

Towards a Systems-Based Clienting Framework in Major Projects: From Control to Orchestration

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Abstract

We explore the concept of clienting as a systems framework for enhancing leadership, relational dynamics and effective delivery approaches in major infrastructure projects. Drawing on systems thinking principles, we examine how client practice is evolving from mechanistic control approaches towards systems orchestration that can accommodate complexity, emergence, and adaptive responses. Drawing on an initial synthesis of major infrastructure project attributes, systemic delivery challenges, and client role dimensions, we explore how client practices have evolved beyond traditional governance and technical competencies to embrace adaptive capabilities and emotional intelligence. We position the following interconnected dimensions for effective clienting: (i) emotionally intelligent leadership, which balances technical expertise with emotional intelligence whilst ensuring effective governance; (ii) relational dynamics, which centres on cultural alignment, trust-building, and stakeholder engagement; and (iii) effective delivery approach, which emphasises value creation, sustainable outcomes, and knowledge retention. As such, in this paper we establish the theoretical foundation and contextual background necessary for the collaborative development of a systems-based clienting framework for major projects.

Keywords: Clienting, major projects, infrastructure delivery, intelligent client, emotionally intelligent leadership, relational dynamics, supply chain, emotional intelligence, technical expertise, effective delivery approach, project success, sustainable partnerships, systems thinking, complex adaptive systems, boundary management.

1. Introduction

The management of major infrastructure projects has long been recognised as a critical driver of economic development and societal progress (Straub, 2008). These projects, often characterised by their scale, complexity, and high public visibility, play a pivotal role in addressing national infrastructure demands and delivering long-term value (Denicol & Davies, 2022). However, their execution frequently encounters substantial challenges, including persistent cost overruns, delays, fragmented supply chains, and strained stakeholder relationships (Flyvbjerg, 2014). Recent studies suggest that only a fraction of major projects are delivered

successfully, with many failing to achieve their intended outcomes due to misaligned priorities and ineffective collaboration between stakeholders (Eggleton et al., 2023; Ika & Pinto, 2022; Pinto et al., 2022). These systemic failures suggest that traditional mechanistic approaches to clienting may be fundamentally inadequate for addressing the complex, dynamic nature of major infrastructure delivery.

As these challenges persist, there is growing recognition of the unique role that client organisations perform in shaping the conditions for project success (Radhakrishnan et al., 2022). Traditionally, the role of the client has been viewed through a technical lens focusing on procurement, governance, and compliance (Ancona et al., 2007; McCue et al., 2015). While these capabilities remain essential, the increasing complexity of modern projects has exposed the limitations of this approach, particularly in addressing interpersonal and relational dynamics that underpin successful delivery (Azim et al., 2010; Dainty et al., 2007; Walker et al., 2022). This has led to calls for client organisations to adopt a more integrated systems perspective that balances technical expertise with leadership and collaborative approaches (Denicol & Davies, 2022; Mortimer & Laurie, 2017). However, while these calls recognise the need for integration, they lack a clear theoretical foundation for understanding how such integration might be achieved. Systems thinking, which emphasises understanding relationships, interactions, and emergent properties rather than decomposing complexity into isolated parts, provides this theoretical foundation for examining client roles within the interconnected stakeholder networks and temporary organisational structures that characterise major infrastructure projects (Dacre & Kockum, 2022; Kapsali, 2011).

Despite these challenges, the concept of the 'Intelligent Client' has emerged as a critical approach for improving client practices, initially emphasising governance, strategic insight, and technical competency (Aritua et al., 2009; Aritua et al., 2011; Curd, 2022; Madter & Bower, 2015; Vine, 2018). This concept has evolved to reflect the growing importance of relational competencies, including the ability to foster trust, promote shared accountability, and build sustainable partnerships across the supply chain (Denicol, 2020; Gosling et al., 2020; Laryea & Watermeyer, 2016). However, as project environments become increasingly volatile and stakeholder expectations grow (Whyte & Mottee, 2022), the need for further analysis is pertinent since clients navigate not only traditional delivery challenges, but also socio-political and cultural dimensions of project delivery (Dacre, 2024; Svejvig & Andersen, 2015).

In light of this, we position clienting as a systems-based analytical approach to explore and understand the tensions between technical and relational competencies within client organisations (Aritua et al., 2009; Aritua et al., 2011; Boyd & Chinyio, 2008; Mortimer & Laurie, 2017; Radhakrishnan et al., 2022; Zani et al., 2024).

2. Major Infrastructure Projects: Complex Adaptive Systems and Systemic Challenges

The temporary nature of major infrastructure projects fundamentally distinguishes them from smaller, business-as-usual initiatives (Lauermann, 2016; Nilsson Vestola et al., 2021). These projects often operate within interim frameworks, forming specialised entities to oversee their delivery (Davies & Mackenzie, 2014; Denicol & Davies, 2022). As complex adaptive systems, major projects exhibit characteristics of emergence, non-linear dynamics, and sensitivity to initial conditions that create profound implications for all facets of client practice. This temporary dimension has profound implications for all facets of client practice, from leadership styles to knowledge management systems, creating a dual challenge for major project teams (Sydow et al., 2004). Achieving specific pre-defined outcomes within a limited timeframe whilst contributing to broader economic and infrastructural development (Flyvbjerg, 2014; Flyvbjerg & Gardner, 2023). Temporary organisational models facilitate flexibility and responsiveness, yet they also introduce vulnerabilities in knowledge retention and capability development that client organisations must navigate effectively (Lehtinen & Aaltonen, 2020; Packendorff, 1995).

The scale of delivery challenges in major projects is both pronounced and persistent. Analysis of project performance data reveals that nine out of ten megaprojects experience cost overruns (Flyvbjerg, 2017), contributing to approximately £3 trillion in annual global economic inefficiency. This pattern suggests that the challenges are not merely operational but systemic, reflecting a fundamental misalignment between how project success is measured (through process outputs such as adherence to time, cost and scope) and the complex outcomes that stakeholders actually value (Gupta et al., 2019). The correlation between project size and the likelihood of cost overruns, delays, and governance failures indicates that larger infrastructure projects encounter exponentially greater levels of systemic risk rather than simply scaled-up versions of smaller project challenges (Ahsan & Gunawan, 2010; Cantarelli et al., 2013; Odeck, 2004).

The integration challenges inherent in major projects reveal a fundamental question: who is responsible for ensuring that multiple interdependent parts function as a coherent whole? These projects typically involve multiple contractors, regulators, and government agencies, creating complex webs of interdependence that are compounded by legal, environmental, and community concerns (Flyvbjerg, 2003). Fragmented supply chains and inconsistent project specifications have been directly linked to delays, cost overruns, and suboptimal outcomes, suggesting that the traditional approach to project organisation may be fundamentally misaligned with the requirements of major infrastructure delivery (Stefano et al., 2023).

These systemic challenges are compounded by what Flyvbjerg (2017) terms 'uniqueness bias' where project leaders perceive their initiatives as singular,

thereby impeding their ability to learn from previous experiences (Flyvbjerg et al., 2024). This phenomenon is particularly problematic given the temporary nature of project organisations, which creates conditions for 'organisational amnesia', the loss of critical knowledge when project entities dissolve before capturing valuable expertise (Bakker, 2011; Mangematin et al., 2011; Wettenhall, 2011). For client organisations, this challenge is especially acute, as they may only deliver a single major project and therefore lack the accumulated experience possessed by supply chain partners involved in numerous projects.

3. The Evolving Role of the Client: From Mechanistic Control to Systems Orchestration

Despite the emergence of the 'Intelligent Client' concept, persistent delivery failures highlight a disconnect between the approach and actual performance that suggests a fundamental gap between established client practices and the evolving demands of contemporary project environments (Cesarotti et al., 2019). This paradox of client expertise presents a particular challenge in major project contexts. While clients may bear responsibility for project outcomes, they often lack the experiential knowledge held by their supply chain partners who deliver multiple projects, with this asymmetry exacerbated by the temporary nature of major projects where client organisations may only oversee a single initiative (Brookes et al., 2017; Sydow et al., 2004). The conventional expectation that clients can effectively specify requirements and manage delivery through mechanistic control becomes problematic when they possess less practical experience than their suppliers and must instead develop more collaborative approaches.

Such asymmetries create conditions that shape client-contractor relationships in major projects, which are characterised by inherent tensions that extend beyond simple commercial arrangements. For instance, the prevalence of adversarial contracting practices, driven by risk aversion and blame allocation, establishes environments where parties focus on protecting their interests rather than optimising collective outcomes (Gil, 2009; Vaaland & Håkansson, 2003). These dynamics are reinforced by procurement approaches that emphasise lowest-cost selection, creating conditions where suppliers submit unrealistic bids and subsequently seek compensation through claims and variations (Wolstenholme et al., 2009). The resulting cycle of mistrust and opportunistic behaviour undermines the collaborative relationships that complex projects require (Lv et al., 2025). The challenge of incomplete contracts in major projects exposes another dimension of client capability requirements. Given the inherent uncertainty and evolving nature of major infrastructure delivery, contracts cannot specify all eventualities, creating spaces where informal mechanisms may bridge formal arrangements (Williamson, 2007). However, clients may lack the adaptive capabilities necessary to manage these informal aspects effectively, defaulting to contractual enforcement rather than collaborative relationship management.

Traditional governance models, designed for stable environments with predictable outcomes, struggle to accommodate the dynamic and uncertain conditions that characterise complex adaptive systems in major infrastructure projects (Baxter et al., 2023; Crawford et al., 2008). For instance, sponsors and senior stakeholders often lack the experience and understanding necessary to provide effective oversight, whilst project teams operate under governance frameworks that may constrain rather than enable adaptive responses to emerging challenges. These observations suggest that the evolution of client capabilities has not progressed with the increasing complexity and scale of major infrastructure projects (Winch & Cha, 2020). The persistence of delivery failures, despite decades of process improvement initiatives and the adoption of 'intelligent client' practices, indicates that current approaches may be addressing symptoms rather than underlying causes.

4. A Systems Perspective on Clienting

Systems thinking can be described as a discipline for seeing wholes rather than parts, for seeing patterns of change rather than static snapshots, and for understanding the subtle interconnectedness that gives living systems their unique character (Kapsali, 2011). As a conceptual framework, systems thinking employs different theories, tools and techniques to help construct holistic, contingent perspectives and practices (Elia et al., 2021). Unlike mechanistic approaches that seek to decompose complexity into manageable parts, systems thinking emphasises the importance of understanding relationships, interactions, and patterns of behaviour that emerge from the whole system (Dacre & Kockum, 2022). Applied to clienting, systems thinking principles particularly relevant include: (i) holism, understanding that client effectiveness emerges from the integration of multiple dimensions rather than the sum of individual capabilities; (ii) emergence, recognising that new properties and capabilities can arise from the interaction of client subsystems; (iii) equifinality, acknowledging that there are multiple pathways to effective clienting depending on project context and environmental conditions; and (iv) boundary management, emphasising the client's role in managing interfaces between different organisational systems and stakeholder networks.

Drawing on our exploration of client roles and systemic challenges in major project delivery, we position the following key interconnected dimensions as the foundation for an integrated systems approach to clienting: emotionally intelligent leadership, relational dynamics, and effective delivery approach. These dimensions emerge directly from the systemic challenges we have examined, being the knowledge asymmetries and relationship tensions that characterise client-contractor interactions, the coordination failures and cultural misalignments in project delivery, and the organisational amnesia and procurement dysfunctions that perpetuate systemic inefficiencies.

4.1 Emotionally Intelligent Leadership

Emotionally intelligent leadership addresses the structural challenges inherent in client roles within major projects, particularly the paradox of bearing responsibility for outcomes whilst often lacking the experiential knowledge held by supply chain partners. The knowledge asymmetries and relationship tensions we have explored create conditions where traditional leadership approaches may prove inadequate, requiring capabilities that can bridge different forms of expertise whilst maintaining collaborative momentum despite uncertainty and conflict (Müller & Turner, 2010). As such, emotional intelligence becomes foundational since it addresses a critical gap in how clients navigate environments where their formal authority may be limited but their influence remains essential (Dacre et al., 2021; Goleman, 1998). The ability to read complex stakeholder dynamics, manage one's own responses to ambiguous situations, and create conditions for others to contribute their expertise becomes central rather than peripheral to client effectiveness. This represents a departure from leadership models that assume clear hierarchies and predictable outcomes, toward approaches that can function effectively within the temporary, multi-organisational structures that characterise major projects (Turner & Müller, 2005). Furthermore, the integration of intellectual and emotional capabilities appears particularly critical for clients as they operate at the intersection of strategic intent and operational complexity (Dulewicz & Higgs, 2003). Their role requires them to translate high-level objectives into actionable guidance whilst remaining responsive to the technical and practical constraints that emerge during delivery. This translation function demands both analytical capabilities to understand complex technical information and emotional intelligence to communicate effectively across diverse professional communities with different languages, priorities, and working styles (Koman & Wolff, 2008).

4.2 Relational Dynamics

Relational dynamics addresses the fundamental challenge that major projects function as temporary collaborative networks rather than traditional organisational hierarchies (Davies & Mackenzie, 2014). The failure of many coordination mechanisms may reflect deeper issues about how trust is established and maintained across system boundaries under time pressure, as well as a lack of appreciation of how effective leadership behaviour is linked to trust development (Birchall & Giambona, 2007). Current approaches to stakeholder management often appear to treat relationships as instrumental arrangements designed to secure compliance, rather than as collaborative partnerships essential for managing complexity and uncertainty (Schein, 2017). This perspective potentially creates conditions where stakeholders share information selectively, withhold critical insights about potential problems, and focus on protecting their individual interests rather than optimising collective outcomes. Additionally, the cultural misalignments that characterise many major projects suggest that current approaches to relationship management may be fundamentally misconceived (Nguyen & Watanabe, 2017). Rather than acknowledging the diverse professional

cultures and organisational contexts that stakeholders bring to projects, client organisations often appear to attempt to impose uniform processes and expectations that ignore these differences. The resulting tensions are typically attributed to 'difficult' stakeholders or 'cultural clashes', rather than recognised as symptoms of potentially inadequate approaches to cultural integration (Chipulu et al., 2014). This misdiagnosis may lead to interventions that address behavioural symptoms rather than the underlying relational structures that generate problematic behaviours within the broader project system.

4.3 Effective Delivery Approach

Effective delivery approaches challenge the conventional separation between project outcomes and organisational learning (Brookes et al., 2017). The persistence of similar problems across multiple projects suggests that current delivery approaches may fail to capture and institutionalise the knowledge necessary for continuous improvement. This failure appears to reflect, in part, organisational structures that prioritise immediate project outcomes over longer-term capability development, potentially creating conditions where lessons learned remain project-specific rather than becoming organisational assets (McClory et al., 2017). The temporary nature of major projects may exacerbate this challenge, as the entities responsible for delivery often dissolve before knowledge can be systematically captured and transferred (Wettenhall, 2011). As such, the procurement practices that dominate major project delivery appear to reveal deeper assumptions about value creation that may be fundamentally misaligned with project requirements (Wolstenholme et al., 2009). The emphasis on lowest-cost selection seems to reflect a commoditised view of services that potentially fails to acknowledge the knowledge-intensive nature of major infrastructure delivery. This approach may create perverse incentives where suppliers compete by excluding rather than including capabilities, potentially leading to the claims and variations that characterise many projects (Meng, 2012). The resulting adversarial dynamics appear to undermine the collaborative relationships essential for managing system complexity, as parties focus on protecting their contractual positions rather than optimising project outcomes (Matinheikki et al., 2024).

4.4 Systems Integration

These dimensions function as interconnected subsystems rather than independent components, with effective clienting emerging from the dynamic interactions between leadership facilitation, boundary management, and adaptive delivery capabilities (Boyd & Chinyio, 2008). Attempts to improve leadership capabilities without addressing relational dynamics might generate system tensions as leaders find themselves constrained by adversarial stakeholder relationships. Similarly, efforts to improve relational dynamics without corresponding changes in delivery approaches may prove unsustainable if the underlying incentive structures continue to reward competitive rather than collaborative behaviours (Denicol et al., 2020).

The integration of these dimensions represents a fundamental departure from conventional control-oriented approaches that treat leadership, relationships, and delivery as separate domains. This systems perspective recognises that effective clienting requires orchestrating dynamic capabilities across all dimensions simultaneously, creating feedback loops where improvements in one area can amplify or constrain developments in others. Emergent properties arise from these interactions that cannot be predicted from understanding each dimension in isolation, whilst non-linear effects mean that small changes in client approach can have disproportionate impacts on overall system performance.

5. Conclusion

In this paper we have positioned the theoretical foundations for a systems-based clienting framework in major infrastructure projects. Through examination of the characteristics and challenges of major projects as complex adaptive systems, the evolving role of the client from mechanistic control to systems coordination, and the key dimensions of effective clienting as interconnected subsystems, we have explored three interconnected areas that warrant further exploration: emotionally intelligent leadership, relational dynamics, and effective delivery approaches.

Our synthesis suggests that effective clienting requires a systems approach that integrates technical expertise with emotional intelligence, fosters cultural alignment and trust-building across system boundaries, and prioritises value creation and knowledge retention through improved delivery approaches. This underlines an impetus for simultaneous development across leadership, relational, and delivery capabilities, recognising that these dimensions function as an integrated system with emergent properties rather than separate competencies.

The systems perspective we have outlined acknowledges that major infrastructure projects operate as complex adaptive systems that cannot be effectively managed through mechanistic approaches alone. Instead, clients must develop the capability to coordinate temporary project systems whilst managing boundaries with permanent organisational structures, facilitating collaboration whilst maintaining strategic direction, and adapting to changing conditions whilst delivering reliable outcomes.

The next phase of our research involves the collaborative development of a systems-based clienting framework to operationalise these dimensions and provides practical guidance for client organisations. Through engagement with industry experts and stakeholders, we aim to refine and validate these dimensions, ensuring their relevance and applicability to the complex challenges faced by clients in major infrastructure projects. This collaborative approach acknowledges that framework development requires input from practitioners who possess the experiential knowledge necessary to translate theoretical foundations into actionable guidance. Therefore, by advancing our understanding of systemic

clienting and its role in project success, this exploration will contribute to both theory and practice, offering insights to help address the persistent challenges in major project delivery and enhance the value created through infrastructure investment.

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