



## **Provision of transport infrastructure in the UK: the private finance experience**

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### **Abstract:**

The Private Finance Initiative (PFI) is a government policy that was conceived to promote private sector's involvement in the development of infrastructure services in the UK. The policy has led to the development of a new procurement system, for provision of infrastructure services. This paper provides an overview of PFI and outlines the mechanisms for its implementation in the transport sector. The paper proposes the significance of effective implementation of this policy as crucial to its success and to the provision of efficient services. It highlights some of the significant issues influencing PFI's implementation and emphasises the importance of the joint role of public and private sectors in the delivery of efficient transport services.

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## **Introduction**

Infrastructure provision has always been a primary concern to governments, this is due to the role that efficient infrastructure play in economic growth and social activity. This paper aims to outline and explore the new strategic policy for provision of infrastructure in the UK; and to deduce issues that are imperative to a successful implementation in the transport sector.

Infrastructure provision in the UK, since the Second World War, has largely been the responsibility of the public sector. Decisions relating to provision, production and finance of assets as well as the operation and maintenance of the services were taken by the public sector. Traditionally, infrastructure procurement was viewed as asset procurement. The productions of assets were procured from private sector contractors by means of competitive tendering procedure. Contractors' responsibilities for the assets cease with the commencement of the operation; where risks associated with operation of the facility became the responsibility of the public sector. Public sector procurement often failed to achieve their expected objectives due to high construction cost and time overruns, and to operational inefficiencies that is sometime attributed to poor design (Flynn, 1994).

In the recent years there has been an increasing trend of finding alternative methods of financing and providing infrastructure. There is an increasing shift towards private financing of infrastructure projects and the way infrastructure services are provided. Responsibilities for financing, producing and operating infrastructure facility have shifted from public sector to private sector. This has come about in the UK within a wider ideological setting in the 1980s that was manifested in various forms; such as, privatization, contracting out, build-operate-transfer (BOT) type arrangements

Transport Sector - in particular road sector - has taken the lead in implementing private financing arrangements in the UK. Projects like the Channel Tunnel, Queen Elizabeth II Bridge at Dartford, and the Second Severn Crossing are amongst the prominent examples of privately financed infrastructure projects in the UK. It is argued that private sector's involvement provides an alternative source of funding of projects that may not, otherwise, be developed for a long time under the traditional system of provision. The government was faced with the prospects of increasing demands for new roads, and the need to improve existing network; coupled with tight budgetary constraints. This prompted the need to seek private sector involvement in the provision and operation of road network. By the early 1990s this philosophy began to cover other sectors. In 1992 a new policy the Private Finance Initiative (PFI) was conceived to promote private sector's involvement in infrastructure and public services provision.

## **The Private Finance Initiative**

Private Finance Initiative is a policy framework that is developed to promote and encourage the private sector provision of infrastructure services. At the heart of this policy is attracting private sector **funds, management and innovation** on to the provision of infrastructure services. The policy aims at, **allocating the risk to the party that is best suited to manage it**, and demonstrating value for money for any expenditure by the public sector

One of the main objectives that underlies the PFI policy is obtaining "Value For Money" (VFM). Various mechanisms are identified as being pivotal to the delivery of Value For Money (H.M Treasury; 1995). These mechanisms are:

1. Better allocation of risk
2. Better incentive to perform
3. Close integration of service needs with design and construction
4. A clear focus on respective responsibilities of public and private sectors
5. Continuing commercial incentive
6. More potential efficiencies

PFI came about in a time when privatization was the dominant dogma. The policy provides an off balance sheet financing solution to the public sector and allows the policy of reducing the public sector borrowing requirement (PSBR) to proceed. Moreover, it frees the funds intended for the provision of services to be allocated elsewhere. PFI covers a wide range of infrastructure services; prisons, water and sewerage plant, roads and road related infrastructure, railways, accommodation, defence, higher and further education, urban regeneration, and the Government's national insurance recording system; are among others. Under PFI the private sector is required to design construct and finance the capital asset, and operate the service over a period, which could span for up to thirty years.

The mechanism used for implementing this policy is concession contracting and its variants, i.e., design-build-finance-operate (DBFO). A concession contract is a network of contractual agreement between the concession company (a purpose formed company) and the principal (government department); to finance, design, construct, operate, and maintain the facility for an agreed period called the concession period. The concession company collects revenue from tolls in order to repay the financing and investment costs and make a margin before returning the facility to the principal a fully operational facility.

PFI is a complex process where a number of entangled issues affect the way it is implemented in a particular sector and the way it goes forward. The policy was developed further by the new government (May 1997). A review of the policy, commonly known as the Bates Review, was commissioned in June 1997 and a number of recommendations were made on how to accelerate the flow of the a sound PFI. This has brought PFI into focus within a wider context of public-private partnership; serving to mobilize and enhance joint efforts in the provision of infrastructure services and effecting

a new form of procurement within the context of public private partnership. This form of procurement will be referred to throughout this paper as the public-private partnership procurement system (PPPS).

PFI is about service provision rather than asset provision. Decisions and responsibilities relating to provision and production of a service are identified and allocated. It is, therefore, necessary to define and distinguish between provision and production of services. The definition will aid in clarifying and understanding the roles and responsibilities of the public and private sectors. Provision in this context refers to the decisions made through collective choice-mechanism about:

- the kinds of services and associated assets to be provided,
- the quantity and quality of assets and services,
- the method of procuring these assets and services,
- the mechanism of reimbursing the private sector, and
- monitoring performance of the production of assets and services

Production, on the other hand, refers to decisions regarding:

- the method and arrangement of finance for these assets and services
- how to develop, that is, design and construct, the required assets
- how to operate and maintain the service

PFI correlates the level of usability, operation and maintenance issues to the design of the asset at an early stage. It aims at linking the demand for service and usage. This is achieved by considering issues of whole life costing and by integrating the operational issues in the design.

Projects may be classified, into two categories, according to the source and type of revenue (a) The financially free standing projects, where the users are charged a toll at the point of use. This has been the case for bridges and estuary crossings in the UK (b) Projects where the users do not pay for the service directly, alternatively shadow toll payments are made to concessionaire by the government on banded basis depending on volume of traffic and type of vehicles. Nine DBFO road contracts have been awarded on shadow toll basis. They vary on the degree and scale of new work and improvement work that is required.

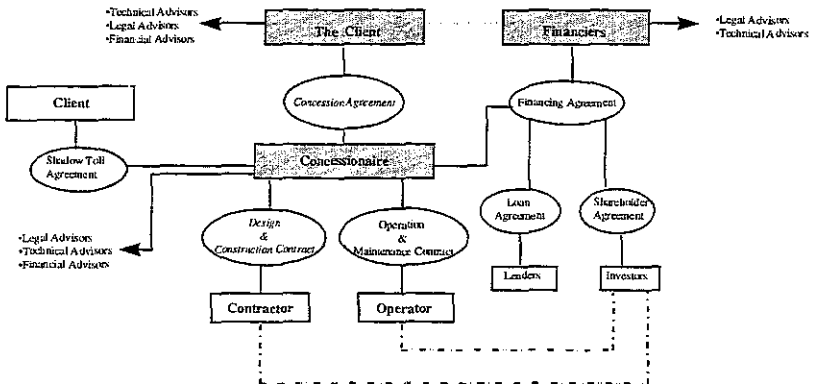
A study appraising the first eight DBFO road contracts was made by the Highways Agency and the Private Finance Panel in 1997. It has reported the success of these contracts and that they have achieved 15% savings on average in comparison to the public sector comparator (PSC). PSC is a calculation done by the Highways Agency to cost how much the public sector would have to pay to procure the construction of the relevant schemes and the operation and maintenance of the road project over 30 years, by traditional means. Another report by the National Audit Office (NAO) in 1998 on the first four DBFO roads has reported that two of the four projects studied offer substantial savings compared with the traditional process. The NAO has nonetheless warned against

spurious precision in carrying out PSC as part of tender evaluation of schemes (NAO; 1998).

The type of revenue will have various implications on the various parameters that affect the asset delivery. In the case of direct toll for example, revenue type will have implications on issues of usage and demand for the facility through the mechanism of price elasticity. It will have implications on the mode of regulating the service delivery and whether that is built in the contract or externally done through toll price regulation.

### The mechanism of implementation

The implementation of PFI policy is achieved by means of concession contracts. Emphasis is made on transferring risks and encouraging private sector's innovation. The schemes bring government departments together with construction firms, design firms, operators, suppliers, offtakers, banks, lenders, and investors. It is helpful to differentiate between active and passive players in PFI schemes. **Active players** are defined as those that are directly involved in the process. Either by being party to the concession company or by being involved as key decision maker; i.e., decisions relevant to design, construction, finance, operation. **Passive players** are those who are involved at an advisory capacity. Their contribution is, nonetheless, imperative to the success of the process. Legal advisors, financial advisors, insurance advisors, technical advisors, traffic consultants are examples of passive players. Figure (1) below illustrates the participants in concession contracts and the contractual arrangements.



Mustafa (1996)  
Adapted from: McCarthy (1991) and Merna & Smith (1993)

Figure (1) Participants In A PFI Project And The Contractual Arrangements

Under the umbrella of the concession contract lies the objective of transferring the risks associated with provision and production to the private sector. Hence, parallel to the concession agreement there is the design and construction contract, on the one hand, and the operation and maintenance contract on the other. These "sub-contracts" serve the purpose of allocating the risks to the appropriate parties best able to manage these risks. That is in addition to separating the roles of contractor and operator from that of a concessionaire and therefore guard against any possibility of role conflict

A PFI project passes through five main phases: the planning phase, the implementation phase, the construction phase, the operation phase and the transfer phase. Figure (2) shows these phases and the sectors' involvement. In the planning phase the government's department undertakes the responsibility of issues regarding provision - as defined above. It clarifies the objectives of the department and the public sector; identifies the need for the particular project; investigates the market; produces an outline plan; decide the procurement route; appoint appropriate advisors and assemble the project team. Careful project planning on part of the client is crucial to achieving public sector objectives. Only those projects that are of the scale and complexity where private sector contribution could be beneficial should proceed a long this route.

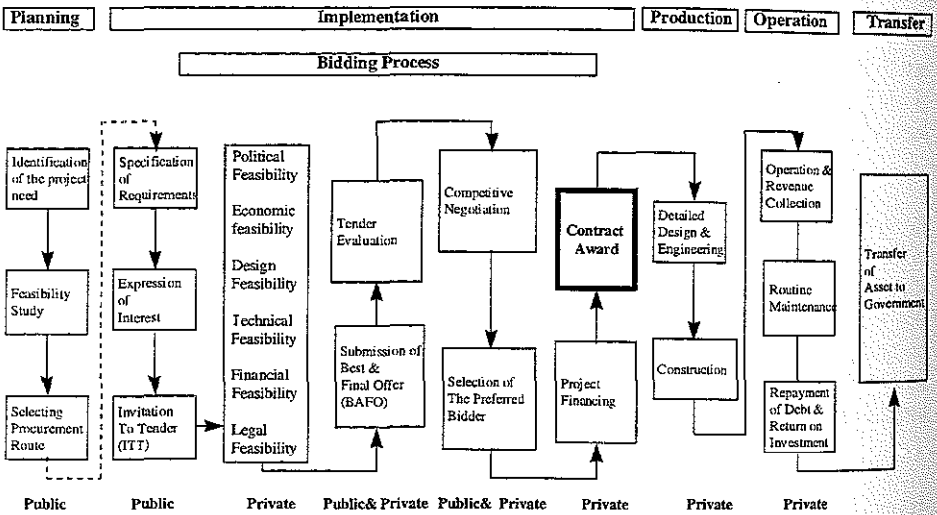


Figure (2) The Phases of a PFI Project

In the implementation phase, the client develops the output specifications taking into account the level and service requirements. A significant part of the implementation phase is the bidding process. Bidding for PFI projects follows negotiated Procedure under the European Union Procurement Rules. The bidding process brings the public sector client and the private sector consortium in bilateral negotiations, that result in the effective risk allocation. Moreover, it is the stage at which the asset and service parameters are determined. The choice of successful bid is based on the most economically advantageous offer. That is the tender that provides value for money to the client.

Following the award of the contract; detailed engineering design and construction commences under a fixed price design and build contract. All the risks associated with construction are transferred to the design and build contractor. The bidding consortia invariably include an operator who takes on the responsibility of delivering the service required by the client and carrying out routine maintenance with minimum disruption to operation. The operator is charged a pre-determined fee that is deducted from his payment, in the event of disruption to service or lane closure, due to routine maintenance or in case of an accident. At the end of the concession period the asset reverts to the public sector.

The general outline of the processes may not differ radically between projects. However, the context in which these projects exist, varies depending on the type of infrastructure, the legal framework, the operational framework, and business culture (of the country).

A crucial factor to the successful implementation of a PFI project is the way that the bidding process is designed. The design of the bidding process is influenced by two components: (a) the *structure and type of contract*. Structure, in this context, refers to way the elements of responsibilities associated with provision are integrated in a contract. That is, the scope of responsibilities passed on to the private sector; which varies with the project needs. Different scope of responsibilities has different implications. For example, allocating the responsibilities of design, construction, finance, and maintenance (DBFM) to a consortium; while retaining the operation of the facility; will have a different impact on the input parameters than that of a DBFO. The second component is (b) the *procedure*; that is the choice of mechanism by which these contracts are allocated and whether it is by means of competition, negotiation or both.

PFI is characterized by high cost of bidding. That is partly due to the fact that a consortium bidding for provision of highway services has to take into account the client's objectives, the financiers objective as well as their objectives. Hence, in order to win the contract the bid has to provide value for money to the client; offer lenders and investors a reasonable return; and maintains consortium's profitability. A diverse range of skills and professional services are required in order to achieve an outcome that satisfies the criteria of objectives.

Often lengthy negotiations and discussions between the consortium, their financiers and the client take place. The cost of professional services particularly legal cost derives up

the tender cost significantly. This is encountered both by the client and bidders. The high cost of tendering is partly due to the novelty of the process and partly a result of the two components of the process design. The cost of tendering has often acted as a deterrent to private sector from engaging in this procurement system

The PPPS is a multi-layered complex system that entails a wider range of activities and experts from cross-disciplines. PPPS brings together the efforts and resources of public sector and various private organizations to interact in a new way. It has various characteristics that differ from those of the traditional system. Figure (3) below illustrates these characteristics.

- Network of contractual agreements.
- Procurement of infrastructure services as opposed to asset procurement. The contract does not end with constructing the facility.
- The demand for the service and usage are linked.
- Change in the role of the client (DoI) from providing and producing to specifying service output requirements, facilitating, granting of concession and monitoring service quality
- Some of the government statutory power is devolved to a private organization.
- Financing ways change in four respects:
  - a) from debt financing to debt and equity financing, hence equitisation of financing of infrastructure.
  - b) identity of the borrower changes; i.e. a switch from public sector borrowing to private sector borrowing
  - c) changes in the cost of borrowing finance.
- Switch from competitive tendering to competitive tendering and negotiation

**Figure (3) The Characteristics of Provision Under PFI**



One of the basic differences between this new system and the traditional procurement system, is that, PPPS exists within a context that sets to focus the efforts, and streamline the roles of the public and private sectors in the provision of services. In contrast to the traditional system, the decisions regarding provision and production are placed with the party that is responsible to manage the associated risks. The new system differentiates the various decisions and integrates the responsibilities.

### **Operational framework for PPPS**

Various institutional options for provision of infrastructure services, that vary from mainly public sector to mainly private sector were examined, (Kessides, 1993) and (Ostrom, Schroeder and Wyne, 1993); the scope is to deliver responsibilities of planning / policy making, ownership, regulation, financing, investment and operation and maintenance for a wide range of infrastructure. The general consensus is that implementing adequate institutional arrangements should take into account: the basis of activities, characteristic of infrastructure services, the incentives provided by the various arrangements, and the issues involved in implementing the institutional arrangement, to achieve the desired outcome.

It is evident that depending on the technological and economic characteristics of the service to be provided, and the conditions for implementation within which the service is to be provided an efficient outcome could be achieved. Given that the characteristics and the conditions within the competitive environment permit, an institutional arrangement that involves both private and public sectors could provide an outcome that is more efficient than that resulting from either sectors alone. Hence, it is no longer an issue of whether it is private sector that is more efficient than public but it is an issue of relationship and framework for operating these mixed efforts.

Alternatively, rather than viewing the institutional arrangement for provision of services as a contrast between public sector and private sector, focus ought to be made on issues of complex relationships between public and private sectors and the environment in which they interact. The analysis should take into account the nature of public and private institutions. This needs to be done against the background of emerging general principles about circumstances that are more conducive to efficiency in either public or private sectors. That is, to have an appropriate incentive structure including, subjecting to competition that aligns the divergent objectives with a clear overall objective to achieve an efficient transport service.

### **Conclusions**

The increasing demand for transport infrastructure and the pursuit of budgetary constraint policies exercised by many governments in 1980s, have led to an increasing involvement of private sector in the provision and production of the required facilities. The government in the UK saw the potential for higher gains by facilitating and

encouraging private sector finance, management and innovation. This was culminated in an overall strategic policy, the Private Finance Initiative, which could serve as a powerful tool in the delivery of efficient services. The policy is still at the early stages; however, indicators of success of early projects point towards a high potential.

PFI has led to the inception of a new system of procurement of infrastructure services. A system that is complex and has a high entry cost. However, as practitioners from both public and private sectors develop the required understanding and skills, the complexity will be better understood and dealt with and the high costs of implementation will eventually be reduced. The efficiency gains and potential benefits of such undertaking could not be fully realized unless the public and private sectors' scope of beneficial contribution is identified and encouraged, not only by the policy makers but also by public and private sectors' practitioners. It is important that public and private sectors' contribution to efficiency is made in a way that enhances and encourages the efficiency of each sector.

The early experience of the UK's PFI policy in the transport sector points towards a positive potential. Its application elsewhere is feasible provided that the appropriate legal and operational frameworks exist. That is in addition to the skills of public and private sector and their willingness to be involved.

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