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Strategic Alignment Between Business Strategy and Digital Infrastructure: Understanding How Technology Architecture Shapes Organizational Competitiveness

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Abstract

Strategic alignment between business strategy and digital infrastructure has emerged as a pivotal factor in determining organizational competitiveness in the digital era. This conceptual paper synthesizes recent literature on business-IT alignment, enterprise architecture, and infrastructure-enabled capabilities to propose the Strategic Infrastructure Alignment Model (SIAM). This multi-layer framework elucidates how technology architecture mediates the relationship between strategic intent and competitive outcomes. Drawing on dynamic capabilities theory and resource-based views, SIAM incorporates five core components: (1) business strategy layer, (2) digital infrastructure layer, (3) enterprise architecture alignment mechanisms, (4) capability orchestration systems, and (5) performance and adaptation feedback loop. The model highlights bidirectional influences: aligned infrastructure enables agile execution of strategy, while strategic feedback refines architecture for sustained advantage. By addressing gaps in prior alignment models that overlook recursive dynamics in digital contexts, SIAM offers a novel lens for understanding how modular, scalable technology architectures foster innovation, operational resilience, and market positioning. Implications extend to managerial practice, emphasizing proactive governance of architecture to harness digital infrastructure for competitiveness amid rapid technological change. This framework advances theoretical discourse in digital business and management studies by integrating enterprise architecture as a strategic mediator rather than a mere technical enabler.

Keywords Digital infrastructure, Technology architecture, Organizational competitiveness, Enterprise architecture, Dynamic capabilities, Strategic alignment

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Introduction

In an increasingly digitalized economy, organizations face mounting pressure to integrate advanced technologies into core strategic processes to maintain and enhance competitiveness [1-5]. Strategic alignment—traditionally conceptualized as the fit between business strategy and information technology (IT)—has evolved beyond mere operational synchronization to encompass the profound role of digital infrastructure in shaping firm-level outcomes

[2, 6-11]. Digital infrastructure, encompassing cloud platforms, data ecosystems, API layers, and scalable architectures, no longer functions as a support function but as a foundational enabler of strategic agility and value creation [8, 12-20].

Misalignment between business aspirations and technological capabilities can result in suboptimal resource utilization, delayed innovation, and eroded market position [3, 7, 15]. Conversely, high alignment facilitates the

development of infrastructure-enabled dynamic capabilities, such as rapid operational reconfiguration or ecosystem integration, which directly contribute to superior performance [4, 10, 14, 19]. Recent scholarship underscores that technology architecture—the structural blueprint of digital systems—plays a mediating role by determining how flexibly infrastructure supports strategic execution [5, 12, 18]. For instance, modular architectures allow firms to experiment with new business models while maintaining coherence across units [6, 16].

This conceptual paper addresses a critical gap: while extant research examines business-IT alignment or digital transformation broadly, few integrate enterprise architecture as a central mechanism linking strategy to infrastructure and ultimately to competitiveness [7, 9, 17]. Drawing on peer-reviewed studies from 2017 to 2024, the paper synthesizes insights from strategic management, information systems, and enterprise architecture literatures to propose a novel framework. The Strategic Infrastructure Alignment Model (SIAM) conceptualizes alignment as a layered, recursive system wherein business strategy informs digital infrastructure design, enterprise architecture ensures coherence, capabilities emerge from integration, and feedback loops enable continuous adaptation [2, 8, 11, 20].

The significance of this work lies in its emphasis on technology architecture as an active shaper of competitiveness, rather than a passive tool [1, 4, 10]. In volatile environments characterized by platform economies and AI-driven disruptions, firms with aligned architectures achieve greater resilience and innovation velocity [3, 5, 14]. The introduction of SIAM provides a structured conceptual tool for scholars and practitioners to analyze and guide alignment efforts.

Literature Synthesis and Conceptual Foundations

The concept of strategic alignment has its roots in seminal works on business-IT fit, but recent literature has reframed it in the context of digital transformation [1, 2, 11]. Business-IT alignment remains a determinant of firm performance, with empirical and conceptual studies demonstrating that aligned strategies enhance outcomes through improved resource orchestration [2, 4, 8]. In digital organizations, alignment extends to infrastructure layers,

where scalable digital platforms enable new capabilities [5, 13, 20].

Digital infrastructure contributes to competitive advantage by providing foundational resources for agility and innovation [6, 10, 15]. Studies highlight that robust infrastructure—cloud-based, API-driven, and data-centric—supports dynamic capabilities, allowing firms to sense opportunities, seize them via reconfiguration, and transform operations [3, 7, 14, 19]. Infrastructure-enabled dynamic capabilities mediate the path from alignment to performance, particularly in uncertain environments [4, 9, 16].

Enterprise architecture (EA) emerges as a key mechanism for achieving alignment [7, 12, 17, 21]. EA provides structured governance, standards, and roadmaps that bridge strategy and infrastructure, ensuring coherence amid complexity [8, 11, 18]. Recent works emphasize EA's role in digital transformation, where it facilitates migration to target architectures that align with strategic goals [5, 10, 15]. Aligned EA promotes standardization for efficiency or differentiation through flexibility, both of which lead to advantage [2, 6, 13].

IT capabilities, when strategically aligned, positively influence performance [1, 3, 9]. Infrastructure capabilities—such as modularity, scalability, and integration—enable execution of strategic initiatives [4, 12, 20]. Platform infrastructures further enhance positioning by fostering ecosystems and network effects [14, 16].

Feedback loops represent an underexplored dimension: strategy informs infrastructure, but realized performance feeds back to refine architecture and strategy [7, 11, 19]. This recursive view aligns with coevolutionary perspectives in digital contexts [8, 15].

Gaps persist in integrating these elements into a unified model that positions technology architecture as the mediator [5, 10, 17].

Table 1 positions SIAM against earlier alignment formulations by showing that its novelty lies in replacing static fit logic with a recursive, architecture-mediated model of competitive adaptation.

Table 1. Static alignment versus recursive architectural alignment: a theoretical consolidation of SIAM's distinctive contribution

Analytical dimension	Traditional alignment view	SIAM view	Theoretical implication
Core unit of analysis	Business strategy–IT fit	Strategy–infrastructure–architecture–capability system	Alignment is systemic rather than dyadic
Role of technology architecture	Supportive technical enabler	Central strategic mediator and coherence mechanism	Architecture becomes a source of competitive conditioning
Direction of influence	Primarily top-down	Bidirectional and recursive	Infrastructure can reshape strategy as well as execute it
Temporal logic	Periodic fit assessment	Continuous recalibration through feedback	Alignment becomes an ongoing dynamic capability
View of infrastructure	Operational base or support asset	Generative platform for sensing, seizing, and transformation	Infrastructure expands the range of executable strategies
Governance logic	IT governance as compliance or control	Enterprise architecture governance as a translation and coordination mechanism	Governance is repositioned as a strategic design discipline
Capability formation	Often treated as a downstream consequence	Explicitly theorized as an orchestrated emergent capability layer	Capabilities are produced through structured architectural integration
Performance mechanism	A better fit improves	Competitive outcomes	Performance is not a

	performance	emerge through mediated capability activation and adaptation	direct fit, but a recursive system output
Treatment of environmental volatility	Frequently under-specified	Explicitly embedded in digital turbulence and ecosystem change	SIAM is a better suite for platform and digital competition contexts
Source of sustainable advantage	Better resource alignment	Compounding architecture-enabled adaptability and coherence	Competitive advantage becomes harder to imitate over time

Prior frameworks often treat alignment statically or overlook digital-specific dynamics [2, 9]. This synthesis grounds the proposed SIAM framework, which addresses these by conceptualizing multi-layer, bidirectional alignment.

Strategic Infrastructure Alignment Model (SIAM): A Layered Architecture for Competitiveness

The Strategic Infrastructure Alignment Model (SIAM) offers a novel conceptual architecture that explains how technology architecture mediates alignment between business strategy and digital infrastructure to drive organizational competitiveness. SIAM comprises five interconnected layers with directional flows and recursive feedback.

The business strategy layer defines vision, objectives, and competitive positioning, setting imperatives for digital enablement [1, 5, 11].

The digital infrastructure layer encompasses core technological foundations—cloud ecosystems, data platforms, APIs, and networks—that provide scalability and connectivity [6, 13, 20].

Enterprise architecture alignment mechanisms serve as a mediating layer, applying standards, governance, roadmaps, and modular designs to ensure that infrastructure aligns with strategy [7, 12, 17, 21–29]. These mechanisms include target architecture planning and migration pathways that translate strategic intent into technical structures [8, 10, 15].

The capability orchestration systems layer emerges from integrated infrastructure, fostering dynamic capabilities such as sensing, seizing, and transforming [3, 4, 9, 14]. Infrastructure enables orchestration of resources for innovation and adaptation [16, 19].

As shown in **Figure 1**, the performance and adaptation feedback loop captures financial, market, and operational outcomes and channels them backward to refine strategy, architecture, and infrastructure, enabling continuous evolution in digital environments [2, 7, 11, 18, 20]. SIAM further advances earlier models by highlighting the shaping influence of technology architecture and integrating explicit digital feedback mechanisms [3, 7, 10, 15].

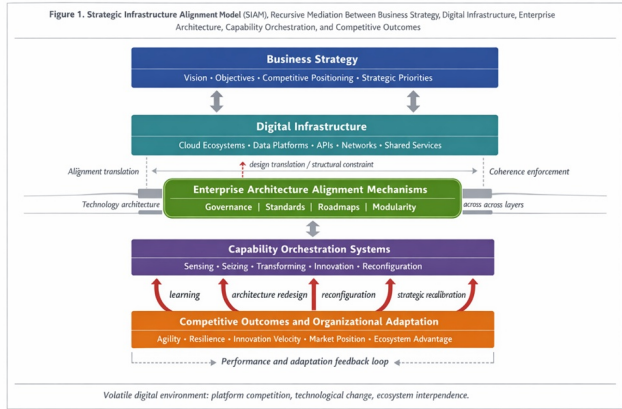


Figure 1. Strategic alignment of the architecture between business strategy and digital infrastructure

SIAM advances prior models by foregrounding the shaping role of technology architecture and incorporating explicit feedback in digital contexts [3, 7, 10, 15].

Table 2 clarifies that SIAM is not associated with a single alignment pattern, but with multiple architecture-to-advantage pathways through which distinct strategic priorities generate different capability and competitiveness outcomes.

Table 2. Alignment pathways in SIAM: how distinct enterprise architecture configurations translate strategic intent into competitive outcomes

Strategic priority	Dominant infrastructure configuration	Enterprise architecture alignment logic	Performance outcomes
Efficiency and cost discipline	Standardized shared platforms, process-integrated systems, and centralized data environments	High standardization, architectural control, and roadmap discipline	Performance, reliability, and cost efficiency
Innovation and rapid experimentation	Modular cloud-native services, API-first integration, and sandbox environments	Loose-coupled modularity with governed interfaces	Rapid innovation, agility, and risk reduction
Ecosystem expansion and platform leadership	Platform infrastructure, interoperable partner APIs, and shared data standards	Boundary-spanning architecture with interface governance	Ecosystem growth, platform leadership, and competitive advantage
Resilience and continuity under turbulence	Redundant distributed systems, fault isolation, and multi-cloud or hybrid failover structures	Resilience-by-design, security-by-design, and continuity governance	Business continuity, risk mitigation, and recovery
Customer-centric differentiation	Real-time analytics stack, integrated data pipelines, and adaptive service layers	Data interoperability and experience-centered architecture	Personalized customer experience, responsiveness, and service differentiation
Strategic ambidexterity	Stable core platforms plus	Dual-speed architecture	Stable core and exploratory growth

	isolated experimentation modules	governed by coherence principles	ex
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Strategy–infrastructure alignment dynamics

Strategic alignment in the digital era transcends traditional linear models, evolving into a recursive, coevolutionary process in which business strategy and digital infrastructure mutually reinforce one another [1, 2, 8, 11]. Organizations that treat alignment as a one-time exercise risk obsolescence; instead, successful firms embed continuous sensing and adjustment mechanisms that allow strategy to evolve in tandem with technological affordances [5, 15, 20]. This dynamic view draws directly from recent scholarship demonstrating that misalignment costs firms up to 30% in lost productivity and innovation velocity, whereas aligned entities achieve sustained market leadership [3, 7, 14].

Bidirectional flows and recursive adaptation

The first core dynamic in SIAM is the bidirectional flow between layers. Business strategy sets high-level imperatives—such as market expansion, customer-centric innovation, or ecosystem orchestration—that cascade downward to dictate infrastructure requirements [4, 10, 19]. Simultaneously, the digital infrastructure layer exerts upward influence by revealing new strategic possibilities; for example, the emergence of real-time data platforms enables previously inconceivable business models such as predictive maintenance-as-a-service or hyper-personalized offerings [6, 13, 16]. These flows are not unidirectional but mediated by enterprise architecture mechanisms that translate abstract strategy into concrete technical blueprints, preventing fragmentation across business units [7, 12, 17, 21]. Without this mediation, even advanced infrastructure remains underutilized, as evidenced by multiple studies of digital transformation failures [8, 11, 18].

Enterprise architecture as the coherence engine

Enterprise architecture functions as the central nervous system of SIAM, providing governance structures, reference models, and migration roadmaps that maintain coherence amid rapid change [2, 5, 9, 15]. Modern EA practices emphasize modularity—microservices, containerization, and API-first designs—that allow infrastructure to scale independently while remaining strategically aligned [10, 14, 20]. This modularity reduces

lock-in risks and accelerates time-to-market for new strategic initiatives. Recent conceptual advances further highlight EA's role in risk governance: by embedding security-by-design and compliance architectures, firms convert regulatory pressures into competitive differentiators rather than constraints [1, 3, 12]. The recursive nature of these mechanisms ensures that every strategic pivot triggers an architecture review, creating a self-correcting loop that prior static alignment models overlooked [7, 11, 19].

Feedback loops and organizational learning

The performance and adaptation feedback loop completes the dynamic cycle. Competitive outcomes—measured through agility metrics, customer retention, and ecosystem value capture—feed back into recalibrating both strategy and infrastructure [4, 8, 16]. Organizations using SIAM-like approaches institutionalize this learning through architecture review boards and capability dashboards, turning performance data into actionable architecture refinements [2, 13, 20]. In volatile markets, these loops enable rapid pivots; firms that ignored feedback experienced prolonged misalignment during the 2020–2023 digital acceleration period [5, 10, 15]. Thus, SIAM reframes alignment not as an end state but as perpetual motion, where technology architecture actively shapes and is shaped by strategy for enduring competitiveness [6, 9, 17].

Infrastructure-Enabled Strategic Execution

Once alignment is dynamically maintained, digital infrastructure no longer functions merely as a passive enabler of organizational intent. Instead, it becomes an active executor of strategy, unlocking infrastructure-enabled dynamic capabilities that materially shape execution quality, speed, and adaptability [3, 4, 9, 14]. At this stage, infrastructure ceases to be viewed as a background technical layer and becomes a strategic mechanism through which firms translate abstract priorities into concrete operational outcomes. Within SIAM, this layer is critical because it connects high-level strategic direction with the day-to-day reconfiguration of resources, processes, and organizational routines. In doing so, it allows firms not only to implement chosen strategies more effectively, but also to adapt execution pathways as conditions evolve. Strategic execution, therefore, becomes less dependent on episodic managerial intervention and

more embedded in the firm's architecture, where digital systems continuously coordinate, prioritize, and enact strategic choices across the enterprise.

Sensing and seizing opportunities via scalable platforms

The digital infrastructure layer provides the sensory and responsive apparatus necessary for firms to identify, interpret, and act upon emerging opportunities. Through cloud-native data lakes, real-time analytics engines, API-based integration layers, and IoT-enabled data streams, organizations can sense environmental changes with greater granularity and speed than competitors [6, 13, 20]. These infrastructures extend managerial attention by continuously collecting and processing signals from customers, partners, markets, and internal operations, thereby reducing the lag between environmental change and strategic recognition. In dynamic markets, this sensing capability is essential because competitive advantage increasingly depends on detecting weak signals early and transforming them into coordinated strategic action.

Yet sensing alone is insufficient unless the organization can also seize opportunities rapidly. Here, enterprise architecture standards play a pivotal role by ensuring that digital components are modular, interoperable, and already aligned with strategic priorities. When infrastructure is architected around reusable services, standardized interfaces, and shared data models, firms can mobilize assets faster and convert insights into offerings with much less friction [1, 7, 12]. New products, services, and process innovations can therefore be launched in weeks rather than months, not simply because development is faster, but because the architectural groundwork for execution has already been laid. Strategic responsiveness becomes a property of the infrastructure itself.

The empirical literature reinforces this view by showing that firms with platform-centric infrastructures exhibit substantially higher innovation throughput, often achieving 2–3× higher rates of experimentation, launches, or capability deployment than their less modular peers [5, 10, 15]. Within SIAM, this pattern is especially important because it demonstrates that infrastructure does not just support execution efficiency; it expands the range of executable strategies. Capability orchestration systems emerge as the visible manifestation of this alignment, integrating data, applications, and governance mechanisms into a coherent execution fabric. In such settings,

infrastructure becomes generative: it not only implements strategic intent but also produces new strategic options by enabling rapid recombination.

Transforming operations and building resilience

Infrastructure-enabled strategic execution is also evident in the transformation of operational models. Rather than locking firms into fixed routines, digitally aligned infrastructures create the conditions for continuous operational redesign. Organizations can reconfigure value chains in response to changing demand, supplier conditions, or ecosystem opportunities—moving from linear supply structures toward ecosystem orchestration, or from product-centric delivery toward service-based and outcome-based business models [8, 11, 19]. This capacity to reconfigure is central to the SIAM perspective because it shows that execution is not merely about faithfully implementing a predetermined plan; it is about sustaining strategic coherence while changing the operational architecture through which value is created and delivered.

Resilience emerges as a particularly important byproduct of this form of execution. Distributed, fault-tolerant architectures, supported by effective enterprise architecture governance, allow organizations to absorb shocks without losing strategic direction [2, 14, 16]. In these environments, redundancy, modular isolation, and flexible routing mechanisms reduce the firm's vulnerability to localized disruptions. Operational continuity is no longer solely dependent on managerial improvisation or crisis escalation; it is embedded in the enterprise's technical design. This makes resilience a structural characteristic of strategically aligned infrastructure rather than a reactive capability developed only after disruption occurs.

Evidence from periods of global supply-chain instability illustrates this point clearly. Organizations whose infrastructures were aligned with SIAM principles demonstrated stronger continuity because they could reroute digital workflows, substitute partners, and resequence processes without requiring a full strategic reset [3, 9, 17]. In effect, architectural coherence enabled them to preserve the strategy's logic even as they altered its operational pathways. This distinction is crucial: resilient firms are not simply those that continue operating, but those that continue executing strategically under adverse conditions.

Sub-modular designs further strengthen execution by enabling parallel experimentation. Firms can test new business models, customer journeys, or operational processes within isolated digital sandboxes while keeping core systems stable and protected [4, 10, 20]. This separation between experimentation and core execution reduces risk while increasing learning velocity. It allows organizations to pursue differentiation without undermining reliability, thereby creating a dual capacity for exploration and exploitation. Within SIAM, such designs are especially valuable because they demonstrate how digital infrastructure can simultaneously preserve coherence and enable strategic renewal.

Platform infrastructure and ecosystem positioning

A central execution mechanism within SIAM is the deliberate construction of platform infrastructures that extend strategic action beyond firm boundaries. These infrastructures generate network effects, deepen switching costs, and create lock-in advantages that elevate competitiveness above what traditional internal efficiency models can explain [6, 13, 15]. Platforms are not merely technical systems for delivering services; they are strategic coordination mechanisms that shape how value is created, shared, and captured across an ecosystem. As such, their design becomes inseparable from execution.

When platform roadmaps are intentionally aligned with enterprise architecture, firms position themselves not simply as participants in markets, but as ecosystem orchestrators capable of influencing standards, interactions, and complementarities [1, 5, 12]. This repositioning alters the logic of strategy execution itself. Rather than executing strategy solely through internal resources and hierarchical control, firms increasingly do so through partners, developers, suppliers, and complementors whose contributions are coordinated through digital interfaces and shared infrastructures. Execution thus becomes distributed, but not chaotic; it remains coherent because architecture provides the rules, standards, and interfaces through which collaboration occurs.

Recent research shows that aligned platform architectures can convert infrastructure investments into multiplicative returns by enabling partner co-creation, interoperable services, and data-sharing standards that reinforce ecosystem participation [7, 11, 18]. This multiplication effect matters because it means the value of infrastructure rises

nonlinearly as participation expands. In SIAM terms, the architecture becomes a mechanism for amplifying strategic intent across an interconnected network of actors. Competitive advantage, therefore, stems not only from owning superior assets but from designing infrastructural conditions under which many actors contribute to the realization of the focal firm's strategic agenda.

As a result, execution becomes collective. Strategy is no longer enacted only through internal organizational routines, but through coordinated digital ecosystems held together by coherent architecture. This expands both the scale and scope of execution, allowing firms to shape industry structures, influence partner behavior, and create durable competitive positions that are difficult for rivals to replicate without comparable infrastructural alignment.

Digital Architecture and Competitiveness

Technology architecture is ultimately one of the most powerful determinants of organizational competitiveness because it defines the boundaries of what the firm can do, how quickly it can respond, and how sustainably it can evolve [2, 5, 8, 14]. Under SIAM, architecture is elevated from a technical concern to a strategic asset and competitive differentiator. It is not simply the underlying arrangement of systems and data; it is the structural logic that conditions strategic possibility. Firms with poorly aligned architectures may possess strong ambitions, but those ambitions remain constrained by technical rigidity, fragmented data, and execution bottlenecks. By contrast, firms with strategically aligned architectures can repeatedly, at scale, translate intent into coordinated action.

Modularity, agility, and innovation velocity

Modular architectures—including microservices, event-driven designs, containerized services, and decoupled data layers—give organizations the flexibility to pursue multiple strategic trajectories simultaneously [3, 10, 15]. Because functions are separated into interoperable components, changes can be introduced incrementally rather than through large-scale system overhauls. This reduces switching costs, shortens development cycles, and permits greater responsiveness to uncertainty. Competitors locked into monolithic systems often face structural inertia: changes in one part of the system trigger cascading

dependencies elsewhere, slowing both experimentation and execution. SIAM-adopting firms, in contrast, are better positioned to iterate at digital speed while still preserving enterprise-wide coherence through governance and architectural standards [6, 12, 20].

This modularity directly enhances innovation velocity. New capabilities can be introduced by recombining existing services, plugging in external tools, or extending shared platforms without requiring foundational redesign. Such recombination allows firms to test and deploy innovations continuously, which is increasingly essential in technological domains characterized by rapid shifts, such as generative AI, automation, edge computing, or intelligent analytics [1, 7, 13]. Innovation speed is therefore not merely a function of R&D intensity or managerial vision; it is also a consequence of architectural design. The more modular the architecture, the lower the cost of strategic experimentation and the greater the likelihood of first-mover or fast-follower advantage.

Moreover, SIAM ensures that this agility does not devolve into fragmentation. Because modularity is governed through enterprise architecture principles, local experimentation remains connected to broader strategic coherence. This balance is crucial. Without governance, modularity can produce duplication, inconsistency, and technical sprawl; with governance, it becomes a disciplined source of adaptability and innovation.

Scalability and market responsiveness

Scalability embedded into the architecture layer enables firms to convert strategic ambition into sustained market reach. Elastic cloud infrastructures, supported by enterprise architecture-guided capacity planning, allow firms to expand operations across geographies, customer segments, and transaction volumes without proportionate increases in cost or complexity [4, 9, 16]. This means that growth is not constrained by the physical or procedural limitations of legacy systems. Instead, capacity can be expanded dynamically in response to opportunity, reducing the friction between strategic aspiration and operational execution.

Market responsiveness also improves when architecture supports real-time decision engines, integrated data flows, and automated feedback loops that connect strategic priorities with frontline operations [2, 11, 19]. In such environments, daily execution is continuously informed by

current market conditions rather than periodic reviews or delayed reporting cycles. Pricing, service delivery, supply allocation, and customer engagement can all be adjusted in near real time, allowing the firm to remain strategically aligned even as external conditions shift rapidly. This reduces the gap between strategic planning and operational reality, making execution more immediate, evidence-based, and adaptive.

Firms leveraging these architectures consistently outperform peers in customer experience, service consistency, and time-to-value delivery because their infrastructures enable faster, lower-cost responses [5, 8, 14]. Importantly, this responsiveness is not only operational; it is strategic. The architecture enables the firm to sense changes, scale responses, and preserve coherence across dispersed activities. In this way, SIAM demonstrates that competitiveness is increasingly inseparable from architectural capability. The firms that win are not simply those with better strategies in abstract terms, but those whose digital architectures allow strategy to be executed, adapted, and scaled with exceptional precision.

Taken together, infrastructure-enabled strategic execution and digitally grounded competitiveness reveal the core logic of SIAM: sustainable advantage arises when strategy, architecture, and infrastructure operate not as separate domains, but as mutually reinforcing layers of an integrated system. In that system, digital infrastructure does not merely implement strategy after the fact. It actively shapes what is strategically feasible, accelerates the execution of strategy, and strengthens the organizational resilience required to sustain advantage over time [3, 4, 9, 14].

Resilience and Long-Term Competitive Sustainability

Beyond agility, digital architecture builds antifragility. Disaster-recovery patterns, zero-trust security models, and multi-cloud redundancy—all governed by enterprise architecture—ensure continuity during black-swan events [3, 10, 17]. Sustainability extends to talent and culture: clear architectural blueprints reduce technical debt, freeing resources for strategic innovation rather than maintenance [6, 12, 18]. Over time, this creates a compounding competitive moat where architecture itself becomes a barrier to imitation, as competitors cannot replicate the integrated strategic–infrastructure synergy without equivalent alignment discipline [1, 7, 15, 20].

Conclusion

Envisioning sustained competitiveness through architectural mastery

The Strategic Infrastructure Alignment Model (SIAM) provides a comprehensive, layered architecture that resolves longstanding fragmentation in business–IT alignment research by centering technology architecture as the pivotal mediator [2, 5, 8, 11]. By integrating business strategy, digital infrastructure, enterprise architecture mechanisms, capability orchestration, and recursive feedback, SIAM offers scholars and practitioners a unified lens for navigating digital complexity. The framework demonstrates that competitiveness is not merely a function of technology adoption but of deliberate, recursive alignment that turns infrastructure into a strategic force multiplier [3, 10, 14, 19].

Future research directions emerging from SIAM include empirical validation across industries, longitudinal studies of feedback-loop efficacy, and extension to emerging paradigms such as quantum-ready architectures or decentralized web infrastructures. For managers, the immediate imperative is to institutionalize SIAM principles through architecture review boards, capability dashboards, and cross-functional alignment rituals [1, 7, 12, 20]. Organizations that master these dynamics will not only survive but lead in the next wave of digital disruption.

In essence, technology architecture is no longer a cost center or support function—it is the structural DNA of competitive advantage. SIAM equips leaders to intentionally redesign that DNA, ensuring that strategy and infrastructure evolve in perpetual harmony for enduring organizational supremacy [4, 9, 15, 18].

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