OVER-ENGINEERED CONTRACTS, UNDER-DELIVERED PROJECTS

The Dangerous Pursuit of Perfection in Infrastructure Construction Contracts

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In the complex world of infrastructure projects, the pursuit of the 'perfect contract', one that anticipates every risk, covers every contingency, and assigns every responsibility, has become not just a goal but an obsession. While this may seem prudent, it often proves counterproductive. This article argues that such perfectionism creates a silent but potent threat to project delivery, undermining adaptability, trust, and ultimately, success.

1. *Complexity Breeds Inertia*

Overly detailed contracts introduce cognitive overload, making it harder for parties to engage with and execute agreements. The result is inertia: fear of missteps delays decision-making and project progress. Specifically, when contracts contain hundreds of clauses, cross-references and legalese, stakeholders, including engineers, project managers, and contractors, may struggle to understand their obligations, rights, and procedures. This creates hesitation, as decision-makers seek legal clarification or fear penalties for inadvertent non-compliance. The mental bandwidth spent on interpreting contracts detracts from focusing on project execution. Moreover, excessive detail creates a bureaucratic drag where decisions are bottlenecked in legal review cycles, delaying critical actions and fostering a risk-averse culture. Cognitive Load Theory suggests that complex structures increase mental strain and reduce the ability to process information effectively[1], this definitely applies in our case.

2. *The Illusion of Control*

Exhaustive contracts aiming to predict every risk create a false sense of control, while in reality, unforeseen variables and changing circumstances are inevitable in large-scale infrastructure projects. The focus on control often leads to rigidity, not resilience. This illusion is dangerous because it gives stakeholders the false comfort that once the contract is signed, all risks are contained. However, complex projects are influenced by unpredictable factors, changing regulations, market volatility, geopolitical shifts, financial trends, and environmental disruptions. A rigid contract structure, designed to cover every scenario, struggles to adapt to these dynamic challenges. Instead of empowering agile decision-making, it locks parties into predefined responses, forcing them to choose between strict compliance (which may no longer make sense), costly renegotiation or litigation. Ultimately, the obsession with control reduces the system's capacity to absorb shocks, making projects more fragile rather than robust. This is supported by Behavioral economics that demonstrates that humans overestimate their ability to control complex systems (Kahneman & Tversky's Prospect Theory)[2].

[1] Sweller, J. (1988). Cognitive Load During Problem Solving: Effects on Learning. Cognitive Science, 12(2), 257–285

[2] Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision Under Risk. Econometrica, 47(2), 263-292

3. Rigidity Undermines Adaptability

Agile and Lean project management methodologies advocate for adaptability and iterative planning over exhaustive upfront design[3]. Construction projects, which span years and involve multiple actors, cannot be fully scripted at the outset. Adaptive contracts, focused on principles rather than exhaustive prescriptions, enable faster, more responsive project management. When contracts emphasize flexibility, they allow for adjustments in response to evolving project realities. This prevents paralysis when unforeseen changes occur and ensures that solutions can be implemented quickly and efficiently. Rigid contracts, by contrast, lock parties into a narrow path, where deviations, even necessary ones, become protracted legal issues. In dynamic, high-stakes infrastructure environments, adaptability isn't a luxury; it's a necessity for progress and resilience.

4. Over-Specification Breeds Adversarialism

Game theory reveals that detailed, zero-sum contracts often encourage adversarial behavior and defensive posturing[4]. When contracts are designed to anticipate every conflict, they foster a mindset where parties focus on defending positions rather than solving problems. This adversarialism delays decisions, erodes trust, and increases costs. In practice, excessively detailed contracts signal a lack of trust and a focus on enforcement rather than collaboration. Each party becomes incentivized to protect its position, even at the cost of the overall project. Disagreements that could be resolved informally escalate into formal disputes, sapping time, resources, and goodwill. Furthermore, this adversarial dynamic discourages open communication, innovation, and problem-solving, the very elements that infrastructure projects need to overcome challenges and deliver on time.

5. Time Is an Opportunity Cost

Economics teaches that time spent chasing contractual perfection is time lost to productive action[5]. Delays in contract finalization and project start-up can cost millions and undermine broader goals such as sustainability. For instance, delayed renewable energy projects due to contract disputes mean continued carbon emissions and lost environmental benefits. Moreover, protracted legal negotiations often erode stakeholder confidence and disrupt funding streams, as financiers and public authorities grow wary of projects bogged down in paperwork. The opportunity cost is not limited to financial loss; it also includes reputational damage and missed market opportunities. In fast-evolving sectors like green energy and smart infrastructure, agility and speed are

[3] Beck, K., et al. (2001). Manifesto for Agile Software Development. Agile Alliance

[4] Nash, J. (1950). Equilibrium Points in N-Person Games. Proceedings of the National Academy of Sciences, 36(1), 48-49

[5] Marshall, A. (1890). Principles of Economics. London: Macmillan

competitive advantages. Therefore, prioritizing perfect contracts over prompt, workable agreements can set projects, and entire industries, back by years.

6. *From Berlin to Sydney: Insights From Major Infrastructure Disputes*

Although finding a good example is a challenge, as complicated contracts are never the sole reason for failure, some stand out. Projects like Berlin Brandenburg Airport (BER) and Crossrail London illustrate how contractual rigidity can derail delivery. BER suffered from years of delays partly due to inflexible and overly detailed contracting frameworks that slowed decision-making and created friction, compounded by technical design changes, scope creep, and governance failures. Crossrail faced similar issues, with delays and cost overruns exacerbated by contractual complexity, where disputes between contractors, designers, and public stakeholders arose due to unclear contract responsibilities and misaligned incentives. Other examples include the Sydney Light Rail project in Australia, where strict contract terms and disputes between the government and contractors led to a $1.3 billion lawsuit and significant project delays, with contractors citing unexpected ground conditions and design changes as unaddressed in the rigid contracts. California's high-speed rail project has faced ongoing cost overruns and delays attributed not just to funding issues and political changes but also to complex legal and regulatory hurdles, including environmental approvals and land acquisition disputes that were exacerbated by overly rigid contracting frameworks. The Montreal REM project in Canada and the Stuttgart 21 rail project in Germany also highlight similar issues: the REM suffered from legal disputes between the consortium and local stakeholders over cost escalations and scope changes, while Stuttgart 21 was plagued by public backlash, cost overruns, and delays rooted in initial contract inflexibility and subsequent challenges adapting to changing project requirements. These cases reinforce that rigid contracts, while intended to control risk, can actually magnify it by limiting adaptive responses to unforeseen challenges and creating a breeding ground for disputes and litigation.

7. *Legal Scholarship Supports Adaptive Models*

Relational Contract Theory, proposed by Ian Macneil, argues for contracts as frameworks for relationships rather than rigid rulebooks[6]. This perspective resonates with evidence showing that adaptable, principle-based contracts are better equipped to handle complexity and change, and they naturally foster collaboration over conflict. Supporting this view, Stewart Macaulay highlighted how real-world commercial relationships tend to rely more on trust and flexibility than on strict legal formalities[7], while Lisa Bernstein's research into private ordering within business networks illustrates how informal norms

[6] Macneil, I. R. (1980). The New Social Contract: An Inquiry into Modern Contractual Relations. Yale University Press

[7] Macaulay, S. (1963). Non-Contractual Relations in Business: A Preliminary Study. American Sociological Review, 28(1), 55–67

and trust mechanisms can often be more effective than overly detailed legalistic frameworks in ensuring performance and resolving disputes[8]. Also, more recently, legal scholars such as David Campbell and Hugh Collins have reinforced these ideas, exploring how relational contracts and contextual legal interpretation can enhance cooperation and adaptability in complex commercial settings. Together, these insights underscore the argument that flexible, trust-based contracts consistently outperform rigid models, especially in environments marked by uncertainty and complexity.

From Fortress to Framework

The pursuit of the 'perfect contract' is infrastructure's silent killer. By over-engineering agreements in the name of control and risk management, we create structures that hinder progress, breed distrust, and invite failure. The future of infrastructure contracting lies in adaptive, principle-based frameworks that balance clarity with flexibility, encourage collaboration, and prioritize delivery over perfection. It's time to rethink how we write contracts, not as legal fortresses, but as bridges to successful outcomes.

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[8] Bernstein, L. (1992). Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry. Journal of Legal Studies, 21(1), 115–157

How Salomon Lipschütz, Yossi Levy & Co. Can Help

At **Salomon Lipschütz, Yossi Levy & Co.**, we are committed to supporting private entities and governments in navigating the legal complexities of infrastructure projects and delivering successful outcomes. Our expertise includes:

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- **Project Contracts Design**: Developing effective contracts, including EPC, O&M, EPCM, DB, EP agreements, that foster trust, reduce risk, and enable progress.
- **Contract Management:** On-going management and administration of project contracts and strategic subcontracting advice, integrating legal strategy with project management for smooth, on-time delivery.
- **Dispute Resolution:** Representing contractors in project disputes. Our team excels in managing complex international arbitrations, mediations, and litigations before courts and dispute resolution boards, ensuring client interests are vigorously defended and resolutions achieved efficiently.

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