

RISK MANAGEMENT, PUBLIC INTERESTS AND VALUE FOR MONEY IN PPP PROJECTS: LITERATURE REVIEW AND CASE STUDIES

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Abstract: Public Private Partnership (PPP) method has been increasingly used to procure large scale infrastructures and public assets such as freeways, tunnels, bridges, hospitals, libraries, schools and prisons. The underlying principle of a PPP project is to achieve value for money for all project stakeholders involved in the partnership, by engaging them in a risk sharing relationship. While there have been many successful PPP projects, the unsuccessful PPP ones abound and the study of them can teach us how to better manage the risks associated with PPP projects. To this end, two PPP projects -- the Sydney Cross City Tunnel and Sydney Airport Railway Link, are used as case studies to scrutinize reasons leading to their current dilemma and articulate the valuable lessons learnt. It is concluded that protecting the public interests and allowing the private partners to gain reasonable return on their investments, are essential in achieving value for money in PPP projects. This can only be viable through optimal risk allocation and balanced interests between the public and private sector partners.

Keywords: Public Private Partnership; PPP; Risk Management; Value for Money

1 Introduction

Public sector managers often claim that the government has under-funded projects in their fields, and media references to ‘decades of neglect’ are common (Spackman, 2002). As such, turning to the private sector for off-budget finances might be in the public’s interest (Briefing, 2005). Meanwhile, the private sector tends to look for new opportunities for investment and to extend their business market (Reijniers, 1994). The two-fold rationale presents the true *raison d’être* for a public-private partnership (PPP) project and consequently gives rise to different types of PPP applications around the world (Zhang, 2005).

In Australia, government has increasingly used PPP in its projects, such as the Mitcham Frankston toll road in Melbourne (\$2.5 billion) and Darwin’s City Waterfront Redevelopment (\$600 million), to provide public infrastructures and services (Mallesons, 2005). Due to the advantages of PPP projects, the NSW Government has recently proposed to build 9 Schools (spending over \$100 million in total) in the State using PPP strategies (Briefing, 2005). The Queensland Government will also use a PPP approach for its future infrastructure (including bridges and free/highways) development totalling \$1.2 billion (Newman, 2005). These figures are clear indications of the increased faith being placed in PPP procurement as a mechanism to provide capital intensive infrastructure for the future. However, not all the PPP projects in Australia have been successful and Port Macquarie Hospital, the Airport Railway Link and now the Cross City Tunnel are typical examples of controversial projects which have been espoused by many commentators as failures. This paper reviews the pros and cons of PPP projects by examining four key issues: risk management, balance of interests and value for money and their dynamic structure. The Sydney Cross City Tunnel and Airport Railway Link projects are analysed to reveal important lessons in these areas.

2 Fundamentals of PPP projects

2.1 What is a PPP project?

Private financing and operation of infrastructure is not a new idea and PPP-type arrangements have been in use since the seventeenth century in France and also during the eighteenth and nineteenth centuries in Britain and the United States (Grimsey and Lewis, 2004). Unavailability of resources, both financial and human, alongside with the rising demands for the provision of infrastructural services, have been considered as the

major factors that are increasingly directing governments to the private sector for providing public goods and services to citizens and enterprises (Stainback, 2000), thus creating the re-growth of the PPP type of project procurement methods in recent decades.

PPP arrangements have been used in different sectors such as transport, technology, water, prisons, health, welfare, and urban regeneration. It may be as extensive as privatizing facilities and services, or may be simply obtaining management or financing techniques from the private sector (McDonough, 1998, cited in Li and Akintoye, 2003). Yet, outright privatization has been excluded from PPP by many researchers and practitioners. In Grimsey and Lewis's (2005) words, PPPs are "...arrangements whereby private parties participate in, or provide support for, the provision of infrastructure, and a PPP project results in a contract for a private entity to deliver public infrastructure-based services." The Canadian Council for Public Private Partnerships defined PPP as 'a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards' (CCPPP, 2001). The basic principle is that the state or federal government departments are transformed from being owners and operators of infrastructures and public assets into the purchasers of services from the private sector, with the private sector becoming the long-term provider of services by taking the responsibility for the financing, feasibility study, design, construction, and the operation of the infrastructure and facilities (Ahadzi and Bowles, 2004).

As PPP arrangements are project specific and dependant on many factors such as public and private skills, capabilities, limitations, projects' characteristics and also the environment in which the project is going to proceed, the partners' assumption of responsibility may differ and the partnership may take different forms such as Build Operate Transfer (BOT), Build Own Operate Transfer (BOOT), Leasing, Joint Ventures or Operation and Management contracts, etc. Regardless of the names, common characteristics among all types of PPPs (Grimsey and Lewis, 2004; and Peters, 1998 -- cited in Li and Akintoye, 2003) include:

- All PPPs involve two or more actors, at least one from the public and another from the private sector.
- Each participant is capable of bargaining on his own behalf.
- The partnership is establishing an enduring and stable relationship among actors.
- Each participant brings something of value to the partnership.
- Sharing of risks and responsibilities for the outcomes or activities between parties involved, is essential.
- A framework contract underpins the partnership and provides the partners with some degree of certainty.

2.2 Benefits of PPP projects

Many of the espoused benefits of PPP projects are summarized below.

Financial

- Transferring risks from government to competent private partners (Grimsey and Lewis, 2004);
- Superior value-for-money (regarded by the New South Wales treasury office (2002) as the sole reason for adopting a PPP type of project procurement method);
- Reducing the cost to implement the project (Li and Akintoye, 2003);
- A favoured form of financial engineering or off-balance sheet financing which have been devised to avoid treating financing arrangements as debt (Centennial Consultancy, 2005).

Productivity

- Shorter construction period (Department of Transport and Regional Services, 2005);
- Streamlined contracts and simplified procurement (Department of Transport and Regional Services, 2005);
- Facilitation of innovation, bringing diverse interests together and enabling public authorities to cohere around common objectives (Jacobs, 1997);
- Getting away from the bureaucratic and political processes involved in publicly procured projects (Grimsey and Lewis, 2004);
- Potentially best practice of risk sharing to improve productivity and performance (Li and Akintoye, 2003);

- Attracting larger, potentially more competent and productive bidders to the project (Li and Akintoye, 2003).

Technological

- An Effective manner in introducing new technologies and also in encouraging technology transfer (Blaiklock, 2003).
- Effective vehicle of bringing about environmentally efficient buildings resulted from the whole-of-life view of the project (Grimsey and Lewis, 2004)
- Access skills, experience and technology of the private sector (Li and Akintoye, 2003)

2.3 Limitations of PPP projects

Limitations of PPP projects are summarised below:

Complexity

- Being negotiated for a longer term (30 years or more), PPP planning is more complicated (Transport Quebec, 2006);
- Complexity of the contractual structure is one of the disadvantages of PPP projects, which in turn results in longer negotiation periods (ECI, 2003).
- The up-front cost of PPP projects is much greater than the preparation and negotiation costs of conventional procurement methods (ECI, 2003).
- Although through PPP, governments try to remove the capital expenditure for the asset from their capital accounts, possibility of expenditure realization in the capital accounts due to the government liability in case of partnership failure should not be disregarded.

Deterioration of public sector ability

- May 'lock in' governments to existing modes of service delivery and lead to a loss of public sector skills (Centennial Consultancy, 2005)
- Lead to a loss of services to the community (Centennial Consultancy, 2005)
- Distort spending and urban planning priorities, since priority may be given to projects that are readily packaged as PPPs, instead of those producing greatest benefit to the community (Centennial Consultancy, 2005)

3 What makes PPP projects successful or unsuccessful?

A number of PPP projects have been successfully implemented in the past decade, such as the Water Treatment Facility project in Scotland, the Faisalabad Urban Transport Society in Pakistan, Sydney Harbour Tunnel and the City Link project in Melbourne (Grimsey and Lewis, 2002; Sohail et al., 2004). However, unsuccessful cases also abound, such as the Malaysian Privatized National Sewerage project, Parkeerschap Den Bosch and the Betuwe Railway in Netherlands (Reijniers, 1994; Zhang, 2005) and the Sydney Airport Link (Centennial Consultancy, 2005) and the Sydney Cross City Tunnel (Davies and Moore, 2005). Therefore, it is necessary to investigate what makes PPP successful or otherwise.

Apart from factors which create an enabling environment for private involvement such as transparency of the process, competitiveness of the bids, developers' return commensurate with their risks, and credit enhancements (Malhotra, 1997), critical success factors for successful PPP projects have also been probed and investigated (Lane, 2003; Parker and Hartley, 2003; Li et al., 2005; Grimsey and Lewis, 2005; Zhang, 2005). On the other hand, Reijniers (1994), the World Bank (Asian Business, 1996) and Owen and Merna (1997) identified a few reasons why many partnered infrastructural projects have been held up. A summary of these positive and negative factors is presented in Table 1.

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Table 1 Factors contributing to the success or failure of PPP projects

Factors leading to PPPs success	Factors leading to PPPs failure
<ul style="list-style-type: none"> • Transparency of the process; • Competitiveness of the bids; • Developers’ return commensurate with risks; • Credit enhancements; • Effective procurement; • Appropriate risk management • Government guarantees; • Stable policy regime; • Favourable economic conditions; • Available financial market; • Reliable concessionaire consortium with strong technical strength; • Collaboration; • Reputation, trust and motivation. 	<ul style="list-style-type: none"> • Poor transparency; • Difference in interests and expectations; • Inappropriate feasibility study; • Lack of government commitment and objectives; • Complex decision making; • Poorly defined sector policies; • Inadequate legal/regulatory framework; • Poor risk management; • Low credibility of government policies; • Inadequate domestic capital markets; • Lack of mechanism to attract long-term finance from private sources at affordable rates; • Lack of competition.

While a variety of factors may influence the success of a PPP project (if not determine), when structuring a PPP, the focus should be on the *value for money*, the *public interest*, the *capabilities* of both the public and the private sectors, and the *optimal risk allocation* environment (Grimsey and Lewis, 2005). The following sections discuss the three most critical aspects, i.e. risk management, balance of interests and value for money.

3.1 Risk Management

While PPPs have been increasingly used in procuring capital intensive infrastructure projects in Australia, research found that unless the risks in terms of financial, technical, managerial, environmental and social, are properly analysed, allocated and managed, the goals of a true value for money and a win-win partnership is hardly attainable. In a PPP-type of arrangement, the government’s role in the delivery of infrastructural and public services changes from owners/managers to overseers, where the investors undertake far more responsibilities and assumes more complicated risks than a mere contractor (Reijniers, 1994). Using PPP schemes, public sectors try to transfer as many risks as possible to the private enterprises and thus, shed their responsibilities. However, every entrepreneur will require a risk surcharge for each risk conveyed. How to fairly share the responsibilities of risks and the potential benefits between public and private sector bodies, or to achieve optimum risk transfer as against to maximum risk transfer when dealing with risk in PPP projects, deserves further consideration in PPP research (Grimsey and Lewis, 2002). In addition to the typical risks related to technical, political, environmental issues, the financial risk factors, such as changing interest rates, fluctuating inflation and unpredictable revenue variables (e.g. toll fee per passenger and amount of usage in bridge and road projects), is of the most concern among private sectors (Spackman, 2002). Furthermore, Grimsey and Lewis (2004) pointed out that “the PPP programme has raised awareness of project risks in ways that public procurement has to date not been able to do. The result is that the identification, allocation and management of risks have grown to become an essential part of PPP processes”. Due to the lack of PPP experience and expertise in many countries and regions, identifying and managing the risks are decisive to the success of PPPs (Zhang, 2005) and the application of risk management techniques can make enormous contributions in identifying risks and minimizing their negative impacts (Zou and Zhang, 2006), and also in optimizing the overall construction project performance (Loosemore and Zou, 2005).

Common practice regarding the risk is to first identify the risks in a structured or ad hoc method through analysis of the previous projects, use of standard checklists, interviewing involved parties and end users, or brainstorming and workshop sessions. When the risk matrix is prepared, the public sector can take four different approaches regarding identified risks: (1) retain certain risks, (2) insure against them or (3) transfer risk to the project company (Lane et al, 2003) or (4) try to mitigate those risks (Akintoye et al., 2003).

3.2 Balance of Interests

Usually, the public sectors are more concerned with the realization of a social goal which is strongly correlated with their political standing and to maintain their influence, while private sectors are more interested in achieving returns on the invested funds and realizing a corporate goal. Under these incentives, the public sector tends to minimize the risks on its shoulder whereas the private sector is willing to take reasonable business risks. The balance of the different interests is the core issue in PPPs (Reijniers, 1994). Therefore, having checks and balances in place to ensure the bearing capacity in toll fee or rental fee and the long term quality of the facilities, are very important from the public perspective, while these are the limitations posted to the private investors. On the other hand, the governments’ guarantee on minimum facility usage volume and/or minimum return on investments, are crucial for the private sector. Hence, balancing the interests of the public and private sectors is essential for the successful implementation of PPP projects.

3.3 Value for Money

Value for money is the core concept for PPP projects (NSW Department of Finance and Administration, 2005). The “value for money” aspect of a project and the comparison between PPP projects and the conventional alternatives in procuring public assets are the essential elements of government decision-making on PPPs. Value for money, defined as the effective use of public funds on a capital project, can come from the private sector innovation and skills in asset design, construction techniques and operational practices, and also from transferring key risks in design, construction delays, cost overruns and finance and insurance to private sector entities (Grimsey and Lewis, 2002). Value for money was proposed to be examined by the comparison between partnership proposal and the “Public Sector Comparator” (PSC) (Blaiklock, 2003). PSC is a model of cost incurred by the government through conventional publicly financed and managed approaches which also allows for the risks that may realize during the lifecycle of the project as costs. However, it should be noted that value for money is not about cost-effectiveness alone, in isolation from the quality of the service.

The Australian Department of Transport and Regional Services (2005) considers achieving long term value for money to be dependant on how well the private party manages the risks transferred to it and how the public sector manages the contract over its usually long duration. The emphasis on the risk transfer can be misleading as value for money requires equitable allocation of risk between the public and private sector partners, and there may be an inherent conflict between the public sector’s need to demonstrate the value for money versus the private sector’s need for robust revenue streams to support the financing arrangement.

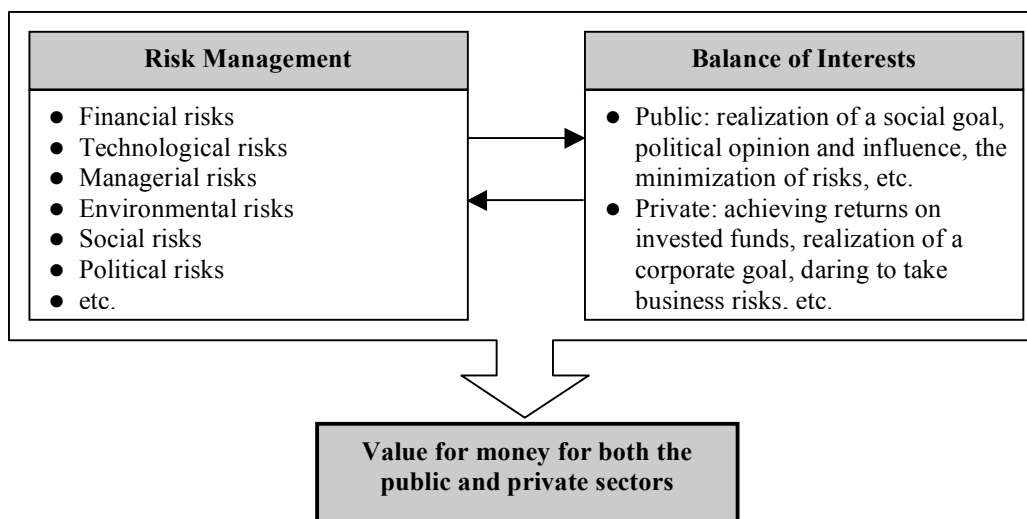


Figure 1 A dynamic structure for the critical factors related to PPP projects

In brief, the very essence of a PPP is that the public sector does not buy an asset; it is purchasing a service under specified terms and conditions with consideration of private sector's benefits. This feature provides the key to the viability (or not) of the transaction, since a PPP is based on a risk-sharing relationship, in this case to bring about certain desired public policy outcomes. The balance of interest and the optimal risk allocation and management are a dynamic and integrated synergy. A PPP project needs to be structured well to achieve effective risk management and balance of interests in order to attain value for money for both the public and private sectors, as shown in Figure 1.

4 Case Study 1 – Sydney Cross City Tunnel PPP Project

4.1 Project History and Brief

The 2.1 km long cross city tunnel, running east-west between Darling Harbour and Rushcutters Bay in Sydney, is a BOT (Build Operate Transfer) type of Public Private Partnership (PPP) between the New South Wales (NSW) Government and the Cross City Motorway Consortium (CCMC) with a 30-year concession period after completion of construction. The tunnel consists of two separate east and west bound tunnels with two lanes in each direction. It is Sydney's first full electronic tolling motorway.

Part of NSW Government's 1998 Action for Transport 2010, was the creation of a road tunnel crossing under the heart of Sydney Central Business District. Following that in 1998, Road and Traffic Authority (RTA) started preparation of a conceptual design for the tunnel. In August 2000, an Environmental Impact Statement of the project was released and on public exhibition for 2 months. In October 2001, the Minister of Planning approved the modifications in response to representations and further studies. In September 2001, the RTA invited private sector organizations to tender and in February 2002, CCMC was announced as the preferred private company. The CCMC's proposal included some changes to the approved activities, which were considered as appropriate by the government and as a result of those changes, a Supplementary Environmental Impact Statement (SEIS) was prepared and put on public display in July 2002. In response to SEIS and additional studies done, further alteration to the project was proposed. In December 2002, the Minister gave his approval to the revised conditions for the approved activities and the contract between RTA of NSW and CCMC was signed (Cross City Tunnel, 2005).

4.2 Details of the Consortium and Construction

The private company, CCMC, consists of Cheung Kong Infrastructure Holdings Ltd. (headquartered in Hong Kong with 50% holding), RREEF Infrastructure Investments (part of Deutsche Asset Management which is a member of Deutsche Bank Group, with 30% holding) and Bilfinger Berger AG (from Germany with 20% holding) (Li Ka-shing: the toll collector, 2005; Hale, 2005).

Design and construction of the project was contracted to Baulderstone Hornibrook, an Australian company, as a Design and Construct (D&C) contract (BH is owned by the Bilfinger Berger AG which also owns Abigroup in Australia) (Abigroup, 2006; Baulderstone Hornibrook, 2006; Road and Traffic Authority, 2006). In January 2003, construction of the project started and the tunnel was officially opened on 28th August, 2005 (Cross City Tunnel, 2006a), almost one and a half months ahead of the schedule. The cost of the project was approximately \$680 million (Davies and Moore, 2005; Wikipedia, 2006).

4.3 Projected and Actual Usage

The tunnel was considered to be effective in reducing the travel time from up to 20 minutes to average of 2 minutes with a free floating traffic in the tunnel (Cross City Tunnel, 2005). Despite the predictions of initial uptake of the tunnel to reach 35,000 vehicles per day and increasing to 90,000 by the end of the first year of operation, the project was not well-received by the motorists and was utilized by only 20,000 per day, one month after the opening (Goodsir, 2005; Wikipedia, 2006). To overcome the public avoidance, a three-week toll free period was announced which was extended by another two and a half weeks, which increased the

tunnel usage to 53,000 vehicles per day. However; the usage dropped by almost half when the toll was reinstated (Smith, 2005; Wikipedia, 2006).

4.4 Why was not the Project Well-Accepted?

Opening of the tunnel attracted much media attention as it resulted in more congested streets and more confused drivers as a result of road alteration and changes made to the above ground streets. As a requirement of the private operator, the government had agreed to make certain changes, such as closing, changing number of lanes and traffic directions to some streets to guarantee minimum revenue to the private sector (Sheehan, 2005). However, closing off the existing free routes angered the public and affected the public inclination towards using the tunnel.

The Cross City Tunnel is Sydney’s most expensive tollway on a per kilometre basis (NRMA, 2005). Cost for using the tunnel is \$3.56 apart from vehicles longer than 12.5 m and higher than 2.8 m which will pay \$7.12. An administration fee of at least \$1.6 will also be added to the mentioned figures if 1-7 day pass is purchased. Travellers without e-tag will pay \$5.16 for a one-way trip to the city, which will be \$10.32 for using the tunnel both ways (Cross City Tunnel, 2006b). This price will also increase quarterly by the Customer Price Index (CPI) (Wikipedia, 2006).

Other issues such as no cash payment facilities, higher price for drivers without e-tag, concerns about exhaust fumes from the tunnel, secrecy of the contract conditions and signage being misleading (Wikipedia, 2006), have also been mentioned by critics of the tunnel but are of lower importance compared to the first two issues mentioned, affecting public using the tunnel.

In this project the government transferred all the financial risk to the private party by trading off other things (such as the public not being able to continue to use the roads they had used for decades). The CCMC’s solution, in dealing with the risk of people not using the tunnel, was to mitigate the risk by funnelling the traffic into the tunnel through changing the road configuration and traffic directions and therefore, guaranteeing its usage. However, these changes resulted in congested roads and confused and angry drivers (Davies and Moore, 2005) who became more resistant to using the tunnel and gave the public the perception that the government is obliging them to pay for a service which was previously free (travelling to the city). Nevertheless, the government eventually got the point, as the Richmond’s (Moore, 2005) report later articulated by saying that as a “general rule”, authorities should minimise alteration and change to the existing roads. Yet, the issue was not appropriately attended to at the time and the immediate public perception of the tunnel opening was not the provision of a service, but worsening the current traffic situation.

The tunnel was also used as a medium to generate income for the government which in turn had its effect on the toll price. In this project the private provider was charged \$105m to obtain government’s permission to build the tunnel which was subsequently converted by the private provider into an extra 50 cents which was then added to toll payments (Wikipedia, 2006). Grimsey and Lewis (2004) regarded purchasing a service as the essence of PPPs. Although one of the roles of government is to redistribute income and wealth, reconcile private and social costs and implement its political program using whatever means suitable, imposing an extra 50 cents to the toll price which otherwise might have better received by the public, somehow contradicts with the fundamental of providing a service to the society.

The expensive toll on the use of the tunnel is the result of a 16% return on investment budgeted by the private sector over the next 30 years (Open Secrets, 2005) and also the \$105m construction permission cost (50 cents of each toll) imposed by the government on the project (Wikipedia, 2006). Twiney M. W.’s (Toll cut would not reduce revenue: report, 2005) report shows that by cutting more than 66 cents off the toll, the operator’s revenue would not change. Reducing the toll price will result into an increase in the tunnel usage and 66 cents reduction in tolls will result in the second balance point which will produce the same income for the private company. However, the number of vehicles using the tunnel is not as much important to the private sector as it is to the public sector.

5 Case Study 2 – Sydney Airport Rail Link (SARL)

5.1 Project Brief

In October 1990, the private sector was asked for an expression of interest to construct a 10km underground railway between CBD of Sydney and Sydney’s Kingsford Smith airport (Spoehr, 2002). On 10th Feb 1995 a contract between French-Australian Bouygues Transfield Joint Venture and State of New South Wales (NSW) Rail Authority was signed (Kerr, 2004). According to BOOT type contract with a 30-year concession period, the Airport Link Corporation (ALC) was to construct, own and run the stations and the government was to design, build, and maintain tunnels, tracks and signalling for the duration of the contract (Kerr, 2004, Morris, 1995). The consortium included Paris based Bouygues and Sydney based Transfield Services each with a 50% holding. The project was financed 14% through equity and 86% by debt (Paradis, 2003). The project was constructed by Bouygues Travaux Publics. The project opened in May 2000, a few months before the Sydney’s 2000 Olympics in September (Shawn, 2000, About Us, 2006c), but ran into financial trouble six months after opening (Shawn, 2000). The project went into receivership in November 2000, after defaulting on a \$10m bank payment of a \$200m loan from National Australia Bank (Kerr, 2004, Wainwright & Kerr, 2000) and receivers called on a State Government guarantee (CC, 2005). Finally, in October 2005 the government accepted a \$106m plan. There after, the private party will receive 85 per cent of all train fare revenue from passengers travelling to and from the four stations on the line, which should see the \$106 million paid by 2012. In return, the owner of the railway link agreed to drop future claims and legal actions against the NSW government. This deal took the sum for Sydney Railway Link to over \$800m. (Davies, 2005).

5.2 SARL’s construction details

Bouygues Travaux Publics was the contractor for the project (Sydney Metro, 2006). Construction started in August 1995 (Morris, 1995). ALC was responsible for building and operating the four stations at Green Square, Mascot, Domestic Airport and International Airport along the 10km railway link (Morris, 1996). The project was completed in 2000. Maintenance of the Airport link stations was the ALC’s responsibility and tracks and tunnel, RailCorp’s responsibility. However both maintenances were carried out by Transfield Services (Transfield Services). The project was expected to be built for \$600m, \$470m of which was supposed to be provided by the government yet the extra cost of pedestrian facilities at the domestic terminal, route changes and tunnelling problems increased the project cost to \$716 m, \$74m of the \$116m extra born by the government (Morris, 1996). By May 1996, the taxpayers’ contributions had grown to \$570m (Wainwright, 2000a). The project cost also increased as a result of construction of the North Arncliffe Interchange including Wolli Creek station. It connected the Illawarra line with the airport link and was considered to be crucial in the project’s success. However, it was not included in the original deal and it resulted to an extra \$130m to the government (Wainwright, 2000a) increasing the total cost to the public to \$700m.

5.3 SARL’s projected and real usage

Using the train, it will take 10 minutes to travel to central station (Morris, 1996) and 15 minutes to travel to Circular Quay (Frequently asked questions, 2006). A one way trip from the city to the international airport will cost \$12.80.

In 1994, it was projected that by project completion, the railway will be used by 48000 per day which averaged just 12500 passengers per day (Shawn, 2000) and the patronage was expected to increase to 68000 in 10 years (Wainwright, 2000a).

5.4 What were the problems of the project?

The Airport Link's main reason for failure could be considered to be its low patronage. Scarcity of passengers was related to ticketing problems and poor marketing when the project was first opened (Shawn, 2000). Spoehr (2002) mentions over crowded carriages at peak times, lack of luggage space and high ticket prices as the problems with the Sydney airport railway link. In order to reach the airport, the passengers need to use suburban railway stations, the majority of which have lots of stairs, which makes using the train inconvenient and this is another reason for not using the train to travel to the airport(Hanks, 2000).

Amongst the reasons resulting in railway low patronage, excessive ticket price has been one of the most important. The fare is very expensive compared to a taxi, especially if a few people are travelling together (Wainwright, 2000b). Centennial Consultancy (2005) explains that the revenue sharing between the private sector and the government to be according to the following four steps. In step 1, 100% of the revenues go to the private sector, until the private sector has recovered all of its initial investment; in step 2, 80% goes to the private sector and 20% to the government. Step 2 lasts until the private sector has earned a cumulative real rate of return of 15% (presumably, before tax) on its initial, already re-paid investment. In step 3 the consortium would get 20% of any additional surplus cash until it has earned a cumulative real rate of return of 22% on its initial, repaid investment. Thereafter, the consortium would get 10% of any excess revenues. On the basis of projected traffic volumes, the NSW Government would recover its investment after at least 23 years and the private sector consortium would break even in less than 4 years. The NSW Government internal 'real' rate of return would be 2%, while the private sector consortium internal rate of return would be 21% - 25% (in 'real' terms before inflation) over the 30 years life of the project (Walker, 1994, cited in CC, 2005). Excessive expectation of return on investment as can be seen in the negotiated terms of the contract clarifies the high ticket price of the line.

Other issues such as the discomfort of carrying luggage up and down the stairs and lack of luggage space in the trains when using the train to travel to the airport are other important factors affecting people's transportation choices.

The underlying reason for building the Airport Railway Link was to facilitate travelling to the airport. However, it is essential to look beyond the Line itself to assess its suitability and comfort. What has been missed in the process was looking beyond the Railway Link itself and paying attention to the origins from which the passengers will be travelling to the airport. Due to the fact that many passengers need to use suburban stations, usually with many stairs, to get to the airport, exacerbated with the inconvenience of bringing the luggage to the stations itself, severely affects travellers' choice.

The expensive ticket price, almost three times as expensive as other lines, has also been equally effective in the line's unpopularity. The high ticket price was a result of high expectation of return on investment by the private company.

In this case there are no obvious reasons why the NSW government needed to involve the private sector. The government itself was responsible for the designing, building and maintenance of the tunnel, tracks and signalings. The government is a major financier of the project by contributing \$700m to the project. The government is also taking all the risk by being responsible for bailing out the corporation if it fails (Shawn 2000). Under such circumstances the government would have been better off building the stations itself as well as running the line as a part of its own network.

6 Discussions

One of the main areas where PPP has extensively been used is Transportation (e.g. railways, roads). These types of projects allow for financing through tickets sold or tolls paid. Toll financing is a direct financing method through which the specific users of the service pay for its capital, operating and maintenance costs (Ababutain, 2002, p29). At the same time, one of the unfavourable features of toll roads is, their great uncertainty regarding costs and revenue (Ababutain, 2002, p29) compared to other infrastructural sectors (e.g. power or water projects).

Correct and precise diagnosis of a need is a fundamental step in the search and prescription of the solution,

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be it using PPP or conventional procurement methods. It is also important to pay attention to the need's life span and the periods in which the need might slow down or increase. It would be illogical to build the railway to the airport if it is just for the purpose of peak periodic needs (such as the Olympics) when it would have been possible to satisfy that need through a different medium. The complication of the issue after the identification of a need and an appropriate solution is to identify the future equilibrium point which will define the feasibility of the project from the private sector's perspective. Yet, it is not always possible and it is very important that both parties, public and private, share the risks if the project is going to proceed. If the government is going to accept or share in a project usage risk, then proper attention should be paid so that the private sector contribute to the project by taking some other risks or to make sure that the private sector is actually sharing in the risks. For example, if the government decides to share the usage risk of the project with the private sector and guaranties a minimum level of patronage as in the case of Airport Railway Link, then it should be careful that the private partner does not set the ticket price too high, thereby mitigating all its financial risk by making sure it will recover all its cost through the minimum level set.

Giving proper attention to contractual conditions and consideration of the possibility of upholding them, is essential for both parties. Incapability of the public sector in complying with some of the contractual conditions in the case of the Airport Railway Link has been the foundation of the government's loss in follow up legal actions. Providing a certain number of trains per hour by CityRail (Kerr, 2004) is part of the Airport Railway link contract. Yet, the airport line has been one of the CityRail's worst lines in 2004 with an average of only one in three trains on time during the afternoon peak hours (Kerr, 2004). It seems that the government's optimistic view of its future performance has been the source of claims by the private partner and the government's loss in the Sydney Airport Railway case.

In the case of the Sydney Airport Link, the division of responsibilities was very unusual because the government acted as the main financier and also takes construction responsibility. If the government was going to build the whole tunnel and then also maintain it, the question arises why the straight forward task of building the stations are to be transferred to the private sector and why the private sector should not also build the tunnel and be responsible for its maintenance if they are more capable in construction. Having a PPP contract in place, with the government being responsible for the maintenance of the tunnel which is then contracted back out to the private partner is an indicator of hastening into the contract without enough studying or incompetence of the government's negotiators.

Risk allocation structure in the Sydney Airport Railway Link is amusingly inappropriate because after finishing the construction of the station, there was almost no risk threatening the private partner. The New South Wales government was responsible for bailing out the corporation if it failed (Shawn 2000). According to the contract, if ALC defaulted on the loan repayment then the government is obliged to buy the four stations at a cost of around \$200m and if the rail authority is found to have defaulted on the agreement, then it is the public sector's responsibility not only to pay the entire debt to National Australia Bank, but also the \$30m investment made by ALC (Wainwright, 200b).

In the Cross City Tunnel case the government tried to transfer the financial risk to the private sector, however; CCMC tried to mitigate the transferred financial risk through imposition of above ground road changes to the contract, in order to funnel the traffic into the tunnel. This way of addressing risk resulted in another problem which was the public resistance in using the tunnel and resentment. It should not be forgotten that the PPP project was to provide a service and not to detract from a service. If the project does not have any justification without affecting the current status of the roads and obliging the traffic to use it then its necessity should be questioned in the first place. Another issue is the government's generation of income through the cross city tunnel which its consequent effect on the toll price, affected the public's usage of the tunnel.

High toll prices for both the Sydney Airport Railway Link and the Cross City Tunnel are significant in their unpopularity. In both cases the return on investment expected by the private partner has been relatively high, 21% - 25% (in 'real' terms before inflation) for Sydney Airport Railway link case and 16% for Cross City Tunnel case.

Richmond (in Moore, 2005) believes that the provision of Sydney's road network without private involvement would be impossible because both the financial and political risks are too high. However, the “no cost to the government” approach of the NSW government can defeat the purpose of higher value for the taxpayers' money if alternative methods of provision of the service by the government are going to be ruled out.

7 Conclusions

Whatever strategies a government adopts for procurement of infrastructure and public assets, the quality of services (that is the public interests) should not be undermined. This should be a prerequisite when both the public and private sectors aim at value for money in their PPP practice. However, due to different benefits explored in PPP projects and different attitudes towards risk and different skills in risk management, the resources of PPP projects are poorly collocated to achieve balance of interests as well as optimal risk allocation and management. As a result, the value for money objective is unattainable. Grounded on a thorough literature review, this paper pinpointed the pros and cons of PPP procurement practice, identified positive and negative factors in implementing PPP projects and particularly examined three key issues of risk management, balance of interest and value for money. Two projects (The Sydney Cross City Tunnel project and Sydney Airport Rail Link project) were referenced, to investigate the root reasons leading to their unsuccessful circumstances. The paper concluded that the importance of putting efforts on the feasibility study prior to signing a long-term PPP contract is never overstated; protecting the public interests and allowing the private partners to gain reasonable return on their investments are essential for achieving value for money in PPP projects, which can only be viable through optimal risk allocation and balance of interests between the public and private sectors.

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