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Global practices and insights for improving infrastructure delivery models

It's time to change the way we deliver infrastructure





Improving Delivery Models

Introduction



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Overview of Improving Delivery Models

Approach, methodology, resources, and online application



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How can we improve infrastructure delivery?



Delivering infrastructure has and always will be a challenge.

The difficulties faced with planning, procuring, constructing and operating infrastructure presents a problem that evolves with society, technology and government.

GI Hub's Improving Delivery Models initiative addresses this question in four ways:

1. Identifying and summarising delivery challenges faced by governments and industry
2. Collating and exemplifying improvements to infrastructure delivery
3. Raising awareness on the importance of delivery strategies, beyond the contractual model
4. Sharing the key functional differences and suitability of different contractual models.

Why delivery models?



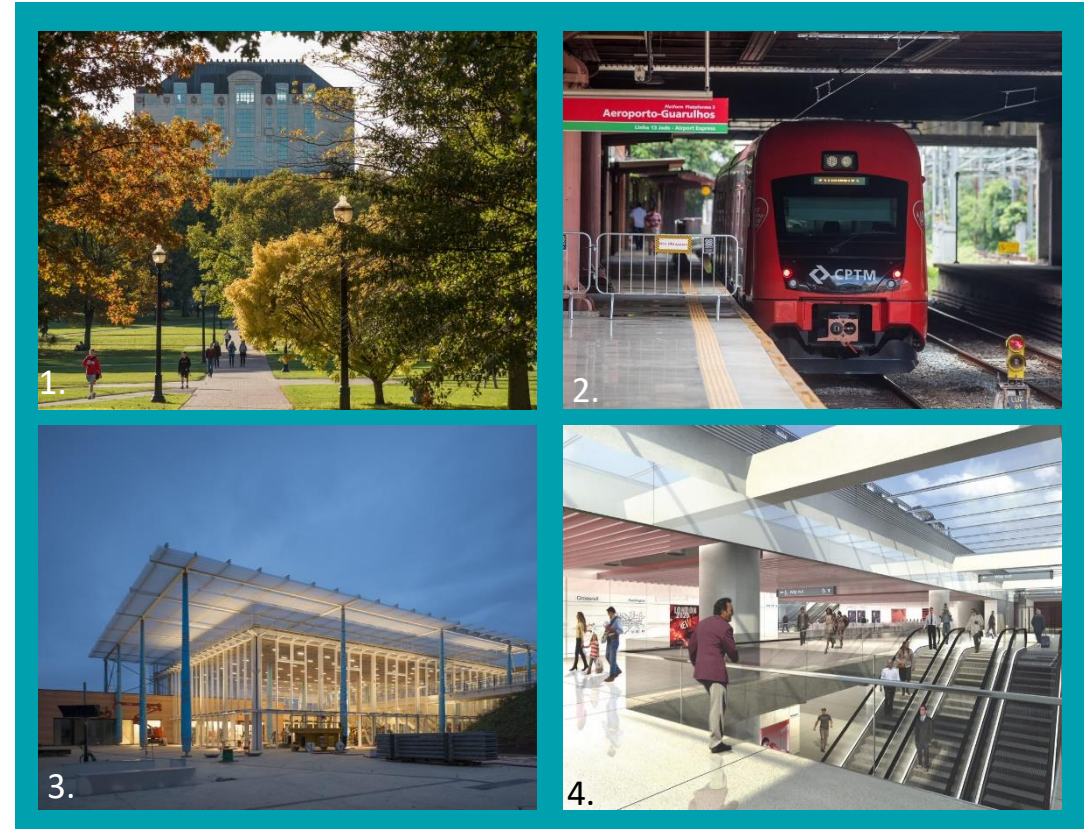
Market gap

- Infrastructure is a key driver of the post-COVID economic recovery, with every USD1 invested in infrastructure leading to a USD1.50 increase in economic output
- Despite an abundance in research, there is **no global collated source** of improvements for infrastructure



Importance of delivery models

- Many of the challenges faced in project delivery can be traced to the delivery model strategy. Research by the International Monetary Fund (IMF) showed that 67% of cost overruns originate prior to contract award¹
- The IMF also found that 33% of a project's budget merely covers inefficiencies in the delivery process, while a separate report from the Inter-American Development Bank found that cost overruns account for 28% of the total infrastructure investment cost.²



1. Ohio State University, USA
2. Sao Paulo Metropolitan Rail Lines 8&9 , Brazil

3. Toulouse SNCF, France
4. Paddington Station, Crossrail, UK

Partners and implementation



The initiative was designed for those planning, designing, procuring and delivering infrastructure, and was developed with input from global experts...

Expert partners

We asked feedback from a variety of delivery agencies, contractors, central governments, and global and regional entities to inform the development of Improving Delivery Models

Implementation

- ✓ Practitioners can use Improving Delivery Models to identify improvements to their projects based on the challenges they face
- ✓ The initiative compliments the other GI Hub guidance and tools, such as:



InfraTracker



Inclusive Infrastructure



PPP Risk Allocation Tool



Project Preparation

Stakeholder engagement:

- | | |
|-----------------------------|---|
| 1. Jacobs | 2. Acciona |
| 3. Infrastructure Australia | 4. European Bank for Reconstruction and Development |
| 5. Bouygues Construction | 6. UK Infrastructure and Projects Authority |
| 7. The World Bank | 8. Engie |
| 9. Infrastructure Ontario | 10. European Investment Bank – EPEC |
| 11. Webuild | 12. OECD |
| 13. Sao Paulo Government | 14. John Holland |
| 15. SNCF | 16. Plenary |
| 17. Société du Grand Paris | 18. Lendlease |

Improving Delivery Models – Overview (i)



The Improving Delivery Models tool uses four main components to address six themes relevant to project execution...

Overview

The Improving Delivery Models initiative has 4 main components:

- 1 Delivery Challenges and Improvements Framework
- 2 Case studies
- 3 Key references
- 4 Contractual Models Overview

Infrastructure themes

We identified six universally relevant themes that inform the structure of the challenges and improvements collated in the framework:




Framework structure

- 1 **Theme**
 - One of the **six** challenges listed below left e.g. *Theme 3: Efficiency*
- 2 **Delivery challenges**
 - **28** identified
 - thematically related e.g. *High cost of bidding projects*
- 3 **Delivery improvements**
 - **61** specific improvements related to the challenges e.g. *Reimbursement of bid costs for projects can introduce new market entrants*
- 4 **Case Studies**
 - **67** real-world case studies illustrating the delivery improvement e.g. *Bid Cost Contribution Policy (NSW Government)*
 - 25 examples and 11 resources.

Snapshot of Challenges and Improvements Framework




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Improving Delivery Models / Challenges and Improvements Framework / Cooperation

Improving Delivery Models



[Home](#) [About initiative](#) [Challenges and Improvements Framework](#) [Contractual Models](#) [Case studies](#) [Key references](#)

Partnering with other connected parties to achieve improved shared outcomes.

Capability and Capacity	Cooperation	Efficiency	Finance	Risk	Sustainability
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CHALLENGE Insufficient early project planning and consultation leading to poor procurement outcomes for projects with a high level of complexity.

Poor or insufficient early planning resulting in inadequately scoped projects and the potential selection of an infrastructure delivery model that is unable to deal with the scope, schedule, and budget risks, particularly where these is a complex scope to deliver. This is counter to the aim of structuring procurement works packages that appeal to the market and thereby improve bidder participation and lowering interface risk.

<p>What improvements have been used to address the challenges?</p> <p>Perform early market sounding with potential contractors, consultants, and suppliers to inform possible works packaging options. This type of engagement can inform scope and</p>	<p>How have infrastructure projects benefited from improvement?</p> <p>Case Studies:</p> <ul style="list-style-type: none">Sydney Metro (Australia) is Australia's largest public transport project and will include 46 stations and 113 km of metro once complete. As part of its early market engagement, it conducted industry briefings and obtained market feedback which resulted in a whole new packaging configuration. Incorporating industry recommendations resulted in a procurement process that was better informed.
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Improving Delivery Models

8

Improving Delivery Models – Overview (ii)



The Improving Delivery Models tool also includes additional examples and further resources for infrastructure practitioners and policy makers...

Key references

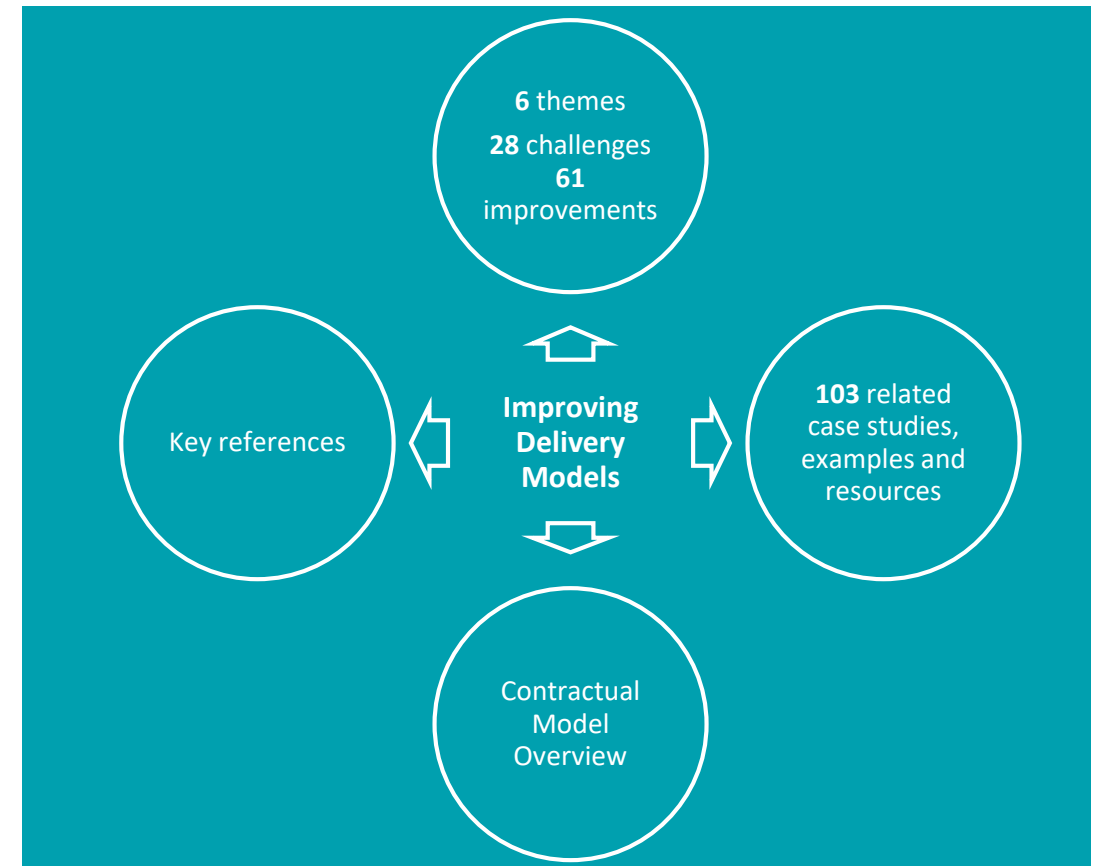


- The tool includes a compendium of delivery frameworks and guidance from authorities in different jurisdictions
- These references compliment and expand on the insights from the Delivery Challenges and Improvements Framework

Contractual Models Overview



- To create language commonality around infrastructure delivery, the initiative includes an overview of the different contractual models
- The models are organised by the functions and services they contract
- It also explains their functions, key features and what they may also be referred to as.





Key Messages

From Improving Delivery Models Introductory Paper

Global trends



We identified eight trends changing the way infrastructure is delivered across the globe, and are closely related to the six themes in the framework

Trend	Description		Link to IDM Themes
Demand	Unprecedented demand for new infrastructure projects has placed pressure on existing delivery models	>	Theme 1: Capability and Capacity
Complexity	Large, complex and more expensive infrastructure projects are becoming more common, especially in urban areas with growing populations and already established networks	>	Theme 2: Cooperation Theme 3: Efficiency
Solvency	Unbalanced risk allocation, changes to scope and cost overruns have threatened the solvency of major contractors and by extension the structure of the construction industry	>	Theme 4: Finance Theme 5: Risk
Outcomes and Transition	The breadth of outcomes expected in infrastructure projects has changed – it is no longer just about the physical asset. Transition to more sustainable infrastructure models will effect how infrastructure is constructed and operated, as governments seek to achieve net zero outcomes at all stages of the asset life cycle	>	Theme 1: Capability and Capacity Theme 2: Cooperation Theme 6: Sustainability
Digitalisation	The potential for infra technology and data-based technology continues to grow, but requires improved processes and integration to be realised	>	Theme 3: Efficiency
Evolving roles	Over the past decade, the internal capacity of governments has declined, with capability increasingly supplemented by the private sector. Governments have become an enabler rather than a supplier of infrastructure	>	Theme 1: Capability and Capacity Theme 2: Cooperation
Cooperation	Interest in collaborative approaches to contracting has grown in response to the rigidity of traditional, adversarial procurement models	>	Theme 2: Cooperation
Skills shortage	Skills shortages of infrastructure engineering and technical skills is a major concern globally both in developed and emerging markets, both on the public and private sector side.	>	Theme 1: Capability and Capacity

Key messages from Introductory Paper

An introductory paper explores some of the key messages from developing the Initiative



Predictability with Flexibility

1. Include *sufficient* risk allowances in cost estimates
2. Use market consultation to *test* procurement and packaging decisions
3. Adopt a clear, *agnostic approach* to contract model selection



Managing Uncertainty

4. *Go slow to go fast.* Align design maturity with contract price firming through further studies and investigations
5. Appropriate risk allocation, *regardless of contractual model*, is the best way to achieve a desired level of competition
6. Consider collaborative and progressive contracting approaches where a firm price *cannot* be realistically determined



Capabilities and Innovation

7. Invest massively in infrastructure *competencies*
8. A strong policy framework is *required* to attract innovation and innovators

Key Messages 2, 3, 4 and 6 form the basis of today's panel discussion

Case studies and examples – Cooperation



Seven case studies from the Cooperation theme, including their relevant challenge and improvements...

Challenge	Improvement	Country	Case study	Context
Insufficient early project planning and consultation leading to poor procurement outcomes for projects with a high level of complexity.	Industry briefings before and after the packaging configuration took into consideration the inputs/recommendations from the industry	Australia	Sydney Metro	Sydney Metro is building Australia's first fully automated metro railway.
	Used an early contractor involvement approach under a two-stage process that involved integrating design, development and construction planning to the client's objectives, and a target price.	United Kingdom	High-Speed 2	HS2 is a new high-speed rail line that will connect London with Birmingham, and later to Manchester and Leeds.
Lack of a cooperative approach between client and delivery teams (design/build teams)	Utilised an integrated delivery team under an alliance framework with a 10-year program of works, with aligned incentives. Expected to deliver BBP 100 million in savings.	United Kingdom	Team 2100	TEAM2100 is delivering the first 10 years of the Thames Estuary Asset Management Program that covers tidal flood defences
	Co-location of project owner, project management consultants and delivery consortium members to address issues collaboratively	United Kingdom	Thames Tideway	It involves the construction of a 'super sewer' tunnel that will run for 25 kilometers through central London
	Utilised an NEC3 ECC Option A contract that required fast track design development driven by specialist user requirements	Hong Kong SAR, China	Tin Shui Wai Hospital	A new 12-storey, 300-bed hospital first proposed in 2012
	The Rocky Flats Contract contained a schedule performance incentive, a cost performance incentive, and a performance gateway measure . The compensation schemes applied only if threshold performance metrics were achieved	USA	Rocky Flats Closure	Rocky Flats was a U.S. nuclear weapons plant located 24 kilometers from central Denver, that required closure and remediation
Conventional O&M arrangements can lack collaborative planning	The 10-year agreements with the Regional Delivery Consortia were let under the NEC4 type of contracts , which provided flexibility and shared terms, conditions and clauses	Australia	Sydney Water Consortia	Sydney Water's new collaborative framework called 'Partnering for Success (P4S)' called for appointment of long-term integrated planning partners



Discussion session and Q&A

Co-moderators



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Discussion session and Q&A

Shared experiences from policymakers and infrastructure delivery agencies



Benoit Dupuis
Executive Director
Procurement, Legal and contract
management
Grand Paris Express



Angela Jeffery
Project Director
Sydney Metro –
Western Sydney Airport



Charl van Niekerk
Executive Vice President –
Transit
Infrastructure Ontario



Dejan Makovsek
Procurement Strategy Lead
OECD Public Governance
Directorate



Matthew Vickerstaff
Deputy Chief Executive Officer and
Head of Project Finance
Infrastructure and
Projects Authority UK



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Thank you for joining

Explore Improving Delivery Models:

infrastructuredeliverymodels.gihub.org

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