

COMPLIMENTARY SAMPLE

RETHINKING CAPITAL PROJECT DELIVERY

Agentic AI-Driven Strategies for the New Era



**Edward
Abramowich**

With Foreword by

Dr. Jeff Sutherland

A different way to deliver

Capital projects do not need more certainty. They need greater adaptability.

This complimentary sample introduces the central argument of Rethinking Capital Project Delivery: the linear, front-loaded systems that built the industrial age are increasingly mismatched with real-world complexity.

IN THIS SAMPLE

- Why cost and schedule overruns are symptoms of a deeper delivery-model problem
- What leading sectors reveal about speed, modularity and continuous learning
- How adaptive, AI-enabled delivery changes the choices available to project leaders

Included: foreword highlights, full contents and Chapter 1

Copyright © 2025 Straits Consulting Pte. Ltd. All rights reserved.

Two perspectives on a new operating philosophy

“What you hold in your hands is not a management framework; it is an awakening of practice.

DR. JEFF SUTHERLAND

Co-creator of Scrum • Creator of Scrum@Scale

“Edward’s book builds upon the core concepts we had learned, with more clarity and conviction.

SANCHAY ROY

Global Operational Excellence, Shell

The complete forewords appear in the full book.

Contents

Part I: A Changing Reality	14
The Capital Project Delivery Revolution	15
My Journey in Transformation	22
For Those Ready To Build the Future	28
The 99.5% Failure Rate	32
Mega Projects Fail Early	38
AI and the Future of Project Delivery	48
The Limits of Control: Why Legacy Models Stall	58
Beyond Front End Loading	70
Will You Spot the Early Warning Signs?	81
Part II: The Root Causes of Underperformance	92
Why Projects Fail - Again and Again	93
Think Your Project Is Unique? Think Again	111
The End of ‘One and Done’	123
The Rigidity Trap	140
Fast and Adaptable Construction	157
Part III: Building the Future Delivery Model	170

Rethinking How We Build	171
From Linear to Adaptive Processes	178
Leadership at the Edge	208
Vision That Inspires, Relentless Focus on Value	230
Modularity as a Model for Adaptive Delivery	252
Agentic Pods: the Future of Project Teams	268
Iteration Over Perfection	300
Engineering Cultures That Accelerate Innovation	314
Data: the Delivery Engine	336
From Supply Chains to Value Ecosystems	356
Reinventing Delivery, Powering the Future	374
Appendix 1: Right Model for the Challenge	379
Appendix 2: Agentic AI in Traditional Delivery	397
Glossary of Terms	416
Bibliography	420
Index	430

CHAPTER 1

The Capital Project Delivery Revolution

“Adaptability, not efficiency, must become our core competency.”

General Stanley McChrystal ^[1]

The frameworks that built the modern world are now holding it back.

Traditional capital project delivery, with its detailed upfront planning, milestone based control and sequential logic, was designed for a predictable world. What once enabled the engineering and construction of refineries, offshore platforms and power plants has become the greatest barrier to progress when speed and adaptability matter most.

We often ask senior leaders a simple question: What would it take to deliver your next mega project 75% faster, at lower cost, with fewer resources?

Most are intrigued but sceptical. Multiyear timelines and chronic overruns have become so normalised that they're no longer seen as failures, just facts of life in capital intensive industries.

But what if that's wrong? What if the entire process could be reimaged from the ground up?

The Cost Curve of Disruption

How iterative design and reuse collapsed the cost of reaching orbit.

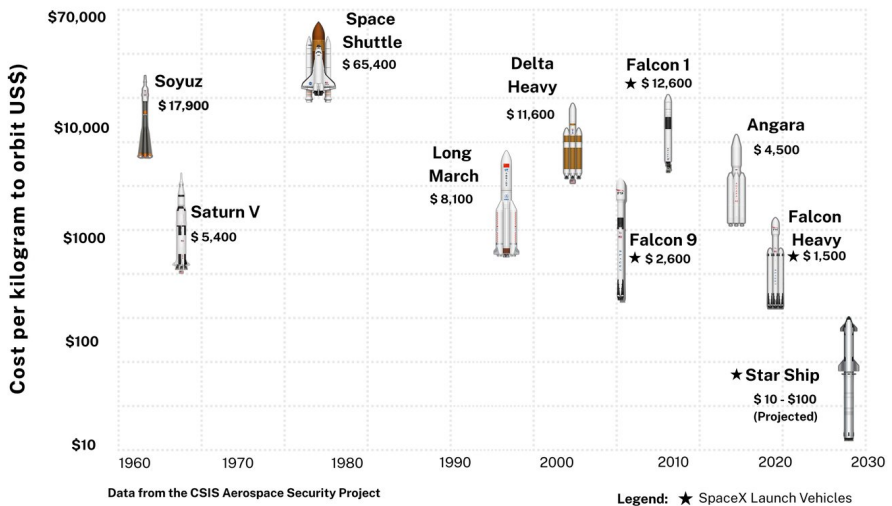


Figure: The Cost Curve of Disruption. Iterative design, modular reuse and rapid learning cycles collapsed the cost of reaching orbit by more than 99 % in two decades.

The Crisis is Real

The numbers tell the story. A recent survey ^[2] of 300 capital project leaders found that 85% struggle to scale improvements in their delivery models. McKinsey ^[2] reports that 98% of mega projects exceed budgets by more than 30%, while 77% run at least 40% behind schedule. These aren't isolated problems, they're systemic failures.

The financial cost is staggering. A high capacity natural gas facility generates roughly \$18 million per day. A single year's delay erases \$6.57 billion in value. Multiply that across a project portfolio and the stakes become clear.

Now consider the inverse: What if you could compress a five year timeline to just over one year? This isn't just about speed, it's about unlocking four extra years of revenue while dramatically improving capital efficiency.

This level of acceleration might sound impossible, but it's already happening in other industries.

Speed at Scale

SpaceX launches rockets that once took NASA years to design and build. The company can now design, test and launch complex systems within 24 hours when needed. They didn't just improve existing processes, they created an entirely new model built on rapid iteration, modular design and continuous learning.

Tesla can redesign and validate new vehicle components in hours where traditional automakers need months or years. SAAB Aerospace flight tests sixth generation fighter systems using digital twins well before final aircraft assembly.

The transformation isn't limited to aerospace. Advanced manufacturers across sectors are achieving similar breakthroughs by abandoning linear workflows in favour of adaptive, AI-enabled systems.

SpaceX has slashed launch costs from NASA's Space Shuttle era rate of \$54,500 per kilogram to under \$2,700 today, with projections as low as \$20 per kilogram in the coming years. That 99.96% cost reduction didn't come from optimising old processes, it came from reimagining how complex systems are designed, built and delivered.

The Energy Opportunity

Energy companies are beginning to recognise similar opportunities. Shell's recent Whale deepwater project in the US Gulf was delivered 20% faster than comparable developments by deploying agile, asset-aligned teams, adaptive delivery approaches and integrated digital workflows. Equinor's Johan Sverdrup platform achieved first oil six months ahead of schedule through similar approaches.

These aren't isolated successes, they're early signals of what becomes possible when organisations embrace adaptive methods, integrate teams, break down functional silos and treat data as a strategic asset rather than an administrative byproduct.

Consider a typical Engineering, Procurement and Construction (EPC) firm with decades of global experience across offshore rigs, floating production systems, LNG terminals and nuclear facilities. Traditionally, the engineering data from these projects gets archived and forgotten. But forward thinking firms are now treating this data as their most valuable competitive asset.

Most mega projects aren't truly unique. While each faces specific constraints, the vast majority of systems and subsystems have been built many times before. Competitive advantage doesn't come from novelty, it comes from superior execution speed and the ability to learn from past experience.

From Linear to Adaptive

The traditional cornerstones of capital delivery, long term planning, sequential milestones and linear execution, are

fundamentally misaligned with how AI operates. AI learns, iterates and adapts in real time. It doesn't follow predetermined sequences rather it responds to new information instantly.

This creates an opportunity to reimagine project delivery entirely. Instead of starting each project from scratch, imagine beginning with a digital twin of similar assets, fed by real time operational data from comparable facilities worldwide. Engineering teams wouldn't start with blank sheets, they'd start with living, learning systems that continuously optimise based on new data.

Physical construction becomes the final assembly step in a process that's already been tested, validated and optimised in the digital realm. Tasks that once required weeks of engineering analysis can be completed in minutes through AI assisted design tools.

These capabilities aren't theoretical. Leading technology companies already operate this way and these methods are rapidly moving into capital-intensive industries.

The Path Forward

The question isn't whether this transformation will happen, it's whether your organization will lead it or be forced to catch up. For companies entrenched in legacy systems and traditional processes, the transition won't be simple. But it also doesn't require a complete overhaul overnight.

There are strategic entry points that allow organisations to evolve their delivery models progressively, reducing risk while building capabilities for larger transformations. The

playbook exists, drawn from the world's most agile, high performing sectors and adapted for capital project realities.

The future of capital delivery isn't coming, it's already here. The only question is whether you'll shape it or be shaped by it.

This book will show you how to choose the former.

References for Chapter 1

- 1 McChrystal, G. S., et al. Team of Teams: New Rules of Engagement for a Complex World. Penguin, 2015.
- 2 McKinsey & Company. Capital Projects 5.0: Reimagining Capital-Project Delivery. 2021.

A note on the evidence

The full book includes a complete bibliography and index. Sources are numbered consistently throughout the text so readers can trace the research supporting the argument.

CONTINUE READING

The delivery model changes from here.

The full 433-page book moves from diagnosis to a practical operating model for adaptive, AI-enabled capital-project delivery.

- The 99.5% failure rate and why megaprojects fail early
- From linear delivery to adaptive processes
- Leadership at the edge and right-to-left planning
- Modularity, agentic pods and iterative execution
- Data as the delivery engine and value ecosystems

BUY THE COMPLETE BOOK ON LEANPUB

leanpub.com/CapitalProjectDelivery