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The Digital Multinational Enterprise: Orchestration Theory as a Framework for Understanding Redefined Firm Boundaries and Strategy

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Abstract- The emergence of digital platforms, artificial intelligence, and ecosystem-based competition has fundamentally altered the competitive landscape within which multinational enterprises (MNEs) operate. This review examines how traditional internalization theory, while remaining influential, exhibits important limitations when applied to contemporary digital and AI-intensive environments. Building on recent theoretical developments, the review advances orchestration theory as a broader framework that conceptualizes the MNE as an entrepreneurial focal firm that coordinates distributed systems of assets, capabilities, and relationships across national and organizational boundaries. The review synthesizes recent scholarship demonstrating that competitive advantage increasingly derives from ecosystem coordination, the management of complementarities, and technologically mediated forms of control rather than ownership-based governance alone. It further examines how geopolitical fragmentation and regulatory divergence shape MNE orchestration strategies. The review concludes by identifying implications for international business scholarships and future research directions.

Keywords: Digital, Multinational enterprises, management, strategy.

I. INTRODUCTION

The multinational enterprise has long been a central object of inquiry in international business scholarship. Among the most influential theoretical frameworks developed to explain the existence, boundaries, and growth of MNEs is internalization theory, which emerged from the foundational insights of Coase (1937) and was subsequently extended to the international domain by scholars including Hymer (1960/1976), Buckley and Casson (1976), Hennart (1982), Rugman (1980), and Teece (1976, 1977). The theory's central proposition, that firms internalize cross-border transactions when internal governance outperforms arm's-length contracting due to market imperfections, information asymmetries, and asset specificity, has provided a powerful and enduring explanation for foreign direct investment and the organization of international production.

However, the economic environment within which MNEs operate has undergone profound transformation. Digital platforms, cloud infrastructures, ecosystem-based business models, and artificial intelligence technologies have created new forms of interdependence that transcend traditional organizational boundaries (Teece & Pitelis, 2026). Value creation increasingly occurs through networks of firms, complementors, users, and institutions whose contributions are jointly necessary for ecosystem success. At the same time, control is increasingly exercised through technological architecture, standards, interfaces, data access, and ecosystem positioning rather than through ownership alone (Teece & Pitelis, 2026).

These developments have prompted scholars to reconsider how international business scholarship conceptualizes MNEs. This review examines the

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theoretical foundations of this reconsideration, focusing on orchestration theory as an extended framework for understanding the contemporary digital MNE. The review proceeds as follows: Section 2 examines the foundations of internalization theory and its limitations in contemporary contexts. Section 3 develops orchestration theory as a broader explanatory framework. Section 4 explores the implications of digital platforms and AI ecosystems for MNE organization and strategy. Section 5 considers how geopolitical fragmentation and regulatory divergence shape orchestration strategies. Section 6 concludes with implications for scholarship and future research.

II. INTERNALIZATION THEORY: FOUNDATIONS AND LIMITATIONS

2.1 Theoretical Foundations

The theory of the multinational enterprise emerged from broader efforts to explain firms' existence, boundaries, and growth. Coase's (1937) theory of the firm argued that firms arise when the costs of organizing transactions internally are lower than those associated with market exchange. By replacing market transactions with managerial coordination, firms can economize on contracting, monitoring, and enforcement costs (Teece & Pitelis, 2026).

The extension of these ideas to the international domain is most closely associated with the work of Hymer (1960/1976). Challenging prevailing neoclassical explanations that viewed foreign direct investment largely as a response to international capital movements, Hymer argued that firms engage in international production because they possess firm-specific advantages that can be exploited abroad. He further emphasized the importance of control over these advantages and recognized that foreign firms face liabilities that must be overcome through superior capabilities, resources, or market positions (Teece & Pitelis, 2026).

Building on Coasian insights, scholars such as Buckley and Casson (1976), Hennart (1982), Rugman (1980), and Williamson (1975, 1985) argued that MNEs emerge when firms internalize cross-border transactions that would otherwise be difficult to coordinate efficiently through markets. Within this tradition, the MNE is viewed primarily as a governance structure. International expansion reflects the firm's decision to internalize activities to reduce transaction costs, protect proprietary knowledge, and exploit firm-specific advantages across multiple national markets (Teece & Pitelis, 2026).

An important extension was provided by Teece (1976, 1977), who highlighted the role of knowledge transfer and technological capabilities in shaping firm boundaries. Tacit knowledge is often difficult to price, transfer, and protect through market mechanisms. Internalization can therefore facilitate more effective knowledge deployment across geographically dispersed operations. Subsequent work by Teece (1986, 2006) also demonstrated the importance of complementary assets and appropriability conditions in determining the distribution of returns from innovation, thereby broadening attention beyond governance alone (Teece & Pitelis, 2026).

Dunning's (1980) eclectic paradigm further broadened the explanatory scope of the internalization approach. According to the Ownership, Location, Internalization (OLI) framework, international production occurs when firms possess ownership advantages, when locations offer benefits that make foreign production attractive, and when internalization provides advantages over market-based alternatives (Teece & Pitelis, 2026).

2.2 Limitations in Contemporary Contexts

Despite its considerable strengths, internalization theory was developed largely in a context where markets and firms were viewed as the principal alternative governance mechanisms. While subsequent refinements have expanded its scope, the theory remains fundamentally concerned with the governance of transactions and the determination of organizational boundaries (Teece & Pitelis, 2026). This emphasis creates several limitations when attempting to explain the behavior of contemporary MNEs.

First, internalization theory places primary emphasis on efficiency and governance while paying comparatively less attention to the processes through which firms create, co-create, and capture value. The theory explains why activities may be organized internally rather than externally, but it is less well equipped to explain how firms generate new sources of value, shape emerging markets, or develop novel business models. Consequently, issues of entrepreneurship, innovation, and opportunity creation often occupy a secondary position within the framework (Teece & Pitelis, 2026).

Second, internalization theory focuses primarily on transactions rather than capabilities. Although knowledge and proprietary assets play important roles within the theory, the development, renewal, and orchestration of organizational capabilities are not typically treated as central explanatory variables. Yet the ability to sense opportunities, seize them through investment and innovation, and continuously reconfigure organizational resources increasingly appears critical to understanding competitive advantage in dynamic international environments (Teece & Pitelis, 2026).

Third, the theory provides only limited insight into situations where value creation depends upon collaboration among multiple independent actors. Contemporary firms frequently operate within ecosystems involving complementors, suppliers, customers, regulators, universities, platform participants, and even competitors. In such contexts, value is often jointly created and appropriated through networks of relationships rather than through activities organized entirely within the boundaries of a single firm (Teece & Pitelis, 2026).

Fourth, internalization theory traditionally treats markets and institutional environments largely as exogenous conditions to which firms respond. Contemporary MNEs, however, frequently participate in shaping markets, influencing standards, developing ecosystems, and co-creating institutional environments. The relationship between firms and their environments is therefore increasingly reciprocal rather than unilateral (Teece & Pitelis, 2026).

Fifth, the emergence of digital platforms and AI ecosystems raises questions concerning the meaning of control itself. Internalization theory typically associates control with ownership and hierarchical authority. Yet many of the most influential firms in the contemporary economy exert influence through technological architecture, standards, interfaces, data access, platform governance, and ecosystem positioning. In such settings, effective control may exist without ownership, and value capture may depend more upon ecosystem coordination than upon the internalization of transactions (Teece & Pitelis, 2026).

These limitations have prompted scholars to call for new theoretical frameworks that can account for the changing nature of value creation and value capture in international business (Birkinshaw, 2022; Autio et al., 2021). As digital transformation reshapes the IB decision space, the why, where, and how of cross-border value creation and capture, existing theories must evolve alongside the changing realities of international business (Autio et al., 2021; Nambisan & Luo, 2021).

III. ORCHESTRATION THEORY AS AN EXTENDED FRAMEWORK

3.1 Conceptual Foundations

The limitations identified above suggest the need for a broader conceptual framework capable of explaining not only governance choices but also the processes through which MNEs create, co-create, and capture value in complex international environments (Teece & Pitelis, 2026). Building on earlier work by Pitelis and Teece (2010, 2018), orchestration theory has been advanced as a framework that integrates insights from internalization theory, dynamic capabilities, entrepreneurship, and ecosystem research (Teece & Pitelis, 2026).

Rather than viewing the MNE principally as an organization that internalizes transactions in response to market imperfections, orchestration theory conceptualizes the MNE as an entrepreneurial focal firm that coordinates, aligns, and reconfigures distributed assets, capabilities, and relationships across national and organizational boundaries (Teece & Pitelis, 2026). Internalization remains an important governance mechanism within this framework, but it is no longer the defining feature of the MNE. Instead, the central challenge becomes the effective orchestration of resources, actors, and the wider context within which firms operate in ways that facilitate sustained value co-creation and value capture. Orchestration theory shifts attention away from static governance decisions and toward dynamic processes of capability development, ecosystem management, and entrepreneurial action (Teece & Pitelis, 2026).

3.2 Context Orchestration

A central element of orchestration theory is context orchestration. By context, Teece and Pitelis (2026) refer to the internal and external business and institutional environment and their alignment. This includes asset orchestration but extends beyond it.

The notion of asset orchestration has been developed in both the innovation-network and resource orchestration literature (Dhanaraj & Parkhe, 2006; Sirmon et al., 2009). Asset orchestration refers to the purposeful coordination of tangible and intangible resources, whether owned by the firm or accessed through external relationships. Such resources may include technological knowledge, intellectual property, data, brands, organizational routines, supplier relationships, distribution channels, and institutional connections. The challenge confronting management is not merely to accumulate assets but to configure them in ways that generate value and support competitive advantage. This perspective is consistent with resource-based explanations of competitive advantage that emphasize the strategic value of heterogeneous resources (Barney, 1991; Wernerfelt, 1984), while extending them through a focus on orchestration and capability renewal (Teece & Pitelis, 2026).

3.3 Implications for Firm Boundaries

Orchestration theory has significant implications for understanding firm boundaries in the digital economy. As Teece and Pitelis (2026) observe, the boundaries of the MNE are becoming increasingly functional rather than purely legal, defined by control over critical resources, technological architectures, and ecosystem relationships. This insight resonates with the broader literature on digital transformation and firm boundaries, which has found that digitization significantly expands firm boundaries by reducing management costs and enhancing labor efficiency (Chen et al., 2024). The positive effect of digitization on firm boundaries is more pronounced in firms with higher internal control and external transaction costs (Chen et al., 2024).

The emergence of digital platforms has further complicated traditional conceptions of firm boundaries. Scholars have argued that platform firms extend their boundaries outward to exchange property rights, data, and design authority with potential external partners for innovation and value co-creation (Banalieva & Dhanaraj, 2019; Chen et al., 2022). This approach shares conceptual roots with Hennart's (1982, 1993) concept of quasi-internalization as a hybrid governance form that achieves control of external activities without hierarchy, through contracting, reputation effects, and social ties (Cantwell, 1991; Forsgren & Holm, 2021). However, platform externalization diverges from traditional quasi-internalization in its emphasis on data, design authority, and the coordination of distributed innovation (Cantwell, 1991; Forsgren & Holm, 2021).

IV. DIGITAL PLATFORMS, AI ECOSYSTEMS, AND THE ORCHESTRATING MNE

4.1 Digital Transformation and the IB Decision Space

Digital transformation has fundamentally reshaped the IB decision space, the why, where, and how of cross-border value creation and capture (Autio et al., 2021). First, digital transformation broadens the why of internationalization, from exploiting tangible assets to capturing the relational value of data, platforms, and ecosystems (Luo, 2021; Banalieva & Dhanaraj, 2019). Second, it compresses geographic and institutional dimensions of distance (Berry et al., 2010; Ghemawat, 2001), thereby expanding the where and how choices and enabling virtual presence, asset-light participation, and hybrid entry modes that combine ownership with digitally enabled market access (Brouthers et al., 2022). Third, it recasts global coordination, shifting governance away from rigid hierarchies toward digitally orchestrated, multi-partner ecosystems (Autio et al., 2021).

Digital adoption affects established MNEs and born-digital firms in fundamentally different ways. Incumbent, born-analog MNEs embark on a "becoming-digital" journey, where each adoption decision must be grafted onto legacy architectures, routines, and management structures. Born-digital firms, such as online platforms and digital content providers, stand in sharp contrast. Their outlook is "global-by-default" (Birkinshaw, 2022) and their international expansion unfolds along compressed learning cycles and minimal resource commitments (Monaghan et al., 2019). For these firms, big data, user networks, and algorithmic capabilities constitute the primary firm-specific advantages. Their location choices hinge less on factor-cost arbitrage than on latency, regulatory permissiveness, and the depth of complementary digital ecosystems (Nambisan & Luo, 2021).

4.2 Network Effects as Firm-Specific Advantages

The emergence of digital platforms has introduced new types of firm-specific advantages that traditional internalization theory does not readily capture. Stallkamp and Schotter (2021) extend traditional notions of FSAs by introducing within-country and across-country network effects as new types of FSAs relevant to digital platforms. These network effects create value through the interdependence of users and complementors on the platform, generating advantages that are not owned in the traditional sense but are orchestrated through ecosystem governance (Stallkamp & Schotter, 2021).

Banalieva and Dhanaraj (2019) assert that a digital platform creates additional value by exploiting specialized resources of local actors. For conditions with strong within-country network externalities, the greater the number of local users, the greater the value created for the platform firm, not only financially but also in terms of data and information about local users and complementors on the platform. Moreover, since the costs to add product and service breadth to a platform are relatively low due to modularity, more local users increase the value of the platform firm's option to expand product and service offerings within the host country (Banalieva & Dhanaraj, 2019). Platform firms with a larger number of worldwide users add more value for users, which attracts even more users and, in turn, increases the value of the platform firm's options to expand into more foreign countries (Banalieva & Dhanaraj, 2019).

Conceptual work on platform firms further argues that they confront a liability of user-network outsidership, rather than the classical liability of foreignness (Hymer, 1960; Zaheer, 2002), favoring asset-light entry and loosely coupled governance arrangements (Brouthers et al., 2016; Stallkamp & Schotter, 2021; Stallkamp, Hunt & Schotter, 2022).

4.3 Orchestration in Digital and AI-Intensive Environments

The competitive dynamics of digital platforms and AI-intensive industries have made orchestration capabilities particularly salient. In these environments, competitive advantage increasingly depends upon the management of complementarities, strategic control points, data resources, computational infrastructures, and ecosystem relationships (Teece & Pitelis, 2026). These phenomena are more naturally explained through orchestration than through ownership-based conceptions of firm boundaries.

Teece and Pitelis (2026) demonstrate how orchestration provides a more effective lens for understanding digital platform and AI ecosystems. In such contexts, the MNE is not merely an internalizer of transactions but a coordinator of complex systems of value creation and value capture. The ability to coordinate distributed resources, manage complementarities, and influence ecosystem evolution becomes central to competitive advantage.

This shift has implications for how control is conceptualized in international business. In digital platform and AI-intensive environments, effective control may exist without ownership, and value capture may depend more upon ecosystem coordination than upon the internalization of transactions (Teece & Pitelis, 2026). As digital technologies continue to transform global business, the ability to orchestrate globally distributed ecosystems may become increasingly central to both international business theory and managerial practice (Teece & Pitelis, 2026).

V. GEOPOLITICAL FRAGMENTATION AND STILTED ORCHESTRATION

5.1 The Geopolitical Context

The contemporary international environment is characterized by growing geopolitical fragmentation, digital sovereignty concerns, and regulatory divergence. These developments present significant challenges for MNEs operating across borders (Teece & Pitelis, 2026). Recent geopolitical events have put into question the stability and reliability of supposedly 'global' value chains and dictate a reevaluation of regional and global strategies (Gammeltoft & Panibratov, 2024; Hitt et al., 2021; Oh & Oetzel, 2023). Geopolitical factors can strongly affect access to critical resources, such as oil, gas, minerals, and raw materials (Shapiro et al., 2018). MNEs in resource-intensive industries, therefore, need to consider geopolitical tensions as well as resource availability in building their supply chains and prepare for both significant supply interruptions and the development of supply chain alternatives to reduce their vulnerability (Gammeltoft & Panibratov, 2024; Hitt et al., 2021).

Digital transformation in IB is increasingly shaped by geopolitical forces, as states compete for control over critical digital technologies, data infrastructures, and AI capabilities. Recent developments underscore how digital transformation is not just a technological shift, but an inherently political process in which national security concerns, economic power struggles, and techno-nationalist policies shape firms' global strategies (Buckley et al., 2024; Luo, 2024). While IB scholarship has traditionally centered on firm-level responses to internationalization challenges, emerging research indicates that digital transformation demands a more nuanced understanding of geopolitical risks and state-driven regulation (Cui et al., 2023; Luo, 2022; Saittakari et al., 2023).

5.2 Stilted Orchestration

Teece and Pitelis (2026) introduce the concept of "stilted orchestration" to highlight how MNEs adapt ecosystem coordination strategies when confronted by political, institutional, and regulatory constraints. This perspective provides a basis for understanding MNE behavior in an era where globalization and fragmentation coexist.

The concept of stilted orchestration recognizes that the ability to orchestrate distributed systems of resources and relationships is constrained by geopolitical and institutional factors. MNEs must navigate growing regulatory divergence, digital sovereignty measures, and data localization requirements (Schotter & Andrews, 2024). The accelerating fragmentation of technology markets is driven by concerns over digital sovereignty, as countries seek to localize data storage, protect critical digital infrastructures, and impose greater scrutiny on foreign technology firms (Schotter & Andrews, 2024).

A particularly pressing issue is digital protectionism, wherein regulatory barriers impede global technology flows. The European Union's General Data Protection Regulation (GDPR), China's Personal Information Protection Law, and similar measures in other jurisdictions create compliance burdens and limit the free flow of data across borders (Autio et al., 2021; Luo, 2022). These regulatory divergences complicate the orchestration strategies of MNEs, requiring them to adapt their ecosystem coordination approaches to region-specific institutional requirements (Gammeltoft & Panibratov, 2024).

The concept of stilted orchestration also addresses how MNEs develop non-market strategies to address decaying or unstable macro-level international institutions. In some cases, as with the "China-for-China" approach adopted by several European and US-based firms, the non-market strategy is tailored primarily to the single country level. Similarly, a "United States-for-United-States" strategy may become more popular because of protectionist policies that incite outsider MNEs to engage in FDI into the US. In many other instances, as with non-EU MNEs operating in the EU, regional stances in geopolitical conflicts require region-based non-market strategies (Gammeltoft & Panibratov, 2024).

VI. IMPLICATIONS FOR INTERNATIONAL BUSINESS SCHOLARSHIP AND FUTURE RESEARCH

6.1 Theoretical Implications

The arguments presented in this review suggest that the central challenge confronting the modern MNE is not simply the efficient governance of transactions but the effective coordination of globally distributed systems of resources, capabilities, technologies, and institutions (Teece & Pitelis, 2026; Nwokoro, E. C., et al,2024). Competitive advantage increasingly derives from the ability to orchestrate complementarities, manage co-dependencies, and continuously reconfigure organizational and ecosystem structures in response to technological and institutional change.

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This has broader implications for the theory of the MNE. Just as internalization theory provided a powerful framework for understanding the MNE in an earlier era, orchestration theory offers a framework better suited to a world characterized by digital platforms, artificial intelligence, ecosystem competition, and growing institutional complexity. Rather than replacing existing theories, orchestration integrates and extends them, providing a richer and more comprehensive account of how MNEs create and capture value in the twenty-first century (Teece & Pitelis, 2026).

6.2 Future Research Directions

Several directions for future research emerge from this review.

First, there is a need for new frameworks to explain how born-digital firms create and capture value across borders through data and network effects. Information systems research on digital service capabilities (Sia et al., 2016) and automated personalization (Porter & Heppelmann, 2014) provide valuable foundations for such theorizing (Autio et al., 2021). Future theoretical development should account for how born-analog and born-digital firms alike manage the tension between global scale advantages and local market demands, particularly when grappling with legacy constraints (Gooderham et al., 2023).

Second, theories must address how MNEs develop and deploy orchestration capabilities across borders in the face of geopolitical fragmentation and regulatory divergence. The concept of stilted orchestration (Teece & Pitelis, 2026) provides a starting point, but further empirical research is needed to understand how MNEs adapt their ecosystem coordination strategies to different institutional contexts. Researchers might investigate how multilateral organizations, international treaties, and diplomatic channels either alleviate or exacerbate the institutional tensions that affect MNE regional versus global strategies (Gammeltoft & Panibratov, 2024).

Third, scholars should investigate the implications of digital transformation for MNE governance structures. As digital channels provide new pathways for serving global demand, this may ultimately reduce the need to establish formal foreign-based subsidiary units (Autio et al., 2021). The emergence of virtual presence, asset-light participation, and hybrid entry modes that combine ownership with digitally enabled market access raises questions about how MNEs govern their international operations (Brouthers et al., 2022).

Fourth, research is needed on how MNEs can balance the synergies and tensions between digitalization and sustainability. The digital economy is a major growth driver, but its development has sustainability-related externalities (Ghauri et al., 2021; Srinivasan & Eden, 2021). Understanding how to balance digital investment with global development objectives will become increasingly important as both digital transformation and sustainability concerns intensify.

VII. CONCLUSION

The emergence of digital platforms, artificial intelligence, ecosystem-based competition, and growing geopolitical fragmentation necessitates a reconsideration of how MNEs are conceptualized within international business scholarship (Teece & Pitelis, 2026). While internalization theory has provided one of the most influential and enduring explanations of the MNE, the changing nature of value creation and value capture suggests that governance considerations alone are no longer sufficient to explain contemporary MNE behavior.

Orchestration theory offers a broader framework that conceptualizes the MNE as an entrepreneurial focal firm that coordinates and reconfigures distributed systems of assets, capabilities, and relationships to create, co-create, and capture value (Teece & Pitelis, 2026). Internalization remains an important governance mechanism within this framework, but it is no longer treated as the defining characteristic of the MNE.

The digital transformation of international business is reshaping the boundaries of the firm, the nature of competitive advantage, and the strategies through which MNEs create and capture value across borders (Autio et al., 2021; Nambisan & Luo, 2021). As digital technologies continue to transform global business and as geopolitical fragmentation reshapes the international environment, understanding the MNE as an orchestrator of globally distributed ecosystems may become increasingly central to both international business theory and managerial practice (Teece & Pitelis, 2026).

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