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Build-Operate-Transfer (BOT) Arrangements: The Experience and Policy Challenges

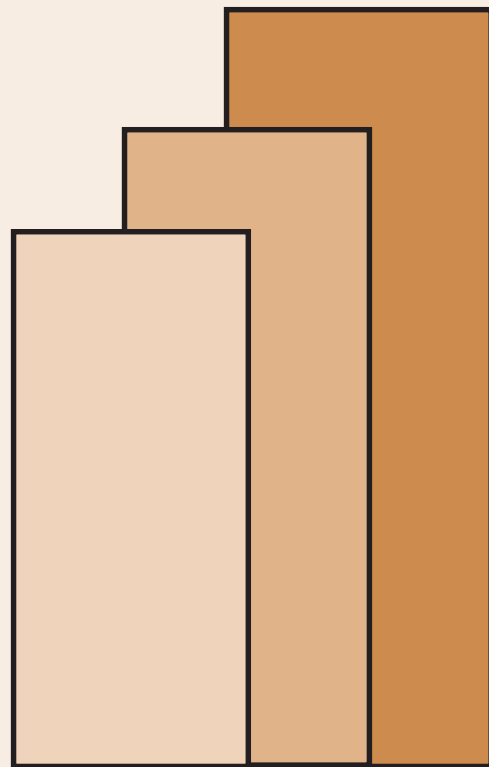
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Abstract

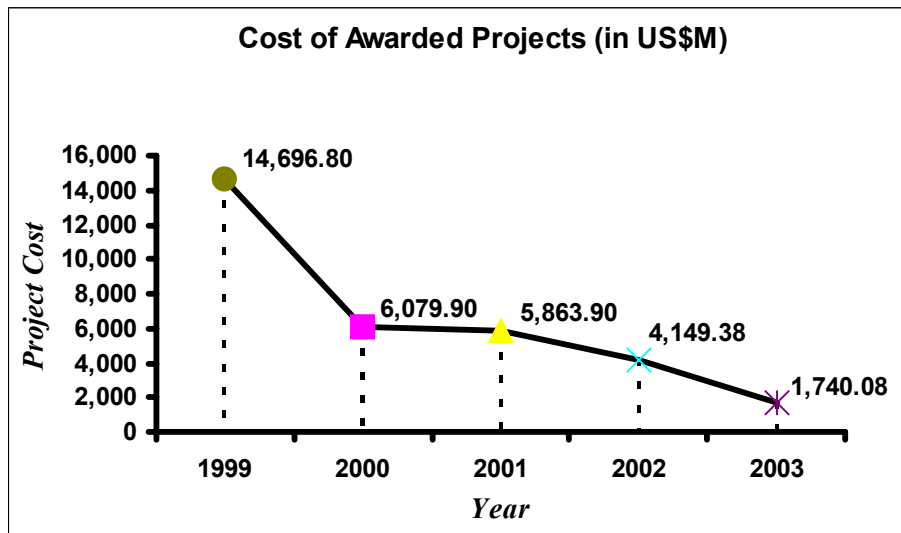
A look into projects under the Philippine program of public-private sector partnerships during the period 1999-2003 showed that participation of the private sector has been declining. This paper postulates that some of the reasons for dwindling investor appetite are related to contract design and implementation. It examines the nature of BOT-type contracts, their design and content and conducts a case study of a challenging BOT-type contract and identifies issues and problems faced by the government and private investors in implementing the contract. Finally the paper recommends that further amendments to the present BOT Law and its IRR must be explored to identify ways in which contractual incompleteness may be minimized. A thorough examination of the integration of law and economics in contract design as future research was also suggested.

Keywords: BOT projects, public-private sector partnerships, infrastructure investments

Build-Operate-Transfer (BOT) Arrangements: The Experience and Policy Challenges

Significance and Objectives of the Study

BOT-type arrangements have been a major instrument of public-private sector partnerships in Philippine infrastructure development since the early 1990s. Recently, however, observers in the academe and the government are saying that the country is now facing a lack of investor appetite in infrastructure provision. By way of introduction, this study examined first if this observation is actually supported by facts. Looking at time-series data on awarded projects under the Philippine program of public-private sector partnerships during the period 1999-2003, it can be seen that there is indeed a declining trend in terms of new investments committed by the private sector every year (see chart below).¹



¹ Build-Operate-Transfer (BOT) Center time-series data

The decline in private sector interest is widely observed elsewhere in the world. The Public-Private Infrastructure Advisory Facility (PPIAF) of the World Bank reported that the decline is an international trend and is brought about by several underlying factors: the more developed middle-income countries had reached the end of the private participation cycle; the financial crises during the '90s brought about a climate of uncertainty; and controversial transactions brought to the limelight the complex political economy of private involvement in infrastructure.² The last explanation for investment decline is something to which the Philippines can immediately relate.

It cannot be argued that it is at this juncture of infrastructure development that a review of the Philippine experience with build-operate-transfer (BOT) and related schemes is necessary. This study postulates that some of the reasons for dwindling investor appetite are related to contract design and implementation. Contractual disputes between the government and private proponents in most big BOT-type projects are manifestations of this. Thus, this study embarks on a research that has the following objectives:

- To examine the nature of BOT-type contracts, their design and content, e.g., risk-sharing arrangements, government guarantees provided, and others;
- To conduct a case study of a challenging BOT-type contract and identify issues and problems faced by the government and private investors in implementing the contract; and
- To provide policy recommendations in the light of the findings of the study.

An analytical framework for understanding BOT contracts is developed and an in-depth analysis of the *Database Infrastructure and Information Technology Project*, as a case study, is presented. The analytical framework takes off from a review of the literature on incomplete contracts theory. As will be explained later, the nature of Philippine BOT contracts, just like other long-term contracts, is that these are essentially incomplete and that incentives mechanisms through risk-sharing arrangements and

² 2003 Public-Private Infrastructure Advisory Facility (PPIAF) Annual Report

penalty/bonus provisions play a significant role in attempting to make these incomplete contracts as optimal as possible.

Among the sources of contract incompleteness identified in the analytical framework, bounded rationality seems to fit as a major explanation for the contracting parties' inability to design optimal long-term contracts in the Philippines. Moreover, incompleteness of contracts itself makes room for opportunism and moral hazard problems during the implementation of BOT-type arrangements. These hypotheses formulated in the development of the framework are 'tested' through the case study. These hypotheses are also the central themes in the examination of the salient features of the contractual arrangement entered into by the government and the examination of failures in the selected case study.

Brief Review of Related Philippine Literature

In a comprehensive assessment of Philippine infrastructure development from the Marcos to the Estrada regimes, Llanto (2002)³ dealt with, among others, the theme of financing infrastructure development through private sector participation. The study hinted on reform areas in risk-sharing arrangements and incentives provision in BOT-type projects.

Reside (1999)⁴ classified the risks in BOT-type projects and offered approaches to measuring the government's exposure to these risks. Particularly, a valuation principle based on options pricing theories is explained.

The Department of Finance-commissioned study "Government Policy, Regulatory and Institutional Framework for Private Participation in Infrastructure" (1999)

³ Llanto, Gilberto M. (2002). "Infrastructure Development: Experience and Policy Options for the Future." Discussion Paper Series No. 2002-26. Philippine Institute for Policy Studies (PIDS).

⁴ Reside, Renato (1999). "Estimating the Philippine Government's Exposure to and Risk from Contingent Liabilities in Infrastructure Projects." Discussion paper. University of the Philippines-School of Economics.

suggested frameworks for competition in and regulation of infrastructure, financial market development, government guarantees, and managing contingent liabilities. Several guiding principles in implementing BOT-type arrangements can be gleaned from this study.

Contractual provisions and approval procedures in the controversial independent power producers (IPP) program had been the focus of a series of reports by the Philippine Center for Investigative Journalism (PCIJ) that came out in newspapers in 2002. Expectedly, the research is narrative and more focused on the *how's* rather than the *why's* of failures and presented in an intriguingly journalistic way without the benefit of rigorous economic analysis. In particular, the PCIJ observes that while most contractual provisions are also present in IPP contracts in other countries, Philippine contracts are the “sweetest of all.”⁵

These studies implicitly suggested the possible areas of exploration that a future assessment of BOT-type arrangements could focus on. To this date, there has been no published study yet that brings the analysis of Philippine PPP experience to a more detailed level of analysis of contract design, approval procedures and contract implementation. This study thus attempts to go farther than what the above-mentioned studies explored by relating the explanations for failures in the BOT experience to a deeper understanding of microeconomic tenets in the economics of contracts.

Rationale for the Use of the Case Study Approach

The rise and decline, and rise again, of the case study methodology in social science, including economics, coincided with a movement within sociology—the move to make it more scientific. The Chicago School was most strongly identified with the case study method. In 1935, there was a public dispute between the Chicago School and Columbia University professors. The latter were championing the scientific method or the use of quantitative measurements to research design and analysis. The outcome was a victory for Columbia University and the denigration of case study as a research

⁵ “Trail of IPP Mess Leads to FVR,” Philippine Center for Investigative Journalism Report, Philippine Star, August 5, 2002.

methodology. However, in the 1960s, researchers became concerned about the limitations of quantitative methods. It was recognized that merely quantitative techniques tended to obscure some of the important information that the researchers needed to uncover. Thus, there was a renewed interest in the case study method. The most natural examples of case study method are to be found in the fields of Law and Medicine, where "cases" make up the large body of literature. In economics, case study techniques are most helpful in the review of government policies and other evaluative situations.⁶

Specifically in economic studies of contracts, precedent econometric analyses in an agency theoretic framework are lacking. Problems such as endogeneity and simultaneity of variables, which are inherent in such framework, seriously limit the application of econometrics. As observed by Maston and Saussier (2000)⁷, the number of explanatory variables and the size of data set needed for statistical identification multiply as the number of contractual provisions being examined is increased. Moreover, even if such methodological problems are surmountable, time and budget limitations prevent the application of rigorous statistical tests for the tentative hypotheses developed in the analytical framework. Thus, this study primarily relies on the *case study approach* as research methodology.

Indeed, Maston and Saussier (2000)⁸ concluded that case studies are an important complement to econometric analysis, especially since puzzles and anomalies encountered in the evaluation of cases can and often have been the stimulus to refinements in contract theories. Moreover, in other countries, researches on contracting are informative and instructive inputs to the courts' resolution of contractual disputes. It is inspiring to optimistically view such possibility in the Philippine setting: if not in the courts and the legislative branch of government, at least at the level of policy makers in inter-agency government bodies.

⁶ Tellis, Winston. (1997, July). "Introduction to case study." *The Qualitative Report* [On-line serial], 3(2). Available at: <http://www.nova.edu/ssss/QR/QR3-2/tellis1.html>

⁷ Masten, Scott E. and Stephanie Saussier (2000). "Econometrics of Contracts: An Assessment of Developments in the Empirical Literature on Contracting." *Revue D'Economie Industrielle*,. 92. 215-236 (available in the Internet).

⁸ Masten and Saussier (2000). *Ibid.*

Analytical Framework

Infrastructure investments, being long-term in gestation, inherently involve long-term contracts. The very fact that long-term obligations are committed *ex ante* and the benefits for which are realizable *ex post* results in contract incompleteness. In the first place, the literature explains that complete contracts are very hard to specify because of the high transaction costs involved, non-verifiability of information, uncertainty of future events and lack of commitment to renegotiate. Moreover, bounded rationality, due to uncertainty of exogenous events and weak computational ability of economic agents, constrains the parties' ability to cover everything and write these into the long-term contracts.

The incomplete contracts theory

The incomplete contracts theory has its roots from the study of vertical integration. In trades requiring long-term investments on specific assets, which are necessarily sunk before the time of exchange, Williamson [1975 and 1985]⁹ identified the possibility of “hold up,” a principal-agent problem which basically predicts this: after the long-term investment, e.g., on an infrastructure facility, has been made *ex ante* by a party to a trade transaction, which investment is largely sunk due to its specificity, the other party may behave opportunistically *ex post*. The latter can do this by reneging on the agreement to use the contracted facility or threatening not to use it if the price is not lowered. Accordingly, since the specific investments cannot be protected by an *ex-ante* contract, incentives are not properly aligned such that under-investment may occur—the investor anticipates her exploitation and under-invests. Williamson assumes further that transaction costs prevent some aspects of the future trade from being contracted *ex ante*. The parties have to leave contingencies open to future renegotiation and, thus, contracts become necessarily incomplete. Vertical integration is thus offered as a

⁹ Williamson, O. E. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. The Free Press, New York.

Williamson, O. E. 1985. *The Economic Institutions of Capitalism*. The Free Press, New York.

solution since it enables the investing party to protect its specific investments against the potential hold-up that the procuring party's opportunistic behavior could generate. The study of vertical integration and the investigation of incomplete contracts evolved as two distinct branches of economic research.

Williamson's analysis implies that the motivation for integration in long-term trade relationships involving specific investments is to resolve principal-agent problems such as "hold-up." (The principal-agent theory is broad and the focus of this study is on the specific set of problems which arise because of the lack of incentives by one of the contracting parties, i.e., the recipient of the facility in the hold-up case, to take the desired action—this set is what is known in the literature as "moral hazard" problems.) It is clear that the choice of integration instruments can be between contracting and vertical integration. It is also clear that vertical integration is a preferred solution because long-term contracts can be difficult to enforce owing to their incompleteness. The search for explanations of contractual incompleteness thus began.

Grossman and Hart [1986]¹⁰ formalized the "hold-up" problem in contracts by distinguishing between *ex ante* transaction costs (writing costs) and *ex post* transaction costs (non-verifiability by a third party, say, the judicial system, of valuation of trade variables). The former assumes that contractual contingencies are costly to specify, whereas the latter assumes observable but non-verifiable information on the parties' valuation of future trade exchange or contractual obligations. Grossman and Hart's model explains that incompleteness of contracts results from a combination of investment specificity and the cognitive and informational boundaries of the judicial system (which decide on the enforceability of contracts).

Hart and Moore [1988]¹¹ carried on this non-verifiability and enforceability assumption further by pointing out the judges' inability to verify whether a relevant state of nature had occurred. Moreover, they postulated that long-term contracts reflect the incapacity of parties to prevent *ex post* renegotiation. This renegotiation framework

¹⁰ Grossman Sanford and Oliver Hart. 1986. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration." *Journal of Political Economy*. **94**. 691-719.

¹¹ Hart, Oliver and John Moore. 1988. "Incomplete Contracts and Renegotiation." *Econometrica*. **56**. 755-786.

introduces another phase—the *ex interim* period—when the realization of a state of nature that calls for the renegotiation option is occurring or has just occurred.

Overall, the reasons for contractual incompleteness may be summed up in four categories: (i) unforeseen contingencies, (ii) existence of writing costs, (iii) presence of enforcement costs, or the non-verifiability by judges of valuations and states of nature, and (iv) lack of commitment not to renegotiate. Some aspects of the future states of the world, e.g., a change in the legal environment or drastic market movements, may be unforeseen or indescribable by the parties in advance. Even if these states may be described, writing them into the contract will be too costly. Furthermore, whoever is responsible for enforcing the contract (e.g., the court) may not be able to verify whether or not a particular state of the world has occurred, or whether or not a party's representation is true. It is also possible that the prevailing legal system does not allow parties to prevent renegotiation (i.e., renegotiation is always an option). The Philippine legal framework actually confirms this—there is a provision on contract re-opener in the BOT Law implementing rules and regulations. Moreover, parties are often unable to legally bind themselves not to renegotiate. This is especially true if the contractual relationship makes room for potential hold-up—the possibility of renegotiation constrains the set of feasible contracts.

In Tirole's 1994 working paper and 1999 seminal paper,¹² he recognized these reasons in his criticism of the incomplete contract theory. Among other things, he rejects the non-verifiability assumption since contracting parties can always implement a "revelation mechanism." In Tirole's view, if parties are risk-averse, a mechanism may be devised that will induce parties to reveal their true nature, e.g., whether efficient or inefficient, in order to design an optimal contract. Such revelation mechanism makes the contract contingent on the realization of the states of nature and requires a high penalty for breach together with a credible commitment by both parties not to renegotiate the penalty.

¹² Tirole, Jean. (1999). "Incomplete Contracts: Where Do We Stand?" *Econometrica*. **67**, 741-82.

Existing literature provides counter-arguments to this criticism. In particular, Brousseau and Fares (1998)¹³ summarized the counter-criticisms provided by earlier authors, for example: (i) Tirole's argument implicitly assumes the paradoxical view that the parties will not opt to renegotiate even when it is mutually profitable; and (ii) from an empirical point of view, the applied literature (i.e., case studies) points out that judges do not force the parties to apply the wording on non-renegotiation if they agree to renegotiate.

The incomplete contracts theory in the context of bounded rationality

The *New Palgrave – A Dictionary of Economics* [1987] uses the term bounded rationality to designate “rational choice that takes into account the cognitive limitations of the decision-maker—limitations of both knowledge and computational capacity.” The contextualization of decision-making processes in the bounded rationality framework is an emerging behavioral approach in economics.

As can be gleaned from the analysis above, the reasons for contractual incompleteness are closely linked with bounded rationality, which in turn is arising from information asymmetries and limits of computational capability. For example, the non-verifiability assumption arises from the possibility that the courts or judges may be incompletely informed or unable to correctly interpret the information made available to them, or both.

However, an analysis that focuses only on the judges' bounded rationality is incomplete. It is logical to assume that the judges' rationality is not less bounded than the contracting parties' rationality. Indeed, Brousseau and Fares (1998)¹⁴ explains that “bounded rationality of all agents” and “radical uncertainty” are the key reasons why agents cannot write complete contingent contracts and precisely state *ex ante* each party's behavior. This study finds merit in the first reason but not in the second.

¹³ Brousseau, Eric and M'hand Fares. (1998). “Incomplete Contracts and Governance Structures.” Centre d'Analyse Théorique des Organisations et des Marchés. Université de Paris. (available in the Internet).

¹⁴ Brousseau, Eric and M'hand Fares. (1998). *Ibid.*

With respect to postulating bounded rationality of all agents, this study considers it an acceptable proposition that there is no reason to believe that contracting parties, relative to judges, will have complete information about their own situation, e.g., pay-offs, effort levels, disutility of effort, etc. The radical uncertainty assumption by Brousseau and Fares (1998) postulates that agents cannot imagine the characteristics of the future and therefore cannot set contingent contracts that will fit every future situation. However, this study does not deem the proposition acceptable because in reality, agents do try to imagine future states and are able to ascertain its possible characteristics. Although in practice, not each and every future situation is addressed in contingent contracts, agents can still design contracts that approximately provide solutions to alternative realizations of the future. In the context of BOT, examples of such alternative future states include construction on schedule vs. delayed construction, successful operation vs. glitches in the operation, high demand vs. low demand, and many others. That is why the contracting parties design contracts that attempt to approximate such future states through provisions for performance bonds, operation bonds, liquidated damages, buy-outs, early termination, step-in rights, etc. Still, it is reasonable to assume that a considerable, but not entirely radical, amount of uncertainty is present in *ex ante* design of contracts that may bring about problems in *ex post* investment coordination and good exchange.

One of the criticisms to the use of the bounded rationality framework in explaining incompleteness of contracts is that existing models of bounded rationality have not been able to explain how people could be irrational enough not to be able to describe all the contingencies yet rational enough to see their payoffs (see, for example, Maskin and Tirole (1999)¹⁵). However, it has been claimed that any attempt to model bounded rationality in a “simple environment” is doomed to fall into the trap of describing decision-makers as either “completely dumb” or “perfectly rational” Segal (1999).¹⁶ These simplistic characteristics are not attractive assumptions in modeling since the two extremes of rationality are unacceptable, not to mention improbable. This study deems it

¹⁵ Maskin, Eric and Tirole, Jean (1999). “Unforeseen Contingencies and Incomplete Contracts.” *Review of Economic Studies*. **66**, 83-114.

¹⁶ Segal, Ilya. (1999) “Complexity and Renegotiation: A Foundation for Incomplete Contracts.” *Review of Economic Studies* **66**, 57-82.

more palatable to present environments reflecting, or at least approximating, the real world's complexities and wherein bounded rationality is a major assumption.

The LTO-IT Project

Project description and status¹⁷

The *Database Infrastructure and Information Technology Project* involves the design, customization, construction, complete installation, testing, commissioning and operation of the entire information technology (IT) system of the Land Transportation Office (LTO). This US\$75 million build-own-operate (BOO) project was pursued under the solicited mode of procuring a private partner. The public-private partnership is for ten years and is sealed by a BOO Agreement signed between the LTO and the private proponent, Stradcom Corporation, on March 26, 1998. Stradcom's investment partners are the International Finance Corporation of the World Bank and ePLDT, Inc., a wholly owned subsidiary of PLDT. From here onwards, the project is referred to as the "LTO-IT project."

Specifically, the project aims to perform the following:

- Register a minimum of 15,000 motor vehicles daily;
- Monitor the issuance of 12,000 pairs of motor vehicle license plates per day;
- Issue at least 12,000 licenses daily;
- Inspect a minimum of 2,000 queries daily about drivers and transport statistics through dial-up lines; and
- Capture a minimum of 35,000 records per day sent by the regional offices and field offices through the network and store these into the information data warehouse.

¹⁷ From various sources such as the LTO's Request for Proposals and the BOT Center's monitoring reports.

The project is designed to interconnect 230 LTO offices (including regional offices and field offices) nationwide, facilitate the real-time flow of information in these offices, integrate critical processes in LTO's licensing and registration activities and enable an on-line transaction processing. The LTO-IT database is intended to serve as a backbone for an integrated vehicle registration and licensing system. It is also designed to link up with the National Police Crime Reporting Units and other agencies for effective information dissemination.

Phase 1 of the project was completed in November 2001 and Stradcom was authorized to collect computer fees on December 7, 2001. (See Annex 1 for the chronology of events.) The computerized system had also been interconnected with the Department of Health and the vehicle emission testing centers. As of this writing, the project is about 97% complete. Stradcom claims that the remaining 3% deliverable is an obligation by the LTO. The government had also invoked the contract re-opener provision in the 1999 Implementing Rules and Regulations of the RA 7718, the amended BOT Law, and is preparing to re-negotiate the contract with Stradcom to accommodate a revenue-sharing scheme.

Policy framework for the LTO-IT project

Projects using information and communications technology (ICT) have unique features relative to other infrastructure projects. Provisions for obsolescence of technology, open architecture, interconnectivity and dynamism, for example, must be strictly ensured. Previously there were no policy guidelines specifically for the ICT sector. The ICC guidelines for the review and approval of BOT projects in the ICT sector were crafted only in 2002. The policy framework within which the development phase of the LTO-IT project was pursued is the National Information Technology Plan 2000 (NITP 2000), redolent of the *Philippines 2000* slogan of then President Ramos. The NITP 2000, adopted by the government through EO 190. s. 1994, called for massive diffusion and use of IT in government operations to improve the delivery of government services, promote transparency in government transactions, and improve the capability of the government in coordinating development objectives and implementing projects. Former President Ramos identified the need for an information technology infrastructure that

must provide fast transaction processing to eliminate red tape in government and, thus, issued on April 27, 1994 a directive for the LTO and the Department of Transportation and Communications (DOTC) to prepare flagship projects for immediate implementation.¹⁸ Thus, the LTO-IT project was identified in 1994 as one among the seven “flagship” projects of the agency.

The review and approval (the stage called in the government circle as “first pass”) of the LTO-IT project in 1997 was guided by the amended policy on BOT projects, RA 7718 and its implementing rules and regulations (IRR). RA 7718 (popularly known as the “amended BOT Law”) was enacted on May 5, 1994 to amend the first BOT Law, RA 6957 approved on July 9, 1990. The 1994 IRR of the amended BOT Law also served as the policy guide during the review and approval process for the draft contract (which stage is commonly called the “second pass”). The succeeding years demonstrated that, as the IRR was being tested in the review of BOT projects, several improvements had to be made. Thus, the IRR was amended and the amendments became effective on April 8, 1999.

In the policy front, it was increasingly being recognized that the amended BOT Law and its IRR are not fully capable of addressing the need for clearer policy guidelines in the approval of ICT projects. It was observed that the private sector was apprehensive and reluctant to participate in the ICT sector pending the resolution of the concern on lack of appropriate guidelines. Thus, one major priority action identified sometime in 1999 is to amend again the BOT Law and the 1999 IRR to address specific requirements of ICT projects. Efforts to amend the IRR have not yet officially taken off.¹⁹

To fill the policy gap and to formulate an urgent and immediately implementable solution, the BOT Center spearheaded the preparation of supplemental guidelines for ICT projects. The activity started in 2002 and it got favorable response and participation from other agencies. What is now known as “*Guidelines on the Preparation, Review, and Approval, and Implementation of Information and Communications Technology Projects Proposed for Financing Under RA 6957, as amended by RA 7718, otherwise*”

¹⁸ LTO’s Request for Proposals

¹⁹ The vehicle for this is the IRR Committee, as prescribed by Section 15.1 of the amended BOT Law.

known as the Build-Operate-Transfer (BOT) Law” or “ICT Guidelines for BOT” became an operational guideline in September 2003. Among other things, the guidelines include provisions for ownership of source codes and data, open system, obsolescence, data security and integrity, key performance indicators, and technology transfer arrangement. In future contract revisions for the LTO-IT project, renegotiation or execution of supplemental agreement, for example, these guidelines along with the 1999 IRR of RA7718 shall prevail.

Project review, bidding and contract approval procedures

First pass

As mandated by RA 7718, BOT projects costing more than P300 million must be reviewed by the Investment Coordination Committee (ICC), an inter-agency body under the National Economic and Development Authority (NEDA) Board. The NEDA Board is headed by the President. The project was proposed by the LTO as a build-operate-own (BOO) project under the solicited mode. RA 7718 defines a BOO arrangement as:

“a contractual arrangement whereby a project proponent is authorized to finance, construct, own, operate and maintain an infrastructure or development facility, in which the proponent is allowed to recover its total investment, operating and maintenance costs plus a reasonable return by collecting tolls, fees, rentals or other charges from facility users. Under this project, the proponent which owns the assets of the facility may assign its operation and maintenance to a facility operator.”

Moreover, RA 7718 and its IRR describes the solicited mode of procuring a private partner as the usual bidding process wherein the implementing government agency initiates project development, i.e., preparation of project concept and conduct of feasibility study, and subsequently calls for public tender once the necessary government approvals are secured. The unsolicited mode, on the other hand, is when the private proponent initiates project packaging and submits the project as an

unsolicited proposal to the government, and the government, in turn, invites challengers or comparative proposals through what has come to be known as the “Swiss challenge.”

The ICC-Technical Board deliberated on the project on April 25, 1996. During the first-pass review, the ICC Secretariat’s evaluation resulted in a rate of return on equity at 23% using the following assumptions, among others: a PhP28=US\$1 exchange rate, total project cost of US\$44,543,017 (or PhP1.25 billion at the time), and pass-on fees of as low as PhP150 for motor vehicle registration and PhP60 for licensing of drivers. The need for a centralized or national registration system for vehicles was raised and it was clarified that, although the registration and licensing activities are devolved in regional offices, there is still a need to centralize the information on all registered vehicles and licensed drivers for law enforcement purposes, e.g., identification and retrieval of stolen vehicles. The rationale for implementing the project under the BOO scheme rather than the BOT scheme was also raised. The LTO justified the choice of the BOO contractual arrangement based on the following arguments: (i) IT facilities have a high rate of obsolescence and such facilities may be outmoded by the end of the cooperation period; and (ii) under the BOO scheme, the project cost is lower and this lessens the fees that will have to be passed on to the public.²⁰

The ICC-Cabinet Committee approved the project on February 3, 1997 subject to the inclusion of the following in the draft contract:

- Adoption of performance indices for periodic replacement and upgrading;
- Modification of the fee adjustment formula applying the peso depreciation rate solely for the foreign exchange cost component;²¹
- Institution of a revenue-sharing scheme between the government and the winning bidder;
- Inclusion of provisions for minimal disruption in LTO operations.²²

²⁰ April 25, 1996 ICC Secretariat Project Evaluation Report and Minutes of ICC-TB Discussion.

²¹ The adjustment formula in LTO’s 1997 proposal is as follows:
adjusted fee = fee last period * [1 + (depreciation + inflation)]
which may result in over-charging since it passes on the full effects of depreciation and inflation to the adjusted fee and does not discriminate between the weights of foreign exchange cost and peso cost components in cost-recovery implicit in price adjustment formulas.

Concerns on the fee adjustment formula and revenue-sharing scheme will be revisited five years later when the project started operating and the incompleteness (i.e., due to weaknesses in the design) of the contract was revealed. This will be discussed in the sections related to the analysis of the executed contract and project implementation issues.

The NEDA Board approved the project on February 11, 1997 reiterating the conditions for approval stated above. The LTO's preparation for bidding activities commenced immediately thereafter.

Bidding

After the NEDA Board has approved the project, the LTO prepared the pre-qualification documents and advertised the "Invitation to Pre-qualify and Bid" for three weeks in March 1997. A total of 32 local and foreign companies obtained pre-qualification documents but only eight consortia submitted the accomplished pre-qualification documents. On April 25, 1997 (shortly after the Amended BOT Law IRR became effective, i.e., April 5, 1997), three consortia were pre-qualified, namely:

- Multi-Tower, Fujitsu, Tomen, RTA and Polaroid Consortium ("Fujitsu-Tomen")
- Stradec, Comfac, NCR and SAIC Consortium ("Stradcom")
- IBM, Penta Capital, OPCV and VicRoads Consortium ("IBM-Penta Capital")

The IBM-Penta Capital Consortium withdrew and the two remaining consortia submitted their bids on November 17, 1997. The LTO Pre-qualification, Bids and Awards Committee (PBAC) Technical Evaluation Committee reported on December 3, 1997 that both consortia passed the technical evaluation, with ratings of:

²² February 3, 1997 ICC-TB Memorandum for the ICC-CC and Minutes of ICC-CC Discussion.

Fujitsu-Tomen = 98.096%

Stradcom = 98.855%

The financial proposals of the two consortia were opened on December 8, 1997 and the present value²³ of the two proposals were revealed as:

Fujitsu-Tomen = PhP 6,711,187,347

Stradcom = PhP 2,585,208,402

Stradcom was thus declared as the winning bidder. Fujitsu-Tomen Consortium protested to the LTO and the PBAC on December 10, 1997 on grounds that the Stradcom bid of PhP2.58 billion did not comply with PD 1594 (Procurement Law) which provides that no award shall be made to a bidder whose bid price is lower than 70% of the allowable government estimate (PhP8.4 billion in the reckoning of Fujitsu-Tomen). On December 11, 1997, the LTO defended its decision based on the argument that PD 1594 is not the governing law but RA 7718, which stipulates that the contract will be awarded to the lowest bid with most favorable terms based on the present value of its proposed tolls, fees, and other charges. Thus, on December 15, 1997, the Notice of Award was given to Stradcom.²⁴

Second pass

The losing bidder's protest was also carried on to the ICC level as the former requested on February 3, 1997 that the processing of contract review be deferred. The LTO informed the Technical Working Group (TWG) on BOT Contract Review, which at the time was already starting to review the draft contract, that the losing bidder's arguments are not valid. The LTO also clarified that it did not indicate an allowable government estimate in the Request For Proposal documents. The TWG suggested to the ICC that it should not in any way get involved with the selection and awarding of

²³ The Request for Proposals issued by the LTO in 1997 stated that "the contract will be awarded to the bidder whose tolls/fees/charges are determined to have the lowest present value."

²⁴ From various LTO background materials on LTO-IT bidding activities

BOT contracts since the ICC is mandated to approve projects only and not to approve the selection of contractors.

One of the issues raised during the second-pass review is the fee adjustment formula which includes income tax as a component of one of the weights to be used in the parametric formula. The ICC interpreted this as similar to the issue raised by the Energy Regulatory Board on Meralco's practice of including taxes in its operating expense, which issue was being deliberated by the Supreme Court at the time. The LTO conveyed that it is not inclined to change the formula at that point in time since they would not want to preempt the decision of the Supreme Court on the issue. On March 11, 1998, the ICC-Technical Board issued a second-pass approval of the project with the understanding that the LTO will invoke the contract re-opener provision in the contract in the event that the Supreme Court ruled unfavorably on the inclusion of taxes.²⁵ (This contract re-opener provision will prove to be important six years later; contract re-negotiation for the LTO-IT is being studied by the government at present.) In a joint meeting of the NEDA Board and ICC-Cabinet Committee on March 24, 1998, the Technical Board approval of the BOO contract was confirmed. On March 26, 1998, DOTC/LTO and Stradcom signed the contract.

Contract review by the Office of the President

The executed contract trailed an endorsement process from the LTO to the DOTC Secretary (April 30, 1998), then from the DOTC Secretary to the Office of the President (May 6, 1998). The Office of the President, through the Executive Secretary, clarified that the NEDA Board approval of BOO projects carries with it the approval of the President and, thus, there is no need for a separate Presidential approval of the LTO-IT BOO contract. The Notice to Proceed was then issued to Stradcom on May 28, 1998. A month after this issuance, President Joseph Estrada assumed office. Then President Estrada called for a review of all "flagship projects" by the previous administration, including the LTO-IT project, and this delayed project implementation. (This delay will prove to be a crucial concern during the 2002 review of project implementation by the

²⁵ March 11, 1998 Minutes of ICC-TB Discussion.

Commission on Audit.) On November 9, 1998, former President Estrada directed LTO to implement the project and this instruction served as the new Notice to Proceed. On July 1, 1999, the LTO and Stradcom started implementing the project.²⁶

A note on the sequencing of the pre-implementation activities

It is crucial to note that the sequencing of pre-implementation activities for the LTO-IT project followed this procedure:

First Pass (project review) → Bidding → Second Pass (review of draft contract)

This is also the sequencing followed for some projects approved prior to the 1999 amendment of the IRR, e.g., the Ninoy Aquino International Terminal 3 BOT Project.²⁷ This sequencing is now generally viewed within the government circle as inconsistent with prudent BOT approval procedure, i.e., that the ICC clearance of a contract must be secured prior to bidding (or prior to invitation to challengers in the case of unsolicited projects). Perhaps during the time projects were being reviewed using the 1994 IRR as framework, the decision-makers (the ICC and implementing government units), who had the opportunity to look more closely at the details of project proposals, considered that the requirement for contract approval prior to bidding was not explicit in the 1994 IRR. Section 9.2 of the 1994 IRR states,

“ICC Clearance. In case of projects involving substantial government undertakings as defined under the ICC guidelines attached hereto as Annex B, the concerned Agency/LGU shall, prior to the approval of the Notice of Award, submit the draft contract to the ICC for clearance on a no objection basis...”

Still, it is interesting to note that Section 4.1 (Bid/Tender Documents) of the 1994 IRR required that the draft contract be included in the tender documents to be issued to prospective bidders.

²⁶ From various BOT Center monitoring reports.

²⁷ An exhaustive investigation of all BOT-type projects approved using the 1994 IRR is necessary to see whether or not all such projects followed the described sequencing.

At present, in accordance with the 1999 IRR and as a matter of due diligence, there is consensus within the government that the following sequencing of activities must be followed:

First Pass (project review) → Second Pass (review of draft contract) → Bidding

Section 2.9 of the 1999 IRR states,

“ICC/Local Sanggunian Clearance of the Contract Prior to Award. ICC/Local Sanggunian clearance of contracts shall likewise be required only for projects requiring national government undertakings. ICC clearance of the contract shall be secured prior to award, in the case of publicly bid projects or prior to solicitation of comparative proposals for unsolicited proposals. The concerned agency/LGU, prior to the schedule of submission of bids, shall submit the draft contract to ICC for clearance on a no-objection basis.... “

The evolution of the appropriate sequencing of pre-implementation project activities speaks much of how bounded rationality played a role in the decision-makers’ understanding of the intention of the amended BOT Law to prevent failures in the design of contracts.

The BOO Agreement

The following outlines the basic components of the Build-Own-Operate Agreement executed by DOTC/LTO and Stradcom on March 26, 1998:

- Contracting Parties
- Recitals
- Article 1 – Definitions
- Article 2 – Scope of Work
- Article 3 – Annexes
- Article 4 – Main Undertakings

- Article 5 – Undertakings of the Contractor
- Article 6 – Performance Security
- Article 7 – Financing and Operation
- Article 8 – Warranties of the Contractor
- Article 9 – Responsibilities of the Contractor
- Article 10 – Undertakings of the DOTC/LTO
- Article 11 – Payment Schedule
- Article 12 – Contractor’s Fees
- Article 13 – Warranties and Responsibilities of the DOTC/LTO
- Article 14 – Prices for IT-Based Services and Price Adjustment
Procedure
- Article 15 – Insurance
- Article 16 – Acceptance of an IT Facility
- Article 17 – Force Majeure
- Article 18 – Default
- Article 19 – Termination
- Article 20 – Requisition
- Article 21 – Disputes
- Article 22 – Miscellaneous Provisions

Salient features of the BOO Agreement²⁸

The contractual provisions summarized here include the major undertakings of each party, the performance securities, the prices agreed upon and the price adjustment procedure, the events of default, the remedy for default, the termination procedures, and the compensation principles in the event of early contract termination. These contractual provisions are deemed important as risk-sharing and incentive alignment mechanisms and will be analyzed in the succeeding section.

- Major undertakings of Stradcom:
 - Complete the IT facilities within the time frame and upon completion, present the IT facilities to the DOTC/LTO with an application for a

²⁸ Summarized from the March 26, 1998 executed BOO Agreement.

Certificate of Acceptance of an IT Facility (CAIF). A CAIF is to be issued on a per site basis.

- Upon receipt of the first CAIF, commence to operate, maintain and manage the IT facilities and provide the IT-based services so required by DOTC/LTO and in accordance with the schedule set forth in the contract.
 - Post two performance securities.
- Performance securities to be posted by Stradcom:
 - Upon signing of the BOO Agreement – equivalent to PhP100 million, valid and in full effect until the issuance of the final CAIF. It shall answer for and guarantee the completion of the project in accordance with performance standards and time frame.
 - Upon issuance of the first CAIF – equivalent to PhP100 million, valid and in full effect for a concession period of 10 years commencing from the first In-Service Date.
- Major undertakings of DOTC/LTO:
 - Pay Stradcom, in not more than two billings a month and in Philippine currency, fees based on the total number of daily transactions of the IT facilities and on the daily report, including but not limited to motor vehicle registrations and processing of driver's licenses or permits but excluding the supply, production and delivery of driver's licenses and IDs.
 - Collect all fees from the end-users and/or beneficiaries of the IT-based services.
 - Open a Trust Fund with the Bureau of Treasury and/or any authorized government depository bank and deposit all the proponent's fees collected into the said Fund.
 - Remit the agreed upon payment to Stradcom.
- Prices for IT based services:
 - Stradcom will be paid in accordance with the price schedule as shown in Stradcom's financial proposal (i.e., during the bidding stage).²⁹ The

²⁹ There are only two kinds of fees indicated in the financial bid of Stradcom:
IT Fees for Driver's License Application = PhP 48.00 (excluding VAT), and

amount of payment per type of service rendered will be applicable from the day when the IT-based services are initially utilized by the LTO up to the end of that same year.

- Price adjustment formula:
 - Beginning on the first day of the following year and every year thereafter during the duration of the BOO Agreement, the prices shall be automatically adjusted in accordance with a price adjustment formula.

The price adjustment formula and the definitions as exactly stated in the contract are reproduced here:

$$\pi_t = \alpha \left[\theta \frac{\text{FOREX}_t}{\text{FOREX}_{t-1}} + \lambda \frac{\text{IL}_t}{\text{IL}_{t-1}} + \phi \right] + \beta \left[\gamma \frac{\text{CPI}_t}{\text{CPI}_{t-1}} + \delta \frac{\text{PR}_t}{\text{PR}_{t-1}} + \eta \right] + \varepsilon$$

$$F_t = \pi_t F_p$$

and

where:

- | | | |
|-----------------|---|--|
| subscript “t” | = | the year in which the new adjustments shall be implemented |
| subscript “t-1” | = | the previous year |
| π | = | periodic adjustment factor |
| F_t | = | adjusted fee for the current year |
| F_p | = | proposed fee for the current year |
| FOREX | = | average monthly peso-dollar exchange rate for the preceding 1 year, as published by the Philippine Dealing System. This variable shall be equal to 1.0 after the project has been in full operation for a number of years equal to the foreign project debt with the longest life. |

IL	=	average 180-day government Treasury Bill rate for the preceding 1 year, as published by the Bangko Sentral ng Pilipinas. The variable IL_t/IL_{t-1} shall be equal to 1.0 after the project has been in full operation for a number of years equal to the project debt with the longest life.
CPI	=	the year-on-year Metro Manila Consumer Price Index (February 1998=100), as published by the National Statistical Office, corresponding the month closest to the date of adjustment for which data is available.
PR	=	the average monthly peso/kilowatt-hour rate for the preceding 1 year, as calculated from the monthly Manila Electric Corporation (Meralco) billing statement of the Land Transportation Office.
α	=	the proponent's average total annual debt payments (principal plus interest) as a percent of total revenues, with the said average calculated over the period equal to the debt with the longest life, based upon verification by LTO of the winning bidder's submitted financing plan.
θ	=	the proponent's average total annual foreign currency-denominated debt payments (principal plus interest) as a percent of total annual debt, with the said average calculated over the period equal to the debt with the longest life, based upon verification by LTO of the winning bidder's submitted financing plan.
λ	=	the proponent's average total annual peso-denominated interest payments as a percent of total annual debt, with the said average calculated over the debt over longest period, based upon verification by LTO of the winning bidder's submitted financing plan.
β	=	the proponent's average annual operating expenses (less interest, but including taxes), as a percent of total revenues, with the said average calculated over the entire

cooperation period, based upon verification by LTO of the winning bidder's submitted financing plan.

γ = the proponent's average annual manpower and repairs and maintenance expenses (excluding janitorial and security expenses) as a percent of total operating expenses, with the said average calculated over the entire concession period, based upon verification by LTO of the winning bidder's submitted project cost estimate.

δ = the proponent's average annual power expenses (electrical and fuel) as a percent of total operating expenses, with the said average calculated over the entire concession period, based upon verification by LTO of the winning bidder's submitted pro-forma project cost estimates.

η = $1 - \gamma - \delta$

ϕ = $1 - \theta - \lambda$

ε = $1 - \alpha - \beta$

The contract further states,

“All weights (e.g., α , β , γ , δ , θ , λ) shall be based upon verification by the LTO of the project cost estimates and financing plan contained in the winning bidder's technical and financial proposal and subject to the conditions stipulated above. The weights shall be reviewed on the tenth (10th) year of operation by the Contractor and the Government and modified accordingly.”

- Stradcom's default – Occurrence of any of the following events:
 - Failure to perform any material covenant within 45 days after receipt of notice of default.

- Intentional misrepresentation or omission of material information required in reports and failure to correct the same within 45 days.
 - Failure to finish the IT facility in accordance with project scope and specifications.
 - Repeated non-compliance with terms and conditions.
 - False representation in any material aspect.
- DOTC/LTO's default – Occurrence of any of the following events:
 - Termination or cancellation of the BOO Agreement without valid cause.
 - False representation in any material aspect.
 - Failure to perform any material covenant within 45 days after receipt of notice of default.
 - Promulgation of any law or regulation which adversely affects the interest of Stradcom in the IT Facility and its financial return or otherwise rendering Stradcom incapable of performing its undertakings.
- Remedy for default:
 - In case a party commits an act constituting an event of default, the non-defaulting party may terminate the BOO Agreement by serving a written notice specifying the ground for termination.
 - The defaulting party is given a period of 45 days within which to rectify the default.
 - If the default is not remedied within this period, the non-defaulting party will serve a written notice of termination indicating the effective date of termination.
- Termination procedures and compensation principles:
 - Due to Stradcom's default:
 - Step-in rights of the unpaid creditors – the creditors may foreclose the IT facilities or assign a new contractor.
 - In case the creditors waive their rights, DOTC/LTO shall take over the facilities and assume all the remaining liabilities of Stradcom.
 - In all cases of termination due to Stradcom's default, actual and compensatory damages will be charged against the performance

securities and, if found insufficient, arbitration proceedings may be initiated.

Due to DOTC/LTO's default:

- DOTC/LTO shall be obligated to take over the facilities on an “as-is-where-is” basis and assume all attendant liabilities of the project.
- In addition, DOTC/LTO shall pay Stradcom liquidated damages equivalent to:
 - If terminated prior to completion – Value of Completed Construction plus 10% thereof, minus the attendant liabilities assumed by DOTC/LTO. The term “Value of Completed Construction” shall mean the aggregate of all reasonable costs and expenses incurred by Stradcom in connection with the IT facilities, including all interest and other reasonable financing costs, as verified by a reputable accounting firm to be appointed by Stradcom subject to approval by DOTC/LTO.
 - If terminated after completion – Just Compensation, equivalent to the present value of the net income, using a discount rate of 15%, which Stradcom expects to earn during the remaining term of the BOO Agreement.

Analysis of the BOO Agreement

As shown in the analytical framework section, in their attempts to show the flaws in the reasoning of incomplete contract theory proponents, incentive theoreticians like Tirole have actually helped in finding solutions to the problem of incomplete contracts. They devised mechanisms aiming to show that optimal contracts are possible, specifically by employing revelation mechanisms and designing incentives that are aligned with desired actions. Revelation mechanisms can be tackled methodically by a study on auctions principles, and are thus beyond the scope of this study. Incentives as they relate to contract design and implementation are tackled here.

Given the recognition that long-term contracts are necessarily incomplete, or at least, that it is difficult, if not entirely impossible, to design a complete and optimal long-term contract, moral hazard problems in the implementation of contracts may be expected. But there are ways to mitigate such moral hazard problems: by formulating appropriate contractual provisions in order to properly align incentives and allocate risks. The latter purpose, risk allocation, actually relates to the former, incentives alignment—a properly designed risk allocation setup that manages and mitigates future project risks provides incentives for the contracting parties to perform optimally.

However, the implementation of BOT-type agreements is likely to bring with it problems when there are *specification failures* in contract design—i.e., when the parties fail to specify risk allocation and incentives mechanisms that seek to mitigate the difficulties information asymmetries and exogenous events may cause in the future. The succeeding discussion presents the specification failures in the design of the LTO-IT BOO contract, as identified by this study.

- The public sector is made to bear the completion risk.

This is primarily because there is no provision for liquidated damages in case of the contractor's delays in project completion. It may be argued that the government must not be faulted for this because the LTO-IT project does not involve any government undertaking and thus the liquidated damages provision is not required per the 1994 IRR of the amended BOT Law, the guideline used by the LTO during the contract preparation stage and by the ICC during the contract review stage. The 1994 IRR prescribes that,

“Section 12.11. *Liquidated Damages*. ...For projects involving no government undertaking whatsoever, liquidated damages shall not be imposed in case the project proponent fails to complete the construction of the projects within the approved construction period. In case, however, that the delay exceeds twenty percent (20%) of the approved construction period, inclusive of the extension or grace period stipulated in the contract, the government shall terminate the contract...”

However, completion delays translate to opportunity costs to the public sector and such costs provide a strong basis for requiring liquidated damages. Economic literature offers two measures of liquidated damages—expectations damage and investments damage. The expectations damage measure puts the party suffering breach of contract in the same position that she would have been in had the agreement been fulfilled. The investment damage measure, on the other hand, puts the party suffering breach in the same position that she would be in without the agreement.³⁰ In the LTO-IT project, the expectations damage measure seems to be what is more applicable since the LTO has only a small amount, if any, of investment share (e.g., manpower counterpart) in the project. Expectations damages in this case include the benefits to the public, initially estimated during the project evaluation period, that are foregone due to completion delays.

- Owing to the absence of liquidated damages provision, the contractor has weak incentive to finish the project on time.

It may also be argued that, even without a liquidated damages provision, a possible call on the PhP100 million-performance bond or security during construction and installation already provides incentive to the contractor to finish the project on time. However, although there is that provision for performance bond, a call on the whole amount for minor delays is a severe threat that lacks credibility. There is a clear moral hazard problem here: since the contractor knows that the contract does not state any penalty “for every day of delay”, and that the government is not likely to call the whole performance bond for minor delays, the former is also not likely to be disciplined enough to avoid minor delays. Moreover, since minor delays are not penalized, the contractor may even behave opportunistically by maximizing the 20% allowable delays through requests for extensions from the government.

- It is unclear in the contract whether or not the operation risk is fully covered until the end of the cooperation period.

³⁰ Leitzel, Jim (1989). “Damage Measures and Incomplete Contracts.” RAND Journal of Economics. Vol. 20, No.1. pp. 92-101.

The contract states that the PhP100 million performance bond during the operation phase is valid only for a concession period of 10 years commencing from the “first” In-Service Date. The contract further states that the operation of an IT facility starts upon the contractor’s receipt of a CAIF. (In actual contract implementation, the first CAIF was issued in December 2001 and the final CAIF was issued in February 2003.) Since the contract distinguished a “first” In-Service Date, it can be interpreted that the accepted facilities have distinct In-Service Dates and have a concession period of 10 years each. If such loose interpretation is permitted, the whole operation period is not fully covered by a performance bond.

- Aside from early termination, the events that may warrant a call on the operation bond are not stated.

Although there is a provision for performance bond during operation, it is not explicitly specified in the contract whether it can be called should it happen that the IT facilities’ performance is below standard. The only applicable statement about the purpose of this operation bond is in the default provisions, which state that compensation to the government in the event of early termination due to the contractor’s default shall be charged against this bond.

- The end-users are made to bear the risks of underperformance during operation.

As in the construction and installation phase, there is no contractual provision for liquidated damages in case there are shortfalls in the quality or quantity of performance during the operation of the IT facilities. Thus, with unclear application of the operation bond, and with no provision for liquidated damages, the contract provides no penalty at all for minor faults during the operation phase. The glaring incompleteness of the contract with respect to a guarantee for faithful performance during operation again provides room for opportunism by the contractor.

- The price adjustment mechanism through the parametric formula is not well-defined and permits loose interpretation and, thus, wrong application.

A background discussion on parametric formula is necessary at this point. Here are a few stylized facts³¹ in tariff-setting in Philippine BOT contracts: (i) the initial tariff is set by rules (e.g., Manila International Airport Authority administrative orders on charges for airport services), by using the prevailing market rates, by basing it on a cost-recovery-plus-return formula, or through any combination of such methods; (ii) price adjustment is usually provided through what is popularly known in the government circle as “parametric formulas”; and (iii) parametric formulas follow this usual form:

$$P_t = P_{t-1} [wt_1 (1 + \Delta index_1) + wt_2 (1 + \Delta index_2) + \dots]$$

where P = price or tariff
 wt = fixed weights, e.g., projected average annual power cost as a share of the projected average annual operation and maintenance expenses
 $\Delta index$ = change in an index for adjustment from period $t-1$ to period t , e.g., consumer price index
 and the sum of the weights is always equal to 1.

With respect to the LTO-IT parametric formula, assuming that the weights α , β , θ , λ , γ , δ are fixed weights, and if we can think of the effects of the different adjustment indices as something that can be summed up by a hypothetical composite index, then the formula essentially follows this structure:

$$P_t = P_{t-1} [\tau (1 + \Delta composite index) + (1 - \tau)]$$

where $\tau = \alpha (\theta + \lambda) + \beta (\gamma + \delta)$
 and $(1 - \tau) = \alpha \phi + \beta \eta + \varepsilon$

³¹ Navarro, Adoracion M. (2004). “Contracts Made Easy: General Provisions and Principles in the Design of BOT-type Contracts,” a presentation material for BOT Center in-house training. May 25, 2004.

$$\begin{aligned}
 &= \alpha (1 - \theta - \lambda) + \beta (1 - \gamma - \delta) + (1 - \alpha - \beta) \\
 &= 1 - [\alpha (\theta + \lambda) + \beta (\gamma + \delta)]
 \end{aligned}$$

Note that the formula is not as difficult as it seems because it actually boils down to a two-part tariff: a variable fee, $P_{t-1} [\tau (1 + \Delta \text{composite index})]$, plus a fixed fee, $P_{t-1} (1 - \tau)$. Moreover, this parametric formula is a hybrid of price-cap regulation and return-on-rate-base (RORB) regulation. To the extent that it uses indexation rules, it employs the principles of price-cap regulation.³² To the extent that it is aimed to meet a certain rate of return on equity (as the ICC is wont to do in approving BOT projects during the first pass), it employs the principles of RORB regulation.

Since indexation rules are being applied in the LTO-IT price adjustment, the weights α , β , θ , λ , γ , δ should be fixed weights. For α and β , the idea is to remove any guarantee for market risk³³. For example, had the weight β in the LTO-IT parametric formula been fixed as:

β = the proponent's projected average annual operating expenses, as a percentage of projected average annual revenues, with the said average calculated over the entire cooperation period, based upon verification by LTO of the winning bidder's submitted projected cost estimates and revenue projections,

or,

= the proponent's projected total operating expenses, as a percentage of projected total revenues, with the said totals calculated over the entire cooperation period, based upon

³² However, it is common knowledge in the economics of regulation that price-cap regulation in its pure form allows for a deduction for some measure of expected efficiency gain commonly denoted as "X", as in the "RPI -X" formula popularized by British Telecom in 1984.

³³ In earlier BOT projects in the Philippines, especially in the power generation sector, guarantee for market risk or fluctuations in demand were given in the form of minimum off-take agreements and take-or-pay contractual provisions. For the LTO-IT project, however, the ICC approval did not carry with it any guarantee for market risk.

verification by LTO of the winning bidder's submitted projected cost estimates and revenue projections,

then there is no danger that realized revenues below the projected average (due to low actual demand) will result in higher than normal allowance for price adjustments, which will subsequently be translated into an abrupt increase in tariffs and over-priced charges for the remaining cooperation period.

However, it can be gleaned from the definitions of the weights α and β in the LTO-IT parametric formula that there is a danger that a loose interpretation could be entertained. For example, since computing β based on the original definition, i.e., "average annual operating expenses as a percent of total revenues," will result in a very large denominator and a very insignificant weight and thus will not make any sense, then there is a danger of permitting the interpretation of β as "average annual operating expenses as a percentage of annual revenues." With the latter interpretation, the weight β will become a variable factor; moreover, a lower-than -projected initial revenue will permit a very abrupt increase in fees in the first adjustment exercise (assuming the indices for β will move positively and other variables will be held constant), and with the overcharging carried on for the whole cooperation period.

Fixing the weights for cost recovery also acts as an incentive mechanism. The idea is to apportion the components of the projected costs (i.e., debt service and operation and maintenance expenses) and limit the cost recovery within what is projected by the contractor (during the bidding stage). For example, had the weight δ in the LTO-IT parametric formula been fixed as:

δ = the proponent's projected average annual power expenses (electrical and fuel) as a percent of projected average annual operating expenses, with the said averages calculated over the

entire concession period, based upon verification by LTO of the winning bidder's submitted project cost estimates,

or,

= the proponent's projected total power expenses (electrical and fuel) as a percent of projected total operating expenses, projected over the entire concession period, based upon verification by LTO of the winning bidder's submitted project cost estimates,

then the proponent is residual claimant for any cost savings and additional price adjustment should actual costs be lower than what is projected. Moreover, it should motivate the proponent to be efficient since the share in price adjustments of the movements in power rate index will not be larger than what is allowed.³⁴

In the LTO-IT parametric formula, taking the definition of δ in its literal sense will not make any sense, e.g., computing δ as "average annual power expenses as a percent of total operating expenses" and using total operating expenses during the whole cooperation period will result in a very small weight, or a very insignificant allowance for power rate adjustments, and will not be acceptable. Again, several interpretations could be applied and there's the rub, so to speak. For example, interpreting δ as a variable by computing it as "average annual power expenses as a percent of annual operating expenses" loses its incentive power to discipline the proponent to stay within the power expenses it projected during the bidding stage. Furthermore, the effect of future price adjustments on the rate of return on equity will now be difficult to estimate even with available data on index forecasts since there is a need to predict the variance between actual costs and the costs projected in the bid.

As a final statement on the issue of weights, it is interesting to note that such weights were not fixed immediately during contract preparation and reflected in

³⁴ In cases wherein *adverse selection* happened during the bidding stage, such that an inefficient type of firm was able to pass itself off as an efficient type and won the bid, the inefficient firm may behave opportunistically by inserting terms in the contract that aims to prevent discovery and maximize its gains. In view of this, future researches on adverse selection and auction results in BOT contracts will be very helpful.

the executed contract since these can already be computed from the submitted bid, particularly from the financial proposal.

- The end-users bear the depreciation and interest rate risks.

A background discussion on risk allocation principles behind parametric formulas is also necessary at this point. In the design of parametric formulas using indexation rules, one of the initial questions is: Should a general index be applied to the overall tariff or should particular indices be applied to distinct components of total cost? The answer to this question is related to the question of which risks should be allocated to the end-users, the contractor, and the government. Every index tacked into the formula reflects each type of risks being passed on to the paying users. The risks not reflected by the indices are being borne by the contractor or are being hedged against through insurance. The government shares in the risk allocation by agreeing to honor the result of the parametric formula, and this is usually made more explicit by a contractual provision in the price adjustment procedure that compels the government to shoulder the difference in the event that it opts not to impose the result of the formula, e.g. due to the perception that the adjusted price is not politically tenable.

In the LTO-IT parametric formula, depreciation risk and interest fluctuation risk are being passed on to motor vehicle owners and drivers by allowing for price adjustments based on fluctuations in the peso-dollar exchange rate and the yield on 180-day Treasury bills. (Actual contract implementation, however, proved that the Treasury bill index does not matter because the weight for local debt is zero, i.e., the proponent did not use local debt financing.) The practice of passing on depreciation risk and interest fluctuation risk is quite common in Philippine BOT contracts because it has often been claimed that coverage for such risks is a requirement of international lending partners. The literature offers options about the treatment of such risks. Exchange rate and interest rate movements are considered exogenous factors during contract implementation and, since they reflect events outside the control of the project company, governments may as a matter of policy allow investors to protect themselves against these uncertainties through indexation in the parametric formula. However, risk coverage must not necessarily translate to public sector risk-bearing. In more sophisticated markets,

depreciation and interest rate risks are insurable risks for which the project company has the means to hedge against.³⁵ Although the ICC as a matter of policy sets a debt-to-equity ratio (usually between 75%-25% to 70%-30%) in BOT projects, still, full coverage of depreciation and interest risks through the parametric formula sometimes results in biases that affect the commercial decision of the contractor, e.g., full coverage of depreciation risk may result in higher preference for foreign credit to the maximum extent that only foreign financing will be tapped, as confirmed by the experience in the LTO-IT project.

- Income tax is being recovered through the parametric formula.

As mentioned in the discussion of project pre-implementation activities, this issue was raised during the ICC review of the contract. The definition of the weight β in the price adjustment procedure includes taxes in the numerator, and “taxes” in this case was taken to mean during the second-pass review as income taxes. This, however, is not appropriate since, in the economic sense, corporate income taxes are meant as taxes on project companies, i.e., the income earner, and must not be passed on to the end-users or consumers. Moreover, Philippine jurisprudence supports this because the Supreme Court ruled on *ERB et al vs. Meralco* (November 2002) that income tax should be borne by the taxpayer alone and not passed on to consumers as these are “payments in exchange for benefits received by the taxpayer from the state.”³⁶ Only value-added taxes (VAT), which form part of the final price of a good or service, may be passed on to end-users. Tax incentives, such as income tax holidays, may, however, be granted as a matter of government policy; but that is another matter.

As a matter of principle, cost recovery may be allowed for taxes during construction or installation stage, such as import duties, VAT on materials, licensing and business permits, etc., since these are considered legitimate investment expenses. But corporate income taxes during operation must not be

³⁵ Kerf, Michel et al. (1998). *Concessions for Infrastructure: A Guide to Their Design and Award*. The World Bank, Washington D.C.

³⁶ “SC bases Meralco decision on people's economic rights,” November 16, 2002 edition of www.inq7.net.

recovered from end-users. There are, however, components of the tax burden that may be shared by the government—these are taxes that accrue due to the government’s performance of its obligations in the contract, for example, real estate taxes, assessments and imposts levied on the land used by the private partner but the ownership for which still remained with the government.³⁷ But all real property taxes on the buildings, improvements and facilities made by the private partner should be for the account of the private firm. Any sharing of the tax burden, however, must be clearly spelled out and the effects of it on a project’s tariffs and cash flows should be evaluated before approving a tax-sharing policy.

- The threat of early termination as penalty in the event of default lacks credibility. In the absence of calibrated penalties for minor faults by the contractor, and with the severest penalty, i.e., early termination together with forfeiture of performance bonds, as the only penalty, the threat of early termination loses credibility. The contractor expects that the government will not carry out its threat for minor defaults and thus may behave opportunistically during contract implementation.

Related to the issue of early termination in the event of default is the issue on whether or not the government should assume the project’s attendant liabilities. The Supreme Court ruling on the BOT contract for the NAIA Terminal 3 declared the assumption of attendant liabilities as tantamount to giving a direct government guarantee and therefore a violation of the BOT Law prohibition of direct guarantees for unsolicited projects.³⁸ However, in the first place, the treatment of attendant liabilities is explicitly stated in the BOT Law IRR as follows:

“Section 12.19. Contract Termination/Rescission

...

³⁷ An example is the Metro Rail Transit (MRT) Line 3 case, a build-lease-transfer arrangement, where the government pays for the real property taxes for the land where the facility stands.

³⁸ May 5, 2003 Supreme Court ruling on *Agan vs. PIATCO*, *Baterina vs. PIATCO* and *Lopez vs. PIATCO*.

- b. If the project proponent refuses or fails to perform any of the provisions of the approved contract with such diligence as will ensure the project's completion, operation and maintenance in accordance with the prescribed technical and performance standards or otherwise fails to satisfy any of the contract provisions including compliance with the prescribed/agreed milestone activities, or commits any substantial breach of the approved contract...if not corrected within the time specified, the Agency/LGU concerned may rescind the contract. In such an event, the Agency/LGU concerned may either:
 - i. **Take over the facility and assume all attendant liabilities thereof;**
or
 - ii. Allow the project proponent's lenders/creditors/banks to assign the project to another."

The intention of this IRR provision, and its application to BOT-type projects, whether unsolicited or solicited, may have been to further encourage long-term investment in infrastructure. In this matter, it seems inappropriate for this study to render a final opinion on which principle (that implied by the Supreme Court decision or that contained in the BOT Law IRR) is correct. Moreover, the NAIA Terminal 3 project has a pending arbitration case before the International Bank for Reconstruction and Development and, therefore, as a matter of principle, it may be imprudent to render an opinion on questions which are *sub judice*.

Most of the above-mentioned weaknesses in the BOO Agreement remain unaddressed as the parties implement the contract. A few of these glitches, however, were identified by outside parties. For example, the lack of penalty provisions such as liquidated damages was raised by the Commission on Audit (COA) on August 29, 2003, although in a different light as will be explained later. An Amendment Agreement was entered into by the contracting parties but most of the weaknesses of the main contract identified above were not addressed.

The Amendment Agreement

On September 15, 2000, Stradcom submitted to the DOTC Secretary a draft Amendment Agreement. DOTC requested for a legal opinion from the Department of Justice and the DOJ, in turn, requested NEDA to comment on the draft agreement. NEDA stated that the proposed amendments need not go through ICC re-evaluation since these do not involve any additional undertaking for the government nor any variations in project costs and component activities.³⁹ On June 11, 2001, the DOTC/LTO and Stradcom executed the Amendment Agreement.

Salient features of the June 11, 2001 Amendment Agreement

- Commencement of the project – It was clarified in the Amendment Agreement that the actual date of project commencement was July 1, 1999, pursuant to the implementation schedule duly agreed upon and signed by the parties, and not reckoned thirty days from the issuance of the Notice to Proceed.
- In-Service Date – The In-Service Date was clarified as the date when the whole computerized system of the LTO have been accepted, tested operated and accepted by the LTO, as evidenced by the issuance of the Final CAIF.
- Allowance for downtime – The original BOO contract allowed one day of downtime per month for all sites. The pertinent contractual provision was amended to accommodate a total of three days of maximum downtime per month per site or district office.
- Frequency of payment – In the original BOO contract, there shall be no more than two billings a month for the payment of computer fees to Stradcom. In the Amendment Agreement, payment is to be made on a daily basis.

³⁹ December 28, 2000 letter of NEDA

Analysis of the Amendment Agreement

The revision of the original schedule of project commencement seems reasonable; it had to be revised mainly due to the delay brought about by the Office of the President's review. The In-Service Date mentioned in the analysis of the original BOO Agreement is now clarified in the Amendment Agreement; the In-Service Date is now reckoned from the acceptance of the whole IT system as evidenced by the Final CAIF. This clarification corrected a flaw in the main contract described earlier, i.e., that the designation of a "first" In-Service Date blurred the beginning and end of the 10-year cooperation period and the validity period of the performance security during operation. Notwithstanding this clarification, the issue on the lack of provisions for events of claim for the performance security still remained.

The amended provision on downtime is generally viewed by government technical staff as reasonable. The daily payment scheme seems administratively difficult; succeeding events proved that this is the case when an attempt to implement this particular amendment was made. The proposal for an Amendment Agreement could have provided an opportunity for the LTO to insist on a contractual provision for liquidated damages. However, as will be evidenced later by its attitude towards penalty provisions in the contract, the LTO was not inclined to make such counter-proposal.

Issues Encountered during Contract Implementation

To implement the BOO Agreement and, subsequently, the Amendment Agreement, a Project Monitoring Committee (PMC) was created in the LTO. The PMC also has sub-committees that currently look into the financial and technical aspects of contract implementation.

From the time contract implementation started in 1999, several issues arose. Some of these issues are still outstanding at present, as will be described in the discussion below.

- Construction and installation delays and granting of several extensions

The first revision of the construction and installation schedule is understandable given the delay in the final instruction to implement the contract in 1999. On August 4, 1999, Stradcom submitted the following schedule of implementing the five evolutionary phases⁴⁰ of the project:

	Task	Time Frame
Phase I	NCR installation completed	12 months from contract start
Phase II	Nationwide installation completed	18 months from contract start
Phase III	Data warehouse completed	36 months from contract start
Phase IV	Major upgrade completed	60 months from contract start
Phase V	Evolutionary technology upgrades	120 months from contract start

However, extensions were requested four times by Stradcom and said extensions were approved through PMC Resolutions. Accordingly, the table below illustrates the extensions (for Phases 1 and 2 only) granted to the private proponent.⁴¹

Original Schedule and Extensions	Time Frame
Original Schedule	
Phase 1	July 1998 – June 1999
Phase 2	July 1998 – December 1999
Revised Schedule (after the OP's instruction to implement the project)	
Phase 1	July 1999 – June 2000
Phase 2	July 1999 – December 2000
First Extension	
Phase 1	July 1999 – December 2000
Phase 2	July 1999 – June 2001
Second Extension	

⁴⁰ March 15, 2004 BOT Center Aide Memoire

⁴¹ *Ibid.*

Phase 1	July 1999 – June 2001
Phase 2	August 2000 – September 2001
Third Extension	
Phase 1	July 1999 – October 2001
Phase 2	August 2000 – June 2002
Fourth Extension	
Phase 1	July 1999 – May 2002
Phase 2	August 2000 – December 2002

- COA's suspension of remittance to Stradcom

Starting December 2001, the following fees were collected from the public:

	Computer Fee	VAT	Total Fee
Motor Vehicle Registration	PhP 120	PhP 12	PhP 132
Driver's License Issuance	PhP 48	PhP 4.8	PhP 52.8

As of August 9, 2002, LTO's remittance to Stradcom stood at an aggregate amount of PhP96.8 million computer fees collected from the Central Office and the whole National Capital Region.⁴²

The issue on suspension of remittance to Stradcom started on May 30, 2002, when the Commission on Audit (COA), through its resident auditor at the LTO, issued to LTO a Notice of Suspension of Payments. The reasons for suspension were reiterated in COA's August 29, 2003 Consolidated Annual Audit Report on the LTO. The COA cited the following as grounds for suspension:

- The Amendment Agreement was not approved by the President.
- The manner and collection of payment to Stradcom were effected without the mandated rules which shall be issued by the COA, DBM and DOF pursuant to Section 6 of the General Appropriations Act (GAA).

⁴² August 9, 2002 Minutes of Meeting of the LTO-IT Project Management Committee

- The contract appears grossly disadvantageous to the government because the government provides facilities, manpower, supplies and electricity, but there is no revenue-sharing arrangement with the government.
- LTO appears to have granted unwarranted benefits to Stradcom by way of the following, among others:
 - The frequency of payment was amended from not more than two billings per month to payments on a daily basis.
 - The original date within which to commence the project was amended thus condoning the delay. The Penalty Clause as provided in Section 12.11 (Milestone Bonding) of the BOT Law IRR was not provided in the contract and its amendment. Had it been provided as mandated by law, a liquidated damage would have been due the government for the failure of Stradcom to commence the project as originally agreed upon.
 - The basis of payment, originally based on the number of motor vehicles and driver's licenses handled, was amended to be based instead on the total number of daily transactions, which could mean bigger income for the contractor at the expense of the public.⁴³
- Application of fee adjustment

When most components of the project had been delivered, Stradcom requested the Finance Committee of the PMC for two successive application of fee adjustments, i.e., January 2002 and January 2003 adjustments, and cited the following provision of the BOO contract as legal basis:⁴⁴

“Sec. 14.1 – ... The amount of payment per type of service rendered... will be applicable from the day when the Contractor's IT-based services are initially utilized by the LTO up to the end of that same year. Beginning on the first day of the following year and every year thereafter for the duration of this BOO Agreement, the prices per type of service rendered shall be automatically adjusted ...”

⁴³ COA's May 30, 2002 letter to LTO.

⁴⁴ Stradcom's June 23, 2003 letter to LTO-IT Finance Committee

The interpretation of the phrase “same year” had been a contentious issue between the contracting parties. Stradcom claimed that it means calendar year and the fee increase should therefore be effected every January until the end of the cooperation period. It further pointed out that given that the IT system was initially utilized in 2001, 2002 should have been the first adjustment exercise; and since the 2002 adjustment was not carried out, this should be incorporated in the 2003 adjustment being requested. The Finance Committee, on the other hand, viewed Sec. 14.1 of the BOO Agreement as ambiguous and can have more than one interpretation. The Committee resolved to liberally interpret the phrase “same year” as fiscal year, in accordance with Article 13 of the Civil Code, wherein a year is understood to comprise 365 days. The Finance Committee opined that the extent of the fee increase could not be justified considering that LTO only started utilizing the IT-based services on December 7, 2001, 13 working days prior to January 2002, the requested first adjustment.⁴⁵ At present, the agreement was to allow fee adjustment only after the project is fully completed.⁴⁶

- Request for additional fees

Stradcom is requesting for additional fees for the Automated Driver’s License Examination System (ADLES) and clearance transactions using the Law Enforcement and Traffic Adjudication System (LETAS). ADLES is the automated generation and checking of exam questionnaires for new applicants for driver’s license. The LETAS is used to verify apprehension records and to issue clearances as supporting documents for securing duplicate licenses, plates and stickers, and even for employment, visa applications, and court proceedings. Stradcom is claiming it is just reasonable for it to recover the investment costs in the development and installations per site of these IT systems.⁴⁷

⁴⁵ July 11, 2003 BOT Center Aide Memoire on the LTO-IT Project.

⁴⁶ Condition cited in the February 4, 2003 PMC approval of the issuance of the Final CAIF.

⁴⁷ Minutes of February 6, 2004 meeting between LTO-PMC and Stradcom.

How the Issues Relate to Contract Design and Institutional Framework

The issues are primarily related to weaknesses in contract design and gaps in the institutional framework for BOT-type arrangements. On one hand, some of the contract design-related issues stem from the previously identified *specification failures* and are exacerbated by *application failures* during implementation—when the parties fail to enforce the contractual provisions or when the parties apply such provisions under questionable interpretations. An example of such application failure in the LTO project is the government’s failure to call on the performance security when the circumstances called for it (explained below). On the other hand, the issues related to institutional framework stem from a wide range of causes—from the fact that, during the design and initial implementation of the project, the Philippines was still in the lower portion of its BOT learning curve and one must allow for gaps in procedures, to the fact that coordination problems exist within the government given that it is not a single entity but consists of different agencies with multi-level principal-agent relationships and heterogenous interests.

The contract design-related issues now confronting the contracting parties, plus the weaknesses in the BOO Agreement identified by this study, may be settled in the contract re-opener window given by the ICC. The issues related to institutional framework and, to a certain extent, to the regulatory capacity of the government may, however, take time to be resolved. The resolution may entail looking closely at the institutional players in BOT implementation and harmonizing bureaucratic procedures with private sector practices.

On the implementation delays issue, the several extensions requested by Stradcom validated a previous analysis of the main contract—there is a moral hazard problem due to lack of provisions for liquidated damages. As explained earlier, since delays are not penalized, the contractor has no strong incentive to abide by the original timetable. On the contrary, it has strong incentives to maximize the allowable delays (20% of original timetable including extensions, as mandated by the 1994 and 1999 IRRs of the amended BOT Law) through repeated requests for extensions from the government.

On the COA-raised issues, there are indications that, at this point, the issues have not yet been fully resolved. To settle these issues, the LTO constituted an *ad hoc* committee to look into the COA findings.⁴⁸ The LTO is espousing the following arguments in response to the issues raised by the COA⁴⁹:

- On the Amendment Agreement, NEDA opined that the amendments do not appear to involve any additional undertaking and project cost variation; hence, ICC re-evaluation is not necessary,⁵⁰
- Stradcom pays for the electricity and supplies used by the project; moreover, the government is doing a public service in not asking for a revenue share since this will result in higher fees for the public;
- Daily billing was not implemented as this is administratively difficult;
- Former President Estrada's call for review of flagships project effectively caused the delay in project commencement date;
- The agreement for payment has always been transaction-based and the terms "motor vehicle registration" and "drivers' licensing" are treated in their generic sense; Motor vehicle registration includes activities such as new registration, renewal, change of ownership, etc. Drivers' licensing, on the other hand, includes new license, renewal of license, change of status, etc.

The COA has a point, from an incentives theory perspective, in raising the lack of penalty provisions in the contract, particularly provisions for milestone bonding and liquidated damages. It must be recalled, however, that the 1994 IRR of the amended BOT Law did not strictly require those provisions for projects with no government undertakings and the LTO or the ICC may not be faulted for excluding such provisions in the contract design. Nevertheless, the contractual provision on performance security during construction, or "construction bond", could have sufficed to serve as incentive for Stradcom's performance. The BOO Agreement states that the construction bond shall answer for and guarantee the completion of the project in accordance with performance standards and timetable (Section 6.1-a); another purpose of the construction bond is to

⁴⁸ February 18, 2004 letter of the LTO to BOT Center inviting a representative to the committee.

⁴⁹ Undated draft response to COA-raised issues

⁵⁰ NEDA's December 28, 2000 letter to LTO.

answer for actual and compensatory damages in the event of early termination due to the default of the contractor (Section 19.2).

By this study's reckoning, an application failure with respect to the provision in Section 6.1-a occurred. To illustrate, the officially allowed time frame for Phase II (nationwide installation completed), including extensions, is a total of 42 months, but the total implementation period had been more than 42 months, with a 4.76% delay⁵¹ if reckoned until February 2003 (issuance of final CAIF). The LTO should have sanctioned Stradcom for delays in implementation by drawing on the latter's construction bond. However, the LTO issued the Final CAIF on February 11, 2003 despite the fact that the project was only 93% completed. Thus, the LTO lost the opportunity to call on the construction bond because the BOO Agreement states that the construction bond shall remain valid and in full effect only until the issuance of the final CAIF (Section 6.1-a). A possible explanation for this action by the LTO is *regulatory capture*. Regulatory capture happens when the principal-agent relationship between the regulator and contractor is such that "relationships provide incentives for government officials to treat their industry partners kindly."⁵²

The issuance of the final CAIF carried with it the PMC's condition that the deadline for Stradcom to complete the project (still with 10% deliverables at the time) is March 31, 2003 and "if the latter has not complied by that date, the LTO may declare forfeiture of the Performance Bond."⁵³ The performance bond the PMC is referring to this time is the performance security posted when project operation started ("operation bond"), i.e., after the issuance of the first CAIF. During the time that the LTO was floating the idea of forfeiting Stradcom's performance bond due to non-delivery of the remaining 10% project deliverables, the legal counsel of Stradcom cautioned the PMC on the exercise of "forfeiture" because it is tantamount to declaring the project company

⁵¹ This is treated separately from the 20% maximum construction delays, which is an event of contractor's default and a cause for early contract termination (Section 18.1-d of BOO Agreement and Section 12.11 of 1994 IRR of the amended BOT Law).

⁵² Laffont, Jean-Jacques and Jean Tirole (1993). "Chapter 11-Regulatory Capture." *A Theory of Incentives in Procurement and Regulation*. The MIT Press. Cambridge, Massachusetts.

⁵³ Project Management Committee Resolution No. 0068, February 4, 2003.

in default and to terminating the BOO Agreement.⁵⁴ This scenario confirmed this study's finding in the analysis of the BOO agreement that the early termination clause as severest threat lacks credibility. Thus, the weaknesses in the contract design, the regulatory capture situation and the opportunism of the contractor all contributed to the ineffectiveness of the contractual provisions for performance securities.

On the issue of price adjustment, the disagreement in the interpretation of the term "same year" arose from contractual incompleteness—both parties failed to specify a definition that will not lead to ambiguity. A deeper issue, one that is a greater cause for concern, however, is a possible application failure with respect to the parametric formula. The government must not permit an interpretation of the parametric formula weights α , β , θ , λ , γ , and δ as variable weights. Granting that the contract is unclear on the definition of terms and permits a "variable weights" interpretation, still, the Philippine experience with other contracts speaks of the intention to fix the weights in BOT-type arrangements (This is most apparent in bulk water supply agreements.).

It is quite possible that the private proponent is applying a "variable weights" definition given that it is asking for a high of 9.8% fee adjustment rate in January 2004.⁵⁵ However, this study was unable to verify this due to limited access to data. Nevertheless, a financial run on the 1997 submitted financial bid and projected expenses of Stradcom will prove that one possible source of over-charging could be interpreting β as "average annual operating expenses as a percentage of annual revenues." As stated earlier in the section on analysis of the BOO Agreement, with this interpretation of a variable β , a lower-than-projected initial revenue together with a positive movement in the indices for β , *ceteris paribus*, will permit a high β and a very abrupt increase in fees in the first adjustment exercise; and the overcharging will be carried over the whole cooperation period. Actually, a low initial revenue is realized given that the system became operational only for a smaller segment of the market, i.e., the National Capital Region, during the first few months of operation. The resolution of the price adjustment issue should take into account not only the time frame for adjustment but also the re-

⁵⁴ Minutes of the November 27, 2003 meeting between the LTO-IT PMC and Stradcom.

⁵⁵ Minutes of the January 23, 2004 Joint LTO-Stradcom meeting.

formulation of the parametric formula using clearer definitions, with the end in view of fixing the weights once and for all.

The additional computer fees proposed to be collected from the public for ADLES and LETAS is quite a difficult issue. On the one hand, it is true that Stradcom made investments on these IT systems already and it appears reasonable to let the project company recover its investments. It would seem at first glance that this is a hold-up problem, with the government refusing to pay or impose additional fees to the public now that investments have been made. On the other hand, these fees are not part of the original parameters for bidding because only two kinds of fees were allowed—driver’s license fee and motor vehicle registration fee—and Stradcom’s financial bid were based on such fees only. These bidding parameters and Stradcom’s financial bid became part of the original BOO contract. Thus, since additional fees were not part of the original deal, there is no hold-up problem because the government is not really renegeing on any obligation to pay. Moreover, the 1997 Request for Proposal states,

“Section 2.15.14.1 *Application Systems to be Developed*. The following business areas are identified for the development of application systems:

- ...
- drivers’ licenses
- law enforcement and adjudication
- ...”

The automated generation and checking of examinations for drivers’ licenses are part of the application systems for drivers’ licenses, and the automated verification of apprehension records and issuance of clearances are part of the application systems for law enforcement and adjudication. Thus, even though during the time of bidding, it is not yet clear as to what form these application systems will take⁵⁶, whether in the form of ADLES and LETAS or not, it is clear that such application systems are technical requirements specified in the bid documents and it is fair to say that Stradcom, as a bidder then, had the opportunity to question this investment requirement. Still, should the

⁵⁶ The Request for Proposal (RFP) states only that “the proposed application system must employ state-of-the-art system development tools, approach and strategy.” RFP, page 16.

government decide to impose additional fees for these application systems, this decision should be covered by, first, an investigation of the project company's rate of return on equity to see whether or not these investments are not yet being recovered through the current fees, and second, by an amendment to the BOO contract. The government must also take care that such additional fees will not result in a very high rate of return on equity. Since the 1999 IRR of the amended BOT Law is the appropriate legislative framework for any contract amendment, then additional fees must be approved only if these will result in a reasonable rate of return, as mandated by the 1999 IRR.

The other COA-raised issues, particularly the concerns that the Amendment Agreement was not approved by the President and that LTO remitted payments to Stradcom even though there are no rules yet on the General Appropriations Act provision for BOT revenues, speak of the coordination problem within government, a bounded rationality concern due to severe information asymmetry, which sometimes manifest in decisions with costly consequences or far-reaching impacts.

The requirement for the President's approval of the Amendment Agreement as a matter of procedure is a non-issue since the LTO, at several points in time, attempted to seek the President's approval for the two contracts—the BOO Agreement and the Amendment Agreement. (Recall that BOT-type contracts follow these levels of review and approval: ICC Secretariat (in NEDA) → ICC-Technical Board → ICC-Cabinet Committee → NEDA Board.) When the DOTC tried to secure an explicit approval by the President for the BOO Agreement, the Executive Secretary, in a letter to DOTC dated May 22, 1998, echoed the NEDA Board statement made in the latter's March 24, 1998 meeting: "NEDA Board approvals of BOO projects carry with it the approval of the President." As to the Amendment Agreement, in response to DOTC's request for review, NEDA stated in its December 28, 2000 letter, "the proposed amendments do not appear to involve any additional undertaking for the LTO and do not involve any variations in project costs and component activities. Hence, the project need not go through ICC re-evaluation." Thus, the President who heads the NEDA Board will not have an opportunity to review the Amendment Agreement if in the first place an ICC re-evaluation was not required.

The concern on COA's observation on remitting payments to Stradcom without the mandated rules pursuant to Section 6 of the General Appropriations Act (GAA) is that the remitted payments could be void transactions. The particular provision in the GAA states,

“Section 6. Receipts arising from Build-Operate-Transfer Transactions and its Variant Schemes. Notwithstanding the provision of Section 5, General Provisions of this Act, receipts such as toll fees, charges and other revenues arising from public sector projects collected by the office or agency of the National Government but which shall accrue to the proponent private companies or individuals in accordance with the contract entered into by said office or agency and the project proponent (s), shall be deposited with any authorized government depository bank and shall be utilized exclusively for the fulfillment of obligations as stipulated and prescribed under the contract: Provided, That the government share out of the collections from said projects, if any, including interest thereon, shall accrue to the General Fund and shall be remitted to and deposited with the National Treasury.

“The implementation of this Section shall be in accordance with the guidelines issued jointly by the Department of Finance, Department of Budget and Management, National Economic and Development Authority and Coordinating Council for Private Sector Participation (now BOT Center), in coordination with the Commission on Audit.”

When its assistance was solicited by the LTO, the BOT Center helped elucidate⁵⁷ this issue by pointing out that the LTO had already complied with the first instruction in Section 6 of the GAA—it opened an Escrow Account at the Land Bank of the Philippines (LBP) where the computer fees are deposited for further remittance to Stradcom. The Escrow Agent, LBP, shall only pay Stradcom upon receipt of a written order from the LTO. With respect to the second instruction, i.e., to implement the Section 6 rule in accordance with guidelines, the BOT Center also opined that “both from a legal and logical standpoint, there can be no compliance with something that does not exist” since

⁵⁷ July 2, 2002 letter of BOT Center to LTO.

the guidelines were not yet formulated during the time COA was raising this issue in 2001. In fact, the guidelines on receipts from BOT transactions were approved only in December 2003.⁵⁸ It was reported that the COA accepted this opinion and, therefore, the LTO cannot be faulted for the absence of the IRR.⁵⁹

In the light of COA's concern on revenue-sharing, and given also that it is one of the conditions set by the ICC during first-pass approval, the LTO asked for an ICC clearance on a no-objection basis of a contract re-opener, or renegotiation, with the revenue-sharing scheme as focus.⁶⁰ The ICC-Cabinet Committee gave its concurrence on November 14, 2003 and the parties are now preparing for contract renegotiation. This study deems it appropriate that before the government bargains for a revenue-sharing scheme, it must first examine the level of viability of the project under the present level of fees. The revenue-sharing scheme must not be pushed aggressively if it will result in higher fees to the public. More than the opportunity to bargain for a revenue share, the opportunity to address the weaknesses in contract design, and thereby minimize the incompleteness of the BOO Agreement, through the contract re-opener option is a very much welcome idea.

⁵⁸ The Joint Circular No. 03-01, containing the said guidelines, was signed in December 2003 by the Secretaries of the DOF, NEDA, DBM, and the Executive Director of the BOT Center.

⁵⁹ August 9, 2002 Minutes of Meeting of the LTO-IT Project Management Committee.

⁶⁰ Subject of April 9, 2003 and September 18, 2003 letters of the LTO to the ICC.

Recommendations for policy and future research

Further amendments to the present BOT Law and its IRR must be explored to identify ways in which contractual incompleteness may be minimized. As for penalty provisions, it may be recalled that the 1994 IRR and the 1999 IRR of the amended BOT Law do not prescribe rules nor principles in setting liquidated damages for “under-performance” during operation. The 1999 IRR prescribes principles for setting an operating security (Section 12.8) but the liquidated damages provision is for the construction or installation stage only (Section 12.13). The principles for liquidated damages for under-performance during operation may be one of the areas where the planned omnibus amendments to the BOT Law and the existing IRR can focus on. However, in the absence of rules, the government may look for guidance from existing literature, especially now that the parties in the LTO-IT project are preparing for contract renegotiation. One prescription in the literature is that if the sub-standard performance is due to the project company’s fault, it must bear the risk arising from it by paying liquidated damages, and by allowing the erosion of its returns once the liquidated damages are exhausted.⁶¹

The attendant liabilities issue is a cause for concern in policy making. Given that the Supreme Court has already ruled on this issue, it is high time for the government to take a harmonized and unified view on this. The provision on the BOT Law IRR for attendant liabilities must therefore be re-visited and subjected to further examination. Perhaps guidelines based on valuation methods of project asset and/or future earnings for determining compensation in the event of early termination may be formulated, rather than specifically stating as government policy (1999 IRR, Section 12.19 (b)-(c)) the practice of assuming the terminated project’s attendant liabilities. Such guidelines must also tackle the principles in the choice of discount rate to be used in valuation methods, especially since it is now difficult to discern the foundations of the 15% discount rate commonly used by the government in BOT contracts. The 15% discount rate is the economic viability hurdle rate being prescribed by policy-makers for public sector

⁶¹ Kerf, Michel et al. (1998). *Concessions for Infrastructure: A Guide to Their Design and Award*. The World Bank, Washington D.C.

projects.⁶² But it does not seem appropriate to extend the use of this rate in discounting financial flows in projects with private sector participation.

Although the current policy framework permits concession fees or revenue-sharing schemes (1999 IRR, Sections 4.2-(k), 4.3-(f) and 12.16), requiring such in BOT contract design is not always desirable. In ICT projects which aim to facilitate the government's delivery of public services through computerization and automation and to preserve security or peace and order through building up of critical databases, the seeming unfairness of requiring a small segment (those with transactions with the government for clearance and licenses, for example) of the population to pay for the revenue share of the government may be viewed in the context of "public good." Probing further, even requiring that segment to pay for the total investment cost in building up databases where the whole country and future generations will benefit through improved peace and order means requiring that segment to pay for the public good component of the project. This public good nature is a common factor in these ICT projects with private sector participation: the on-going Machine Readable Passports and Visas Project, the Land Titling Computerization Project, the Alien Certificate of Registration "Smart Card" Project, and the LTO-IT Project, and the proposed Extensible Automated Fingerprint Identification System (X-AFIS) for the National Bureau of Investigation (NBI). It is only recently that policy-makers are beginning to discuss the public good nature of BOT projects in the ICT sector, particularly in the ICC-Technical Board discussion of the NBI X-AFIS project in May 2004. Discussions such as these must be deepened to enable the policy-makers to appreciate better the nuances of tariff-setting and revenue-sharing schemes in BOT projects.

BOT arrangements do not necessarily improve inefficiencies in the public sector. To illustrate using the case study, in August 2002, the LTO-IT project encountered significant delay in the implementation of the computerized licensing system because license plate manufacturing backlog stood at around 87,000 plates. The district offices could not give the plates to vehicle owners who had already paid for these because the Central Office could not cope up with the demand. As a consequence, even with the presence of computerized systems in the district offices, these offices resorted to

⁶² ICC Project Evaluation Procedures and Guidelines.

manual operation.⁶³ This experience proves that some measures must also be incorporated either into policy such as the BOT Law IRR or into the contract design itself to incentivize government units to be efficient.

One source of moral hazard problems in BOT arrangements is asymmetry of information resulting from imperfect monitoring. There is a moral hazard problem to the extent that, because it is difficult to monitor BOT project companies, these companies have an incentive to take on more risks, for example, through higher debt, if the regulator or the incomplete contract is unable to penalize them. Using risk-taking through high debt leverage as illustration, although the BOT Law IRR requires that potential bidders be pre-qualified based on minimum financial net worth (Section 5.4-c, 1999 IRR), this criterion does not necessarily eliminate the possibility of fraud or lack of transparency because it is difficult to monitor the winning bidder's actual investment behavior. Should the government be resolute in monitoring such behavior, a possible source of information are the audited financial statements being required annually by the Securities and Exchange Commission. This kind of approach will make the government better informed but it involves significant micromanagement in regulation and monitoring. Thus, a good balance between comprehensive regulation and micromanagement must be found.

In view of the criticism on the case study methodology as severely restrictive since it proceeds from a few examples to generalizations of findings, more case studies must be undertaken to validate the claims being made in this study. Moreover, for a truly significant empirical study of the principal-agent problems in BOT arrangements in the Philippines to be made, game theoretic experiments as an approach may be undertaken. This emerging approach in empirical testing, however, will require sophisticated computer-simulated games, human subjects (in foreign universities, economics undergraduate students suffice) and certain assumptions on rationality. For the meantime, a survey of empirical studies on contracting and negotiation games conducted elsewhere may be undertaken to assess whether or not the simulated environments and conclusions of such experiments are applicable in the Philippines.

⁶³ August 9, 2002 Minutes of Meeting of the LTO-IT Project Management Committee

As subjects for future research, a more thorough examination of the development of incentive theories in the economics of regulation and risk allocation mechanisms in the economics of finance, as they relate to BOT contract design, must also be undertaken. Noting also how some aspects of the analysis presented here are actually a merging of law and economics, it pays to devote more study on the integration of law and economics in contract design.

Bibliography

Amendment Agreement for the *Database Infrastructure and Information Technology Project*. June 11, 2001.

Brousseau, Eric and M'hand Fares. (1998). "Incomplete Contracts and Governance Structures." Centre d'Analyse Théorique des Organisations et des Marchés. Université de Paris. (available in the Internet).

Build-Own-Operate Agreement for the *Database Infrastructure and Information Technology Project*. March 26, 1998.

Grossman, Sanford and Oliver Hart. 1986. "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration." *Journal of Political Economy*. **94**. 691-719.

Hart, Oliver and John Moore. 1988. "Incomplete Contracts and Renegotiation." *Econometrica*. **56**. 755-786.

Investment Coordination Committee. *ICC Project Evaluation Procedures and Guidelines*. (undated).

Kerf, Michel et al. (1998). *Concessions for Infrastructure: A Guide to Their Design and Award*. The World Bank, Washington D.C.

Laffont, Jean-Jacques and Jean Tirole (1993). "Chapter 11-Regulatory Capture." *A Theory of Incentives in Procurement and Regulation*. The MIT Press. Cambridge, Massachusetts.

Leitzel, Jim (1989). "Damage Measures and Incomplete Contracts." *RAND Journal of Economics*. Vol. 20, No.1. pp. 92-101.

Llanto, Gilberto M. (2002). "Infrastructure Development: Experience and Policy Options for the Future." Discussion Paper Series No. 2002-26. Philippine Institute for Policy Studies (PIDS).

Maskin, Eric and Tirole, Jean (1999). "Unforeseen Contingencies and Incomplete Contracts." *Review of Economic Studies*. **66**, 83-114.

Masten, Scott E. and Stephanie Saussier (2000). "Econometrics of Contracts: An Assessment of Developments in the Empirical Literature on Contracting." *Revue D'Economie Industrielle*,. 92. 215-236 (available in the Internet).

Navarro, Adoracion M. (2004). "Contracts Made Easy: General Provisions and Principles in the Design of BOT-type Contracts," a presentation material for BOT Center in-house training. May 25, 2004.

Philippine Center for Investigative Journalism. August 5, 2002. "Trail of IPP Mess Leads to FVR." PCIJ Report. The Philippine Star.

Public-Private Infrastructure Advisory Facility. PPIAF Annual Report. 2003. The World Bank. Washington D.C,

Republic Act 7718 and its 1994 and 1999 Implementing Rules and Regulations (IRR).

Reside, Renato (1999). "Estimating the Philippine Government's Exposure to and Risk from Contingent Liabilities in Infrastructure Projects." Discussion paper. University of the Philippines-School of Economics.

Segal, Ilya. (1999) "Complexity and Renegotiation: A Foundation for Incomplete Contracts." *Review of Economic Studies* **66**, 57-82.

Supreme Court. May 5, 2003. SC ruling on *Agan vs. PIATCO*, *Baterina vs. PIATCO* and *Lopez vs. PIATCO*.

Tellis, Winston. (1997, July). "Introduction to case study." *The Qualitative Report* [On-line serial], 3(2). <http://www.nova.edu/ssss/QR/QR3-2/tellis1.html>

Tirole, Jean. (1999). "Incomplete Contracts: Where Do We Stand?" *Econometrica*. **67**, 741-82.

Various public correspondences, minutes of meetings, and reports of the Investment Coordination Committee, National Economic and Development Authority, Build-Operate-Transfer Center (formerly, Coordinating Council for Private Sector Participation), Land Transportation Office, Department of Transportation, Department of Justice and Stradcom Corporation.

Williamson, Oliver E. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. The Free Press, New York.

Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism*. The Free Press, New York.

www.inq7.net. "SC bases Meralco decision on people's economic rights," November 16, 2002.