

RISK MANAGEMENT IN PFI PROCUREMENT: A HOLISTIC APPROACH

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PFI is a public service delivery type of public-private partnership. The public sector PFI has been driven by a centrally adopted policy to transfer risk to the private sector. The scale and duration of PFI deals are significant, because it is the responsibility of the public sector to ensure that substantial amounts of taxpayers' money are not put at risk. Public and private sector bodies must exercise diligent care in the procurement process while negotiating contracts for PFI to ensure that project risks are fairly allocated between them. The construction industry in general has a poor reputation for managing risk and many projects fail to meet targeted schedules and cost. Systematic risk management allows an early detection of risks and encourages the PFI stakeholders to identify, analyze, quantify and respond to the risks and take measures to introduce risk reduction policies throughout the life of a PFI project. This paper will review systematic management of PFI risks and suggest that risks need to be identified and managed in all phases of the PFI procurement process.

Keywords: Concession, contract, PFI, procurement, risk, systematic assessment, uncertainty

INTRODUCTION

According to Eaton (2003) a risk can be defined as 'a potential event, either internal or external to a project that, if it occurs, may cause the project to fail to meet one or more of its objectives'. The risk therefore has two aspects:

- The expected likelihood (probability) of that event occurring; and
- The expected impact if it does occur.

Risk can arise in many ways from a variety of factors including changes in:

- Circumstances of both the context and content of the project (social, legal, economic, environmental, political, technological);
- Technology; and
- Attitude, perception and local knowledge.

Construction is a complex and dynamic industry; and the main construction procurement parameters are time, cost, quality and certainty. A managed approach to risk is a means for providing the client with fewer surprises and greater certainty. Central to all PFI transactions are the *contractual agreements* put in place between the parties in the transaction and these define each party's role making clear their expected requirements and liabilities. The contractual agreements define the apportionment of risk between the contractual parties. The incorporation of a risk register with identified risk owners as an addendum to the contracts clarifies the liabilities and responsibilities of the parties.

PFI AND RISK

A fundamental principle of a PFI project is that risks associated with the implementation and delivery of services should be allocated to the party that is best able to manage the risk in a cost effective manner. It is of the utmost importance to emphasize that the public sector should not automatically seek to transfer all risks to the contractor but the public sector should transfer a risk when it can obtain a *Value for Money* (VFM) by such a risk transfer. The intended complementary merger between the VFM objective and the idea of transferring project risk to the party best able to handle it has been seen as an ideal solution to the persisting problems of escalating costs and uncertainty in public sector capital projects (Illidge and Cicmil,2000).

The public sector (Granting Authority) in PFI has essentially shifted from provider of services to purchaser of the services. A PFI transaction is normally constructed using a Special Purpose Vehicle (SPV), which acts as the management and operating company for the project and is the legal owner of the concession that is granted by the public sector. The equity of the SPV is jointly owned by the construction contractor (D&B Contractor), service providers and the banks and lenders involved in financing the project.

A PFI project is divided into a number of separate phases and at the end of each phase an appraisal can be made and assessment of the risk involved in proceeding with the project can be established. The management of risk is therefore a continuous process and should span all the phases of the project. According to Jackson (2004) a major feature of any PFI appraisal is that risks are identified and costed. The key assumption is that the PFI process will act as a catalyst to ensure that risks are more effectively allocated between the public and the private sectors (Treasury Taskforce, 1997). The greater cost effectiveness of the private sector is specifically attributed to its capacity to manage better the risks associated with the procurement of services. This may not mean all the risk, and the UK Government has accepted the goal of optimum risk allocation, rather than transfer for its own sake (HM Treasury, 1995).

In a PFI concession, the Government's view has been that it is reasonable to expect the project consortium (SPV) to take on *systematic risk* (Gallimore *et al*, 1997). Systematic risks can be classified as economic risk, legislative risk, taxation risk and financial arrangements (ibid) although Eaton (2004) utilises the SLEEPT (Social, Legal, Environmental, Economic, Political, and Technological) as a methodology for explicating potential risk issues. The financing arrangements risk crosses the boundary between construction and operation and may persist for the life of the contract and beyond; although there has been a tendency for re-financing early in the concession period. The Consortium Company (SPV) has separate contracts, for the Construction Contractors and for the Operation and Maintenance Contractors and may have Services Contracts. The reason for this is simply to allocate risks to the party which has the ability to bear that risk.

As stated above the risk transfers are normally achieved by means of contracts. A thoroughly and correctly risk transferred PFI project has a great chance to succeed to the satisfaction of the client and of the other parties in the concession and fit to its intended purpose. Sir John Bourn (2003) reporting to UK Parliament said: '*Most construction under [PFI] is delivered on time and at the cost expected...Obtained a much higher degree of price certainty and timely delivery of good quality assets, compared to previous conventional.... projects.*'

When the UK entered into the funding of public services through PFI procurement, risk was at the centre of the discussion. There was a strong expectation that Private Finance Initiatives would allow the public sector to deliver services without risk. This expectation is largely valid for the PFI projects in UK and the private sector is expected to ensure that complex and expensive projects are managed efficiently, delivering on time and to budget; and they will ensure that risk is managed effectively. The Chief Secretary to the Treasury in UK, Paul Boateng, (2003) said that: *'We expect quality in our [projects]. We expect them to be well designed and fit for purpose-safe, practical and cost effective.'*

...we need to do everything we can...to ensure that maximum whole-life value for money is achieved.' However Eaton (2004) presented evidence that contractors and SPVs are learning the lessons of PFI management and are no longer willing to accept total risk transfer to them. The prediction is that a more balanced approach will be achieved in future.

For future PFI's it is important to understand that there are several categories of risk that accompany any PFI project. To make such a risk transfer judgement requires a broad and detailed understanding of the nature of the risk, the cost to the public sector of managing the risk, and an appreciation of the private sector's ability to manage the risk. There are a variety of risks that each PFI project faces at varying stages of the PFI projects lifecycle. These are now presented.

Risk categories and risks to be transferred in a PFI project

Risk categories

Risks in PFI projects can be categorised in a number of broad categories (Jackson, 2004).

1. Demand Risk: This risk arises from demographic changes and in participation rates;
2. Design Risk: This risk involves designing the facility in order to minimize subsequent maintenance costs;
3. Construction and Development Risks: these risks are seen in cost and time overruns;
4. Operating Cost Risks: These risks arises from an under estimation of the true costs of operating the facility;
5. Performance and Availability Risk: This risk is reflected in the penalties that will be imposed on the operator if he fails to provide a satisfactory level of service as specified in the contract; and
6. Residual Value Risk: This risk refers to the fixed price for which the asset will be sold at the end of the contract. The more specific the asset and the faster it becomes obsolete, then the greater the risk. If there are problems finding an alternative operator at the end of the contract than the residual value of the asset will be high. The worst case is that if the operator has no intention to buy the asset, then the risk will be even higher.

The above mentioned risk categories will be borne by different contracting parties in any PFI project which is detailed in the following.

2.1.2 Contracting parties risk objectives in a PFI project

A number of key areas of risk transfer noted in (Fox and Tott, 1999) are as follows:

Public Sector Risk Objectives:

Transfer of design risk: The public sector specifies the service it requires and the project company is responsible for delivering the service. Payments to the private sector against performance and/or level of performance will be defined and graded to incentives to the private sector. Achieving high standards of performance will be rewarded and poor performance will be penalised;

Transfer of planning risk: The private sector generally has wider experience in dealing with planning authorities than the public sector. Thus the public sector generally seeks to transfer this risk. Typically bankers will not be prepared to advance funds until detailed planning permission is obtained;

Completion risk: This risk encompasses a number of separate aspects such as completion on time, completion to cost and completion to quality. In essence, this risk relates to the transfer to the private sector of the risk that facilities are completed and services become operational to time, to cost and to quality;

Operational risk: The risk that facilities and services can be provided to the public authority throughout the contract term to the agreed output specification for the agreed unitary payment will rest with the private sector. The payment mechanism will comprise as an *availability element* or a *performance element* and a *volume element*;

Residual value risk: Residual value risk is the risk that facilities associated with a service will be required and will have a value at the end of the contract term. In terms of PFI philosophy this risk should generally pass to the private sector as the public sector is merely buying a service for a given period and is not concerned with acquiring the assets associated with the service. But, in practice it is no like this. In the case of the road projects no ownership interest in the road will at any point be transferred to the private sector and accordingly the ownership will return to the public sector at the end of the concession period;

Insolvency risk: The SPV in a PFI project is established with limited recourse to its consortium and will typically have no assets other than its interest in the project. Therefore the public sector's objective here will be to protect itself, both financially and in terms of ensuring the continuity of what are often vital public services, in the event of the insolvency of the private sector provider.

Special Purpose Vehicle's (SPV) Risk Objectives: (ibid)

SPV's objectives in relation to risk transfer naturally, will be the opposite of the awarding authority and a compromise has to be found in the negotiation to Project Agreement (PA). Once the risks accepted by the SPV are determined it will in turn, to seek to pass them down to construction subcontractor and operation and maintenance subcontractor and other third parties.

The Lenders' (Debt Funders') Risk Objectives: (ibid)

Most PFI projects have been financed on a limited recourse project finance basis. The most common way in which limited recourse has been achieved in PFI projects is by the private sector raising the finance being established as a Special Purpose Vehicle (SPV) which holds only the project assets and which conducts no business other than that contemplated by the Project Agreement (PA). The Financiers are granted security

over all of the SPV's assets as security for its obligations under the project documents. The primary goal of the lenders will be to ensure that the risks encountered at each stage of the project have been analysed and the liability for such risks allocated in such a way as to ensure that few if any risks remain with the SPV. The risks which money lenders require are:

Completion risk: Key areas are planning, design and construction. Until the project is completed no unitary payment is made to the project company from which to service the debt;

Operation risk: This is the most important issue of PFI. Payment is only made against performance;

Pricing risk: The lenders will require to be satisfied that the SPV's cost estimates for operating costs and capital expenditure are realistic and make satisfactory allowances for contingencies;

Revenue risk: The lenders will wish to ensure that the unitary payment is made as robust and as secure as possible by seeking to minimise and control the extent to which it can be penalised for under-performance of the SPV;

Public Sector (Awarding Authority) risk: Associated with the lenders' evaluation of the payment mechanism is the strength of the covenant of the public sector and whether it has the power to enter into the transaction and perform its obligations;

Change of law risk: The effect of change of law during the life of the project is a further matter for negotiation between parties. It is an important factor because PFI deals are comprised of a complex collection of individual contracts. Since the project organisations are subject to change of law and that it is common place to take legislative risk in both the construction and operating phases of a PFI project, the money lenders are prepared to accept the change of law and the quantum of its effect;

Sponsor/Contractor risk: A preliminary risk often assessed by the lenders is sponsor risk. A sponsor risk is the financial, management and technical strengths of the sponsor, behind the PFI project. Given the limited recourse nature of most PFI financings, the funders will want to be satisfied that the SPV has the qualifications, experience, technical competence and sufficient financial resources available to enable it to perform its obligations under the Project Agreement (PA).

Success of PFI Schemes

For PFI schemes to succeed, two main issues are essential (Gallimore *et al*, 1997):

1. The private sector must take on risks which by definition have formerly been assumed by public sector occupiers; and
2. The price of this risk transfer must not be so expensive that it prevents satisfaction of the criterion of value for the public money expended in rewarding the risk.

'There must be sufficient convergence of opinion on the level and degree of risk between the public sector purchaser and the private sector supplier to enable agreement on price to take place' (ibid). The PFI added novelty to in an increase of risks which have been highlighted above to be borne by the three main players of PFI. The payment mechanism in a PFI contract is the typical mechanism used to transfer the more common risks, to give the supplier an incentive to perform.

The optimum risk transfer mechanism will vary widely from contract to contract and between different types of PFI service. The experience in the UK suggests that the

public sector will seek to transfer design, development and operating risks in terms of both cost and performance. Demand and other risks have been most often a matter of negotiation between the service supplier and the service provider. The experience from executed PFI projects in the UK shows that the private sector is often considered to be best placed to manage the majority of risks regardless of whether this is strictly accurate. The private sector's management of the majority of risks is always dependent on the fact that the public sector's requirement is specified correctly.

MANAGEMENT OF RISK IN PFI

Risk management is not about predicting the future, but understanding a project and making a better decision regarding the management of that project tomorrow (Smith, 1999). DOE (2000) define risk management as a process of identifying the significant risks to a project, devising tactics to reduce exposure to these risks, and then monitoring the effectiveness of risk management actions undertaken. Risk management is a structured approach to identifying, assessing and controlling risks that emerge during the course of the policy, programme or project lifecycle and its task is to ensure an organisation makes cost-effective use of a risk process that has a series of well-defined steps to support better decision – making through good understanding of the risks inherent in a proposal and their likely impact. HM Treasury, the Green Book (2003).

The major feature of any PFI appraisal is that risks are identified and then quantified. There are many risks as pointed out above and risk analysis is crucial for the following reasons:

1. to prove Value for Money;
2. to prove robustness of the assumptions behind the choice of the PFI alternative;
3. risk analysis will lead into affordability assumptions; and
4. risk analysis will highlight which risks are to be retained by the public sector and which risks are to be transferred to the private sector.

Some of the risks will be dependent on others and many of the probabilities, costs and outcomes will be uncertain. The concept of identification, analysis, mitigation, and control of the risks lies at the heart of the risk analysis and management of projects.

Risk management, according to Eaton (2003) primarily has two important missions:

1. to identify the risks which comprises analysis of the likelihood of each risk event and determination of how serious the consequences might be; and
2. to identify the risk mitigation options where in each case there will be an inconvenience or cost factor and a decision will have to be made on whether mitigation is worthwhile.

Depending on the quality of information and unless all the risks are mitigated, some residual risks will remain. Those residual risks are the ones which are not avoided, eliminated or transferred in the mitigation strategy. The authors are of the opinion that risk management is a forward looking proactive process and primarily deals with risks before they become problems. It is essential that knowledge and information should be provided about predicted events in order to ease decision making in any PFI project. According to Liu, Flanagan and Li (2003) risk management can help to reduce, absorb and transfer risk and exploit potential opportunities. Mills (2001)

suggests that risk management is an important part of the decision-making process of all construction activity.

Systematic approach to effective risk management

Illidge and Cicmil (2000) say that, PFI is not a mechanistic principle based contractual agreement. PFI is a complex process and although there are many elements in its practice from the known and tested procurement paths in the construction industry it is an innovative procurement approach. The complexity of the procurement process, the financial issues and the uncertainty of events in the long-term concession period adds to the complexity of PFI risk assessment and management by all parties involved in the process.

All the stages in PFI are closely interrelated with VFM and risk transfer who constitutes the heart of the procurement. The risk perceptions in all the phases are different for the different parties. The risks must be clearly understood by all parties in order to achieve best value for the taxpayer money.

For the main objectives of the PFI process to be realised the assessment and management of risk must be understood and implemented systematically at all levels of the process.

Managing risk, in general, is an integral part of good management. Risk management strategies are fundamental to supporting sound procurement decisions and as such, a formal and systematic assessment should be a part of every PFI project.

Eaton (2004) lists the aims of risk management as following:

1. Anticipate and influence events before they happen by taking a pro-active approach;
2. Provide knowledge and information about predicted events;
3. Inform and where possible improve the quality of decision making, recognising the preferred hierarchy of risk avoidance, risk reduction, risk control, and risk acceptance;
4. Avoid covert assumptions and false definition of risks;
5. Make the project management process overt and transparent,
6. Assist in the delivery of project objectives in terms of benchmarked quality, time and cost thresholds;
7. Allow the development of scenario planning in the event of the identification of a high impact risk;
8. Provide improved contingency planning; and
9. Provide verifiable records of risk planning and risk control.

The authors believe that the key to effective risk management is ownership. The Client should own any risks that affect the business or business case e.g. those that would prevent the benefits of the project from being fully realised; the Project Manager should own any risks that might affect the delivery of the project e.g. those that affect the project schedule and, the Project Contractor should own any risks that might affect the Contractors' ability to deliver the project objectives.

Risk Management Cycle

The authors believe that risk management in PFI requires a ‘top-down’ approach; and key business risks should be identified, evaluated and managed. In a ‘top-down’ approach management should allocate time at the start to lay the foundations for the ongoing risk management process. Good risk management should have the potential to re-orient the whole PFI organisation (either public or private sector) around continuous performance improvement. The overall aim is to improve a risk culture at all levels of the respective organisations and in all phases of the PFI procurement process.

Risk assessment focuses on how risks affect objectives. The ultimate goal is the creation of an overall ‘big-picture’ of the uncertainty focusing on the public or private PFI organisations. To reach this ultimate goal the authors believe in the creation of a culture of risk awareness in the organizations. Upon creation of such awareness the data is collected and risk models will be constructed. The risk assessment will be communicated transparently within the assigned participants, with roles and responsibilities for risk assessment stipulated. Risk assessment in order to be successful for the overall aim of the PFI procurement must be embedded into the management and planning process and not carried out in isolation.

The standard risk management model according to Smith (1999) is divided into three parts:

1. Risk Identification
2. Risk Analysis
3. Risk Response

Risk Identification

According to Treasury Taskforce (1999) and HM Treasury Taskforce (1995) the first step is to compile a list of all the risks that may be relevant to a PFI project. This list will create a real register providing a means of monitoring the risk evaluation and the eventual allocation of the risk throughout the procurement will eventually build up into the risk matrix. Treasury Taskforce (1999) notes that further risks can be identified at any time during the procurement process and the aim should be to explore each of the risks in detail.

In risk identification Raftery (1994) advises to work closely with the project team and consider explicitly at least three separate areas:

1. Risks internal to the project;
2. Risks external to the project; and
3. Quality of the documentation (in anticipation of sources of claims).

Raftery’s advice is generic for all construction projects. The aim of risk identification is to generate a comprehensive list of risks likely to have a time, cost, benefit input and management impact.

Risk Analysis

Risk analysis is concerned with the tools and techniques for analysing the identified risks. Techniques such as Biological Mimicry, Fuzzy Theory, Complexity Theory, Genetic Algorithms (Eaton, 2004) and Sensitivity Analysis, Monte Carlo Simulation

and other package programs which are in use for risk analysis will not be studied in detail in this paper.

Risk Response (Risk Action)

The general guiding principle of risk response is that the parties to the project should seek a collaborative and, mutually beneficial distribution of risk. The starting point for the distribution of risk is the Contract. The responses to identified risks in a PFI project are:

1. Prevention of the risk : an action which reduces the likelihood;
2. Mitigation of the risk : an action which reduces the impact to the project should the risk occur;
3. Transfer of the risk : transfer the risk to someone who can better manage it, for example to the Project Contractor (this is normally combined with acceptance) or partner the risk;
4. Avoidance of the risk : a different course is taken so that the likelihood of the risk is reduced to zero;
5. Contingency of the risk : a contingency plan which can be brought in to play should the risk occur e.g. to deliver the business outcome (or part of it) in a different way; and
6. Acceptance of the risk: no action will be taken – the risk is accepted as it is. For example if the impact is very low.

Risk response is about enable the decision maker to make a considered response in advance of the problem occurring.

CONCLUSION

The aim of the paper was to present a holistic approach to risk management and PFI procurement.

The paper has identified risk principles and risk categories for all the participants within a PFI project. The risk management process has been developed with particular application to PFI risks.

Some new and potentially significant PFI risk analysis techniques have been identified.

A broader and more holistic view of risks is required to successfully complete a PFI project. The risks are more diverse and hence newer techniques are required to manage these risks. Translating the risk transfer awareness in PFI projects requires risk knowledge and risk knowledge allows effective risk management.

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