AI-DRIVEN TRANSFORMATION OF THE DIGITAL ECONOMY: INNOVATION, COMPETITION, AND STRATEGIC OPPORTUNITIES IN EMERGING MARKETS

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Abstract. *AI is rapidly reshaping the global economy, offering transformative opportunities across sectors. This article examines how AI-driven innovation influences competitive advantage and economic growth, with focus on Uzbekistan's Digital Economy Vision 2030. A systematic review of peer-reviewed literature (2022–2025) maps adoption frameworks and compares AI integration across enterprise sizes. Results show 78% of organizations use AI in at least one function, yet significant gaps persist between large enterprises and SMEs. Strategic frameworks like the dynamic capabilities model highlight critical enablers and barriers. Findings inform policymakers, managers, and educators in emerging economies pursuing digital transformation and competitive growth.*

Keywords: *AI; digital economy; business innovation; digital transformation; competitive advantage; emerging markets; SMEs; generative AI*

INTRODUCTION

AI, big data, cloud computing, and IoT are converging to reshape the global economy. AI now accounts for approximately $16 trillion of global GDP and has become a strategic imperative for all enterprises [1]. The McKinsey Global Survey (2025) reports that 78% of organizations use AI in at least one business function, up from 55% in 2023, with generative AI growing fastest [2]. Private investment in generative AI reached $33.9 billion in 2024.

For emerging markets, the stakes are critical. SMEs — over 90% of global businesses — must adopt AI strategies to remain competitive, yet significant adoption gaps persist between large enterprises and SMEs in developing economies [3]. Uzbekistan's "Digital Uzbekistan 2030" strategy exemplifies this challenge: while the country has digitized 60% of public services and advanced in e-government rankings, SMEs continue to face barriers in digital infrastructure, financing, and skilled talent. Despite growing attention to AI adoption, gaps remain in frameworks tailored to developing and transition economies [3], [5]. This study synthesizes evidence on AI-driven transformation and derives actionable insights for enterprises and policymakers in emerging markets.

METHODS

This study employs a systematic analytical-descriptive research design, drawing on peer-reviewed journal articles, institutional reports, and governmental strategy documents published between 2022 and 2025. Literature was identified through searches of the Scopus, Web of Science, and Google Scholar databases using combinations of the following terms: “digital economy,”

"artificial intelligence adoption," "digital transformation strategy," "competitive advantage," "SMEs and AI," and "emerging markets." Inclusion criteria required: (1) peer-reviewed or institutional authorship; (2) publication in English; (3) direct relevance to enterprise-level AI adoption, digital transformation strategy, or innovation-driven economic growth; and (4) publication date of 2022 or later. From 47 candidate sources identified through initial screening, 10 were selected as primary references based on methodological rigor, citation impact, and topical alignment. Institutional reports from the OECD, World Bank, McKinsey Global Institute, and relevant government ministries were incorporated alongside peer-reviewed publications.

Table 1. Comparison of major AI adoption frameworks in digital economy contexts.

Framework	Key Focus	Key Performance Indicators	Enterprise Applicability
Dynamic Capabilities (DC)	Resource sensing, seizing, and reconfiguring capabilities in response to environmental change	Innovation velocity, R&D investment rate, market sensing speed	Large and mid-size firms with dedicated technology functions and R&D units
Technology-Organization-Environment (TOE)	Contextual readiness across technology infrastructure, organizational structure, and external environment	IT maturity, firm size, regulatory pressure, competitive intensity	SMEs in developing and transition economies facing environmental constraints

RESULTS

Global AI Adoption Landscape

By 2024, 78% of organizations globally use AI in at least one business function, a 23-percentage-point increase from the prior year (Figure 1). Generative AI dominates, adopted by 69% of enterprises. Macroeconomic projections are substantial: the WTO projects AI could increase global trade value by 34–37% by 2040, while McKinsey estimates a potential 38% average sectoral profitability increase by 2035.

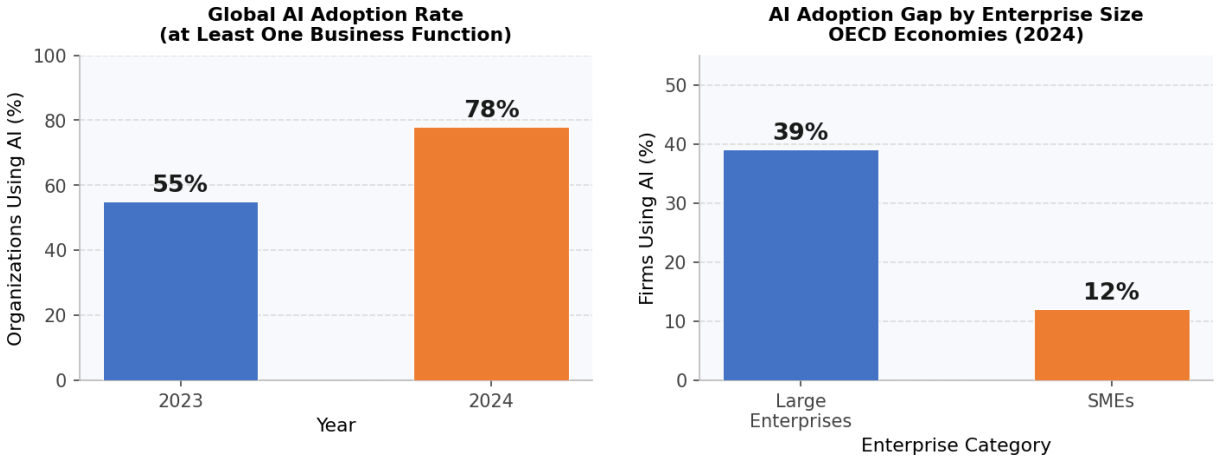

Figure 1. AI adoption rates: (a) global organizational AI use in at least one business function (2023 vs. 2024); (b) adoption gap between large enterprises and SMEs in OECD economies (2024).

Despite aggregate AI growth, the adoption differential between large enterprises and SMEs persists. In OECD economies, only 12% of small firms use AI compared to 39% of large enterprises—a 3.3-fold disparity amplified in developing economies, where SMEs face compounding barriers: limited digital infrastructure, insufficient AI competencies, constrained capital access, and fragmented regulation. Three thematic clusters emerge: (i) operational innovation through predictive analytics and process optimization; (ii) strategic decision-making enhancement via market sensing and scenario analysis; and (iii) human capital transformation reflecting demand for AI-adjacent technical and managerial competencies.

Emerging Market Dynamics

Uzbekistan's IT sector generated approximately US$690 million in 2023, with export revenues growing 1.4 times year-on-year, demonstrating growing international competitiveness. The government has integrated AI as a catalytic investment driver under Digital Uzbekistan 2030, embedding AI objectives across data governance, public service digitalization, and financial sector modernization. In banking, early evidence shows AI improving credit risk assessment, fraud detection, and automated customer service. These advances align with broader Central Asian patterns of AI-enabled e-government platforms and digital financial infrastructure evolving under national policy mandates and international development support.

Framework Comparative Findings

The comparative analysis revealed substantive framework differences (Table 1). Dynamic Capabilities suits large and mid-size enterprises with dedicated R&D functions. The TOE model better explains SME adoption in developing economies, incorporating regulatory conditions, competitive pressure, and market maturity. Resource-Based View emphasizes internal competencies—proprietary data, AI talent, and infrastructure—as foundational for competitive advantage. Innovation Ecosystem Approach captures collaborative network dynamics and platform-based interdependencies defining AI-enabled value creation at regional and national scales.

DISCUSSION

AI drives strategic transformation at enterprise, sectoral, and macroeconomic levels, yet most organizations have not achieved the process integration needed to realize material

performance benefits—a challenge substantially compounded in emerging markets by structural and human capital constraints [6].

For SMEs in developing economies, barriers to AI adoption are multi-layered: gaps in digital infrastructure limit access to cloud-based platforms; workforce skill deficits in data science and machine learning constrain deployment; capital constraints inhibit sustained investment; and regulatory frameworks lack adequate AI governance guidance [7]. These barriers disproportionately disadvantage SMEs that could derive the greatest benefit from AI-enabled differentiation.

Targeted government intervention can meaningfully accelerate AI adoption. Singapore tripled SME AI adoption between 2023 and 2024—from 4.2% to 14.5%—through accessible generative AI tools and structured support programs, demonstrating how institutional design and policy commitment compress adoption timelines [8]. Perceived competitive advantage is a primary motivator for SME uptake.

For Uzbekistan, the Digital Uzbekistan 2030 strategy presents opportunity but requires educational institutions, financial intermediaries, and regulators to bridge strategic aspiration and enterprise-level implementation [9]. The OECD identifies digital skills development aligned to private sector competitiveness as critical. Regional academic institutions can serve as knowledge transfer nodes, facilitating AI literacy curricula and research-industry partnerships [9].

Uzbekistan's banking sector illustrates broader AI transformation dynamics: financial institutions report challenges around data quality, legacy regulatory compliance, and organizational change management [10]. Addressing these challenges sustainably requires coordinated multi-actor governance, human capital investment, and regulatory evolution.

CONCLUSION

Artificial intelligence has emerged as the defining technological driver of digital economy transformation in the contemporary era, reshaping the frontiers of competitive advantage and redefining the strategic calculus for enterprises from Silicon Valley to Fergana. This study has documented the accelerating global pace of AI adoption, illuminated the structural disparities that shape unequal access to AI's transformative benefits, and synthesized key strategic frameworks for navigating digital transformation in emerging market contexts. The evidence is unequivocal: enterprises and economies that proactively invest in AI integration, workforce upskilling, data governance, and adaptive innovation ecosystems will secure durable competitive positions in the digital century ahead, while those that delay face the real prospect of structural marginalization from the global digital economy.

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