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Adaptive Strategy Formation in High-Velocity Digital Markets: Organizational Responses to Technological Disruption and Rapid Competitive Change

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Abstract

High-velocity digital markets are defined by unrelenting technological disruption, compressed innovation cycles, and intense competitive pressures that render conventional strategy models obsolete. Organizations must therefore develop continuous adaptive strategy formation processes capable of sensing weak signals, interpreting disruptions, and reconfiguring resources at unprecedented speed. This conceptual article synthesizes contemporary research on strategic agility, dynamic capabilities, and organizational responses in digital environments to address a critical gap: the lack of an integrated framework that explains how firms achieve sustained resonance with market velocity. The paper introduces the adaptive velocity resonance architecture (AVRA). AVRA is a five-component cyclical model that links environmental sensing mechanisms, disruptive signal interpretation, agility activation pathways, capability reconfiguration mechanisms, and feedback-driven strategy recalibration loops. The architecture demonstrates how organizations translate rapid competitive change into iterative strategic adaptation through continuous learning and digital integration. By foregrounding the interplay between technological turbulence and organizational responsiveness, AVRA offers a conceptual lens for understanding and guiding adaptive strategy formation in digital contexts characterized by permanent flux. Theoretical contributions extend dynamic capabilities and strategic agility literatures, while the framework supplies managers with a practical architecture for maintaining competitiveness amid unrelenting digital disruption.

Keywords High-velocity digital markets, Adaptive strategy formation, Technological disruption, Strategic agility, Dynamic capabilities, Organizational learning loops

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Introduction

The escalating velocity of digital market turbulence

Contemporary digital markets operate at velocities that compress decision windows to weeks or even days. Firms encounter simultaneous technological breakthroughs, platform shifts, and competitor moves that collectively erode established strategic positions. In such

environments, static planning cycles fail to capture the intensity of change, compelling organizations to treat strategy as a continuously evolving process rather than a periodic exercise. Recent scholarship underscores that high-velocity settings demand capabilities far beyond traditional resource allocation; they require real-time alignment between external signals and internal action [1-9].

Technological disruption as catalyst for strategic reorientation

Technological disruption no longer arrives as discrete events but as persistent waves that reshape entire value architectures. Cloud-native architectures, artificial intelligence integration, and ecosystem-based competition have accelerated the pace at which incumbents must reinvent core offerings. Organizations that treat disruption as episodic risk obsolescence; those that embed responsiveness into their strategic DNA achieve sustained advantage [3, 10–19]. The literature consistently demonstrates that failure to respond rapidly to these forces correlates with diminished performance, while proactive adaptation correlates with resilience [17, 20].

Strategic agility as the central organizational imperative

Strategic agility has emerged as the pivotal competence for navigating digital volatility. It encompasses the capacity to sense opportunities, mobilize resources, and reconfigure operations faster than competitors. Empirical foundations, though conceptualized here, reveal that agility operates through three interconnected layers: sensing, decision speed, and execution flexibility [9, 10, 15]. In high-velocity digital markets, these layers must operate in near-real time, supported by digital infrastructure that shortens feedback cycles.

The imperative for a new integrative framework

Despite rich streams of research on dynamic capabilities [3, 16], digital agility [9, 20], and organizational learning under turbulence [12, 21–25], no single architecture yet explains the full cycle through which firms form adaptive strategies while maintaining resonance with market velocity. Existing models remain fragmented—some emphasize sensing [26, 27], others capability reconfiguration [28], and still others feedback loops [8]. The present article addresses this fragmentation by synthesizing these streams into a unified cyclical architecture explicitly designed for high-velocity digital conditions.

Literature Synthesis and Conceptual Foundations

Strategic agility in digitally volatile environments

Strategic agility literature has evolved from general responsiveness concepts to digital-specific formulations. Salmela et al. [9] conceptualize digital agility as the fusion of sensing speed, decision agility, and execution velocity within technology-enabled structures. Tallon and colleagues extend this by demonstrating that digital-enabled strategic agility requires alignment between IT investments and market sensing capabilities [10]. Complementary work shows that entrepreneurial agility enables firms in disrupted sectors to create value through rapid pivots [11]. These foundations establish that agility is not merely speed but resonant alignment with external velocity [24].

Dynamic capabilities under conditions of technological turbulence

Dynamic capabilities theory provides the micro-foundational backbone for adaptive strategy formation. Teece argues that business models themselves must become dynamic when markets exhibit high velocity [3]. Salvato and Vassolo identify the sources of dynamism within capabilities—managerial cognition, organizational routines, and relational assets—that allow firms to sustain adaptation [16]. Warner and Wäger illustrate how digital transformation itself becomes an ongoing process of strategic renewal through capability building [22]. Empirical anchors, while conceptualized here, confirm that dynamic capabilities mediate the relationship between environmental dynamism and performance [17, 25–28]. In digital contexts, these capabilities must incorporate data analytics, platform thinking, and ecosystem orchestration [13, 18].

Technological turbulence intensifies the need for these capabilities by compressing competitive cycles and increasing the unpredictability of innovation trajectories. Firms operating in digitally disrupted industries face continuous waves of technological change—such as the integration of artificial intelligence, shifts in cloud-native infrastructure, and platform-based competition—that rapidly alter the strategic landscape. Under such conditions, dynamic capabilities are not merely episodic mechanisms deployed during strategic transitions; they become persistent organizational processes embedded within everyday operations. The ability to continually sense emerging technologies, evaluate their strategic implications, and redeploy organizational resources

accordingly determines whether firms maintain competitive viability or fall behind accelerating industry dynamics [16, 22].

Moreover, digital technologies alter the structure of capabilities themselves. Traditional capabilities often relied on stable routines and incremental refinement. In contrast, digitally mediated capabilities are modular, data-driven, and networked across organizational boundaries. Firms must therefore develop orchestration capabilities that coordinate internal resources with external partners, platform ecosystems, and developer communities [13, 18]. This shift expands the scope of dynamic capabilities theory beyond firm-centric adaptation toward ecosystem-aware strategic coordination.

Organizational learning loops in rapid competitive cycles

High-velocity markets demand accelerated learning cycles. Shin and Pérez-Nordtvedt demonstrate that efficient knowledge acquisition directly influences strategic renewal frequency and performance in turbulent settings [12]. Chen *et al.* highlight experience-based learning (“strategy-by-doing”) as a mechanism for new product success in volatile environments [14]. An organizational climate of trust further facilitates the microfoundations of dynamic capabilities by enabling rapid knowledge integration [29]. Learning loops must therefore operate continuously, feeding sensed signals back into capability reconfiguration [6, 8].

In digitally mediated environments, learning cycles are increasingly supported by real-time data infrastructures. Digital platforms generate vast streams of behavioral data, enabling organizations to observe market responses almost instantaneously. Product experimentation, A/B testing, and continuous deployment pipelines transform learning from a retrospective process into an ongoing operational activity. As a result, strategic insights are derived not only from managerial analysis but also from automated experimentation embedded within digital systems.

The acceleration of organizational learning also alters the temporal rhythm of strategic renewal. Instead of episodic strategic reviews occurring annually or quarterly, firms must engage in continuous micro-adjustments informed by real-time feedback. These accelerated learning loops enable organizations to refine strategic initiatives rapidly while preventing the accumulation of outdated assumptions. When embedded effectively, learning loops become the

connective tissue linking sensing mechanisms to capability reconfiguration and strategic recalibration [8, 12].

Market sensing and responsiveness mechanisms

Effective adaptation begins with superior market sensing. Evans and Salaiz emphasize the importance of engaging all organizational levels in opportunity sensing [27]. Pinsonneault and Choi call for examination of weak-signal detection within digital-enabled agility [15]. Yeow *et al.* [20] show that alignment with new digital strategies requires dynamic capabilities specifically tuned to sensing and responding. In technologically disrupted markets, sensing must incorporate both structured data analytics and unstructured ecosystem signals [17, 18].

Digital technologies significantly expand the scope and precision of sensing activities. Advanced analytics tools enable organizations to process large-scale datasets encompassing customer behavior, competitor activities, and technological trends. At the same time, unstructured signals—such as developer forum discussions, open-source contributions, and ecosystem partner interactions—provide valuable insights into emerging innovation trajectories. Integrating these heterogeneous signals requires sophisticated analytical capabilities and cross-functional collaboration across organizational units.

Equally important is the responsiveness that follows sensing. The value of market sensing lies not merely in identifying opportunities or threats but in translating these insights into timely organizational action. Firms must therefore develop mechanisms that connect sensing outputs directly to operational decision-making structures. When sensing systems are tightly integrated with activation pathways and capability reconfiguration processes, organizations can transform early signals into rapid strategic responses, thereby gaining an advantage in environments characterized by intense technological competition [15, 20].

Capability reconfiguration and feedback integration

The final link in adaptive strategy formation is the reconfiguration of capabilities and the integration of feedback. Bendig *et al.* reveal micro-foundations rooted in CEO personality and knowledge capital that enable

reconfiguration [28]. Frank et al. [25] demonstrate that environmental dynamism and hostility moderate the deployment of dynamic capabilities in smaller firms. Feedback mechanisms close the loop, allowing organizations to recalibrate strategies in real time [4, 8]. Collectively, these foundations reveal a missing integrative architecture—one that cycles sensing, interpretation, activation, reconfiguration, and recalibration in perpetual resonance with digital market velocity.

Capability reconfiguration becomes particularly critical in digital environments where competitive advantages erode rapidly. Organizations must continuously redeploy resources across product lines, technological infrastructures, and market segments in response to emerging opportunities. Digital architectures facilitate this process by enabling modular capability structures in which technological components, human expertise, and organizational routines can be recombined quickly. Such modularity reduces the cost and complexity of strategic change, allowing firms to pivot their strategic direction without destabilizing the entire organizational system.

Feedback integration further enhances the adaptability of this process. Performance metrics derived from digital platforms provide immediate insights into the effectiveness of strategic initiatives. These insights feed back into sensing and learning mechanisms, allowing organizations to refine strategies iteratively. Over time, this recursive feedback structure enables firms to develop increasingly sophisticated adaptive capabilities that align internal strategic processes with the pace of technological change [4, 8].

Resonating with market velocity: Introducing the adaptive velocity resonance architecture (AVRA)

To address the identified fragmentation, this article proposes the adaptive velocity resonance architecture (AVRA). AVRA is explicitly designed for high-velocity digital markets and conceptualizes adaptive strategy formation as a resonant, cyclical process rather than a linear sequence. The acronym AVRA captures the core logic: organizations must achieve “resonance” (synchronized frequency) with external market velocity through continuous adaptive cycles.

Unlike traditional dynamic-capability models that emphasize sequential stages of sensing, seizing, and transforming, AVRA conceptualizes adaptation as a continuously circulating system in which sensing, activation, reconfiguration, and recalibration operate simultaneously. Each cycle strengthens the organization's ability to interpret signals, mobilize responses, and refine its strategic direction. The architecture, therefore, transforms adaptation from an occasional strategic activity into a persistent organizational rhythm aligned with the tempo of digital competition.

By framing adaptive strategy formation as a resonance-based process, AVRA extends existing theories of strategic agility and dynamic capabilities. Competitive advantage no longer stems solely from possessing superior resources or capabilities, but from maintaining synchronization between organizational response cycles and the velocity of environmental change. Firms capable of sustaining this resonance develop compounding adaptive capacity, enabling them to navigate continuous technological disruption while preserving strategic coherence.

The architecture comprises five interdependent components connected by directional flows and bidirectional feedback loops:

1. Environmental sensing mechanisms – Continuous monitoring of technological signals, competitor moves, and ecosystem shifts using digital platforms and weak-signal detection tools.
2. Disruptive signal interpretation processes – Cognitive and analytical routines that translate raw signals into strategic meaning, drawing on organizational learning and managerial cognition.
3. Agility activation pathways – Rapid mobilization of cross-functional teams and digital resources to initiate responsive actions.
4. Capability reconfiguration mechanisms – Dynamic adjustment of resources, routines, and business models to align with interpreted disruptions.
5. Feedback-driven strategy recalibration loops – Real-time evaluation of outcomes that feeds performance data back into sensing mechanisms, closing the adaptive cycle.

Figure 1 illustrates the adaptive velocity resonance architecture (AVRA), depicting how environmental sensing, disruptive signal interpretation, agility activation, capability

reconfiguration, and feedback-driven strategy recalibration operate as a cyclical system that enables organizations to maintain resonance with high-velocity digital markets.

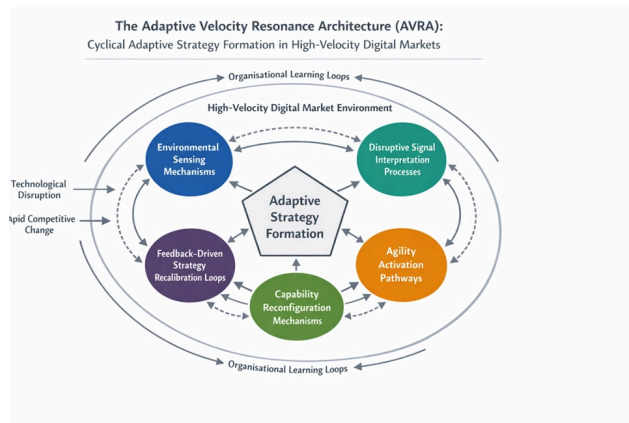


Figure 1. The AVRA cyclical architecture

AVRA advances prior models by integrating sensing [15, 27], interpretation [12], activation [9, 10], reconfiguration [3, 22, 28], and recalibration [8, 29] into a single resonant system explicitly tuned to digital velocity. The framework is purely conceptual, offering a lens for both theory development and managerial practice in environments where competitive advantage accrues to those who maintain continuous resonance with change.

Orchestrating Continuous Resonance: Interpreting AVRA Components Amid Technological Disruption and Rapid Competitive Change

The adaptive velocity resonance architecture (AVRA) operates as a perpetual motion system, with each of the five components feeding directly into the next, while bidirectional feedback loops ensure instantaneous recalibration. This interpretation moves beyond static descriptions to reveal how AVRA enables organizations to maintain strategic synchronization with high-velocity digital markets.

Environmental Sensing Mechanisms form the entry point. In digital contexts characterized by platform shifts and algorithmic innovation, sensing must capture weak signals across multiple layers: real-time data streams, ecosystem partner behaviors, and latent technological trajectories [15,

17, 27]. The mechanism is not passive monitoring but active, digitally augmented scanning that integrates big-data analytics with human intuition. Organizations that embed sensor networks across functions detect disruption earlier, converting external velocity into internal opportunity [18, 20].

Disruptive Signal Interpretation Processes translate raw inputs into actionable strategic meaning. Drawing on managerial cognition and collective learning, this component filters noise from signal through rapid sense-making routines [12, 14, 29]. Interpretation is accelerated by cross-functional digital forums where AI-assisted pattern recognition meets experiential judgment. The result is a shared strategic narrative that aligns the entire organization around a common disruption timeline [16, 28]. Without precise interpretation, even superior sensing yields paralysis; AVRA therefore positions interpretation as the cognitive bridge that prevents overload in high-velocity environments.

Operationalizing AVRA in digitally turbulent environments

Translating the Adaptive Velocity Resonance Architecture (AVRA) into organizational practice requires aligning technological infrastructure, governance logic, and cultural orientation around continuous adaptation.

Operationalization begins with the establishment of integrated sensing infrastructures capable of capturing signals across digital ecosystems in real time. Advanced analytics platforms, machine-learning-driven pattern recognition, and API-linked partner networks create a distributed sensing mesh that extends beyond organizational boundaries [6, 15, 27]. Rather than relying solely on internal monitoring, AVRA assumes that valuable signals emerge from customers, developers, suppliers, and platform participants simultaneously. This ecosystemic sensing architecture increases signal diversity while reducing the latency between environmental change and managerial awareness.

Activation pathways translate these signals into immediate organizational action through digitally enabled coordination mechanisms. In AVRA-driven firms, strategic intent is embedded in operational platforms—continuous deployment pipelines, automated experimentation frameworks, and cross-functional digital squads—that enable decisions to propagate rapidly across organizational units. Activation, therefore, becomes less a managerial

intervention and more an infrastructural property of the firm. When competitive conditions shift—for example, when a rival introduces an AI-driven feature or a regulatory change affects data governance—activation pathways enable rapid redeployment of product modules, pricing structures, or service layers without requiring full organizational restructuring [9–11].

Figure 2 illustrates how the adaptive velocity resonance architecture operates in practice by translating its five theoretical components into organizational workflows that link market signals, managerial interpretation routines, agile response structures, capability reconfiguration processes, and real-time strategic recalibration.

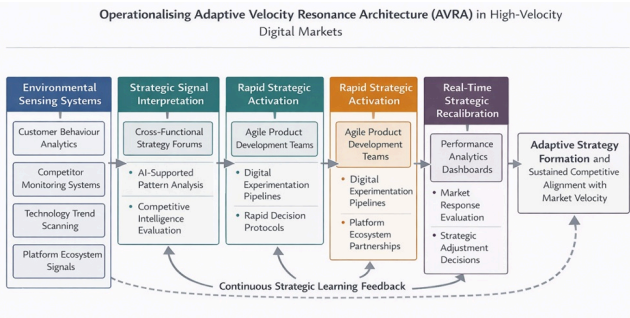


Figure 2. Operationalizing the AVRA cycle in high-velocity digital markets

Capability reconfiguration then serves as the architectural backbone. Through modular technology stacks and fluid talent allocation systems, firms continuously reshape their operational capabilities to match evolving market requirements. Digital infrastructures such as microservice architectures, containerized workloads, and shared data environments allow capabilities to be recombined at unprecedented speed. In this context, organizational capabilities behave less like stable assets and more like configurable modules that can be assembled, dismantled, and redeployed across strategic initiatives [3, 8, 22]. The iterative nature of reconfiguration aligns the organization's internal architecture with the tempo of digital competition, reinforcing the AVRA principle that adaptation must keep pace with environmental change [16, 28].

The final operational layer involves institutionalizing rapid feedback loops to sustain strategic recalibration. Digital platforms generate vast streams of behavioral and performance data—user engagement patterns, algorithmic response rates, feature adoption metrics—that feed directly into decision systems. AVRA assumes that these signals

are not merely evaluative but generative: they inform subsequent sensing activities, reshape activation triggers, and guide future capability configurations [4, 6, 29]. The feedback cycle, therefore, acts as a recursive learning mechanism through which the organization refines its strategic rhythm over time.

Implications for Digital Strategy and Organizational Design

The AVRA framework implies a fundamental shift in how digital strategy is conceived and executed. Traditional strategic planning models assume periodic analysis followed by structured implementation phases. Under conditions of high-velocity digital change, however, such sequential models struggle to keep pace with technological disruption. AVRA replaces this linear paradigm with a continuous orchestration model in which sensing, activation, reconfiguration, and recalibration occur simultaneously rather than sequentially.

This shift has significant implications for organizational design. Hierarchical coordination structures become increasingly inefficient when adaptation cycles occur in days rather than quarters. AVRA therefore favors distributed decision-making authority, networked teams, and digitally mediated governance mechanisms that enable strategic adjustments to emerge from multiple organizational nodes. Leadership roles evolve accordingly: executives transition from central decision-makers to architects of adaptive infrastructures, responsible for designing systems that sustain organizational resonance with external change [8, 25]. **Table 1** links the five components of the AVRA framework to their underlying organizational capabilities, enabling technologies, and strategic outcomes in high-velocity digital environments.

Table 1. Organizational capabilities underlying the AVRA adaptive strategy cycle

AVRA component	Core organizational capability	Digital infrastructure/tools	Strategic outcome
Environmental sensing mechanisms	Continuous environmental	Big-data analytics platforms, ecosystem	Digital transformation

	scanning capability	monitoring dashboards, and API-connected market feeds	Tr s a	While AVRA provides a conceptual architecture for understanding adaptation in high-velocity digital markets, several avenues remain open for empirical exploration. One promising direction involves examining how artificial intelligence enhances organizational sensing capabilities. AI systems capable of processing large-scale behavioral data may dramatically increase signal detection accuracy, thereby strengthening the first stage of the AVRA cycle. Investigating how these technologies reshape managerial cognition and decision speed represents an important extension of existing agility research [11, 13, 19].
Disruptive signal interpretation processes	Strategic sense-making and cognitive integration	AI-supported pattern recognition, cross-functional interpretation forums, and knowledge repositories		
Agility activation pathways	Rapid decision and mobilization capability	Agile squads, cloud infrastructure scaling, and digital coordination platforms	i c i	A second research direction concerns ecosystem-level activation. Digital platforms increasingly operate as interconnected networks rather than isolated firms, suggesting that activation pathways may extend beyond organizational boundaries. Future studies could explore how platform governance structures enable or constrain collective activation among ecosystem participants, particularly when innovation cycles accelerate across industries [9, 24].
Capability reconfiguration mechanisms	Dynamic resource orchestration capability	Modular IT architectures, microservices platforms, and flexible talent allocation systems		
Feedback-driven strategy recalibration loops	Organizational learning and strategic refinement capability	Real-time performance dashboards, experimentation pipelines, and A/B testing infrastructures	C	Finally, further work is needed to understand how recalibration loops operate under extreme technological acceleration. As emerging technologies such as generative AI and autonomous systems compress decision timelines even further, organizations may need to develop new mechanisms to maintain strategic coherence while operating at near-real-time speeds. Investigating these mechanisms will help clarify whether resonance-based architectures, such as AVRA, can sustain long-term strategic alignment in environments characterized by continuous technological upheaval.

Moreover, the architecture highlights the importance of cultural alignment with digital velocity. Adaptive infrastructures alone cannot sustain resonance if organizational norms discourage experimentation or penalize rapid iteration. AVRA-compatible cultures emphasize psychological safety, rapid learning, and tolerance for controlled failure, enabling employees to respond confidently to emerging signals [12, 14]. In such environments, strategic agility becomes embedded in everyday routines rather than confined to formal transformation initiatives.

Future Research Directions

Forging Competitive Resonance: Managerial Pathways for Implementing AVRA in Technologically Disrupted Environments

Managers operating in high-velocity digital markets can operationalize AVRA through targeted, actionable pathways that convert the conceptual model into daily practice.

Begin by institutionalizing Environmental Sensing Mechanisms via cross-functional digital dashboards that aggregate internal analytics, competitor APIs, and ecosystem signals. Allocate dedicated “velocity scouts”—

small teams empowered to flag weak signals daily rather than quarterly [15, 27]. This shifts sensing from episodic to continuous without increasing headcount.

Next, formalize disruptive signal interpretation processes through weekly “resonance huddles” where AI pattern outputs are evaluated by human judgment. Train managers in rapid sense-making frameworks drawn from experience-based learning [12, 14], ensuring interpretation speed matches market velocity.

For Agility Activation Pathways, redesign organizational structures around modular digital squads that can be assembled in under 48 hours. Pre-approve escalation protocols and cloud resource pools to enable activation without waiting for capital allocation cycles [9, 10].

Capability Reconfiguration Mechanisms require quarterly “capability swaps,” during which legacy routines are retired and new digital modules are integrated. Leaders must champion micro-foundational investments in trust climates and knowledge capital to accelerate reconfiguration [28, 29].

Finally, close feedback-driven strategy recalibration loops by linking real-time performance telemetry directly back to sensing dashboards. Establish “recalibration triggers”—automated alerts when key velocity metrics deviate—ensuring the entire organization learns from every cycle [8, 22].

Implementation succeeds when leadership treats AVRA as cultural infrastructure rather than a project. CEOs who model resonance thinking—publicly recalibrating strategy in town halls—accelerate adoption [28]. Firms following these pathways conceptually move from reactive firefighting to proactive velocity mastery, turning technological disruption into sustained competitive advantage.

Conclusion

The Adaptive Velocity Resonance Architecture (AVRA) offers a comprehensive conceptual answer to a defining challenge of our era: how organizations develop adaptive strategies amid technological disruption and rapid competitive change that have become permanent conditions. By synthesizing strategic agility, dynamic capabilities, organizational learning, and market sensing into a single resonant cycle, AVRA demonstrates that

sustained competitiveness no longer derives from superior resources but from superior alignment with digital market velocity.

The framework’s five components—environmental sensing, signal interpretation, agility activation, capability reconfiguration, and feedback recalibration—operate as an integrated system in which each loop amplifies the next. Its theoretical contributions tighten the linkage between dynamic capabilities and strategic agility while introducing resonance as a new organizing principle. In practice, AVRA provides managers with concrete pathways to embed continuous adaptation into organizational DNA.

As digital markets accelerate—driven by generative AI, decentralized platforms, and real-time ecosystem competition—the imperative for resonant adaptation will only intensify. Organizations that internalize AVRA’s cyclical logic will not merely survive disruption; they will orchestrate it. Those who cling to periodic strategy cycles risk permanent desynchronization.

Adaptive strategy formation in high-velocity digital markets is therefore no longer an occasional competence but the central organizational capability of the digital age. AVRA provides both the conceptual map and the operational compass for maintaining perpetual resonance amid unrelenting change.

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