

10. PUBLIC-PRIVATE PARTNERSHIP AND MEGA-PROJECTS

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Published In: H. Priemus, B. Flyvbjerg, B.van Wee (eds) *Development and Management of Large Infrastructure projects*, Edward Elgar, Cheltenham (UK), Northampton (Mass.USA), 2008, pp. 189-212

10.1 Introduction

Public-private partnership (PPP) in mega-projects has attracted increasing attention worldwide and is seen as a promise for the future (Pollit, 2002). It is often considered to be a third option for preparing and managing public infrastructure projects, in addition to the traditional, public project development and privatisation.

Traditional preparation and management of public projects consists in general of governments preparing the projects, contracting out the construction and taking care of the maintenance and operation themselves or contracting these out separately. Despite the popularity of PPP, this is still the dominant method of working in, for example, projects in the transport and water sector worldwide.

Although there are examples showing that public service provision is successful, for instance in the field of water management, it is often associated with government failure (Johnstone and Wood, 2001). Public decision making stands for 'pork-barrel policies' in which public funds are channelled into lobbies of alliances of private company, public organisations and politicians, a selection of uneconomic projects and major budget overspending and time overruns (Bruzelius et al., 2002). The cost overspend of 84% (3.5 billion pounds instead of the planned 1.9 billion) on the new Jubilee Line extension of the London Underground which was delivered in 2000, six years after the initially intended date, is a well-known example (Joosten, 2005). Public service provision is considered to involve poor quality and efficiency, inadequate innovation, and, particularly in developing and transitional economies, low levels of cost coverage, neglect of poor sections of the population, and clientism.

Privatisation of infrastructures has been realised worldwide in the telecommunication and energy sectors based on the idea that the market will provide more funds, greater efficiency, better service provision and more innovation. At the same time there is an increasing awareness that as a result of market failure certain goods and services will not be delivered, the area surrounding infrastructures will be burdened with negative side-effects such as noise, pollution and other forms of nuisance, and opportunistic behaviour leads to higher prices, inadequate service provision and investments failing to materialise. Extensive regulation is needed in order to control these negative effects (Johnstone and Wood, 2001; Koppenjan and Enserink, 2005).

In areas where privatisation has remained limited up to now, such as in the transport and water sector, PPP is seen as a third option, by means of which it will be possible to avoid both public and market failures. The advantages of involving the private sector in public projects can be combined with the promotion and safe guarding of public values. For political reasons, however, in debates PPP may be positioned in somewhat different ways. In the UK for instance, PPP is put forward by the Labour government as an alternative to privatisation, whereas in Australia PPP is viewed as a fullfledge form of privatisation.

The Private Finance Initiative (PFI) model that was developed by the Conservative government in the UK in the early 1990s and has been taken up by Blair under the name public-private partnership, appears to be developing into an important standard worldwide (Osborne, 2000;

Pollit, 2002; Spackman, 2002). The UK continues to play a pioneering role in this. H.M. Treasury (2005) reports a commitment of £ 42.7 billion by the UK government for 667 PFI-projects in 2004. Among other countries, Australia, the Netherlands, and South Africa have set up programmes to follow this example.

The spread of PPP worldwide shows that the expectations are high: PPP is supposed to offer the opportunity to avoid government and market failures and to combine the strong points of public and private involvement making it a ‘marriage made in heaven’ (Hodge and Greve, 2005). However, PPP also has a host of critics who think that the construction and management of essential public infrastructures and the public service provision linked with it cannot be trusted to private parties. In the view of these critics, PPP stands for ‘problem, problem, problem’ (Bowman, 2000).

Given the increasing relevance of PPP for public infrastructural projects, we present an overview of the experiences with regard to this phenomenon in this chapter. We will investigate to which extent PPP lives up to expectations: is it a ‘marriage made in heaven’ or, does PPP in practice stand for ‘problem, problem, problem’?

Given the scope of this contribution we are not able to provide a comprehensive overview of all PPP applications in major public infrastructural projects worldwide. We concentrate in particular on PFI-like arrangements in the transport and water sectors. First of all we will discuss what PPP is about, why PPP is introduced and which PPP-models are most commonly used (section 10.2). We then outline the state of the art of the application of PPP in practice: are the ambitions that underlie the choice of PPP realized (section 10.3). After that we discuss a number of typical problems that occur in PPP processes which will have to be dealt with in order to make PPP schemes work (section 10.4). Finally, in section 10.5 lessons regarding the conditions for successful PPP in mega-projects are summarized.

10.2 What PPP is about: definitions, motives, and forms

The concept of PPP is used as a catch-all term to denote a large number of relationships between the public sector and the private sector (Whettenhall, 2003). Nevertheless there is a certain consensus about what the concept does and does not comprise.

What’s in a name: defining PPP

Broadly speaking, a PPP project is understood to be a project in which private parties on the basis of long-term contracts or arrangements are involved in the design, building, maintenance and/or operation of a public infrastructure, and co-finance it (Li and Akintoye, 2003; Spackman, 2002). Forms of innovative contracting such as Design and Construct, and Design, Construct and Maintenance are not usually seen as PPP; in PPP private parties are expected to take on responsibility with regard to the financing of the project (Van Ham and Koppenjan, 2002).

Motives for PPP: realising Value for Money

Governments strive for PPP because they think the building and operation of infrastructural projects according to this formula is cheaper, faster and better. The following benefits of PPP are expected (HM Treasury, 1993; Ministerie van Financiën, 1998; Spackman, 2002):

1. *Attracting private investment.* Investment in infrastructure is an expensive business and governments’ wish lists are long. These desires concern both new infrastructure as well as the upgrading of existing infrastructure. Public funds are too limited to realise all these desires. By means of PPP efforts are made to attract private money in order to enable these investments. Under EU financial policy European countries see PPP as an opportunity to

realise infrastructural projects without growing budget deficits, enabling them to meet the requirements of the EU budget policy (Pollit, 2002; Johnstone and Wood, 2001).

2. *More Value for Money (VfM)*. Private companies are supposed to work more cost-conscious and efficient than the public sector. Moreover, with PPP contracts various project components such as design, building, maintenance and realisation are contracted out jointly. Since private parties are able to coordinate these phases, design optimizations are possible which lead to better quality and efficiency returns. Ultimately, the same project can thus be delivered for less money, or higher quality can be achieved for the same money. The chances of overspend in terms of time and budget decrease, too, because private parties are better at project management and contracts discourage modifications during the project (Pollit, 2002; Spackman, 2002).
3. *Promoting innovation*. By involving private parties and particularly major, international players, in public projects expertise is tapped which governments themselves do not have at their disposal so that innovative solutions become possible. Innovations can lead to design optimizations with efficiency returns, but also to redefinitions of the scope and content of projects, thus increasing its societal value (Koppenjan, 2005).
4. *Better decision making and project management*. Private involvement is considered to improve the decision making on infrastructure because it forces the government to clearly delimit and define the project beforehand. PPP also limits the informal lobby activities of private parties because they are expected to participate in the risk-bearing. The chances of over-optimistic estimates of returns and costs and the selection of uneconomic projects – characteristics of public decision making – decrease, since private financial institutions will monitor the quality of investments and project management (Bruzelius et al, 2002).

Forms of PPP: an overview of contractual arrangements

Forms of PPP or Public Private Partnerships can be classified according to the extent to which tasks, risks and responsibilities of former public service provision are transferred to the private partner (Bennet and Grohmann, 2000; Akintoye and Beck, 2003; Walker and Smith, 1995). In the literature a wide variety of classifications is used. Figure 10.1 gives an overview of three frequently used categories of Public Private Partnerships.

[Figure 10.1 about here]

These three models of public sector involvement are elaborated below.

1. *Operation, Maintenance and Service Contracts*. The private sector must perform the service for the agreed costs and must meet performance standards set by government. Government is responsible for funding any capital investments. These contracts do not solve the problem of limited public budgets, although private parties will have to pay for their concessions, depending upon the possibilities for cost-recovery and profit. *Transfer Operate Transfer (TOT) arrangements* e.g. mean that government constructed facilities are leased to a private operator who pays a lump sum that makes it possible for government to invest in a new facility (Chang et al., 2003). Operation, Maintenance and Service contracts lead to greater efficiency. Improvements are limited, however, by the government's ability to provide capital investments and to monitor performance. Chang et al. (2003) suggest that *Operation and Maintenance contracts* (such as those applied for sewage treatment plants in Long Tian and Sha Tian townships of Shenzhen city) may be best for cities where facilities have already been constructed. The aim is not to attract private investments but to increase efficiency. This may lead to savings that will lower subsidies and tariffs.
2. *Build, Operate and Invest*. These forms bring private investments into the construction of new infrastructure or the upgrading of existing infrastructure. By combining construction and operation, design optimizations are possible. Because private parties accept financial

responsibilities, they become receptive to financial incentives provided by government. Private parties may receive government payments or user payment, depending on the kind of contract involved. *Concession contracts* (e.g. Design, Build, Finance Maintain and/or Operate) are publicly developed projects, for which consortia of contractors, financiers and operators have to be found to realise them. This is the model that is known as PFI in the UK (Pollit, 2002).

In these contracts upfront financing from private parties is needed to pay for the construction of the project. They can then recover the costs on this investment through a 'user pay' system in which users have to pay for the use of the infrastructure or the service provided or, if that is not possible or desirable, through a 'government pay' system: the government then pays a one-off or annual availability or performance fee. An example of this is the shadow toll which can be put into operation when toll charging is not possible owing to the existence of alternative connections or legislation preventing the charging of tolls. Depending on whether the contractor has borne the cost of realising the infrastructure and is able to recover the costs on this investment at a profit, this party pays for the concession. If excess profits are anticipated, benefit sharing arrangements between government and private parties can be entered into. Furthermore, contracts can contain bonus and penalty provisions in order to ensure that there are incentives for the private party to continue to perform during the building, maintenance and/or operation phases.

DBFOM contracts require that governments have the expertise and regulatory capacity to develop viable projects and manage complex contracts. If this expertise and capacity is not available, as is the situation in many developing countries and countries with economies in transition, *the Build, (Own,) Operate and Transfer (BO(O)T) model* may be an alternative. If this model is used, private parties are responsible for the development of the project. The ownership of the project remains with the government. After an agreed period for operation, in which private parties have to recover their investment costs, the project is then transferred to government. Sometimes also the ownership is in the hands of the private parties during the concession period (BOOT-contracts). Fully-fledged concessions such as those used for water supply in Manila may result in increased service delivery, which is of great value to poorer households (Johnstone and Wood, 2001).

3. *State Owned Enterprises and Joint Ventures.* Governments may decide to incorporate the realisation and/or operating of an infrastructure project in a Special Purpose Vehicle (SPV), a private-law body of which the shares are entirely in the hands of the government. The advantage of this is that it places the project development and operational management at arm's length from the political sphere so that it can occur in a businesslike way. A State Owned Enterprise (SOE) of this type can be financed with public funds which can subsequently be recovered via toll charges. This is the mode of operation used in the realisation of the multi-billion Euro projects at Great Belt (a toll bridge in Denmark) and the Oeresund (the combined rail and road link comprising a tunnel and bridge between Denmark and Sweden) and the – less costly - Westerscheldt Tunnel in the Netherlands. Bruzelius et al. (2002) advocate that SOEs of this type should be forced to attract private financing because private control mechanisms would thus be activated which better ensure the cost-effectiveness and control of the project.

Joint ventures are SPVs in which both government and private parties invest. This model makes it possible for both parties to cooperate intensively during some or all phases of infrastructure development and operation. This model, sometimes referred to as 'alliance model' or 'institutional PPP', to more clearly distinguish it from the 'concession model' or 'contractual PPP', is particularly suited to complex, innovative and uncertain projects, that

cannot be precisely defined beforehand (Van Ham and Koppenjan, 2002; Greenpaper EU, 2004). By sharing risks, costs and benefits it becomes possible to develop and operate these projects jointly and to realize innovative infrastructures and services. Some authors consider this arrangement to provide the conditions for real partnerships, enhancing the intensive forms of collaboration needed to develop the high quality infrastructures which the current complex network society demands. Concession contracts in their opinion do not add much to genuine outsourcing arrangements (Klijn et al., 2007).

These three forms of PPP differ in the extent to which (commercial) risks are transferred from the public to the private sector (Bennet et al., 2000). In addition, they place increasing demands on the skills and capacities of the public procuring agency responsible for designing and managing the contract. The choice of the PPP model therefore is contingent upon both the nature of the project and the regulatory capacity of government.

10.3 Experiences with PPP: does PPP live up to the expectations?

To what extent did PPP in mega-projects live up to the expectations regarding the realization of private investments, value for money, innovation and better decision making?

Are private investments realized?

Experiences in several countries, and especially the UK and the Netherlands, show, that it is hard to get PPP-projects off the ground. In the UK the first initiatives date from the 1980s, but only from the middle of the 1990s onwards the number of PFI increased, due to efforts of the Treasury and the establishment of specific units within government, promoting PFI. Pollit (2002) cites the example of the Channel Tunnel Rail Link (the link between the Channel Tunnel and London) and the Skye Bridge (a PFI toll bridge in Scotland) (NAO, 1997). In 2004 there were 667 signed PFI schemes in the UK with a total capital value of £42.7 billion. Half of the projects by value were transport projects (H.M. Treasury, 2005). In the Netherlands from 1998 onwards a lot of PPP initiatives were taken, but the number of PPP contracts that are actually signed, remain rather limited, although the Ministries of Finance and Transport are committed to PPP. More common are partnerships in the form of formal or informal alliances, for instance in city revitalisation projects (Klijn et al., 2007). In Denmark PPP is not developing due to the adverse attitude of the Ministry of Finance. The public funding of projects is considered to be cheaper and more appropriate. Overall one can conclude that PPP needs active promotion and specific government units and regulations in order to be accepted as alternative for the traditional public preparation and management of infrastructural projects.

Nevertheless, in the area of transportation and water management worldwide, some governments do succeed in attracting private capital and thus in realizing projects which, without private money, would be considerably delayed or would not be realized at all. Boxes 1 and 2 give an overview of the PPPs in these two areas.

Box 10.1 The use of PPPs in transport projects

In Europe Spain and France are known for their extensive network of toll roads, built and operated by private companies. However, the ownership of many of these companies have passed over to government, since the private companies that originally built the roads, performed poor as operators (Flyvbjerg et al, 2003). Only recently in France reprivatisation is considered. Currently, the UK, Spain, Portugal, Finland and the Netherlands have advanced PFI-arrangements. In Portugal BOT-arrangements are used since the early 90s. Economic growth resulted in an increased demand for basic infrastructures like motorways, bridges, railways and pipelines. PPP was pursued in order to get private investment. In Finland the first DBFO project, the Lathi Motorway, was started in 1997 (Akintoye and Beck, 2003). In Germany about 12 road projects and one railway project were financed by DBFO schemes, involving DM 4.6 billion (Flyvbjerg et al., 2003) As mentioned in the introduction, Australia and South Africa are also committed to PFI-programmes. Australia is expected to realise \$A 20 billion on PPP projects during the period 2002-2007 (Gray, 2002).

In the USA and Canada PPP has mainly developed at the county and municipal level, especially in the fields of public schools, welfare programmes, inner city redevelopment and waste water treatment operation. In California four toll roads are realized by BOT-schemes, without state or federal funds (total value \$2.5 billion). Since the mid-90s Canada has selectively applied PPP (in Canada: P3) to large infrastructure projects in Nova Scotia (Akintoye and Beck, 2003).

In the developing world there is a strong regional concentration of PPP in Latin America and South East Asia. In Mexico development franchises were tendered for the construction of 5400 km motorway in the period between 1984-1994.

In Asia BOT-like schemes have been used in countries like China, Thailand, Philippines, Malaysia, Vietnam, Korea and Japan (Akintoye and Beck, 2003). The BOT contracts in Hong Kong have been significant sources of inspiration. The first major BOT project was the Cross Harbor Tunnel (CHT) under Victoria Harbor which links Hong Kong Island with Kowloon. The building of the project started in 1969 and costed 56 million US dollars. The CHT has been successfully operated since. Since then, four other tunnels have been realised in this way. All these projects had a concession period of 30 years in which the investors will need to recoup their costs by means of toll charges (Kumaraswamy and Zhang, 2001).

Box 10.2 The use of PPPs in the area of drinking water supply and waste water management

Haarmeijer and Coy (2002) provide an overview of projects in the field of drinking water supply and waste water management over the whole world and show that although public service provision remains dominant in this sector, in numerous countries projects are being realised under PPP. Whereas in the UK water and sewerage are privatised, France and Spain are using long-term concessions. In the Netherland during the 1990s sale-and-lease-back constructions were popular since tax rules made them financially attractive. Recently a large waste water treatment facility in Delfland has been realized, using a DBFM concession of 30 years (Expertise Centrum PPS, 2004). In the Eastern European capitals of Sofia and Bucharest 25-year concessions have been issued by means of a public tendering process for the operation and improvement of extensive drinking water and waste water systems. In China, Vietnam, Korea, the Philippines and Thailand, too, important BOT and BOOT contracts have recently been entered into with regard to the drinking water supply and waste water treatment. In South America a lot of BO(O)T projects in this area have been delivered with Argentina in the forefront: 70% of the drinking water supply is controlled by private providers. In the US, 85% of the drinking water supply and 95% of the waste water treatment is in public hands. In the coming years, however, huge investments are needed to meet the increasingly stringent requirements which are being imposed on drinking water and waste water (Haarmeijer and Coy, 2002; see also Johnson and Moore, 2002).

Although there are many infrastructural projects for which private financing has been found, there is also a lot of evidence that governments find it difficult to introduce PPP as a new institutional practice. In addition it is important to notice that PPP does not guarantee private investments. In their evaluation of 76 North American PPP projects, Boardman, Poschmann and Vining (2005) state that substantial private investment was realised in less than half of these projects. Five projects in the field of transport, drinking water supply, and waste processing were fiascos, with private parties wanting to be fully compensated for commercial risks and threatening bankruptcy to prevent losses, while the public authorities did their utmost to ensure that the projects were continued.

Some authors point out that many PPP contracts like DBFM and DBFO chiefly concern prefinancing. PPP involves either the purchase of infrastructure through the credit cards of users, or the introduction of a mechanism whereby a one-off public capital expenditure is replaced by a series of small, annual expenditures (Hodge and Greve, 2005). Especially with regard to PFI schemes, the emphasis on generating new private investments, recently seems to have lost importance in favour of the other PPP advantages (Klijn et al., 2007). In developing countries generating private investments obviously remains an important motive.

Is value for money realized?

Do PPP schemes deliver better Value for Money than publicly developed and managed infrastructural projects?

Hall (1998) examined a number of early PFI projects in the UK and ascertained that in road projects and prison projects considerable savings had been achieved. Although calculations were surrounded by uncertainty, he found that there were nevertheless 'some grounds for optimism'. Moreover, an analysis of 29 PFI projects commissioned by the Treasury Task Force identified efficiency advantages of 17% with respect to the public sector comparator (Arthur Anderson and Enterprise LSE, 2000). In 1999, the National Audit Office (NAO) examined ten PFI projects and found that in every project the best offer had been selected and in 8 out of 10 cases good value

for money was achieved. The NAO reported a 10 to 20% efficiency return on 7 projects (NAO, 1999). An influential report from the Institute for Public Policy Research (IPPR, 2001) concluded that PFI had been successfully applied in road construction and prisons; but was less successful in delivering hospitals and schools. Mott-Macdonald (2002) and the NAO (2003) found that PPP delivers on time far more often than infrastructure projects realised with public funding. Pollit (2005) finds this too: projects under PFI 'are [now] delivered on time and to budget a significantly higher percentage of the time'.

Hodge (2005) examined 48 Australian projects, 3 of them in depth, and found that these projects were well managed from a commercial point of view. By means of a 34-year BOT concession, the 2.1 billion Australian dollar City-link project in Melbourne was contracted out, whereby risks were successfully transferred and value for money was achieved. With regard to PPP in human service contracting in the US, Martin (2005) found a significant improvement in contractor performance thanks to the use of performance based incentives. In the Netherlands, the conversion of a regional road into a motorway (the A59) by means of a PPP arrangement underlined the potentials of performance based incentives.

However, the assessment of PPP as successful in realizing Value for Money and improved project management is not unchallenged. Although some PPP projects were successful and delivered value for money, others did not. The Skye Bridge in Scotland which opened in 1993 turned out to be more expensive than if it had been realised with public funding. In the Netherlands the PPP road tunnels which were built in the early nineties proved to be more expensive than public construction too. In the UK, PPP did not deliver value for money in the case of hospitals and schools (IPPR, 2001; NAO, 2003).

What is more, the methods used for calculating value for money - the Public Private Comparator and the Public Sector Comparator - are heavily criticised. Hall (1998) states with respect to his positive findings that the furnishing of proof is weak because an accurate and non-controversial public sector comparator is lacking. The complex contracts are surrounded by uncertainties and, in addition, the outcomes of long-term contracts are always uncertain. Moreover, data may have been adjusted because it was politically advantageous to imply efficiency returns. Shaoul (2005) mentions manipulation of the PSC process. In the Dutch High Speed Rail Link project and the N31 road project the assumptions used in conducting these studies were chosen in such a way as to justify the choice of PPP (TCI 2004; Buck, 2004). Bloomfield, Westerling and Carey (1998) mention a lease-contract at a correctional facility in Massachusetts of a 7.4 per cent more expensive deal than using conventional financing, disguised by 'inflated sales pitches'. Fitzgerald (2004) shows with regard to eight PPP projects in Victoria, Australia, that the finding of value for money is highly sensitive to the choice of the discount rate. If this was set at 5.7 instead of at 8.65 per cent, the outcomes were reversed. With regard to four early PFI road projects in the UK, the NAO (1998) determined that an inappropriate discount rate was used. Ultimately it appeared that public construction would have been cheaper. Even more uncertainties are involved in the use of the PPC and the PSC. For example, the question of to what extent costs, benefits and risks have been included in the calculations. Boardman, Poschmann and Vining (2005) examined 76 major 'P3' projects in North America and ascertained that it is difficult to take account of the transaction costs of PPP projects - which can be high - when making a comparison with traditional public implementation.

These latter observations show that it is difficult to conclude beyond any doubt that PPP schemes deliver better value for money. As far as they do, it is clear that this depends on the specific circumstances of projects and policy areas. Following the reasoning of Pollit (2002) we can conclude that in some policy areas and some countries, parties involved seem to have gone

through a learning circle by which they gradually have succeeded in mastering the PPP process, while others still have not.

Do PPP schemes result in innovation?

Do PPP projects then result in more innovation than public projects? Pollit (2002) ascertains that substantial innovation is realised both with respect of the physical assets of projects as well as in governance methods, contract forms and financial constructions.

However, some authors state that the potentials of PPP with regard to innovations are not fully used, due to the preference for PFI-type contracts in which the government defines the project in advance and draws up clear specifications for design. Within the constraints which then apply, the design scope for private parties is limited to design optimizations. For more innovative contributions, a collaborative development process is necessary for which joint ventures are more appropriate (Klijn et al, 2007; Van Ham and Koppenjan, 2002).

Within PFI contracts the design scope is often further limited because the specifications for design are not formulated at the level of functional requirements and parties endeavour to exclude all risks by means of detailed contracts. This trend is reinforced by the fact that both public and private parties do not yet have the skills needed for PPP. For example, the project organisation that led the procurement process for the Dutch High Speed Rail Link project until far into the contract negotiations was geared towards the conventional tendering of projects. Content-driven expertise dominated and detailed referential designs were used.

Moreover, it appears that the participation in the tendering process of foreign companies, from whom innovation is anticipated, often is disappointing. For instance in the Dutch High Speed Line Project foreign companies participated only in 2 of the 10 contracts involved. Companies find it difficult to meet the legislation and regulations of countries that are unfamiliar to them. Also, national governments and industries do not warmly welcome foreign companies to their national markets (TCI, 2004).

To sum up, in some PPP projects innovations are realized. In other projects they are prohibited by inflexible procurement procedures and the use of detailed in stead of functional requirements. PFI-like contracts restrict innovation to design optimizations. These contracts leave little room for improvements with regard to the content and scope of projects, since the PFI approach implies that projects are defined up front by government without private involvement.

Does PPP improve the quality of decision making and project management?

Do PPP schemes contribute to better decision making on infrastructural projects and less budget and time overruns?

PFI indeed seems to encourage governments to clearly define performance requirements and to introduce financial penalties for failure to perform. Since private parties carry financial risks, it is more likely that projects will start on time and meet requirements because the contractor does not get paid until he delivers. Furthermore PPP brings in private management skills, innovative design and risk management expertise, conditions for better decision making and better project management (Klijn et al., 2007).

On the other hand, there are examples of governments and private companies engaging in PPP schemes without clear upfront project definitions nor realistic assumptions and calculations. In the Netherlands, privatisation did not appear to have a disciplining influence on the planning processes pertaining to the three major rail projects in which PPP was applied, i.e. the High Speed Rail Link, the Betuwe Link and the Zuiderzee Link. On the contrary, the argument that private parties would want to co-finance was used to convince parliament that the projects were socially profitable. Furthermore, private parties do not always base their decision to participate on rational arguments either. For example, in promoting the construction of the Zuiderzee Link in

the Netherlands, Siemens aimed at bringing its Maglev technique into practice even though the project was commercially uneconomic (TCI, 2004).

The quality of decision making seems to be threatened by problems with regard to transparency, accountability and democratic legitimacy. Walker and Walker (2000) criticise the 'off-balance sheet PPP infrastructure deals' as misleading accounting trickery. In addition, they criticise the high returns on investments of private parties in the Sydney Airlink BOOT project, in which the private consortium anticipates a profit of 21 to 25 % while the government is fobbed off with 2%. In the case of Sydney's M2 Motorway, private investors achieved a pre-tax return on investment of 24.4%. They are of the opinion that under PPP, accountability towards Parliament and the public is rendered difficult. Johnston and Romzek (2005) find the same thing with regard to short term service contracts in North American water projects. Hodge (2005), too, ascertains in the Australian projects studied that arrangements are nontransparent, the government for political reasons presses ahead with the hurried construction of projects and seems keener to protect the interests of the private investors than public interests or the interests of the citizens. In the Melbourne City Link BOT contract, which was successful in terms of value for money, parliament was hardly involved; the project is problematic from the point of view of transparency and legitimacy. Other authors also mention high deal complexity and low PPP transparency resulting in accountability problems (Fitzgerald, 2004; Hodge and Greve, 2005).

To sum up, PPP may contribute to better decisionmaking and project management, but this is not guaranteed. PPP even introduces new challenges with respect to transparency, accountability and democratic legitimacy.

Lessons from mixed PPP experiences

It is difficult to pass an overall judgement on the success or failure of PPP as a method of working. Successes appear to lie chiefly in the sphere of effectiveness (private investments; value for money, improved project management and innovation). The problems arise especially in the sphere of transparency, legitimacy and accountability. But owing to the complexity of projects and contracts, the uncertainties with which they are surrounded and the limitations of the assessment methods used, the successes are not unquestioned. As far as they hold, they are closely bound up with the skills which governments have managed to develop in specific policy areas with regard to the procurement process and contract management.

10.4 Issues in the formation and operation of PPP-projects

It does not seem wise to go further into the endless debat on the success or failure of PPP, and the highly normative and therefore unsolvable question whether governments should engage in PPP or not. Since PPP is a practice that is adopted in a growing number of countries, it seems wiser to address the question which typical problems parties face when engaging into PPP processes. In doing so, we may identify some of the critical conditions that influence the success or failure of PPP and which have to be addressed in order to reduce the change of failures or disadvantages and to improve the quality of the development and management PPP-projects in practice.

Issues in the formation of PPP projects

Since currently a reasonable number of PPP contracts have been concluded, the international literature on PPP provides us with a fairly good account of the typical issues that parties involved face in the formation phase of PPPs.

Chaotic and lengthy procurement processes

The procurement processes, by which PPPs are brought about, are characterised by lengthy, erratic contract negotiations amongst a small numbers of bidders, considerable cost inflation during the bidding process, resulting in questionable risk properties. In the UK this pattern has been found in, for instance, road projects and the London Underground, and in the High Speed Rail Link and the A59 and N31 road projects in the Netherlands (NAO, 1998, 1999, 2003; Joosten, 2005; Koppenjan and Leijten, 2005).

In the Design and Construct and DFBM contracts for the High Speed Rail Link, for instance, the private bids were between 43 and 80% higher than anticipated. What followed were improvised, chaotic negotiations which were aimed at driving the bids down via cutbacks and the taking back of risks (TCI, 2004). Governments' determination to develop PPP contracts puts them into a weak negotiating position compared to private parties, running the risk of entering into complex contracts which they don't fully comprehend and ending up taking back risks that they originally wanted to transfer.

High transaction costs

The transaction costs of PPP deals appear to be high for both government and private parties. Governments are often forced to hire external expertise at high rates (Pollit, 2002). In the Dutch High Speed Rail Link project, foreign consultants received over 45 million euro. Due to the project-based application of PPP, learning effects with regard to PPP are often not institutionalized within standing organizations and may easily get lost after the project is finished. Knowledge management aimed at institutionalizing learning effects is an important strategy in trying to reduce transaction costs.

Companies complain about the costs they have to incur for bids while not knowing if they will be remunerated. These experiences lead to pleas for a reduction in the number of parties who are allowed to make bids, private parties being reimbursed for their design expenses and the standardisation of procedures and contracts (TCI, 2004; Buck, 2004). Each of these solutions have institutional implications and drawbacks. So at this point is is far from clear how they should or could be brought in practice.

Lack of competition

PPP presupposes competitive tendering to stimulate private parties to produce their best bids. Open tenders, or at least competitive dialogues, should prevent 'shotgun marriages' and 'sweetheart arrangements'. This requirement also implies that competition between (consortia of) banks, constructing firms and service providers exists. The practice of PPP shows in many cases a remarkable lack of competition, governments often creating legal monopolies in favour of their private partners (Green Paper EU, 2004; Koppenjan and Enserink, 2005).

For instance, the tender procedure for the Dutch High Speed Train was started at a moment when there were already many major infrastructural project under construction. Constructing firms had little capacity available and the prices of building materials were high. The competition was further limited by the scale of the project: only a small number of large firms were capable of doing the job. Collusion on the side of the firms, leading to illegal agreements on the height of the bids and the division of the market, reduced competition even further (TCI, 2004).

Late involvement of private parties

The earlier private parties are involved, the greater the chance that innovative contributions will be delivered. In practice, however, it appears to be difficult to achieve this early involvement. The preference for PFI-type contracts in which governments define projects up front, restrict the possibilities for private parties to participate in early project stages. The market consultations governments use to involve private parties in early project stages are highly voluntary by nature and there are disincentives for private parties to invest in these activities. The tendering policies

of governments, and especially those of the EU, even deter early involvement because this involvement might lead to exclusion from the competitive tendering process.

Strategic use of PCC and PSC

In theory, the choice of PPP is made dependent on the added value which this method of working has compared to traditional, public project preparation. In the UK a converse burden of proof is used: the public scenario is only raised after it has become apparent that PPP does not deliver more Value for Money. The PCC and the PSC are used to determine this (Pollit, 2002). As argued in section 10.3, evaluation research has shown that the outcomes of these instruments are not rock-solid but vary according to the assumptions which are used. The PCC and PSC are often used to legitimise the choice of PPP. This does not mean that these instruments could not play a useful role in the development of PPP, though. De Bruijn and Leijten (2004) suggest that although the outcomes of these instruments are not reliable enough to be used to underpin decisions regarding the use of PPP, they do offer governments information which can be used as a starting point in the negotiation process with private parties.

Dealing with representative bodies and stakeholders

PPP schemes for major infrastructural projects result in high complexity and low transparency. This leads to accountability problems: representative bodies like parliaments or municipal and provincial councils are hardly involved and have a hard time to understand and exert control over PPP schemes. Careful coordination between the project and representative bodies - before, during and after the conclusion of contract negotiations - is highly important. Of course Parliament will claim the right to take the final decision on the project. Uncertainty for contract partners can not be eliminated. At most parties can make agreements about how they will deal with any changes to their contractually agreed relations (De Bruijn and Leijten, 2004). In addition, the lack of transparency and legitimacy also raises the question of how stakeholders can be involved in PPP projects. There are examples of PPP projects which were quite successful in this respect (Van Ham and Koppenjan, 2002).

Issues in the contract implementation phase of PPP

The track record with regard to the implementation of PPP contracts, which often have a duration of 25 or even 30 years, is limited. Most of the recent proclaimed PPP victories, refer to contract closure or at the best to the finalization of the construction phase. It remains to be seen which issues will arise during the contract implementation phase and whether parties are equipped and capable of handling these. This depends on the content and quality of the contract. The contract should for instance include conditions that further a proper transfer of the project at the end of the contract period

But since contracts almost by definition will be incomplete, this is not enough. Governments need to organize the regulation and management of the PPP-contract. Furthermore, due to the long contract periods, it is clear that PPP schemes will be vulnerable for changing conditions in the environment of the project (e.g. technologies, physical environment, economy, policies) which may jeopardise public interest involved as well private parties' return on investments. International accounts on the implementation of PPP contracts, suggest that the parties may expect the following problems (Koppenjan and Enserink, 2005).

Ex post contract dependency: strategic behaviour

Long term contracts and arrangements between government and private parties frequently create private monopolies. These evoke typical forms of strategic or opportunistic behaviour by private concessionaires: raising charges, reducing the quality of the service provision, cutting down on maintenance, and avoiding investments in uneconomic project components ('cherry picking'). In the Netherlands, for example in urban development projects, it turns out to be difficult to get

private parties to invest in public project components such as parks, public transport and road infrastructure (Koppenjan and Enserink, 2005). One way out of this problem is preventing parties from raking in their profits too soon. For example, the contract with the private infrastructure provider for the London Underground requires that during the first years of the contract period investments are made; cost recovery can only occur later (Joosten, 2005; NAO, 2004).

Renegotiating contracts: adapting to circumstances or hold-up?

In water concessions in South America the renegotiations by means of which private providers try and get out of their contractual obligations to connect poorer districts to their physical networks are notorious (Johnstone and Wood, 2001). This is an example of the 'hold up' phenomenon. If one of the two parties has made asset-specific investments, asymmetrical dependency relations develop, allowing the other party to change contract conditions to his advantage. In addition, private parties can threaten bankruptcy or actively aim for bankruptcy. Since the government ultimately has an interest in a completed project which will be operated properly, it will feel compelled to intervene in order to save the project. The course of events regarding the bankruptcy of the Channel Rail Link in the UK is an example of this (Pollit, 2002). To prevent hold-up, arrangements should ascertain that all involved parties make asset-specific investments so that they all have a common interest in making the project a success. Also, since during the operation of long-term contracts circumstances are likely to change, contracts and contract partners should be prepared for dealing with interim contract modifications. The extent to which these general remedies in practice can be realized, and the way that this can be done, is a challenge for practitioners and an interesting subject for future research.

Manifest political risks

An important cause for the failure of PPP projects is the tendency of governments to modify contract conditions during the development or operation. The consequences of this are budget and time overruns, private bankruptcies, or lengthy legal procedures entailing compensation claims. The Bangkok Elevated Transport System project in Thailand, for example, collapsed in the early stages of building because the government decided to opt for a tunnel (Tam, 1999). One of the reasons for the budget overspend on the Channel Tunnel was that the French and British governments were able to impose a whole range of safety requirements during development, while the costs lay with the private parties. This was compensated by an extension of the concession period, but currently the concessionaire is still teetering on the edge of bankruptcy (Flyvbjerg et al., 2003).

These experiences demonstrate that PPP projects need to be protected against the tendency of governments to keep interfering in an uncoordinated way with the development and operation of a project. This imposes requirements on the contract but also on a government as a professional procurer of products and services, and its capacity to coordinate the policies and strategies of the various public bodies which are inevitably involved in major projects.

10.5 Conclusion: conditions for PPP in mega-projects

From the overview of problems public and private parties encounter in formation and implementation of PPPs the following picture arises: in PPPs a large number of parties are involved; contract negotiations and renegotiations are erratic and lengthy; transactions costs are high, uncertainties on technologies, developments and forecasts are huge, transparency is lacking and both public and private actors behave strategically, trying to create beneficial advantages by the way costs, benefits and risks are allocated. Parties often have unrealistic expectations of each other and are not very professional in playing the PPP game both in the phase of formation and

implementation of PPP schemes. Apparently parties are not very well prepared and equipped to deal with the reality of PPP in infrastructure projects, as a result of which the high expectations of PPP in many instances are not realized. They lack the proper skills and expertise, the operation procedures of their organizations do not fit PPP requirements and above all, as far as governments concern, they do not want to loose their control over mega-projects.

So the day-to-day reality of the marriage between public and private parties can hardly be described as heavenly. PPP imposes stringent requirements on both partners. In order to make this relationship work, its not enough to develop proper contract forms and schemes, but investments have to be made in the institutional condition for governing these working methods: the development of skills and expertise, improvement of the role performance by governments as professional procurers and process managers and private parties as contractors, and the redesign of organizations to support these new roles.

Experiences from real-life cases teach us that the introduction and development of PPP in mega-projects follows a learning curve: it is only by actually engaging in a series of PPP projects that parties learn to master the PPP process. In some sectors and some countries the learning process has advanced further than in others.

The fact that PFI-type contracts seem to be developing into a new standard, may be considered beneficial for this learning process. Standardisation reduces complexity, thus increasing the understanding and quality of the PPP process. Giving the erratic tender procedures and contract negotiations and the high transaction costs, both public and private parties call for standardisation, which according to them helps to reduce uncertainties and the costs of involvement in PPP processes.

This standardisation has a price though. Mega-projects are far from standard. They have unique characteristics, which make them worlds apart. Just as some projects will be less suited for involving private partners than others (for instance when the project is highly controversial, when competition is lacking or when there is no good business case), when PPP is considered, it is far from obvious that one PPP model fits all. As shown before, there are different PPP models which are developed for different purposes and different projects. Some aim at a more efficient operation, others at realizing private investments, again others at developing innovative, high quality projects.

As far as PFI is concerned, there is a remarkable tension with some essentials of large infrastructure projects. PFI assumes the upfront specification of project requirements by governments and risk transfer to private parties. These schemes seem to be especially appropriate for known, standard projects, like some road schemes or water treatment facilities. Large, complex infrastructure projects however are new, unique and surrounded by a high degree of uncertainty. Governments find it hard to specify their requirements in advance. Private parties are supposed to bring in their expertise and creativity in an early stage. Uncertainties make that in stead of risk transfer, riks sharing is sensible. In such cases the alliance model is perhaps more attractive than PFI-like schemes.

All in all, there are reasons to argue that the current emphasis on PFI-like models in the world of mega-projects should be complemented with experiments with other models: the variety of mega-projects calls for the development of a variety of PPP options, which makes the task for parties to learn to handle these options even more challenging.

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<i>Fully Public Sector</i>		<i>Public Private Partnership</i>			<i>Fully Private Sector</i>		
Traditional Public Contracting <i>Design</i> <i>Build</i> <i>Maintain</i>		1. Service Contracts <i>Operate</i> <i>Maintain</i> <i>Lease</i>	2. Build Operate and Invest <i>Concessions</i>		3. State Owned Enterprises and Joint ventures <i>Corporatization</i> <i>Private Finance</i> <i>Co-ownership</i> <i>Alliances</i>	Full Divestiture Privatization	
Public service provision	Passive private investment <i>Government</i> <i>Bonds</i>		2a DBFM/O <i>Government defines project</i>	2b BOT <i>Private party develops project</i>		Passive public investment <i>Equity</i> <i>Debt Guarantees</i> <i>Grants</i>	Private service provision
Public		← investment responsibility			→ Private		
Provider		← government role			→ Enabler		

Figure 10.1 A Spectrum of Public Private Partnership Models
Adapted from Bennet et al. (2000).