

The Role of Artificial Intelligence in Enhancing Dynamic Capabilities and Strategic Agility: A Malaysian Perspective

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Abstract

Organizations confronting volatile competitive environments must cultivate the capacity to adapt continuously rather than rely on static positional advantages. This article investigates the intersection of artificial intelligence (AI) and the dynamic capabilities framework, focusing specifically on how AI-driven tools reshape an organization's ability to sense, seize, and transform in response to shifting market conditions. Drawing on the foundational work of Teece et al. (1997) and more recent empirical scholarship, the paper argues that AI is not merely a productivity instrument but a structural enabler of higher-order organizational learning and strategic flexibility. The Malaysian business landscape serves as the primary empirical focus, offering a rich context in which national policy ambition, early sectoral adoption, and persistent structural constraints co-exist. Case material spanning the banking, telecommunications, and manufacturing sectors reveals divergent adoption trajectories, with financial institutions moving decisively while manufacturers remain largely in exploratory phases. The article highlights that AI's contribution to dynamic capabilities is mediated by cultural, managerial, and infrastructural conditions, and that purely technology-led implementation strategies tend to produce limited returns. Policy frameworks including the National AI Action Plan 2030 and Industry4WRD provide directional clarity but require more granular sectoral strategies and talent pipelines to close the gap between ambition and execution. The discussion concludes with theoretical extensions to the dynamic capabilities framework and practical guidance for Malaysian managers and policymakers navigating this transition.

Keywords: *dynamic capabilities, strategic agility, artificial intelligence, Malaysia, organizational transformation, Industry 4.0, digital innovation*

I. INTRODUCTION

Strategic management has long grappled with a fundamental tension: how organizations sustain competitive advantage in environments that

continually erode whatever edge they possess. The resource-based view suggested that rare, inimitable assets could serve as durable sources of differentiation, but this perspective proved inadequate when technological cycles shortened and industry boundaries dissolved. Teece et al. (1997) addressed this limitation by shifting attention from asset stocks to organizational processes, specifically the routines through which firms build, integrate, and reconfigure their competencies over time. This reorientation gave rise to the dynamic capabilities framework, which remains one of the most influential constructs in strategic management scholarship.

Into this theoretical tradition, artificial intelligence has arrived as both a disruptive force and a potentially enabling one. Global expenditure on AI is projected to reach approximately \$1.5 trillion by 2025, a figure reflecting not only widespread organizational interest but also considerable pressure to translate investment into measurable strategic returns (Cisco, 2025). For Malaysia, these global currents intersect with a domestically driven agenda. The National AI Action Plan 2030 articulates a bold national vision to position the country as a leading AI economy in Southeast Asia, backed by infrastructure investments, talent initiatives, and regulatory reform (Anwar Ibrahim, 2025; Malaysia Ministry of Digital, 2025). Yet the translation of national ambition into firm-level capability remains uneven, particularly in sectors where digital readiness has historically lagged.

This article addresses a gap in the strategic management literature by examining how AI technologies function as mechanisms for developing dynamic capabilities at the firm level, using Malaysian industry as the primary empirical context. Three questions guide the analysis. First, through what processes does AI enhance sensing, seizing, and transforming capabilities? Second, how do Malaysian firms across different sectors actually deploy AI in pursuit of these capabilities? Third, what conditions determine whether AI investments translate into genuine strategic agility or remain at the level of operational efficiency? The paper proceeds through five sections: a theoretical exposition of dynamic

capabilities, an analysis of AI as an enabler across each capability dimension, a sectoral review of Malaysian adoption patterns, an assessment of persisting barriers, and a discussion of implications for theory and practice.

II. THEORETICAL FOUNDING: DYNAMIC CAPABILITIES AND STRATEGIC AGILITY

2.1 *The Dynamic Capabilities Framework*

The publication of Teece et al. (1997) marked a pivotal moment in the evolution of strategic management theory. The authors argued that competitive advantage in high-velocity environments cannot be adequately explained by resource possession alone; rather, it depends on organizational processes that allow firms to respond purposefully to external change. Dynamic capabilities were defined as the firm's ability to integrate, build, and reconfigure internal and external competencies in the face of rapidly shifting environments (Teece et al., 1997). Critically, the framework foregrounds process and routine over asset, repositioning strategy as a managerial practice rather than a portfolio decision.

The framework rests on three analytical pillars. The first concerns the firm's specific path dependencies and asset positions, which constrain and enable the strategic options available at any given moment. The second concerns managerial and organizational processes, encompassing coordination, learning, and the mechanisms through which knowledge is created and diffused. The third concerns evolutionary trajectories, the cumulative effects of past decisions on current capability configurations (Teece et al., 1997). Together, these pillars suggest that dynamic capabilities are historically embedded and difficult to replicate, which distinguishes them from more easily transferable operational skills.

The operationalization of dynamic capabilities has been refined over time, with particular attention to three foundational activities: sensing, seizing, and transforming. Sensing involves the systematic monitoring and interpretation of external opportunities and threats, requiring firms to maintain awareness of evolving customer needs, technological developments, and competitor moves (Wong, 2016). Seizing refers to the mobilization of organizational resources to act on sensed opportunities, involving business model design, capital allocation, and strategic commitment under uncertainty (Wong, 2016). Transforming encompasses the renewal of organizational processes and structures to sustain relevance over time, which often demands the difficult work of unlearning established routines and confronting organizational inertia (Wong, 2016). The

interaction among these three activities constitutes the firm's overall dynamic capability, with strength in all three being necessary for sustained strategic agility.

2.2 *Strategic Agility as a Derivative Outcome*

Strategic agility is best understood as the observable expression of dynamic capabilities in practice. Where dynamic capabilities describe the underlying processes, strategic agility describes the resulting behavioral flexibility: the demonstrated capacity to detect environmental shifts and respond with both speed and coherence (Wong, 2016). Organizations exhibiting genuine strategic agility can alter their resource configurations, revise their strategic commitments, and adapt their operating models without losing operational integrity. This reconciliation of adaptability and stability is what distinguishes firms with true dynamic capabilities from those that are merely reactive or opportunistic.

An important distinction in the literature separates strategic agility from operational flexibility. Operational flexibility allows firms to vary output or adjust processes within a fixed strategic orientation, while strategic agility involves the capacity to fundamentally reorient the firm's direction and value creation logic (Wong, 2016). AI technologies bear on both dimensions, but their more significant contribution lies in enabling the strategic, rather than merely operational, dimension of agility, a point elaborated in the following section.

III. ARTIFICIAL INTELLIGENCE AS A DYNAMIC CAPABILITY ENABLER

3.1 *Sensing: Expanding the Scope and Fidelity of Environmental Awareness*

Traditional sensing mechanisms depend heavily on structured market research, periodic competitive reviews, and expert judgment processes that are inherently constrained by cognitive bandwidth and information latency. AI-powered sensing operates on an entirely different scale. Machine learning algorithms can process heterogeneous data streams, including social media activity, competitor pricing signals, regulatory filings, patent applications, and supply chain indicators, in near real time, surfacing patterns that human analysts would be unable to detect within operationally relevant timeframes.

Empirical support for AI's impact on sensing capabilities has grown considerably in recent years. A study by Almheiri et al. (2024), which surveyed 344 public managers using a validated 23-item AI capability scale, confirmed that AI capability has a positive and statistically significant effect on dynamic capabilities, with organizational creativity and performance emerging as downstream outcomes. The research design employed nomological testing to

verify construct validity, lending confidence to the causal interpretation that AI capability constitutes a genuine antecedent of dynamic capability development rather than a mere correlate.

The social dynamics of sensing deserve equal attention. Research conducted across three industrial firms using interview and observational methods found that management teams sharing positive orientations toward generative AI developed more integrated and productive strategizing processes, whereas those sharing skeptical or resistant attitudes experienced fragmented decision-making that ultimately undermined organizational effectiveness (Aalto University, 2025). This finding implies that AI's sensing contribution is not purely technical; it is shaped by the collective epistemic culture within management teams. Organizations that fail to cultivate constructive attitudes toward AI tools may find their sensing advantage constrained even when the technological infrastructure is adequate.

3.2 Seizing: Accelerating Commitment and Resource Mobilization

The seizing dimension requires organizations to act on sensed opportunities with conviction and speed. Historically, this has been complicated by organizational politics, resource constraints, and the cognitive difficulty of evaluating uncertain opportunities against competing priorities. AI reduces several of these friction sources. Predictive analytics models generate probabilistic forecasts of market outcomes, providing decision-makers with evidence-based grounds for resource allocation. AI-powered simulation environments allow organizations to stress-test strategic options before committing capital, effectively compressing the learning cycle associated with major investments.

The telecommunications sector illustrates seizing in particularly vivid terms. Digital Nasional Berhad (DNB), Malaysia's 5G wholesale network provider, became the first mobile operator globally to receive validation of Level 4 network autonomy from the TM Forum (Onag, 2025). At this level of autonomous operation, DNB's network uses AI to anticipate service degradation and automatically reconfigure itself to maintain optimal performance, removing the response lag that characterizes human-mediated operations. The system, powered by Ericsson's intent-based operations platform, employs generative AI to resolve conflicting network objectives, simulate remediation pathways through digital twin environments, and execute corrections in real time (Menon, 2025; Onag, 2025). DNB's chief technology officer noted that building efficiency progressively through integrated automation allowed the company to deliver world-class 5G connectivity at

globally competitive cost structures (Onag, 2025). This achievement illustrates seizing not simply as the adoption of a new technology but as the strategic mobilization of AI capabilities to establish a differentiated market position ahead of competitors.

Research on human resource management offers complementary insight into what seizing AI opportunities actually demands of organizations. Deepa et al. (2024) identified managerial cognitive capability, human capital, and social capital as essential antecedents of successful AI adoption within the dynamic capabilities view. This suggests that seizing AI-enabled opportunities is less a matter of acquiring tools and more a matter of cultivating the managerial competencies needed to deploy those tools purposefully within organizational contexts.

3.3 Transforming: Organizational Renewal Through Intelligent Automation

Transforming is widely considered the most challenging of the three dynamic capability dimensions because it requires organizations to modify or discard established routines, often against the resistance of individuals and groups whose identities and interests are tied to existing practices. AI contributes to transformation through three interconnected mechanisms.

First, autonomous systems enable continuous process optimization without waiting for periodic management reviews. The emergence of agentic AI, described as goal-driven systems capable of planning, acting, and collaborating with human counterparts in real time, represents a qualitative advance over earlier automation paradigms (BearingPoint, 2025). Agentic systems can identify inefficiencies as they emerge, propose redesigned workflows, and in some cases execute changes without requiring explicit human authorization, effectively institutionalizing a self-correcting organizational dynamic.

Second, AI facilitates organizational learning by making tacit knowledge explicit and transferable. Machine learning systems operating on operational data logs, performance metrics, and process telemetry can identify patterns of success and failure that are invisible to human observers working from aggregated reports (Cisco, 2025). This visibility creates the evidentiary foundation needed for evidence-based transformation initiatives, replacing the reliance on intuition or authority that has historically characterized organizational change.

Third, AI-enabled experimentation reduces the risk associated with transformation. Organizations can test strategic and operational alternatives in simulated environments, gathering performance data before committing to full-scale implementation. This

compression of the experimentation cycle lowers the cost of learning and accelerates the pace of renewal.

Despite these theoretical contributions, evidence on actual transformation at scale remains sobering. A global survey of C-suite executives across 1,010 organizations found that only 7% had embedded agentic AI architectures enterprise-wide, and merely 8% reported scaling AI initiatives as originally planned (BearingPoint, 2025). These figures indicate that the transformative potential of AI remains largely unrealized in practice, constrained by organizational, cultural, and infrastructural barriers explored in Section 5.

IV. THE MALAYSIAN CONTEXT: POLICIES, ADOPTION PATTERNS, AND SECTORAL CASES

4.1 National Policy Architecture

Malaysia's policy response to the AI era has been vigorous in its ambition and comprehensive in its scope. During the tabling of the 13th Malaysia Plan in July 2025, Prime Minister Datuk Seri Anwar Ibrahim announced the country's commitment to leading Southeast Asia in AI and digital technology, centering this commitment on the National AI Action Plan 2030, which targets local innovation, research and development, commercialization, and the cultivation of strategic digital assets (Anwar Ibrahim, 2025). Concrete milestones include achieving 98% 5G coverage across populated and industrial areas by 2030 and developing a minimum of 5,000 digital entrepreneurs capable of driving AI adoption across economic sectors and rural communities (Anwar Ibrahim, 2025).

Acting Economy Minister Datuk Seri Amir Hamzah Azizan subsequently announced an incoming national AI roadmap designed to position Malaysia as an inclusive, sustainable AI-powered economy (Amir Hamzah, 2025). This roadmap is intended to complement existing policy instruments including the Malaysia Digital Economy Blueprint, the National Science, Technology and Innovation Policy, and the National Fourth Industrial Revolution Policy, creating an interlocking governance framework for digital transformation (Amir Hamzah, 2025).

The Ministry of Digital further articulated Malaysia's ambition to achieve AI Nation status by 2030 at an October 2025 event coinciding with Malaysia's ASEAN Chairmanship. This occasion saw the launch of the ASEAN AI Safety Network, which connects policymakers, researchers, and private sector stakeholders across the region to advance responsible AI deployment, as well as a Sustainable AI White Paper addressing the energy and environmental implications of large-scale AI adoption (Gobind Singh

Deo, 2025; Malaysia Ministry of Digital, 2025). These layered policy initiatives create favorable conditions for AI-enhanced dynamic capabilities, though the distance between policy articulation and organizational implementation remains substantial.

4.2 Banking and Financial Services

No sector in Malaysia has moved more decisively toward AI-enabled dynamic capabilities than banking. Maybank, the country's largest financial institution by assets, formalized a five-year strategic technology partnership with Microsoft valued at approximately RM1.0 billion, covering cloud platform migration, enterprise-wide deployment of AI productivity tools, and enhanced cybersecurity infrastructure (Maybank, 2025). The Group Chief Executive Officer framed this investment explicitly in capability terms, describing it not as a technology upgrade but as a structural step toward building organizational agility and competitive resilience (Khairussaleh Ramli, as cited in Maybank, 2025). This framing reflects a genuine seizing logic: the deliberate mobilization of substantial financial and organizational resources toward an anticipated strategic advantage.

AFFIN Group pursued a parallel trajectory under its AFFIN Axelerate 2028 strategic plan. The Group undertook a complete modernization of its core banking systems with the explicit objective of replacing rigid legacy infrastructure with platforms capable of supporting rapid product iteration and service innovation (Microsoft, 2025). Crucially, AFFIN's approach was defined by its inclusivity: Microsoft 365 Copilot was deployed across all 5,700 employees, with accompanying AI literacy and upskilling programs designed to ensure that productivity gains were broadly distributed rather than concentrated in technical units (Microsoft, 2025). AFFIN's Chief Technology and Operating Officer stated that digital transformation loses its value unless it encompasses the entire organization, an observation that connects directly to the cultural prerequisites for genuine transformation capability (Risham Akashah, as cited in Microsoft, 2025).

RHB Bank provides a detailed illustration of how AI restructures customer-facing dynamic capabilities. Prior to 2022, RHB's digital onboarding process was essentially a data collection mechanism that handed off to human sales teams, with no automated decisioning, status transparency, or customer feedback loops. By March 2024, the bank had deployed a fully digitized onboarding journey linked to an enterprise lead management system, yielding a 288% increase in completed applications, a 191% improvement in product approvals, and digital sales of credit cards that exceeded targets by 68%

while acquisition costs ran at approximately a quarter of traditional channel costs (The Asian Banker, 2026). These results illustrate sensing (customer behavior analytics driving product and journey design) and seizing (rapid reallocation of investment from physical to digital channels) working in concert. The simultaneous deployment of an internally trained generative AI chatbot serving over 4,000 branch staff demonstrates the transforming dimension, replacing knowledge retrieval processes that previously required manual reference to policy documentation (The Asian Banker, 2026).

The most theoretically provocative case is Ryt Bank, described as the world's first AI-native bank. Where established institutions have layered AI tools onto existing operational architectures, Ryt Bank was designed from inception with AI as the organizational core rather than the periphery. Its proprietary large language model, ILMU, powers a multi-agent system through which customers interact with core banking services using natural language, with the system managing intent interpretation, action execution, and compliance guardrails autonomously (Bi Chao, 2025). This architecture raises important questions about the dynamic capabilities framework itself: in an AI-native organization, the boundaries between sensing, seizing, and transforming may collapse, with a single AI system performing all three functions simultaneously.

4.3 Telecommunications

DNB's achievement of Level 4 network autonomy, discussed in Section 3.2, deserves deeper contextual examination within the Malaysian telecommunications landscape. The validation, granted by the TM Forum, confirmed that DNB's live commercial 5G network could operate with high autonomy in service assurance, a milestone no other mobile operator had achieved globally at that point (Onag, 2025). The practical implication is that the network independently detects, diagnoses, and resolves service anomalies at a speed and consistency no human operations team could match, fundamentally altering the economics and reliability profile of Malaysia's 5G infrastructure.

Industry analyst Arun Menon noted that DNB's validation demonstrates that AI-driven, intent-based automation functions effectively in commercial environments, not merely in laboratory conditions, establishing a reference model for wholesale network operators worldwide (Menon, 2025). This observation highlights a broader point: Malaysia's telecommunications sector has not merely adopted AI tools but has used them to redefine the performance benchmark for an entire network model, which

constitutes a genuine seizing capability exercised at national scale.

TM Research and Development advanced complementary capabilities through two platform deployments in late 2025 and early 2026. The ANTRIX platform, deployed across TM's nationwide network in December 2025, enables real-time monitoring of network performance indicators, alert correlation, and automated incident management, replacing the manual reporting cycles that previously introduced response latency (TM R&D, 2026). The SMART-E platform addresses the specific challenge of optical line terminal migration during network upgrade cycles, automating a class of activities that traditionally required significant skilled labor and coordination overhead (TM R&D, 2026). Both platforms exemplify the transforming dimension: existing operational processes have been structurally reconstituted around AI-driven automation, not merely supplemented by it.

4.4 Manufacturing

The manufacturing sector presents a more qualified picture that tempers the optimism evident in banking and telecommunications. A survey conducted by the Federation of Malaysian Manufacturers found that only 26% of companies had implemented AI solutions, with the majority still in awareness or exploratory stages (Federation of Malaysian Manufacturers, 2025). Familiarity levels were equally limited: only 12% of respondents described themselves as strongly familiar with AI technologies, which signals a significant deficit in the foundational knowledge needed to make informed adoption decisions (Federation of Malaysian Manufacturers, 2025).

Industry 4.0 adoption exhibited a similar pattern, with 32% of surveyed manufacturers reporting implementation and most of these concentrated in foundational capabilities such as system integration, Internet of Things connectivity, and cloud computing (Federation of Malaysian Manufacturers, 2025). More sophisticated technologies such as additive manufacturing and augmented reality remained niche, reflecting what the survey characterized as a cautious and targeted approach rather than a comprehensive digital transformation strategy (Federation of Malaysian Manufacturers, 2025). This caution is understandable given the capital intensity of manufacturing operations and the disruption risks associated with major infrastructure changes.

Among firms that have adopted AI, the returns have been tangible. Sixty percent of adopters reported productivity improvements, 57% noted faster decision-making processes, and 46% identified better resource management as a benefit (Federation of

Malaysian Manufacturers, 2025). These outcomes correspond directly to the seizing and transforming dimensions of dynamic capabilities, suggesting that the benefits are real but remain concentrated in a small proportion of the sector.

Infrastructure developments may alter this trajectory. The expansion of hyperscale and AI-ready data centre capacity across Malaysia is expected to reduce the computational cost barriers that currently limit small and medium enterprise adoption of advanced analytics, predictive maintenance systems, and supply chain optimization tools (Sikh Shamsul Ibrahim Sikh Abdul Majid, 2025). The Malaysian Investment Development Authority's approval of RM285.2 billion in investments from January to September 2025, of which manufacturing accounted for RM93.8 billion spanning over 800 projects, suggests that capital inflows will continue to build the industrial base for more advanced AI adoption (Sikh Shamsul Ibrahim Sikh Abdul Majid, 2025).

Manufacturing sector experts have nonetheless urged caution about technology-first approaches. One industry leader articulated a perspective that recurs across sectors: that firms must prioritize people, culture, and process alignment before embarking on large-scale digitalization programs (Sarvanasivan Ganesan, as cited in Media Selangor, 2025). This counsel cuts to the heart of the dynamic capabilities framework: the organizational processes that constitute dynamic capabilities are irreducibly human, and AI can enhance them only if those human processes are already functioning well.

4.5 Quantitative Evidence

The empirical literature offers direct quantitative support for the AI-dynamic capabilities relationship within contexts relevant to Malaysia. Almheiri et al. (2024), in collaboration with a researcher from Universiti Malaysia Terengganu, developed and validated a 23-item AI capability scale through an integrative psychometric approach applied to self-reported data from 344 public sector managers. Nomological testing confirmed that AI capability exerts a positive and significant influence on dynamic capabilities, which in turn drives organizational creativity and performance outcomes (Almheiri et al., 2024). The authors noted that prior information systems research had underweighted the role of organizational-level complementary resources in capability development, and their framework provides practitioners with a structured instrument for diagnosing AI-capability maturity (Almheiri et al., 2024). This contribution is particularly valuable because it grounds the theoretical proposition in verifiable measurement rather than case anecdote,

providing a replicable methodology for future research in the Malaysian and regional contexts.

V. CHALLENGES AND BARRIERS

5.1 Technological and Infrastructural Constraints

Despite notable policy momentum and leading-edge sectoral achievements, Malaysia's AI adoption landscape is characterized by persistent structural challenges. In manufacturing, the Federation of Malaysian Manufacturers (2025) survey identified skills gaps, fragmented data environments, and legacy infrastructure as the primary impediments to AI deployment. These are not idiosyncratic problems but symptomatic of a broader infrastructure maturity gap between Malaysia and countries that began intensive digitalization a decade or more earlier.

Telecommunications operators face analogous challenges. Despite DNB's world-first achievements, industry analysts note that legacy network systems complicate the integration of advanced AI tools, data silos across organizational units impede the training of effective AI models, and budgetary constraints create pressure to demonstrate near-term return on investment in circumstances where AI benefits often accrue over longer horizons (STL Partners, 2025). Only 28% of telecommunications operators globally expect to achieve high autonomous network maturity within the next three years, suggesting that DNB's achievement, while remarkable, represents an exception rather than an emerging norm (STL Partners, 2025).

5.2 Organizational and Cultural Resistance

The BearingPoint (2025) global C-suite study identified a structural paradox in AI adoption: 90% of organizations report overcapacity in legacy roles alongside acute shortages in AI-critical competencies, yet only 46% embed workforce planning into their AI implementation roadmaps. This disconnect implies that organizations are investing in AI technologies without simultaneously managing the workforce transitions that effective deployment requires. The consequence is predictable: technologies remain underutilized, and the potential dynamic capability gains from AI go unrealized.

Cultural resistance adds another layer of complexity. The finding that shared negative attitudes toward generative AI among management teams lead to fragmented strategizing processes that undermine organizational effectiveness (Aalto University, 2025) has direct implications for Malaysian organizations navigating AI adoption. Cultural transformation cannot be mandated from above or purchased as a vendor service; it requires deliberate investment in communication, education, and demonstrated leadership commitment over sustained periods.

Organizations that underestimate this dimension of the transformation challenge are likely to find that their AI investments produce operational tools rather than genuine strategic capabilities.

5.3 Talent Gaps and Workforce Development

The National AI Action Plan 2030's target of developing 5,000 digital entrepreneurs reflects recognition of the talent challenge, but independent assessment suggests the scale of ambition may be mismatched with the scale of the need (Anwar Ibrahim, 2025). Comprehensive AI adoption across Malaysian banking, telecommunications, manufacturing, agriculture, and public services requires not merely 5,000 specialized professionals but a much broader workforce with foundational AI literacy sufficient to work productively alongside AI systems. The BearingPoint (2025) study found acute shortages in AI-critical skills across all major economies, a constraint that Malaysia shares and that cannot be resolved through domestic talent development alone. Strategic partnerships with international universities, targeted immigration policies for AI expertise, and accelerated integration of AI competencies into secondary and tertiary education curricula may all be necessary components of an adequate response.

5.4 Data Governance and Security

The effectiveness of AI as a dynamic capability enabler depends fundamentally on data quality, availability, and governance. Organizations operating with fragmented data architectures, inconsistent data standards, or inadequate data security postures will find AI tools systematically underperforming their theoretical potential. The Malaysian government has acknowledged this through announced investments in a Sovereign AI Cloud designed to ensure national control over sensitive data and reduce dependence on foreign cloud infrastructure (Anwar Ibrahim, 2025). For private organizations, the challenge is to build internal data governance frameworks that satisfy regulatory requirements, enable AI training, and maintain the trust of customers and partners, a complex balancing act that requires dedicated institutional capacity.

VI. DISCUSSION AND IMPLICATIONS

6.1 Theoretical Contributions

This analysis contributes to the dynamic capabilities literature in three ways. First, it reinforces the empirical tractability of the framework by demonstrating that AI capability can be measured through validated scales and shown to produce downstream effects on dynamic capabilities, creativity, and performance (Almheiri et al., 2024).

This operationalization is valuable because the dynamic capabilities literature has sometimes been criticized for being theoretically rich but empirically elusive.

Second, the analysis highlights a potential theoretical limitation of the original framework when applied to AI-native organizations. Teece et al. (1997) conceived sensing, seizing, and transforming as analytically distinct activities requiring deliberate managerial coordination. In AI-native organizations such as Ryt Bank, these activities may be performed simultaneously and automatically by integrated AI systems, collapsing the distinction between them (Bi Chao, 2025). This observation suggests that the dynamic capabilities framework may require extension or modification to accommodate organizational forms that did not exist when the theory was developed.

Third, the analysis underscores the socio-technical nature of dynamic capabilities. The mediation of AI's sensing contribution by collective attitudes within management teams (Aalto University, 2025) indicates that capability development is not purely a function of technological investment but is shaped by the social and psychological context in which technology is used. This finding invites greater integration of organizational behavior perspectives into the dynamic capabilities tradition.

6.2 Practical Implications for Managers

For Malaysian managers, four practical priorities emerge from the foregoing analysis. The first is the importance of strategic rather than tactical AI adoption. Organizations that position AI as a cost-reduction tool will realize narrower benefits than those that treat it as a mechanism for building sensing, seizing, and transforming capabilities. This requires framing AI investments in strategic terms from the outset and ensuring that implementation roadmaps are tied to capability objectives rather than purely operational metrics.

The second priority is workforce development as an inseparable companion to technological investment. The AFFIN Group's deliberate effort to deploy AI tools inclusively across its entire staff, rather than concentrating them in specialist units, offers a model for ensuring that AI investments produce organizational rather than merely departmental returns (Microsoft, 2025). Workforce upskilling must be treated as a core implementation cost, not an optional supplementary activity.

The third priority is the strategic use of technology partnerships. Maybank's engagement with Microsoft, DNB's collaboration with Ericsson, and Ryt Bank's leveraging of advanced AI architecture capabilities all demonstrate that building AI

capabilities internally from scratch is neither necessary nor efficient (Maybank, 2025; Onag, 2025; Bi Chao, 2025). Well-designed partnerships provide access to frontier capabilities while allowing organizations to focus internal resources on the culturally embedded, harder-to-replicate aspects of dynamic capability development.

The fourth priority is sector-appropriate benchmarking. The substantially different adoption trajectories of Malaysian banking, telecommunications, and manufacturing reflect genuine differences in competitive pressure, customer expectations, regulatory environments, and infrastructural readiness. Managers should resist the temptation to draw direct lessons from sectors with fundamentally different dynamics and instead seek guidance from comparable organizations within their own competitive context.

6.3 Implications for Policy

Several refinements to Malaysia's AI policy architecture could strengthen the connection between national ambition and organizational capability development. The most urgent is a substantial expansion of the national talent pipeline. The current target of 5,000 digital entrepreneurs is likely insufficient for the scale of transformation envisaged, and a broader strategy encompassing foundational AI literacy at all educational levels, professional development pathways, and strategic immigration facilitation seems warranted.

A second refinement is the development of sector-specific AI roadmaps that complement the national-level strategy. The manufacturing sector's specific challenges around legacy infrastructure, skills gaps, and fragmented data environments are not well addressed by general policy instruments and would benefit from targeted programs offering technical assistance, subsidized pilot programs, and peer learning networks.

Third, Malaysia's leadership of the ASEAN AI Safety Network presents an opportunity to establish regional norms for AI governance that are more aligned with Southeast Asian developmental priorities and institutional contexts than frameworks developed by economies with substantially different conditions (Gobind Singh Deo, 2025). Leveraging this position could attract regional AI investment, establish Malaysia as a hub for responsible AI innovation, and create shared infrastructure that lowers adoption costs for smaller ASEAN economies.

VII. CONCLUSION

This article has examined the relationship between artificial intelligence and organizational dynamic capabilities through a Malaysian lens, tracing

the mechanisms by which AI enhances sensing, seizing, and transforming activities and situating this analysis within Malaysia's distinct policy context and sectoral adoption landscape. The core argument is that AI functions as a structural enabler of dynamic capabilities rather than a mere operational tool, and that its contribution is mediated by organizational culture, managerial competency, and infrastructural readiness.

The Malaysian evidence presents a nuanced picture. Financial institutions have moved with considerable decisiveness, building genuine AI-enabled dynamic capabilities through large-scale platform investments, inclusive workforce development, and architecturally innovative AI deployment. Telecommunications providers have achieved world-leading benchmarks in network autonomy that demonstrate the strategic seizing potential of AI at commercial scale. Manufacturing remains at an earlier stage, with adoption concentrated among early movers who are already realizing measurable productivity, decision-making, and resource management benefits (Federation of Malaysian Manufacturers, 2025). National policy frameworks provide directional support and regulatory clarity, but translating policy into firm-level capability requires more granular sector-specific instruments and a substantially larger talent development effort.

Perhaps the most enduring insight from this analysis is a cautionary one. AI-enhanced dynamic capabilities cannot be purchased, contracted, or deployed; they must be cultivated through organizational learning, cultural openness, and sustained managerial investment in the human dimensions of transformation. Technology provides the materials; organizational capability is what shapes those materials into competitive advantage. As the Malaysian manufacturing sector's leading voices have observed, firms that lead with people, culture, and process alignment before introducing technology tend to achieve more durable transformations than those that do the reverse (Sarvanasivan Ganesan, as cited in Media Selangor, 2025). This principle, while easily stated, is demonstrably difficult to operationalize at scale, and closing the gap between its recognition and its application is perhaps the central challenge facing Malaysian organizations as they pursue their AI ambitions through 2030 and beyond.

Future research should track the long-term capability trajectories of Malaysian organizations currently in early AI adoption phases, investigate the conditions under which AI-native organizational forms outperform augmented traditional forms, and develop context-sensitive measurement instruments for dynamic capabilities in developing economy settings. Longitudinal comparative studies across

ASEAN would offer particularly valuable insights into how national context shapes the AI-capability relationship.

REFERENCES

- [1]. Aalto University. (2025). Generative AI in strategy work and firm performance. *Academy of Management Proceedings*, 2025(1). <https://research.aalto.fi/en/publications/generative-ai-in-strategy-work-and-firm-performance>
- [2]. Almheiri, H. M., Ahmad, S. Z., Khalid, K., & Ngah, A. H. (2024). Examining the impact of artificial intelligence capability on dynamic capabilities, organizational creativity and organization performance in public organizations. *Journal of Systems and Information Technology*, 27(1), 1–20. <https://doi.org/10.1108/JSIT-10-2022-0239>
- [3]. Amir Hamzah, D. S. (2025, November 28). Malaysia eyes innovation-led future as minister rallies push for high-value growth. *Malaysian Institute of Economic Research*. <https://mier.org.my/malaysia-eyes-innovation-led-future-as-minister-rallies-push-for-high-value-growth/>
- [4]. Anwar Ibrahim, D. S. (2025, July 31). RMK13: Malaysia tetap hala tuju strategik teraju ekonomi Asia Tenggara dalam bidang AI. *Astro Awani*. <https://www.astroawani.com/berita-bisnes/rmk13-malaysia-tetap-hala-tuju-strategik-teraju-ekonomi-asia-tenggara-dalam-bidang-ai-532023>
- [5]. BearingPoint. (2025). Resilient by design: How agentic AI is reinventing organizations [Global study of 1,010 C-suite executives]. BearingPoint. <https://www.bearingpoint.com/en-nl/insights-events/insights/resilient-by-design-how-agentic-ai-is-reinventing-organizations/>
- [6]. Bi, C. (2025, November 11). Decrypting the world's first AI-native bank Ryt Bank. *Weiyangx*. <https://www.weiyangx.com/453939.html>
- [7]. Cisco. (2025). Designing digital resilience in the agentic AI era. *MIT Technology Review*. <https://www.technologyreview.com/2025/11/20/1127941/designing-digital-resilience-in-the-agentic-ai-era/>
- [8]. Deepa, R., Sekar, S., & Malik, A. (2024). Impact of AI-focussed technologies on social and technical competencies for HR managers: A systematic review and research agenda. *Futures*. <https://www.sciencedirect.com/science/article/pii/S0040162524000970>
- [9]. Federation of Malaysian Manufacturers. (2025, September 18). FMM: AI adoption among Malaysian manufacturers remains at an early stage. *TNGlobal*. <https://technode.global/2025/09/18/fmm-ai-adoption-among-malaysian-manufacturers-remains-at-an-early-stage/>
- [10]. Gobind Singh Deo, Y. B. (2025, October 28). Malaysia and WEF drive ASEAN's next leap in AI governance and industrial innovation. *MyDIGITAL*. <https://www.mydigital.gov.my/malaysia-and-wef-drive-aseans-next-leap-in-ai-governance-and-industrial-innovation/>
- [11]. Malaysia Ministry of Digital. (2025, October 28). Powering the intelligent age: Driving innovation with Southeast Asia and beyond. *Ministry of Digital, MyDIGITAL, World Economic Forum Summit Announcement*.
- [12]. Maybank. (2025, August 5). Maybank forges strategic partnership with Microsoft to accelerate digital transformation and AI-driven innovation. *Maybank Newsroom*. <https://www.maybank.com/en/news/2025/08/05/maybank-microsoft-digital-ai-partnership.page>
- [13]. Media Selangor. (2025, November 13). AI-driven manufacturing must remain human-centred — experts. *Media Selangor*. <https://mediaselangor.com/ai-driven-manufacturing-must-remain-human-centred-experts/>
- [14]. Menon, A. (2025, November 5). DNB's Level 4 validation sets benchmark for wholesale network models globally. *Fierce Technology*. <https://ftp.fiercetechnology.com/wireless/ai-driven-intent-based-automation-works-malaysia-dnbs-live-5g-network>
- [15]. Microsoft. (2025). AFFIN is putting people at the heart of Malaysia's AI-powered banking future. *Microsoft Source Asia*. <https://news.microsoft.com/source/asia/features/affin-is-putting-people-at-the-heart-of-malysias-ai-powered-banking-future/>
- [16]. Onag, G. (2025, October 20). DNB secures Level 4 automation validation for 5G network. *Light Reading*. <https://www.lightreading.com/network-automation/dnb-secures-level-4-automation-validation-for-5g-network>
- [17]. Sikh Shamsul Ibrahim Sikh Abdul Majid, D. (2025, November 18). Malaysia's data centre boom to lower Industry 4.0 costs for SMEs, says Mida. *The Edge Malaysia*. <https://theedgemalaysia.com/node/781014>

- [18]. STL Partners. (2025). The telecom-techco: The role of network cloud, automation and AI. Capgemini Research Report.
- [19]. Teece, D. J., Pisano, G. P., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- [20]. The Asian Banker. (2026, April 19). RHB's multi-pronged retail transformation in digital acquisition, AI services and flexible home financing. *The Asian Banker*. <https://live.theasianbanker.com/video/rhb-s-multi-pronged-retail-transformation-in-digital-acquisition-ai-services-and-flexible-home-financing>
- [21]. TM Research & Development. (2026, April 2). TM R&D secures double wins at Malaysia Technology Excellence Awards 2026. TM R&D Newsroom. <https://www.tmrnd.com.my/tm-rd-secures-double-wins-at-malaysia-technology-excellence-awards-2026>
- [22]. Wong, A. (2016, August 22). The key to keeping up: Dynamic capabilities. *California Management Review*. <https://cmr.berkeley.edu/2016/08/dynamic-capabilities/>