

## **The Trend of Build Operate and Transfer (BOT) Projects in Pakistan**

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### **Abstract**

Build operate and transfer (BOT) term in construction management has been gearing up popularity tremendously in recent times. In developing countries (i.e. Pakistan), where often the owner do not have enough finances to carry out the infrastructure development projects, the BOT can provide the unique opportunity to assist both the financier and the owner. The developing country like Pakistan require extensive infrastructure to meet the various development challenges of future. The governments in the developing countries mostly have the budgetary constraints to commence the development projects. The priorities always remained debatable for the commencement of any government funded infrastructure development project especially in Pakistan. BOT is an option for financing the infrastructure and boost the economical growth of the country with out direct utilization of government finances. In private sector for the owners who have land resources but no finance to make the sufficient development on these lands BOT can be a precious alternate. The BOT projects have the potential to serve the government and private sector with equal effectiveness. BOT projects are also offering attractive opportunities to foreign investors, which in turn can generate substantial foreign exchange for economic growth. Today the Pakistan construction industry has lot of prospects of BOT projects in the fields of power, irrigation, transportation, real estate, highways, multistory buildings and urban development, which can gain the attention of foreign investors. This paper highlight the major BOT projects offered in Pakistan in recent years. This paper will also discuss the major requirements of the BOT projects.

### **Keywords**

BOT, Infrastructure Projects, Developing countries, Pakistan, Construction Industry.

### **1. Introduction**

In Pakistan, BOT is a relatively innovative approach to infrastructure development, which enables direct private sector investment in large-scale infrastructure projects. The BOT refer as follows:

**Build** – A private company (or consortium) agrees with a government/private owner to invest in a infrastructure project.

**Operate** – The private developer then owns, maintains and manages the facility for an agreed concession period and recoups their investment through charges or tolls.

**Transfer** – After the concessionary period the company transfers ownership and operation of the facility to the government/private owner or relevant state authority.

In a typical BOT infrastructure project, a private sector project company builds a project, operates it long enough to payback project debt and equity investment, then transfer it to the host government. But if the same BOT project can be implemented as a turnkey construction contract financed by sovereign borrowing, the time saved and the great certainty of the project going forward may warrant the more traditional approach (Augenblick and Custor, 1990).

There are number of stakeholders in any BOT project and all of them have particular reasons to be involved in the project. The contractual agreements between these stakeholders and the allocation of risks can be complex. The major stakeholders of a BOT projects usually include:

**Government Owner (Government Client)**

A government department or statutory authority is a pivotal party. It will:

- Grant the sponsor the “concession”, that is the right to build own and operate the facility.
- Grant a long term lease of or sell the site to the sponsor
- Often acquire most or all the service provided by the facility.

The government’s cooperation is critical in large projects. It may be required to assist in obtaining the necessary approvals, authorizations and consents for the construction and operation of the project. It may also be required to provide comfort that the agency acquiring services from the facility will be in a position to honor its financial obligations. The government agency is normally the primary party. It will initiate the project, conduct the tendering process and evaluation of tenderers, and will grant the sponsor the concession, and where necessary, the off take agreement.

**Private Owner (Private Client)**

A private owner can be a substitute party for the government agency. The owner’s past reliability, faith and believe in the trade/market is compulsory. The track record and nature of the services offered by the owner are the important aspects.

**Sponsor**

The sponsor is the party, usually a consortium of interested groups (typically including a construction group, an operator, a financing institution and other various groups) that, in response to the invitation by the Government Department, prepares the proposal to construct, operate and finance the particular project. The sponsor may take the form of a company, a partnership, a limited partnership, a unit trust or an unincorporated joint venture.

**Construction Contractor**

The construction company may also be one of the sponsors. It will take construction and completion risks, that is, the risk of completing the project on time, with in budget and to specifications.

**Operation and Maintenance Contractor**

The operator will be expected to sign a long-term contract with a sponsor for the operation and maintenance of the facility. Again the operator may also inject equity into the project.

**Financers**

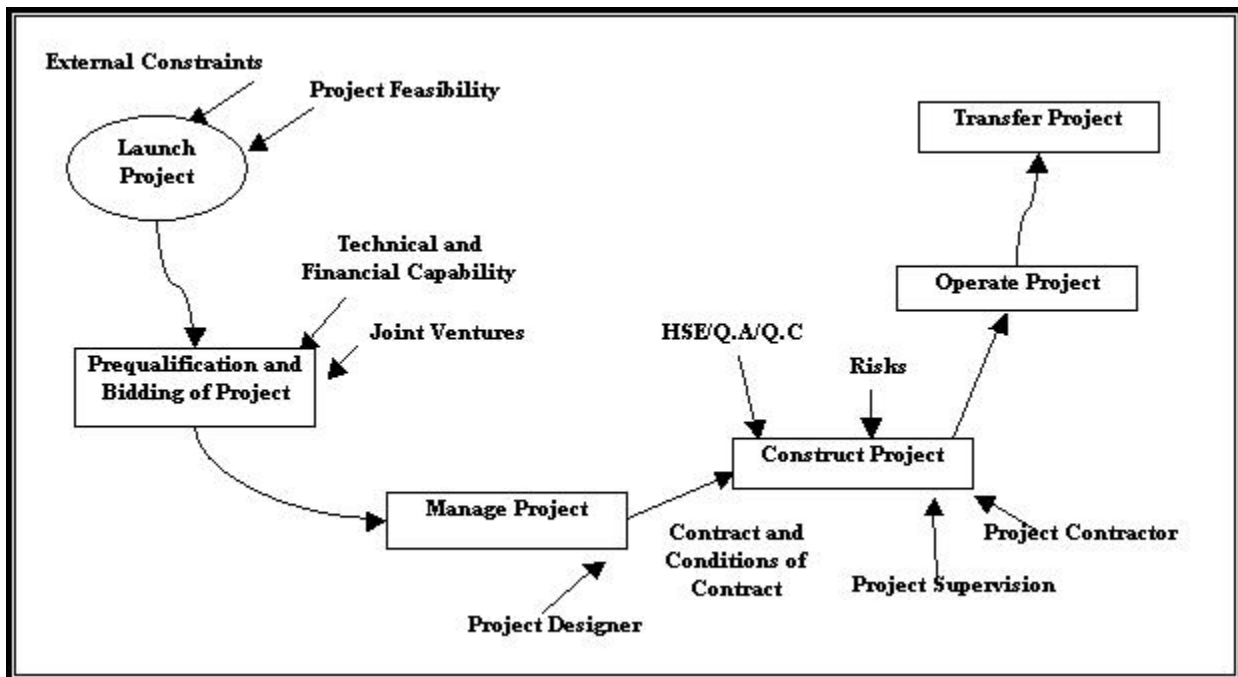
In the large project there is likely to be a syndicate of banks providing the debt funds to the sponsor. The banks will require a first security over the infrastructure created. The same or different banks will often provide a stand-by loan facility for any cost overruns not covered by the construction contract.

**Other Parties**

Other parties such as insurers, equipment suppliers and engineering and design consultants will also be involved. Most of the parties too will involve their lawyers and financial and tax advisors.

To address the complexity of BOT projects, innovative project management theories and techniques are needed like interface management (Weng et al., 2005). Innovation in project management theories and

techniques in construction may be specific but not generalized depending on country-to-country and project-to-project. However, a simple start up model can be categorized as a baseline to start the provoking of thought. Based on the international success factors of BOT, a model has been formulated as shown in Figure 1.



**Figure 1: BOT Projects Model**

This model can be treated as a BOT introduction guideline. The model is also developed based on the fact to introduce the flow line concept of BOT to various national organizations. Number of engineering professionals and management individuals working in various organizations are still unaware with BOT. This model is going to simplify the approach and methodology of BOT in their minds.

## 2. Objective of Research and Methodology

The build operate and transfer (BOT) approach to develop infrastructure projects and facilities of public interest such as bridges, airports, power plants, detention facilities, parking facilities etc is an alternative for a country that lacks the appropriate funds to undertake on its own projects of this scale (Yiannis and Demos, 2005). The research and development on BOT has proved it as an accepted, recognized and successful module of infrastructure development. But in Pakistan, the economy is still unable to have any potential benefit from it. Pakistan even being the member of World Trade Organization (WTO) unlike China is unable to utilize the available multinational financing opportunities for BOT projects in infrastructure development (Ammad, 2008).

Thus, the main objective of the research is to review the trend of BOT projects in Pakistan in context of assessing the implementation and application shortcomings. The methodology includes the review of international literature, interviews with professionals (bankers, developers, contractors, private owners and government agencies) involved in BOT projects, journal papers and conference articles on BOT projects, which are reflecting up to date status, statistics, success, challenges, research and development on BOT projects. Based on the findings, the BOT projects trend in Pakistan is discussed and a model for the BOT process is developed.

### **3. Trend of BOT Projects in Pakistan**

Globally research and implementation on BOT project delivery system has directed various effective routes to utilize private sector funds, technology innovation, management skills and operational efficiencies for the development of public infrastructure. However, many countries and regions lack BOT expertise and experience. The BOT concept is working well in Hong Kong, with particular reference to the five tunnels on which it has been applied (Zhang and Kumaraswamy, 2001). Host governments often provide guarantees in build operate transfer infrastructure projects to attract private sector investors (Andreas, 2004).

The Government of Pakistan and private owners in last decade in various capacities offered BOT projects. The induction of BOT concept and launching the projects was very healthy but the implementation, policies and strategies were lagging. However, the BOT projects trend did not get the success in its realization and relevance. In last five years, lot of projects has been offered time to time on BOT, but except one or two most of the projects was not commenced. The multinational financiers and ventures operating in Pakistan (in various capacities and infrastructures development projects) did not show its expression of interest in offered BOT projects. Thus, Pakistan is among those countries, which has never been able to exploit the benefits and earn the advantages from the BOT projects.

#### **3.1. BOT Projects Pre-qualification Requirements**

In Pakistan, the expression of interest (EOI) invited by the government or private agencies normally include the following details:

- Profile of company and associates showing financial capability of firm/consortium, annual turn over, financial management, technical capability, available human resources, organization, present business activities, type of registration (memorandum of association, deeds) and experience of similar type of project, if any.
- Details of credibility/capability to undertake this type of work
- Suggested marketing plans and strategy
- Vision for making the project viable and its planning, construction, commissioning and managing the project.
- Brief methodology for financing proposed funding arrangements to be lined up for undertaking the project, both local and foreign financing.
- Undertaking regarding blacklisting or default litigation of the firms if any

The submission of above documents usually enables the government or private agency to short list and pre-qualifies the interested enterprises in the project. The evaluation of EOI is normally carried out on weightage basis rationally. The documentary evidence must be furnished before the final acceptance of the pre-qualification.

#### **3.2. Recent BOT Projects Offered in Pakistan**

In Pakistan, development of an appropriately cost effective and robust infrastructure is a pre-requisite for economic growth of the country. Such like development at national level warrants availability of huge financial outlays involving use of public funds and foreign investments at the cost of other equally important social sector works. The government often in meeting development targets has drained its meager financial resources. It is therefore necessary adoption of an indirect approach i.e. BOT.

In the last decade, the Government of Pakistan (GOP) has been facing financial limitations, liabilities and constraints in the development of various infrastructure projects. So the GOP has tried to coup up with the situation by introducing the BOT. In order to protect its own financial liabilities and to inject the finance from private sector and foreign countries in the infrastructure development, the GOP launched various BOT projects in Pakistan. The list of major BOT projects offered recently is shown in Table 1.

**Table 1: List of Recent BOT Projects Offered in Pakistan**

Sr	Name of The Project	Employer Agency	Sponsor	Remarks
1	Faisalabad – Lahore Motorway Project (M-3)	National Highway Authority, Government of Pakistan	Husnain Cotex Pvt. Limited.	Commenced, But Later on BOT Contract converted into normal item rate contract
2	Liquid Cargo Terminal at Port Qasim	Communication and Works Department, Government of Sindh.	-	Not commenced
3	Electromagnetic Train Project in Karachi	City District Government	-	Not commenced
4	Light Rail Transit System in Lahore and Rawalpindi	Government of Punjab	-	Not commenced
5	Public Swimming Pools/Sports Entertainment Areas	Parks and Horticulture Authority, Government of Punjab	-	Not commenced
6	Lahore Sheikhpura, Faisalabad Dual Carriageway	Communication and Works Department, Government of Punjab	Frontier Works Organization (FWO)	<b>Commenced and Completed.</b>
7	Naran Saiful Malook Cable Car Project	Communication and Works Department, Government of NWFP.	-	Not commenced
8	Grain Terminal at Port Qasim	Communication and Works Department, Government of Sindh.	-	Not commenced
9	Construction of Five Star Hotel at Lahore.	Pakistan Railway, Government of Pakistan.	-	Not commenced
10	Construction of Islamabad International Airport, Islamabad	Civil Aviation Authority, Government of Pakistan	-	Not commenced
11	Neelum Jhelum Hydal Power Project	Water and Power Development Authority, Government of Pakistan.	Frontier Works Organization (FWO)	Stage of Pre-qualification

12	Lakpass Tunnel Project Near Quetta	National Highway Authority, Government of Pakistan.	Frontier Works Organization (FWO)	Commenced and Near Completion.
13	Lahore Bus Terminal at Thokar Niaz Baig	City District government of Punjab	-	Not commenced
14	Lahore Kasur Dual Carriageway	Communication and Works Department, Government of Punjab	-	Not commenced

The most of the projects mentioned above seemed to be potentially strong in business development perspective. The employers of the projects are also the federal or provincial governments. But the success or the processing of the projects is very less. Only very few projects has been commenced and completed or under the completion. It is very interesting to observe that the lead sponsor, construction and maintenance contractor in all of above commenced projects is Frontier Works Organization (FWO). FWO has also been involved as sponsor and contractor in the Neelum Jhelum Hydal Power Project pre-qualification.

### 3.3. Challenges Faced During the BOT Projects

The key to a successful implementation of a BOT infrastructure project is in depth analysis of all aspects related to economic, environmental, social, political, legal, and financial feasibility of the project. For these reasons, the analysis of project feasibility decision needs a technique to include the qualitative decision factors that have the strong impact on the project (Ahmed et al., 2007). In Pakistan, BOT contracts may be complicated due to its long-term contractual obligations and multiparty involvement, moreover legal, economical and technical framework need to be developed on large scale for successful execution of the project (Mubin and Ghafar, 2007).

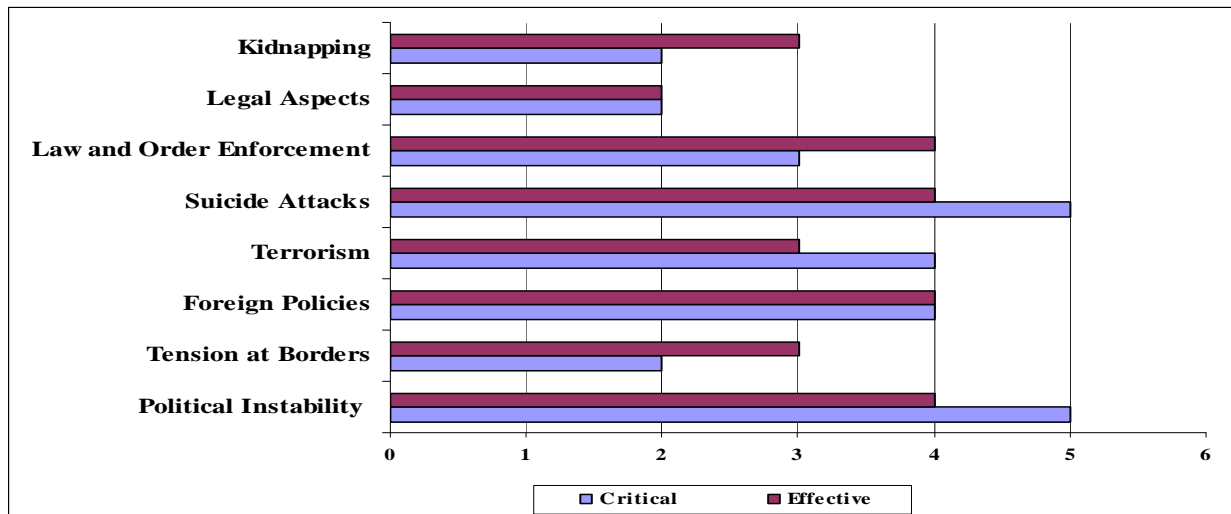
There are numerous awkward natures of constraints and risks faced by the various stakeholders during the BOT projects execution in Pakistan. In most of the projects stated above the constraints and risks become that much significant that the projects did not proceed after the feasibility analysis. Project planning in build operate and transfer project is a complicated decision making problem because the model has a complex financial and organizational structure, which is influenced also by the socio economic environment in the country (Irem and Talat, 2000). In the recent decade, there is an increasing trend of private sector involvement in infrastructure development through the BOT approach, which brings about a redistribution of risks among the project participants (Lam, 1999). Change in law, corruption, delay in approval, expropriation, reliability and credit worthiness of entities are the major political and force majeure risks faced by Chinese construction industry (Wang, 2000). Different designs reflect different risk control strategies for completion time overruns (Ye and Tiong, 2003).

In BOT projects, the sponsors of the project are usually a consortium or a joint venture of construction, engineering, and venture capital firms. The capital for the project investment may come from commercial banks or insurance companies. Three of the major challenges facing a prospective sponsor are estimation of project costs, projection of revenues during the concession period, and the selection of an appropriate financing strategy (John and Isr, 2003).

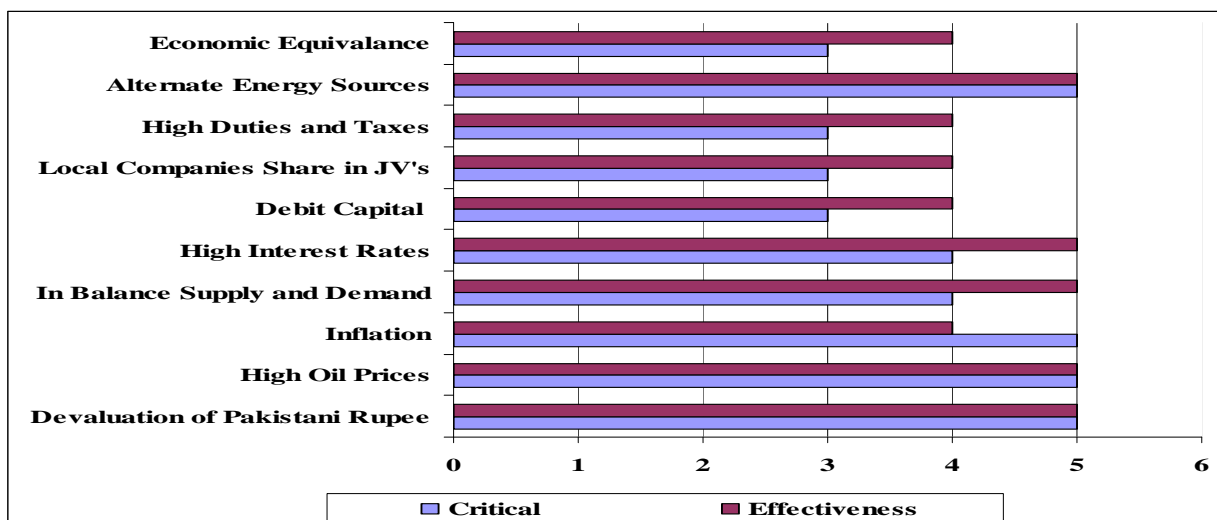
The financial commitments would take the form of irrevocable commitment letters such as letter of credit and are an agreement that equity and debit finance have been committed or will be available in the amounts required to assure the completion of the project (Tiong, 1997). It is essential that government support be available, that the risks be properly allocated, and that each party be given meaningful contractual incentives and guarantees (Tiong, 1990).

Based on the experience of commenced projects of BOT in Pakistan, a survey has been conducted among the leading stakeholders to list down the major challenges faced during BOT projects in Pakistan. Three top management representatives of the major owner, sponsor, contractor, maintenance contractor and financiers have been contacted. The results of the survey are based on the personal interviewing with the management of BOT project stakeholders. As the commenced BOT projects in Pakistan are related to communication and highways, thus the findings of challenges faced can be attributed more towards the highway projects. Additionally, these challenges can be treated as a guideline for the other kind of infrastructure projects.

The major constraints faced by the stakeholders include political, economical, ecological, technological, social, environmental and ecological. In the last twenty years, the political and economical scenario of Pakistan has been under notable transition. The political and economic instability remained as a serious hurdle in the formulation of various infrastructure development reforms like BOT. Figure 2 and 3 represent the major political and economical constraints faced by the stakeholders in Pakistan in BOT projects with respect to the relative impact factor based on the attributed weights obtained from the analysis of survey and direct interviewing communication response. The attribution critical in the figures has been referring the consideration level of the constraints before the start of the project. The attribution effective in the figures has been referring the actual level of the constraint during the cause of the project.



**Figure 2: Major Political Constraints in BOT Projects in Pakistan**



**Figure 3: Major Economical Constraints in BOT Projects in Pakistan**

The rating system used in above figures is narrated in Table 2.

**Table 2: Rating System for Criticality of Political and Economical Constraints**

Rating Score	Criticality	Effectiveness
0	Not Applicable	Not Applicable
1	Not Critical	Not Effective
2	Fairly Critical	Fairly Effective
3	Critical	Effective
4	Very Critical	Very Effective
5	Extremely Critical	Extremely Effective

It has been observed based on the findings of the analysis that for political constraints the minimum rating score is in the range of fairly critical and effective. Additionally, in case of economical constraints the minimum level of rating score is in the range of critical and effective.

#### **4. The Benefits Earned from BOT Projects**

Concerted efforts from government and private sectors as well as appropriate political, legal and economic environments are essential to earn the benefits from BOT projects (Kumarasawamy and Zhang, 2001). Considering the large investments, the technical expertise, and the length of commitment that are involved, BOT projects present a unique opportunity for the transfer of technology to the developing countries (Antonio and Miroslaw, 2007).

In Pakistan only two projects has been commenced on the BOT basis. So the expected benefits can be stated as below.

- Technology Transfer
- Concession Period
- Incentive Scheme
- Market and Contract Led Revenue

- Commercial Freedom
- Foreign Exchange
- Projects Identification
- Entrepreneurship and Leadership

This is only a slight glimpse of a large number of expected benefits associated with BOT projects.

## 5. Conclusions and Recommendations

This paper has been attempted to present the review of the most relevant literature related to the BOT projects around the globe with the current trend and status in Pakistan. Much of the research remains to be done on the link between BOT projects and its effective implementation in Pakistan. Several member (in the capacity of construction stakeholders) from various government, private and semi government institutes and organizations has been consulted in the preparation of this paper. It is expected that further research with in Pakistan and abroad could reveal more prospective information on the existing mechanisms of BOT projects in Pakistan and the means for improving the implementation and success for the benefits of stakeholders and general public. Currently Pakistan has lot of potential in launching of BOT projects especially in the power, housing, infrastructure, communication and irrigation sectors. The following recommendations can be extracted from the research:

- The concept of BOT in Pakistan is still new, so it should be introduced to the construction industry and organizations in Pakistan through presentations, lectures, seminars etc.
- The success factors of BOT projects based on the international case studies and research should be brought in the information of Employers launching BOT projects.
- The pre-qualification mechanism of BOT projects in Pakistan is required to be amended and research is required to be carried out that why the substantially strong projects offered are unable to get the attention.
- The stakeholders of commenced BOT projects should be referred to others for the sharing of the success.
- The guarantees, bonds, surety consideration are required to be relieved in compliance with running international criteria to attract more foreign financiers.
- The benefits earned from the BOT projects should be highlighted in media to gain the attention of local and foreign investors.
- The political and economical constraints are very vital in planning as well as in construction of BOT projects.
- The devaluation of Pakistani rupee, alternate energy sources, high banking interest rates and high oil prices in Pakistan are the major economical constraints, which provokes thoughts in the stakeholders policies to participate effectively in the BOT projects.
- The suicide attacks and political instability in recent years are the major political constraints encountered in the decision making of the organizational management structures to finance or launch its projects in Pakistan.
- The way out to mitigate the challenges and risks encountered in BOT projects should be established.

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