P 3 POINT®
Public Private Partnerships

Tapping Into The Trump Induced Infrastructure Boom: Basics of Public Private Partnerships (P3s)

Presentation – iGlobal Forum
16th Real Estate Private Equity Summit
15 March 2017

Michael Palmieri
+1.415.309.5542
michael.palmieri@p3point.com

Topics

- Brief Introduction to p3point
- Introduction to Public Private Partnerships (PPP or P3)
- P3 Lessons Learned – Elements for Success
- Value for Money (VfM)

Introduction to P 3 POINT®

Public Private Partnership Strategy, Procurement, Structuring, Negotiations, Financing

Experience advising government authorities on over 70 P3 projects for over $40 billion in new capex

- Deep P3 experience and P3 expertise developed over decades of leading teams on P3 strategy, project development, procurement programs, project financings and infrastructure investment

- Key understanding of the issues that government authorities face in P3 politics, risk allocation, changes in procurement and asset ownership, project specification, operation, oversight and responsibilities

- Broad range of infrastructure sector experience brings expertise, knowledge and lessons learned that can apply to all P3 projects, ultimately saving time and costs, as well as reducing risks to projects and participants

Introduction to P 3 POINT®

Infrastructure Investment and Municipal Bond Financing

Experience on "the other side of the table" as an Infrastructure Equity Fund Investor

- Successfully led investment team, negotiated and closed private equity investments in 19 infrastructure deals (most P3) totaling $369 million of equity
- Raised $625 million of private equity infrastructure fund capital
- Helped form three successful infrastructure funds - Advised infrastructure funds on markets and investments
- Hands on experience at two leading private equity fund groups

Experience on "the other side of the table" as Banker – Municipal Bonds and Project Finance

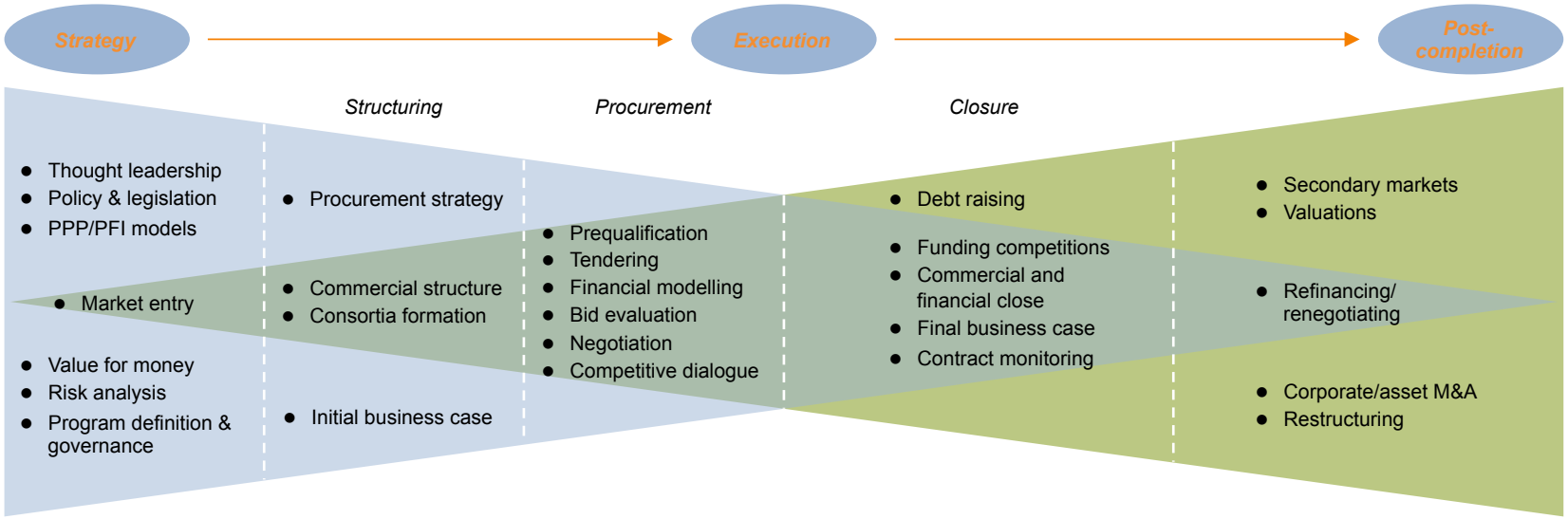
- Former pubic finance investment bankers and project finance bankers – Know how to access low cost financing and we understand the nuts and bolts of how municipal bond and project finance deals are structured, marketed, underwritten, syndicated

Introduction to P 3 POINT®
Experience Spans the Full P3 Spectrum

p3point provides strategic, financial and commercial advice to public and private sector clients on infrastructure transactions across the globe.

Service offerings cover the creation of new infrastructure and help to maximise the value of existing infrastructure assets, through refinancing and mergers and acquisitions.

Range of Experience Spans The P3 Spectrum



Overview of Public-Private-Partnerships

Public Private Partnerships (PPP or P3) is an umbrella term for many forms of private-sector involvement in the provision of traditional public-sector services.

A P3 is a set of contractual arrangements between a public agency and a private-sector entity structured to meet the need of the public by:

- Optimizing the skills and resources of each party (both public and private) in delivering a service or facility for the use of the general public

- Allocating the risks in the delivery of the service and/or facility to the parties best able to manage them

“A long-term contract between a public party and a private party, for the development and/or management of a public asset or service, in which the private agent bears significant risk and management responsibility through the life of the contract, and remuneration is significantly linked to performance, and/or the demand or use of the asset or service”.

P3s can be applied to a variety of infrastructure:

- Social or Vertical Infrastructure (courthouses, city halls, hospitals, schools, worker accommodation, prisons)
- Transport (roads, bridges, airports, rail, parking)
- Utilities (power stations, district energy, waste water and municipal waste)

P3s can be greenfield or brownfield:

- Greenfield projects with site procurement, permitting, construction, operation
- Brownfield involve redesign, reuse, permitting, construction, operation

Infrastructure Procurement Options

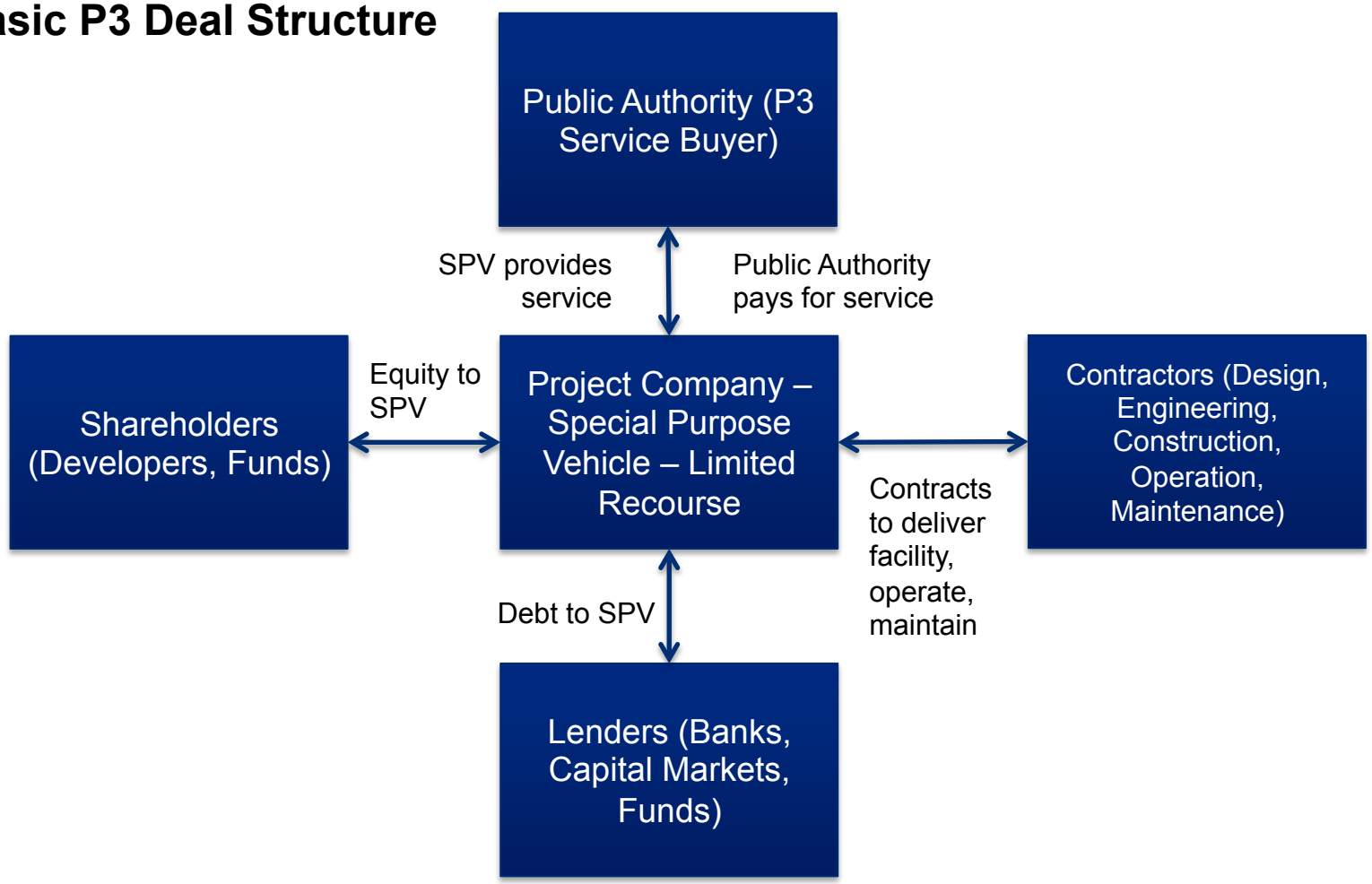
Traditional Procurement	Public Private Partnership	Privatization
The procurement of assets by the public sector using conventional design and low cost bids and paid with public sector funding (tax exempt muni bonds)	Management contract / Technical assistance Design, build, finance and transfer (DBFT) Build, operate and transfer (BOT) Build, operate and own (BOO) Design, build, finance, operate, maintain (DBFOM) Alliance	Publicly regulated but privately owned in perpetuity

P3 Characteristics

There are many P3 structures but a typical one has the following characteristics:

- Long-term output-based contractual arrangements
- Public sector retains strategic control over service delivery
- Private-sector contractor takes full responsibility and risks of delivering and operating the project (constructing, start up, operating, maintaining and hand back)
- Private-sector contractor takes full responsibility for financing (debt and equity)
- Payments are made by the public sector partner for performance and availability and in some cases usage
- Whole life costs are often minimized compared to public-sector delivery of service
- Designed to encourage the most efficient use of public-sector resources

The Basic P3 Deal Structure

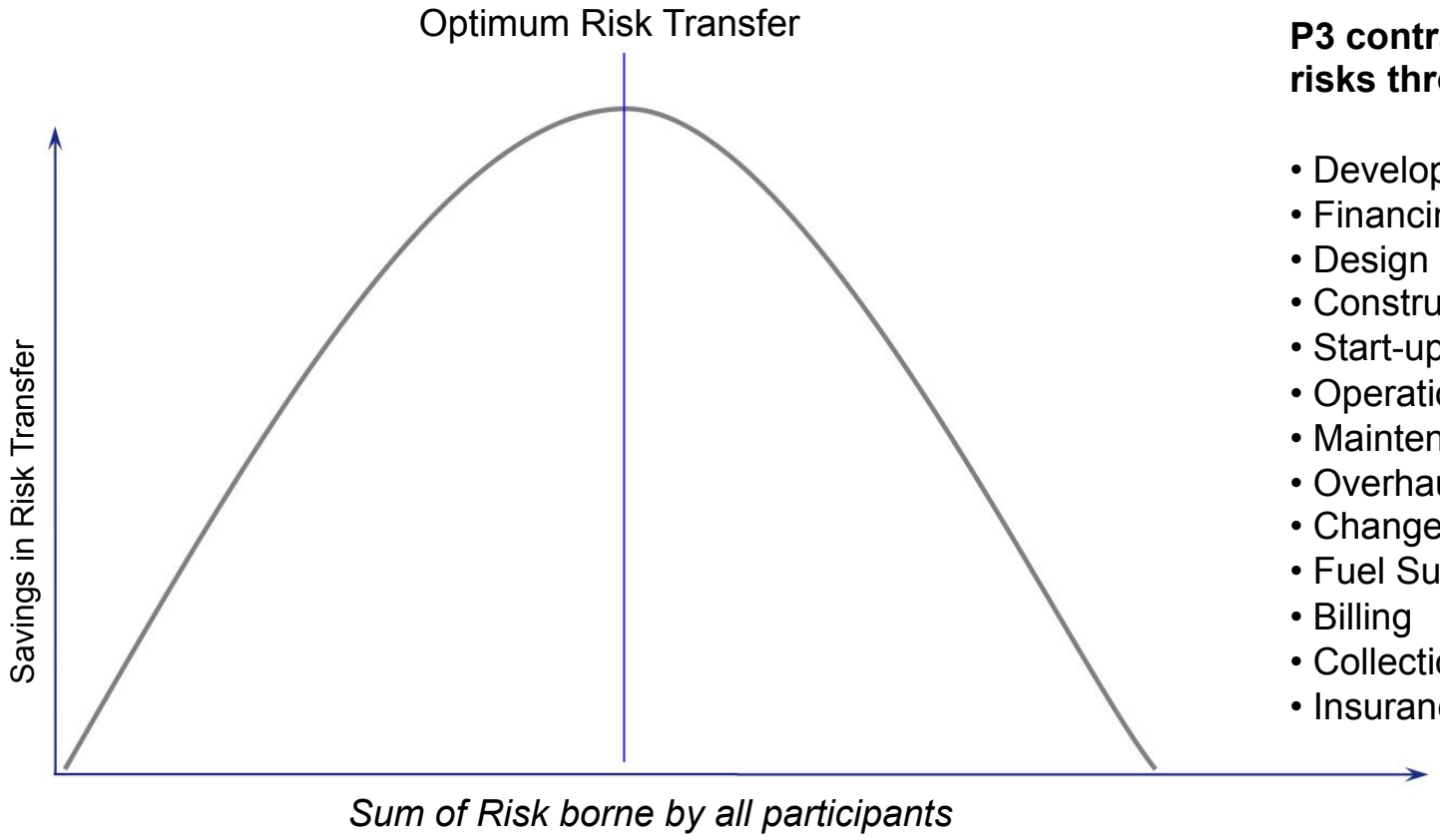


Risk Transfer in P3 Contracts

Under P3 contracts, risks are allocated through contractual structures to those parties that are best able to manage each risk.

- Only those risks that the private sector is able to manage are transferred to the private sector
- Similarly, the public sector will retain those risks that it is best placed to manage
- For some risks it may be appropriate for the public and private sectors to share the risk
- Undertaking this risk allocation process to an arrive at an optimum risk transfer to the private sector means that overall lifetime project cost can be minimized

Risk Transfer in P3 Contracts

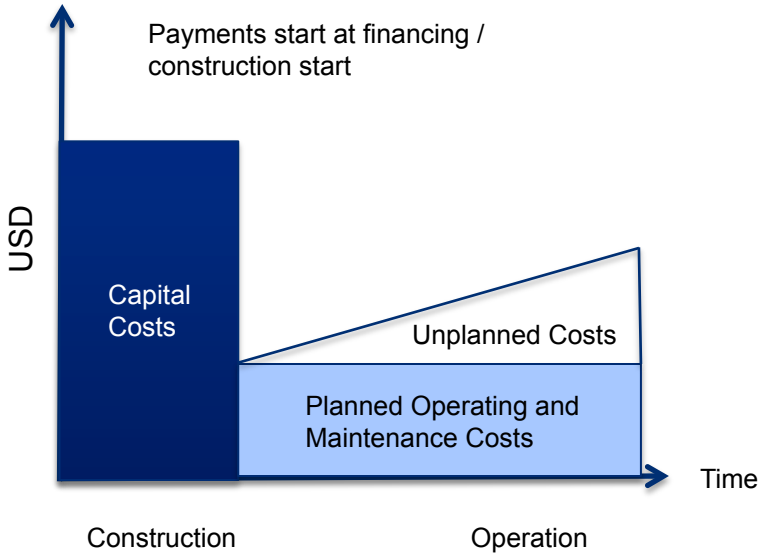


P3 contracts allocate risks through:

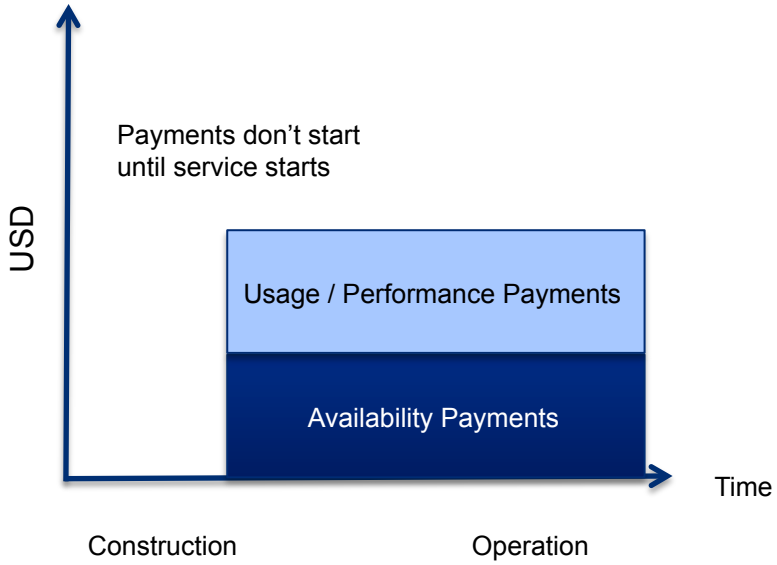
- Development
- Financing
- Design
- Construction
- Start-up
- Operations
- Maintenance
- Overhaul
- Change in Law
- Fuel Supply
- Billing
- Collection
- Insurance

Payment profile of a typical P3 project compared to Traditional Procurement

Traditional Procurement



P3 Procurement



Overview of P3 Benefits

The main benefits of P3s arise from the improved management of risks transferred to the private sector. The involvement of P3 senior lenders should ensure that all risks are identified, mitigated and managed resulting in a comparatively mature project before contract signature:

- Provides risk transfer to the private sector and maximizes use of each parties' strengths
- Provides additional sources of financing for public infrastructure projects
- Leverages third party revenue and development opportunities
- Focus on outcomes and accountability through long term contracting
- Provides contractual incentives and disincentives to help ensure high level of service and performance
- Promotes competition and performance based infrastructure development

Overview of P3 Benefits

Efficiencies in Delivery:

- P3s reduce costs and accelerate project delivery by consolidating responsibility for multiple project elements in one private entity (with conventional approaches, each element of a project is procured separately and sequentially)

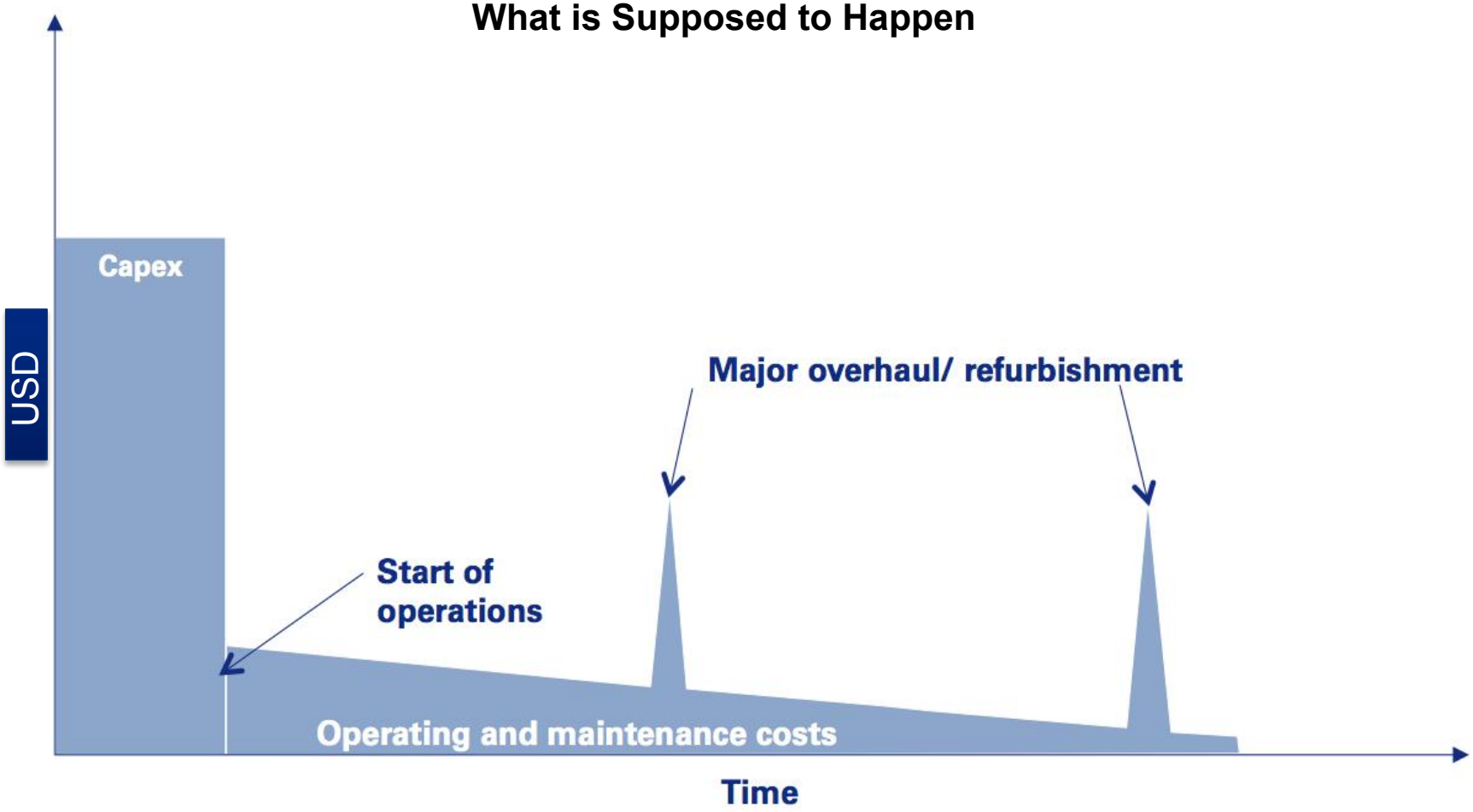
Innovation and Life-cycle Design:

- Private investors have incentives to fully capitalize a project and incorporate innovations upfront to reduce whole life costs (O&M and lifecycle costs)

- P3s encourage the private sector to come forward with creative ideas by rewarding innovation

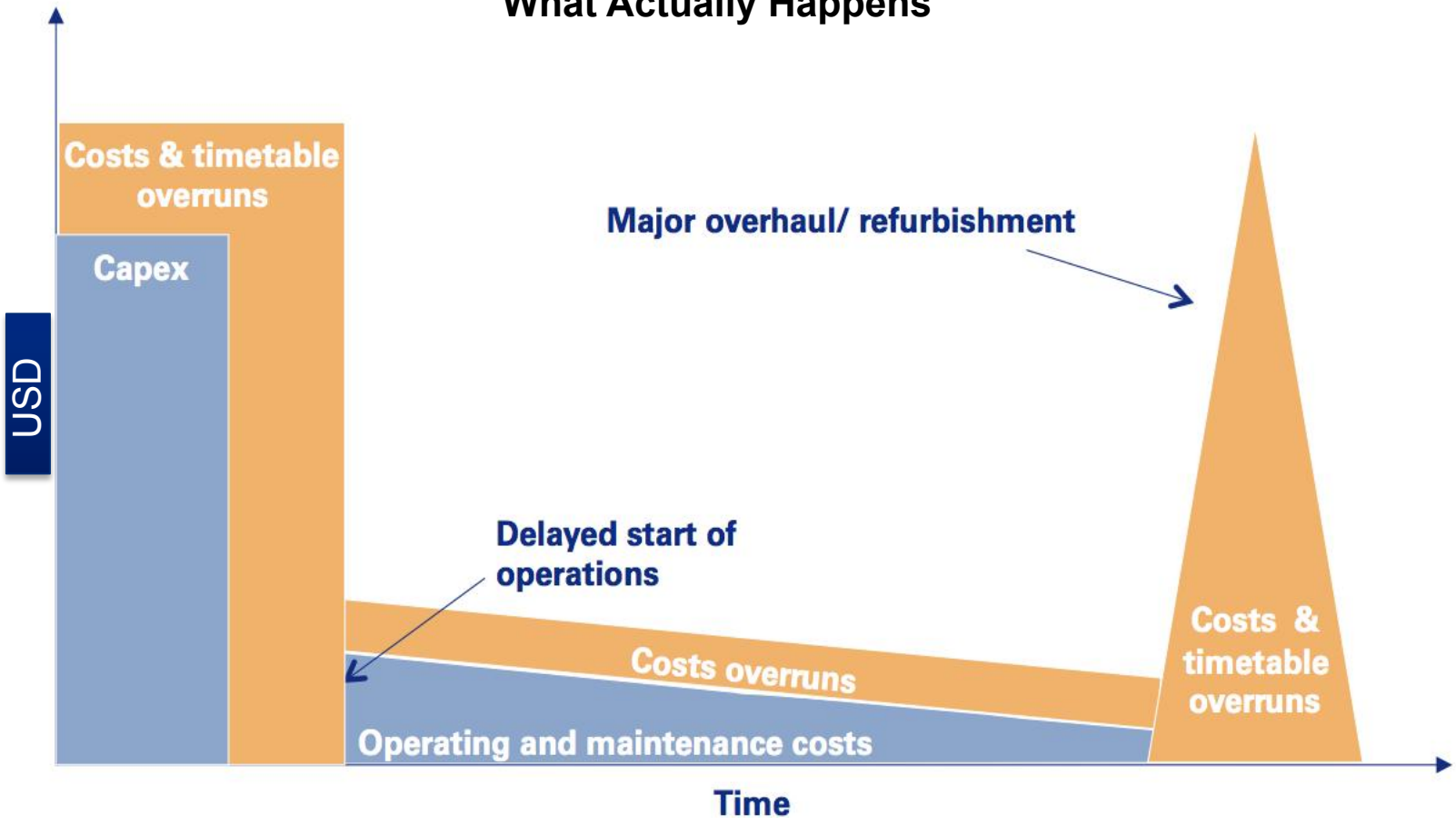
Problems with Traditional Procurement

What is Supposed to Happen



Problems with Traditional Procurement

What Actually Happens



Problems with Traditional Procurement

What Actually Happens – Poor Performance

P3 Cost and Schedule Efficiencies

Australian Academic Study - 2007

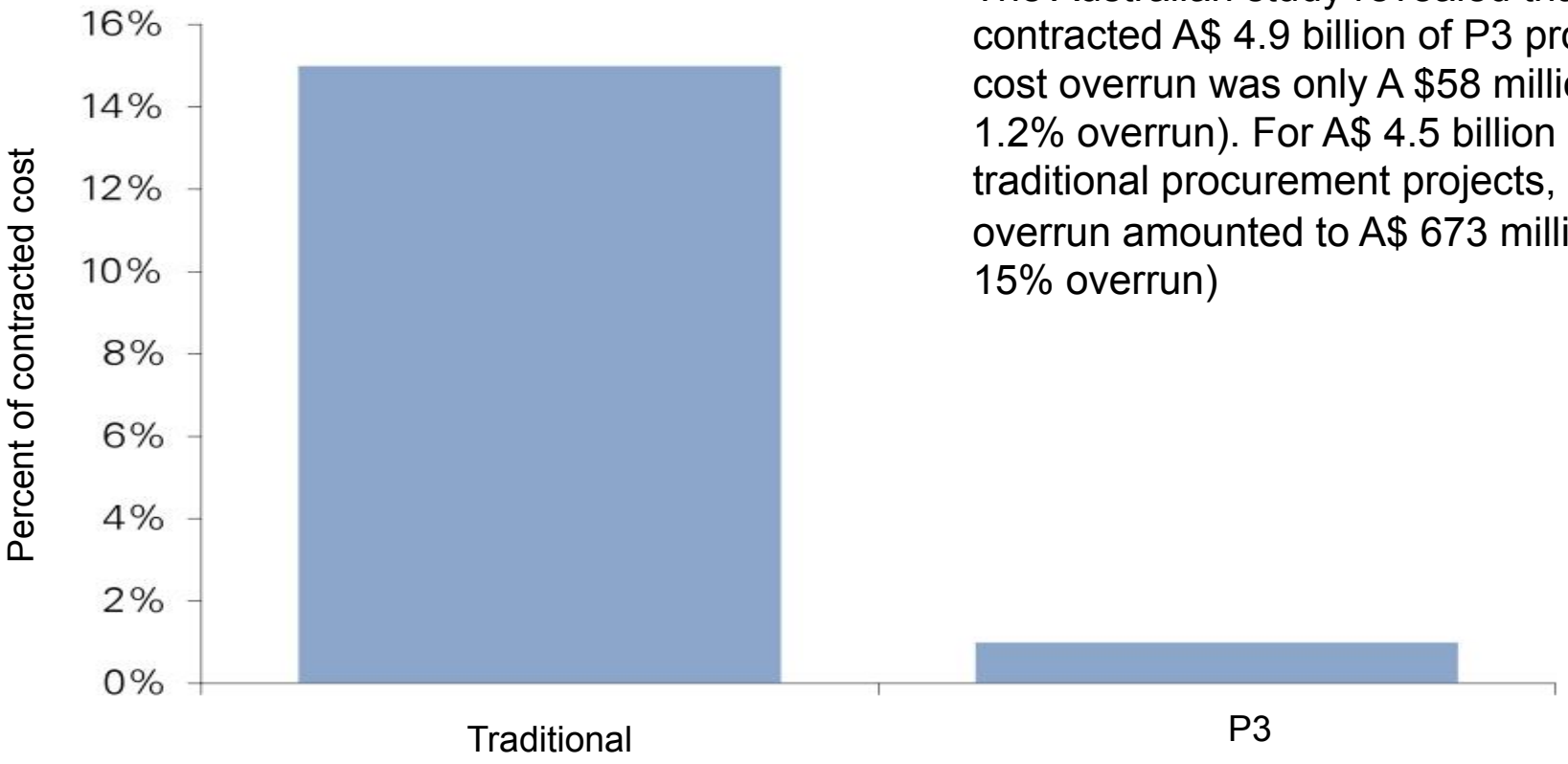
A December 2007 study by the University of Melbourne and the Allen Consulting Group of 21 P3s and 33 traditional projects in Australia, found:

- Traditional projects experienced significant cost overruns and schedule delays
- P3s were generally delivered on time and on budget

These overruns were relative to the price and timetable agreed at the time of contract signature

P3 Cost and Schedule Efficiencies

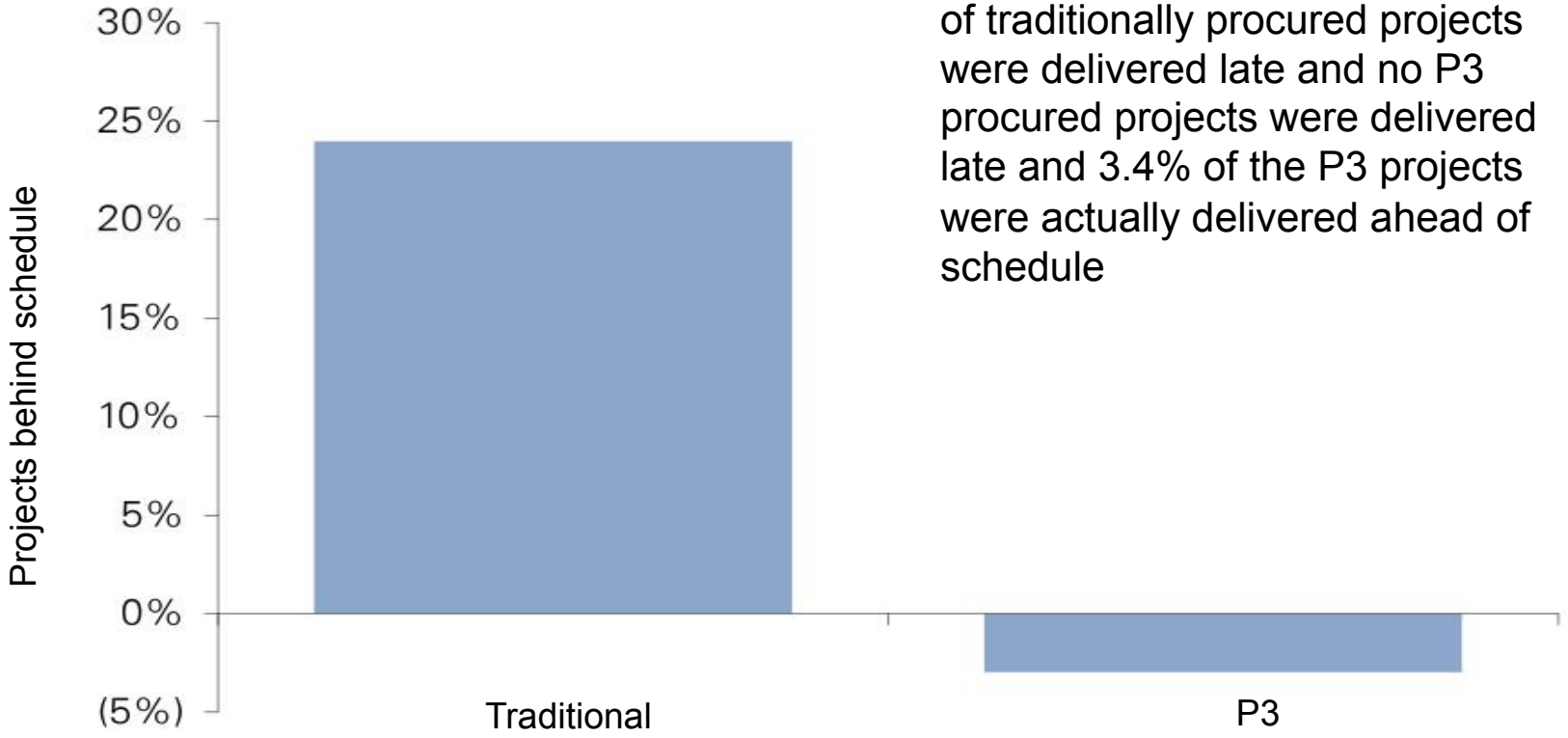
Australian P3 Study – Cost Overruns



The Australian study revealed that on a contracted A$ 4.9 billion of P3 projects net cost overrun was only A $58 million (a 1.2% overrun). For A$ 4.5 billion of traditional procurement projects, net cost overrun amounted to A$ 673 million (a 15% overrun)

P3 Cost and Schedule Efficiencies

Australian P3 Study – Schedule Delays



The study also showed that 23.5% of traditionally procured projects were delivered late and no P3 procured projects were delivered late and 3.4% of the P3 projects were actually delivered ahead of schedule

P3 Cost and Schedule Efficiencies

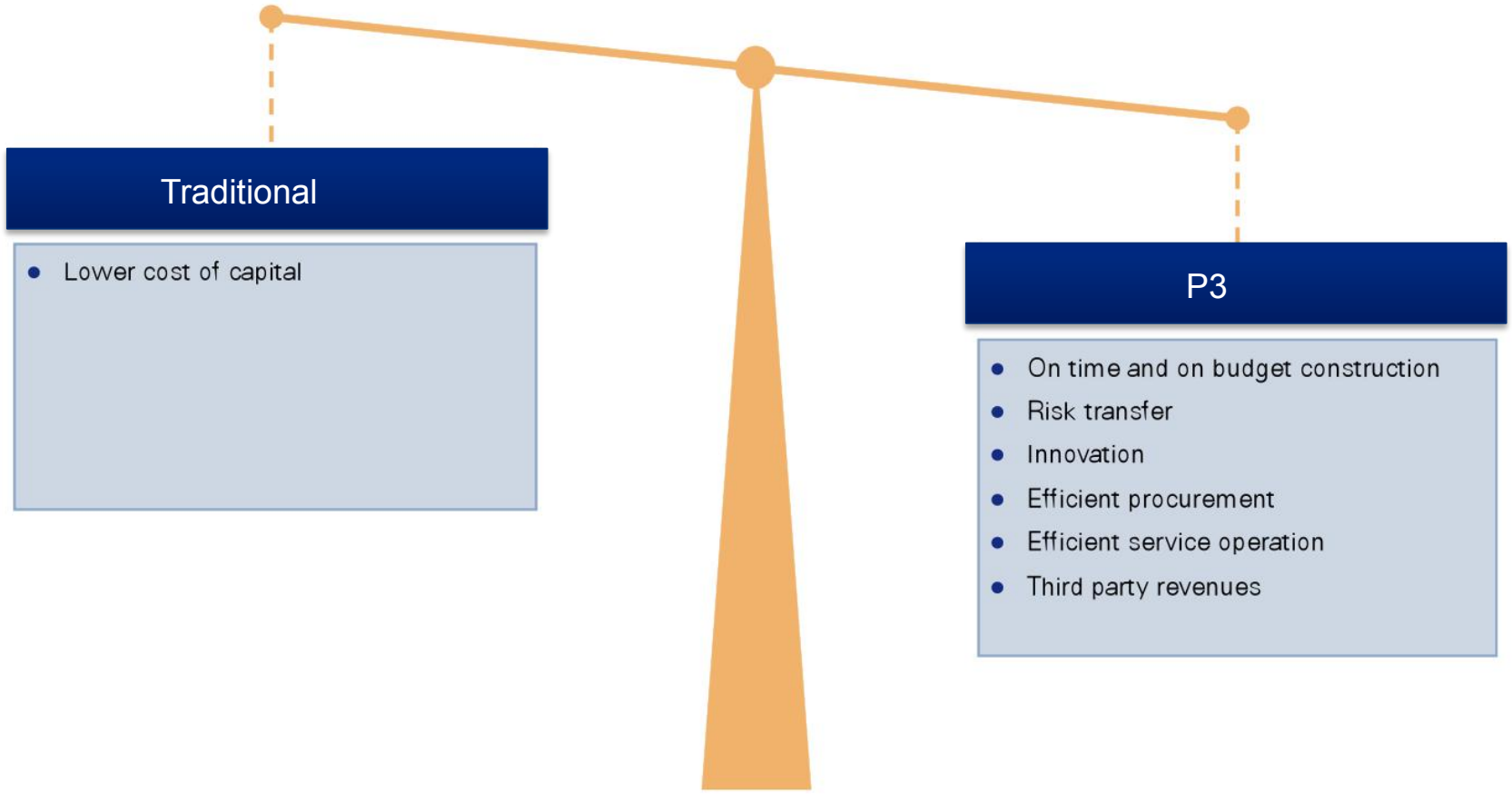
UK Government P3 Study – 2009

In October 2009 the UK National Audit Office issued a report which supported the overall conclusions of the Australian study: P3s are much more likely to be on time and on budget. The UK study consisted of 114 P3 projects and 400 traditionally procured projects.

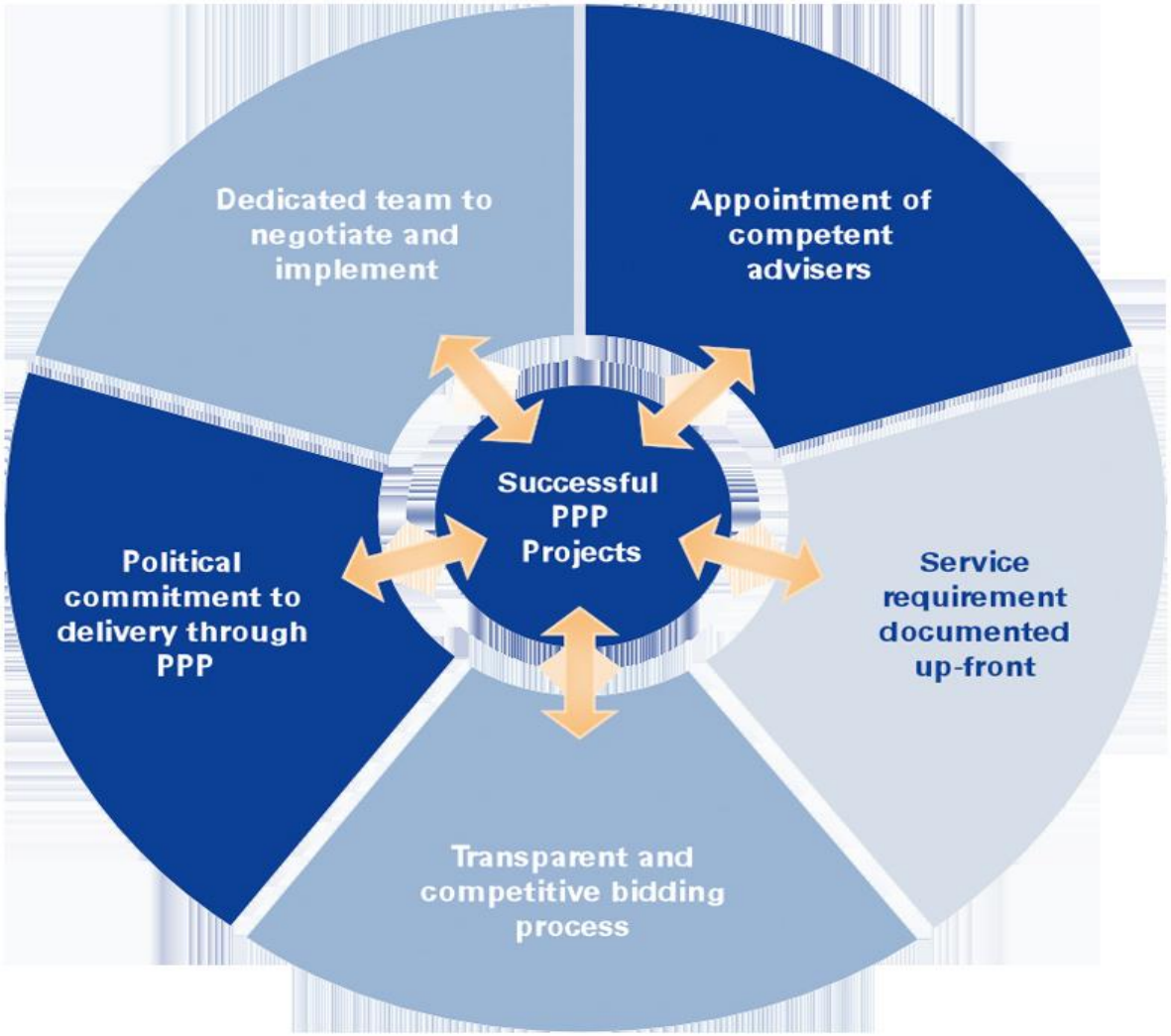
Of the 35% of the projects in the UK study that experienced cost overruns only 14.3% of these projects had cost overruns of 5% or more. **That is, nearly 95% of PPP projects have been delivered "on or close to budget".**

The HM Treasury in the UK estimate that road and prison projects undertaken through P3 have delivered average savings of 17% compared to what the costs would have been had the projects been undertaken through traditional procurement.

The Benefits of P3s Outweigh the Lower Cost of Government Financing



Success Factors for P3 Procurement



P3 Lessons Learned – P3 Projects Are Complex

Project Agreements Have Many Interdependent Elements

Success Needs a Fair Long Term Deal for Both Sides

Value for Money
Performance Requirements, KPIs
Payment Mechanism, Take or Pay Long Term Formulas
Planned / Unplanned Maintenance
Force Majeure
Termination – Payment Amounts
Termination - Fault / No Fault
Market Testing / Benchmarking
Change in Law
Equity Restrictions
Completion Definition
Change in Control

Long Stop Date
Commencement of Payments
Liquidated Damages
Performance Bonds
Parent Company Guarantees
Relief Events
Compensation Events
Insurance
Warranties
Hand-back Requirements, Procedure
Step-in Rights
Dispute Resolution
Independent Engineer

P3 Lessons Learned – Key Elements to Help Avoid Failure

Key Elements of P3s

- Legal – Laws must be in place to effectuate a P3
- Political – Project champion must lead and coalesce political constituents
- Commercial – Fair return on investment must exist even if Private Partner takes market risk
- Technical – Construction and service standards must be achievable and properly risk allocated
- Financial – Markets must be open and flexible to P3 structures, construction risk, repayment sculpting
- Advisors – Experience needed to help guide government through new process

Value for Money

- What is a VfM calculation?
- Why is a VfM made?
- When is a VfM typically done?
- How is a VfM done?

Value for Money (VfM)

What is a VfM calculation?

- **Value for Money (VfM)** is the estimated difference between the total life cycle cost of a project implemented by the government Authority (the Public Sector Comparator, or PSC) and the P3 (initially the Shadow Bid and later the P3 Bid)
- **PSC** = Estimated total costs (including adjustments for risks retained and ancillary costs) to the Authority of delivering a project using traditional procurement processes
- **Shadow Bid** = An estimate of the expected P3 bid (including financing costs) for a project

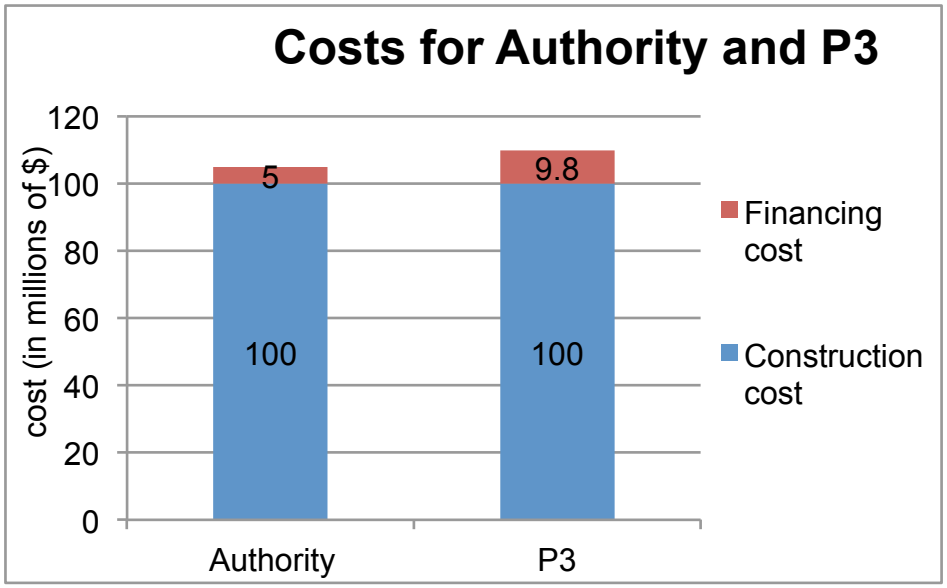
Why is a VfM made and when?

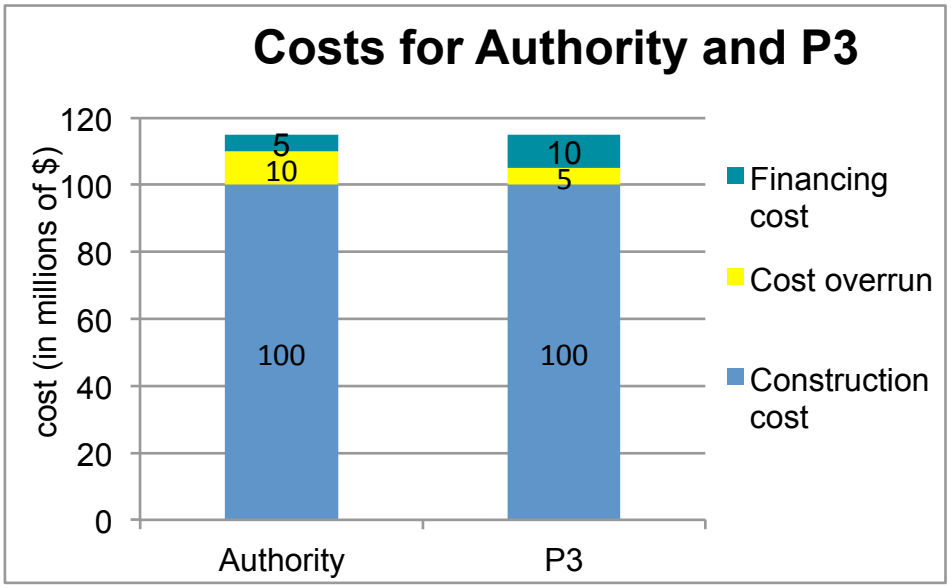
- **Before Proceeding**: VfM is done to initially to make an informed decision on whether the Authority should proceed with a P3 tender or traditional procurement for a project
- **Before Signing**: If VfM favors P3 procurement, then the VfM is run again, with actual inputs, after selection of a preferred bid to confirm the original assumption that P3 offers positive VfM and before the Authority enters into any P3 project agreement

How is a VfM done?

Assumptions:

- $100 million construction cost
- PSC - Authority cost of borrowing, transaction, fees (5%)
- P3 - financing costs, transaction, fees (70% debt at 7% plus 30% equity at 10% = WACC 9.8%)
- Cost overrun history – PSC more





Value for Money (VfM)

Whole life VfM - Because the Project is not just construction

Basic inputs to VfM calculations:

- Availability payments – P3
- Capex – DBB
- Construction oversight
- Financing costs, including fees, oversight
- Development costs
- Transaction costs
- O&M
- Major maintenance and Handback conditions
- Management during operation
- Taxes
- Risk allocations
- Discount rate and base date

Capex – why is P3 more than Traditional?

All costs are the responsibility of the P3 bidder and its finance providers, resulting in **stricter project scope definition and tighter construction management** to ensure delivery on time and on budget means:

- **More contingencies** to both reflect lack of additional funding (project financing relies on equity to suffer) plus up-front recognition of risks of cost overruns and delays
- **Additional construction oversight** and management by both the P3 equity and the project finance banks or financing sources, including more rigorous initial due diligence
- The financiers will also work to **contractually pass down** the cost overruns and schedule delays to the appropriate responsible parties because the payments by the Authority are capped subject to completion and performance contractual criteria

O&M and Handback

Because the P3 competes on whole life costs, driven by O&M and handback requirements

I**nnovation in design, operation and maintenance** (compared to standard Authority traditional methods driven simply by lowest Capex) to optimize total life cycle costs:

- **More Capex** (e.g., more insulation to reduce HVAC capex and O&M) – a calculated "investment" by the P3
- **More periodic maintenance** to ensure performance and lower operating costs

Risk allocation

Risk Matrix Summary

- Identify risks
- Allocate risks – Authority, P3, shared
- Probability of occurrence
- Quantify range of potential costs per risk
- Statistical analysis to summarize total risk quantification allocations

P3 Risk Matrix – Short Sample

Indicative Risk Allocation Matrix for Project					
Item #	Category	Description	Public	Shared	Private
0	Government Policy and Strategy				
1	Change in public sector funding policies	Risk that the method of funding the project is changed by the current or subsequent Authority	x		
	Discriminatory change in law	Risk that the Authority implements or changes laws that impact the Project	x		
	Site Risk				
2	Geotechnical	Risk that the geotechnical conditions vary from those assumed which cause construction costs to increase and/or cause construction delays			x
3	Archaeological	Risk of archaeological discoveries that cause construction cost increases or construction delays		x	
	Design & Construction				
5	Design specification	Risk that the design of the facility is incapable of delivering the required services at the anticipated cost or that there are errors or omissions			x
6	Cost overrun risk during construction	Risk that the actual project costs are higher than anticipated or budgeted and not due to Public Sector changes			x
7	Commissioning Delays				x
	O&M				
8	Higher rehabilitation and replacement costs				x
	Financing				
9	Refinancing risk	Risk that the market changes, resulting in higher than anticipated costs at the refinancing stage			x

Risk allocation

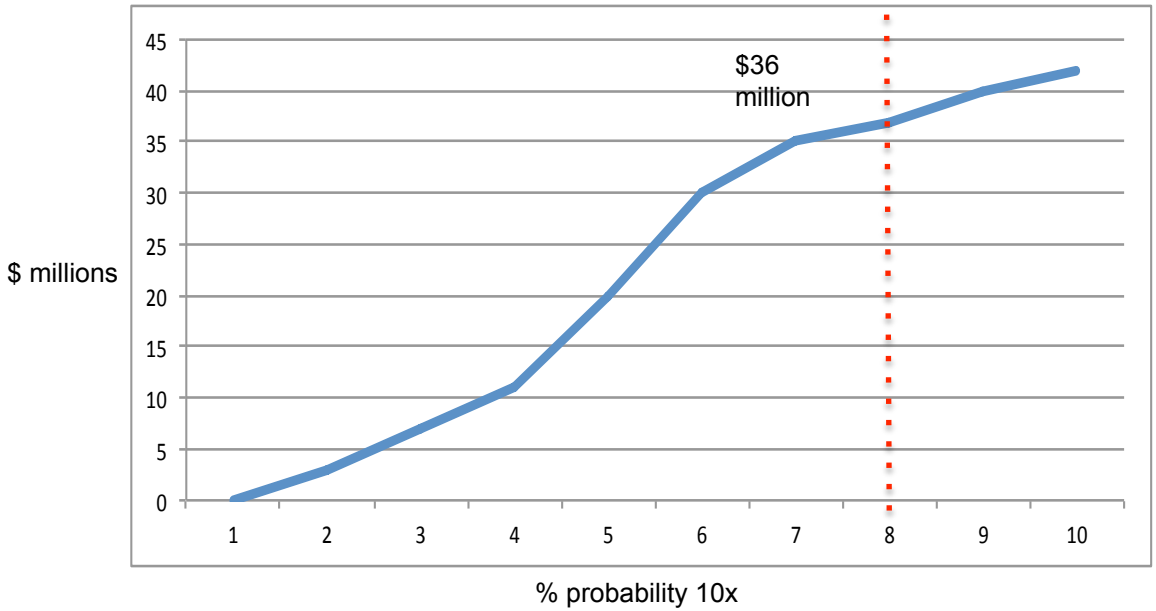
Probability and Cost of risk

	Allocation					
	Traditional			AFP		
RISK	**Pub.**	**Pvt.**	**Shrd.**	**Pub.**	**Pvt.**	**Shrd.**
Design Coordination Completeness	X				X	

	Traditional			
	Probability of Risk Occuring	Impact Range		
RISK		**10th**	**Most Likely**	**90th**
Design Coordination Completeness	90%	1%	3%	8%

Risk analysis

- Each risk has a range of potential costs but the combination of all the risks is infinite
- Statistical modeling provides a distribution of the risks which can be analyzed with confidence intervals to determine a total allocation of cost



Optimism bias

Various studies conclude optimism requiring adjustment to VfM analysis

Construction cost bias	DBB	DBFOM
Bent Flyvbjerg	32%	na
US accountability	55%	na
UK VfM giudeline	66%	na
Florida DOT	20%	5%

O&M optimism bias	DBB	DBFOM
Florida DOT	20%	5%
UK	20%	20%

Value for Money (VfM)

Discount Rate to use on NPV of Authority vs P3 cash flows?

Not the Risk Free Rate - Need to add a risk premium for Project risks, market risk, unknown risks, residual uncertainty

Various approaches:

Social Time Preference Rate – economic value now to society (UK) Federal Management Budget, Circular A-94 "Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs = Real rate of 7% plus assumed inflation 2.2% = 9.2%

Project Specific Risk – pre-tax WACC (Canada)

Differentiated Discount Rates – Capital Asset Pricing Model (CAPM), risk free plus systematic risk (Australia)

Risk	Sector	Asset beta	Real Risk Premium	Project Rate of Return
Very low	Accommodation	0.3	1.8	6.8
Low	Water, transportation, energy	0.5	3.0	8.0
Medium	Telecom, media, tech	0.9	5.4	10.4

Value for Money (VfM)

Taxes – adjustment for comparison and Authority benefits

Insurance – self insured is not free