



**Institute of
Commissioning &
Assurance**

FROM SILOS TO SYSTEMS: REDEFINING PROJECT GOVERNANCE FOR A NEW ERA

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From Silos to Systems

We are entering a decisive chapter in how societies imagine, deliver, and govern critical infrastructure systems. One where the stakes are higher, the systems more complex, and the consequences of failure harder to absorb. And yet - too often - we still govern projects as if they were linear, siloed, and one-dimensional.

Today, that must change.

Traditional infrastructure governance treats project delivery as an endpoint - discrete, output-focused, and largely assessed through cost, schedule, and scope. This paradigm is no longer fit for the complexity, interdependence, and sustainability demands of 21st-century infrastructure.

The Problem

Surprisingly few projects are genuinely aligned to deliver their intended outcomes. Engineers focus on design intent. Contractors prioritise installation. Project managers track cost and schedule. Rarely is there a dedicated group - *from the outset* - responsible for ensuring that the project delivers as a fully integrated, operational system capable of realising its promised benefits.

Commissioning complex infrastructure is inherently difficult. And for those unfamiliar with starting up a functioning system - not merely completing an asset - the early steps required to ensure success often remain unseen. Without a shared understanding of what success looks like, teams fall into **goal ambiguity**. And as with any collaborative endeavour, when the outcome is unclear and the path undefined, the likelihood of success sharply declines.

On most projects, each discipline delivers its own scope: engineering design, system installation, cost and schedule control. But when teams optimise for their own outputs instead of the collective outcome, alignment fractures. Silos deepen. The project devolves into a disconnected network - rather than a coordinated system designed to deliver enduring public value.

A New Governance Paradigm – From Silos to Systems

We believe a new approach is needed and possible: one guided by *Purpose, Stewardship, Integration, and Efficacy*. One where commissioning becomes not the final act - but the framing logic focused on the project outcome, right from the start. At ICxA, we define this as Outcome Assurance. It establishes a dedicated Outcome Authority, typically led by a project commissioner who understands what it truly takes to deliver a complex project. These are the visionaries who connect the end to the beginning - ensuring that outcomes are not only intended, but achieved. With a vivid understanding of what success looks like, they align every discipline to work with intention, clarity, and purpose from day one.

Outcome Authority Leaders are guided by Four Cornerstones:

1. **Purpose** (*Investment Planning*) — clarify what we're solving for, before defining how we deliver it
2. **Stewardship** (*Asset Management*) — manage value across the lifecycle, not just at handover
3. **Integration** (*Systems Engineering*) — align the moving parts into coherent, operable outcomes
4. **Efficacy** (*Outcome Assurance*) — track performance against intent, with transparency and trust

The Outcome:

A new infrastructure model built for value creation - where contracts aren't just instruments of risk transfer, but catalysts for results. Where commissioning evolves into a trusted function of assurance. And where the public no longer simply inherits infrastructure, but experiences its value - *transparently, accountably, and by design*. Outcome Authority Leaders are guided by the ICA Global Commissioning Standard, the proven approach used by successful project teams to deliver project outcomes in alignment with initial expectations. This is not theoretical – this is the proven battle-tested standard to follow that allows project owners to protect their project investment.

A Blueprint for Policy and Reform — The 'How'

To operationalise this vision as an international standard, ICxA is bridging institutional boundaries and forging alignment across the professional ecosystems that govern the infrastructure lifecycle. There of course is lots of resistance to this new approach to projects, as many groups enjoy and benefit from the chaos and inefficiencies that currently exist. The construction industry will not willingly adapt to this way of governing projects, as shown by the lack of productivity gains over the last several decades. Instead, a new project environment must be created, with either conditions created to incentivize project participants to adopt this new way to govern projects, or to mandate projects to be governed in this manner. ICxA recognises that industry transformation cannot be achieved alone. That's why it is forging alliances with like-minded partners - amplifying the message and advancing a shared agenda for outcome-focused project governance.

The following partners are pivotal to this ambition:

- **IIBA** — *International Institute of Business Analysis Bridging strategic intent with operational clarity - ensuring stakeholder needs are visible, traceable, and actioned across the lifecycle.*

- **ICE — Institution of Civil Engineers** *Elevating commissioning from a late-stage activity to a leadership discipline - anchored in integration, consents, and delivery accountability.*
- **IAM — Institute of Asset Management** *Aligning Outcome Assurance with asset stewardship, lifecycle value, and sustainability imperatives.*
- **IET — Institution of Engineering and Technology** *Championing systems thinking, digital assurance, and engineering innovation - positioning Outcome Assurance at the intersection of physical and digital infrastructure integrity.*
- **INCOSE — International Council on Systems Engineering** *Integrating commissioning into the systems engineering lifecycle - embedding governance across technical interfaces*
- **WorldCC — World Commerce and Contracting Association** *Advancing commercial governance and relational contracting - ensuring commissioning principles shape procurement design, value creation, and performance-based collaboration.*

The below **Governance Framework** maps these institutional lenses against ICxA's four core governance disciplines to illustrate their collective potential as a unified system for public and private value creation.

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| <p>Governance Disciplines</p> | <p>World Bank / Asian Development Bank Institute / International Institute of Business Analysis (IIBA)</p> | <p>World Bank / Asian Development Bank Institute / International Institute of Business Analysis (IIBA)</p> | <p>Institution of Civil Engineers (ICE) / Institute of Asset Management (IAM)</p> | <p>Institute of Commissioning and Assurance (ICxA) / World Commerce & Contracting (WorldCC) Association</p> |
| <p>Investment Planning</p> | <p>Drives capital programming and policy coherence through multi-criteria decision frameworks that prioritise long-term socioeconomic impact</p> | <p>Embeds public need, planning consents, and delivery alignment into infrastructure prioritisation and approval processes</p> | <p>Advances risk-informed investment strategies that maximise lifecycle value and resilience from concept to commitment</p> | <p>Aligns planning with outcomes through consents and stakeholder commitment - reinforcing purpose via value-led procurement</p> |
| <p>Asset Management</p> | <p>Strengthens infrastructure durability and service continuity through operations and continuous improvement - capacity-building and preservation strategies</p> | <p>Applies ISO 55000 principles to govern lifecycle cost, maintainability, and operational readiness—from initial design through to circular reuse and reintegration</p> | <p>Employs ISO 15288 systems-based asset stewardship—including Requirements Engineering and Reconfiguration Management—for adaptive, high-performing asset portfolios.</p> | <p>Drives lifecycle performance with traceable assurance —sustains commercial continuity through outcome-based, performance-driven contracts.</p> |

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| <p>Systems Engineering</p> | <p>Champions digital transformation and resilience as systemic imperatives across infrastructure delivery and governance.</p> | <p>Leads interdisciplinary programme integration through guidance on managing complexity, interfaces, and phased transitions.</p> | <p>Embeds engineering maturity models and lifecycle integration practices that underpin system coherence and operability at scale.</p> | <p>Institute of Commissioning and Assurance (ICxA) / World Commerce & Contracting (WorldCC) Association</p> |
| <p>Outcome Assurance</p> | <p>Institutionalises performance accountability through results frameworks, delivery protocols, and verification mechanisms.</p> | <p>Advances performance-led contracting and collaborative models like Project 13 to link delivery governance with outcome realisation.</p> | <p>Applies systems-level benchmarking, traceability, and assurance models that embed outcome thinking into governance from the outset.</p> | <p>Delivers traceability, readiness, and outcome verification - driving performance-based contracts with built-in metrics and shared value.</p> |

Strategic Enabler Alignment

This infrastructure governance framework is activated through three critical enablers: *Organisational Change Management*, *Knowledge & Information Management*, and *Digital Governance*. Each plays a vital role in ensuring that institutions, intelligence, and digital systems evolve in concert with asset lifecycle performance.

| ICxA Strategic Enabler | Alignment Across Institutions |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Organisational Change Management | IAM recognises behavioural and leadership maturity; ICE and World Bank highlight change leadership in capability building |
| Knowledge & Information Management | IAM embeds knowledge transfer into asset information strategies; World Bank promotes evidence-based decision making, chronological memory and auditability |
| Digital Governance & Data Assurance | IAM, ICE and IET increasingly advocate digital twins and data integrity; The World Bank and ADBI explores AI governance and digital policy tools |

Reframing Infrastructure as a Living, Adaptive System

To meet the demands of complexity, uncertainty, and accelerating change, infrastructure governance must evolve. It is no longer sufficient to treat projects as static, linear undertakings. ICxA introduces a paradigm that sees infrastructure as a living system—dynamic, interconnected, and continuously accountable to its intended outcomes.

- **Commissioning-led Framing:** Unlike traditional governance models that assert control after the design phase, ICxA activates delivery governance from the outset. By embedding planning consents and verification early, commissioning becomes the catalyst for whole-system alignment - setting infrastructure performance in motion from day one.
- **Outcome Assurance as a Discipline:** Where most frameworks reference lifecycle performance only in passing, ICxA defines outcome governance as a sovereign discipline. It moves beyond conventional Quality Assurance to systematically assure the outcome - integrating policy, technical, and operational domains into a unified assurance architecture.
- **Systemic Orchestration:** ICxA's Socio-Technical lens transcends asset-centric thinking. It enables adaptive governance across complex, multi-actor environments - mirroring the lived realities of governments, investors, regulators, and integrators tasked with delivering value across the full infrastructure lifecycle.

Conclusion

By uniting the strengths of leading professional institutions with ICxA's commissioning-led model, a powerful convergence takes shape - revealing not just alignment, but the opportunity to forge systemic coherence across governance disciplines.

Each partner contributes critical depth: from interdisciplinary stewardship and infrastructure strategy to the formation of public policy. Yet it is **ICxA's Socio-Technical Outcome Assurance** framework that uniquely fuses these domains into an architecture of **intent, integration, and verification**.

This positions ICxA not merely as a curator of best practice, but as the pioneer of a **new governance paradigm** - one designed to ensure infrastructure performs by design, and by intended outcome.