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Digital Maturity as Strategic Adaptability: A Theory-Driven Model for Explaining Firm-Level Transformation Outcomes

Daniel Kim[1*], Jihoon Park[1]

Abstract

Digital maturity has become a widely used concept for assessing how firms progress in digital transformation. In both managerial practice and academic research, maturity is often represented as a measurable condition that indicates how far an organization has advanced in adopting digital technologies, redesigning processes, and developing digital capabilities. This view has helped organizations diagnose digital gaps, compare current and desired states, and structure transformation initiatives. However, the dominant maturity logic also creates theoretical limitations. Many maturity models imply that firms move through relatively stable and sequential stages, even though digital transformation unfolds under uncertainty, competitive pressure, technological discontinuity, and organizational resistance. As a result, maturity scores may describe the presence of digital resources but fail to explain whether firms can adapt strategically when external conditions shift. This article reconceptualises digital maturity as strategic adaptability. Rather than treating maturity as a static stage, it defines digital maturity as the firm's ongoing capacity to align digital strategy, organizational capabilities, resource configurations, and managerial action with changing technological and market conditions. This reinterpretation positions maturity as a dynamic, adaptive property of the firm rather than a checklist of completed digital initiatives. The contribution is threefold. First, the article critiques the static assumptions of existing digital maturity models. Second, it defines strategic adaptability as the central mechanism that translates digital maturity into transformation outcomes. Third, it offers a conceptual foundation for future empirical research and managerial diagnosis by shifting attention from maturity as status to maturity as adaptive capacity.

Keywords Dynamic capabilities, Firm performance, Digital maturity, Strategic adaptability, Transformation outcomes, Theory-driven model

*Correspondence:
Daniel Kim
daniel.kim@gmail.com
[1] Department of Digital Enterprise Management, College of Business, Korea University, Seoul, South Korea

Introduction

Digital maturity has become a central language through which firms describe their progress in digital transformation, yet its explanatory value remains contested. In many studies, maturity is associated with digital orientation, digital intensity, digitization capability, and the degree to which firms have embedded digital technologies into processes and business models [1, 2]. This literature has generated useful diagnostic frameworks, but it has not fully resolved why firms with similar levels of digital investment often achieve different transformation outcomes. The mixed evidence suggests that digital maturity should not be treated merely as the accumulation of digital assets or formal capabilities.

A core limitation of prevailing digital maturity thinking is its tendency to assume cumulative progression. Maturity models often imply that organizations advance from lower to higher stages through a broadly predictable pathway, while digital transformation research shows that firms

repeatedly confront disruption, recombination, strategic ambiguity, and organizational change [3, 4]. The distinction between digital transformation and earlier forms of IT-enabled organizational transformation further complicates linear assumptions because digital transformation changes organizational identity, value creation logic, and strategic positioning rather than only improving existing processes [5]. This article therefore questions whether maturity can explain transformation success if it is conceptualised mainly as staged advancement.

An alternative view is to understand digital maturity as strategic adaptability. Dynamic capabilities theory argues that firms create advantage under uncertainty by sensing opportunities, seizing them, and transforming their resource base [6]. In digital contexts, such adaptability becomes especially important because transformation is not a one-time technology adoption project but an ongoing process of strategic renewal, capability recombination, and organizational learning [7]. From this perspective, a digitally mature firm is not necessarily the firm with the most advanced technologies, but the firm that can repeatedly realign digital strategy and capabilities as conditions change.

The purpose of this article is to build and defend a theory-driven model that explains firm-level transformation outcomes through strategic adaptability. Prior studies have linked digital transformation to innovation, business model renewal, performance, and competitive advantage, but they often treat maturity, capabilities, and outcomes as separate research streams [8-10]. This article integrates these streams by positioning digital maturity as an antecedent condition that enables strategic adaptability, which then mediates transformation outcomes. The resulting model aims to clarify why some firms convert digital transformation into sustained performance while others stall despite visible digital initiatives.

Theoretical Background

The theoretical foundation of this article begins with dynamic capabilities theory. Teece argues that business models and dynamic capabilities are closely connected because firms must not only identify opportunities but also design and renew the mechanisms through which value is created and captured [6]. Digital transformation intensifies this requirement because digital technologies reshape products, processes, customer interfaces, ecosystems, and organizational boundaries [3]. Thus, digital maturity can be theoretically strengthened by linking it to the firm's capacity for continuous strategic renewal rather than to fixed indicators of technological adoption.

Strategic adaptability also draws on the idea that competitive advantage depends on organizational agility under uncertainty. The dynamic capabilities perspective emphasises that uncertainty requires firms to adjust strategy, redeploy resources, and revise organizational routines rather than rely on stable positions [6, 7]. Information technology-enabled dynamic capabilities similarly show that digital resources contribute to competitive performance indirectly through the capabilities they support, not simply through their existence [11]. This distinction is important because it suggests that digital maturity becomes valuable when it enables adaptive action.

The information systems and strategy literatures have defined digital transformation in ways that highlight both technological and organizational change. Vial conceptualises digital transformation as a process through which digital technologies trigger strategic responses that alter value creation paths, while Wessel, Baiyere, Ologeanu-Taddei, Cha, and Blegind Jensen differentiate digital transformation from IT-enabled transformation by stressing deeper organizational and strategic consequences [3, 5]. Hanelt, Bohnsack, Marz, and Antunes Marante further show that digital transformation requires integrating strategy, organizational change, and technology across multiple levels of analysis [4]. These contributions imply that a theory of digital maturity must explain adaptive processes, not only digital readiness or implementation scope.

The maturity literature provides useful assessment concepts but often lacks integration with strategic management theory. Nasiri, Saunila, and Ukko distinguish digital orientation, digital maturity, and digital intensity as determinants of financial success, showing that maturity is related to performance but does not operate in isolation [2]. Ritter and Pedersen frame digitization capability as central to business model digitalization in business-to-business firms, while Li explains digital business model transformation through holistic reconfiguration rather than isolated technology use [1, 12]. These studies provide the basis for reconceptualising maturity as a dynamic capability that links digital resources, business model renewal, and adaptive strategy.

Limits of Existing Digital Maturity Models

Existing digital maturity models are useful for diagnosing organizational preparedness, but they often rest on static assumptions. They frequently treat maturity as a measurable state that can be located on a scale, even though digital transformation is an ongoing process shaped by strategic renewal, ecosystem change, and organizational learning [7, 10]. Such models may identify whether a firm possesses digital infrastructure, leadership attention, or process digitization, but they are less able to explain how firms respond when digital opportunities or competitive threats change. This limits their predictive value for explaining firm-level transformation outcomes.

A second limitation is that maturity models often assume a single pathway of progress. Systematic reviews of digital transformation show that firms transform through multiple routes depending on industry context, business model structure, resource constraints, and strategic orientation [4, 13]. For example, business model digitalization in business-to-business firms can involve different combinations of customer interaction, value proposition redesign, internal process change, and ecosystem participation [1]. A linear maturity logic therefore risks overlooking the fact that firms may become more digitally effective through different adaptive configurations rather than through identical stages.

A third limitation concerns the treatment of capabilities as relatively stable possessions. Research on digital servitization and digital business model innovation shows that digital transformation often requires firms to reconfigure their roles in ecosystems, redesign value creation mechanisms, and manage tensions between existing and emerging business logics [14, 15]. Growth paths in digitalization also reveal that firms may face paradoxes when digital investments do not automatically generate scalable value [16]. These findings suggest that maturity models need an adaptability logic capable of explaining how firms revise capabilities when current configurations become insufficient.

A final limitation is the weak theoretical connection between maturity indicators and transformation outcomes. Studies of digital maturity, digital orientation, and digital intensity have begun to link maturity to financial success, but the causal mechanisms remain underdeveloped unless maturity is connected to strategic action and organizational reconfiguration [2]. Digital transformation reviews also note that outcome measurement remains fragmented, with performance, innovation, agility, and resilience often treated as separate dependent variables rather than as connected transformation consequences [10, 13]. **Table 1** summarises the key limitations of existing digital maturity models.

Table 1. Limitations of Current Digital Maturity Models: Static Assumptions, Lack of Adaptability Logic, and Theoretical Weaknesses

Limitation	Explanation	Theoretical weakness	Implicati transforn outcor
Static stage logic	Digital maturity is often represented as a fixed level or sequential stage.	It underplays uncertainty, iteration, and strategic renewal.	Firms r score mature w being ab adapt w condition
Single-path progression	Models often imply that firms follow similar routes toward higher maturity.	It neglects industry, ecosystem, resource, and business model variation.	Different may rec differe adapti configura to succ
Capability possession bias	Capabilities are treated as assets that firms have rather than routines they continuously renew.	It weakens the link between maturity and dynamic capabilities theory.	Existi capabil may bec obsolete are n reconfig
Weak environmental sensitivity	Turbulence, competition, and technological discontinuity are insufficiently theorised.	It overlooks the role of sensing and strategic responsiveness.	Matur assessm may fa predi resilier unde disrupt

Limited outcome explanation	Maturity indicators are not always linked to causal mechanisms explaining performance.	It leaves the maturity–performance relationship undertheorised.	Transforn success be attribu maturity s rather t adapti proces
Managerial checklist orientation	Many models support assessment but not theory-driven explanation.	It reduces maturity to diagnostic compliance.	Manager pursue m labels ins of build adaptat routin

Figure 1 illustrates the conceptual shift from static digital maturity models to an adaptability-centred theory of digital maturity.

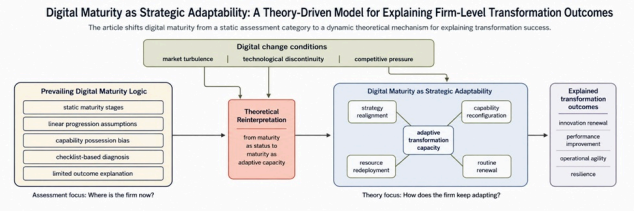

Figure 1. From Static Digital Maturity Stages to Strategic Adaptability: A Reconceptualisation Logic

Strategic Adaptability as a Core Mechanism

Strategic adaptability is the firm's ongoing capacity to detect digital shifts, interpret their strategic significance, and reconfigure resources before existing business logic becomes obsolete. This view extends dynamic capabilities theory by treating adaptability not as a general managerial virtue but as the operational mechanism through which digital maturity becomes consequential [6]. In digital transformation, firms must combine sensing, seizing, and transforming activities because technological change affects not only operational processes but also value propositions, customer relationships, and competitive positioning [7]. Digital maturity therefore becomes meaningful when it enables firms to act adaptively rather than merely document their current level of digitization.

The first adaptability mechanism is sensing, which refers to the ability to identify changes in technologies, customer expectations, competitor moves, and ecosystem conditions. Digital transformation research shows that firms face uncertainty because digital technologies alter innovation processes, business models, and organizational boundaries [3, 8]. Strategic agility literature similarly suggests that firms require alertness, responsiveness, and flexible decision processes when environments become volatile [17]. A mature digital firm must therefore build routines for scanning, interpreting, and prioritising digital signals rather than relying on periodic maturity assessments.

The second mechanism is seizing, which involves converting sensed opportunities into strategic commitments, resource allocation, and business model experimentation. Research on digital servitization and digital business model renewal shows that firms must redesign value creation and value capture mechanisms when digital technologies change the basis of competition [14, 15]. Adaptability also requires learning, coordination, and cross-functional integration because opportunities cannot be seized through isolated digital projects [18]. **Table 2** defines the dimensions and mechanisms of strategic adaptability as a driver of digital maturity.

Table 2. Strategic Adaptability Mechanisms: Sensing, Seizing, and Transforming Capabilities Linking Digital Maturity to Transformation Outcomes

Strategic adaptability mechanism	Definition	Digital maturity interpretation	Link t transform outcon
Sensing digital shifts	Identifying technological, market, customer, and ecosystem changes that may affect strategy.	Maturity is reflected in the firm's ability to read the digital environment continuously.	Improv strategic t opportu recognitio compet awaren
Learning and interpretation	Translating digital signals into shared organizational understanding.	Maturity depends on whether digital knowledge becomes	Reduc uncertaint suppo cohere transform decisio

		actionable across functions.	
Seizing opportunities	Allocating resources, redesigning offerings, and committing to digital initiatives.	Maturity is shown through the ability to convert insight into strategic action.	Suppo innovat mark responsive and busi model rer
Integrating capabilities	Combining digital, managerial, operational, and relational capabilities.	Maturity requires coordination rather than isolated digital competence.	Improv implemen coherenc operati agilit
Transforming routines	Revising structures, processes, roles, and organizational assumptions.	Maturity is expressed as continuous renewal of organizational logic.	Builds res and prev transform stagnat
Reconfiguring resources	Redeploying financial, human, technological, and knowledge resources as conditions change.	Maturity is dynamic resource orchestration under uncertainty.	Strengt adaptab scalabilit sustain performa

The third mechanism is transforming, which refers to the renewal of organizational routines, structures, roles, and assumptions. Studies of dynamic capabilities for digital transformation show that firms must continually reshape organizational processes and managerial practices to sustain transformation momentum [19]. This transforming capability is what separates strategic adaptability from simple flexibility because it changes the underlying configuration of the firm rather than only adjusting short-term responses. Consequently, digital maturity should be assessed through the firm's capacity to renew its operating logic, not only through the sophistication of its digital tools.

Proposed Theory-Driven Model

The proposed theory-driven model begins from the premise that digital maturity is an antecedent condition, not the final explanation of transformation success. Digital maturity includes digital orientation, digitization capability, leadership commitment, technological infrastructure, data use, and organizational readiness, but these elements explain outcomes only when they support adaptive strategic action [1, 2]. Prior research on maturity assessment in business-to-business firms similarly indicates that resources and capabilities matter because they shape how firms execute transformation, not because they automatically produce success [20]. The model therefore treats maturity as the foundation from which strategic adaptability emerges.

Strategic adaptability is positioned as the core mediating process between digital maturity and firm-level transformation outcomes. This means that digital maturity influences performance, innovation, agility, and resilience through the firm's ability to sense digital changes, seize emerging opportunities, integrate capabilities, and transform organizational routines [6, 7]. Evidence on digital transformation and firm performance supports this logic because performance effects often depend on business model innovation, leadership capabilities, and organizational change mechanisms rather than technology adoption alone [21, 22]. The model therefore shifts causal attention from digital maturity scores to adaptability pathways.

The model also includes moderating conditions that shape the strength and direction of the maturity–adaptability–outcome relationship. Environmental turbulence increases the value of adaptability because firms operating in unstable markets must update strategy and capabilities more frequently [10, 17]. Leadership, digital orientation, and organizational agility also influence whether firms can translate maturity into adaptive action, especially in SMEs and resource-constrained organizations [23, 24]. **Table 3** presents the theory-driven model and its core components.

Table 3. Theory-Driven Model of Digital Maturity as Strategic Adaptability: Constructs, Relationships, and Mediating Pathways

Model component	Conceptual role	Core content	Exp theo

			relati
Digital maturity	Antecedent condition	Digital orientation, infrastructure, data capability, digitization capability, leadership support, and organizational readiness.	Provic resour capabil from adaptal dev
Strategic adaptability	Core mediating mechanism	Sensing, learning, seizing, integrating, transforming, and reconfiguring.	Conver matur strate organi act
Environmental turbulence	Boundary condition	Technological discontinuity, competitive intensity, market uncertainty, and ecosystem change.	Strengt import adapta achi outc
Leadership capability	Enabling condition	Strategic vision, digital leadership, coordination, empowerment, and willingness to revise existing routines.	Helps t mat resour ada transfo prac
Transformation outcomes	Dependent consequences	Innovation performance, operational agility, financial performance, resilience, market responsiveness, and competitive advantage.	Improv matu chan thro adapt rathe sta implem
Feedback learning	Dynamic renewal	Outcome monitoring,	Rein matu
		pathway	learning from failure, capability revision, and strategic recalibration.	turi transfo experie rene ada capa

Figure 2 presents the theory-driven model linking digital maturity to firm-level transformation outcomes through strategic adaptability mechanisms.

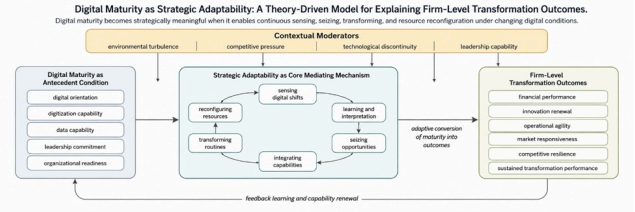

Figure 2. Theory-Driven Model of Digital Maturity as Strategic Adaptability for Explaining Firm-Level Transformation Outcomes

The model's boundary conditions are important because digital maturity does not have identical effects across firms. Banking, manufacturing, service, and platform-based contexts require different combinations of technological, organizational, and strategic capabilities [25]. Digital projects may also succeed or fail depending on whether firms develop dynamic capabilities that match the scope and pace of transformation [26]. The model therefore does not claim that one maturity profile is universally superior; it argues that maturity becomes valuable when it supports context-sensitive adaptability.

Firm-Level Transformation Outcomes

The first predicted outcome is improved performance, but performance must be understood multidimensionally. Digital transformation may influence financial results, productivity, cost efficiency, market access, and customer value, yet these outcomes often depend on complementary changes in business model design and organizational capability [9, 21]. A firm may invest heavily in digital technologies without achieving performance gains if those investments are not aligned with strategic renewal. Strategic adaptability explains this variance by clarifying whether digital resources are converted into timely and coherent action.

The second outcome is innovation renewal. Digital technologies reshape innovation by enabling new forms of experimentation, data-enabled value creation, platform participation, and ecosystem collaboration [8, 12]. However, innovation outcomes require more than digital tools because firms must revise decision routines, customer interfaces, and value creation assumptions [14]. Adaptability therefore explains why some digitally mature firms become more innovative while others merely automate existing processes.

The third outcome is resilience under disruption. Digital transformation research increasingly recognises that firms must sustain operations, revise strategy, and protect competitiveness under volatile conditions [10, 13]. Static maturity models have difficulty explaining resilience because a high maturity score at one point may become obsolete when technologies, regulations, markets, or customer expectations change. Strategic adaptability offers a stronger explanatory logic because it links maturity to continuous renewal, capability redeployment, and organizational responsiveness.

Research Propositions

The model generates a first proposition concerning mediation. Digital maturity is expected to improve firm-level transformation outcomes primarily through strategic adaptability because resources, infrastructure, and digital orientation must be translated into sensing, seizing, integrating, and transforming activities [2, 11]. Accordingly, the maturity–performance relationship should weaken when firms lack adaptive routines. Proposition 1 is therefore that strategic adaptability positively mediates the relationship between digital maturity and firm-level transformation outcomes.

A second proposition concerns environmental turbulence. When technological and market conditions are stable, digital maturity may support efficiency and process improvement, but turbulent environments increase the importance of strategic agility and dynamic capabilities [7, 17]. Firms facing high competitive pressure should benefit more from adaptability because they must continuously revise their strategies and resource configurations. Proposition 2 is therefore that environmental turbulence strengthens the positive indirect effect of digital maturity on transformation outcomes through strategic adaptability.

A third proposition concerns capability reconfiguration speed. Firms differ not only in whether they possess digital capabilities but also in how quickly they can recombine them across projects, functions, and business models [19, 20]. This difference is especially important for organizations attempting to overcome digitalization paradoxes, where digital investment does not automatically translate into growth or value capture [16]. Proposition 3 is therefore that the speed of capability reconfiguration positively moderates the relationship between strategic adaptability and transformation outcomes.

Managerial Implications

The model implies that managers should stop treating digital maturity scores as transformation success in themselves. Maturity assessments can be useful, but they should be interpreted as diagnostic inputs rather than as proof that the firm can adapt strategically [27]. Managers should ask whether digital resources improve sensing, learning, coordination, and transformation routines. This shifts attention from reaching a maturity level to building an adaptive system capable of responding to digital change.

Managers should also invest in the organizational routines that connect digital capability to strategic action. Digital transformation management requires agile structures, cross-functional collaboration, leadership commitment, and the ability to align technology investments with changing value creation opportunities [18, 22]. In practical terms, firms should build mechanisms for environmental scanning, rapid experimentation, resource redeployment, and feedback learning. These routines are more important than isolated digital initiatives because they determine whether transformation becomes cumulative and strategically coherent.

Finally, managers should evaluate transformation outcomes through adaptability-sensitive measures. Financial performance, innovation rate, operational agility, customer value, and resilience should be assessed in relation to how well the firm senses change, seizes opportunities, and transforms routines over time [10, 21]. For SMEs and resource-constrained firms, this is especially important because maturity may depend less on technological sophistication and more on the ability to align limited resources with changing strategic priorities [23, 24]. The managerial lesson is that digital maturity should be

governed as an adaptive capability portfolio rather than as a static compliance ladder.

Conclusion

This article has reconceptualised digital maturity as strategic adaptability. Instead of viewing maturity as a fixed stage or cumulative score, it has argued that maturity is best understood as the firm's capacity to continuously align digital strategy, capabilities, resources, and organizational routines with changing conditions. This shift provides a more dynamic and theoretically grounded explanation of why transformation outcomes vary across firms.

The theory-driven model developed here positions strategic adaptability as the central mechanism linking digital maturity to firm-level transformation outcomes. It explains that digital maturity becomes consequential when it enables sensing, learning, seizing, integrating, transforming, and resource reconfiguration. In doing so, the article moves beyond static maturity thinking and offers a process-based account of digital transformation success.

Future research should empirically test the propositions developed in this article across industries, firm sizes, and environmental conditions. Such research can clarify when maturity matters, how adaptability mediates transformation outcomes, and which boundary conditions strengthen or weaken these relationships. For managers, the central implication is clear: the goal is not to appear digitally mature, but to become strategically adaptable.

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