ECOSYSTEM ORCHESTRATION AS A STRATEGIC DRIVER OF DIGITAL TRANSFORMATION

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Abstract

The rapid expansion of platform-based economies has transformed the way how organizations create and deliver value through interconnected digital ecosystems. Ecosystem orchestration has become a critical strategic capability, enabling platform leaders to coordinate stakeholders, support innovation, manage their data flows, and employ digital transformation. This conceptual paper reviews contemporary literature on platform economies, business ecosystems, and digital transformation to examine the role of ecosystem orchestrators. It highlights key governance mechanisms with technological infrastructures to address challenges such as power asymmetries, data governance, regulatory pressures, cybersecurity risks, and sustainability. The paper argues that successful digital transformation depends not only on firms' internal capabilities but also on their ability to participate in and coordinate broader digital ecosystems. Platform orchestrators enable interoperability, scalability, and innovation across industries, making ecosystem-oriented strategies essential for long-term competitiveness. The study contributes to platform and digital transformation research and offers managerial and policy implications for governance and sustainable digital development.

Key words: Business ecosystems; digital transformation; ecosystem orchestration; platform economy

JEL Code: L86, O33, L14

Introduction

The digital economy refers to an economic system in which digital technologies, data, and internet connectivity play a central role in creating, delivering, and capturing value. Advances in information and communication technologies have enabled organizations to improve efficiency, reach global markets, and develop innovative products and services. A defining feature of this transformation is the emergence of digital platforms, which facilitate interactions among multiple groups of users, including consumers, producers, service providers, and

advertisers. Rather than producing goods directly, digital platforms create value by enabling exchanges, coordinating transactions, and leveraging network effects. As participation increases, platforms become more valuable, strengthening their competitive position and enabling rapid scalability and innovation.

The growth of digital platforms has transformed traditional linear value chains into interconnected business ecosystems. Instead of creating value through sequential activities, digital ecosystems consist of networks of interdependent actors—including platform owners, complementors, developers, suppliers, and users—who jointly create and capture value (Jacobides et al., 2018). By reducing transaction costs, facilitating collaboration, and supporting knowledge exchange, digital platforms enable continuous interaction among ecosystem participants. Consequently, competitive advantage increasingly depends not only on a firm's internal capabilities but also on its ability to collaborate effectively within an ecosystem and leverage network effects.

1 Platform-Based Economies

The platform economy refers to an economic system in which digital platforms facilitate interactions between multiple groups of users. A digital ecosystem enables the exchange of goods, services, information, and value. Unlike traditional pipeline businesses that create value through linear production processes, platform business models primarily create value by connecting independent participants and enabling transactions between them. Companies such as Amazon, Uber, Airbnb, and Apple illustrate how platforms act as intermediaries that coordinate interactions while leveraging digital technologies to scale rapidly and efficiently.

A defining characteristic of platform business models is the existence of **multi-sided markets**, where a platform simultaneously serves two or more distinct user groups whose participation creates mutual benefits. Rochet and Tirole (2003) explain that the success of a platform depends on balancing the interests of these different groups, such as buyers and sellers, drivers and passengers, or developers and users. The platform creates value by **reducing transaction costs**, facilitating exchanges, and ensuring efficient interactions.

Platform growth is strongly multiplied by **network effects**, which occur when the value of a platform increases as the number of users grows. According to Parker et al. (2016), direct network effects arise when additional users increase value for others within the same user group. At the same time, indirect network effects occur, as growth on one side of the platform increases value for participants on the other side. Strong network effects create competitive

advantages by attracting more users, strengthening customer retention, and making it increasingly difficult for competitors to replicate successful platforms.

Another important feature of platform economies is **value co-creation**, where customers, developers, suppliers, and other stakeholders actively contribute to creating products, services, and innovations. Rather than producing value independently, platform owners provide the environment that enables participants to collaborate, exchange knowledge, and generate mutual benefits. Srnicek (2017) describes this phenomenon as **platform capitalism**, emphasizing that digital platforms increasingly capture value by controlling data, coordinating interactions, and governing digital marketplaces rather than by directly producing goods or services. Consequently, it is data **that becomes a strategic resource** enabling platforms to personalize services and strengthen competitive positioning.

Tab. 1: Traditional Versus Platform Ecosystems

Dimension	Traditional Business (Model)	Platform Ecosystem (Model)
💎 **Value Creation**	Value created within firm (vertical integration)	Value co-created across ecosystem (network effects)
⚙️ **Key Assets**	Physical assets, proprietary resources	Data, algorithms, platform infrastructure
👥 **Actors**	Firm, employees, suppliers, customers	Multiple actors: users, partners, complementors, developers
🕸️ **Control**	Centralized control by firm	Orchestration & facilitation (not direct control)
□ **Innovation**	Internal R&D, linear process	Open innovation, crowdsource, co-creation
💰 **Value Capture**	Firm captures most of the value	Shared value capture, multi-sided monetization
📈 **Scalability**	Linear scalability (more resources = more growth)	Exponential scalability (network effects)
👤 **Customer Role**	End buyer	Co-creator, contributor, participant
📊 **Data Role**	By-product, limited use	Core strategic asset, real-time utilization
🗺️ **Governance**	Hierarchy, top-down management	Ecosystem governance, standards, shared rules

Source: Created by the authors.

2 Business Ecosystems

The concept of a **business ecosystem** was introduced by Moore (1993), who described businesses as members of interconnected networks that evolve together rather than operating as isolated entities. Similar to biological ecosystems, organizations interact with customers, suppliers, competitors, regulators, and other stakeholders to create and capture value. Instead of focusing solely on competition, firms increasingly rely on collaboration and complementary capabilities to respond to changing market conditions and technological developments.

Adner (2017) further developed the ecosystem perspective by emphasizing that value creation depends not only on the capabilities of individual firms but also on the successful alignment of multiple interdependent actors. According to this view, innovation outcomes are determined by the coordinated contributions of ecosystem participants rather than by a single organization. Companies therefore need to manage relationships with partners whose products, services, or technologies complement their own. A defining characteristic of business ecosystems is the **interdependence among actors**. Organizations rely on one another for resources, expertise, technologies, and market access. The success of one participant often depends on the performance and commitment of others, making collaboration essential for ecosystem growth. At the same time, these interconnected relationships create shared risks, as failures or disruptions affecting one actor may influence the entire ecosystem. Effective communication and coordination are therefore critical to maintaining ecosystem resilience and long-term performance.

Business ecosystems are also characterized by the coexistence of **cooperation and competition**, commonly referred to as **coopetition**. Organizations collaborate to develop standards, share knowledge, and foster innovation while simultaneously competing for customers, market share, and financial performance (Brandenburger & Nalebuff, 1996). This balance enables ecosystem participants to benefit from collective innovation while preserving their individual competitive advantages.

Because ecosystem members are autonomous organizations rather than units within a single company, traditional hierarchical management is insufficient for coordinating their activities. Instead, ecosystems rely on shared governance, trust, common standards, and collaborative mechanisms that align the interests of diverse stakeholders. As ecosystems continue to expand through digital technologies and platform-based business models, effective coordination becomes increasingly important, creating the need for ecosystem orchestration.

3 Ecosystem Orchestration

Ecosystem orchestration refers to the strategic coordination and management of relationships among multiple independent actors within a business ecosystem to facilitate value creation and innovation. Unlike traditional hierarchical management, orchestration does not rely on direct authority over participants. Instead, it focuses on aligning the interests, capabilities, and activities of autonomous organizations through collaboration and shared objectives. Dhanaraj and Parkhe (2006) define ecosystem orchestration as the process by which a focal firm mobilizes network participants, promotes knowledge exchange, manages innovation, and coordinates complementary resources to maximize collective value.

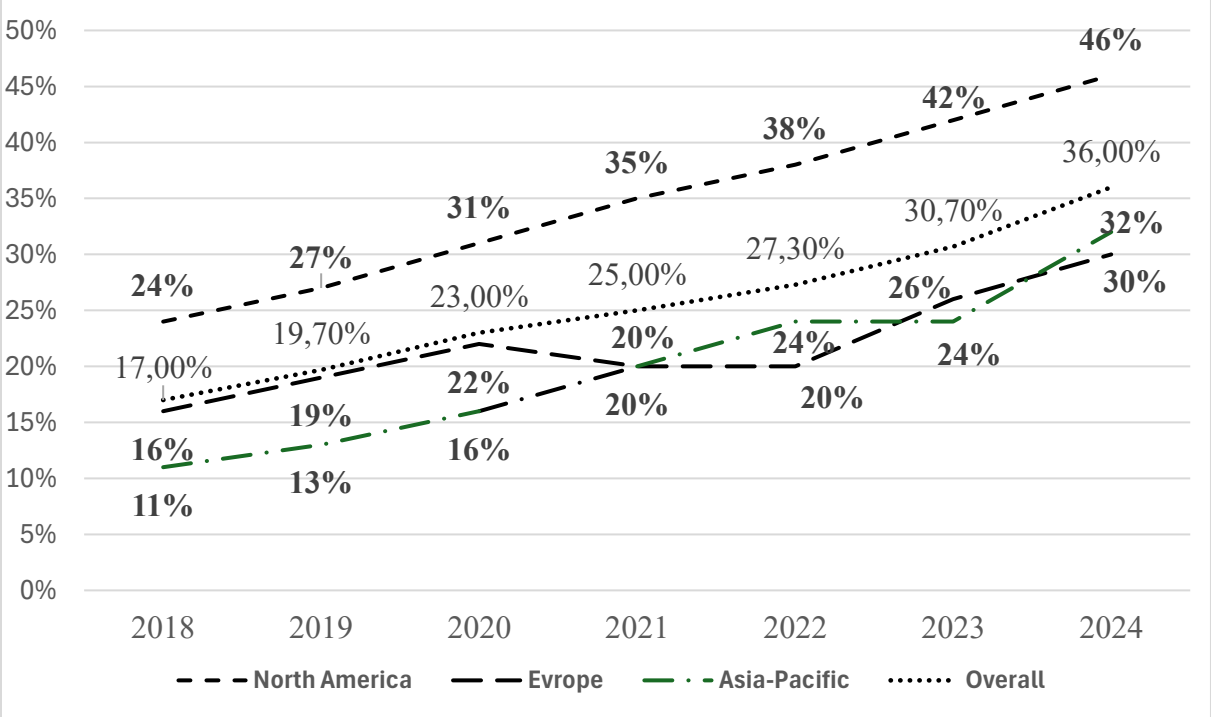
The **orchestrator**, typically a platform owner or focal organization, plays a central role in coordinating ecosystem stakeholders, including customers, suppliers, developers, complementors, and strategic partners. Rather than controlling participants, the orchestrator establishes the conditions that enable effective collaboration. Its responsibilities include attracting new participants, facilitating communication, resolving conflicts, defining standards, and ensuring that ecosystem members remain aligned with shared goals. Successful orchestration balances openness, which encourages innovation and participation, with sufficient control to maintain quality, security, and ecosystem stability.

Effective ecosystem orchestration depends on appropriate **governance mechanisms**, trust, and incentive systems. Governance defines the rules, standards, participation requirements, and decision-making processes that guide interactions among ecosystem members. Transparent governance increases confidence among participants and reduces uncertainty. Trust encourages organizations to share knowledge, invest in long-term relationships, and collaborate on innovation. Incentive mechanisms—including revenue-sharing models, access to platform resources, technical support, and opportunities for market expansion—motivate participants to contribute valuable resources and capabilities while sustaining ecosystem growth.

A key responsibility of the orchestrator is **resource integration and innovation management**. Ecosystem participants possess complementary knowledge, technologies, and capabilities that must be effectively combined to generate new products, services, and business models. Dhanaraj and Parkhe (2006) argue that orchestrators facilitate knowledge mobility, coordinate complementary innovations, and ensure that participants can both contribute to and benefit from collective innovation. By integrating diverse resources, orchestrators accelerate innovation while reducing duplication of effort across the ecosystem.

Digital technologies have significantly strengthened ecosystem orchestration. **Digital infrastructure**, including cloud platforms, application programming interfaces (APIs), artificial intelligence, and analytics systems, enables continuous communication, coordination, and resource sharing among ecosystem participants. Kapoor (2018) emphasizes that modern ecosystems are characterized by strong interdependencies that require effective coordination mechanisms, while Nambisan et al. (2019) highlight the importance of digital technologies in supporting distributed innovation across organizational boundaries. Furthermore, data generated through platform interactions provide valuable insights into customer behavior, operational performance, and ecosystem health, enabling orchestrators to make informed decisions and continuously improve ecosystem performance.

Fig. 1: Global trend in digital transformation



Source: Deloitte (2024) Digital Transformation Survey and own processing

The increasing complexity of digital ecosystems has heightened the importance of **ecosystem orchestration**, defined as the coordination and management of relationships, resources, and activities among multiple independent actors. Unlike traditional firms that primarily manage internal operations, ecosystem orchestrators facilitate collaboration among platform owners, suppliers, complementors, developers, customers, and other stakeholders to

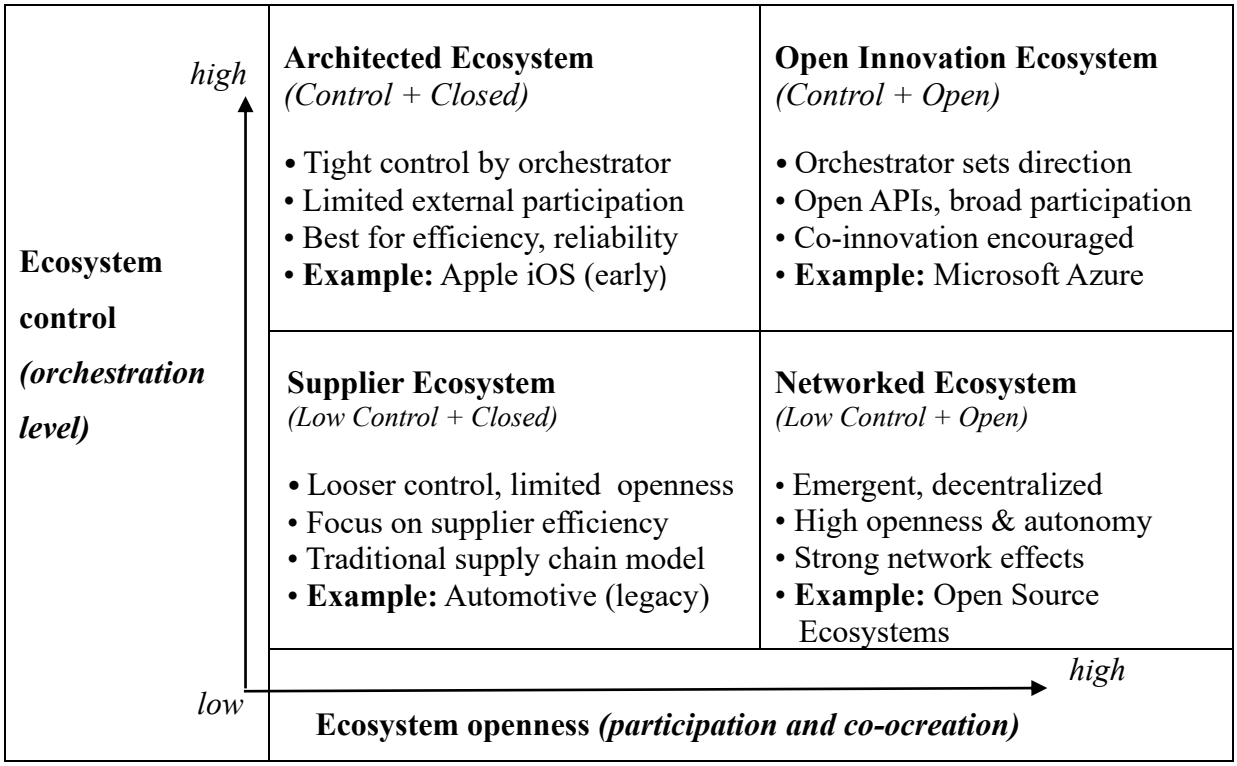
achieve shared value creation. Effective orchestration requires balancing stakeholder interests while establishing governance mechanisms, trust, and incentives that encourage long-term participation. Governance provides the rules and standards that guide ecosystem interactions, whereas coordination ensures the integration of complementary resources and capabilities. Without effective orchestration, ecosystems risk fragmentation, reduced innovation, and weaker competitive performance. Recent research further highlights that digital transformation requires organizations to integrate technological capabilities with strategic and organizational change to achieve sustainable value creation (Jindřichovská et al., 2026).

Ecosystem orchestration is closely linked to digital transformation and organizational change. Digital transformation extends beyond the adoption of new technologies and fundamentally reshapes business processes, organizational structures, governance mechanisms, and customer relationships (Oberländer et al., 2025). As organizations increasingly operate in complex digital environments, they can no longer rely solely on internal resources to remain competitive. Instead, firms collaborate with external partners to access specialized knowledge, accelerate innovation, and respond more effectively to changing market conditions. Ecosystem orchestration supports this process by coordinating diverse actors, aligning strategic objectives, and integrating complementary capabilities into a coherent value creation system. Consequently, successful digital transformation depends not only on technological innovation but also on effective collaboration across organizational boundaries.

Although digital platforms, business ecosystems, and digital transformation have attracted considerable scholarly attention, relatively limited research has examined how ecosystem orchestration facilitates organizational change through stakeholder coordination and governance. This study addresses this gap by investigating the role of ecosystem orchestration in enabling collaborative value creation and supporting digital transformation.

As platforms expand, they attract complementary partners, technologies, and services that increase their overall value. Consequently, successful platforms evolve beyond simple marketplaces into complex business ecosystems characterized by interdependent relationships, continuous innovation, and collaborative value creation. This evolution demonstrates why understanding platform-based economies provides the foundation for analyzing digital ecosystems and their orchestration (Shaba et al., 2023).

Fig. 2: Ecosystem innovation strategies



Source: Created by the authors

This evolution has strengthened the concept of value co-creation, whereby customers and partners actively contribute through innovation, feedback, content creation, and service development. As organizations increasingly depend on digital platforms and interconnected business networks, ecosystem orchestration has become a critical capability for sustaining innovation and competitive advantage. The growing importance of digital infrastructure, data-driven coordination, and collaborative governance demonstrates that effective orchestration is closely linked to the broader process of **digital transformation**, which reshapes how organizations create value, collaborate, and compete in the digital economy.

Conclusion

In conclusion, digitalization and the platform-based economy are fundamentally reshaping the management systems of contemporary corporations and the orchestration of business ecosystems. The implementation of digital solutions enhances organizational agility, enables data-driven decision-making, and supports more effective coordination among ecosystem participants. Platform-based models facilitate value co-creation by strengthening interactions between firms, customers, suppliers, and other stakeholders. Consequently, the role of

management is evolving from controlling internal processes toward orchestrating collaborative networks and fostering innovation across organizational boundaries. At the same time, corporations must address challenges related to digital governance, cybersecurity, and data management to ensure sustainable ecosystem performance. Digital technologies are transforming organizational capabilities and managerial practices. Furthermore, platform ecosystems redefine how organizations create, deliver, and capture value. Therefore, the ability to effectively deploy digital solutions and orchestrate ecosystem relationships has become a critical determinant of long-term corporate competitiveness. This conceptual analysis contributes to the literature by integrating perspectives from digital transformation, ecosystem management, and organizational change to provide a comprehensive understanding of ecosystem orchestration, which also includes theoretical and managerial implications and possible directions for future research.

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