



**MÄLARDALEN UNIVERSITY**

*Department of Public Technology*

Diploma Work 20P

# **Public Private Partnerships**

## **As a public infrastructure optimizer**

Diploma work  
in collaboration with Nottingham Trent University

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## **Abstract**

A public private partnership is an alternative to procurement of the facility by the public sector, using funding from tax revenues or public borrowing. In a typical public sector procurement, the public authority sets out the specifications and design of the facility, calls for bids on the basis of this detailed design, and pays for construction of the facility by a private sector contractor. The public authority has to fund the full cost of construction, including cost overruns. Operation and maintenance of the facility are handled by the public authority and the contractor takes no responsibility for the long term performance of the facility after the construction warranty period has expired. In a public private partnership, on the other hand, the authority specifies its requirements in terms of outputs, which set out the public services which the facility is intended to provide, but which do not specify how these are to be provided. It is then left to the private sector to design, finance, build and operate the facility to meet the longterm output specifications. The project company receives payments over the life of the PPP contract, which are supposed to repay the financing costs and give a return to investors. The payments are subject to deductions for failure to meet output specifications, and there is no extra allowance for cost overruns which happen during construction or in operation of the facility.

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# Summary

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Public Private Partnerships (PPP), means that the private sector fully or partially assist in shaping and founding public-sector investments, and that the private companies co-operate with the state and share the investment risks.

The idea of PPP solutions was originally introduced in the UK, with the Private Finance Initiative (PFI). With experience from PFI, the model has given rise to what are known as Public Private Partnerships, a partnership between the private and public sectors. In the UK, PPP solutions have given rise to major cost savings. In the EU, PPP are regarded as an important means of improving cost-effectiveness in the need for public grants for infrastructure investments.

PPP are based on the principle, value for money, as the outcome of increased incentives, innovation, utilisation of the private sector's commercial skills in the planning, design and provision of public services. An effective division of risks is important for the attainment of value for money in PPP. The main idea is that risk should be borne by the party that is able to manage it at the lowest possible cost. One purpose is to transfer the kind of risks that give private suppliers incentives to improve their performance and services. Another is to secure a businesslike flexibility in the public sector. The distribution of risk and all other conditions and requirements connected with PPP are regulated in the agreements that clarify liability and financial rights and obligations. PPP are also largely controlled by means of the remuneration system applied to cover project costs. This cost coverage is effected either through charges imposed directly on the users, or by remuneration of the private project company by the state on the basis of use and standard.

In Sweden, PPP-solutions in larger scale has only been tried in one case, namely Arlandabanan, the railway link between Stockholm and Arlanda International Airport.

## **Introduction/Background**

Over the last ten years, private sector financing through Public Private Partnerships (PPP) has become popular as a way of procuring and maintaining public sector infrastructure, in sectors such as transportation (roads, bridges, tunnels, railways, airports), social infrastructure (hospitals, schools, prisons, social housing) and other public infrastructure utilities. Structuring PPP is complex because of the need to reconcile the aims of the large number of parties involved. On the private sector side there are investors, lenders and companies with construction and operational services. On the public sector side there are public authorities creating and implementing PPP policies and the general public who use the facilities that a PPP provides. The involved parties need to have a basic understanding of policy and finance issues, and how their part of the project is linked to and affected by them.

## **Purpose, goal and Methodology**

The main aim of this thesis is the examination of UK case studies of infrastructure projects under the PPP method, and a evaluation of how successful their implementations has been. Also to see an comparison between the traditional way of building project and with PPP. There is many types and variants of PPP, these will be examined to see what the difference between these are.

In order to review the method of PPP and major aspects as the financial context in which they are developed, the various types of them, the key features and the conditions pre-required for their implementation, the UK's case is studied and is presented. To get insight on the issues involved in the procurement of infrastructure through PPP literature, reports, interviews and newspapers was used for this diploma work.

## Report structure

The PPP (Public Private Partnerships) have become an increasingly important area for construction companies, consultants and other players in the construction sector. Since its launch in 1992 in UK and after many teething troubles in the mid 1990s the PPP has become an essential part of the procurement strategy of central and local government in the UK. Over 790 PPP projects delivering infrastructure investment of over £54 billion have been signed since 1992<sup>1</sup>. Public private partnership is an arrangement between the public and private sectors with clear agreement on shared objectives for the delivery of public infrastructure and/or public services by the private sector that would otherwise have been provided through traditional public sector procurement. The key is to focus on what service is required, that is to specify the output, and allow the private sector to determine what inputs are required, including infrastructure and skills, to achieved specified output. PPP recognize that both the public sector and the private sector have certain advantages relative to the other in the performance of specific tasks. By allowing each sector to do what it does best, public services and can be provided in the most economically efficient manner

Significant PPP projects have been delivered in the following sectors:

- Highways
- Prisons
- Hospitals
- Defense and foreign Office
- IT
- Schools
- Property portfolio management

PPP is part of the wider move away from state control over assets. Each PPP project involves the private sector delivering services to a public sector purchaser. This will involve the construction of a new facility (such as hospital) or at least substantial refurbishment works. Normally the private sector will be expected to design, build, finance and operate the asset created over a long-term contract: hence the acronym DFBO which is often applied. The public sector's role in the PPP contract is to purchase the services and to monitor the efficient of the PPP contractor.

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<sup>1</sup> [www.pppforum.com/](http://www.pppforum.com/)



For construction and engineering companies there are opportunities to become involved as players in the PPP process at various levels. They may play a role in the bidding vehicle as an investor and/or a sponsor. This will involve the assumption of a relatively high level of risk in terms of bidding costs and if the company is investing in its projects and taking a long term equity stake, tying up its capital. On a lesser scale, the construction company may prefer only to get involved at the subcontract level. However, PPP has also contributed to the trend towards diversification away from core construction services, for example, many construction groups now own facility management (FM) companies<sup>2</sup>. Such groups may have the capability to deliver all of the key service needs of some PPP schemes. The PPP marketplace in the UK is now maturing and a number of established players are emerging as market leaders and as specialists in particular sectors such as health and education. Some construction companies have set up joint ventures with other players such as FM contractors and large consultancy firms<sup>3</sup>. These may be specific to the project but are increasingly multi-project so that the shared learning and agreed approach of the joint venture can make it a stronger player in the market. Partnership between providers and funders are also increasingly common.

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<sup>2</sup> Barrett, T, (1999), *Public Private Partnership in the Financing of European Transport Infrastructure*

<sup>3</sup> Blackwell, M (200), *The PFI/PPP and Property*

## **The essentials of a PPP project – parties and contracts**

The main parties to a PPP project are:

- The public sector party – usually a central government department, a local authority or a government agency.
- The project company – the vehicle (usually a “special purpose vehicle” or “SPV”) set up to run the project.
- The banks of funders – who provide the debt and other forms of finance to fund the project
- The shareholders – in the project
- The subcontractors – of the project
- The insurers – of the project

### **Forms of PPP**

PPP are not well defined within international markets, and in their widest sense PPP embrace a variety of relationships. A simple definition is that they exist wherever the public sector and private sector work closely together with a common purpose.

- Contracts to supply services to the public sector
- Contracts to sell services or assets from the public sector
- Joint ventures to do either of these activities

### **Outsourcing or Service contract**

Service contracts are for short periods of time and leave coordination and investment responsibility with public sector management. Traditional service contracts involve the contracting out of activities such as catering and cleaning to achieve cost savings. Outsourcing is characterized by the transfer of assets and a level of risk to the private sector contractor<sup>4</sup>. In recent years outsourcing contracts have increasingly included the provision of capital assets.

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<sup>4</sup> Blackwell. M (2000), *The PFI/PPP and Property*

## **Management contract**

Management contracts are similar to service contracts in that the length of the contractual period typically varies around three to five years<sup>5</sup>. The responsibility for operation and maintenance is transferred to the private sector while investment responsibility rests with Government.

## **Leasing**

With leases most, most commercial risks of the operations are assumed by the private provider, and the profits of the private operator depend on how much he can reduce costs.

## **Build Own, Transfer (BOT)**

BOT is a common term for many variants of PPP. A BOT is a common term for many variants of PPP. A BOT is an agreement where the private party takes on the design, building, and maintenance of an infrastructure facility<sup>6</sup>. The private party exploits the facility during an agreed timetable and has in return the right to require fees. The private party usually owns the facility. At the end of the period the facility is transferred back to the Government.

## **Build Own Operate Transfer (BOOT)**

Essentially a BOOT project is when a government grants a private sector organization a concession to build a facility, own it, operate it during the concession period, and then transfer it back to government. The difference from BOT is the ownership element, and the distinction is getting weak in many cases where the two names are used almost in mix with each other on the premise that transfer would eventually take place.<sup>7</sup>

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<sup>5</sup> Hickman. D, (2001), *PFI and construction contracts*

<sup>6</sup> Bates. M, (1997), *Review of PPP*, H.M. Treasury, London

<sup>7</sup> Bates. M, (1997), *Review of PPP*, H.M. Treasury, London

### **Build Own Operate (BOO)**

This type of project differs from BOT in that promoting group designs, finances, constructs and operates a project, but with a plan to syndicate all or a portion of its equity after completion. Thus, the concession company retains ownership and operates the project indefinitely, continuing to get profits from it. A BOO scheme might provide incentive for the project sponsors to maintain the facilities during the concession period.

### **Design Build Operate (DBO)**

An agreement between the Government and a private party, in which design and building is transferred to the private party.

### **Design, Build, Operate, Finance (DBOF)**

Under DBOF contracts the private sector is responsible for designing, building, operating and financing the facility and recovers its costs only from the public sectors payment. At the end of the contract, ownership of the facility commonly transfers back to the public sector.

### **Build Lease Transfer (BLT)**

The private sector investors finance, design, build and retain legal ownership of a facility for stipulated period of time, but the host government

### **Build Transfer Operate (BTO)**

An agreement, which the private parties build and finance the infrastructure facility. The private party also takes on excess costs, delays and implementations risks. When the facility is tested and is meeting the demands, the facility is transferred to the Government. Next, the private party operates the facility in the name of the Government for the certain amount of time during the lease-contract. So the private party establishes the facility, transfers it to the Government and then leases the provisions back to the Government.

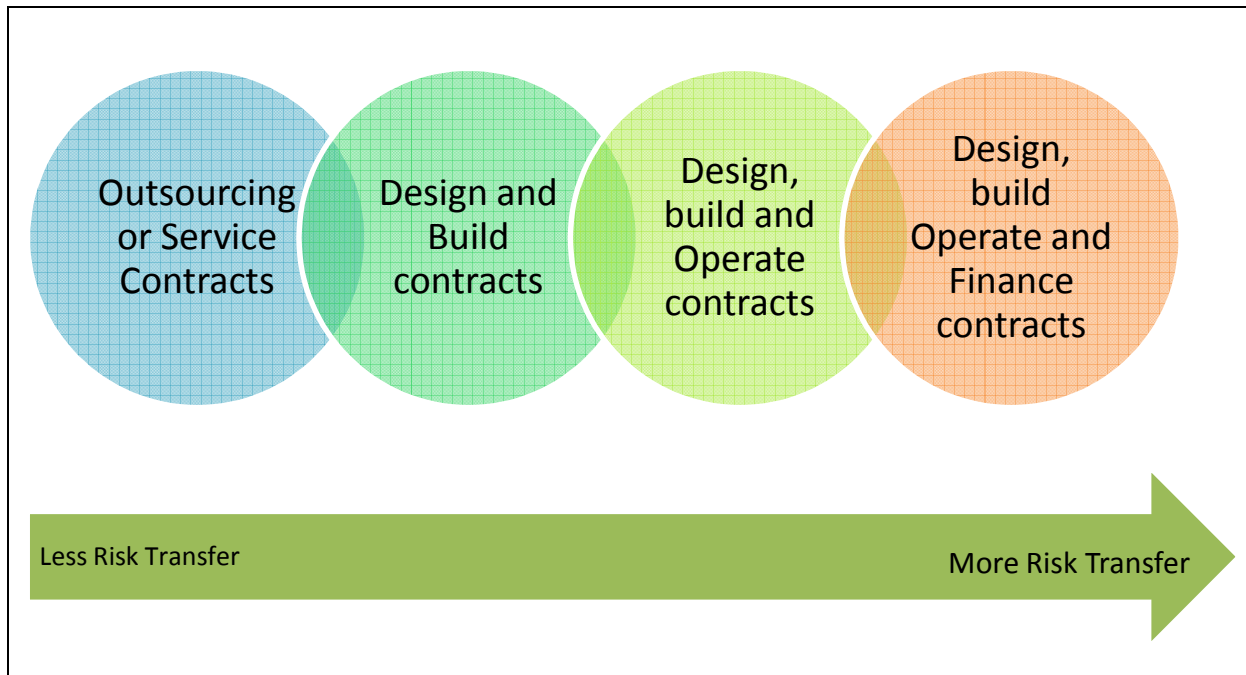


Figure 1.1

A typical PPP project involves an interlocking set of contracts which can seem forbiddingly complex. However, the basic principles are:

1. The authority contracts by a project agreement with a project company (SPV) for the supply of all the services within the scope of the project. SPV will in effect act as the developer, although its role is much wider than in a traditional arrangement.
2. SPV will usually obtain debt finance from external financiers (the banks). This relationship will be governed by a loan agreement usually known as a credit agreement.
3. The banks will enter into a direct agreement with the authority and SPV. The main objectives of the direct agreement is to regulate what happens when SPV defaults; in such circumstances the banks will enjoy “step-in” rights giving them first right of refusal to install a new SPV in priority to the rights of the authority.

The above are the three key contracts as illustrated in figure 1.1. There will be many contracts arising out of these, the principal ones being:

- Contracts governing the establishment of SPV. A shareholders agreement will be needed to regulate the investment of equity stakes in SPV and other funding together with the rights and obligations of its shareholders
- Collateral agreements in favour of the authority of by parties with whom they will not otherwise have a direct contact. Normally these would be restricted to direct subcontractors of SPV.
- SPV's subcontracts. Typically there will be two principal subcontracts: 1: with the design and build contractor and 2: with the operating company (responsible for facility management and long-term services provision). PPP does not have to involve a single design or build contractor although this approach is prevalent.
- Guarantees in SPV. The normal expectation is that the parent companies of the principal subcontractors will provide these. In addition, it will sometimes be agreed that the construction contractor will procure a performance bond from a third-party "bondsman", normally an insurance company<sup>8</sup>.
- Direct agreements between the banks and the SPV's principal contractors. The banks will usually require direct agreements with other parties who are further down the contractual chain, including the construction. These will give the banks similar step-in rights to those they have under the main direct agreement<sup>9</sup>.
- Agreements between subcontractors. These are often called cooperation agreements<sup>10</sup>. The FM contractor will want such agreement with the design and build contractor, regulating their respective rights and obligation

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<sup>8</sup> Partnership UK, (2006), *Report on Operational PFI projects*

<sup>9</sup> KPMG, International Financial Services London, (2003), *PPP, UK Expertise for International Markets*

<sup>10</sup> KPMG, International Financial Services London, (2003), *PPP, UK Expertise for International Markets*

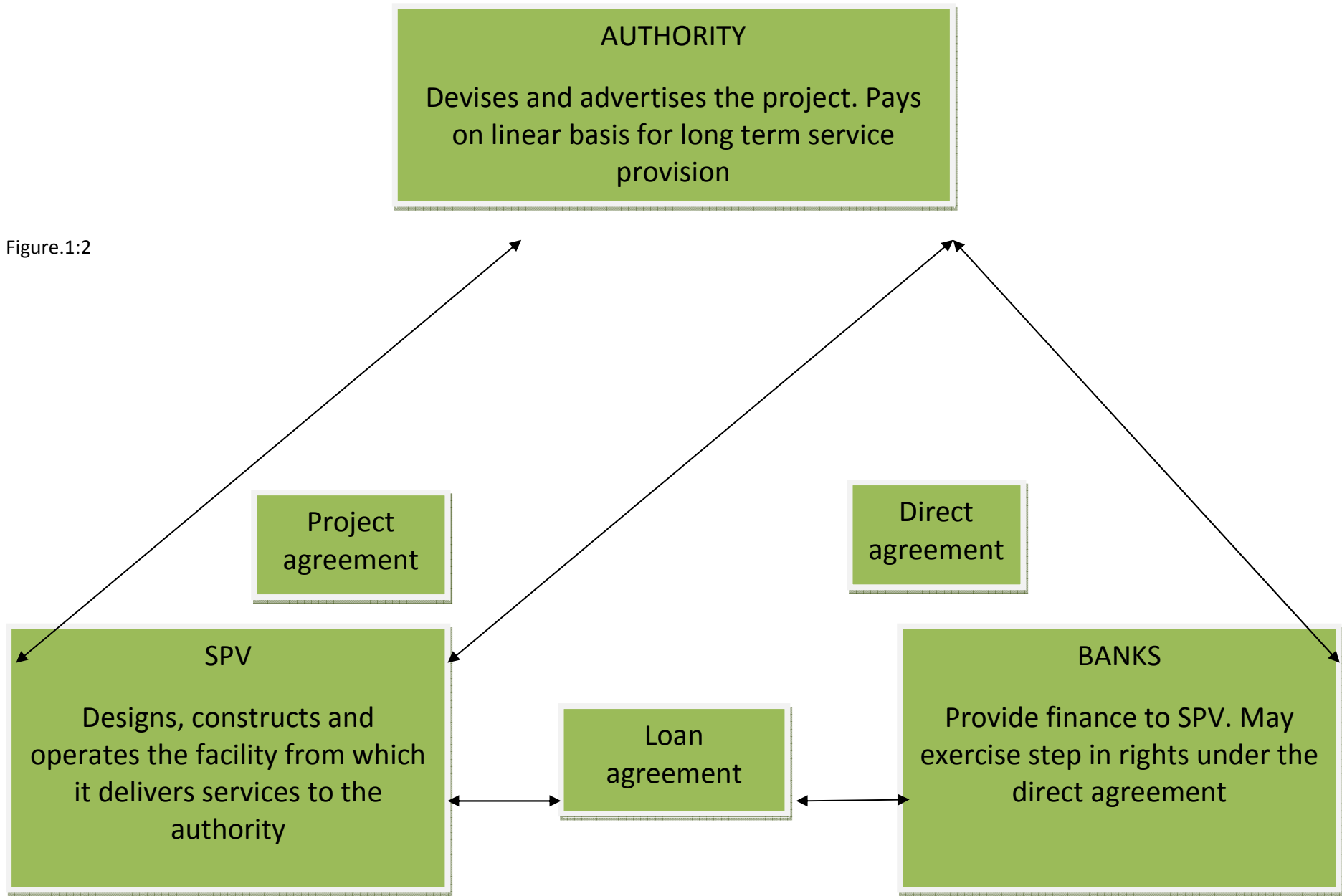
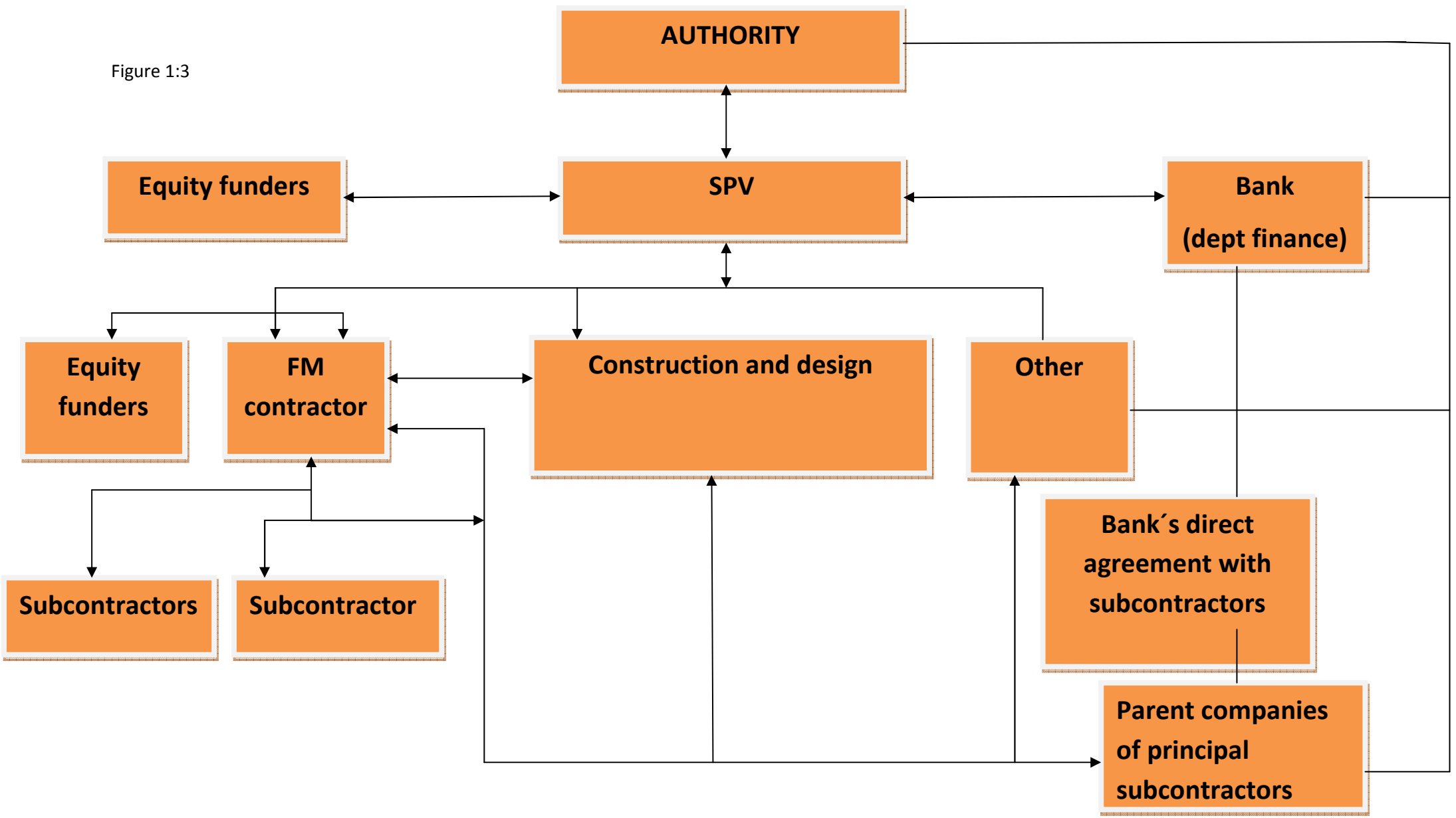


Figure.1:2

The authority and the banks will between them call the shots and the contract reflect this. Without them the project would not get off the ground. The construction company will thus usually be involved in at least one of the principal subcontractors, a construction direct agreement and a direct agreement with authority, plus a parent company guarantee or bond. These contracts will need to be consistent with each other and with the project agreement. Figure 1.2 sets out a detailed picture of the overall contract arrangements on a typical project.



Figure 1:3



## **The British Government's approach to PPP**

PPP is only a number of procurement options that the Government can use to invest in public services. The Government only uses PPP where it can be shown to deliver value for money and does not come at the expense of employees' term and condition. PPP offers value for money for certain investments through a long-term focus on whole life costs; risk management expertise and greater certainty for the public sector that services will be delivered to the specific standard.

## **Construction and design issues**

Most projects will be involved an element of design and construction of a facility such as a building or infrastructure such as a road, railway, bridge or tunnel. Sometimes these will be ancillary to the main equipment or service being provided – for example, a project for the supply of valuable hi tech equipment at a Defense facility. On other projects the buildings or accommodation will be fundamental, as in, for example, hospital and school projects.

Normally the design and construction will be very much at the front end of the project. The cost will be a very significant element of the entire project cost over the term of the project agreement. This agreement will set out the overall requirements of the authority in respect of:

- The output specification for the works and services
- The date for delivery of the facility from which date the services can start
- Circumstances in which extensions of time may be granted
- Default events
- Termination provisions
- Compensation
- Variations in the services to be provided
- Regulation of change of law

The design and construction processes and their timely completion are normally fundamental to the delivery of the scheme on time so that the delivery of services can commence on time. For this reason the construction company will be required under its subcontract to perform to the fixed price and to be on time.

### **The PPP procurement process**

Because they are procured by public authorities, PPP projects are subject to the European Union regulatory regime on procurement. The essential regulations which usually apply are the Public Works (contracts) and the Public Services (contracts). A PPP process will need to be run along the following lines so as comply with the regulations (unless the project value is below the thresholds set by the regulations)<sup>11</sup>

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<sup>11</sup> The current threshold (from 31 January 2006) is £3,611,319 (€5,278,227) for works contracts and £144,371 (€211,000) for services contracts awarded by central government.  
[http://www.mytenders.org/guides/guides\\_list.aspx?Type=3](http://www.mytenders.org/guides/guides_list.aspx?Type=3)

1. An OJEU<sup>12</sup> advertisement will be issued describing the project and requesting expressions of interest by potential bidders. Applicants who could fulfill the requirements of designing, building, financing and operate for the project will send their application.
2. A pre-qualifications process is followed, after which a long list of pre-qualified bidders is selected.
3. The long list bidders are reduced down to a short list and this will normally involve the submission by the bidders of a detailed questionnaire or other document, followed by an interview.
4. The short listed bidders, which are normally not more than four parties, will be sent an Invitation to Negotiate (ITN)<sup>13</sup> document prepared by the authority and its advisers. These bidders will typically be permitted three months to review the ITN and the submit a detailed bid.
5. Bids will be evaluated by the authority. Clarification meetings will be held with the bidders.
6. Final negotiations with the short listed bidders take place. This will be permitted provided the OJEC advertisement made it a clear that the negotiated procedure under the regulations is to apply. Following such negotiations each bidder will submit further information so as to clarify its bidding position.
7. The authority will either
  - Create a further shortlist of two bidders or
  - Select preferred bidder

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<sup>12</sup> OJEC is an abbreviation for the Official Journal of the European Union in which all relevant advertisements are published.

<sup>13</sup> Hickman. D, (2001), *PFI and Construction Contracts*

8. If the first sentence in 7 applies the authority will then prepare and send each remaining bidder an invitation to submit best and final offers (BAFOs). Each bidder will be allowed a period in which to prepare and then send off its BAFO submission.
9. The preferred bidder is selected following which the final terms of the project are negotiated between the authority and SPV: its advisers, shareholders and the banks.
10. Contractual and financial close of the project occurs<sup>14</sup>.

This project procurement schedule does not allow for essential milestones which will additionally have to be achieved such as Treasury Taskforce approval, appropriate central government approvals and so on.

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<sup>14</sup> Blackwell. M, (2000), *The PFI/PPP and Property*

## **Construction issues on PPP projects**

Because of the hierarchy of the contracts it is necessary to look at the project agreement level first. A PPP is driven by the authority and the project agreement will be the first contract to be prepared. It will be developed as part of the ITN document, normally prepared by the authority at a fairly early stage of the procurement process, and certainly no later than when bidders have been shortlisted. The ITN is divided into four or five parts. These will include a draft project agreement, a technical section and output information such as the scope of the project, the identities of shortlisted bidders and the project timetable. The ITN usually also includes a risk matrix table, setting out which party is expected to bear key project risks (e.g. changes in the law), that is authority/project risks and in some cases shared risks will be identified. The construction company and its associated designers and advisers will need to review these items, in particular to ensure they have a clear understanding of the authority's requirements and that such requirements can be converted into a contract which is acceptable to the consortium in terms of the risk/reward ratio it appears capable of offering. In its contract with SPV the authority will not go into all of the detailed requirements for construction and design. These will normally be dealt with at the subcontract level. The project agreement will need to include the following, listed from 1 to 14

- 1 The output specification
- 2 SPV's solution – design, works, etc
- 3 Design and construction standards
- 4 Warranties
- 5 Joinder of disputes
- 6 Timescales for the design and the construction process
- 7 Authority's rights of access and monitoring
- 8 Commissioning
- 9 Lifecycle costs and programme
- 10 The interface between the construction phase and the operational phase
- 11 Design Development

## **1. The output specification**

This should be a statement of the key outputs which are required by the authority for the project. The output specification should concentrate on results rather on how that performance is achieved. For example the output specification for a school will include:

- The numbers of pupils and staff using the school
- The authority's preferences as to the location of particular types of accommodation
- General space planning criteria
- Special requirements such as sports facilities or laboratories
- Particular technical needs
- Opening hours and days during which the facility must be available for school and other uses

A lot of public sector purchasers of PPP services struggled to take hold of the importance of allowing bidders the freedom to propose their own solutions and are still on occasions tempted to impose prescriptive approaches to the selection of particular materials or design solutions. Generally this should be limited so as to ensure that the private sector takes on sufficient responsibility and risk. Most authorities have struggled to cope with the need to let go, i.e. to accept the need to pass responsibility as well as risk on the SPV. This often manifests itself in an over prescriptive approach, not just in relation to design, but also in the authority adopting a traditional attitude towards contract administration during the construction phase where the authority behaves like it is the employer in the construction contract where this is the role of SPV. Although bidders are engaged in a competitive process, they need to resist this sort of traditional approach by the authority.

## **2. SPV's solution – design, works, etc**

This is SPV's response to the output specification. It will typically be prepared by the construction company, which will be leading the dialogue and negotiations with the authority over the design and construction requirements of the project. The solution need to be developed into a clear proposal. Before the bid is submitted, SPV needs to be confident that the proposal will be acceptable to the authority, the consortium and the banks in the following terms:

- That it meets the requirements of the output specification
- That it is an affordable solution in the context of the funds available to the authority and the Public Sector Comparator
- That it is a solution that will be well placed to achieve any planning consents required.
- That it is a solution which the FM contractor supports. There will be overlapping issues in terms of replacement of plant and lifecycle issues.

The quality of the solution and its relevance to the authority's requirements will be a vital part of the bid. On some projects there will be a major debate as to how the construction solution should be set out in the project agreement. The authority is permitted to be sure that SPV will design and build the facility in a manner that meets all the requirements of the output specification, but SPV will otherwise want to be in a flexible position. The construction phase is a high risk project and all such risk is borne by the private sector. However, it must be recognized that in practice the banks will insist on strict loyalty to a contractual programme by both SPV and its construction subcontractor, usually monitored by the achievements of milestones. Generally it is in all parties' interests to ensure that the contract is clear as to the design solution that is ultimately agreed upon.



### **3. Design and construction standards**

The standards set should be objective and capable of measurement according to easily understood criteria. The contract will contain separate provisions governing the standards of design and of construction, workmanship, goods and materials. Often the authority will seek to impose a requirement that the design and construction of the facility achieve a standard of “fitness for its intended purpose”. As most contractors and their insurers will readily appreciate, such a requirement is controversial, these parties being concerned as to the level of uncertainty caused by this approach. To resolve such a problem it will be necessary either to adopt a less controversial standard or to ensure that the “purpose/purposes” are very clearly defined and if they are changed, the contract contains suitable preparation for SPV. Generally it would expect a right to pass on the cost to the authority of any capital expenditure incurred implementing changes which are required by a change of purpose.

It is now established practice for the authority to require SPV to meet the standard of “good industry practice” in respect of its design and construction responsibilities. There is a widely used form of wording for good industry practice, along the following lines: “the exercise of that degree of skill, care and diligence which would reasonably and ordinarily be expected from an experienced, properly qualified and competent contractor engaged in the same type of works or services as SPV”. This is an objective test which is generally considered to be fair to both parties.

### **4. Warranties**

The project agreement will normally include warranties by SPV regarding standards of workmanship and design. Warranties in similar form will be required in the construction and design subcontract and in any direct warranties which may be provided by the construction contractor to the authority.

## **5. Joinder of disputes**

Because PPP projects involve a lot of separate but linked contracts there will need to be proper provisions for “joinder of disputes” where appropriate. Joinder means a contractual provision which allows a third party to be included as a party to a dispute before the same tribunal along with the parties to the contract. Generally SPV and its construction subcontractor will want the dispute resolution provisions to allow a dispute involving more than two parties to be referred to resolution by the same tribunal. This must be initially negotiated at the project agreement level. The authority will often be reluctant to agree to any joinder of disputes but it is now common practice to agree the following:

- Joinder of disputes may occur between SPV, its direct subcontractors and the authority but no further down in the chain.
- This will only apply to related disputes. Each dispute must relate to the same facts or matters.
- Submissions made by the subcontractor to the tribunal must be made within the same timescale as will apply to SPV’s submissions.
- The authority shall not incur any direct liability to the subcontractor as a result of any joinder.
- SPV will be expected to restrict the access to documents permitted to its subcontractors; such documents must be relevant to both disputes and the subcontractor must give an undertaking not to use such documents or their contents save in connection with the current dispute.

## **6. Timescales for the design and construction process**

The project agreement will address the authority’s essential concern to ensure that its requirements as to the commencement of service delivery are met. The agreement should be very much geared towards completion of the facility rather than the details of the design and construction timetable along the way. However, the project agreement will contain detailed requirements regarding the monitoring of the works by the authority’s representative and the process of final commissioning and testing of the facility leading to the final certification process, as follows.

## **7. Authority's rights of access and monitoring**

Reasonable rights of this nature should be granted to the authority but it must not be allowed to overstep the mark and interfere during the construction phase. It is customary to grant the authority representative's reasonable access to the site when they may inspect the general progress of the works to ensure that they are being carried out in a manner consistent with the output specification. The contract must place limitations on the authority.

## **8. Commissioning**

Access issues take on a particular importance as the construction phase approaches completion. The authority's representative will have to be involved in the key aspects of commissioning and testing of the new facility. This may be challenging in terms of programming. The usual solution is to allow the authority in the project agreement the right to attend SPV's own commissioning and testing process. There should be a requirement for adequate notice of such attendance

## **9. Lifecycle costs and programme**

A typical PPP contract has a term of 25-30. The private financiers don't calculate more than 25-30<sup>15</sup>, that is why the contract has that year limit. In order to maintain the asset so that it can meet the requirements of the output specification it will be necessary for SPV to review and replace key elements, equipments, key parts of the building and machinery under a efficient organization. The programme of asset renewal and replacement will probably be run by a maintenance contractor or by the operating contractor. Each item will have an estimated life and this will vary depending on the quality of the particular product selected by SPV. It is essential that the construction contractor is fully aware of the programme for replacement. The contractor will be expected to design and build the asset in a manner consistent with that programme and may be asked to give warranties as to the design life of particular items.

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<sup>15</sup> KPMG, International Financial Services London, (2003) *PPP UK Expertise for international Markets*

## **10. Design development**

Because of time limitations and the need to limit abortive bidding costs it will be necessary for the project agreement to make provision for development of the design after the preferred bidder has been appointed. During the period of final negotiations between the authority and the preferred bidder it will be necessary for the representatives of each party to agree on the process for concluding the design. Often the final design will still not be totally complete at the time of contractual close. The project agreement needs to describe the design solution which is required by the authority. Generally this will be done by means of a schedule which will set out the building specification prepared by SPV. This needs to identify all relevant current drawings by number with a view to avoiding disputes which could arise following further development of the design or contractual variations. The party needs to provide for any acceptance or agreement of design by the authority and the procedure to be applied. This is something of a difficult area for public sector players: the will try to limit such requirements and to include a provision that no acceptance or agreement of an item of design by the authority will relieve SPV of its obligation to design the facility in accordance with the output specification. A lot of care needs to be taken to cover the following areas:

- Identifying existing design work in the project agreement. The authority will require a provision that SPV accepts responsibility for all such design.
- Setting out a clear and fair procedure for dealing with further design development which is necessary after contractual close. SPV will be able to get on this work without suffering undue interference by the authority but the latter want at least to be consulted and to ensure that the design continues to be consistent with the output specification.

## **11. Project agreement: inputs required from the construction team**

Because the project agreement is the first contract to be negotiated, the other contracts are dependent on it. From the subcontractor's point of view it is very important for them to have an input into the negotiation of the project agreement. This will mean that before bids and comments can be submitted to the authority a lot of parties have to be consulted.

## The benefits from PPP

If used in the right way, PPP can:

- Offers significant value for money advantages when compared to conventional procurement, through private sector innovation in the way that services are delivered<sup>16</sup>.
- Acceleration of infrastructure provision. PPP provide an opportunity for the public sector to translate upfront capital expenditure into a flow of ongoing service payments. This enables the public sector to proceed with the projects at times when the availability of public capital may be constrained, thus bringing forward much needed investment.
- Faster implementation. The allocation of design and construction risk to the private sector, combined with payments linked to the availability of a service, provides significant incentives for the private sector to deliver capital projects within short construction timeframes.
- Reduced whole life costs. PPP project often require the private sector to be responsible not only for constructing the asset, but also for maintaining and operating it over time. This provides the private sector with a strong incentive to ensure that it minimizes cost over the whole life of a project, something that is inherently difficult to achieve within the constraints of traditional public sector budgeting.
- Better allocation of risk. A central part of public private partnership is the allocation of risk to the party best able to manage it at least cost. The aim is to optimize rather than maximize risk transfer, to ensure that best value is achieved. The ability to secure cost effective risk transfer is dependent on the scope of the services provided by the private sector and it is most likely where the private sector has clear ownership, responsibility and control that go hand in hand with ownership and yes still seeks to transfer risk, then the private sector will increase its price and value for money will reduce or the project will become undeliverable. The principle of allocating risk to the party best able to manage it leads to more consideration and better control of complete range of project risks across the whole life of the project.

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<sup>16</sup> European Commission, (2003), *Guidelines for Successful Public Private Partnerships*

- Better incentives to perform. The allocation of project risk should incentivize a private sector contractor to improve its management and performance on any given project. Under most PPP projects, full payment to the private sector will only occur if the required service standards are being met on an ongoing basis.
- Generation of additional revenues. The private sector may be able to generate additional revenues from third parties, thereby reducing the cost of any public sector subvention required.
- Improved public management. By transfer responsibility for providing public services to the private sector, government officials will act as regulators and will focus upon service planning and performance monitoring instead of the management of the day to day delivery of public services to be benchmarked against market standards to ensure that the very best value for money is being achieved.
- Ensure that facilities and equipment are designed and built with the purpose of providing a high quality service for the full life of the contract.

## **Risks**

A risk is defined as any factor, event or influence that threatens the successful completion of a project in terms of time, cost or quality. A key principle of PPP is that risk should be allocated to the party best able to manage it<sup>17</sup>. The effective allocation of risk has a direct financial impact on the project as it will result in lower overall project costs and will therefore provide enhanced value for money if compared to traditional procurements methods. The direct relationship between risk and financial impact lies also in the fact that the degree of risk transfer to the private sector will influence the overall cost of the project to the public sector as all risk will be associated with a price premium. Therefore the objective must be to achieve cost effective risk transfer not simply risk allocation for its own sake.

The objective of risk transfer includes:

- To reduce long term costs of a project by allocating the risk to the party best able to manage it in a most cost effective manner.
- To provide incentives to the contractor to deliver projects on time, to required standard and within the budget.
- To improve the quality of service and increase revenue through more efficient operation
- To provide a more consistent and predictable profile of expenditure.

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<sup>17</sup> Hickman. D, (2000), *PFI and Construction Contracts*

**Financing risks**

Foreign exchange risk is especially relevant to developing countries, which have to import equipment and substantial amounts of materials using foreign currencies for settlement. However, the incomes arising from the use of the completed facilities or the sale of products are in local currency. Foreign exchange fluctuations can also be harmful to financial soundness by affecting the prices of input and output, as well as loan repayment. Likewise an upward movement of interest rates will affect the repayment ability of the project company.

**Market risks**

Changes in market price, demand and sources of raw material supply will inevitably affect the construction and operation of projects, let alone profitability. In industrial projects, lenders want to ensure the sale of the product so that there are sufficient revenues to repay their loans.



### **Income risks**

Income risk is the most fundamental of all unknown factors involved in PPP projects. Income flows are generally determined by two factors: utilization levels and tariffs. For transport problems, the initial traffic forecast may be overoptimistic, either due to wrong assumption, or to an insufficient connecting road network. Income from direct income tolls may then fall short of expectations and hence the cash flow of sponsor.

### **Construction risks**

The capital construction cost of any project is one of the fundamental factors upon which financing is based, and when cost overruns are incurred, the financial possibility of a concession can be jeopardized. Poor project definition, unknown geological conditions, or loosely defined safety specifications can have dramatic effects on capital construction costs. However, these potential problems can be toned down with the completion of careful engineering studies before a concession contract is actually signed. Construction delays also have detrimental effects on capital costs. While some delays can be minimized through careful construction management, they still have the potential to arise. External forces such as inflation, economic policy, embargoes and political conflicts also have the potential to have dramatic effects on capital costs. Construction risk is nearly always assigned to the private party, which in turn is likely to include strong incentives for on-time completion of works in its construction contract.

### **Cost overrun risks**

When construction costs exceed original estimates, either due to inflation or excessive design changes, drawdown from loans may not be able to match the payments due to contractors. This may also cause lenders to question the continued viability of the project.

## **Political risks**

The long duration of most concession agreements and the common aversion to user fee increases, make PPP projects especially susceptible to political risk. This is exacerbated when new governments oversee unpopular projects investigated by previous administrations. Political risks are often assumed by host governments, but such an assignment can prove less than optimal in the face of lackluster political support for an infrastructure partnership. Bilateral agencies such as export-import banks have also been known to provide political risks guarantees to private concessionaires from aligned countries.

## **Instability risks**

This type of risk can range from labour unrest and embargo of construction equipment to outright expropriation. Construction companies could be forced into bankruptcy by a political decision to stop work. The same can happen with war and hostility between countries. Major political uprisings can also take away financiers' interests in otherwise lucrative projects, at least temporarily.

## **Public Acceptance Risk**

Infrastructure projects have the potential to provoke loud protest among local communities, a fact which can prove fatal to private concessions.

## **Sustainability risk**

A principle objective of the public sector is to protect the public interest and ensure delivery of value for money. Publicly procured and operated projects provide the taxpaying public with the ability to control the quality through votes and taxes. The introduction of private operators may reduce this control if effective control or oversight systems are not developed.

**Construction difficulties**

Unforeseen soil conditions and breakdown of equipment are common occurrences of any construction site, especially for large civil engineering projects. Usually, these will have repercussions on cost and time but the effects are usually surmountable with today's technology.

**Operations risks**

During operation of the facilities the revenue generating capability may be hindered by equipment breakdown or the discovery of defects in the work. Proper training of local operators for operation and maintenance is obviously essential, as is stipulation of adequate contractual provisions for maintenance and the making good of defects by the contractor. More positive steps include careful choice of operator, and where possible involvement of the operator in the design and commissioning phases.

## **PPP in UK Industry**

PPP is used extensively within the UK in the following sectors:

### **Water/Wastewater**

Private sector Investment and expertise are redefining the water industry. PPP is providing the finance for long term investments and allowing the modernization of existing water facilities as well as providing the finance to build and operate new water plants and wastewaters disposal facilities on a concession basis.

### **Road and Highways**

The national road network is suffering under the strain of increased user demand and failing government budgets for maintenance and future expansion. Private sector companies are now encouraged to build, fund and operate new existing roads on either a real shadow toll basis using public authority concessions.

### **Light rail and metro systems**

PPP has delivered new tram and metro systems for a number of major UK cities with several more currently under construction or negotiation.

### **Healthcare**

Private sector companies and public authorities are entering into PPP where concessions are granted to private sector consortium to design, build/refurbish, and finance/maintain hospitals. The private sector is the provider of non-clinical services to the hospital i.e. provision and employment of cleaners, porters and security personnel.

## **Education**

Private sector companies are designing, building, financing and maintaining schools and colleges. As with healthcare, the private sector is the provider of ancillary services to school i.e. provisions and employment of cleaners and security personnel.

## **IT**

There have been several large IT PPP projects which have delivered mixed results. The IT sector has proven to be a particularly difficult sector for PPP for a number of reasons but the private sector involvement on a PPP basis is a necessary requirement if governments are to have the use of latest technology both in terms of IT hardware and software.

## **Government Accommodation**

PPP has played a major role in the modernization and maintenance of government offices and accommodation. Private sector consortia have successfully upgraded and refurbished government offices on a PPP basis with facility management services providing a long term answer to ensuring civil servants throughout the UK work in modern, clean and safe working environments.

## **Defense**

PPP has a central role within the defense sector which has often been at the forefront of PPP innovation and pathfinder project. In the UK the private sector has successfully worked within the Ministry of Defense.

## **Prisons**

The private sector has been active in the financing, design, construction and operation of new existing UK prisons. The template for a private sector involvement within UK prisons has been successfully exported abroad.

## **Value for Money**

- PPP should be used only if they provide better value for money than traditional methods
- Value for money assessment techniques are complicated and require quality data and should be used after careful reflection
- Value for money must be a primary objective in maintaining the public interest.

PPP should only be adopted as procurement and implementation option if they are reasonably expected to deliver enhanced value for money over traditional methods. Value for Money Assessment (VFM) is therefore crucial to deciding the suitability of a PPP, in general, and the suitability of a particular project design<sup>18</sup>.

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<sup>18</sup> Andersen. A, (2000), *Value for Money Drivers in the PPP*

## **Factors Determining VFM**

Factors determining value for money will vary from project to project and between different sectors. Generally PPP will generate value improvements in a number of areas including:

- Reduced life cycle costs
- Better allocation of risk
- Faster implementation
- Improved service quality

## Assessing VFM Potential

VFM generation potential should be investigated with reference to:

- The scope of the project including the balance between asset provisions and service delivery
- The potential for cost effective risk transfer, with respect to demand and residual value risk
- The scope for user charges, third party revenues and alternative asset usage that might reduce project costs

This type of information is gathered from market analysis and reference to previous projects and historical data. If these sources prove insufficient or substantial concerns exist, it may be necessary to undertake a shadow bid, which can be done in one of two ways:

- Estimating the costs savings required. This involves adding the additional cost of a PPP approach to a financial comparator, which compares the cost of PPP with the cost of delivering the project through traditional public sector procurements methods, and then making a valued judgment on the potential of the private sector to eliminate these additional costs.
- Actual Bid. This involves developing an actual bid for the PPP project and comparing it to the estimated cost of traditional public sector procurement costs.

The above concerns assessments for the potential of a PPP to generate value for money. Actual assessments can only take place at the end of the procurement stage but should be done before the conclusion of contractual arrangements<sup>19</sup>.

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<sup>19</sup> HM Stationary Office London, (2006), *Value for Money Assessment Guidance*



## **Parameters for the Final VFM Assessments**

The achievement of value for money in PPP procurement is, in part, evidenced through effective competition between potential suppliers and, on projects that involve public money, through a value for money assessments of the costs and benefits of the preferred PPP tender. The nature of the value for money assessment undertaken at the end of the procurement process depends whether the PPP is financially free standing, generates the majority of its revenues from third parties, or is reliant on public finance. The nature of the value for money assessment for each type of project is summarised below:

### **Financially Free-Standing projects**

Financially free-standing projects require the contractor to recover all costs through charges on the final users of the service. The public sector plays facilitating role but no public money is involved. It is therefore the responsibility of the contractor to determine whether the project is commercially viable and suitable for investment. The contracting authority should satisfy itself through project appraisal that a concession contract is the preferred form of PPP for the project, and that the applications of user charges is appropriate. The contracting authority should determine its preferred approach to the setting of user charges, and develop a payment mechanism that will deliver government policy, the objectives of the project and protect and protect the public interest. Value for money is achieved through competitive tendering process.

### **Concession contracts with Public Grants**

This sort of projects involve the investment of public money and there is therefore a need to ensure that the project represent the best of the public funds. For this reason the benefit gained from applying the funds to the PPP project should be compared with the benefit gained from applying them to an alternative project that would otherwise not proceed. Policy priorities will be an important consideration in this regard. Public subvention could take a number of forms, including capital grant and revenue support.

### **Project where the Public sector is the Main Financial Contributor**

In the case of projects where the public sector is the role or main funder detailed value for money assessment is recommended at the end of the procurement. The assessment should compare the costs and benefits of the preferred PPP tender with the costs and benefits of traditional procurement.

### **Elements of value for money assessment**

A value for money assessment comprises two key elements:

- Monetary comparison. Comparison of the cost of the preferred PPP tender, with the costs of traditional public sector procurement, expressed in terms of discounted cashflows over the life of the PPP contract.
- Non monetary comparison. Comparison of all the factors that are difficult to quantify in monetary terms, but their value to government and the wider public is significant. E.g. speed of project delivery, quality of service, and security of supply.

## **Parameters Required for the Monetary Comparison.**

The monetary comparison could take one of four forms depending on the characteristics of the project. The four forms of monetary comparison:

- Financial Comparator. Involving a comparison of the cost of the preferred PPP tender with the cost of delivering the project through traditional public sector procurement.
- Best availability alternative. For projects where the cost of traditional public sector procurement is difficult to determine, the cost of the preferred PPP tender should be compared with the best available alternative costing.
- Price benchmarks. Involving a comparison of the preferred PPP tender with the reliable, comparable and independent price benchmarks or unit costs.
- Comparable PPP projects. Involving a comparison of the preferred PPP tender with the cost of other comparable existing PPP projects.

## **Length of concessions**

Private operators will aim to maximize the length of concessions to safeguard their cashflow and the viability of their investment. The public sector on the other hand aims to promote open communication and fair market access, reduce the possibility of monopolies and ensure the public benefit. These objectives would suggest shorter concession agreements.

A number of considerations can be taken into account when designing concession agreements:

- At the tender evaluation stage there must firstly be a clear demonstration of value for money from a concession arrangement which should be a priority factor in approving it. It is argued that currently not enough effort is placed in identifying value for money and where further efficiency gains or cost savings can be achieved
- A common complaint of the private sector concerns the perception of fairness of concession tenders. In other words is the tender fair enough to warrant the investment in developing a tender.
- As a general rule the lower amount of risk assumed by the private party and the lower their financial contribution, the shorter should be the concession period.
- A common tool is to impose a maximum cap on user charges but to support the concessionaire's cashflow with subsidies. While this does not promote the implementation of effective tariff systems or the polluter pays principle it does allow social considerations to be integrated into the financial implications of concession duration.
- Another common tool is to separate the concessionaires revenue stream between user charges and an incentive payment relate to cost savings realized through increases in operational efficiency. This allows greater justification for longer concessions because of the concessionaire is incentivized to take a long term operational approach to meet revenue targets.

## **Practical Considerations**

The development of successful PPP requires attention to a large variety of issues. As PPP is a developing concept the first stage must be to create a supporting institutional structure able to develop, guide and manage PPP on behalf of the public sector. This will entail the development of supporting and local legislation and regulations enabling PPP, the development of institutional capabilities and importantly the creation of effective management and oversight structures.

Practical issues associated with the PPP development include the following:

- Selection of the most suitable PPP structure for the local setting and project characteristics
- Developing systems and structures which reduce complexity and wherever standardize the approach
- Ensuring that the structures are manageable both in terms of size and complexity
- Ensuring that a full understanding of the timing is achieved
- The public sector should be realistic about the skills and experience it has to develop and implement PPP
- PPP must demonstrate additional value for money over and above traditional procurement systems and must be designed to maximize benefits to all parties according to their objectives
- Effective institutional and regulatory structures must be developed to manage and monitor PPP. The public sector should be clear that some control must be given to the private sector
- The paying public should be integrated into the monitoring and oversight function.
- Trust must be established between all parties if a partnership is to be created.

The following roadmap can be envisaged to the development of an effective enabling framework for PPP implementation. This

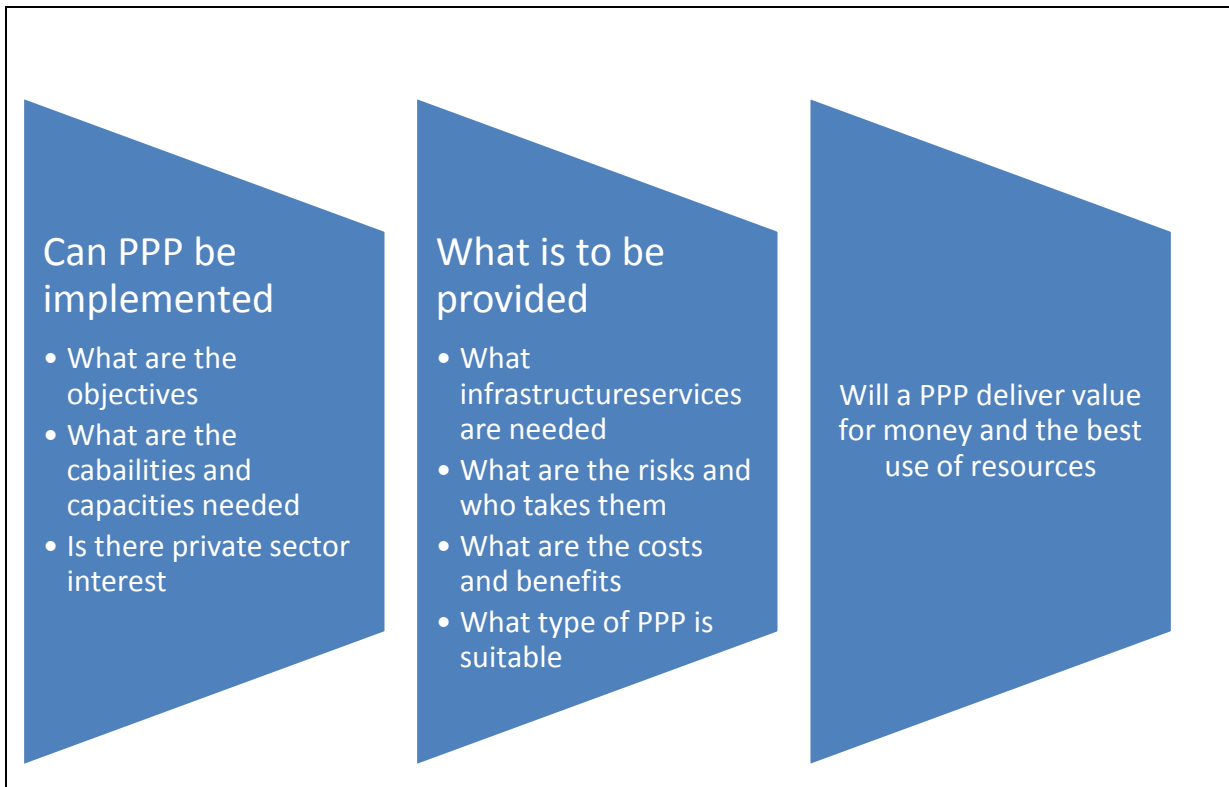


Figure 1:4 Roadmap to successful PPP development

### **PPP is not the same as privatization**

The differences between privatization and PPP are:

- Public own assets are not sold off to the private sector
- Core services continue to be provided by the public sector

### Project organisation

The organization of a PPP project centers on four main elements: the Steering group, the project manager, the project team and the advisers. A project organization could like the figure below:

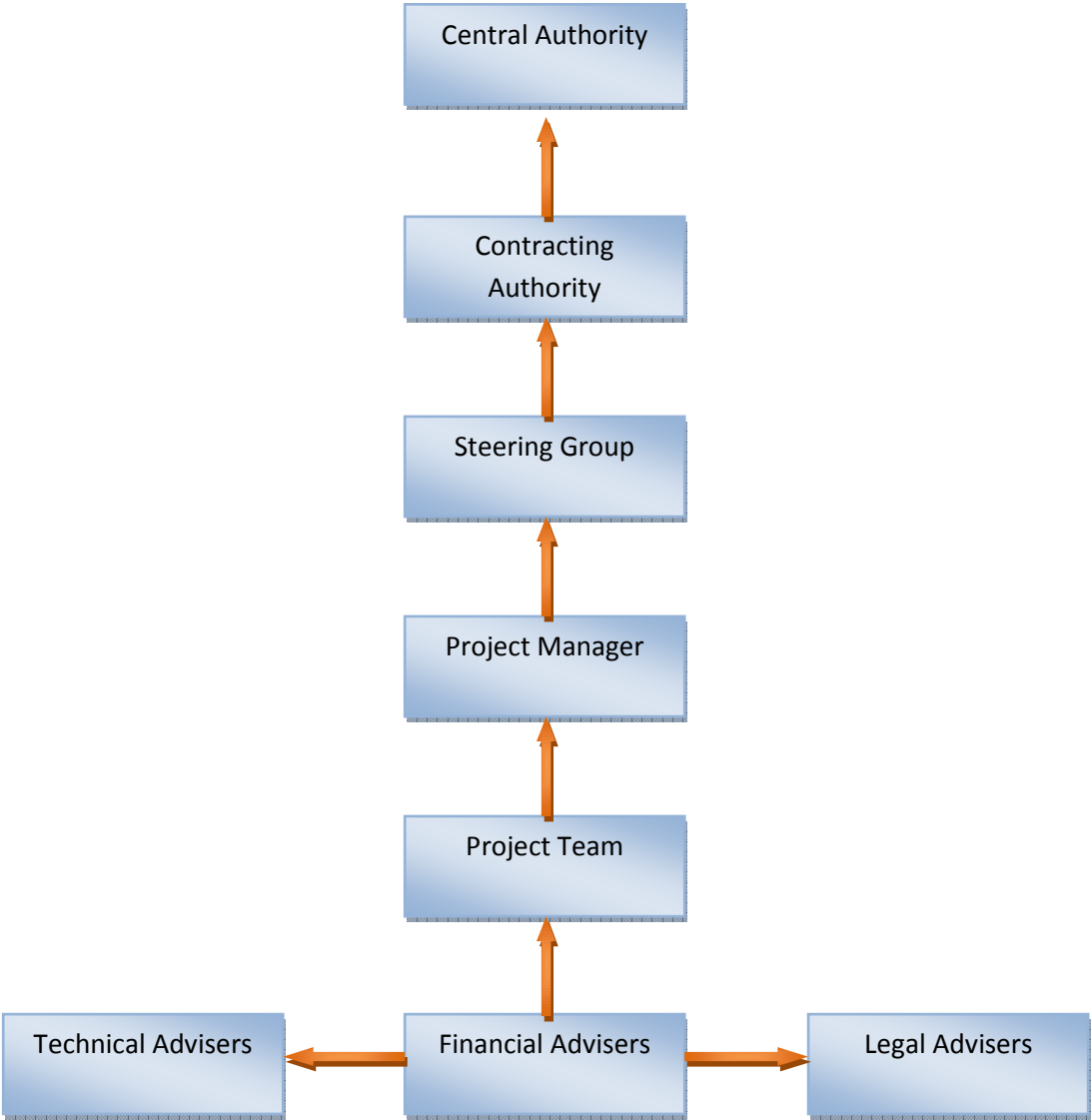


Figure: 1:5

## Steering group

A Steering group is necessary for all major PPP projects. This will be along the lines of the existing arrangements and include representatives of the central authority, the contracting authority, other local authorities involved in the project, and the project manager. Technical advisers would be required to attend and report to steering group meetings as required. The role of the steering group is to consider, analyse and resolve the range of complex issues<sup>20</sup>, which arise in the course of the planning and implementation of a PPP project, subject to a formal approval by the central authority at the appropriate stages. Among the tasks to be undertaken by the steering group are:

- To review the project initiation document and authorize the initiation of each project stage
- To review the scope and boundary of the project
- To review briefs and budgets, and to direct the procurement and appointment of technical advisers, specialists and contractors, in accordance with central authority approvals and guidelines
- To resolve procedural issues and manage the agreed work programme
- To ensure that the business and technical integrity of the project is maintained
- To review the programme and recourse plans prepared by the project manager and incorporate those of the technical advisers
- To guide and direct the project manager and project team as required
- To define and oversee the level of consultation and communication with key project stakeholders, including elected members
- To review the implementation programme, project recourses and budget updates on an ongoing basis, including actions required to meet objectives, and the need of additional central authority approvals, ensuring that project outputs are supplied within agreed cost, time and quality constraints

The steering group should consist of people who have genuine interest in the project and are able to direct the work and facilitate formal decisions relating to the project, and are committed to seeing the process through the completion. The PPP project should be established once the project has been formally approved as a PPP project. The frequency of steering group meetings will depend on the project. In the early phases, meetings might be less frequent.

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<sup>20</sup> Macdonald. M, (2002), *Review of Large Public Procurement in the UK*



## **Project manager**

The role of the project manager is to manage and coordinate the decision making by planning an appropriate process and setting up systems for providing information to the steering group. The project manager will have primary ownership of the project within the contracting authority and will drive project within that body, arranging for rapid policy decisions, implementations of procedures, and harnessing the internal resources required for the project.

Where to project is large or complex, the project manager is likely to be engaged on a single project on full time basis. Depending on the scale and complexity, the project manager should have substitute arrangements in periods of absence. A full time project manager is required for major contract involving complex technical, as well as legal and financial issues.

The project manager oversees the day to day management of the project and the main responsibilities are:

- Defining the scope of the project and the proposal phases of project activity
- Defining the objectives and responsibilities of each member of the project team
- Monitoring project progress and ensuring the delivery of all project outputs as planned
- Preparing the project evaluation review after the closure of the project

The project manager, who can be recruited internally or sourced externally on a contract basis, facilitates the communication and information flows between parties. The project manager should have a good working knowledge of the public sector systems and procedures.

An important plan task is the planning of the timetable for the entire process. A task definition, which provides a logical sequence of steps, is required with realistic timeframe allocated to each task.

## Conclusions

Procurement of infrastructure through PPP in Sweden is limited so far to one large transportation project: Arlandabanan, the railway between Stockholm and Arlanda International Airport. The new Swedish government that was elected 2006, it will probably be more PPP solutions, because of their positive attitude to alternative infrastructure finance methods. Therefore will the PPP model adjust and change shape so it can be implemented to Swedish conditions, a Swedish PPP model. This applies, for example, to the organisation for managing and controlling projects, Parliament's scope for influence and control, and the design of a remuneration system. Before such development work can be begun, formal obstacles to an introduction of the PPP model in Sweden must be further investigated. One such obstacle for example is the Road Act, which would therefore require modification. In addition, the effects on the government budget should be further analysed. The new Parliament has stated that it is urgent for alternative financing options to be examined, in order to free investment funds for other urgent projects.

On the basis of a experience review in UK's PPP solutions, the effects has been in majority positive: increased efficiency in the form of lower costs and improved quality, freeing of public funds for the future through increased cost effectiveness, better state management and control of project cost. The negative effect has been raised procurement costs. The essential difference between traditional projects and PPP are that the PPP give the private sector better incentives to perform the task well. Private companies participate not only in the financing, they participate also in the design of projects and share their risks.

The cost savings found in PPP are largely an effect of good procurement practice that has succeeded in stimulating and attracting increased international competition. One important reason for this is that the PPP model forces purchasers to take into account the entire impact of a project at an early stage. The capacity to define needs and specifications of requirements has proved open to development in PPP. On the other hand, planning and specifying projects and orders in PPP procurement have generally proved to take longer than in traditional procurement. For that reason, the costs of procurement of PPP are also higher than usual.

An indirect positive effect of projects being more numerous and brought forward, employment can increase in the construction industry and other construction dependent sectors. The more long term

savings to which partnership solutions can give rise may, for example, be used to lower taxes or extend public services.

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