“SCAFFOLDING THE VOID: TOWARDS A VOID-DRIVEN DYNAMIC CAPABILITIES META-CAPABILITIES”

Research Paper

Aimé Matamba Cibamba, Swiss School of Business Management, Geneva, Swizerland,

aimematamba.cibamba@ssbm.ch

“Abstract”

The dynamic capabilities model describes the ability of firms to sense, seize, and adapt to changes in their environment. The model assumes a foundation of institutional support, meaning structures that ensure reliable contract enforcement, credible information, and regulatory consistency. However, in many parts of the world, this type of institutional support does not exist. Examples include cities with high congestion in developing markets, digital industries where the internet is frequently down or hurricane affected area where institution sometimes becomes unfunctional. These environments do not provide the conditions under which standard DCs can be applied. This introduce scaffolding defined as a capability that enables firms to establish a temporary institutional structure, a set of frameworks, practices, or norms implemented for a limited period to support specific organizational actions. Using both the institutional theory perspective and the dynamic capabilities view, we introduce the Voids-Driven Dynamic Capabilities (VDDC) framework. This model posits an inverted-U relationship between institutional reliability and scaffolding effectiveness and reframes DCs not only as mechanisms for adaptation within order but for the reconstitution of order itself.

Keywords: dynamic capabilities, scaffolding, institutional voids, organizational resilience, microfoundations, emergent strategy, fragile environments

1 Introduction

Dynamic capabilities (DCs) are an organization’s ability to use its own resources and those it has access to, in order to adapt to and/or alter the way it operates in response to changes in its environments (Teece, Pisano and Shuen, 1997; Teece 2007). The traditional framework of DCs comprised of sensing opportunities, seizing them, and reconfiguring resources serves as a basis for understanding strategic renewal and sustained competitive advantage (Teece, 2014). Yet this model tacitly presupposes that enterprises function within functional institutional frameworks, that scholars have defined as markets where contracts are enforceable, with dependable information, uniform law enforcement, and legitimate authority (North, 1990; Scott, 2001). Within these stable institutional settings, managers can interpret signals, mobilize resources, and realign structures as needed. However, across large segments of the global economy particularly in emerging markets and in fast-evolving digital and decentralized industries the reliability of institutional frameworks remains uneven and prone to disruption (Khanna and Palepu, 2010; Côté and Hu, 2025). This fragility reflects both governance weaknesses (World Bank, 2019) and the rise of systemic uncertainty linked to geopolitical shifts and digitalization (Teece, 2025). Institutional voids limit the information flow, governance reliability, and coordination mechanisms needed for sensing, seizing, and reconfiguring (Côté and Hu, 2025), thus when institutions are weak, dynamic capabilities can become difficult to deploy. Sensing fails without reliable information. Seizing fails without enforceable contracts and with uncertain logistics. Reconfiguring fails due to a lack of coordination or minimal bases to act on. This theoretical gap has practical implications. It raises an essential question for strategy and policy: How do organizations sustain adaptation and operational continuity when the institutional frameworks that

normally coordinate exchange collapse*?* Existing theory offers limited guidance to answer this. While current literature on dynamic capabilities is adept at demonstrating how things change under a given institutional order, it does not speak particularly to how they change when that order is reconstructed (Pitelis, Teece, Yang, 2024).

Institutional theory, particularly institutional void work, does a good job delineating the lack of regulation, information, and enforcement that impede market functionality (Khanna and Palepu, 2010), but it less often delineates the dynamic firm capabilities that enable organizations to traverse these voids. Recent work on *institutional scaffolding* (Ekpenyong et al.,2025) begins to address this gap, but focuses on formal, top-down governance alternatives established by multinationals such as the CSR-supported community boards in conflict areas. This leaves untheorized the more pervasive, bottom-up, and informal processes through which firms internally and relationally rebuild the minimal order necessary for strategic action.

This paper fills the gap by framing scaffolding as a meta-capability. Scaffolding precedes and enables dynamic capabilities when institutional reliability breaks down. We define scaffolding as the patterned, collective routines through which organizations reconstruct provisional cognitive, relational, and procedural order temporary but reliable enough for the sensing-seizing-reconfiguring cycle to resume. This way Scaffolding is distinct from improvisation, which is brief and spontaneous. It is different from bricolage, which assembles resources in new ways under constraints. It also differs from institutional entrepreneurship, which creates long-term field-level changes. Scaffolding is the real-time, meta-level process that makes adaptation possible by first rebuilding its essential preconditions. This paper introduces the Voids-Driven Dynamic Capabilities (VDDC) framework that serves as a scaffolding substructure at a higher level of the capability hierarchy. If ordinary capabilities perform tasks and dynamic capabilities transform them, scaffolding re-enables transformation itself when formal institutions fail. The VDDC framework is operationalized through four interdependent microfoundations namely:

- Predictive Heuristics: Defined as the simplified, experience-based rules that enable actors to anticipate and coordinate future states of their environment when information is incomplete or unstable (Helgason et al., 2013). The Predictive Heuristics is a micro-foundation that fill the cognitive gaps.
- Relational Trust: Relational Trust is a microfoundation of scaffolding that allows companies to re-establish normative order when institutions fail. In contrast to conventional definitions that regard trust as a by-product of repeated exchange, this context signifies the deliberate establishment of reliable connections with actors whether formal or informal capable of assisting the firm in reconstructing absent or deficient institutional functions, including enforcement, information credibility, or resource accessibility.Through this trust-based scaffolding, companies bring back the bare minimum of norms that dynamic capabilities need to resume..
- Orchestration Flexibility: The idea of Orchestration Flexibility is based on Teece's (2007, 2014, 2025) idea of managerial orchestration and later work that focuses on flexible and adaptive coordination in situations where there is uncertainty (Helfat and Peteraf, 2015; Keller et al., 2022; Zahra, Petricevic and Luo, 2022). It refers to the company's ability to move and sync up resources and relationships in real time when institutional coordination mechanisms don't work. In traditional dynamic-capabilities theory, orchestration denotes the managerial alignment and reconfiguration of assets within operational institutional and contractual frameworks (Teece, 2014; Helfat and Peteraf, 2015). Orchestration Flexibility, on the other hand, means that the firm can keep things coordinated even when those systems break down. It is a procedural scaffolding mechanism that rebuilds temporary operating rules and flexible connections between actors until formal institutions are back up and running. Instead of making things more efficient, it brings back procedural coherence, which makes it possible to sense, seize, and reconfigure later.

- Collective Intelligence: Collective Intelligence is defined as the organization's ability to restore shared cognition and coordinated learning among its internal teams and external networks when formal knowledge systems and reporting structures collapse. Through informal communication channels, managers and partners share their experiences, give each other situational cues, and work together to come up with flexible responses. This new process lets broken actors work together to make sense of things and keep things working together. In the VDDC framework, collective intelligence serves as a cognitive scaffolding mechanism that reinstates interpretive capacity and facilitates continuous learning amid institutional collapse, thereby fostering the evolution of predictive heuristics and bolstering the resilience loop. It also fills informational gaps.

The proposed VDDC framework deliver key fundamental insights. First, it predicts an inverted-U relationship between institutional reliability and scaffolding efficiency. This suggests that scaffolding mechanisms achieve their highest effectiveness under conditions of *moderate institutional fragility*, where formal systems are weak enough to require substitution but not so degraded that cognitive, relational, and informational infrastructures collapse entirely (Côté and Hu, 2025; Rodrigues, 2013). Second, it reframes resilience not as a static outcome but as an emergent property of a recursive interplay between scaffolding and DCs a capacity refined through repeated reconstruction. Finally, it positions dynamic capabilities not only as mechanisms for adapting within order but, fundamentally, for participating in the reconstitution of order itself. In doing so this paper contribute to the DC and Instutional theory the following ways; Firstly, it corrects a fundamental boundary condition of dynamic capabilities theory, moving beyond the implicit assumption of institutional stability to provide a framework for "*governance under world disorder*" (Teece, 2025). Secondly, it introduces and specifies scaffolding as a distinct meta-capability, providing a missing link between institutional failure and strategic renewal. lastly, it integrates institutional and strategic perspectives by treating voids not as external constraints but as endogenous arenas for capability development, offering a refined conceptual toolkit for understanding how firms in fragile environments continue to function

2 Literature Review

2.1 Canonical dynamic capabilities and the assumption of institutional order

The Dynamic Capabilities View (DCV) is a powerful explanation of how firms achieve and sustain competitive advantage in rapidly changing environments. The DCV is based upon the Resource-Based View (RBV) and shifts focus from the possession of static resources to the capacity to reconfigure them (Teece, Pisano, and Shuen, 1997). The seminal triad of sensing (identifying new opportunities and threats), seizing (mobilizing resources to address them), and reconfiguring (transforming the firm's asset structure) has become the cornerstone of this research stream (Teece, 2014). However, the canonical model embeds a critical assumption that often remains implicit: That these processes operate within a context of minimal institutional reliability. The mechanisms of sensing rely upon information channels that are presumed credible; seizing depends upon contracts that are presumed to be enforceable and logistics infrastructures that are predictable; and reconfiguring requires the ability to coordinate human and capital assets under a stable set of rules (Schilke, Hu, and Helfat, 2018). As Teece (2014: 329) notes, dynamic capabilities are exercised "in concert with… the institutional environment." Therefore, the theory brilliantly explains adaptation within a functioning institutional order but treats that order as an exogenous background condition. Advances have recently begun to stretch the boundaries of these assumptions, yet the core assumption often remains. Research has shown that DCs can become path-dependent, reaching a ceiling where existing routines prevent renewal even in stable systems (Keller, Sandner, and Welter, 2022). Other scholars have called for capabilities that address sustainability (Ortiz-avram, Ovcharova, and Engelmann, 2024) or that help firms shape their environments (Cristofaro et al., 2025). Most pertinently, Teece (2025) has recently highlighted the challenge of "global disorder," urging a focus on governance capabilities under

fractured institutional architectures. This evolving discourse exposes a critical frontier: The need to theorize how dynamic capabilities function or are enabled to function when the institutional substrate disintegrates.

2.2 Institutional voids and the challenge of fragility

Institutional theory provides the necessary vocabulary for understanding environments without order. The concept of institutional voids defined as gaps in the regulatory, cognitive, and normative frameworks that underpin efficient market functioning, captures the absence of the very structures DCs theory takes for granted (Khanna and Palepu, 2010). These voids manifest as unreliable information, unenforceable contracts, and capricious regulation, leading to high transaction costs and paralyzing uncertainty (North, 1990).

In such contexts, the linear logic of the dc triad breaks down. For example, in Kinshasa's logistics sector, chronic congestion, fragmented authority, and informal enforcement repeatedly suspend market coordination (Sánchez, Kiyungu, and Tshimanga, 2018; Kumpel and Mfuamba, 2024). Here, firms cannot "sense" opportunities because signal is overwhelmed by noise; they cannot "seize" them because mobilization is thwarted by erratic policing and infrastructural decay; and they cannot "reconfigure" because the procedural stability for systemic change is absent. This converts the strategic process of dynamic capability into a struggle for survival through constant improvisation.

The literature suggests that the relationship between institutional voids and firm adaptation is not linear, but follows an inverted u pattern (Côté and Hu, 2025; Leonidou, Katsikeas, and Morgan, 2025). Moderate voids can stimulate innovation by forcing firms to develop unique, non-market capabilities. However, as voids deepen into systemic fragility, the cognitive and relational anchors necessary for any coordinated action formal or informal begin to dissolve. When enforcement and trust erode beyond a certain threshold, uncertainty turns into disorder, imposing severe social and economic costs (Rodrigues, 2013). This creates a theoretical and empirical "black box": What occurs in the space between the failure of standard dcs and the point of total collapse? It is within this zone of moderate fragility that our theorizing is focused.

The critical implication of this gap is that the dynamic capabilities (DCs) framework, in its current form, risks being a theory of adaptation for the institutionally privileged. It brilliantly explains strategic renewal in contexts of stability but offers limited guidance for the growing number of firms operating in the "messy middle" of institutional life, where formal rules exist but are unreliable, and informal systems are essential yet fragile. Recent analyses have shown that DCs remain powerful only when firms can mobilize adequate financial and human resources to support sensing, seizing, and reconfiguring processes under uncertainty (Leonidou et al., 2025). Yet much of the literature assumes relatively structured environments where these precondition hold (Pitelis, Teece and Yang, 2024). As a result, dynamic capability research has mostly captured strategic adaptation within order, not adaptation through the reconstitution of order. Without a construct explaining how firms rebuild the foundational conditions for dynamic capabilities when institutions malfunction, our understanding of strategic adaptation in a world marked by volatility and institutional decay remains incomplete. Emerging evidence from the chinese automotive sector shows that institutional voids themselves can shape the development of dynamic capabilities, compelling firms to build regulatory, cognitive, and normative substitutes that enable sensing, seizing, and transforming under weak institutional conditions (Côté and Hu, 2025). This leaves a theoretical and practical void: what occurs in the space between the failure of standard dcs and the point of total collapse? It is within this zone of moderate fragility, the "zone of scaffolding," that this theorizing is focused, and where a fundamental extension of dc theory is most urgently needed.

2.3 The limits of existing adaptive constructs

Theories of organizational resiliency and adaptability have been developed, yet no theory has captured the meta-capability to rebuild the strategic adaptation preconditions in the event of collapse.

- **Improvisation** refers to spontaneous, innovative actions taken in response to unanticipated events (Miner, Bassoff and Moorman, 2001). Improvisation captures the immediacy and rapidity of responses in a crisis; however, improvisation is ad hoc and transitory and therefore cannot capture the repetitive, cooperative nature required to maintain coordination across time.
- **Bricolage** represents "making-do" through the re-combination of existing resources for new uses (Baker and Nelson, 2005). Bricolage is a fundamental component of resourcefulness; however, it primarily concerns the recombination of assets rather than the building of the cognitive and relational structures required for coordination.
- **Resilience** is defined as the result of an organization's adaptive capacity-the ability to absorb shock and maintain operation (Duchek, 2020). Resilience is an important organizational characteristic; however, it is a resultant state rather than the process that produces it. Our concern is with the process that generates that state.
- **Institutional entrepreneurship** refers to the purposeful efforts of actors to create or alter institutions (Battilana, Leca and Boxenbaum, 2009). Institutional entrepreneurship is a macro-level activity focused on changing fields; our concern is with the micro-level needs of firms seeking to establish a stable institutional environment.
- **Organizations' network and relational capabilities** represent the ability of firms to develop and utilize inter-organizational relations to achieve strategic advantages (Lorenzoni and Lipparini, 1999; Kale et al., 2002). Network and relational capabilities are commonly used by firms to improve performance; however, these capabilities are often employed within a functioning institutional environment and are designed to enhance performance rather than to recreate a collapsed institutional environment. Scaffolding is the meta-capability that coordinates relational and cognitive/procedural resources to enable firms to operate in the absence of an effective institutional environment.
- **Summary**: It is essential to differentiate scaffolding from other forms of organizational adaptation. Institutional work (Lawrence and Suddaby, 2006) emphasizes the intentional creation, maintenance, or disruption of institutions in a field; scaffolding is a firm-level meta-capability designed to stabilize the firm and its relational environment in the absence of effective institutions. Additionally, unlike bricolage (Baker and Nelson, 2005), which focuses on resource recombination, scaffolding primarily concerns establishing the cognitive and relational context necessary for resource use. Collective improvisation (Cunha et al., 2014) defines spontaneous, coordinated behavior in the moment; scaffolding provides the structured, repeated behaviors necessary to sustain such improvisation over time. Lastly, while organizational resilience (Duchek, 2020) is the emergent outcome of an organization's ability to absorb shocks and maintain functioning, scaffolding is the meta-capability and process that builds that resilience in the absence of an effective institutional environment.

While each of these constructs addresses some aspect of the problem reactivity, resourcefulness, recovery, transformation, or leveraging, they fail to identify the meta-capability that systematically enables the core engine of strategic adaptation (the DC triad) to function when its foundational supports collapse.

2.4 Differentiating Scaffolding: From institutional substitution to meta-capability

Recently, a study by Santistevan, Kourula, and Laasonen (2025) introduced the concept of institutional scaffolding to define how multinational enterprises (MNEs) operating in violent conflict environments develop formal top-down governance substitutes. For instance, the authors demonstrate how the Global Memoranda of Understanding (GMoUs) developed by oil companies and local communities in the Niger Delta created Cluster Development Boards that performed governance, mediation, and development functions in the absence of the government. In this manner, the authors define GMoUs as formal, semi-permanent scaffolds that provide public governance.

Our theorization builds upon, but significantly differs from, this important research. We propose that scaffolding be viewed as a dynamic meta-capability- an internal, firm-level, and often bottom-up response to institutional failure. While the scaffolds described by Santistevan et al. are designed to replace state institutions through formal agreements, our scaffolding is focused on how organizations re-establish provisional order internally and relationally to allow for the continued operation and strategic planning of the organization. The mechanisms we describe are generally emergent, informal, and temporary, and are resolved once a baseline of institutional reliability is established. Therefore, institutional scaffolding substitutes for governance; our scaffolding enables an organization to adapt and rebuild the preconditions for dynamic capabilities to function. Table 1 below map scaffolding as a metacapability.

Dimension	Institutional Scaffolding	Improvisation and Bricolage	Resilience	Our Scaffolding (Meta-Capability)
Primary Aim	Stabilize external governance via formal substitutes	Spontaneous response / Resource recombination	Outcome of adaptive capacity (Recovery)	Restore minimal order enabling DCs
Locus and Initiator	MNEs (top-down); Firm-community interface	Individual or small team	Organization-wide system	Collective firm-level actors (bottom-up)
Temporal horizon	Medium-to-long-term (semi-permanent)	Immediate, short-term	Long-term, ongoing	Short-to-medium ; Provisional
Formality	Formal, documented agreements	Ad hoc, informal	Formalized learning processes	Informal to semi-formal
Core mechanism	GMoUs, CSR projects, boards	Creative action, "making do"	Feedback loops, resource flexibility	PROCI microfoundations
Theoretical role	Institutional substitute	Micro-level action	Outcome state	Enabling meta-capability
Sources	(Santistevan et al., 2025)	(Miner, Bassoff, and Moorman, 2001; Nelson and Baker, 2005).	(Duchek, 2020)	This paper's framework

Table 1 Fundamental distinction between scaffolding and related construct. Source: Author (2025)

Summary: While there is considerable research on firms' responses to environmental instability, a major gap remains in understanding how firms systematically rebuild the basic institutional functionality needed to reactivate their dynamic capabilities amid fragility. There are three types of shortcomings of the current concepts: they are ephemeral (improvisation); they are focused on resources (bricolage); or they are macro (institutional entrepreneurship), or they describe an outcome (resilience) rather than a process that generates the outcome. The concept of institutional scaffolding relates to a different problem-the formal replacement of public governance-but our VDDC framework (centered on the scaffolding meta-capability) was developed to fill this theoretical gap. The VDDC framework describes the routine practices that allow firms to build the foundation for responding before they can respond.

3 Scaffolding as a Meta-capability: The PROCI Microfoundations

3.1 Conceptual definition and position in the capability hierarchy

We define scaffolding as a meta-capability comprising repetitive, collective routines that enable firms to rebuild provisional predictability, legitimacy, and coordination when formal institutional systems fail. As a meta-capability, scaffolding enables the activation and operation of normal and dynamic capabilities in conditions of institutional fragility. Resilience is the emergent outcome of a firm's ability to absorb shocks and continue operating; scaffolding is the dynamic capability that builds that

resilience when the institution supporting the firm collapses. Scaffolding is the generative process that reconstructs the context for adaptation and recovery.

We use the term "meta-capability" to denote a capability that controls other capabilities and operates at a higher level of abstraction, providing the conditions for their performance. This places scaffolding in a hierarchical capability structure:

- **Ordinary capabilities** perform the administrative, operational, and governance activities required for the continued existence and short-term effectiveness of the firm ("doing things right"). Normal capabilities are executed within a stable environment.
- **Dynamic capabilities** alter, expand upon, or generate new normal capabilities to address changes in the environment ("doing the right thing"). Dynamic capabilities allow the firm to adapt.
- **Scaffolding (The Meta-Capability)** establishes the minimal institutional substrate (cognitive, relational, and procedural supports) that dynamic capabilities assume. It restores the ability to adapt when the foundational order collapses.

This hierarchy adds a critical, pre-adaptive stage to the processual view of capabilities as continuous organizational and learning processes (Wollersheim et al., 2013). The hierarchy also addresses Keller et al.'s (2022) need to overcome internal path dependence by addressing external institutional collapse. Scaffolding represents a systematic response to a firm's systemic failure, enabling the reconstruction of a workable environment for strategic activity.

3.2 The PROCI microfoundations: operationalizing scaffolding

Our theories of the institutional base parallel North's (1990, 1991) foundational typology of institutions, which distinguishes formal institutions (laws, rules) from informal institutions (conventions, norms, codes of conduct). PROCI microfoundations fill gaps left by collapses of both formal and informal institutional layers. Predictive Heuristics and Collective Intelligence replace collapsed informal cognitive institutions by rebuilding shared mental models and re-establishing information channels. Relational Trust replaces informal normative institutions, which were lost when formal enforcement mechanisms failed. Finally, Orchestration Flexibility addresses failures of formal procedural institutions by creating opportunities for temporary changes to roles and coordination patterns. Hence, scaffolding systematically attacks the multi-layered institutional failures. Scaffolding is realized through four interdependent microfoundations termed under the acronyme PROCI. Each of the PROCI element is theorized to address a different type of institutional void and, together, to provide an integrated, short-term support structure needed. It function this way:

Predictive Heuristics (Cognitive/Informational Void): Without access to reliable information systems, firms are unable to perform complex analytics to predict demand and other variables. Predictive heuristics are simple, cognitive "rules-of-thumb" that allow firms to establish common expectations and inferences about the future while dealing with uncertainty (Gigerenzer and Todd, 1999). By reducing complexity to focus on a small number of key indicators, predictive heuristics enable firms to produce "good-enough" predictions that support coordinated activity. For example, in Kinshasa's transport sector, drivers use collectively developed road timing rules to provide some degree of coordination in navigating chronic congestion (Kumpel and Mfuamba, 2024). Predictive heuristics restore a basic level of cognitive order to an uncertain environment, making it minimally intelligible for sensing activities.

Relational Trust (Normative/Enforcement Void) : In environments without reliable contract enforcement and legal recourse, relational trust serves as a substitute for formal governance. Relational trust is established through repeated interactions among network members, reciprocity, and the shadow of the future (Uzzi, 1997). Relational trust creates a normative order that holds exchange relationships together through social glue in environments where institutional enforcement fails. Examples include informal agreements between depot managers and local authorities, and reputation-

based credit systems used within business networks to sustain transactions even in environments of regulatory ambiguity (Hock-Doepgen et al., 2024; Sánchez et al., 2018).

Orchestration Flexibility (Procedural/structural void): When standard operating procedures fail due to disruptions such as technology outages, Orchestration Flexibility allows organizations to adaptively coordinate available resources and redefine roles. This involves a capacity for decentralized decision-making, role fluidity, and rapid resource reallocation in response to emerging constraints (Teece, 2014; Laamanen and Wallin, 2009). While not simply improvisation, orchestration flexibility represents a structured yet adaptive approach to coordinating activity. For example, if a firm experiences a digital platform outage, the organization may temporarily delegate communication and decision-making authority to ad hoc teams, using alternative communication channels to maintain operational flow (Benzell et al., 2024). Through orchestration flexibility, a provisional procedural order can be created.

Collective Intelligence (Informational/cognitive void): Collective intelligence represents the ability to aggregate, integrate, and make sense of dispersed knowledge held by many individuals to recreate information flows and solve problems (Majchrzak and Markus, 2012; Kump et al., 2019). In environments where central information authorities are either absent or distrusted, collective intelligence provides a mechanism for distributed sense-making. For example, driver cooperatives share real-time route updates via messaging apps, while open-source communities collaborate to design solutions to supply chain crises (Sarkar et al., 2022). Collective intelligence pools cognitive resources to create a shared, actionable picture of reality, compensating for fragmented information.

The PROCI System as an integrated whole: While each microfoundation targets a different void, their strength resides in their interdependence. Relational trust reduces the costs of sharing information for collective intelligence. Predictive heuristics generated from collective intelligence provide guidance for flexible orchestration. Orchestration flexibility supports the maintenance of relational networks. As a result, they represent a synergistic system that creates a holistic, albeit temporary, institutional environment.

3.3 Scaffolding in action: illustrative manifestations

To illustrate the concept of the PROCI microfoundations, Table 2 presents illustrative examples of how the microfoundations manifest in various contexts of institutional weakness. They are not empirical data but conceptual representations intended to illustrate the theory's applicability and scope.

Context (Source)	Institutional void	Illustrative mechanism	PROCI microfoundation(s) activated
Urban logistics, Kinshasa (Sánchez et al., 2018)	Enforcement and Regulatory	Informal pacts with local authorities; transport syndicates setting internal rules	Relational Trust, Orchestration Flexibility
Digital platform Outage (Benzell et al., 2024)	Procedural and Informational	Shift to alternative communication apps; emergent role allocation in ad-hoc teams	Orchestration Flexibility, Collective Intelligence
Community security, DRC (Lagrange and Vircoulon, 2021)	Enforcement	Markets hiring former gang members for protection, creating hybrid legitimacy	Relational Trust / Hybrid Legitimacy
Open-source crisis response (Sarkar et al., 2022)	Coordination and Informational	Digital maker communities co-designing and distributing PPE during collapsed supply chains	Collective Intelligence, Predictive Heuristics

Market Self-Governance (Malukisa and Titeca, 2018)	Regulatory and Procedural	Vendor unions setting tariffs and self-organizing sanitation services	Collective Intelligence, Orchestration Flexibility

Table 2 Illustrative Manifestations of Scaffolding. Source: Author (2025)

3.4 Distinguishing scaffolding from related constructs

To better understand the PROCI microfoundations, it is important to further clarify the distinction between scaffolding and related constructs to avoid overlap. Scaffolding is the collective, orchestrated process that creates the context for improvisation and bricolage to function effectively. It is the generative mechanism through which the routines emerge that, in the long run, produce resilience. The goal of scaffolding, unlike that of institutional entrepreneurship, is not to change the field's institutional environment but rather to create a temporary buffer that allows business operations to continue, enabling the firm to operate until it returns to normalcy.

To summarize, this section has defined scaffolding as a meta-capability in and of itself, placed it within the capability hierarchy, and specified its operationalization through the microfoundations of the PROCI system. We thus have the basis of foundational logic for the Voids-Driven Dynamic Capabilities framework, the formal propositions and the conceptual model of which will be treated in the following section.

4 Discussion

4.1 Theoretical propositions

The following propositions define the sequence and logic by which scaffolding produces its effects enabling strategic adaptation in the environment of institutional fragility.

Proposition 1 (The enabling function): *When the level of institutional reliability of an environment falls below a functional threshold, scaffolding enables the process of dynamic capabilities by reconstructing a provisional order through the coordinated activation of its PROCI micro-foundation*.

The main intention of scaffolding is to foster the minimum cognitive, relational, and procedural conditions to allow the sensing-seizing-reconfiguring (SSR) cycle to operate. Scaffolding does not substitute for the DC's triad; it is a necessary condition for its activation under fragility. Predictive Heuristics and Relational Trust restore the shared expectations and secure interactions required for *sensing* and *seizing*. Orchestration Flexibility and Collective Intelligence rebuild the coordination and information-processing capacity required for *reconfiguring.* Without this scaffolding phase, the DCs are rendered ineffective by fundamental uncertainty and coordination failure.

Theoretical grounding: These processes accord with the basic DC tenet that managerial cognition and coordination are microfoundations of adaptation (Teece, 2014; Schilke, 2018), but specify the routines that establish these microfoundations when institutions fail.

Illustration: In Kinshasa, the sudden ban on cargo movement during daily hours creates a regulatory void. Faced with this situation, improvisation or bricolage did not really help. Because of the Ban, reconfiguring resources becomes either costly, unsafe (night shift), or impossible. In this case, the solution was to activate scaffolding. Some companies that had activated their relational trust obtained quick exemptions and continued business as usual. Some companies shifted activities to the night shift despite the security threat, because certain areas of Kinshasa are largely deserted at night. Instead of relying on the police, which are ineffective in those areas, they activate the relational trust they've built over the years with community leaders to help secure cargo as it passes through areas with enforcement gaps that create insecurity.

Antecedent: When the reliability of formal institutions drops below the range of functional thresholds, it renders the operation of the systemic cycling of sensing-seizing-reconfiguring (SSR) unsafe or impossible to sustain.

Mechanism: The firm activates the scaffolding meta-capacity, which reconstitutes provisional order through the coordinated activation of the PROCI: Predictive heuristics (sensory cognitional stability), Relational trust (normative stability), Orchestration flexibility (procedural stability), and information capacity (collective intelligence).

Outcome: Thereby, reinstating the minimal cognitive, relational, and procedural conditions for the dynamic capabilities (SSR) cycle to operate again.

Boundary: This enabling function is critical and has the highest potential in contexts of moderate fragility, where there is sufficient social structure to support the PROCI mechanism.

Proposition 2 (The substitutive mechanism): In persistent environments of institutional voids, scaffolding performs the function of missing governance and information structures, enabling direct coordination and exchange in the face of the absence of formal systems.

Beyond enabling the firm's internal DCs, the scaffolding routines performed externally often serve as the core functions of the absent institutions. These are a parallel, informal architecture of governance. Trust networks substitute for legal and security enforcement; Collective Intelligence systems substitute for public information systems; and flexible orchestration between firms substitutes for the missing regulatory coordination or infrastructure deficiency.

Theoretical grounding: This developed the institutional voids theorization, which identifies the problem of missing market intermediaries (Khanna and Palepu, 2010), by refocusing the solutions in the capabilities these firms perform. It shows how firms internalize and co-create the functions of the institutional environment (Côte and Hu, 2025).

Illustration: In the absence of municipal or governmental services, the vendor unions of the marketplaces in Kinshasa jointly impose self-imposed levies and organize effective waste collection, effectively substituting for a municipal sanitation department (Malukisa and Titeca, 2018). This is scaffolding (via Collective Intelligence and the Orchestration Flexibility) performing the institutional function.

Antecedent: In situations where there exists chronic and deep institutional voidness, where formal governance machines and structural information vehicles either do not exist or are poorly functional.

Mechanism: The scaffolding routines effectively leverage the primary powers of absence of the institutions, with networks of Relational Trust supplying the legal enforcement of trust, and Collective Intelligence systems supplying the public services of information, flexible orchestration, and regulatory coordination.

Outcome: Thereby enabling direct, secure exchange, dependable flows of information, collective action, between a network of actors, no matter what the non-functional formal system.

Boundary: This substitutive function is potent only when the firm possesses or can build sufficient network embeddedness and social capital; it is ineffective in contexts of total social disintegration or where the firm is a complete outsider.

Proposition 3 (The recursive learning loop): *Recurrent use of scaffolding routines across recurrent institutional ruptures produces recursive learning, transforming provisional responses into enduring organizational capabilities and enhancing resilience.*

Each instance of use is a learning occasion. Utilizing a dual-loop process, the firm solves not only the immediate challenge (single-loop learning), but also, on the basis of scaffolding routines, reflects on and codifies the effective scaffolding routines itself (double-loop learning). Over time, what were ad hoc heuristics become institutionalized guidelines, informal trust shifts into stable alliances, and ad hoc coordination into a core competence of volatility.

Theoretical grounding: This proposition integrates the scaffolding concept with organizational learning theory and the view of resilience as a dynamic capability (Duchek, 2020). It shows how

exposure to fragility can paradoxically lead to long-run adaptive capacity through recursive refinement of scaffolding routines.

Illustration: A logistics cooperative in Kinshasa, repeatedly thrown into difficulties by the harassment of the traffic police in the first instance, will tend to use ad hoc means of negotiation (improvisation by the driver). This is common practice as reported by Sanchez et al. (2024). Some firms elevate this type of negotiation by building relational trust with officials, not to bribe in the event of harassment, but to have a higher-ranking official who can help when enforcement voids cause delays to their operations. With time, this becomes a firm's scaffolding routine: a standardized understanding of 'safe passage' (codified Relational Trust), and a common digital map of the control points updated by drivers in real time (codified Collective Intelligence). This learned scaffold is thus also enabled to be more rapidly and effectively used in the next rupture of the system.

Antecedent: As the firm is repeatedly faced with and navigates recurrent institutional ruptures.

Mechanism: ...a dual-loop learning process is activated: single-loop learning is used for the more refined, immediate application of PROCI routines, and double-loop learning is activated in the reflected codification and institutionalization of the most effective scaffolding routines.

Outcome: Moving from ad hoc, provisional responses to enduring, institutionally embedded capabilities and thereof systematically enhancing the firm's resilience and diminishing the recovery time from succeeding institutional shocks.

Boundary: This recursive learning is contingent on the firm having processes for integral knowledge capture and reflection; it is undermined in environments of constant, overwhelming disruption that preclude post-hoc analysis.

Proposition 4 (Boundary condition - Inverted U): *The performance of scaffolding is inversely related to the level of institutional reliability. That is, it performs best when institutions are moderately reliable, and less so when they are very reliable, and least when institutions are in a collapsed state.*

This proposition describes a key boundary condition for the VDDC framework. Scaffolding is context-dependent.

High reliability: In this scenario, institutions are functioning well. Therefore, scaffolding will be unnecessary, as formal rules, contracts, and information systems provide a stronger foundation for the development of DCs.

Moderate fragility (Zone of scaffolding): At this stage, institutions are functioning to some extent, but their reliability is inconsistent. There is still some residual social structure, potential for trust, and latent information supporting the PROCI micro-foundations. Thus, scaffolding will perform at its highest levels.

Extreme collapse: In these instances, institutions have completely broken down (for example, in active war zones). As a result, the social and informational fabric upon which scaffolding relies also collapses. Trust networks break down, heuristics fail in a non-stationary environment, and collective intelligence cannot emerge (Rodrigues, 2013). In addition, scaffolding and, therefore, DCs cease to exist.

Theoretical basis: This proposition offers a nonlinear rationale for institutional theory (Côté and Hu, 2025) and DC-environment fit (Cristofaro et al., 2025), specifying the institutional factors that lead to the emergence of the meta-capability.

Illustration: Logistics in Kinshasa operate within the 'zone of scaffolding' (productive area); whereas, in a region surrounding Kinshasa where militias such as the Mobondo (ACAPS, 2024) replaced the state completely, the relationships and cognitive elements upon which scaffolding relies were destroyed, causing businesses to close.

Antecedent: The degree of institutional reliability in a firm's operational environment.

Mechanism: Influences the value and efficiency of scaffolding as a meta-capability. Where institutions are reliable, scaffolding is redundant and is no longer needed due to superior formal institutions. Where institutions are fragile (moderately reliable), scaffolding is most effective at

addressing gaps. When institutions are in extreme collapse, the social/cognitive fabric on which the PROCI mechanisms rely disintegrates, rendering the scaffolding ineffective.

Outcome: Resulting in an inverted U (non-monotonic) relationship between institutional reliability and the effectiveness of scaffolding, where the maximum effectiveness occurs in the 'zone of scaffolding' (moderate institutional fragility).

Boundary: The relationship described here delineates scaffolding as a transitional capability, useful for coping with volatility, but never a substitute for functional states, nor a solution to complete state failure.

4.2. The scaffolding inversion curve (P4)

The relationship between institutional voids and the effectiveness of scaffolding is not direct but curved (inverted) (P4). In stable environments with few voids, scaffolding is largely redundant. The greatest effectiveness of scaffolding is found in moderate to high institutional voids. In extreme collapse scenarios, however, the scaffolding itself is destroyed, and its effectiveness drops dramatically. As shown in Figure 1, the inverse relationship between institutional voids and the effectiveness of scaffolding interventions is non-linear.

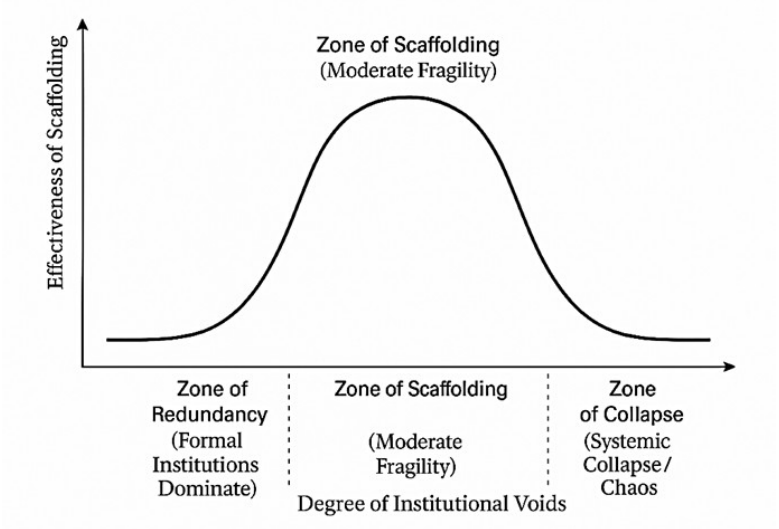

Figure 1 Scaffolding inversion curve. Source: Author (2025)

The critical implication of the scaffolding inversion curve is that resilience is not a monotonic function of institutional stability. Scaffolding represents a transitional capability, most vital in the ambiguous space between order and chaos. Its ultimate purpose is not to permanently replace institutions, but to provide the necessary meta-capacity for reorganization, enabling systems to navigate the volatile peak of the curve and avoid the precipice of systemic collapse. This model reframes resilience not as mere endurance, but as the dynamic ability to actively invert a trajectory of failure. It also shows that scaffolding is a dynamic capability for building resilience in the face of institutional fragility.

4.2 The VDDC conceptual model

The VDDC process is shown conceptually in Figure 2. The model starts with the trigger: Institutional Failure, where the failure of formal rules, norms, and enforcement mechanisms creates cognitive, normative, and procedural voids. The mediating mechanism: Scaffolding activation ensues, where the firm uses the PROCI microfoundations. This activation immediately results in provisional Stabilization, creating a minimum institutional substrate: Predictive heuristics and Collective intelligence restore cognitive order; Relational trust restores normative order; Orchestration flexibility

restores procedural order. This provisionally stabilized environment enables the Dynamic Capability Cycle (Sensing, Seizing, Reconfiguring) to begin anew, ultimately producing the outcome of Organizational Resilience. Importantly, the model includes a Recursive Learning Loop (Kump et al., 2019) where the outcomes of both the scaffolding and DC phases produce learning that enhances the PROCI microfoundations, thereby increasing the firm's capability to reconstruct in the future.

The model depicts the inverted U relationship (P4) as a boundary condition, thus demonstrating that the overall process is most productive in the zone of moderate institutional fragility.

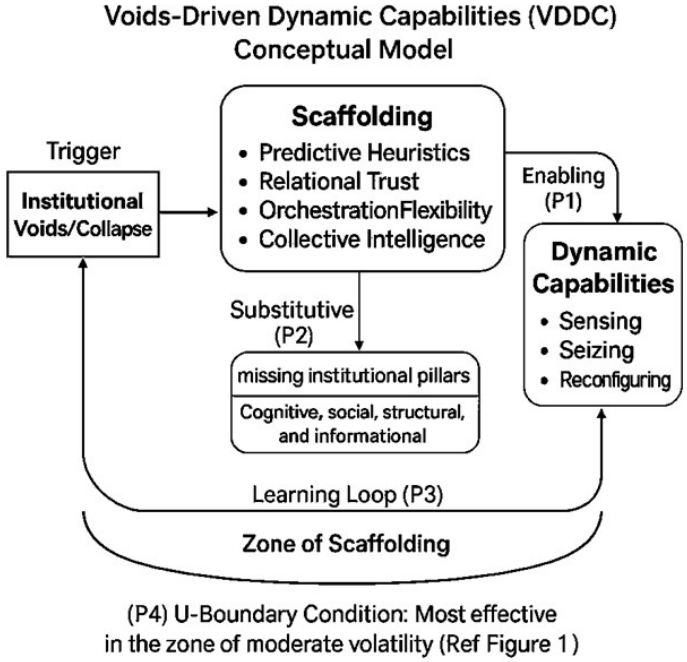

Figure 2 The Voids Driven Dynamic Capabilities (VDDC) Conceptual Model. Source: Author (2025)

In this chapter, we extended the VDDC framework through four major propositions that describe the scaffolding meta-capability's enabling (P1), substitutive (P2), evolutionary (P3), and bounded (P4) nature. The integrated conceptual model illustrates how firms can address the challenges of institutional fragility through a dynamic, recursive process, initially restoring order and then reconfiguring strategy, allowing the DC triad to function. These reframing positions dynamic capabilities not as the starting point of adaptation, but as the valuable outcome of a prior, more fundamental process of institutional reconstruction.

5 Discussion, Implications, and Future Research

5.1 Theoretical contributions

This research makes four principal contributions to the literature on strategic management and institutional theory.

Correcting the boundary conditions of dynamic capabilities: The main theoretical contribution of this paper is to reconceptualize the environmental limits of dynamic capabilities theory. By moving away from the implicit assumption about the functionality of institutions, the VDDC framework formally includes situations of fragility, volatility, and institutional collapse as central rather than peripheral to the study of adaptation. It answers the urgent call to understand governance under conditions of world disorder (Teece, 2025). We show that the fundamental sensing-seizing-reconfiguring triad is not the universal starting point of adaptation. It is itself based upon other

processes, often unremarked, of institutional reconstruction. This puts the basic DCs model in the position of a special case operating in a particular (stable) context, whereas VDDC describes the general situation of adaptation in a world of disorder.

Introducing and specifying Scaffolding as a meta-capability: This article advances scaffolding as a theoretically distinct concept, nestled within the capability hierarchy. It moves beyond the established hierarchy of ordinary and dynamic capabilities (Teece, 2014; Wollersheim et al., 2013) into a meta-layer that re-enables the operation of the layers below it under appropriate conditions. By clearly distinguishing scaffolding from improvisation (the ephemeral variant), bricolage (the resource-based cousin), resilience (the desired outcome), and institutional entrepreneurship (the macro-level variant), we lend conceptual clarity to the study of how hi-tech organizations respond to breakdown. This provides the missing link between the literature on institutional failure on the one hand and that on strategic renewal on the other. It thus positions scaffolding not merely as a coping mechanism but as the specific dynamic capability for architecting resilience in the face of institutional failure, providing a missing generative link between institutional failure and the recovery of strategic agility.

The operationalization of adaptation through the PROCI microfoundations: The VDDC regime moves forward from the abstract capability to an actionable routine through its specification of the PROCI microfoundations. The fine-grained detailing of how Predictive Heuristics, Relational Trust, Orchestration Flexibility, and Collective Intelligence cumulatively address distinct institutional voids meets the call for fine-grained studies of capability microfoundations (Hock-Doepgen et al., 2024; Schilke, 2018). This operationalization thus provides a concrete theoretical basis for examining how firms navigate fragility, moving us from a vague notion of "coping with voids" to a fruitful taxonomy of interrelated routines.

Integrating institutional and dynamic capability theory through recursive Learning: This framework serves to create a deep link between institutional theory and the dynamic capabilities perspective. It sees institutional voids not as external constraints but as endogenous arenas for capability development and learning. In Proposition 3 (Recursive Learning), the conceptual model's feedback loop shows how repeated scaffolding episodes transform temporary solutions into permanent organizational capabilities. What emerges here is the enrichment of institutional theory by revealing how action at the level of the firm systematically regenerates local institutional functionality, and the further enrichment of dynamic capability theory by making the institutional environment endogenous, in the sense that it is something firms actively co-create in response to non-failure.

5.2 Managerial and policy implications

Managerial and Policy Implications: The VDDC frame is not merely an academic exercise. It is fitted with practical advice relevant to practice and governance.

For Managers:

Diagnose Institutional Reliability: Managers need to learn how to assess the reliability of institutions as a strategic variable and not a given. They need to have a sense of institutional reliability in terms of permanence. It is important to monitor the reliability of rule enforcement, information, and policing mechanisms, for it is through them that the switch from the standard mode of dynamic capabilities to the scaffolding mode can be made.

Pro-actively Invest in the Theoretical Foundations of PROCI: Firms that function in volatile environments need to consciously invest in the building blocks of scaffolding, where such investor capability will clearly pay dividends. These Will include:

- Opportunities to create good relational capital or varying types of trust-building partnerships with parties who have mutual interests beyond mere commercial ones.
- Creating and codifying organizational heuristics for decision-making, especially in conditions of uncertainty.
- Designing structures and cultures that account for orchestration flexibility and decentralizing the enterprise.

- Technology and methods that lend themselves to collective intelligence and communication of information sharing.

Cope with Disruption in terms of a Learning Continuum: Firms need to systematize the lessons learned from scaffolding episodes by having after-event reviews, and codifying informal successful routines, through which cost related disasters can be converted into learning finds on possible socio-long-run investments.

For Policymakers and institutions:

Recognize and Legitimize Hybrid Governance: The VDDC model shows clearly that formal and informal systems frequently are blended. Policymakers need to adopt policies that support, rather than suppress, effective hybrid governance arrangements. This would entail legitimizing and integrating successful informal coordination arrangements (e.g., transport cooperatives) into the strategies of formal policy institutions.

Design for Resilience: Contrasting stability. That is to say, institutional design needs to provide for systems that can develop elastically and allow for reconstruction from below by means of various signaling devices and systems in the event of crisis damage, e.g., business associations and generalized "legal havens" enabling commented temporary coordination proxies, when formal institutional mechanisms are overwhelmed.

Enable Interfaces: Public policy needs to be in a position to, possibly, bootstrap the overall economic resilience by creating formal interfaces and approaches to formal dialogue between the state agency and bottom-up scaffolding networks, which can, eg, be utilized in fragile settings for eventual typology means by emerging interfaces as in urban or public commercial roads.

5.3 Limitations and avenues for future research

5.3.1 Empirical roadmap for testing the VDDC framework.

Firstly, as a first step in operationalizing and testing the framework, the following empirical research will be required:

- Qualitative, Process-Oriented Research: Qualitative research (i.e., ethnographic study, real-time diary studies, and in-depth case studies) will be required to identify the process by which scaffolding activation leads to DC outcomes in real-time. Examples of qualitative research include studies of how companies navigate specific crises (e.g., supply chain disruptions, platform outages, changes in regulatory requirements in emerging markets).
- Develop and Validate Scales: Create and validate survey-based scales for the four PROCI microfoundations to allow for quantitative testing of the propositions, particularly the inverted-U relationship (P4).
- Natural Experimental Designs: Future research will use natural experimental designs (e.g., post-conflict recovery, sudden infrastructure failure, regulatory removal) to carry out comparative studies to examine the effects of scaffolding on company survival and adaptation.
- Longitudinal Research: A key area of interest in future research will be longitudinal research to determine how scaffolding routines, through recursive learning (P3), develop into lasting organizational competencies.

5.3.2 Contextual boundary conditions and extensions

- Digital Fragility: How does scaffolding function in digital institutional voids (e.g., platform outages, algorithmic black boxes, crypto-governance failures)? Are the PROCI microfoundations sufficient, or are additional digital-specific microfoundations needed?

- Cross-Cultural and Cross-National Comparison: Do cultural norms affect the degree of importance of different PROCI components? Is Relational Trust functionally equivalent across a guanxi-based context vs. a formalistic legal system?
- Scale-Up and Negative Consequences: When does successful scaffolding contribute to the establishment of secondary, illicit institutions or strengthen exclusionary networks? What are the social and ethical implications of corporate-driven reconstruction of social order?

5.3.3 Microfoundational interactions and dynamics

- Sequencing and Substitution: Are there predictable sequences in which PROCI microfoundations are engaged? Can a strength in one micro-foundation (e.g., high levels of Collective Intelligence) compensate for a weakness in another (e.g., low levels of Relational Trust)?
- Leadership and Agency: What is the role of individual and middle managers in establishing, managing, and maintaining scaffolding processes? This links the macro-capability perspective with behavioral strategy.

5.3.4 The dark side and ethical ambiguity of scaffolding

Although scaffolding is identified as a critical adaptive mechanism, scaffolding's recursive and informal nature also creates potential pathologies. Our framework recognizes that while the routines that support short-term survival in the face of adversity can have adverse long-term effects. Recurring application of scaffolding may result in several adverse consequences:

- Institutional avoidance and Parallel Governance: Corporate scaffolding success may reduce the motivation for investment in the restoration of formal public institutions; consequently, parallel, corporate-driven governance systems without public accountability may be entrenched.
- The Institutionalization of Illegitimacy: What begins as an ad-hoc relational agreement (e.g., a payment to a local leader for security) through recursive learning (P3), may be codified as a standard operating procedure and the boundary between trust and corruption blurred, thereby possibly supporting the continuation of predatory systems.
- Strategic rigidities: Scaffolds that are successful in a particular environment of fragility can become core rigidities, preventing the firm from readapting to a normal environment of formal institutions.

Recognizing this "dark side" is neither a limitation nor a deficiency of the theory; rather, it demonstrates its richness and realism. It thus presents important opportunities for future research on the ethics, governance, and long-term impacts of corporate-driven order reconstruction.

6 Conclusion

This paper began with the observation that the engines of strategic adaptation, dynamic capabilities, are designed to run on a fuel of institutional order. Given the increasing volatility of the world around us, fuel is frequently in short supply. The Voids-Driven Dynamic Capabilities framework does not dismiss the traditional DC model; instead, it provides the missing piece of the puzzle a starter motor when the institutional engine breaks down. Scaffolding is that meta-capability the collective, patterned capacity to rebuild the cognitive, relational, and procedural frameworks that permit strategic actions to occur. Ultimately, the most profound implication of this reframing is that resilience is derived not from stability, but from the repeated practice of rebuilding coherence amidst chaos. For companies competing in environments such as Kinshasa, this is a daily experience. For strategic theory, it is a major advancement. The introduction of the scaffolding meta-capability provides a new way of viewing the most basic question of strategic theory how organizations both survive and proactively re-establish the very order upon which their competitive existence depends and thrives.

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