

IS BUILD-OWN-OPERATE-TRANSFER A SOLUTION TO LOCAL GOVERNMENT'S INFRASTRUCTURE FUNDING PROBLEMS?

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Abstract

Australian local government is experiencing funding shortfalls concurrently with increasing infrastructure maintenance and renewal requirements. Ratepayers are unwilling to bear these costs and, in many cases, local governments are restricted from raising rates beyond certain levels.

Local government has therefore considered using a variety of structures such as Build-Own-Operate-Transfer (BOOT) to involve the private sector in the delivery of many of the infrastructure related services it provides.

Where complex delivery methods such as BOOT are adopted, local government professionals may lack the experience to negotiate effectively with private sector service providers. If quality services are to be obtained at the lowest cost for ratepayers, local governments must create clear processes for awarding BOOT contracts and develop frameworks for assessing bids and allocating project risks.

Key Words: infrastructure, private finance, build-own-operate-transfer, BOOT, risk allocation, local government

Introduction

Local government in Australia provides a range of infrastructure services to the community. The actual services provided vary from state to state but include the provision of local road networks, drainage, parks and other recreational facilities, child care facilities and some health care services. In some states local government is also responsible for water and wastewater treatment and power services.

Providing and maintaining all of these services is extremely expensive. A recent report concluded that the infrastructure provided by Victorian local governments would cost approximately \$13,000 per household to replace (AMQ International, Skilmar Systems Pty Ltd et al., 1998). The report goes on to explain that, as current infrastructure assets age, the cost of maintenance rapidly increases and the need for renewal grows. This renewal cost is beyond the capacity of most local

governments to fund via current rates income.

Build-Own-Operate-Transfer (BOOT) project delivery methods have been discussed as one way for local governments to alleviate infrastructure funding difficulties but few, if any, true BOOT projects have been successful at local government level to date.

BOOT as a project delivery method

BOOT projects are a way for governments to bundle together the design and construction, finance, operations and maintenance and potentially marketing and customer interface aspects of a project and let these as a package to a single private sector service provider. In many cases the asset is transferred back to the government after a set length of time (called the concession period) at little or no cost.

There are many alternative structures for BOOT type projects. These can be chosen to suit the characteristics of the project in question. References to BOOT projects in this paper include other similar forms of project delivery.

Contract Type	Characteristics
Build Own Operate Transfer (BOOT)	The service provider is responsible for design and construction, finance, operations, maintenance and commercial risks associated with the project. It owns the project throughout the concession period. The asset is transferred back to the government at the end of the term, often at no cost.
Build Own Operate (BOO)	Similar to BOOT projects, but the service provider retains ownership of the asset in perpetuity. The government only agrees to purchase the services produced for a fixed length of time.
Design Build Operate (DBO)	A design and construction contract linked to an operation and maintenance contract. The service provider is usually also responsible for financing the project during construction. The government purchases the asset from the developer for a pre-agreed price prior to (or immediately after) commissioning and takes all ownership risks from that time.
Lease Own Operate (LOO)	Similar to a BOO project but an existing asset is leased from the government for a specified time. The asset may require refurbishment or expansion.

Table 1 BOOT project procurement structures

The BOOT consortium: differing motivations

It is typical in BOOT projects that there is no one single entity looking to take on the project so a consortium is developed.

There will generally be a **sponsor** or lead participant in the consortium. The sponsor is often a construction company seeking work. It may also be a developer seeking to sell its investment soon after the project is commissioned, obtaining a development premium. It is less common for the sponsor to be a true, long term investor in a project.

Consortia also include those providing the funding; **debt** and **equity** providers. Debt providers are often banks but may also include the purchasers of other capital market instruments such as bonds or subordinated debt. Equity providers often include the sponsors or contractors but pure equity investors may also take part. Some debt and equity providers will have a long term view of the project, however others may seek to sell down their holdings as soon as possible.

In addition to these 'financial' members, consortia also include sub-contractors such as **operators** and **contractors**. There will also be a range of **advisers** including technical, legal and financial advisers.

It is important for governments to understand that consortia are far from homogeneous. All of these member organisations will have different, and often conflicting goals. Some will be on success fees and focussed purely on winning the bid. Others will have a long term view. Some parties may not be interested in the development opportunity at all but will be seeking purely to obtain a construction or operating contract.

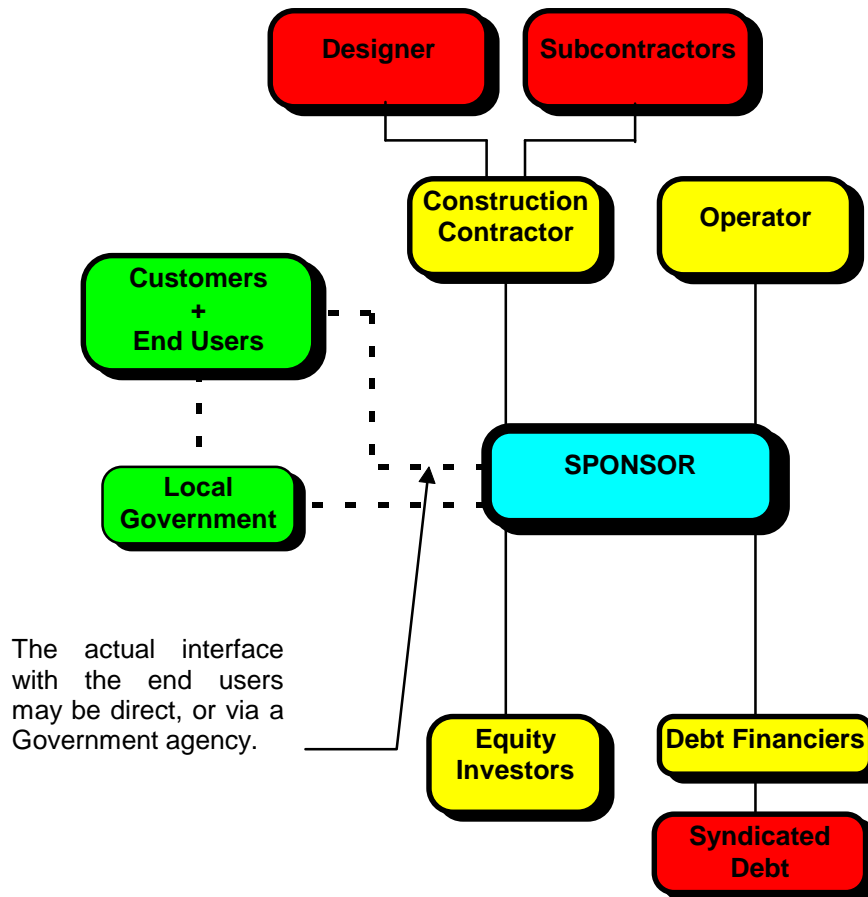


Figure 1 Typical Bidding Consortium

Costs and benefits of the BOOT procurement method

It is very important for public sector practitioners to realise that BOOT is not a panacea for all their problems, nor will it provide them with a ‘free’ infrastructure asset. There are significant benefits, which can be harnessed from utilising the private sector for project delivery, but there are also significant costs. Each project must be assessed individually in order to determine the best procurement method.

Benefits

A range of benefits may flow from involving the private sector in infrastructure provision.

Enhanced efficiency

It is commonly held that given the proper competitive incentives private sector organisations are more efficient at delivering

most services than public authorities. These efficiencies come from the greater accountability and financial discipline of private sector firms, which is underlain by the strong motive of maximising profit and increasing shareholder value.

Private sector companies often choose to adopt innovative construction techniques in order to capitalise on cost and time savings. The risk adverse public sector has a tradition of providing highly detailed specifications to contractors, which reduces the scope for innovation. This had lead to many large public projects being delivered late and above initial cost estimates.

Access to broader funding

Private sector organisations have access to broader sources of capital than governments. They can seek funding internationally and in many forms from equity to mezzanine debt

and a range of bonds to which the government does not have access. By using structured finance, private sector firms are more able to spread the risks associated with a project to investors with a matched risk profile. Governments are generally restricted to issuing guaranteed bonds and hence pass on all project risks to taxpayers.

Risk sharing

Governments are generally risk averse. One of the main benefits of any type of privatisation is that governments can separate themselves from the risks of running a business and concentrate on the regulatory and community service facets of that industry.

Ratepayers are not well placed to bear many of the business risks of infrastructure provision. Transferring appropriate risks to private providers is also likely to focus the service provider's thinking on avoiding or mitigating those risks.

Whole of life approach

Traditional models of asset procurement separate the design, construction, operation and sometimes maintenance tasks. This leads to conflict between the parties responsible for each role and inefficient outcomes.

One of the great advantages of BOOT projects and of privatisation is that a single party is responsible for designing, constructing, operating and maintaining the asset. That party is required to assess the asset on a *whole of life* basis. This means that trade-offs between investments during the various life cycle stages of the asset need to be considered.

Access to latest technology

Private sector organisations that deliver infrastructure services tend to be reasonably large and are often multinational. These firms often have extensive experience in operating infrastructure elsewhere. They may have access to operating philosophies and patented technology that would not be available to the government if the project was

undertaken within the public sector. By involving private organisations in the delivery of services, the quality and standard of those services may therefore be improved.

Economically sound decision-making

When private companies choose to invest in infrastructure, they perform detailed studies of potential markets for those services, and the costs of providing them. As a result, only projects that are expected to be financially viable proceed. In the absence of major externalities (an externality is an economic or social benefit or cost accruing to a third party, the value of which is not captured by the service provider), financially viable projects will also be economically viable (positive cost-benefit analysis). This process avoids economically unjustifiable projects from being developed due to political or other pressures.

Costs

It must be recognised that there are also significant costs that arise from involving the private sector in the delivery of infrastructure. These include high transaction costs due to complex documentation, heavy reliance on expensive legal and financial advice and any costs resulting from complex financial structuring.

Government also needs to develop the contract management skills required to manage ongoing projects and the skills for assessing tenders. This expertise may need to be bought in if it is not available 'in house'.

Finally, many BOOT projects in Australia have been criticised as a public underwriting of private profits. The key to avoiding this outcome is to ensure that all appropriate risks are transferred to the private sector under a competitive bidding process.

Suitability of BOOT for local government projects

Structures similar to BOOT projects have been used by local government in the past, particularly in areas where it is responsible for the provision of power and water related services. However most of these examples have been structured as DBO or outsourcing

projects rather than true BOOTs (which allocate business and ownership risks to the private sector). BOOT structures were successfully used by the New South Wales Government to deliver some of the recreational infrastructure required for the Sydney Olympics. In theory, there is no reason why similar structures could not be used to procure local government supplied recreational facilities.

The types of projects which local government undertakes have a number of characteristics. Relative to many infrastructure projects they tend to be smaller in size. A few years ago the Victorian Government suggested that projects smaller than \$15 million (present value of total cost) will be unlikely to receive benefits from a BOOT structure due to the large transaction costs (EPAC, 1995). They recently indicated that with greater experience this threshold has fallen to \$5 million.

Local government projects also tend to have significant positive externalities associated with them. In other words there may be significant *Community Service Obligations* (CSOs) which may cause the project to be unfinanceable without a government provided subsidy or other public sector contribution. However, the presence of a subsidy need not detract from the benefits of BOOT projects if the contract is well structured and avoids inappropriate public guarantees.

Finally, a particular local government would generally only consider a handful of projects which would be suitable for private sector participation in a given time period. This makes the bundling of small projects into one larger one difficult, but also creates difficulties for the local government to attract skilled and experienced staff, and in retaining them following completion of the project. Hence private sector organisations report large skill differentials between state government bureaucrats and local government professionals. Local governments may overcome these hurdles by combining or bundling projects across jurisdictions and sharing knowledge or 'buying in' expertise.

In order to overcome these hurdles and seriously consider BOOT project delivery, local government must focus on developing highly certain, well run processes and reducing transaction costs as much as possible. This will allow the consideration of private sector participation in infrastructure delivery and potentially lead to higher quality and lower cost services for their constituents.

Key issues to be addressed

Process issues

The private sector often spends significant capital when tendering for projects. It is up to councils to encourage prospective service providers to expend the effort required to achieve the best possible outcome. This can be done by ensuring that the tendering process is transparent and has a high degree of certainty and no probity concerns.

Bidding costs can also be reduced if councils have done sufficient work prior to going to the market, for example by clearly understanding desired service outcomes and by making feasibility studies and preliminary business plans available to bidders on a no liability basis. Councils also need to consider the type of contract they are seeking in terms of the allocation of risks and responsibilities prior to approaching the market. The fewer the number of negotiable items post tender, the lower the transaction costs.

Finally, the number of short-listed consortia should be kept to a maximum of three or four. The greater the number, the fewer advisers and consultants there are to go around and the lower quality advice available. Bidders also perceive a reduced chance of success as the number of short-listed parties rises and may put less effort into their bid.

To reduce transaction costs:

- Sufficient work by government prior to approaching the market
- Large amount of certainty that the project will go ahead
- Engage experienced advisers
- Short, sharp process
- High degree of probity
- Reasonable (real) short-lists
- Few negotiable items post bid

Figure 2 Actions for transaction cost reduction

Benchmarking

For ratepayers and local government to be certain that a BOOT project will actually achieve the best value for money they must have benchmarks against which they can assess private sector proposals. These public sector benchmarks will need to consider not just the cost for delivering the service in the traditional manner, but also the quality of the service being produced and any contingent liabilities which the council is accepting. Only by ensuring that the private sector bid equals, or betters, the benchmark on each of price, quality and risk can councils ensure that ratepayers are actually achieving value for money.

The Victorian State Government requires a detailed public sector benchmark to be constructed for each BOOT project entered into by a department or agency (Victorian Department of Treasury and Finance, 1994). Should the private sector bids not achieve the benchmark then the project will still go ahead as a publicly funded project, at the benchmark cost. The pressure of requiring departments to provide the project internally at the benchmark price (funded by budget allocations and public borrowing if necessary) ensures the rigorousness of the benchmarking process.

Benchmarks are normally constructed based on letting a design and construct contract coupled with an operating and maintenance contract. Ownership and related risks remain with the government. Major issues associated with constructing the benchmark include developing an appropriate valuation methodology for the additional risks which are transferred to the private sector in a BOOT project, and determining an appropriate *Weighted Average Cost Of Capital* (WACC) at which to discount the project costs. The WACC may normally be taken at the government (risk free) borrowing rate inflated by a risk premium appropriate for the industry in question.

The importance of well constructed benchmarks should not be underestimated - particularly for marginal projects. Councils and ratepayers need to know for certain that they are better off by utilising the private sector as a service provider. This includes understanding whether the ratepayers are underwriting any aspects of the project.

The knowledge that a rigorous benchmark exists also imposes significant pressures on private sector bidders to focus on minimising the cost of providing the service to the government while maintaining service quality and maximising risk transfer away from the public sector.

Benchmarks:

- Cost (based on D&C + O&M, require appropriate WACC)
- Quality (built in to service specifications)
- Risk (contingent liability to government)

Figure 3 Public sector benchmarks

Risk Transfer

One of the key benefits of adopting a BOOT structure for projects is the ability to transfer *appropriate* risk to the private sector.

While state governments have been criticised in the past for failing to achieve this (see for example Auditor General of New South Wales (1994)), in recent times some governments have been criticised for transferring too much risk (Arndt and Maguire, 1999).

Governments should transfer appropriate risks in order to provide an incentive to the private sector to avoid those risks if possible or mitigate their effects if they do arise. *Appropriate* risks are therefore those where the private sector is better placed to control, mitigate or otherwise manage the risk than the government.

Governments must recognise that rational private sector firms will only accept **risk** in return for an expected **reward**. There is a price associated with transferring risk to the private sector. It is therefore more efficient (in the long run) for the government to retain risks which it can better control or mitigate within the public sector. Examples of these risks (for a local government) include changes in rates and local government planning schemes, changes due to varying policy or strategic initiatives, and changes in infrastructure networks (upstream or downstream of the project). These are controlled by government (A more detailed analysis of optimal risk allocation strategies may be found in Arndt (1999)).

Risk transfer in BOOT projects has come a long way since the Sydney Harbour Tunnel in the late 1980s when the demand for the road was fully underwritten by government. In more recent projects, such as the Melbourne City Link, full demand risk has been accepted by the private service provider. This creates the incentive for them attract as many road users as possible. Significant demand risk has also been accepted by private sector firms providing public infrastructure services to the water and waste water treatment, health and even correctional industries.

It is clear that only by optimising the risk allocation for each specific project, can the most efficient project outcome be achieved. If this does not occur then ratepayers will be paying more than they need to for the services.

Optimal Risk Allocation:

- **Transfer risk where the private sector is better placed to:**
 - **Control it (likelihood or consequence)**
 - **Mitigate its effects**
- **Retain risks which are better able to be managed by government.**

Figure 4 Optimal Risk Allocation

Conclusion

Australian local government is currently experiencing significant difficulty providing infrastructure services from current rates income. This problem is expected to get worse as assets age and require renewal.

BOOT projects are a possible solution to this problem. They are particularly suitable for projects involving new construction with scope for innovation in design and operation. However, while there are benefits, BOOT projects also have significant costs associated with them.

To ensure the success of the BOOT method of service delivery local government has to reduce transaction costs and ensure that the outcomes are sustainable in the long term. This requires well run processes, robust public sector benchmarks and a sophisticated and well thought out approach to project risk allocation.

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Author Biography



Raphael Arndt is currently researching optimal risk allocation policy in private provision of infrastructure projects for his PhD in the Department of Civil & Environmental Engineering at The University of Melbourne. He has consulted on commercial aspects of BOOT projects for both the Victorian Department of Treasury & Finance and for Macquarie Bank, most recently working for one of the consortia bidding for the franchise to operate Melbourne's trains and trams. Raphael was previously employed as a consulting engineer by Ove Arup & Partners in Australia and the United Kingdom. His views on project risk allocation have been published in the Journal of Project Finance and the Australian Financial Review.

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