population of the Greater Bangkok Area (GBA) was approximately only 4.3 millions with 318,000 vehicles (175,000 passenger cars; 75,000 motorcycles; 9,000 taxi; 7,000 tuk-tuks; 50,000 trucks; 2,800 buses). At present, the population of the GBA is about 8 millions with approximately 2 million vehicles (946,000 passenger cars; 831,000 motorcycles; 25,600 taxi & tuk-tuks, 227,000 trucks; 59,000 buses). Traffic congestion problems in the metropolis are very serious as vehicle speeds on main roads are lower than 10 kilometers per hour during rush hour. The major causes are the results of poor town planning and the lack of efficient public transportation and road network systems. Considering the road network system, it is found that the ratio of the road surface area to the inner area of the metropolis is only 6% which is lower than 20% standard of other big cities in the world. The lack of the road surface and efficient road network system cause chronic traffic congestion in the city of Bangkok with the results of economic losses and adverse environment. The traffic congestion is now widely recognized and considered as one of the most important national problems.

2. The Feasibility Study of the Second Stage Expressway System in the Greater Bangkok, 1982-1983.

In 1982 the Expressway and Rapid Transit Authority of Thailand (ETA) with the cooperation of the Japan International Cooperation Agency conducted an economic and engineering feasibility study of the SES. The study recommended two routes of the expressway namely North-South route and East route. The North-South route starts from Vibhavadi-Rangsit highway in the north and joins the existing FES in the south with the length of 19.17 km. In addition, the East route connects with the North-South route at Phaya-Thai Interchange and runs to the east terminating at

Ramkhamheang Road with the length of 8.72 km. The total length of the SES is 27.89 km. with the investment cost of 16,118.82 Million Baht (1983), Net Present Value of 6,090 Million Baht, benefit/cost ratio 1.65 and internal rate of return 17.0% at 12% discount rate.

3. The Special Report on Review of the Previous Study, Detailed Design and Environmental Impact Assessment of the Second Stage Expressway System in Greater Bangkok, 1986-1987.

An engineering consultant was hired to review the JICA's study and conduct the Engineering Detailed Design and Environment Impact Assessment of the Second Stage Expressway System. The route alignment was a little modified with the extension of the North-South route to the upper north at Chaeng Wattana Road, the extension of the East route to further east and a Collector/Distributor Road connecting the main line of the expressway with the central business area of Bangkok. The total length of the reviewed SES is 39.05 km. with the investment cost of 17.620 Million Baht (1986), benefit/cost ratio 2.32 and internal rate of return 22.60% at 12% discount rate.

4. The Development of the SES privatization.

After the completion of the JICA's study, the Cabinet approved the SES project on March 12, 1985. Due to the economic recession, the cabinet advised the ETA to look for the private sectors to make an investment in the SES project for a period of 30 years.

On August 14, 1987, the ETA made an announcement inviting the private sectors to submit the investment proposal for the SES project. The main conditions and requirements for the investment proposal as stated in the distributed Terms of Reference by the ETA can be briefly detailed as i.e.;

1) The ETA shall acquire all land as to be required for the SES project construction.

2) The Government shall not make any grant or subsidy to the Investor in any case apart from those specified in 1).

3) The Investor shall be responsible for the construction, procurement and installation of equipment, for operation and maintenance of the SES. The Government shall not guarantee any loan.

4) The Investor shall reimburse the land acquisition cost paid by the ETA or the Government, together with interest and conditions of such repayment, as well as propose other benefits to be beneficial to the Government.

On February 1, 1988, 2 proposals were submitted to the ETA for evaluation both in technical and financial. On March 14, 1988 the winner was selected based on the followings;

1) The proposal conformed with the conditions and requirements.

2) The registered capital (equity) was equal to 20% of the project cost as required by the conditions while the other party's equity was 10%.

3) The implementation plan offered full project construction with a specific period.

4) The cheaper construction cost on the same base year.

5) Better land utilization and environmental mitigation plan proposal.

After the Cabinet's approval on September 20, 1988, the ETA signed a contract with the successful investor on December 22, 1988 for the implementation, operation and maintenance of the SES for 30 years.

At present, the construction of the SES is on the way with the first part being expected to open to public by the middle of the year 1993.

5. Conclusions

The privatization of the SES project is the pioneer of the implementation of mega infrastructure projects by sharing the role between the Government and private sectors. This strategy is expected to make earlier the completion of the infrastructure projects and create foreign investment which will reflect a good economic environment in the country. Following the privatization of the SES, there are many mega projects come along such as the Third Stage Expressway System Project, the Mass Transit System Project etc. and most of these projects are under the negotiation with the interested proposers.

The Benefits and Disbenefits between two Investment Policies

(Private Sector & Government Sector)

	By Private Sector	Government Sector
Benefits		
1.	Efficient management	Fully governmental control policy
2.	Save government's budget	Maximum social and economic benefit
3.	Increasing the role of private sector in developing the country	Better coordination among government agencies during construction
4.	Definite implementation plans	Available soft loan with lower interest rate.
Disbenefits		
1.	No soft loan which cause higher toll rate	More procedures in decision makings
2.	Maximum Profit is concerned	Limited Governmental budget
3.	Taking time in negotiation	

Main Features of the Contract Agreement (SES)

1) Land acquisition by the ETA

2) No grant or subsidy to the Investor

3) Reimbursement of Land cost by the Investor beginning at the 15th year of the 30 year investment period

4) The Investor is responsible for construction, operation and maintenance costs

5) The Investor is subjected to the support of BOI privilege

6) The Proposer shares registered capital of 20% of the SES project but not less than 1,800 Million Baht

7) The Investment period may be extended for two further periods of 10 years

8) The Investor has priority to utilize the land within the right of way

9) The FES revenue is included in the revenue sharing between the ETA and the Investor

Main Features of the Conditions & Requirements of the TES investment

1) Land acquisition by the ETA

2) No grant or subsidy to the Investor

3) Reimbursement of Land cost by the investor beginning at the 21st year of the 30 year investment period

4) The Investor is responsible for construction, operation and maintenance costs

5) The Investor is subjected to the support of B-I privilege

6) The Proposer shares registered capital of 20% of the project cost

7) The Investment period may be extended for two further periods of 10 years

8) The Investor has priority to utilize the land within the right of way

9) The Investor collects all toll revenue and other revenue from land utilization

No revenue sharing

Main Features of the Conditions & Requirements of the MTS project

1) Government invests not more than 25% equity

2) No loan guarantee from Government

3) Land acquisition by Government

4) Investor reimburses for Land cost or lends the land from the Government

5) No fare rate control and low level riderships guarantee

6) The Investor collect all revenue for 30 year investment period

7) The Investor has priority to utilize the land within the right of way

8) The Investment period may be extended for two further periods of 10 years

The Main Features of the FBS

1) All Governmental Investment

2) Capital cost 8,518.9 Million Baht (2,258.4 M.B. Government's subsidy, 1,039.85 M.B. ETA's Revenue and 1,400.32 M.B. Local Loan, 3,820.34 M.B. foreign loan)

3) The ETA collects all toll revenue and revenue from Land Utilization

The Main Feature of the ARE

1) All Government Investment

2) Capital cost 26,617 Million Baht (16,000 M.B. Government's subsidy, 1,123 M.B. Government's Loan, 3,978 M.B. Local Loan and 5,466 foreign loan)

3) The ETA collects all toll revenue and revenue from land utilization

SOME PROBLEM AREAS: BOT PROJECT STRUCTURING, IMPLEMENTATION AND OPERATION

(PARTLY BASED ON COUNTRY REPORTS FROM MALAYSIA, PAKISTAN, PHILIPPINES AND THAILAND)

I. Structuring the BOT project:

1. Lack of legislation and political commitments.

2. Lack of cooperation between the public sector and the private sector. Time consuming government procedures.

3. Proposals which are not properly prepared.

4. Lack of fair and transparent bidding rules.

5. Lack of understanding of the BOT concept mixed with conservative attitudes among foreign and local lenders.

6. Excessive positions on tariffs, risk allocation and Government guarantees.

7. Resistance from consumers.

8. The costs of construction, equipment and supplies are priced too high.

9. Lack of long-term commitment, including equity contribution from sponsors.

10. Positions on maintenance, termination and transfer regulations.

II. The Implementation Phase:

1. Delays due to inadequate communications, importation of equipment, supplies, requirement of site, etc.

2. Delayu in construction with consequential increase in the interest expenses on construction financing and delay in the project revenue.

3. Capital cost overrun.

4. Technical failure.

5. Financial failure of the project company.

6. Lack of co-operation between the public sector and the private sector throughout the implementation of the project.

7. Increased prices or shortage of raw materials, energy supply, etc.

8. Poor management.

9. Force majeure.

10. Labour force not available.

Obviously most of the above are not specific for a BOT proect.

III. The Operational Phase:

1. Cash flow problems in the start-up phase.

2. Technical failure causing delays, less production than projected, etc.

3. Operational cost overrun.

4. Poor management and maintenance of the project.

5. Technical obsolescence of the project and loss of competitive positions in the market.

6. Increased price or shortage of raw materials, energy supplies, etc.

7. Foreign exchange, currency and inflation problems.

8. Government interference.

9. Force majeure during the operation period.

10. Lack of interest from project company sponsors.

List of Participants

INTERNATIONAL SEMINAR ON BUILD-OPERATE-TRANSFER PROJECT FINANCING/IMPLEMENTATION

2 to 6 December 1991, Bangkok, Thailand

BANGLADESH

1. Mr. S.M. Akram, Executive Chairman, Board of Investment, Ministry of Industries, Dhaka, Bangladesh

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2. Mr. PGHJ Kamarulzaman B.PG PSDDSB HJ Ali, Deputy Director, Public Works Department, Government of Brunei Darussalam, Bandar Seri Begawan

3. Mr. Saiful Bhari B DP HJ Yaya, Senior Engineer, Telecom Department, Government of Brunei Darussalam, Bandar Seri Begawan

CHINA (People's Republic of)

4. Mr. Zhao Yingfu, Senior Engineer of Geology, Manager of Planning, China Technology Market Management and Promotion Centre, SINOTECHMART, Beijing

5. Mr. Yang Jinabo, Engineer of Mechanics, Administrator of Technology Market, Add. Science and Technology Commission of Anhil Province, Anhil

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6. Mr. Rusiate Korovusere, Ministry of Trade and Commerce, Government Buildings, P.O. Box 2118, Suva

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9. Mr. A.N. Bansal, General Manager (Traffic and Transport), Consulting Engineers Services (India) Pvt. Ltd., New Delhi.

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12. Mr. Noor Agus Salim, Project Leader of a Multipurpose Reactor and Supporting Laboratories, UPT MPIN MIC National Atomic Energy Agency of Indonesia Puspiptek Centre, Jakarta

IRAN (Islamic Republic of)

13. Mr. Mohsen Talaie, General Director, Bureau of Public Enterprises, Ministry of Plan and Budget, Tehran

KOREA (Republic of)

14. Mr. Yoon-Kyung Kim, Deputy Director, Engineering Service Promotion Division, Ministry of Science and Technology, Gwacheon

15. Mr. Jin-Dal Song, Korea Consultants International, Seoul

16. Mr. Seung-Yang, Sunkyong Engineering and Construction Ltd., Bangkok

MALAYSIA

17. Mr. Mohd. Tajuddin Mohd. Ghazali, Head of Projects, Privatization Unit, Economic Palnning Unit, Prime Minister's Department, Kuala Lumpur.

MALDIVES

18. Mr. Ahmed Ashraf, Project Officer, Ministry of Public Works and Labour, Government of the Republic of Maldives, Male

MYANMAR

19. Mr. U. Thaw-Da Sein, Managing Director, Myanma Hotels and Tourism Services, Trade Ministry, Myanmar

NORWAY

20. Mr. Kjell Haagensen, Vice President, Norwegian State Power Board, Oslo

21. Mr. Oyvind Ulfsby, Chief Engineer, Norwegian State P[illegible] Board, Oslo

PAKISTAN

22. Mr. Hasan M. Naqvi, Executive President, National Engineering Services (Pakistan) Ltd., Karachi

23. Engr. Balal A. Khwaja, Engineering Contracts Advisor, Karachi

PHILIPPINES

24. Mr. Evaristo M. Medina, Supervising Science Research Specialist, Technology Application and Promotion Institute, Department of Science and Technology, Metro Manila

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