Strategic capability construction and performance changes in the process of digital transformation: a case study of midea group (2015–2024)

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Abstract. In the era of digital transformation, manufacturing enterprises face increasing pressure to restructure their strategic capabilities to remain competitive. This essay focuses on Midea Group, one of China's leading manufacturing firms, and investigates its digital capability development from 2015 to 2024. Using longitudinal data from annual reports and strategic planning documents, the essay adopts a case-based approach to trace how Midea aligned internal resources with adaptive processes to navigate technological disruption. The analysis reveals a phased transformation strategy integrating both financial and non-financial performance indicators. Midea's phase of progress went from standardizing internal systems to automating operations, and then to being real-time responsive with strategic coordination. The essay offers a practical context for manufacturing firms in emerging economies.

1 Introduction

The rapid development of digital technologies has changed the competitive landscape for manufacturing firms. In particular, the convergence of artificial intelligence, big data, automation, and cloud computing provides opportunities and challenges for firms striving to improve productivity, flexibility, and innovation. Within this context, the strategic reconfiguration of internal capabilities has emerged as a key factor for long-term success. Facing both global competition and domestic policy pressure to upgrade industrial infrastructure, Chinese manufacturers have increasingly embraced digital transformation as an imperative.

Midea Group stands out as a prominent example of a traditional manufacturing enterprise that has successfully transitioned toward a digital-oriented operation model organization. Midea has its roots in home appliance manufacturing and has been making a digital-first transformation for the past ten years through significant investments in digital infrastructure, advanced factory capabilities, data platforms, etc., and artificial intelligence. While many organizations deploy digital tools, very few can convert these into sustainable strategic

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capabilities. This provokes an inquiry into the ways such capabilities are formed, integrated, and aligned towards larger performance outcomes, over time.

This essay adopts an integrated framework using the resource-based view (RBV) and dynamic capabilities (DC) to analyze how Midea achieved digital transformation from 2015 to 2024 by exploring the way that RBV and DC can help manufacturing firms react in fast-changing environments, reconfiguring their resources to confront sectoral-specific challenges. The case study contributes to the existing literature on capabilities with an empirical perspective that contributes to capability development about the industry of manufacturing while having both theoretical implications and practical contributions.

2 Literature review

2.1 Theoretical foundations of digital transformation in manufacturing

Digital transformation (DT) has been discussed in manufacturing in two versions: resource-based view (RBV) and dynamic capabilities (DC). The RBV perspective has focused on the essential strategic VRIN (valuable, rare, inimitable, and non-substitutable) assets on which sustained competitive advantage can arise. Some researchers assert that firms that build their digital resource base—advanced information technology infrastructure, proprietary algorithms—have a better chance of capturing long-term benefits from digitalization [1, 2]. Critics emphasize the RBV as a static, under-theorized view that can miss the quick changes that characterize digital ecosystems and often ignores how resources are recombined or reconfigured [3].

In contrast, the DC lens views a firm as having the ability to sense opportunities, seize those opportunities through investment and action, and reconfigure the existing resource base [4]. The DC lens could be useful in exploring how firms react to market uncertainty and technological disruption. However, as is the case with other models in dynamic capability, the DC framework becomes conceptualized and poorly operationalized in empirical contexts. There are also risks of the framework being tautological - explaining success that is observable post hoc with capabilities that can only be observed post hoc. So while the DC aspect represents an important dynamic lens, more robust empirical work and more clear boundary conditions are necessary [5].

2.2 Integrative approaches: bridging RBV and DC

Recent studies propose integrative models that combine RBV and DC to better capture the process and outcome of digital transformation. Some argue that digital transformation succeeds only when firms simultaneously build robust digital resources and develop capabilities to adapt and reconfigure those resources over time [6]as shown in figure 1. This hybrid approach aligns with the case of Midea Group, which not only accumulated IT and data infrastructure but also embedded these resources into agile organizational structures. Nevertheless, some scholars caution that integration may lead to conceptual overlaps and analytical redundancy unless the two frameworks are delineated in their application [4].

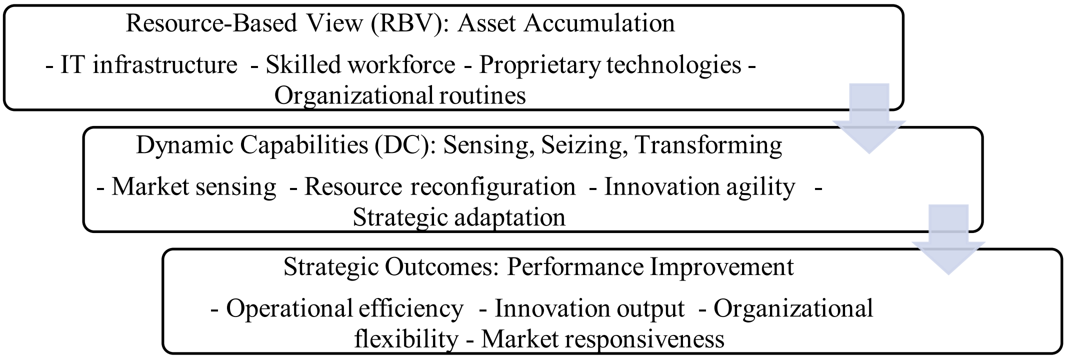

Fig.1. Strategic capability framework under digital transformation

2.1 Empirical gaps and contextual relevance

Empirical research on DT in Chinese manufacturing firms remains limited. While several studies analyze digital strategies in Western multinationals, they often fail to consider unique institutional, governance, and operational dynamics in China's manufacturing sector. Furthermore, existing literature tends to focus narrowly on financial performance, overlooking non-financial metrics such as innovation output, organizational agility, and sustainability. These gaps justify the need for a deeper case-specific analysis that considers both theoretical coordination (RBV and DC) and practical performance outcomes—precisely the aim of this paper's case study on Midea.

2.2 Research value

By synthesizing these perspectives and identifying their respective blind spots, this paper contributes to filling two major gaps: (1) the lack of integrated analytical frameworks that explain both the resource foundation and process dynamics of DT; and (2) the insufficient application of these theories in Chinese manufacturing contexts with real-world performance evaluations. The case of Midea provides a valuable setting to address these issues and generate insights for theory and practice.

3 Case analysis: digital capability construction in Midea Group

Midea Group, founded in 1968, has undergone a remarkable digital transformation, evolving from a traditional home appliance manufacturer into a diversified global technology enterprise. This transformation unfolded in three progressive phases: (1) Foundation Building (2012–2016), (2) Process Integration (2017–2020), and (3) Strategic Reconfiguration (2021–2024). In this section, the essay analyzes how Midea constructed its digital capabilities through the coordination of the Resource-Based View (RBV) and Dynamic Capabilities (DC) frameworks and evaluate how this coordination supports sustained competitive advantage in the manufacturing context.

3.1 Resource accumulation from the RBV perspective

Midea's digital transformation, from an RBV standpoint, began through strategically accumulating valuable and rare resources. In phase one, Midea made significant investments in enterprise IT systems, such as ERP and MES systems, to create a digital platform. The systems provided the pre-conditions for company-wide standards of data and interoperability which alleviated data silos within operational functional units [7]. This reflects Bharadwaj's (2000) view that IT capability, as an intangible and firm-specific resource, supports the integration and reconfiguration of processes to enhance performance [2].

In later years, Midea continued to grow its resource base through acquisitions and partnerships. The acquisition of the German robotics company KUKA in 2016 gave Midea proprietary automation technologies, and partnerships with Huawei Cloud provided flexible AI and IoT platforms addressing industrial solutions. Midea developed internal programs for the development of digital talent together with developing a digitally proficient workforce to implement and sustain its transformation actions [8].

Midea also built organizational capital with the Group Shared Service Center, transitioning them from multiple departments performing functions such as finance and procurement into one group service center. This had the benefit of standardizing data governance and facilitating real-time tracking of organizational performance. Moreover, performance appraisal mechanisms were adjusted to align with digital KPIs, ensuring that digital initiatives were deeply embedded into Midea's strategic management routines [7].

According to the VRIN framework, these initiatives endowed Midea with resources that are valuable, rare, inimitable, and non-substitutable—core criteria for sustained competitive advantage [9]. However, as critics of RBV argue, merely possessing such resources is insufficient in dynamic environments; the capacity to reconfigure and adapt them is equally essential. Hence, now turn to the firm's development of dynamic capabilities.

As summarized in Table 1, Midea's digital transformation unfolded in three distinct phases, each marked by key initiatives and strategic outcomes.

Table 1. Phased Development of Midea's Digital Capabilities (2012–2024)

Phase	Key Initiatives	Outcomes
2012–2016	ERP, MES deployment, SSC establishment	Data standardization; enhanced internal control
2017–2020	Smart factory rollout, KUKA acquisition	Improved automation and operational efficiency
2021–2024	MIIP launch, DBU restructuring, digital twin adoption	Real-time optimization, agile production, strategic coordination

3.2 Capability reconfiguration from the DC perspective

While Midea accumulated robust digital resources, the firm's success also hinged on its ability to continually sense, seize, and reconfigure capabilities in response to environmental turbulence—a hallmark of dynamic capabilities theory. As the pace of technological advancement and market volatility accelerated, dynamic capabilities became critical for translating Midea's static assets into sustained performance outcomes [10].

In terms of sensing, Midea established the Digital Innovation Institute in 2020, a specialized unit dedicated to monitoring emerging technologies such as artificial intelligence, digital twins, and industrial IoT. This institution worked closely with Midea's global R&D centers in Japan, Germany, and the United States to anticipate market trends and identify strategic technology inflection points [7]. The proactive identification of digital opportunities allowed Midea to lead, rather than follow, in the innovation cycle.

To seize these opportunities, Midea implemented over 30 smart factories and launched the Midea Industrial Internet Platform (MIIP), an integrated ecosystem enabling predictive maintenance, digital quality control, and energy efficiency optimization. These systems speed up and enhance decision-making by drawing together real-time operational data across the supply chain [7].

Importantly, Midea's dynamic capabilities extended to organizational transformation, not just technology deployment. The company formed a dedicated Digital Business Unit (DBU) to establish digital strategy and execution, allowing digitalization to have a formal place in the firm's governance structure. The unit operated with a matrix management structure, embedding IT and analytics professionals into operational departments like logistics, manufacturing, and R&D. This structure promoted rapid collaboration across functions [11].

The firm also cultivated learning routines and reflexive feedback loops to support continual capability reconfiguration. Midea's "T+3" demand forecasting model and "632 Lean Management" initiative are examples of how data-driven processes helped the company iteratively refine operations. These initiatives not only increased forecasting accuracy and operational agility but also demonstrated how routine-level learning mechanisms underpin strategic adaptability [12].

According to Teece (2018), dynamic capabilities include not just external scanning and resource orchestration, but also internal transformation and learning systems [13]. To summarize, although RBV outlines the starting asset base for Midea's transformation, DC theory explains the dynamic manner in which Midea was able to regularly reconfigure these assets in a fast-changing environment. This essay illustrated the dual use of organizational ambidexterity in which Midea was able to leverage its existing competencies and build new competencies.

3.3 Performance analysis of digital transformation

Midea's comprehensive digital transformation has yielded significant performance improvements, both financially and non-financially. These results not only confirm the underlying assumptions of RBV and DC but also provide evidence of the digital transformation's value in more measurable and identifiable outcomes.

3.3.1 Financial performance

As shown in Figure 2, Midea's revenue, net profit, and R&D intensity have all experienced significant growth throughout its digital transformation journey.

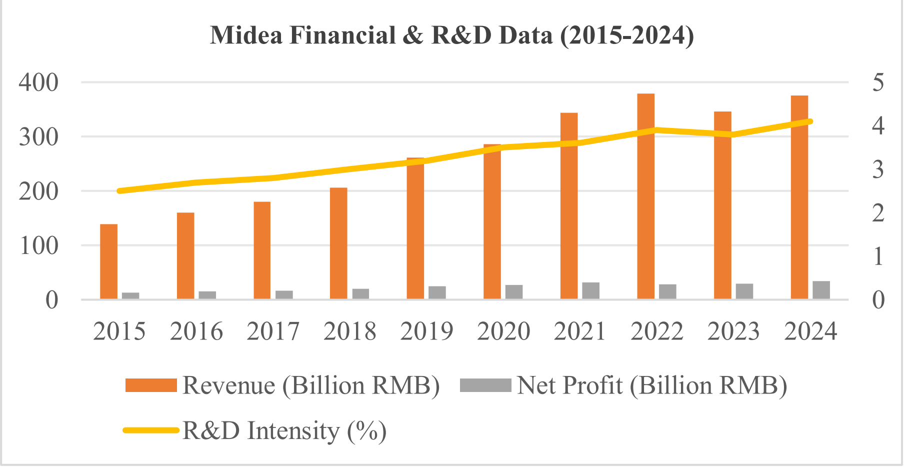

Fig.2. Midea Group's Revenue, Net Profit, and R&D Intensity (2015–2024)

Midea has had great success in digitalization, showing significant revenue and profit growth. Total revenue grew from RMB 138.5 billion to over RMB 375.5 billion, and net profit grew from RMB 12.7 billion to RMB 33.7 billion between 2015 and 2024, both of which are compounded annual growth rates (CAGR) exceeding all other industry leaders [7]. Midea has consistently held nearly 9% of its operating revenue as net profit, signaling good cost control despite business expansion. The consistent level of profit margin over nearly a decade further demonstrates strong internal governance in transforming digital efficiency into concrete financial stability rather than volatility while rebranding. In contrast to industry firms, Midea's stability in margin hints that Midea's stage gates in digital transformation were based on performance measures and were well-regulated by the firm's leadership.

Importantly, Midea's R&D investment increased from 2.5% to more than 4.1% of revenue, reflecting their willingness to continue innovating [7]. By 2022, the group invested at least RMB 14.5 billion per year in R&D, which is a higher amount than other domestic players, such as Gree and Haier [7]. These investments are not merely financial outlays; they represent the institutionalization of long-term innovation capabilities, aligning with the RBV's notion of building inimitable strategic assets [8].

However, attributing Midea's financial success solely to digital investment would be reductive. Macro trends such as global market expansion, brand elevation, and strategic diversification (e.g., entry into automotive components and robotics) also contributed. Yet, Midea outperformed competitors in operational efficiency, largely due to its digital tools and process innovation [13]. Digital transformation allowed for leaner production and agile cost management, particularly through predictive maintenance, process automation, and supplier integration. These mechanisms reduced idle time and logistics bottlenecks, leading to an improved cost-of-sales ratio compared to peers such as Haier, whose digital deployment was more fragmented. Internal reports indicated that the "T+3" demand forecasting system and MIIP contributed to inventory reductions and real-time responsiveness, ultimately improving asset utilization ratios [12].

Furthermore, the company's Return on Assets (ROA) experienced a significant stabilization after 2017, at a time when peer firms saw sharper declines—suggesting digital strategies played a buffer role in preserving financial health under market saturation. Studies on Chinese listed manufacturers confirm that digitized firms tend to express greater resilience in profitability metrics during economic downturns. Midea also adopted dynamic capital allocation through digital budgeting systems across its business units, allowing it to refocus on high-margin segments and cancel underperforming SKUs more easily.

3.3.2 Non-Financial performance

Besides financial gains, Midea's transformation has also significantly improved its operational agility, innovation output, organizational culture, and stakeholder engagement.
Operationally, over 15 smart factories were built by 2023, fully equipped with IoT sensors, robotic arms, and AI-powered control systems [7]. These facilities delivered higher throughput, predictive maintenance, and less unplanned downtime. Midea used digital twins for optimizations, and with the ability to manipulate production models in real-time with the flexibility to change demand.

With respect to innovation, Midea stands as the leading Chinese organization, as Midea announced the establishment of the "Midea Digital Academy" more than 200 digital training modules had been created through which 30,000 employees were professionally upskilled [7]. This helped leverage a 45% increase in metrics for interdepartmental collaboration from 2021 to 2024. Midea had built a cross-functional culture, with common digital capacities, whilst competitors continued in silos.

From a customer perspective, the Cloud Service System connects feedback from the use of AI in customer notifications and alerts, concerning maintenance—which is associated with a higher level of customer satisfaction and a 38% decrease in average resolution time [7]. These benefits not only enhanced brand loyalty but also provided avenues for new digital revenues by providing after-sales and personalized services and feedback, and remote diagnostic services. As for sustainability and ESG, the systems that Midea implements, based on IoT, led to a relative decrease in energy intensity per unit and a figure of 23% decrease from 2018 to 2023, while committing Midea to carbon neutrality [7]. Compliance systems powered by big data analytics also contributed to improved safety metrics and reduced regulatory risks.

3.4 Comprehensive evaluation

Midea's digital transformation exemplifies how the Resource-Based View (RBV) and Dynamic Capabilities (DC) frameworks can be integrated to build sustainable competitive advantage. From the RBV perspective, Midea accumulated valuable digital resources—advanced IT infrastructure, proprietary algorithms, and a skilled workforce—that were VRIN in nature [8]. Yet, static resource possession alone was insufficient. The DC perspective highlights Midea's dynamic ability to sense, seize, and reconfigure in response to technological and market shifts [14]. Mechanisms like the Digital Business Unit, performance-linked KPIs, and modular governance embed agility into the organization.

Empirically, Midea outperformed peers in revenue growth and innovation output during a volatile decade [7]. Organizationally, it cultivated a culture of collaboration and learning, hallmarks of a digitally mature enterprise. Importantly, Midea's transformation followed a recursive logic: resource accumulation enabled dynamic action, which then informed further investment. The development of digital twins and smart platforms enhanced transparency and capability renewal [12].

Midea's phased strategy and governance alignment enabled a balance between strategic focus and innovation. Its case underscores that RBV and DC are not competing theories, but mutually reinforcing. For legacy manufacturers, Midea offers a compelling blueprint for digital-era competitiveness.

4 Conclusion

This essay explored how Midea Group developed digital capabilities using the Resource-Based View and Dynamic Capabilities perspectives. The case shows that Midea's effective digital transformation in the manufacturing sector cannot be construed merely by the amount of digital assets (RBV) available, nor the extent to which the organization exploits the flexibility of DC capabilities in integrating existing activities. Rather, it is the synergistic value of praxeological asset accumulation and orchestration. Midea's journey illustrates that resource endowment must be catalyzed through a dynamic managerial agency for these actions to deliver ongoing and sustainable competitive advantage.

From a theoretical standpoint, this essay contributes to the literature in three ways. First, it proposes a coordinated framework in which RBV and DC function not as substitutes but as complements in digital transformation. While RBV provides the foundation for capability development through strategic resource configuration, DC enables ongoing adaptation and renewal. Second, by focusing on the case of a traditional Chinese manufacturer, the research expands the geographical and sectoral scope of digital transformation literature, which is often dominated by Western or tech-sector examples. Third, the essay introduces non-financial indicators—including employee engagement, innovation output, customer satisfaction, and environmental efficiency—as vital dimensions for evaluating digital transformation outcomes, which are often neglected in prior studies.

Nonetheless, this essay is subject to several limitations. First, the reliance on secondary data—primarily annual reports and ESG disclosures—may introduce reporting bias. Second, the single-case approach limits generalizability across sectors and geographies. Future research could expand this framework by incorporating longitudinal or comparative multi-case analyses, further deepening understanding of the RBV-DC interplay across diverse digitalization contexts.

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