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Digital Ambidexterity in Business Management: Balancing Operational Automation and Strategic Innovation under Resource Constraints

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Abstract

Digital transformation has intensified the pressure on firms to improve operational efficiency while simultaneously generating strategic renewal. Firms are expected to automate routine processes, reduce costs, improve reliability, and scale digital operations without losing the capacity to experiment, innovate, and create new sources of competitive advantage. This dual demand creates a central theoretical problem for business management. Operational automation and strategic innovation are both enabled by digital technologies, yet they rely on different organizational logics, resource commitments, governance routines, and managerial capabilities. This article develops a theory of digital ambidexterity to explain how firms balance operational automation and strategic innovation under resource constraints. It argues that digital ambidexterity differs from general organizational ambidexterity because digital technologies are not merely tools that support exploitation and exploration but also reshape the tension between them. The article uses a theory-building synthesis of peer-reviewed journal articles published. It integrates ambidexterity theory, digital transformation research, dynamic capabilities, resource-based logic, automation studies, and digital innovation scholarship to construct a conceptual model and derive testable propositions. The proposed theory identifies operational automation and strategic innovation as distinct but interdependent digital logics. Firms that balance these logics can achieve both efficiency and renewal, whereas firms that overemphasize automation risk rigidity and firms that overemphasize innovation risk fragmented experimentation and resource dissipation.

Keywords Resource constraints, Digital ambidexterity, Operational automation, Strategic innovation, Exploitation, Exploration

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Introduction

Digital transformation has become a defining managerial challenge because firms must simultaneously improve the efficiency of existing operations and create new forms of value through digital innovation. Digital technologies enable process standardization, data-driven decision-making, automation, platform-based interaction, and new business models, yet these opportunities do not automatically reinforce one another [1, 2]. In many firms, the same digital investments that increase operational efficiency also redirect managerial attention and capital away from exploratory innovation. The strategic question is therefore not whether firms should digitize, but how they should balance different digital priorities when resources are finite.

The tension between exploitation and exploration has long been central to ambidexterity theory, but digital contexts intensify this tension by making automation and innovation depend on overlapping technological, human, and financial resources. Digital innovation research shows that firms increasingly compete through recombinable technologies, data infrastructures, platforms, and digitally enabled ecosystems [3, 4]. At the same time, digital transformation research emphasizes that firms must redesign routines, capabilities, and organizational structures rather than merely adopt new tools [5, 6]. These conditions make ambidexterity a resource allocation problem as much as a strategic orientation problem.

Operational automation represents the exploitation side of digital transformation because it seeks to improve existing processes through efficiency, reliability, control, and scalability. Robotic process automation and related digital technologies can reduce repetitive labor, improve process consistency, and enable data-based monitoring of operational performance [7, 8]. However, automation can also lock organizations into standardized routines and reinforce existing assumptions about value creation. Strategic innovation, by contrast, requires experimentation, uncertainty tolerance, and the willingness to reconfigure business models, markets, and capabilities [9, 10].

This article develops an original theory of digital ambidexterity in business management. It argues that existing ambidexterity theory does not fully capture the specific digital tension between operational automation and strategic innovation because both are powered by digital technologies while requiring different organizational logics. The article first reviews the theoretical foundations of ambidexterity and digital transformation, then defines digital ambidexterity, develops the automation and innovation logics, analyzes resource constraints and capability trade-offs, proposes a theoretical model, and derives research propositions. The intended contribution is a forward-looking theoretical framework that explains how firms can balance automation-driven exploitation and innovation-driven exploration under resource scarcity.

Theoretical Background

Ambidexterity theory explains how organizations pursue exploitation and exploration simultaneously despite their competing demands. Exploitation emphasizes refinement, efficiency, implementation, control, and incremental improvement, whereas exploration emphasizes search, experimentation, variation, flexibility, and long-term renewal [11, 12]. In traditional organizational theory, firms may manage this tension structurally by separating exploratory and exploitative units or contextually by encouraging individuals and teams to shift between both modes. Digital transformation complicates these approaches because digital infrastructures often cut across organizational boundaries and affect both operational routines and strategic innovation processes.

Digital transformation research emphasizes that digital technologies alter the conditions of competition, coordination, and value creation. Vial's review defines digital transformation as an organizational change process triggered by digital technologies that produces new strategic responses, structural changes, and value creation pathways [2]. Verhoef, Broekhuizen, Bart, Bhattacharya, Dong, Fabian, and Haenlein further show that digital transformation spans digitization, digitalization, and broader strategic transformation, which means firms must manage both operational redesign and strategic renewal [6]. These insights suggest that digital transformation cannot be reduced to automation or innovation alone.

Digital innovation research adds that digital technologies have distinctive properties such as generativity, modularity, reprogrammability, and data intensiveness. Nambisan, Lyytinen, Majchrzak, and Song argue that digital innovation changes innovation management because boundaries between products, processes, platforms, and ecosystems become increasingly fluid [1]. Svahn, Mathiassen, and Lindgren show that incumbent firms face competing concerns when embracing digital innovation, especially when new digital opportunities disturb existing structures and strategic priorities [3]. This means that digital innovation is not simply exploration in a new technological domain, but a reconfiguration of how firms organize innovation itself.

Resource-based and dynamic capability perspectives are necessary because firms cannot pursue all digital initiatives equally. Teece links business model renewal to dynamic capabilities, showing that firms must sense opportunities, seize them, and transform resources to sustain competitive advantage [13]. Helfat and Raubitschek emphasize dynamic and integrative capabilities in digital platform ecosystems, where firms must coordinate complementary assets and technological dependencies [14]. These perspectives imply that digital ambidexterity depends not only on strategic intent but also on how firms orchestrate scarce resources across competing automation and innovation priorities.

Digital Ambidexterity in Business Management

Digital ambidexterity can be defined as a firm's capability to pursue operational automation and strategic innovation simultaneously through the coordinated use of digital technologies, managerial attention, and organizational resources. It extends general ambidexterity theory by specifying that exploitation increasingly takes the form of digital automation, while exploration increasingly takes the form of digitally enabled innovation [15, 16]. The concept therefore focuses on how firms balance efficiency-seeking digital systems with opportunity-seeking digital experimentation. Digital ambidexterity is not a simple combination of two separate strategies but a managerial capability for handling their interaction.

The distinctiveness of digital ambidexterity lies in the fact that digital technologies are both the medium of balance and the source of tension. Cloud platforms, artificial intelligence, data analytics, robotic process automation, and digital ecosystems can support automation and innovation, but they also compete for budgets, specialist talent, governance attention, and architectural flexibility [17, 18]. A data infrastructure designed for standardized reporting may strengthen operational control but may not support exploratory experimentation with new customer-facing services. Conversely, an innovation-oriented architecture may promote flexibility but reduce process discipline and cost efficiency.

Digital ambidexterity also differs from ordinary digital transformation because it places the automation–innovation tension at the center of theory development. Some digital transformation initiatives primarily optimize existing operations, while others create new offerings, business models, or ecosystem positions [19, 20]. Firms that treat these initiatives as a single transformation portfolio may overlook the contradictions between standardization and experimentation. A theory of digital ambidexterity must therefore explain how firms allocate resources, design governance structures, and cultivate capabilities that allow exploitation and exploration to coexist without one logic crowding out the other.

Digital ambidexterity creates several management challenges, including competing performance metrics, incompatible time horizons, different talent requirements, and unequal visibility of outcomes. Automation projects often produce measurable short-term gains, while strategic innovation projects may require longer experimentation cycles and uncertain payoffs [21, 22]. This imbalance can cause firms to favor automation because efficiency gains are easier to justify under resource constraints, even when long-term competitiveness depends on exploration. **Table 1** outlines the defining dimensions and challenges of digital ambidexterity.

Table 1. Digital Ambidexterity Dimensions: Exploitation–Exploration Tensions, Digital Specificities, and Management Challenges

Dimension	Operational automation side	Strategic innovation side	Digital specificity	Core management challenge
Strategic orientation	Efficiency, reliability, process discipline, and cost reduction	Renewal, experimentation, market creation, and business model change	Digital technologies enable both process optimization and new value creation	Preventing efficiency priorities from suppressing exploratory renewal

Dominant organizational logic	Exploitation through refinement of existing processes and capabilities	Exploration through discovery of new products, services, platforms, or ecosystems	Shared data, cloud, AI, and platform resources may serve both logics	Allocating common digital resources without creating internal rivalry
Primary technology use	Robotic process automation, AI-enabled workflows, IoT monitoring, cloud-based process integration	Digital platforms, AI-enabled offerings, data-driven services, ecosystem experimentation	The same digital architecture can standardize operations or enable recombination	Designing technology architectures that support control and flexibility
Capability requirement	Process standardization, governance discipline, data quality, operational analytics, implementation reliability	Dynamic capabilities, innovation search, ecosystem sensing, experimentation, rapid learning	Digital capabilities are modular but often constrained by legacy systems and talent shortages	Building complementary capabilities rather than isolated digital functions
Performance horizon	Short to medium term, with visible productivity and quality gains	Medium to long term, with uncertain but potentially transformative gains	Digital metrics make automation benefits more immediately measurable than innovation outcomes	Avoiding resource bias toward measurable short-term automation returns
Resource profile	Capital investment in systems, integration, process redesign, and technical maintenance	Investment in experimentation, market learning, digital talent, and flexible infrastructure	Both domains draw on overlapping digital budgets and specialist expertise	Managing capability trade-offs under scarcity
Failure risk	Rigidity, over-standardization, technical lock-in, and reduced adaptability	Fragmentation, failed experiments, strategic drift, and resource dissipation	Digital transformation can amplify either rigidity or disorder depending on governance	Maintaining balance between discipline and discovery
Ambidextrous outcome	Scalable, reliable, digitally optimized operations	Renewed competitive positioning and adaptive strategic options	Digital ambidexterity links operational excellence with strategic renewal	Achieving simultaneous efficiency and innovation without treating them as separate agendas

Operational Automation Logic

Operational automation logic refers to the use of digital technologies to refine, standardize, and scale existing organizational processes. In this logic, digital transformation is primarily directed toward exploitation: improving what the firm already does through automation, analytics, process integration, and reliability enhancement [7]. Robotic process automation is especially important because it transfers repetitive rule-based tasks from human labor to software routines, thereby increasing speed and consistency [8]. In strategic terms, automation converts digital investment into operational discipline.

Automation logic is supported by technologies such as robotic process automation, artificial intelligence, cloud computing, IoT-enabled monitoring, enterprise architecture, and data-driven process control. These technologies allow firms to capture operational data, automate workflows, reduce errors, and improve coordination across functions [6, 16]. Enterprise architecture-driven digital capabilities can strengthen operational ambidexterity by aligning technological infrastructures with business value creation [16]. However, this value depends on whether automation is embedded in broader capability development rather than treated as isolated technical implementation.

The primary mechanisms of operational automation include process standardization, workflow codification, cost reduction, quality control, and scalability. Business process automation studies show that automation projects require careful attention to process selection, governance, organizational readiness, and implementation discipline [23]. The automation logic therefore has a strong managerial appeal because its outcomes are comparatively measurable and can be linked to productivity, cycle-time reduction, compliance, and error minimization. **Table 2** summarises the mechanisms and outcomes of operational automation as an exploitation strategy.

Table 2. Operational Automation Logic in Digital Firms: Technologies, Mechanisms, Efficiency Gains, and Limits

Automation component	Main digital technologies	Exploitation mechanism	Expected efficiency gain	Organizational requirement	Main limitation
Routine task automation	Robotic process automation, workflow systems, rule-based AI	Replaces repetitive manual tasks with software-based execution	Reduced labor intensity, faster processing, fewer routine errors	Clear process rules, stable inputs, process documentation	Weak fit with ambiguous or changing tasks
Process standardization	Enterprise systems, cloud platforms, process mining, digital dashboards	Codifies and harmonizes operating routines across units	Greater consistency, compliance, and operational comparability	Governance discipline and cross-functional process ownership	Risk of suppressing local adaptation
Predictive operational control	AI analytics, IoT sensors, operational data platforms	Anticipates bottlenecks, failures, and demand fluctuations	Improved reliability, preventive action, better capacity use	Data quality, analytics capability, timely managerial response	Overreliance on historical patterns
Cost and productivity optimization	Automation platforms, digital resource planning, cloud infrastructure	Reduces waste and reallocates labor from repetitive work	Lower transaction costs and higher throughput	Investment discipline and change management	Short-term cost focus may crowd out innovation
Quality and compliance reinforcement	Monitoring systems, automated controls, audit analytics	Embeds quality checks and compliance routines into workflows	Fewer deviations, stronger traceability, improved accountability	Regulatory alignment and control design	Excessive control may reduce experimentation
Scalability of operations	Cloud computing, API integration,	Allows standardized processes to be	Faster expansion and lower	Stable architecture and integration capability	Scaling standardized

	modular digital infrastructure	replicated across scale	marginal operating costs		routines can create lock-in
Managerial visibility	Digital dashboards, performance analytics, automated reporting	Makes operational performance more observable and measurable	Better decision speed and performance monitoring	Interpretive capability and metric governance	Visible automation gains may dominate strategic attention
Exploitation outcome	Integrated automation portfolio	Strengthens existing capabilities through digital refinement	Operational excellence, reliability, and efficiency	Alignment between technology and operating model	Potential rigidity and reduced strategic flexibility

Yet the same features that make automation valuable can create strategic rigidity. Automation depends on standardization, but strategic adaptability depends on variation, learning, and openness to alternative future states [2, 5]. When firms overinvest in automation, they may reinforce existing business models and routines at the expense of exploratory renewal. Thus, operational automation is a necessary component of digital ambidexterity, but it becomes problematic when exploitation becomes the dominant interpretation of digital transformation.

Strategic Innovation Logic

Strategic innovation logic refers to the use of digital technologies to create new products, services, business models, platforms, and ecosystem positions. Unlike automation logic, which refines existing routines, innovation logic emphasizes exploration, uncertainty, experimentation, and recombination [1, 4]. Digital innovation is distinctive because digital components can be reprogrammed, recombined, and scaled in ways that blur boundaries between products, services, processes, and business models [1]. This makes strategic innovation a central dimension of digital ambidexterity.

Digital business model innovation requires firms to rethink how value is created, delivered, and captured. Foss and Saebi argue that business model innovation has become a major research domain because firms increasingly compete by redesigning their value architectures rather than merely improving products [9]. Teece similarly connects business models to dynamic capabilities, emphasizing that firms must sense opportunities, seize them, and transform resources to remain competitive [13]. In digital contexts, these processes are accelerated by platforms, data analytics, AI capabilities, and ecosystem collaboration.

Strategic innovation is resource intensive because exploratory projects require specialized talent, flexible infrastructure, market learning, managerial patience, and tolerance for failure. AI-enabled business model innovation, for example, depends not only on algorithms but also on organizational learning, scaling processes, feedback loops, and complementary capabilities [10]. Digital orientation in small and medium-sized firms also shows that strategic engagement with digital transformation requires managerial commitment and organizational readiness rather than isolated technology adoption [24]. **Table 3** characterises strategic innovation logic in digital contexts and its resource demands.

Table 3. Strategic Innovation Logic in Digital Firms: Innovation Types, Digital Enablers, and Exploration Requirements

Strategic innovation type	Digital enabler	Exploration mechanism	Resource demand	Expected strategic outcome	Main uncertainty

Digital product innovation	AI, analytics, embedded software, digital interfaces	Recombines technological components into new offerings	Technical talent, experimentation budget, user insight	Differentiated offerings and new customer value	Uncertain market acceptance
Digital service innovation	Platforms, cloud systems, data-enabled service models	Extends value creation through digitally mediated service delivery	Service design capability, data infrastructure, customer analytics	New service revenue and stronger customer relationships	Difficulty scaling service quality
Business model innovation	Digital platforms, subscription systems, ecosystem interfaces	Redesigns value creation, delivery, and capture mechanisms	Strategic leadership, business model experimentation, partner alignment	New revenue logic and competitive repositioning	Unclear profitability and adoption path
Ecosystem innovation	APIs, platform governance, partner networks, data-sharing architectures	Creates value through external complementors and interdependence	Governance capability, relational capital, architectural openness	Ecosystem positioning and network-based advantage	Dependency and coordination risk
AI-enabled innovation	Machine learning, generative AI, predictive systems	Uses data and algorithmic capability to create new decision or offering possibilities	Data quality, model development, ethical oversight, scaling capacity	New intelligence-based value propositions	Model reliability and accountability concerns
Market creation	Digital channels, platform communities, analytics-driven segmentation	Identifies underserved or emerging demand spaces	Market sensing, experimentation, branding, adaptive investment	New customer segments and growth options	Demand ambiguity and competitive imitation
Organizational innovation	Digital collaboration systems, agile methods, knowledge platforms	Changes how innovation work is coordinated internally	Cultural readiness, leadership support, cross-functional talent	Greater responsiveness and learning capacity	Resistance and coordination complexity
Exploration outcome	Strategic innovation portfolio	Builds future-oriented options through digital experimentation	Sustained renewal, adaptability, and new growth paths	Slack resources, strategic patience, and learning governance	High failure rate and delayed returns

The challenge is that strategic innovation does not follow the predictable return profile often associated with automation. Exploration may produce failed experiments, ambiguous metrics, delayed benefits, and conflict with existing operating models [3, 25]. Digital transformation roadmaps can help organize innovation activity, but roadmaps alone cannot resolve the deeper tension between disciplined resource use and exploratory openness [25]. Therefore, strategic innovation logic must be balanced with automation logic rather than subordinated to short-term efficiency criteria.

Resource Constraints and Capability Trade-Offs

Resource constraints are central to digital ambidexterity because firms rarely possess unlimited digital budgets, technical talent, managerial attention, or infrastructure capacity. Automation and innovation often compete for the same scarce resources, including data engineers, cloud architecture, AI expertise, cybersecurity capacity, and senior leadership attention [18, 22]. Resource orchestration research suggests that digital transformation depends on how firms structure, bundle, and leverage resources under uncertainty [18]. This means digital ambidexterity is fundamentally a problem of resource configuration.

Capability trade-offs occur when resources optimized for one digital logic cannot be maximized for the other at the same time. Automation requires process discipline, repeatability, data standardization, and implementation control, while innovation requires flexibility, experimentation, and tolerance for incompleteness [12, 21]. These capability requirements are not always compatible because the routines that make automation efficient may reduce the variation needed for innovation. The trade-off is therefore not simply financial but organizational and cognitive.

Dynamic capabilities help firms manage these trade-offs by sensing shifts in the environment, seizing digital opportunities, and transforming resource configurations over time [5, 13]. Warner and Wäger show that digital transformation requires ongoing strategic renewal rather than one-time implementation [5]. Helfat and Raubitschek further emphasize that firms in digital platform-based ecosystems need integrative capabilities to coordinate internal and external assets [14]. In the digital ambidexterity model, dynamic capabilities operate as the mechanism through which firms reallocate resources between automation and innovation as conditions change.

Resource constraints also affect firms differently depending on size, maturity, and environmental conditions. Smaller firms may lack slack resources and therefore rely more heavily on contextual ambidexterity, where the same people and systems must support both exploitation and exploration [15, 24]. Larger firms may use structural separation, but they still require digital integration to prevent automation units and innovation units from becoming disconnected [21]. Thus, resource scarcity does not eliminate ambidexterity; it determines which balancing mechanisms are feasible.

Proposed Theoretical Model

The proposed theoretical model defines digital ambidexterity as a higher-order organizational capability that coordinates two lower-order logics: operational automation and strategic innovation. Operational automation contributes efficiency, reliability, scalability, and process discipline, while strategic innovation contributes renewal, experimentation, market creation, and business model transformation [2, 6]. The model assumes that both logics are necessary for sustainable digital competitiveness but that neither can dominate without creating strategic risk. Digital ambidexterity therefore emerges through active balancing rather than passive coexistence.

The first balancing mechanism is structural separation with digital integration. This mechanism allows firms to separate automation-oriented units from innovation-oriented units while maintaining shared data architecture, governance coordination, and strategic oversight [3, 21]. Separation protects exploratory activity from short-term efficiency pressure, whereas integration prevents innovation from becoming detached from operational realities. This mechanism is especially relevant for large firms with sufficient resources to maintain differentiated digital portfolios.

The second balancing mechanism is contextual ambidexterity through digital culture, managerial judgment, and cross-functional routines. In this mechanism, firms cultivate norms that allow teams to shift between efficiency discipline and exploratory learning depending on task requirements [11, 12]. Digital culture matters because data transparency, agile routines, and shared digital literacy can help employees understand when automation should be prioritized and when experimentation is necessary. The third balancing mechanism is resource allocation heuristics, through which firms deliberately reserve resources for both automation and innovation rather than allowing visible short-term automation gains to absorb the entire digital budget.

The model also includes moderating conditions: environmental dynamism, digital maturity, slack resources, and ecosystem dependence. Under high environmental dynamism, strategic innovation becomes more important because firms must adapt to changing markets and technologies [4, 20]. Under high digital maturity, firms may be better able to reuse common digital infrastructures for both automation and innovation [19, 26]. **Table 4** presents the proposed theoretical model of digital ambidexterity under resource constraints.

Table 4. Proposed Theoretical Model of Digital Ambidexterity: Constructs, Relationships, and Balancing Mechanisms under Resource Scarcity

Model element	Definition	Theoretical role	Expected relationship	Balancing implication	Relevant boundary condition
Operational automation logic	Use of digital technologies to standardize, automate, control, and scale existing processes	Exploitation construct	Positively related to efficiency, reliability, quality, and operational performance	Must be protected from excessive experimentation that disrupts process discipline	Stronger effect in stable or process-intensive environments
Strategic innovation logic	Use of digital technologies to create new offerings, business models, markets, and ecosystem positions	Exploration construct	Positively related to renewal, adaptability, and future growth options	Must be protected from short-term efficiency pressure	Stronger effect in dynamic or uncertain environments
Resource constraints	Limitations in budget, talent, infrastructure, time, and managerial attention	Tension-generating condition	Intensifies competition between automation and innovation investments	Requires deliberate resource allocation rather than ad hoc prioritization	Stronger in small firms and low-slack firms
Capability trade-offs	Incompatibilities between capabilities optimized for standardization and those optimized for experimentation	Mediating tension	Explains why automation and innovation cannot be maximized independently	Requires capability reconfiguration and differentiated governance	Stronger when digital talent and infrastructure are scarce
Dynamic capabilities	Sensing, seizing, and transforming capabilities used to reconfigure digital resources	Reconfiguration mechanism	Improves the firm's ability to shift resources across logics over time	Enables temporal balancing and adaptive portfolio adjustment	Stronger when leadership supports strategic renewal
Structural separation with digital integration	Separate organizational arrangements for automation and innovation connected	Balancing mechanism	Enhances ambidexterity in complex firms by reducing direct	Allows differentiated execution while maintaining strategic coherence	More effective in larger firms with sufficient slack

	through shared digital architecture		conflict between logics		
Contextual ambidexterity through digital culture	Shared norms and routines that allow teams to combine efficiency and experimentation within the same context	Balancing mechanism	Enhances ambidexterity when structural separation is infeasible	Supports local judgment and flexible switching between logics	More effective in smaller or resource-constrained firms
Resource allocation heuristics	Explicit rules for distributing digital resources across automation and innovation portfolios	Governance mechanism	Reduces bias toward short-term measurable automation gains	Protects exploratory investment while maintaining operational discipline	More important under budget pressure
Digital maturity	Development level of digital infrastructure, governance, data quality, and organizational learning	Moderator	Strengthens the ability to reuse digital assets across both logics	Increases complementarity between automation and innovation	Stronger in firms with integrated platforms and data governance
Digital ambidexterity outcome	Balanced capability to achieve operational efficiency and strategic renewal simultaneously	Central theoretical outcome	Positively related to sustained competitive advantage under digital transformation	Requires continuous balancing, not fixed equilibrium	Stronger under environmental uncertainty and competitive turbulence

Figure 1 visually presents the proposed digital ambidexterity model, showing how firms balance operational automation and strategic innovation under resource constraints through structural, contextual, and resource-allocation mechanisms.

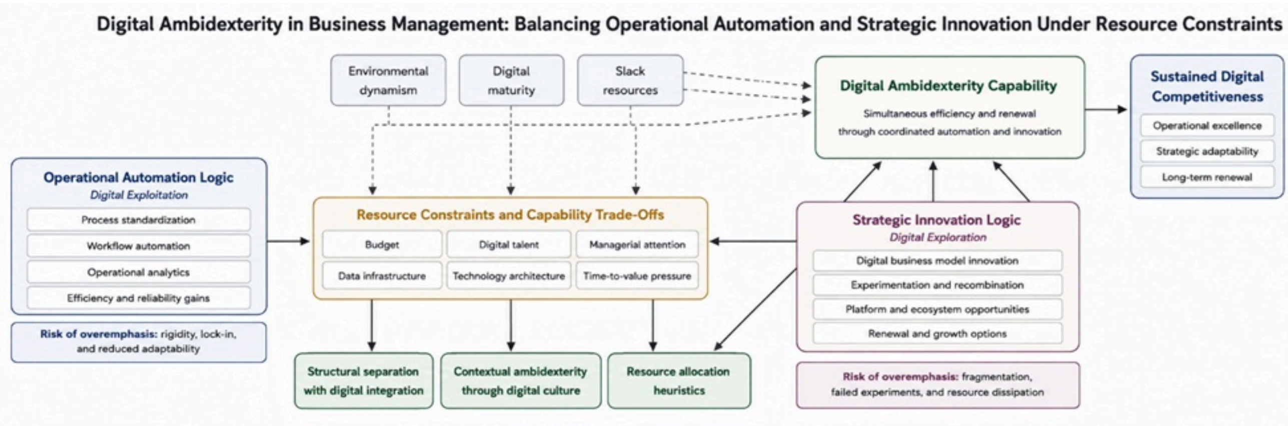

Figure 1. Digital Ambidexterity under Resource Constraints: A Theoretical Model Linking Operational Automation, Strategic Innovation, Capability Trade-Offs, and Balancing Mechanisms

Research Propositions

The first implication of the model is that digital ambidexterity should improve firm performance when environmental uncertainty is high. Firms that combine operational automation with strategic innovation can simultaneously maintain efficiency and adapt to emerging opportunities [5, 6]. Proposition 1 is therefore: firms with higher digital ambidexterity will exhibit stronger performance under high environmental dynamism than firms that emphasize either operational automation or strategic innovation alone. This proposition is consistent with digital transformation research showing that strategic renewal and operational redesign must be managed together rather than separately [2].

The second implication is that resource slack moderates the relationship between digital ambidexterity and performance. Firms with greater slack can invest in automation while preserving exploratory capacity, whereas resource-constrained firms may overcommit to measurable efficiency projects and underfund strategic innovation [18, 22]. Proposition 2 is therefore: resource slack positively moderates the relationship between digital ambidexterity and firm performance by reducing the severity of automation–innovation trade-offs. However, slack alone is insufficient unless supported by dynamic capabilities that reconfigure resources over time [13, 14].

The third implication is that different organizational forms support digital ambidexterity under different conditions. Structural separation with digital integration should be more effective in large firms because they can maintain differentiated units while coordinating shared digital architectures [3, 21]. Contextual ambidexterity should be more effective in smaller firms because limited resources require teams to shift between automation and innovation within the same organizational setting [15, 24]. Proposition 3 is therefore: firm size and digital maturity jointly shape whether structural or contextual balancing mechanisms produce stronger digital ambidexterity outcomes.

Conclusion

This article developed a theoretical model of digital ambidexterity in business management. The central argument is that firms must balance operational automation and strategic innovation because digital transformation simultaneously creates pressure for efficiency and renewal. Unlike general ambidexterity, digital ambidexterity is distinctive because digital technologies are both the enablers of exploitation and exploration and the source of intensified resource competition between them.

The proposed theory clarifies the automation–innovation tension by identifying two distinct organizational logics, the resource constraints that make them difficult to combine, and the balancing mechanisms that allow firms to manage their interaction. It contributes to theory by extending ambidexterity research into the digital age and by linking digital transformation, dynamic capabilities, resource orchestration, and business model innovation within a single conceptual framework. It also provides a basis for future empirical research through testable propositions.

For managers, the theory suggests that digital transformation should not be governed as a single undifferentiated portfolio of technology projects. Firms need conscious mechanisms for deciding when to prioritize automation, when to protect innovation, and how to reconfigure scarce resources across both. The long-term promise of digital ambidexterity lies in helping firms avoid the twin dangers of rigid efficiency and chaotic experimentation.

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