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Trending P3

The evolving role of value-for-money analysis in supporting project delivery selection

March 13, 2015

Executive summary

In Canada, public-private partnerships (P3s) are increasingly being used successfully to build big infrastructure projects that involve complexity and risk – everything from public hospitals to waste-water plants to roads and bridges to transit systems. P3s are a performance-based approach in which the private sector not only assumes responsibility for risks and a major stake in financing projects, but also their integrated design, construction and long-term maintenance. In fact, P3s across Canada have already been successfully used to deliver 170,000 square feet of new school space, 4,790 hospital beds, 170 court rooms, 930 kilometers of roads and other infrastructure. Their economic impact is also significant. For example, between 2003 and 2012 alone, it is estimated that P3s created more than 517,000 full-time equivalent jobs, contributing \$32.2 billion in income, \$48.2 billion in total GDP and \$92.1 billion in total output to Canada's economy.¹

P3s can be a very effective way to build and manage infrastructure, but they aren't always the right solution. In order to determine if applying a P3 model is the most effective means of delivering a project, governments conduct a range of qualitative and quantitative due diligence activities including a value-for-money (VFM) assessment. A VFM assessment is meant to quantify and analyze the cost of delivering a project through a traditional procurement model compared with delivering it as a P3. Based on this calculation, if the P3 delivery model is found to have a lower total cost than the traditional model, it is said to achieve positive "value for money."

In fact, VFM assessments are a common practice in evaluating P3 projects around the world. A recent OECD² study found that 19 out of the 20 countries surveyed undertake VFM assessments of proposed P3 projects. Standard methodologies guiding VFM assessments have been established by leading P3 jurisdictions in Canada and elsewhere.

A number of studies, in Canada and around the world, have looked at the benefits and drawbacks of P3s. There is a growing body of empirical evidence that, when used appropriately, P3s can be a very effective means of protecting the public sector from the risks associated with large project delivery. Consider these figures:

- In the UK, a 2009 report showed that 69 percent of P3 projects were delivered on time and 65 percent were delivered within budget (a rate that increases significantly to 94 percent when projects less than 5 percent over budget are included).
- In Australia, an analysis of 25 P3 and 42 traditionally-delivered projects concluded that P3s were 31.5 percent better in terms of on-budget performance and that they had an average cost escalation post-contract award of 4.3 percent compared to 18 percent for traditionally-delivered projects.
- In Canada, a 2010 Conference Board of Canada report showed that, out of 55 Canadian P3 projects, none exceeded budget; of the 19 projects that had achieved substantial completion, 17 were completed either on-time or ahead of schedule.
- At the provincial level, a 2014 report on Ontario-based P3 projects concluded that 36 out of 37 projects were completed within budget and 24 out of 37 were delivered on-time or ahead of schedule.
- An informal review of 20 traditionally procured transit projects in Canada revealed that 16 of them appeared to be behind schedule and/or over budget, with no evidence of the same for the 5 P3 transit projects identified in ReNew Canada's "Top 100 Projects" lists for the years 2007 to 2015.

And while these studies show that P3s around the world are often delivered on budget and with efficiency and innovation gains, many governments still lack key data that would allow them to more accurately compare P3s to traditionally delivered projects. As P3 delivery models become more prevalent and an increasing number of projects reach advanced levels of maturity, public sector sponsors should look to develop a disciplined, planned approach to collecting and analyzing project data and experience to understand performance with an aim to improve future project outcomes.



1 10-Year Economic Impact Assessment of Public-Private Partnerships in Canada (2003-2012). InterVISTAS Consulting. June 2014.

2 How To Attain Value for Money: Comparing PPP and Traditional Infrastructure Public Procurement. Philippe Burger and Ian Hawkesworth, OECD Journal on Budgeting, 2011.

Identifying the appropriate project delivery model for infrastructure projects

A key responsibility of governments is to facilitate investments in long-term public infrastructure projects that support economic growth and the efficient delivery of services, making the selection of which infrastructure projects to invest in arguably among the most critical decisions that governments have to make – and the most complex, given the myriad factors (demand, economic, social, fiscal, political, etc.) involved. Many governments around the world have implemented structured approaches that guide this process and ensure that business cases are comprehensive and ultimately reflective of government objectives (see Box 1 for examples).

To P3 or not to P3?

Once a specific project has been selected, a key next step is to identify the delivery model that will best address the project's objectives. While public sector entities have historically delivered infrastructure projects through "traditional" models (typically a Design-Bid-Build approach to construction with subsequent maintenance responsibilities retained by the public sector), governments are increasingly considering, where appropriate, public-private partnership (P3) models. These alternative means of project delivery involve the private sector through multiple aspects of design, construction, financing and/or long-term maintenance within a clear contractual structure intended to ensure on-time and on-budget delivery as well as long-term performance of public infrastructure assets.

The details of this process vary across jurisdictions. However, both a qualitative and a quantitative assessment are usually involved, and a wide array of criteria pertaining to the project's full lifecycle (technical, social, environmental, financial, political, etc.) may be considered.

In Canada, for example, a two-stage P3 model selection process has been established for municipalities and other entities applying for large-scale projects funding through the federal New Building Canada Fund (NBCF). This process involves an initial qualitative P3 screen to assess the high-level suitability of a P3 model, followed, if necessary, by a more detailed qualitative and quantitative P3 business case assessment. (Key features of the process are presented in Box 2.) Provincial jurisdictions in Canada and across the world apply similar approaches.

Quality first

After a project's initial suitability for a P3 is established during the early stages of project planning, further analysis is conducted to evaluate the project's more granular details and determine exactly how to proceed. A detailed model might be Design-Build-Finance, Design-Build-Maintain, Design-Build-Finance-Maintain,

Box 1

Rigorous approaches are applied to guide project selection in jurisdictions around the world

Canada

Many jurisdictions in Canada have developed specific processes for use in conjunction with the approval of an infrastructure project investment. Depending on the jurisdiction and the project, this process can be conducted by a specialized infrastructure-focused agency, the line ministry within government responsible for the asset class, or a combination of the two.

UK

The government has developed a Five Case Model framework which is systematically used to advance the development of a project concept by thinking along the lines of five key cases, namely the Strategic, Economic, Commercial, Financial and Management case for the project.

and so on. This due diligence typically involves a qualitative analysis that considers a wide range of factors that may vary across projects depending on the unique circumstances in each case and the objectives of the project's sponsor.

The types of qualitative factors examined in the assessment of the various P3 delivery models include the following:

- Project characteristics and risks;
- Project schedule and budget considerations;
- Private sector market interest and capacity;
- Political constraints and acceptance;
- Regulatory and legal considerations; and,
- Other factors such as technology and security considerations.

The qualitative analysis also requires the involvement and input of key stakeholders and subject matter experts that reflect the comprehensive nature of the factors being considered – factors that may be translated into qualitative evaluation criteria to be used in assessing the range of potential models. The expected outcome is the identification of a preferred model (or short-listed options as appropriate) for further consideration.

Value for money

A quantitative assessment of the short-listed or preferred P3 delivery model is typically completed following the qualitative assessment, and is considered in the final selection. The key component here is a **value-for-money (VFM)** analysis intended to compare the risk-adjusted costs of a potential P3 delivery model against a traditional approach in order to estimate the potential quantitative benefit of each. The use of a VFM assessment is common practice globally – a recent OECD study found that 19 out of 20 countries surveyed adopt a VFM assessment for proposed P3 projects.

VFM results are typically used to confirm that a P3 delivery model is indeed expected to achieve greater value for money. In that respect, the purpose of a VFM analysis is not to serve as a **stand-alone** decision-making tool, but rather as an important test to validate a preferred delivery model through the project assessment process.

Value for money is affected by the amount of private finance used and the amount of risk associated with a project. It is important to optimize the amount of private finance in any project to ensure that the cost of risk transfer is less than the value of the risks being transferred.

In the case of conflicting conclusions, such as a positive VFM result but a qualitative assessment that does not support a P3 delivery model, additional analysis may be required to reach a decision. For example, in these circumstances, PPP Canada suggests re-examining the qualitative analysis; if the qualitative factors are deemed to carry significant negative impact potential, then greater emphasis may be placed on them. From that perspective, it can be concluded that a project should be delivered as a P3 only if the qualitative assessment reaches a conclusion that is subsequently confirmed by a positive VFM result.

It's important to recognize that even with their increased adoption over recent years, P3 delivery models do not always represent the most appropriate delivery option. In fact, a 2013 report shows that P3s accounted for less than 12 percent of infrastructure investment in the European Union between 2006 and 2009, underscoring the criticality of project-specific assessments in the delivery model selection process.

Box 2

The P3 screen used to assess projects applying to the New Building Canada Fund

Stage 1 – P3 Suitability Screening Matrix

A P3 Screening Matrix assists project sponsors early on to identify whether or not a P3 delivery model would be suitable for delivering the project. The P3 Suitability Screening Matrix is meant to score a project against identified criteria on a scale of 1-5, calculating a weighted total score for the project. If the project scores high, it moves on to Stage 2.

Stage 2 – Procurement Options Analysis

The second stage of the process involves the preparation of a business case-like document that involves the following activities, in the order:

- Identify procurement options
- Perform qualitative analysis
- Conduct market soundings
- Perform quantitative analysis
- Develop integrated recommendation

The overall objective and outcome of this process is to identify, based on a comprehensive approach that relies on qualitative and quantitative analyses, the delivery model that best suits the project.

Risk worth calculating

As noted, VFM analysis compares the total risk-adjusted costs borne by the public sector of delivering an infrastructure project using a traditional delivery model versus a P3 delivery model. Based on this calculation, if the P3 delivery model is found to have a lower total cost to the sponsor than the traditional model (commonly referred to as a “public sector comparator,” or PSC), it is said to achieve “value for money.”

Risk analysis

Key inputs into the VFM assessment include project cost and financing assumptions, as well as a quantitative assessment of the impact of specific project risks under both P3 and traditional delivery models. The conceptual driver of VFM is the potential transfer and/or reduction in total risk retained by the public sector under a P3 model relative to the PSC, which if sufficiently large in magnitude would offset a P3’s typically higher financing and transaction costs, leading to positive value for money. The quantification of risk is based on estimated probability and impact values for each risk identified in the project’s risk matrix. The absence of a comprehensive database comparing traditional and P3 delivery of projects is not a barrier to sound VFM analysis. Best practice is to rely on the advice of professional cost consultants, many of whom have significant experience in both P3 and traditional delivery. The value of these risks would typically be estimated based on historical information and professional judgement to account for project-specific factors.

The risk allocation principle underlying P3 models is commonly expressed as “allocating risk to the party best able to manage it.” At a practical level, this means key risks relating to on-time and on-budget project delivery (e.g., design coordination, construction management, etc.) are transferred to the private sector and underpinned by a “payment on performance” regime that is a key defining feature of P3s.

What is critical to acknowledge in any large and complex infrastructure project is that there are significant risks. Proceeding with such projects with assumptions that risks will be avoided or will never materialize is contrary to best practices. What is prudent is to assess risks, determine the best project delivery model and amount of private financing to manage them, and ensure that the approach to risk transfer delivers positive value for money for governments.

Consistent methodologies

Leading P3 jurisdictions around the world have been successful in establishing clear methodologies to guide the application of VFM analysis in support of their P3 programs. In Canada, the VFM assessment process is very well established. The procurement agencies leading the largest P3 programs in the country – Infrastructure Ontario

and Partnerships British Columbia – each has a published guide that details the methodologies employed in their VFM assessments and both issue public project reports that present the VFM results for all projects they undertake. Research by the Conference Board of Canada found that the leading jurisdictions in Canada (Ontario, B.C., Alberta and Quebec) have all developed a rigorous VFM methodology. At the federal level, PPP Canada does not have a specified methodology for VFM assessments but does require project sponsors to use established methodologies applicable to their jurisdictions, such as those developed by Infrastructure Ontario and Partnerships British Columbia.

Jurisdictions with large P3 programs also continuously evaluate the performance of projects, adopting lessons learned and best practices to improve P3 delivery procurement processes, template contracts, documents and methodologies (including those applied to VFM). An example can be drawn from the UK – widely regarded as the most mature P3 market in the world. Detailed reviews of projects delivered under the Private Finance Initiative (PFI) program and subsequent assessments have led to the introduction in 2012 of an updated program, named PF2. From a VFM perspective, the quantitative assessment has been temporarily suspended and an updated methodology is being developed as part of this program update. Along similar lines, Infrastructure Ontario is conducting a refresh of its VFM methodology to reflect lessons learned from its own portfolio of projects and to align it with recent experience and the state of the P3 market. As part of this process, Infrastructure Ontario consulted with key clients and external experts to meet its objectives to be more transparent and to use information grounded in actual experience and data that is now more readily available. The anticipated result is a number of key changes being made to the VFM methodology that acknowledge the experience and innovation on past projects, and the evolving nature and continuous improvement principles inherent to the process.

Given the role of forward-looking assumptions in the VFM exercise itself, sponsors try to be as accurate and well-grounded as possible in developing robust analytical inputs. In this way, they can leverage the best available information throughout the process, including industry expert input and professional judgement. Ultimately, sponsors try to ensure that the VFM assessment, while not perfect, provides a meaningful quantitative assessment in comparing the P3 approach to traditional project delivery. While practices vary from one jurisdiction to another, it is common for project sponsors to update the initial VFM analysis developed during the business case stage with actual information available at the bid stage for further confirmation that value for money is still expected prior to the transaction’s completion.

Track record of P3 project delivery

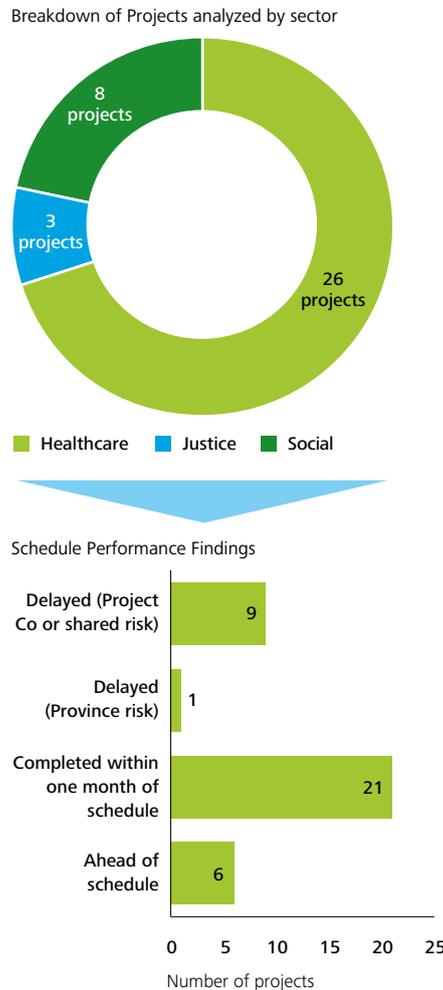
The expansion and success of P3 programs around the world has helped deliver much needed infrastructure across numerous sectors. In Canada, P3 models have been successfully used to deliver 170,000 square feet of new school space, 4,790 hospital beds, 170 court rooms, 930 kilometers of roads and other infrastructure. Beyond the assets' functional benefits, infrastructure is a major driver of economic activity and growth. In order to quantify the economic benefit of P3 projects to the Canadian economy, the Canadian Council for Public-Private Partnerships (CCPPP) commissioned research, published in 2014, suggesting that P3 projects delivered across Canada between 2003 and 2012 have contributed the following:

- More than 517,000 full-time equivalent jobs
- \$32.2 billion in income
- \$48.2 billion in total GDP
- \$92.1 billion in total economic output.

These social and economic benefits may be seen as attributable to the essential delivery of the infrastructure, not a direct benefit of its delivery through P3 projects specifically. It is arguable, however, that P3 programs (and their integration of private financing) have introduced new flexibility in public sector funding frameworks that allows for more urgently needed infrastructure investment than would otherwise have been delivered. The vast majority of information available to date indicates that, globally, P3 projects have achieved strong performance in terms of on-time and on-budget delivery – two key parameters in measuring success. Research from mature P3 jurisdictions such as Canada, the UK and Australia offers strong evidence of P3s' positive track record.

For instance, findings from the Conference Board of Canada in 2010 showed that, out of 55 Canadian P3 projects, none exceeded budget; of the 19 projects that had achieved substantial completion, 17 were completed either on-time or ahead of schedule. At the provincial level, an Altus Group report on Ontario-based P3 projects concluded that 36 out of 37 projects were completed within budget and 27 out of 37 were delivered on-time or within one month of their scheduled completion date (see Figure 1 for additional detail).

Figure 1. Schedule performance of AFP projects delivered by Infrastructure Ontario



Source: Infrastructure Ontario AFP Track Record Report, Altus Group, October 2014.

3 *10-Year Economic Impact Assessment of Public-Private Partnerships in Canada (2003-2012)*. InterVISTAS Consulting. June 2014.

4 *Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments*. Conference Board of Canada. 2010.

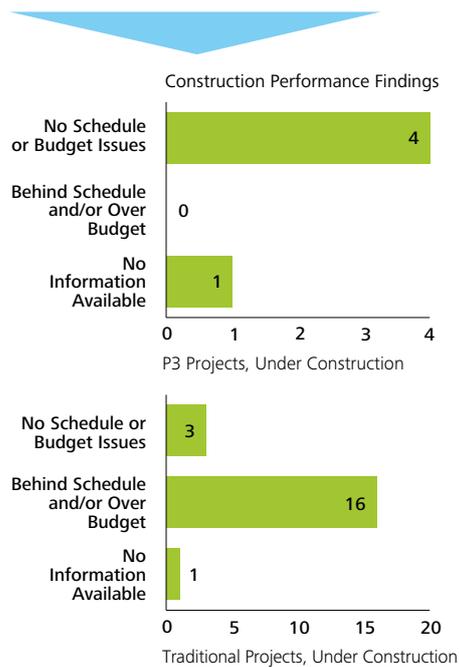
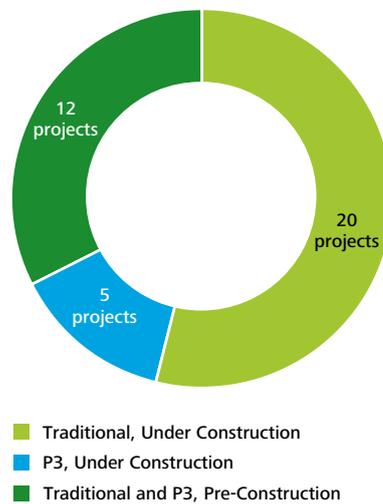
5 *Infrastructure Ontario AFP Project Track Record Report*. Altus Group. 2014.

Similar findings are evident in other jurisdictions where more robust empirical data has also been collected. In the UK, a 2009 National Audit Office (NAO) report⁶ showed that 69 percent of projects were delivered on time⁷ and 65 percent were delivered within budget (a rate that increases significantly to 94 percent when projects less than 5 percent over budget are included). Research conducted by the University of Melbourne⁸ to benchmark the performance of P3 projects in Australia relative to projects delivered through a traditional delivery model provides similar insight. Analysing 25 P3 projects and 42 traditionally-delivered projects, the research concluded that P3s were 31.5 percent better than traditional projects in terms of on-budget performance⁹ and that they had an average cost escalation post-contract award of 4.3 percent compared to 18 percent for traditionally-delivered projects.

Unfortunately, there is currently no systematic performance data tracking of traditionally-delivered projects in Canada. In an attempt to provide a general indication of the schedule and budget performance of these types of projects, Deloitte researched publicly available information on budget and schedule for a subset of traditional projects in one particular sector (public transit) to provide a non-empirical indicative comparator of performance. We identified 20 projects delivered through traditional delivery models in ReNew Canada’s “Top 100 Projects” for the years 2007 to 2015 which tracks the largest infrastructure projects across the country. Through a search of public information on these projects, we determined that 16 of the 20 appeared to be behind schedule and/or over budget.¹⁰ In contrast, using the same “Top 100 Projects” for the years 2007 to 2015, we identified five projects delivered through P3 delivery models with none showing indications of cost overruns or schedule delays (see Figure 2 for additional detail). While this research was only indicative, it is generally aligned with the empirical studies cited earlier.

Figure 2. Construction Performance of Transit Projects in Canada

Breakdown of Project By Type and Phase



Source: Projects identified through ReNew Canada’s “Top 100 Projects” for the years 2007 to 2015. Performance findings obtained through research of numerous publicly available information sources.

6 Performance of PFI Construction. UK National Audit Office. 2009. This report is similar in scope to the review undertaken by Altus Group for Infrastructure Ontario’s AFP Program.

7 In the context of the NAO report, “on-time” delivery refers to projects completed within one month of the date set out in the contract.

8 National PPP Forum – Benchmarking Study, Phase II. Report on the performance of PPP projects in Australia when compared with a representative sample of traditionally procured infrastructure projects, 2008.

9 Based on the inter-quartile for the period from initial project announcement to the actual final costs.

10 Findings are based on public information obtained through desk research of internet sources. Deloitte does not have access to data to verify these findings nor does it have insight on the accuracy of the information obtained.

Evolutionary theory

Observations from P3 projects around the world offer real insight into the performance of these projects.

As P3 delivery models become more prevalent and an increasing number of projects reach advanced levels of maturity, public sector sponsors will have greater access to real-world project data and experience – an excellent source of knowledge that can be used to feed the refinement of VFM assessments to ensure reliance on inputs and assumptions that are as evidence-based as possible. The challenge that governments in many jurisdictions face is a lack of data on traditionally delivered projects that would feed into the public sector comparator side of the VFM assessment. A structured and disciplined approach to collecting relevant performance data for traditionally delivered projects would be valuable in this regard.

Canada could benefit from undertaking the kind of comprehensive research contained in the studies noted earlier by the NAO and the University of Melbourne. While there is very good data when it comes to the track record of P3 delivery in Canada and while the anecdotal evidence would seem to suggest that the results in Canada when it comes to traditional delivery are no better than Australia's, a comprehensive database would go a long way to dispelling some of the myths and misunderstanding that can arise in the context of P3s.

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