EVALUATION OF PROCUREMENT SYSTEMS FOR BOT INFRASTRUCTURE PROJECTS IN ASIAN COUNTRIES

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***ABSTRACT*:** One of the issues to successfully apply the BOT project is that must have an adequate procurement strategy or procedure. Differently with traditional projects, procurement procedures for BOT projects will be influenced by a variety of factors, including the host country's existing legislation governing public procurement of construction work, internationally accepted rules for public procurement, the business environment, the overall infrastructure policy and the nature of the particular BOT project. The purpose of this paper is to compare the practical implementation of BOT competitive procurement procedure in two selected Asian countries, Hong Kong and Philippines, which have some successful implementation of competitive tendering for BOT projects. The findings from the comparison would be helpful for other countries when formulating or revising the BOT procurement systems.

KEYWORDS: Evaluation, Procurement, BOT

1. INTRODUCTION

In the mid-1980s, many Asian countries turned to privatization of infrastructure to overcome problems which threatened to constrain economic growth. Getting private sector management and capital into transport, power, water and sewage, and telecommunications services, was seen as a way of obtaining and maintaining infrastructure more quickly and more cheaply than traditional, state-led methods. Various privatization methods such as corporations, public flotations and straightforward sell-offs of state-owned enterprises, became a popular option in Asian countries. One important approach for building new infrastructure facilities was the Build-Operate-Transfer (BOT) concept (Handley 1997).

One of the issues for successful BOT scheme is to have an adequate procurement strategy or procedure. Differently with traditional projects, procurement procedures for BOT projects will be influenced by a variety of factors, including the host country's existing legislation governing public procurement of construction work, internationally accepted rules for public procurement, the business environment, the overall infrastructure policy and the nature of the particular BOT project (UNIDO 1996).

In order to formulate an efficient procurement framework for BOT projects, several researches (Zhang 2004, 2005; Kumarawamy and Zhang 2001) as well as guidelines (UNIDO 1996, WB 1998) indicate that the competitive tendering system is suitable method to improve the efficiency of procurement systems of BOT projects.

The experiences of Asian countries indicate that they develop the procurement systems of BOT projects based on the trial-and-error exercises (Kumaraswamy et al. 2002). This suggests the usefulness of learning from the successful "trials" so as to mini-

mize any further “errors” in developing the future procurement systems of BOT projects.

The purpose of this paper is to compare the practical implementation of BOT competitive procurement procedure in two selected Asian countries, Hong Kong and Philippines, which have some successful implementation of competitive tendering for BOT projects.

2. BOT COMPETITIVE PROCUREMENT PROCEDURE

Based on the basic procedure for procuring BOT projects as guideline of UNIDO (1997) and competitive tendering process of BOT projects introduced by Tiong and Alum (1997), the BOT competitive procurement procedure is shown in Figure 1.

In Hong Kong, there is no legislation specifically dealing with BOT projects as a group; specific schemes have to be submitted by the government to the legislative council for approval, and a special ordinance needs to be promulgated for each particular scheme. Almost of BOT projects in Hong Kong are projects in transport sector such as Cross Harbour Tunnel (CHT), Eastern Harbour Crossing (EHC), Tate’s Cairn Tunnel (TCT), Western Harbour Crossing (WHC), and Route 3 Country Park Sections (R3CPS). These projects were awarded through competitive tendering even either solicited or unsolicited projects.

Unlike Hong Kong, the Philippines have passed the BOT Law in 1990, the first of its kind in Asia. Then, in 1994, the BOT Law was revised for increasing of the number of variants to 14 variants of the BOT scheme. To date, there are 70 BOT projects in energy, telecom, transport, and water and sewerage sector (PPI database). Following the BOT Law, the BOT project could be provided through three forms of solicitation: direct negotiation, competitive tendering, or unsolicited proposals. The competitive tendering is required for the projects that have more than one bidder participate in the case of solicited proposals, or more than one proposal for the same or similar project in the case of unsolicited projects.

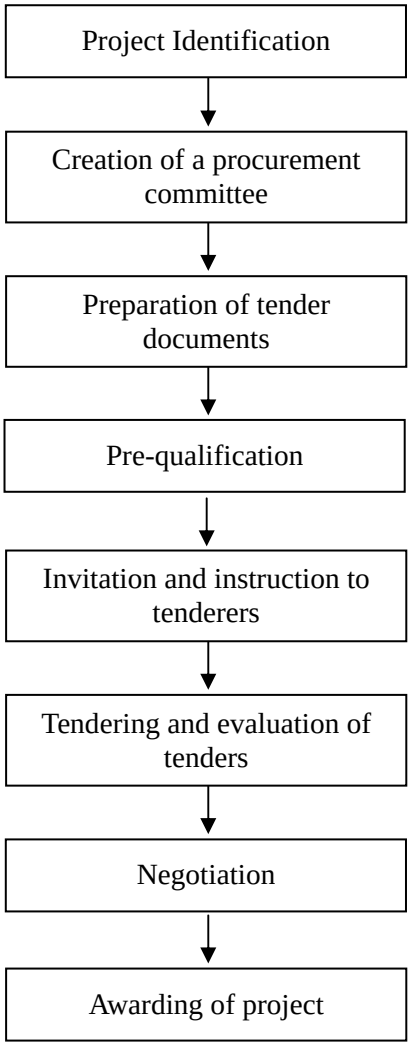

Figure 1 Stages in a BOT competitive procurement procedure

The overview of BOT competitive procurement procedure in Hong Kong and Philippines are summarized in Table1.

Table 1 Overview of BOT competitive procurement procedure in Hong Kong and Philippines

Stages	HONG KONG	PHILIPPINES
Project identification	Government Agencies Unsolicited Proposals	Government Agencies Unsolicited Proposals (many)
Committee	Financial and General Panel Land and Engineering Panel Traffic and Transportation Panel	Agency officer; legal, technical, financial, and management officers; private sector, Commission Audit, BOT center, local representatives
Tender documents	(1) to explain the government's general requirements with respect to the project and the franchise, and to provide relevant information; (2) to provide guidance in the preparation of tenders and explain the tender evaluation criteria; and (3) to set out in detail the government's requirements in design, construction, operation, and maintenance concerning the project and the franchise	(1) instruction to bidders such as general description and objectives of the project, contractual arrangement, and evaluation method and evaluation criteria; (2) minimum design, performance standard/specification, and economic parameters; (3) draft contract; and (4) bid form.
Pre-qualification	N/A	Prequalification with legal requirement, experience or track record, and financial capability
Invitation tenderers	All interested tenderers	Pre-qualified tenderers
Tendering and Evaluation	Single stage, one envelope procedure Sealed-bid Tenderers can submit more than one proposals Kepner-Tregoe evaluation method Key evaluation criterion is lowest tariff (franchise period fixed, 30 years)	Single stage, two-envelope procedure Selaed-bid Tenderers can only submit one proposal Two-envelope evaluation method Key evaluation criteria and franchise period depend the nature of project
Negotiation	Negotiate with preferred tenderer(s)	N/A
Awarding project	Project Ordinance	Project Agreement
Unsolicited proposals treatment	Submit to competitive tendering	Swiss challenge

3. PROJECT IDENTIFICATION

Commonly, the projects are identified by the Government Agencies. Hong Kong's BOT projects are good example with a thorough and effective process being led by the Government. Such as in transport sector, there are a series of Comprehensive Transportation Studies, updated every five years. These

determine future strategy as well as future projects. Projects can also be identified by the private sector, unsolicited projects, but almost of BOT projects in Hong Kong are solicited projects. However, one main issue with Hong Kong's project identification is a lack of suitable projects for future BOT projects. Past experience of BOT tunnel projects indicates that, if the present toll systems and free routes are maintained, such as R3CPS has two alternative routes – the Tuen Mun Road and the Yuen Long Highway – which are free, the private sector may have little interest in new BOT highway or tunnel projects. This issue requires the Hong Kong government identify the future BOT project based on a Long-term master plan.

In Philippines, implementing agencies (ministries, local governments, and government owned and controlled corporations) designate the projects that correspond to the government's medium-term public investment programs as "priority projects". The projects will be then submitted to the relevant development council – according to project cost. One issue in Philippines' project identification is because implementing agencies, especially local government, often lack experience in carrying out feasibility studies, they often welcome unsolicited proposals in which private sector entities have already done it for them, particularly in the power sector. The main issues against unsolicited projects are the lack of competition.

The treatment of unsolicited projects in Hong Kong and Philippines will be discussed in further section.

The lesson experience in this stage is that government should carefully prepare the project to attract private investors by BOT scheme.

4. CREATION OF A PROCUREMENT COMMITTEE

Generally, one agency will be established by government to conduct the procurement of BOT project. In Hong Kong, the tender process will be monitored by the Central Tender Broad and the Independent Commission Against Corruption (ICAC) which has played a major role over many years in minimizing corruption levels in Hong Kong. To evaluate the tender proposals, in case of transport sector, the government setups a tender evaluation committee, which is under leadership of the Secretary for Transport and includes three panels: financial and general, land and engineering, and operation and transportation. Members of each panel come from relevant government policy branches and departments that are assisted by legal, technical, and financial consultants where appropriate. Each panel is responsible for its own area of expertise assesses whether the submitted tender proposals can meet the government's requirements.

In Philippines, one Pre-qualification, Bids and Awards Committee (PBAC) will be created as requirement in BOT Law including one chairman is at least a third ranking officer of the Agency; the members who are legal, technical, financial, and management officers; and other observers from private sector, Commission on Audit, BOT center, and local agency.

5. PREPARATION OF TENDER DOCUMENTS

Good experience in preparation of tender documents from Hong Kong and Philippines is well standardization of tender documents by government agencies.

In Hong Kong, the government agencies have prepared a detailed project brief as part of tender documents to provide usefully and clearly information to

tenderers: (1) to explain the government's general requirements with respect to the project and the franchise, and to provide relevant information; (2) to provide guidance in the preparation of tenders and explain the tender evaluation criteria; and (3) to set out in detail the government's requirements in design, construction, operation, and maintenance concerning the project and the franchise.

In Philippines, the tender document and the draft of project agreement have been also prepared to provide tender information to potential tenderers. In general, the Philippines tender documents provide to potential tenderers the following: (1) instruction to bidders such as general description and objectives of the project, contractual arrangement, and evaluation method and evaluation criteria; (2) minimum design, performance standard/specification, and economic parameters; (3) draft contract; and (4) bid form.

6. PRE-QUALIFICATION AND INVITATION TO TENDERERS

In Hong Kong, it is not the practice to carry out pre-qualification of BOT tenderers. The invitation to tender for a BOT project is announced in the newspapers and interested tenderers are generally given a period of 3-4 months to prepare detailed submissions. The reason to cancel the pre-qualification stage in Hong Kong, as the explanation of Tiong and Alum (1997), because the government believe that the scale of investments required for BOT projects and the keen competition will deter small companies from submitting proposals. Instead, it will attract only serious promoters who are financially strong.

In practice, the evidence from Hong Kong's experience is that the tender have attracted very strong concessionaires and contractors – giving Government confidence that they will deliver on the very demanding projects offered (ADB 2000).

Unlike Hong Kong, Philippines government require the pre-qualification to shortlist the potential tenderers. To participate the tender, the interested tenderers must be passed the legal requirements, experience or track record, and financial capability required in BOT Law. Only the pre-qualified tenderers will be invited to submit the proposals.

Lesson experience from Philippines as well as recommendation from guidelines (UNIDO 1996, WB 1998) is that the government should use prequalification stage to limit the total number of prequalified tenderers to a shortlist of three or four, because the costs associated with more tenderers often exceed the benefits of additional competition. A large number of bidders reduces the chances each has of winning the bid and hence discourages investment in the preparation of proposals. More bidders also raise costs to government since officials and their advisers will usually face more requests for clarification or additional information, and more bids will have to be evaluated.

In Hong Kong, starting from R3CPS project, there was a little change in tendering process in that Hong Kong government first issued a request for expression of interest, and then issued a detailed project brief only to the interested parties.

7. TENDERING AND EVALUATION OF TENDERS

7.1 Tendering

In the two countries, tenderers are typically given 4 months to submit their bids. At the time of open bidding, Hong Kong and Philippines use the same sealed-bid procedure. This procedure usually uses by

other government than the other that is open bids or voice auction. The World Bank Guidelines (1998) given the reasons to use this procedure that are: first, collusion between bidders is generally considered to be less likely with sealed bids than voice auctions; under a sealed-bid procedure, bidders' defections from collusive agreements (that is, the submission of bids above the colluded price) are harder for others to prevent than under voice auctions; and second, if bidders are inexperienced, they may be less likely to correct for the winner's curse under a sealed-bid with the result that the sealed-only bid procedure may actually yield a higher price under these circumstances.

Hong Kong and Philippines also use the same single stage of tendering. However, while Hong Kong uses one-envelope procedure – technical and financial proposal in one sealed envelope, Philippines use two-envelope procedure, the first is technical envelope and the second is financial envelope. Therefore, in Philippines the prequalified tenderers must submit their bids in 2 separate sealed envelopes, the first being the technical proposal and the second being the financial proposal. At the date and time of bid opening, the technical proposal envelope will be opened and then evaluated. Once the tenderers who have qualified for the financial evaluation have been determined, they will be notified the date and time of the opening of the financial proposal envelopes.

To encourage the innovation of private sector as well as the competition in tendering, Hong Kong government permits the tenderers to submit more than one proposal while BOT Law does not allow that.

7.2 Evaluation Method

Based on past BOT experience, the Hong Kong government has formulated the Kepner-Tregoe decision-making method that has been used in the recent projects. This method includes the following decision stages: formulating a “decision statement,” identifying and weighting decision alternatives (in terms of “MUST” and “WANT” criteria), generating alternatives, evaluating alternatives against the MUST and WANT criteria, and selecting the most suitable alternative. The decision statement provides the focus for the following steps and sets limits in the selection. The MUST and WANT criteria identify specific requirements of the decision. The MUST criteria function as a screen to eliminate failure-prone alternatives by a “Yes-or-No” judgment. Then, the remaining alternatives will be judged in their relative performance against WANT criteria. The WANT criteria give the evaluator a comparative picture of the remaining alternatives.

To evaluate the tenders, the Kepner-Tregoe method also incorporates the evaluation methods of binary decision, simple scoring system, and multiattribute analysis.

Zhang et al (2005) indicated that Kepner-Tregoe is a suitable method that can be adapted for competitive tendering of BOT projects although this method is more complicated than other evaluation methods such as simple scoring method, NPV method, or even the multiattribute analysis. It takes time and effort to determine appropriate decision statement, MUST/WANT criteria, and the relative importance of the WANT criteria.

In Philippines, another evaluation method that is two-envelope method has been used to evaluate the tender proposals as requirement of BOT Law. This method includes two stages. The fist envelope evaluation involves the assessment of the technical, operational, environmental, and financing viability of the proposal as contained in the bidders’ first en-

velops vis-à-vis the prescribed evaluation criteria in the bidding documents. The second envelope evaluation involves the assessment and comparison of the financial proposals of the bidders based on the evaluation stated in bidding documents.

The main advantage of the two-envelope method is simple to apply. This method is also recommended to evaluate the BOT tendering by the Work Bank Guidelines (1998). Zhang et al (2004) mentions the two-envelope method as an appropriate method for tender evaluation of small and simple BOT projects.

One characteristic of BOT projects is that financial aspects are the most important issue that needs to be considered in tender evaluation for BOT projects. Hence, the financial package is usually assigned a much higher weight than other evaluation packages. The two-envelop, therefore, will be more effective when is combined with NPV method.

7.3 Evaluation Criteria

Hong Kong government normally listed the evaluation criteria for BOT projects in brief project. The main evaluation criteria have been used as below:

a. The level and stability of the proposed toll regime
b. The proposed methodology for toll adjustments
c. The robustness of the proposed works program
d. The financial strength of the tenderer and its shareholders, their ability to arrange and support an appropriate financing package, and the resources they are able to devote to the project
e. The structure of the proposed financing package including the levels of debt and equity, hedging arrangements for any interest rate and/or currency risks, and the level of shareholders' support
f. The proposed corporate and financing structure of the franchisee
g. The quality of the engineering design; environmental considerations; construction methods, including traffic control, surveillance, and tunnel; electrical and mechanical installation; and ventilation and lighting systems
h. The ability to manage, maintain, and operate effectively and efficiently
i. Benefits to the government and community

The key evaluation criterion for Hong Kong's BOT projects is lowest tariff. It is noted that the franchise period was not considered a criterion since it was predetermined (30 years).

With this key evaluation criterion, the Hong Kong government and the users have the benefits from the low tariffs. However, there are problems form the competition created by the cheaper tolls such as the case of CHT projects. The cheaper tolls than that of the subsequent projects in this project have affected the successful of the subsequent projects. The user interests in low tariffs and always uses the CHT, therefore, the traffic and also the revenue in the subsequent projects are lower than forecast.

To reduce the franchisee's financial risks and encourage private involvement in future BOT projects, the Hong Kong government are considering a ''reverse tender'' system which has been practiced in the United Kingdom. In this system, the government sets up toll levels in phases during the franchise period, provides a certain amount of reserve fund during the selection of the tender, and asks the tenderer to offer what it can do for the project. In its proposal, the tenderer specifies what portion of the reserve fund it needs. From the government's point of view, the less the amount of public money requested by the tenderer the more preferable its proposal. The tender is evaluated against this ''less public money requirement'' among other criteria. The actual public money

requested by the winning tenderer becomes governmental equity, and the government shares corresponding risks and benefits (Zhang and Kumaraswamy 2001).

Unlike Hong Kong, as above mention, Philippines government uses the two-envelop method for BOT tender evaluation, therefore, the evaluation are depended the evaluation stage.

The evaluation criteria for the fist stage are technical soundness, operational feasibility, environmental standards, project financing, and enhancements. The evaluation criteria for the second stage normally include one ore more of the following criteria: the lowest proposed toll, fee, rental or charge at the start of project operation; the lowest present value of proposed toll, fee, rentals and other charges for the period covered by the contract; the lowest present value of government subsidy to be provided for the period covered by the contract; and the highest present value of proposed payments to government such as concession fee, lease payments.

The evaluation criteria in the second stage are the key evaluation criteria. Therefore the key evaluation criteria will be affected by the nature of project or contract.

8. NEGOTIATION

Philippines' BOT competitive procurement procedure is not including the negotiation stage. After the financial evaluation, one tenderer will be selected as the winning tenderer to sign the contract for the project with the Agency.

Unlike Philippines, Hong Kong's BOT competitive procurement procedure is including the negotiation stage. After the tender evaluation, the government may shortlist to a few tenderers to seek further clarification, detailed evaluation, and negotiation, and may require the shortlisted tenderers to submit a draft construction contract, designer's appointment agreement, checker's appointment agreement, and relevant warranty agreements for review.

During the negotiation stage, the shortlisted tenderers are required to have all the necessary expertise and personnel readily available for prompt responses to queries, requests for information, clarifications, submitting revised proposals, and participating in negotiations. Tender assessments are updated as the negotiation process proceeds and follows tenderers' submission of revised proposals. Once the final assessment is completed the executive committee of the Hong Kong Special Administrative Region Government is asked to endorse the selection of the preferred tenderer for further negotiations on the final terms and conditions of the project agreement, and for the draft of the enabling ordinance.

The evidence from Hong Kong's experience is that the negotiations have resulted in major reductions in bid prices and most conflicts between concessionaires and governments have been resolved through negotiation.

9. UNSOLICITED PROPOSALS TREATMENT

As above mention, Hong Kong and Philippines government also accept the unsolicited projects and the main issues against unsolicited projects are the lack of competition.

To resolve this issue, after the approval of the unsolicited project, the Hong Kong government has published the project to call the competitive tendering. An example of this solution is the EHC project. After

the proposal of Kumagai Gumi was received and accepted, the competitive tendering has been issued by the government of Hong Kong. There were then nine tenderers including Kumagai Gumi participating the tendering.

Unlike Hong Kong, the Philippines government wants to overcome this issue by the way of the Swiss challenge or price test (WB 1998): "the agency awarding the project must invite comparative proposals to any unsolicited proposal it has received. The invitation to tender must be published in a newspaper of general circulation for at least three weeks. The published invitation must inform potential bidders where to obtain tender documents, however, proprietary information contained in the original proposal is confidential and may not be disclosed in the tender documents. Competitors have 60 days to submit competitive proposals. If a lower-priced proposal is received, the original proponent has 30 days to match it and win the contract. Otherwise, the award goes to the lower bidder." In theory, it is good solution, however, in practical it is ineffective. One main reason for this ineffectiveness from potential tenderers is that period of time to submit other proposals is short; 60 days are not enough to prepare one proposal. The expert recommendation is that challengers should be given s long time as the extension of the challenge period from 60 to 120 days (PIDS 2002).

10. CONCLUSION

The paper conducted through comparative examination of Hong Kong and the Philippines practical implementation in competitive procurement procedures of BOT projects led the following recommendation to be considered when formulating or revising the BOT procurement systems.

First, the project identification should be carefully prepared by the government. A good project could attract the strong private investors to participate in infrastructure, and give the benefits to the private investors as well as the government and the users. Hong Kong's experience indicated that some current BOT projects such as TCT and WHC are in trouble because of the not good planning in system of toll road and government-tolled.

Second, clear statement of criteria and procedures in each process is recommended. The good example for that is Philippines's BOT Law. It clearly provides the details of the processes and of the responsibility of each related authority in project identification and tendering.

Third, a transparent and competition tendering processes should be conducted. This issue has been confirmed by Hong Kong's experience through their implementation in BOT tunnel projects.

The last, the government should consider special procedures to handle unsolicited proposals that may result form a private sector's identification of an infrastructure need it can satisfy. Unsolicited proposals may also facilitate innovative concepts in term of technology, finance, and management. The Philippines' "Swiss challenge" could become appropriate solution but it should be revised as recommendations.

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