Public-Private Partnership (PPP) in Thailand: A Case Study of the Bangkok Mass Transit System (BTS)

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Abstract

Since 1990, Public-Private Partnership (PPP) has been an option for the government to develop basic transportation and maintain economic growth in Thailand. The BTS is the first successful mass transit system in Thailand and was originally funded totally by a private party, which is a 100 percent private investment. However, the project has faced many problems and obstacles caused by many factors. This study highlights four significant factors affecting the PPP project: (1) political; (2) economic; (3) managerial; and (4) social. The results of the study indicate that these four factors have a different impact on each phase of the BTS project which can be divided into three phases: Preparation phase, construction phase, and operating phase.

With a recognition that not all four factors are controllable, it is recommended for future solutions to improve PPP cooperation that the central government should have only a supervisory role and should not intervene in the project. This could be achieved through decentralization of power to designated agencies which would be particularly responsible for the project. Additionally, before the project commences, there should be a comprehensive study and a master plan laid out which is clear enough and includes a necessary survey, risk assessment and public hearing. The revision and adjustment of the plan should be done only if demonstrated as necessary.

Keyword: Public-private partnership, mass transit system, public transportation, Bangkok mass transit system (BTS), Thailand

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การร่วมลงทุนระหว่างภาครัฐและภาคเอกชนในประเทศไทย: กรณีศึกษา รถไฟฟ้าบีทีเอส

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บทคัดย่อ

นับตั้งแต่ปี พ.ศ.2533 เป็นต้นมา การร่วมลงทุนระหว่างภาครัฐและภาคเอกชนในการให้บริการสาธารณะเป็นอีกทางเลือกหนึ่งในการพัฒนาระบบขนส่งมวลชนพื้นฐานและการรักษาอัตราการเติบโตของประเทศ โครงการระบบขนส่งมวลชนกรุงเทพหรือที่รู้จักกันในชื่อ “รถไฟฟ้าบีทีเอส” เป็นโครงการที่เงินลงทุนเป็นของเอกชนทั้งหมด อย่างไรก็ตาม ตลอดระยะเวลากว่ายี่สิบปีที่ผ่านมา โครงการต้องประสบกับปัญหาและอุปสรรคหลายประการซึ่งเกิดจากปัจจัยหลายประการด้วยกัน การศึกษานี้ได้ชี้ให้เห็นถึงปัจจัยสำคัญ 4 ประการที่มีผลกระทบต่อโครงการ ได้แก่ ปัจจัยด้านการเมือง เศรษฐกิจ สังคม และด้านการบริหารจัดการ ซึ่งแต่ละปัจจัยดังกล่าวส่งผลกระทบต่อโครงการในแต่ละระยะทั้งสิ้นโดยส่งผลกระทบที่แตกต่างกันออกไป การศึกษานี้ได้แบ่งช่วงเวลาออกเป็น 3 ระยะ ได้แก่ ระยะเตรียมการ ระยะก่อสร้าง และระยะดำเนินการ

การศึกษานี้มีข้อเสนอแนะว่ารัฐบาลควรจะมีบทบาทในเชิงตรวจสอบ และให้คำแนะนำมากกว่าการเข้าแทรกแซงกระบวนการดำเนินงานของโครงการ ทำได้โดยการมอบอำนาจแก่หน่วยงานที่ได้รับมอบหมายโดยเฉพาะเป็นผู้ดูแล นอกจากนั้น ก่อนเริ่มดำเนินโครงการควรจัดกำหนดแผนแม่บทซึ่งมีความชัดเจนเพียงพอ เพื่อป้องกันปัญหาในการบริหารจัดการในภายหลัง แผนแม่บทควรจะประกอบด้วยการสำรวจที่มีความจำเป็น การประเมินความเสี่ยงของโครงการอย่างรอบด้านและการจัดทำประชาพิจารณ์ การทบทวนและปรับเปลี่ยนควรทำได้เฉพาะในสถานการณ์ที่จำเป็นเท่านั้น

คำสำคัญ: การร่วมลงทุนระหว่างภาครัฐและภาคเอกชน ระบบขนส่งมวลชน ระบบขนส่งสาธารณะ รถไฟฟ้าบีทีเอส ประเทศไทย

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Introduction

Public infrastructure is a vital success factor for a stable economy and on-going development for any country competing against others, especially in the current globalization era. As a result, every country's government has needed to put great emphasis on basic infrastructure development since the 1990s. However, infrastructure development projects are typically long and complicated, thus confronting a number of administrative challenges, often, due to limitations on budget and the number of public officers.

The public sector lacks the ability to provide adequate public services and infrastructure to the people and it is then necessary for the public sector to bring in outsiders to assist. Therefore, the basic idea of PPPs centers on offering quality public services, but by assigning the procurement of public infrastructure projects or partial public service to the private sector, while the public sector remains the owner of the public service. In PPP projects, the public sector should take responsibility as the manager of the project who controls and is responsible for partial risks associated with the project. The role of the public sector in this concept has been coined "controlling rather than rolling" by the researcher because of its responsibility as a controller rather than as an executor.

The BTS is not only the first successful railway project in the country, but is also the first privately funded Thai mass transit system. Additionally, what makes the BTS project more appealing for research is that the project confronted several obstacles from many different stakeholders that have been involved since 1991, all of which has led to problems such as delays, protests, etc. An obvious problem is the failure to complete the initial plan which was to fulfill a total distance of 291 kilometers by 2009. Adding together the distances serviced by both the BTS and the MRT would account for only 52 kilometers, which means there are still 239 kilometers remaining to achieve the plan. This leads to this article's core question, Why do these problems happen and how can they be prevented from recurring in future Thai PPP projects?

Research Objectives

The main research objective is to identify the reasons behind the problems and determine ways to prevent them from happening in the future. The research objectives can be summarized as:

- To explain the process of the Public-Private Partnership (PPP) in the Bangkok Mass Transit System (BTS) project from the beginning of the project until the present.

- To analyze the situations that caused problems and obstacles which were the determinants against efficient and sustainable collaboration between public and private sectors in the BTS case in four different factors: *political factor*, *economic factor*, *managerial factor*, and *social factor*, within three different phases: *Preparation phase*, *construction phase*, and *operating phase*.

- To outline policy recommendations for future Thai PPP projects.

Research Methodology

The research design of this current study adopts Maxwell's (2013:4) interactive model of research design. According to this model, an interactive model of research design has a definite structure which can be presented as having four components: goal, conceptual framework, methods, and validity. The analysis below shows how these four components relate to our study.

1. Goal – This current study aims to investigate how the contexts of Thai politics, economy, and other related factors affect PPP mass transit projects in each of their stages. Specifically, we aim to answer the key question What are the reasons that caused the delays of the BTS project? - in order to develop best practice for future PPP projects.

2. Conceptual Framework – The conceptual framework or our model studies the political, economic, managerial and social factors that affect each cooperative process between the public and private sectors in the context of the BTS project, from the Preparation phase to the operational phase, using the Typology project phase model (Griffith-Jones, 1993). The purpose of this framework is to analyze the obstacles of PPP projects in each of its phases, and to determine the political, economic, managerial, and social factors and events that affected the PPP projects (see Figures 2 -7: every phase). Furthermore, to realize the political factors which affected each typology phase of the study PPP process.

3. Methods – The research methods adopted in this study include the literature review as well as the process study. Specific methods include various forms of qualitative data analysis, e.g. in-depth interviews, participant observations, history data analysis, documentary research and case studies.

4. Validity – Several validity tests were performed, including triangulation of sources, methods, and theories; specifically, through key informant interviews, reviews of documentary research, and searches for different pieces of evidence, as well as a comparison with other literature.

Literature Review

PPP Definition

There is no consensus on a definition of PPP. Hence, it is broadly defined and typically varied from several authorities. Nevertheless, PPP is defined by many scholars and institutions. For instance, Garvin (2010) sums up the definition of PPPs succinctly by pointing out three dynamics associated with PPPs. First, there must be a long-term contractual arrangement between the public and private sectors to deliver an infrastructure facility that generates mutual benefit. Second, the private sector is involved in one or more of the following: facility design, construction, financing, operations, and maintenance. Third, each partner shares the potential risks and rewards associated with the delivery of the project.

Typology of PPPs Project Phase Model

According to the model developed by Griffith-Jones (1993), a PPP project is typically divided into three phases: *promotion and Preparation phase*, *construction phase*, and *operating phase*. The typology specifies that every phase has its own unique risks and obstacles, all of which are vital to the success of the project as a whole. Table 1 outlines the major risks in each phase, according to Griffith-Jones' (1993) model.

Table 1. Major Risks in Different Infrastructure Project Phases

Phase Name	Primary Risk	Risk Subgroups
Promotion & Preparing Phase	Commercial and Political Risk	Competitiveness Risk, Legislative Delay Risk
Construction Phase	Construction and Political Risk	Technological Risk, Supply Risk, Regulatory Risk, Government Intervention Risk
Operating Phase	Commercial and Political Risk	Demand Risk, Revenue Risk, Technological Risk, Government Intervention Risk

Because this typology reveals specific risks associated with the different phases of large infrastructure projects, it is therefore applicable to rail PPP projects. This typology is especially useful in examining projects that are longer in length and complicated, both of which are characteristic of a typical traditional procurement project, and in particular the BTS project for the purpose of this study.

Project Management Theory

Most of the project managers nowadays carry official certification from the leading professional associations such as Project Management Institute (PMI) or International Project Management Association (IPMA). These two globally recognized and respected international institutes educate thousands of project managers around the world every year for the service in multiple industries.

The project management standards globally promoted by both PMI and IPMA are embedded within the Traditional Project Management (TPM) theory (Whitty & Maylor, 2009). The roots of project management development can be tracked back to the creation of PMI in 1969 (Hebert & Deckro, 2011). Project management underlines the significance of how the contracts are written for the success of the project throughout its whole life cycle. Nevertheless, a strong assumption that the project management theory makes is that all future risks associated with the project can be mitigated totally by careful and thorough planning at the initial stages.

Wysocki (2006) discusses that efficiency is not achievable without careful planning at the beginning of the project, and careful planning relies on the project manager's ability to map all risk factors affecting the success and efficiency of the project, understand the influences of all factors,

realize necessary actions to get the project done, recognize all potential risks and accurately calculate all project costs. To concisely summarize project management theory, the future is predictable if the project manager can control all important variables around the success of the project. For this reason, any change in the environment that causes trouble in any link of the project's chain is seen as careless planning, and thus external shocks can never be used as excuses in project management (Wysocki, 2006).

Furthermore, project management theory can be merged with the typology project phase to aid in studying PPP projects which are complex in nature; i.e., long project duration, several internal and external factors causing uncertainty and unexpected changes. Adopting the project management theory, sophisticated PPP projects can be analyzed by breaking them down into smaller components, all of which still remain parts of the whole system (Dombkins, 2008; Hass, 2008). This is precisely what the typology project phase does by breaking a particular project into three phases, and later performing an analysis phase by phase.

Inter-Organizational Relations Theory

In the PPP literature, it is recommended that, in order to provide public services, both public and private sectors strongly operate cooperatively. This is especially true in the case of the BTS mass transit system because both quality of service and fare levels are significant. The cooperation is vital to drive down cost and improve service quality. Being a mega project that involves long-term cooperation, the BTS project requires great reliability and trust to diminish problems from human and environmental factors. The Inter-Organizational Relations Theory (IORs) is a theory that can be used to analyze mutual cooperation and reliability between two or more sectors; and therefore it assists to analyze PPP projects.

Inter-Organizational Relations Theory (IORs) represents the concept of partnerships among trading organizations. The subject matters could be goods, services, resources, or technology, or even skills and knowledge. The particular organizations aim to exchange and share the subject matters to gain market insight and obtain cost reduction through developing network connections amongst themselves. Several researchers have examined the IORs (Ouchi, 1980) and the findings can be summarized that the relationships can take two formats (Pongsiri, 2003):

- Contract-Centered Approach – This approach is the original format. It relies on a foundation of opportunism and prevention of signatory and focuses on the content of contract enforcement to control opportunistic behaviors.

- Relationship-centered Approach – This approach is based on the foundation of trust development or relationship between partners. It focuses on an open collaboration mechanism and interaction (Madhok, 1995) to prevent opportunism in transactions. The idea is to create mutual trust by focusing on discussion and communication. Incremental comprehension will reduce opportunism, which will ultimately reduce transaction cost.

The Project Management Theory together with the Inter-Organizational Relations Theory (IORs) will be applied in order to study influential factors that affect collaborations between public and private sectors, particularly in the case of the BTS project.

Conceptual Framework

Recently, PPPs have become more and more common. It has been estimated that PPP infrastructure investment in 21 developing countries in East Asia alone could reach and even exceed $200 billion per year over the next decade. (ADB, JBIC and World Bank, 2005) One important reason for this trend is the role and the ability of the private sector to be a significant financing source for meeting developing country investment requirements, as compared to the ability of the government. However, there are a number of reasons that prevent full growth within this trend. In particular, there are four factors as noted in the previously cited literature, some of which may be directly dealt with in PPP literature, while some others may be found to be indirectly related and perhaps pertinent to the PPP situation in Thailand.

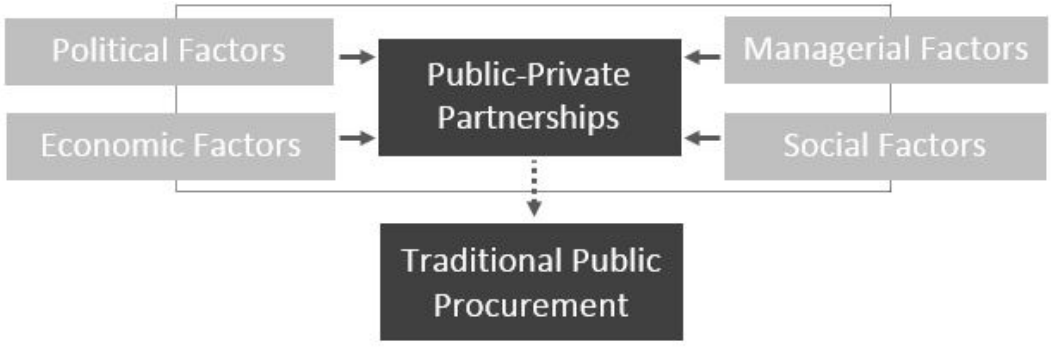

Figure 1. Correlation among the Four Factors

Importantly, it will be investigated how these four factors play a role in transforming PPPs into a Traditional Public Procurement, specifically in the case of the Thai BTS. As will become clear shortly, the four factors above contribute to the effectiveness and efficiency of PPP projects. However, in the case of BTS, even though the project is currently operating in a good manner, it was transformed into a traditional public procurement project despite starting out as a PPP. To fulfill our objective to thoroughly study the BTS project, it is necessary that we study how this transformation took place, and how it may have contributed to the efficiency and effectiveness of PPP projects in general. In addition, it was found that the four factors also contribute to and complement each another. Therefore, in the subsequent analysis, discussion will also be undertaken about how these four factors are related in each phase of the BTS project.

In the discussions below, the dynamics by which these four factors affect PPP projects will be elaborated on, not only their profitability and effectiveness, but also their contribution to the success of PPP projects, in general.

Factor 1: Political Factors

Some previous literature explains that a perception of political risk prevents the ability of any PPP project to gain financial assistance from financial markets, and thus the project is unable to live up to its potential. This is especially true in Asia where governments often lack the funds to meet their own infrastructure requirements and thus have to rely on the private sector to plan, finance, build, and operate infrastructure projects under long-term contractual agreements in the form of PPPs. However, the success of PPP projects depends greatly on stable political and legal environments, which are often absent in developing countries.

Several studies have pointed in the same direction as to how political factors may disrupt PPP growth. One of the most notable examples perhaps is a survey on risks and opportunities in transportation PPPs in Asia that show clearly the relevance and the importance that perceived political risks could play in PPPs.

Because political factor is most important and most critical to a Thai PPP project, and certainly to the BTS project which is the subject of this current study, more detail will be elaborated on. According to previous literature (Zhang & Kumaraswamy, 2001), the problems of PPP application in emerging markets can be briefly categorized into the following items:

- Guarantees and supports that are unrealistic and unreasonably made by the government to fulfill contracts, resulting in default of payments by the government, especially during a change in or expiration of office terms as well as the change of key officers. For this reason, investors would be extremely concerned over a credit-worthiness risk of local governments. Moreover, governments in emerging markets often lack relevant experience and knowledge on PPPs, or might only genuinely care about certain short-term achievements during their power reign, leading to unrealistic guarantees and supports just to trap foreign investment. This incentive of the local government adds risk to the project and might even impose on a future government a great deal of responsibility to maintain the stability of the projects. Ultimately, if governments are unable or unwilling to commit to their initial promises, the contract is then breached and it would be very difficult for investors to achieve the projected return on investment, leading to their defaulting on their principals and interest.

- Irresponsible guarantees might lead to complaints from the public, which can lead to changes in the government or key officials stepping down. For the investors, this also bears on the long-term security and stability of the PPP projects.

- Governments in emerging markets are normally in power for a shorter average length of time than those in more developed countries. For this reason, government officials are more inclined to make decisions based on their career achievements, short-term goals, and political interests, rather than public interest. As a result, this becomes disruptive and investors will not be able to operate the PPP project smoothly and successfully, and thereby do not achieve the expected return on investment.

From above discussion, it should be obvious that almost every problem has the same characteristic. That is, the obstacles are all related to government or government officials and/or their decisions and actions. Therefore, in the proceeding analysis of our case study on the BTS, examples of the above problems will be discussed within the context of political factors that positively or negatively influence the efficiency or success of the project.

Factor 2: Economic Factors

It should not be surprising that economic factors are critical to the efficiency and condition of PPP projects. Two notable factors are a sound economic policy and a stable macro economic environment. A number of research investigations have pointed to the significant relationship between the level of a PPP project's value by region in the UK which strongly correlates to the region's GDP (Li, 2003). A stable macroeconomic environment where the market possesses reasonable certainty and where market risk is low would significantly reduce total risks for private investors. Moreover, good macroeconomic policy affects the credibility of a price regimen and trust in the convertibility of the currency, which are both essential for foreign investors.

Please note that economic factors can also be related to the first factor since the government is partially responsible for creating and maintaining a stable environment by setting economic policies that can ensure stable prices while at the same time maintaining a balanced budget. Additionally, economic factors could independently have an impact on a PPP project and even on government policies. Since not every economic factor is controlled by the government, economic factors need to be discussed separately.

Another important factor that can be categorized as an economic factor is the private contractor's ability to easily access a financial market, which would lead to associated benefits of lowered financial costs. An easily accessible financial market is a great incentive for the private sector which is interested in committing to a PPP project. For instance, one approach used in the UK to improve financial market accessibility is to tie the finance provider(s) into the consortium created specifically for the project (typically known as the Special Purpose Vehicle or "SPV") and to encourage domestic and international banks to develop substantial expertise and experience in PPP activities. However, because PPP projects are usually lengthy and very sophisticated, an important success factor in this case is the ability to accelerate or even delay a project to match particular financial market trends, to encourage investors to invest while at the same time promising them a considerable degree of flexibility.

Factor 3: Managerial Factors

Managerial and business factors include anything related to the private entity that contributes to the efficiency and effectiveness of the PPP projects. Principally, a strong private consortium was ranked first in the critical success factors for PPP projects conducted in 2003 (Li et al., 2005). Generally, it is mainly large and well-established construction companies who win PPP contracts. This is proven in the history of PPP projects in Europe, especially in the UK (Birnie, 1999). Therefore, this suggests that private companies who are deciding about whether to engage in PPP projects or not shall explore other participants' strengths and weaknesses and perhaps, even more importantly, explore their own strengths and weaknesses. In many cases, due to the size and complications of the PPP projects, private companies may find it advantageous even to join together to form consortia that are capable of synergizing and exploiting their individual strengths. Additionally, it is not only the strengths of private consortium that matter, the strategic attention the private companies receive in the form of support and encouragement from the sponsors or the government is no less important to PPPs.

Factor 4: Social Factors

Another critical success factor of PPP projects is the perception of the society towards the PPP project in question. A commonly seen failure of PPPs is due to civil society's opposing the particular PPP project. Civil society is defined as the "aggregate of non-governmental organizations and institutions that manifest interests and will of citizens" (Fukuyama, 2000). Civil society may support or oppose PPP projects, and depending on the size and impact of the PPP projects, the tendency of the government may be to listen to public opinion. Hence, the effectiveness and efficiency of the project may therefore depend heavily on this form of social support. In general, social support is based on the public's acceptance of the concept of private provision, the degree of negative impact on the stakeholders at each stage of the project, and whether or not the society will be fairly compensated if they are affected by the project. Issues related to public support need to be addressed at an early stage to minimize subsequent risk, as problems of this kind are almost irreversible and are extremely costly to fix. The public traditionally regards as desirable the delivery of promised services and benefits at reasonable prices, without significant cost, and in a fair manner. Thus, PPP projects should be built around these criteria at their every stage of their development.

Analysis

Preparation Phase (1990 – 1992)

The preparation phase is the first and most important step of the PPP as it lays the foundation for the whole project. This phase typically contains a feasibility study, a bidding process, and the formation of cooperation. Having a clear goal and a comprehensive plan is one of the factors for a successful PPP. In the Preparation phase for this study's context, the background of the BTS and the

Thai political context from 1990 to 1992 were considered. The end of this process included an analysis of several factors that might impact the BTS project in preparation phase.

A successful Preparation phase requires a strong feasibility study with a clear plan for the whole project. Many studies regarding PPP projects in foreign countries demonstrate that the political factor such as the role of the government and the political context often have a substantial impact on the plan, objectives, and scope of the project, directly affecting the achievement of the project (Tang & Lo, 2010) while other factors including economic and social factors might have a smaller influence on the project.

Political Factors

There are two main reasons why it can be argued that political instability before and during the Preparation phase was the root of the delay of the mass transit system in Bangkok. The first was the policy instability. Transportation policy had been changed from government to government. Subsequently, one reason the mass transit system project was revived when Chamlong was the Bangkok Governor was that Chatchai government had a clear policy to support many big projects in Thailand. Having a clear policy and appropriate support is therefore one is the most essential factors for a successful Preparation phase.

Secondly, political instability led to private investors' low confidence. The mass transit system project is an enormous project and requires an equivalently sized budget. Before the BTS project was launched, there had been many attempts to involve investment from the private sector. However, political instability as well as an uncertain public transportation policy did not build the private sector's confidence nor incentivize private companies to become involved in the project.

Before the concession contract was signed, the political context included the military coup which dismantled the Chatchai government and Mr.Anand became the new Prime Minister. It seemed that the project would definitely be postponed due to the coup. However, a contract was signed under the approval of the Anand Cabinet. One reason why the contract was successfully concluded under the Anand administration was possibly because Anand was a political-neutral Prime Minister, meaning that political interest was not in issue, unlike a political situation where political parties might claim that the achievement of a project was their success for popularity.

Economic Factors

From the first study of the mass transit system for Bangkok, in 1967, it was almost 30 years before the concession contract was signed, in 1992. One reason for the delay was that the project funding required a substantial budget. The Thai government's many attempts over the previous years to launch the BTS project were unsuccessful because no one in the private sector had sufficient financial capability to invest.

Managerial Factors

In the Preparation phase, there had been few managerial difficulties as the phase concluded with the signing of the contract. However, the managerial factor became a more important issue in the Construction and Operating phase due to the inexperience and unclear plan for the whole project.

Social Factors

The traffic problem was the trigger point for the mass transit system. The primary purpose of the BTS project is to tackle the traffic problems in the Bangkok Metropolitan area by providing a better option for commuting between the city center and suburban areas.

Therefore, in the Preparation phase, the social factor that moved the idea of having a mass transit system in the Bangkok area was the severe traffic congestion. The central and local government decided to provide the mass transit system in the form of a PPP concession contract.

Construction Phase

The Construction phase is the period of civil infrastructure as well as the time of provision of the electrical and mechanical works (E&M). Its potential risks include technological risk, supply risk, regulatory risk, and government intervention risk. (Griffith-Jones, 1993). The BTS's Construction phase (1992-1999) faced many problems and obstacles resulting in a three-year delay of the overall construction. (Four factors supporting the success of the BTS project will be discussed later.) The infrastructure was originally due to be completed four years after the contract was signed. In fact, it took seven years until the infrastructure was ready for use. What happened during seven-year period will be described and analyzed subsequently.

A successful construction phase requires a good foundation from the Preparation phase especially a clear construction plan. Despite the perfect plan designed, there were other factors that affected the success of the project. As outlined previously, the potential risks included technological risk, supply risk, regulatory risk, and government intervention risk. (Griffith-Jones, 1993) Indeed, the BTS project is a good example of a PPP project that could overcome those problems and obstacles. In addition to the government instability, the 1997 financial crisis also had a huge impact on the BTS project funding.

Political Factors

The period of 1992-1999 was the BTS project's construction time. However, political instability was reflected by the fact that there were six governments in that seven-year period. Each government had different policies on state operations. Because people in Bangkok had high expectations for this project, each government paid much attention to its progress. There were many times that the working group was requested by the government to present a progress report and other details with regard to the project. Since some operations under the project required

government approval, the frequent reshuffle of the government or related authorized persons was an implied procrastination of the project.

In fact, it can be argued that political factor had more influence on the BTS's Construction phase than it had on the Preparation phase. Each time a new government was formed there was a revision over the detail and the progress of the project. The revision led to amendments of the concession contract and some adjustments of the issues that had already been concluded. A government intervention was usually claimed as a duty to protect public interest. However, such intervention was the cause of the delay of overall operation of the project as the construction had to be suspended periodically for inspection.

Economic Factors

Another factor that significantly affected the BTS project during Construction phase was the economic factor. This obstacle originated from the lack of domestic funding sources resulting in funding by foreign financial sources. The project was forced to take a risk with the exchange rate. Moreover, two major causes of more financial burden on the project came from the change to a light from a heavy rail system and, of course, the financial crisis of 1997.

The adjustment of the project included many changes to the original plan such as the reassignment and relocation of the depot and routes. The most significant change was the use of a heavy rail system instead of a light rail system. The private sector was obliged to comply with this adjustment which required much more investment in the total value of the project from 15,000 million Baht to almost 25,000 million Baht. This increase of the investment budget moved the private sector to find more financial sources for the funding which were mostly foreign sources.

In 1997, the situation of BTS project was further worsened by the "Tom Yum Goong" crisis. Since the main funding sources of the project were foreign financial institutions and the money the project owed was in foreign currency, the fluctuation of the official exchange rate from 25 Baht/USD to 50 Baht/USD consequently doubled the amount of money owed from 25,000 million Baht to more than 50,000 million Baht.

The financial crisis could be seen as the biggest obstacle that impacted the project's viability. The revision of the rail system from light rail to heavy rail raised the cost for the project from 15,000 to 25,000 million Baht with the problem being highly fueled by the financial crisis. As the funding of the project was mainly from foreign sources, the collapse of Thai currency doubled the amount of debt from 25,000 to 50,000 Baht overnight. The procedure undertaken for the project to overcome the financial difficulty included negotiations with financial sources and debt restructuring.

Managerial Factors

In terms of project management, both the public partner (BMA) and the private partner (BTSC) were inexperience in large scale public mass transit projects so there was a lack of effective preparation and a clear operating plan. This problem was fueled by the central government's intervention. The managerial problems in BTS construction could be seen as an aftermath of the government instability mentioned earlier as a political factor that affected the project during the Construction phase.

The management of both public and private sectors was unclear from the beginning of the project. This can be seen when comparing the BTS case to cases in countries such as Canada which applied the DBFO model of PPPs to Vancouver's Canada Line (skytrain) in the form of a 35-year concession. The stage had been set for a "well-defined project & design and government succeeded in reaching a more realistic project scope in the construction plan," resulting in the effective completion of construction on time and within the assigned budget. Another example is South Africa's Gauteng rapid rail link project which covers a total distance of 80 kilometers. This project was successful due to government involvement since its first stage. EIA, feasibility and business studies were conducted during the planning stage and the scope of the project was clear leading to the completion of project on time and within budget.

Social Factors

The BTS project was affected by social factors such as the opposing movements within civil society. The original construction plan was that the depot and maintenance port would be located in the area of Lumpini Park. The movement against this part of the construction plan claimed to preserve the recreational area of the Park for the well-being of Bangkok citizens. The issue raised by protestors against the use of Lumpini Park as the project's construction venue for the BTS depot and maintenance port was that the area needed to be used for the purpose accorded in King Rama VI's will of having that area as a public and recreational park for the people. Another idea was that the project should adjust its original plan to have a subway. The protest led to the revision of the area for the construction. This pressure resulted in the decision to relocate the venue for construction from Lumpini Park to the Mochit area in order to reduce the social tensions arising from the issue.

The cause of the opposition against the BTS project in the construction phase was usually the concern that the construction would affect the quality of life of the city community. During the construction phase, the BTS project seemed unwelcome due to such concern as the BTS was something new to citizens so some argued against the project while others supported the idea. However, it is obvious that BTS project today is more than welcomed as it provides much more benefit in term of transportation convenience.

Another significant movement against the BTS construction was the movement of the community around Chit Lom area where a station was planned to be located in front of Mater Dei School. The phrase "no way station" was used to protest against the plan to have a station next to the school. Dr. Bhichit Rattakul, the Bangkok Governor at that time, also joined the protesters. The protesters raised many issues to explain why a BTS station should not be there. Although many issues were raised, the main and most raised concern was safety. This protest led to the need for a solution on which both BTS and Chit Lom community could agree. Eventually, the protesters and the BTS reached a mutually agreed solution that the station would be located as planned however the BTS would provide a wall to prevent people on the station being able to view what was happening in the school. This was to assure that no one could seek to use the Chit Lom BTS station as a venue for preparation to commit a crime targeting students in the school.

Operating Phase

An overview of the BTS operation phase reveals that there were six central government reshuffles that led to policy inconsistency. Disagreement between the central and local governments resulted in managerial problems and other difficulties. In addition, the private party was still suffering from exchange rate fluctuations caused by the 1997financial crisis. Lastly, information about the BTS project and Thai political situation will be discussed in detail below.

A review of the relevant literature shows that the significant risks in the Operating phase's significant risks were both political and commercial. The BTS project underscores this claim as in the Operating phase of the project the most significant factor that led to the transformation of the BTS project was political. In sum, the following is an analysis of each of the four significant factors that affected the BTS project.

Political Factors

During the Operating phase of the BTS project, political instability and government intervention were the two most influential factors that affected the BTS project. In addition, the split between the central government and local government caused substantial instability in operating the BTS project. The political instability is reflected by the fact that during the 15 years spanning the Operating phase (1999-2014) there were seven reshuffles of the central government resulting in the policy inconsistency that led to discontinuities of the project. Especially since 2001 to the present, the political situation has become more severe than in the earlier phases.

The conflict between the central and local governments was unmistakably highlighted when the central government moved to take over BTSC and operate the BTS project on its own and the local government (BMA) demonstrated its desire to continue the project on its own. This conflict arose when the central government was under the Thai Rak Thai, later the Pheu Thai, Party and the local government was under the rival Democrat Party.

This political tension caused delays in the extension of the public mass transit system which was purportedly to serve Bangkok residents. Such rivalry obviously led to negative implications for the city's infrastructure development in terms of mobilizing finance and accelerating private participation in project investments.

The policy differences of the two political parties fostered conflicts on management, especially that of the BTS project. The BMA proposed the use of private funds for the extension of the BTS project. However, it was impossible because no private company had submitted any proposal in the bidding process. One reason the bidding process failed was that private companies had no confidence in the political situation which had been unstable which from their perspective increased investment risk. This failure led to BMA's decision to transform the PPP project on the BTS extension to a public procurement in which BMA invested its own fund to build the infrastructure.

Economic Factors

Additionally, the economic factor was significant in that it affected the transformation of the BTS project. Such an extension under the concession contract conditions was not possible as the BTSC still suffered from the 1997 financial crisis and was dealing with a current debt burden. This burden limited the BTSC's financial capacity and prevented it from investing in infrastructure for the extension of the project. The inability of the BTSC to invest was therefore another ground for the BMA's decision to use its own budget for the building the infrastructure in the BTS extension.

Managerial Factors

Next, there were several problems and obstacles concerning the government's management during the Operating phase (1999-2014) within a political context. The BMA as a project initiator and responsible agency in the Bangkok metropolitan area is in charge of moving forward route extension projects to correspond with the people's demand. However, it was confronted with many managerial issues challenges because of political instability and the conflicting opinions of the central and local governments, as aforementioned. This challenging situation was a consequence of the lack of financial support allocated from central government for extension projects between 2001-2005 and a problem arising from the Cabinet's resolution of November 27th, 2008 about route adjustments which was originally the responsible area of Bangkok under the approval of the Mass Rapid Transit Authority of Thailand (MRTA). This body was responsible for the construction of the BTS Green Line extension from Mo Chit – Saphan Mai and Bearing – Samutprakarn. This unhappy situation will nurture future issues around management and also problems where the BMA was criticized for signing a 30 year contract with the BTSC Public Company Limited.

A subsequent operating development arouse when the management of the BTSC was hired to operate the scheduled 2.2 kilometers extended route of On Nut – Bearing for two years. In 2012, it was contracted to operate more scheduled route extensions for 30 years, from 2012-2042.

These contracts have clearer details enabling the company to organize long-term planning. Importantly, the BTSC must have standard, good operating service systems – allowing it to run a punctual system and have an enough number of trains to meet their customers' demands, as well as engage an appropriate number of operators, meet necessary safety standards, and engage in continuous enhanced development and effective collaboration with the government sector (BMA), as well as the representatives of the public sector, in this case the Krungthep Thanakom Company Limited (KT).

Under the new contract provisions, the private party must adapt its organizing project. In terms of managerial problems, challenges and obstacles during the Operating phase which often occurred during its 15 years of services, the following are included:

- problems regarding service to the public; e.g., people complained about the service manner of staff, problems from system failure (happened once over the 15 years on December 26, 2013);

- obstacles on managing a 30 year route extension contract due to political issues impacting the management of the contract;

- problems on the future management of joint ticketing (with other public transportation systems).

Social Factors

Different from the Preparation phase and Construction phase, there had been no significant social movements or social argument against the BTS project. It seems that the people accepted the BTS project as a necessary transportation facility in Bangkok and carry the hope that the extension of the project will be achieved and ready for service provision as soon as possible.

However, the process that is likely to face civil opposition is any expropriation where the government acquires private property to be used as an asset for the public interest. An expropriation process normally compels the private sector to give up its property ownership to the government while the government pays private sector reciprocally for the price of such property.

Discussion

In the Preparation phase of the BTS project, political factors along with the economic were most important for the signing of the PPP concession contract. The concession contract required that a private party must invest all by itself while the government had responsibility to provide lands for construction. The reason why that private party had such confidence in investing in the project was the political and economic atmosphere at that time. At the early time of this phase, there was an economic boom due to Chatchai's policy on international cooperation and trade which had built Thai and foreign investor confidence in Thailand. An economic growth rate of more than ten

percent for many concurrent years reflected the positive mood that facilitated investment. Furthermore, the central government undertook many mega projects and promoted the idea of including the private sector's participation in those projects, including the BTS project. The BMA at that time also endorsed the concept of having a mass transit system to solve the Bangkok Metropolitan area's traffic problems. Therefore, the central government and the BMA agreed on the project and conducted a feasibility study of the project as the base for next stage of the process, the bidding. Then, the Chatchai government was displaced by the National Peace Keeping Council (NPKC), however, the concession contract was finally signed under the approval of the Anand Cabinet. One reason why the contract was successfully concluded under Anand's administration was possibly that Anand was a political-neutral Prime Minister for whom political interest was not in issue unlike the political situation where the political parties might claim that the achievement of a project was a marker of their success, building up their popularity.

In the Construction phase, the project faced many more problems than were faced in the Preparation phase. However, political and economic factors were prominent. This seems to support Griffith-Jones's (1993) claim that one of the major risks in the Construction phase is government intervention. In this project's Construction phase there were many revisions of the project plan undertaken by the central government - there being many governments from different political parties espousing different policies coming into power over this time. The plan was repeatedly redrawn, ending up with the adjustment from a light rail system to a heavy rail system and resulting in the project's huge delays. The adjustment of the rail system had a consequence that imposed more burden on the private party as such an adjustment raised the budget required for the project of 15,000 million Baht to almost 25,000 million Baht. Too many revisions of the project also led to managerial difficulties because the implementation of the project needed to be in line with an inconsistent plan. The root of the problem can be traced back to Preparation phase when all the assessment and planning should have been appropriately prepared, clear enough for implementation. Indeed, the adjustment of the rail system was a major change that simply should never have happened. From the time of the Preparation phase, it should have been realized that a light rail system was not going to be sufficient for Bangkok's transportation demands. The problems emerging from this adjustment would never have occurred if the appropriate study and assessment had been undertaken in earlier stage.

The situation surrounding the BTS project was further exacerbated by the so-called "Tom Yum Goong" financial crisis in 1997. This crisis increased the project's debt of 25,000 million Baht to 50,000 million Baht because 80% of loans were from foreign institutions and the exchange rate fluctuated from 25 Baht/US Dollar to 50 Baht/US Dollar overnight. The project had been compelled to rely on foreign sources of funding because, at that time, the foreign interest rate was more competitive than the domestic interest rate. However, currency exchange risks had been overlooked

due to the fixed Thai exchange rate that the government was subsequently forced to abandon and float the Thai Baht because of the financial crisis. In fact, this crisis weakened the project's overall long term financial capability. Notwithstanding, the project would ultimately and successfully overcome this hardship as it was able to negotiate with financial institutions, conduct a debt restructuring program and enter into a business reorganization process. Later, in 2006, the bankruptcy court had an order to revoke the business reorganization plan.

The lesson learned from the study is that risk assessment is a primarily important process to be undertaken from the beginning of a project and that such risk assessments include all possible risks that such a project could possibly face in the future. In other words, PPP projects require appropriate and comprehensive risk assessments and need to ensure that no risk has been over looked.

In the BTS project, interestingly, one stakeholder that came into play in its Construction phase was civil society. The BTS project construction required much land and, consequently, the government was required to assign the land and premises necessary for the construction. Hence, such construction projects can impact on the everyday life of the communities surrounding the construction venue. In fact, there were some civil society movements against the BTS construction plan. First, protestors rallied against the use of Lumpini Park as a construction venue for BTS depot and maintenance port and raised the issue that the area must be used in accordance with King Rama VI's stated will of having that area maintained as a public and recreational park for the people. This led to the decision to relocate the construction venue from Lumpini Park to the Mochit area in order to avoid the social tension arising from the issue. Next, as noted earlier, the movement against the BTS construction was focused by the community around the Chit Lom area where a station was planned to be located in front of Mater Dei Girls' School. The phrase "no way station" became well known as a protest slogan against the plan to have a station next to the school. This opposition was settled with a compromise being reached where the station would remain located as planned, however the BTS was required to construct a wall that prevented the School and its activities being observed by the people on the station's platforms and environs. The Chit Lom local community needed assurance that no one was able to use the BTS station as a venue of preparation to commit a crime targeting the School's students. In short, the common concern was that the construction would affect the quality of life in the city. During the early days of the construction phase, the BTS project seemed unwelcome due to such concern as the BTS was something new to citizens, with some arguing against the project while others supported the idea. However, it is obvious that the BTS project today is more than welcomed as it provides much benefit in terms of transportation convenience. Learning from these examples, it is suggested that if such projects worked to foster good on-going communication contact with the communities around the construction venues as well as host public hearings the opposition and reservations within civil society might be softened,

even avoided. Indeed, appropriate communication with such communities can help civil society understand the financial costs and benefits of the projects and possibly relieve their concerns about particular projects.

Furthermore, the Operating phase was a challenging period as the project still suffered from the financial crisis that had occurred during its Construction phase. The political situation became more unpredictable and resulted in the political conflict that remains rooted in Thai society even now. Yet, a significant political incident was the split between the central government and the BMA. They were from different political parties with totally different ideas concerning the BTS project. For instance, there was a government intervention attempting to wrestle the project back to government from the private sector. However, the BMA maintained its different view to allow the private party retain ownership of its part of the project. The route extension project was accordingly delayed due to such conflict. After many managerial and legal disagreements with the central government, the BMA eventually decided not to continue the extension project in the form of a PPP but along the lines of a traditional public procurement. That was how the BTS project has now been transformed as a traditional public procurement.

On the other hand, it was not only political factors but also economic ones which drove the BMA to transform the BTS project. As the project had been suffering from the financial crisis, the BTSC found it practically impossible to invest more in the extension project. Looking back to the Preparation phase where both the political and economic situations were positive enough to attract investors, no such conditions for a route extension project would be found. However, the political situation has become unstable and unpredictable and there were many attempts of government intervention the project all of which resulted in huge delay and managerial difficulties. Such an atmosphere could never build investor confidence to participate in such a huge project. Second, the private sector interest was not able to be sustained due to insufficient financial capability to invest more. The bearing of such a large debt was formidable in itself and, therefore, almost impossible to fund an extension project. Because of these two conditions, it is challenging, if not inconceivable for the private sector to undergo such a risk and invest in this form of PPP. Therefore, the case must be made that for any PPP project in the future these two conditions need to be addressed.

For instance, political intervention can be undertaken in different forms. The study has found many forms of intervention in the project which have gradually delayed the project extensions. One form of intervention is based on the concept of centralization which supports the idea that the central government should take over long-term mega projects, including the BTS project. The BTS project was originally operated by the BMA but under a centralization concept the central government would like to manage the project directly. Such thinking leads inevitably to

the conflict between the central government and the BMA. Additionally, there are other forms of intervention such the reassignment of responsible authorities associated with the project and the refusal for financial support. These interventions have resulted in substantial delays of the project extensions; e.g., as of 2009, the distance covered by the mass transit system was planned to be 291 kilometers. However, the total of distance served by both the BTS and the MRT was only 52 of the originally planned 291 kilometers.

The Thai political context reflects a particular characteristic of Thai politics which is political instability. This instability has had clearly impacted the project. In the case of the BTS, the most impacting political factor is the movement towards centralization by the central government. Conflict between the central and local governments also has arisen as a result of such maneuverings. Under this political condition long-term PPP projects like the BTS seem to be more difficult to implement or met success in the future.

The right path for the management of the PPP project is towards decentralization where the government plays "steering rather than rolling roles." (Osborne & Gaebler, 1993) The government should not intervene in a PPP project and assign its power to a designated authority. This recommended approach could facilitate the successful development of PPP projects in Thailand in the future.

A final point gleaned from the study is the association amongst four factors. As stated earlier, each factor did not necessarily or independently affect the project. Nevertheless, a chain effect caused by one factor that had an impact on and resulting in the emergence of factor can be discerned. For example, the social factors in the Construction phase affected the project because there were movements against the construction. This led to the revision of the venue that was time-consuming and added to delays due to the managerial difficulties for the project as well. Additionally, in Construction phase the project's budget was raised from 15,000 million Baht to almost 50,000 million Baht because of the adjustment from a light rail to a heavy rail system as a result of government intervention as well as the financial crisis of 1997. As well, within the managerial factor, the lack of an appropriate of risk assessment from the start of the project that overlooked an exchange rate risk can be seen at the roots of the problem.

To sum up this discussion, of the four factors affecting the BTS project, the most influential are the political and the economic because they have impacted the project extensively. This is consistent with the literature review which indicated that the major commonly experienced risk factor arises from a political situation, including government instability and government intervention. Government interventions in both the Construction and Operating phases had a substantial impact that was fueled by economic factors. It might also be concluded that without these two factors the project would not have been transformed into a traditional public procurement.

Conclusions and Recommendations

Even though we cannot definitely conclude that the BTS is a successful PPP project, since the project has been finally transformed into a public procurement, it has overcome many problems and obstacles and has continued to survive damage from the 1997 financial crisis. However, the financial crisis still impacts the private sector's financial capability to invest in the extension of the BTS project. The project is therefore indirectly forced to be transformed into a regular public procurement. The current situation of the BTS project is that there are two applicable contracts: the concession contract for the BTS project (PPP) and the contract for the extension of the project. (Public Procurement)

Table 2 shows recommendations and future solutions for future BTS and PPP projects:

Table 2. Recommendations Based on Four Factors.

Political Factors	Economic Factors	Managerial Factors	Social Factors
- Central government should have only supervisory role and should not intervene in the project unless necessary. - The project should have a clear plan and objectives and such a plan would be revised when necessary. - Central and local governments should have clear and consistent policy as well as a political commitment to facilitate the project within an appropriate legal framework.	- The project should conduct a comprehensive risk assessment and should not overlook any potential risk like the situation in past where the exchange rate risk was overlooked and caused a huge burden as a result of financial crisis in 1997. - The plan should be clear on the principle like the rail system and should not be adjusted in a way that would significantly increase financial burden of the project unless necessary or reasonable. - The central government might give financial support to reduce the burden put on private sector where appropriate.	- The project should have clear plan especially on the roles of all stakeholders to prevent the managerial difficulties which could cause delay of the project. - The central and local governments should have a mutual guideline to deal with the project to shorten and quicken any process related to the project.	- The responsible party should have good communication and public relations with community affected by the project. - The project should have clear direction and plan for expropriation that the public could understand and have sufficient compensation for the owners of expropriated properties. Additionally, the expropriation process should be transparent and accountable. - Public hearings should be done before any decision that would have an impact on civil society to reduce the tension between the project implementer and civil society.

Based on the current situation in Thailand, it is difficult to have a PPP project like the BTS project totally funded by a private party as the conditions conducive to having such a form of a PPP are not present today. However, a PPP project can be formed with more government engagement with less burden on the private party.

Recommendations for Further Studies

This research is an attempt to examine four related factors that have had an impact on the PPP process operating in a mass transit rail system project in the Bangkok Mass Transit System (BTS) since its beginning until 2014, phase-by-phase. The research method was to interview the key related informants of this project using a qualitative research basis to explore the on-going project process, in-depth analysis to analyze the critical factors that impact project development, the problems encountered, and the obstacles met within the past 20 year of the project. The study shows that Thai political context as well as other economic, managerial and social factors had a substantial influence on operating the BTS project in every phase, leading to its transformation from a Public-Private Partnership (PPP) model to a Traditional public contracting style.

This study consolidates all the factual evidence for what occurred in each period of time. The results of this investigation could be beneficially applied to further studies on future mass transit rail system projects. A Public-Private Partnership in a mass transit rail system project stirs great interest amongst scholars and those who are interested to study because it is a large scale public transportation system and requires a significant operating budget. A PPP have many aspects which could be further studied such as transaction costs, decentralization and TOD development. Hence, using past successes to further study background, problems and obstacles is fundamental to ensure that future operations will avoid facing the same problems confronted in the past. In terms of research, further study of these facts and data could be conducted from many other perspectives.

Limitations of this Study

- The approach to key informants especially public executives or officers was limited.
- Key points from the interview did not go into the study details as the project was reviewed, looking back over some 20 years. So, data from the informants might not always be absolutely correct.
- Some documents regarding the project processes are confidential.
- There was also a limitation within some interviews in that particular issues being discussed were so specific or sensitive that most informants avoided mentioning them.

References

Asian Development Bank (ADB), Japan Bank for International Cooperation (JBIC), and World Bank (2005). *Connecting East Asia: a New Framework for Infrastructure.* Danvers, MA: Clearance Center Inc.

Birnie, J. (1999). Private Finance Initiative (PFI) – UK construction industry response. *Journal of Construction Procurement, 5*(1), 5-14.

Dombkins, D. H. (2007). *Complex Project Management: Seminal Essays by Dr. David H Dombkins*. North Charleston, SC: BookSurge Publishing.

Fukuyama, F. (2000). *Social Capital and Civil Society*. Washington D.C.: International Monetary Fund.

Garvin, M. J. (2010). Enabling development of the transportation public-private partnership market in the United States. *Journal of Construction Engineering and Management, 136*(4), 402-411.

Griffith-Jones, S. (1993). *Loan Guarantees for Large Infrastructure Projects: The Issues and Possible Lessons for a European Facility*. Luxembourg: Office for Official Publications of the European Communities.

Hass, K. (2008). *Managing Complex Projects: A New Model*. Vienna, VA: Management Concepts.

Hebert, J. E., & Deckro, R. F. (2011). Combining contemporary and traditional project management tools to resolve a project scheduling problem. *Computers & Operations Research, 38*(1), 21-32.

Li, B. (2003). *Risk management of construction Public-Private Partnership projects.* Thesis, School of the Built and Natural Environment, Glasgow Caledonian University.

Li, B., Akintoye, A., Edwards, P. J., Hardcastle, C. (2005) Critical success factors for PPP/PFI projects in the UK construction industry. *Construction Management and Economics, 23*(5), 459-471.

Madhok, A. (1995). Opportunism and trust in joint venture relationships: An exploratory study and a model. *Scandinavian Journal of Management, 11*(1), 57-74.

Maxwell, J. A., (2013). *Qualitative Research Design: An Interactive Approach.* 3nd ed. Thousand Oak, CA: Sage Publications Inc.

Osborne, D., & Gaebler, T. (1993). *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*. New York: Plume.

Ouchi, W. G. (1980). Markets, bureaucracies, and clans. *Administrative Science Quarterly, 25*(1), 129-141.

Pongsiri, N. (2003). Public-private partnerships in Thailand: A case study of the electricity utility industry. *Public Policy and Administration, 18*(3), 69-90.

Tang, S., & Lo, H. K. (2010). On the financial viability of mass transit development: The case of Hong Kong. *Transportation*, *37*(2), 299-316.

Whitty, S. J., & Maylor, H. (2009). And then came complex project management. *International Journal of Project Management, 27*(3), 304-310.

Wysocki, R. K. (2006). *Effective Project Management: Traditional, Adaptive, Extreme*. 4th edition. New York: Willey.

Zhang, X. Q., & Kumaraswamy, M. M. (2001). Hong Kong experience in managing BOT projects. *Journal of Construction Engineering and Management, 127*(2), 154-162.