STRATEGY

Orchestrating Project Networks to Deliver Local Economic and Social Value

by Jas Kalra, Jens K. Roehrich, Brian Squire, and Andrew Davies

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One must demonstrate how projects deliver value for small firms, local residents, and the wider community.

☑ **INSIGHT | FRONTIER**   13 May 2024

Integrating local SMEs in major projects

Increased media and government scrutiny, legislation, and public pressure have forced **major infrastructure project** clients to demonstrate how their projects would deliver value for small firms, local residents, and the wider community in the local project area. These benefits, defined as the measurable improvement derived from a result, are often linked to **economic and social value**. For example, in the United Kingdom (UK), the Social Value Act 2012 requires organizations to think broadly about how their procurement and supply network activities would improve wider environmental, economic, and societal outcomes for the communities that are impacted by the project. The National Social Value Themes, Outcomes, and Measurement (TOM) framework structures various social value metrics across **five categories**: (1) promoting skills and employment; (2) supporting growth of responsible local businesses; (3) creating healthier, safer, and more resilient communities; (4) decarbonizing and safeguarding our world; and (5) promoting social innovation. Particularly, when it comes to supporting growth of local businesses, governments around the world are increasingly expecting major project clients to demonstrate how their procurement and supply network activities are enabling the maximization of value for a local region (in which the project is being delivered) and its stakeholders. For example, in the USA , the federal government has the combined statuary goal of awarding **23% of its prime contracts to small businesses**.

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One approach to achieving these economic and social value outcomes is to increase the project funding to benefit **businesses embedded in the local communities**. This spending is reflected in the form of investments in local businesses to aid their capability development, and awarding them contracts to deliver products and services to a project. However, for most major projects – such as building new hospitals, transportation systems, or power stations – firms in the vicinity will be small- and medium-sized enterprises (SMEs). These SMEs are often characterized by resource constraints, lower capacity to absorb financial and technical risks, and with a need for faster cash-flow. These **barriers restrict** SMEs from being able to deliver on the scale required by major projects. However, governments' pressure to create local – defined as tight parameter around the project site – economic and social value early in the project lifecycle, coupled with exogenous shocks such as Brexit, **Covid-19 pandemic**, and the Russia-Ukraine war have forced project clients to identify alternative, geographically closer sources to supply to make their **supply networks more resilient**.

Despite the pressing need for the clients to rethink their supply network structures and relationships, **very little guidance exists** on *how* clients can identify, integrate, and coordinate local SMEs into their supply network and ensure wider value creation. Building on rich datasets – including over 30 interviews with industry experts, content analysis of over 50 industry and government reports, multiple industry workshops and conferences, and studying numerous major infrastructure projects over the last two decades – we examine the process by which a client can engage impactfully with regional SMEs in its supply network for the benefits of the project, and for wider economic and social value creation. We unpack the role of a client in orchestrating major projects' supply networks that successfully integrated SMEs, and discover two distinct, yet inter-related, challenges: (1) selecting an appropriate network governance structure; and (2) choosing the intensity of the client's involvement in coordinating network operations. Based on our rich insights, we develop a framework to aid managers and companies to make decisions regarding how best to integrate and manage local businesses in major projects to fulfil its objective of delivering local economic and social value.

The project client acting as a network orchestrator

The construction sector is widely considered to be mired by its **adversarial** industrial norms. This leads to increased costs and delays, with considerable taxpayer money going towards legal costs and non-value-adding activities. In times of inflation, cost of living crisis, and geopolitical disruptions, the inefficient delivery of major projects leads to deterioration (and erosion) of trust in the government and public opposition to these projects. To address these concerns, the government has called on major project clients to demonstrate how a proposed project may benefit the local community from the project outset (e.g., during the planning and building of a new hospital), instead of when the asset is produced and handed over (e.g., opening of and using a new hospital), which often takes years and sometimes decades. Moreover, clients are often expected to play a more proactive role in governing and coordinating project delivery, with governments around the world increasingly calling for clients to develop '**capable owner**' and '**intelligent client**' capabilities.

Clients need to develop the **capability** of orchestrating the network of organizations designed to deliver projects. These project networks often consist of 1,000s, or even 10,000s, of firms with different expertise and capabilities as well as of different sizes – from large multinational corporations (MNCs) to local SMEs. Here, the client is often tasked with orchestrating these vast project networks to bring together a variety of firms to deliver the required project outcomes. **Network orchestration** refers to the deliberate, purposeful actions undertaken by the client firm to set up and manage multiple networks needed to create and access the assets, resources, and complementary capabilities of numerous organizations.

In a major project setting, the client needs to act as a 'network orchestrator', and faces two key challenges. First, the network orchestrator needs to select the right network structure to achieve the desired outcome. The network structure depends on the capabilities of individual network members and the complexity of the task (i.e., product and/or service) to be completed by the network. Second, the network orchestrator needs to ensure that the various activities performed by network members are being coordinated. Here, the

network orchestrator may need to play a more or less active role to support network coordination for the benefits of project delivery. These challenges highlight that despite the pressing need for the network orchestrators to take a more active role in governing and coordinating project networks, a more detailed understanding is needed to guide decision making for the benefit of the project. Building on our research from multiple major projects (often worth in excess of $1bn), we now unpack these two distinct, yet interrelated, challenges for network orchestrators, before positioning a decision making framework.

Challenge 1: Selecting the right network structure

At the project outset (before the construction of an infrastructure), a significant proportion of procurement spend is towards facilities management (FM) and enabling works, which are procured as services. Here, the network orchestrator needs to procure services of varying degrees of complexity (e.g., catering and accommodation services for construction workers; setting up securing services for the project; soft and hard FM services). When choosing network members and selecting the right network structure, we found that not only the capabilities of each firm matter but that also task (or service) complexity plays a key role. Service complexity is often defined as the **number and intricacy of steps required to perform it**, and categorize services as routine (low complexity) and complex (high complexity).

Based on our research across major projects, we detected that for routine services (including catering), a network orchestrator should opt for a shared-governed network structure. In contrast, for more complex services (e.g., site supporting infrastructure), a network orchestrator should consider selecting a lead-governed network structure. For example, in a large project to build a new energy station, the provision for catering services to 1,000s of construction workers on site was crucial at the project outset. Here, local, small businesses expressed interest to provide these services, but mainly comprised of a dairy farmer, a tea and coffee supplier, and a local butcher. Whilst these small businesses could certainly supply local ingredients to a caterer appointed by the network orchestrator, the network orchestrator would still have to appoint an established caterer (highly likely an MNC) to provide end-to-end services. In this case, the opportunity to create local economic and social value would have been missed. To address this challenge,

the network orchestrator encouraged the interested SMEs to form a consortium (i.e., a catering network) to design 'farm-to-fork' catering services. Here, the network orchestrator opted for a shared-governed network structure, whereby the network members had equal responsibility for governing network activities.
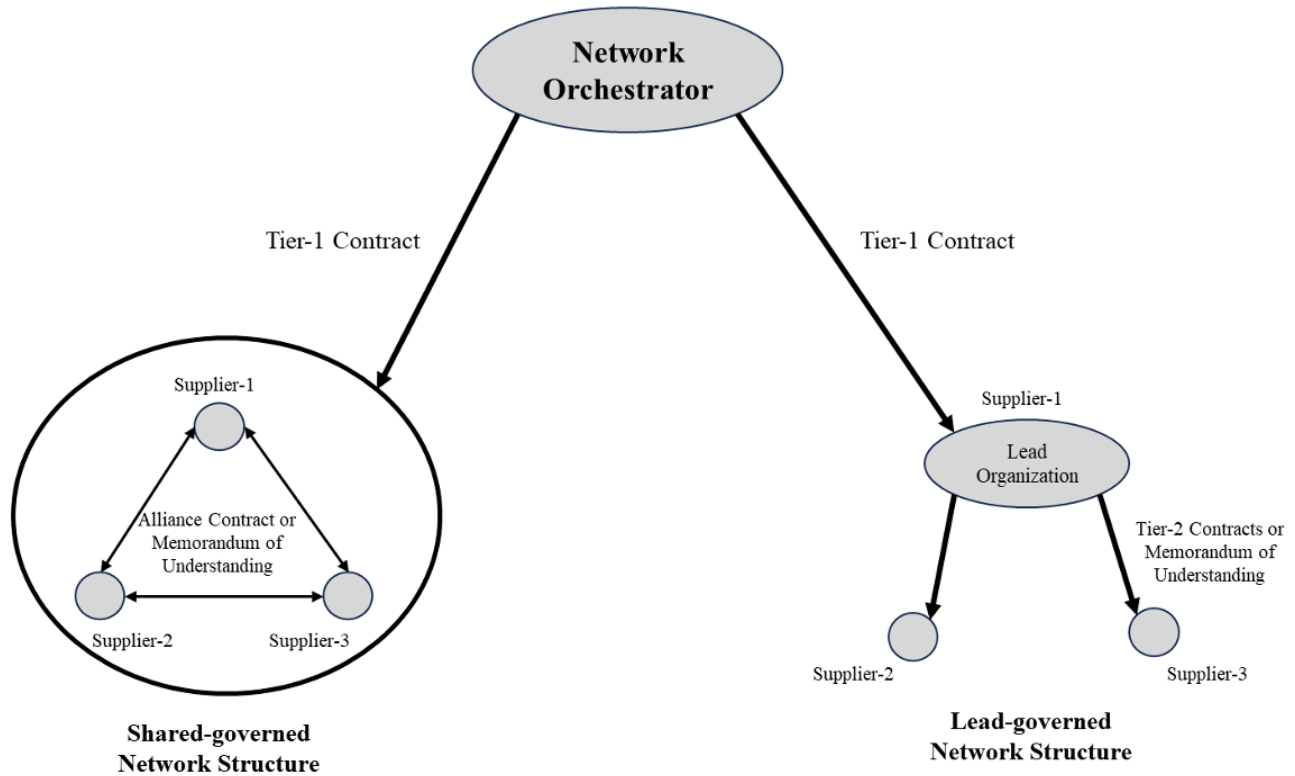
Figure 1 Shared- and lead-governed network structures

For more complex services (e.g., site infrastructure development), we found that a network orchestrator may best adopt a different network structure. Despite some possible local SMEs that could provide parts of the required services for such a network, none of the SMEs are likely to have the capacity to absorb the financial or operational risks that comes with such service delivery. Here, a network orchestrator may be better served to award a main contract to an established firm (possible an MNC) with the mandate to work closely with local SMEs to deliver the required services. A lead-governed network structure – where despite all firms delivering services for the network, the responsibility of coordinating and delivering the overall network contract stays with an established lead

organization (e.g., MNC) – is more appropriate in such a scenario. Taken together, the network orchestrator needs to decide carefully on the network structure, and take into consideration network members' capabilities and service complexity.

***Challenge 2: Selecting the right coordination intensity for a network***

After selecting the right network structure, a network orchestrator is faced with a second key challenge: The degree to which the network orchestrator should get involved in the coordination of the networks to ensure service delivery. Here, two choices need to be made by the network orchestrator: (1) the mode; and (2) the intensity of coordination. A network orchestrator can use more **formal (such as contracts, and performance review meetings), or informal (such as joint problem solving, and socialization) modes** to coordinate these networks. Based on our extensive research, we have evidenced that network orchestration requires both formal and informal modes of coordination. However, we have observed that there are clear coordination differences between high- and low-performing networks. Here, a network orchestrator's strategic choice to actively (such as actively building network members' capabilities via workshops and training), or passively (merely overseeing some activities without active interference) coordinate the network plays a key role. More specifically, we evidenced that 'active coordination' improves the performance of shared-governed networks, and more 'passive coordination' is appropriate for lead-governed networks.

Returning to our example of a large project to build a new energy station, the network orchestrator played a more active role in coordinating activities within the catering network in order for the network to be successful. This included actively participating in service designs, joint problem solving, and board meetings. The network orchestrator also influenced key decisions around corporate governance, inclusion/exclusion of network members, and service quality improvement. In contrast, the network orchestrator played a more passive role in coordinating more complex service networks characterized by a lead-governed network structure. Here, the network orchestrator delegated coordination activities to the lead organization, and limited its interaction with network members. This helped the lead organization in building legitimacy and authority in managing the network, and achieving high performance.

Positioning a decision model for the network orchestration process

Taken together, we found that high-performing networks exhibit a combination of two distinct, yet inter-related, decisions taken by the network orchestrator: (1) selecting the right network structure; and (2) selecting the right coordination intensity for a network. Accordingly, we position a managerial decision framework to guide firms tasked with managing the network orchestration process (Figure 2).
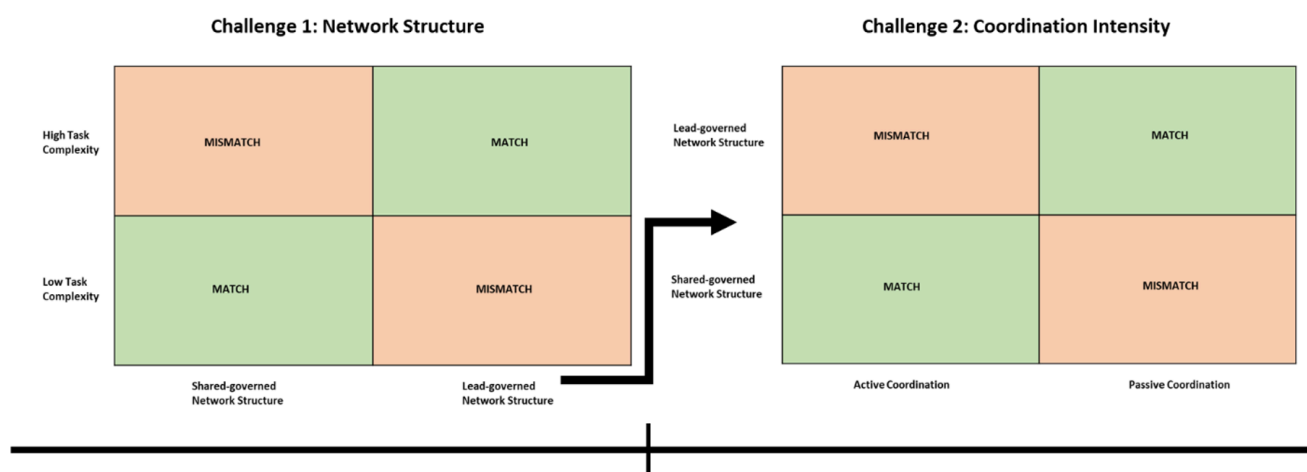
Figure 2 A managerial decision framework for the network orchestration process

First, when setting up and configuring a network of various firms, the network orchestrator needs to ensure a fit between the complexity of task and the network structure. We show that for more routine tasks a shared-governed network structure is best suited. In contrast, for more complex tasks, network orchestrators should build on a lead-governed network structure. However, this is just the first challenge which by itself does not ensure high-performing networks. Thus, as a second challenge, a network orchestrator also needs to ensure the fit between the chosen network structure and the intensity of coordination. For shared-governed network structures, a network orchestrator should adopt an active role in coordinating various network activities. In contrast, for lead-governed network structures, the network orchestrator should ideally delegate the responsibility of coordinating network activities to the lead organization.

Conclusion

To meet their economic and social value creation goals, clients in major projects need to diversify their supply networks to include more local SMEs. This, however, requires a careful selection of the right network structure and consideration of the right coordination intensity by a network orchestrator to ensure high-performing project networks.

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