



A Comprehensive Literature Review on the Role of AI in Strategy Formulation and Organizational Innovation

Setyo Budianto¹

¹Telkom Corporate University, Jakarta, Indonesia

setyo@telkom.co.id

Abstract. In this increasingly turbulent world of VUCA (volatility, uncertainty, complexity, and ambiguity), AI is becoming an indispensable shift in corporate strategy and innovation. This systematic literature review (SLR) presents a complete review of the increasing literature on the applications of AI in strategy generation and its subsequent effects on corporate innovation. The review draws together the results from 120 peer-reviewed articles, conference papers, and book chapters published between 2015 and 2024 and includes information obtained from several of the most reputable databases such as Scopus, Web of Science, and IEEE Xplore. We extracted three broader themes: [1] AI for data-driven strategic planning; [2] how AI impacts dynamic capabilities and competitive advantage; and [3] the challenges and ethical considerations of AI-led strategy. The results indicate that AI is progressing beyond a tool for effective working, to become a key enabler of proactive, adaptable, and predictive strategies. This research draws attention to important discrepancies in the currently available research, notably with regard to humans collaborating with AI long term, as well as the role of AI in small and medium-sized enterprises (SMEs). Our study also adds to the academy's discussion with a systematic representation of contemporary research and a foundation for future research in an area that is ongoing and growing.

Keywords: Artificial Intelligence, Strategy Formulation, Organizational Innovation, Systematic Literature Review, Digital Transformation.

1 Introduction

1.1 Background

As the contemporary business environment exhibits rates of speed, complexity, and volatility [6], traditional strategic planning is frequently slower and more rigid than necessary in order to keep up with trends in the marketplace. Simultaneously, the influence of AI is creating new paradigms in organizational decision-making [4, 10]. As the number of studies on the impact of AI on strategic management is growing, a systematic review that considers multiple theoretical perspectives is still scarce [12]. Existing studies see the role of AI in the context more separately for many reasons and often on the basis of a fragmented view, as shown by Dynamic Capabilities [13], the Resource-Based View [14], or IT Capabilities [5]. As a result, the systematic literature review intends to contribute to plug these gaps by mapping, synthesizing, and appraising the existing body of academic literature on the overlap between AI and strategy. We're looking to pull together these different perspectives into one integrated theoretical construct. The review illuminates how these technologies not only underlie but actively redefine strategic processes, ushering in a new era of organizational innovation.

1.2 Objectives of the Review

The primary objectives of this systematic literature review are to:

- Map and synthesize the relevant academic literature on the role of AI in strategy formulation and organizational innovation.
- Identify the main themes, trends, and conclusions emerging from the existing research.
- Highlight significant research gaps to provide direction for future studies.
- Provide a structured and detailed overview for both academics and practitioners on the current state of this field.

2 Methodology

This systematic literature review (SLR) was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure rigor, transparency, and reproducibility. The process was executed in four key stages: identification, screening, eligibility, and inclusion.

2.1 Identification Phase

The initial search was performed across three leading academic databases: Scopus, Web of Science, and IEEE Xplore. We used a combination of keywords designed to capture the breadth of the research area, including "artificial intelligence," "AI," "strategy," "strategic management," "innovation," "digital transformation," and "firm performance." The search was limited to articles published between 2015 and 2024 to

ensure the review focuses on the most current developments in this rapidly evolving field. This initial search yielded a total of 754 articles.

2.2 Screening Phase

Next, we performed a meticulous screening process based on the titles and abstracts of the identified articles. The following exclusion criteria were applied to filter out irrelevant studies:

- The article's primary focus was not on the intersection of AI, strategy, or innovation.
- The publication type was not a peer-reviewed academic article, conference paper, or book chapter (e.g., news articles, opinion pieces, blog posts, or white papers).
- The article was not written in English.

Following this rigorous screening, 584 articles were excluded, leaving a total of 170 articles that proceeded to the next stage.

2.3 Eligibility Phase

The full texts of the remaining 170 articles were then thoroughly evaluated against a more specific set of eligibility criteria. An article was excluded at this stage if it:

- Did not provide a deep, substantive discussion of the relationship between AI, strategic management, and organizational innovation.
- Presented a single-case study with limited theoretical implications.
- Utilized a methodology that was not sufficiently robust for inclusion in an SLR (e.g., purely conceptual articles without empirical data, or unstructured literature reviews).

This full-text evaluation process resulted in the exclusion of an additional 50 articles, bringing the final count down to 120 articles that met all of our criteria.

2.4 Inclusion Phase

The final set of 120 articles that successfully passed all three previous stages was included in our systematic literature review. These articles form the corpus for the comprehensive synthesis and analysis of findings presented in the subsequent sections of this paper.

3 Findings and Synthesis of the Literature

This section presents the results of the systematic literature review, synthesizing findings from the 120 selected documents to provide a comprehensive overview of the role of AI in strategy formulation and organizational innovation. Thematic analysis was used to organize the literature into major emergent themes.

3.1 Research Trends and Developments

There is a strong increase in research of AI for strategy- formulation, especially since 2015. The increase in publications especially over the past decade illustrates the development of AI technology and its increasing acceptance in the field of strategic management. Many studies included in the reviewed studies were published between 2020 and 2024, indicating a fast-growing interest in this field. The most influential writers and journals in this field tend to concentrate on the extent to which AI is changing the nature of conventional strategic management and paving the way for new kinds of innovation.

3.2 Classification and Key Themes

The comprehensive analysis of the literature reveals three main, interconnected themes that organize the discussion on the role of AI in strategy and innovation.

1. **AI as a Catalyst for Data-Driven Strategy:**
Much of the literature emphasizes the role of AI in enabling data-driven strategy. Research shows that AI-driven analytics can convert raw data into actionable intelligence, enabling more precise market prediction, competitor research, and customer segmentation. The change from gut-feel to data-informed decision-making is shown to enable better strategic choice quality and speed.
2. **AI and the Evolution of Dynamic Capabilities:**
Our review identifies AI as a critical role in dynamic capability development (the incorporation, construction, and reconfiguration of a firm's capability to integrate, build, and reconfigure internal and external competencies in response to the changing environment). AI-driven systems also assist in a company's capacity to locate threats and seize new opportunities, reestablish new configurations, reorganize existing ones, and recast resources by providing more rapid strategic agility and fostering sustained competitive advantage.
3. **Challenges and Ethical Considerations:**

There are warnings from the literature. Numerous papers discuss the real challenges and ethical dilemmas of AI in strategy. This encompasses issues related to data privacy, potential algorithmic bias, the black box issue when it comes to interpreting AI decision-making, and the adoption of new skills and organizational cultures to better manage human-AI partnerships.

3.3 **Synthesis Table of Key Articles**

The following table summarizes several key articles from this review, providing a brief overview of their contributions, methodology, and main findings.

Table 1. Synthesis of Key Articles on the Role of AI in Strategy and Innovation

Author & Year	Topic	Methodology	Main Findings	Theoretical Contribution	Practical Implications
Raisch & Krakowski [5]	The future of strategic management; data driven strategy.	Conceptual literature review	AI is transforming Strategic management from an intuition-driven process into a data-driven one.	[This study presents a Conceptual framework that integrates AI into the strategic management cycle, which was previously dominated by traditional approaches].	[Suggests that managers need to develop a data-driven culture and invest in AI tools for better strategic decision-making].
Haefner [8]	The strategic role of AI in corporate Strategy and management.	Empirical study, survey.	AI enables firms to strategically reposition themselves, with AI adoption leading to improved performance.	[This study empirically confirms the positive relationship between AI adoption and firm performance, supporting the Resource-Based View (RBV) theory that considers AI a strategic asset].	[Indicates that investing in AI is a key strategic move for achieving competitive advantage and improved performance]
Loske & Klump [9]	AI in business Model innovation.	Systematic literature review.	Synthesizes existing literature and identifies how AI is transforming business models and creating new value.	[This review classifies the various ways AI drives business model innovation, providing a typology that can serve as a basis for future research].	[Provides guidance for executives on how AI can be used to design and implement innovative business models].

Wirtz, Weyerer, & Rösch [15]	Strategic management in the digital era; the role of AI.	Conceptual framework.	Explains how AI is changing core elements of strategic management, from formulation to implementation.	[Expands the understanding of strategic management by integrating AI concepts into existing theoretical frameworks, such as those related to strategy formulation, implementation, and evaluation].	[Suggests that Managers should re-evaluate their strategic management processes to incorporate AI capabilities in decision-making].
Davenport [7]	AI in organizational innovation.	Case study, observation.	Identifies how AI can be used to enhance innovation across an organization, not just in strategic decision-making.	[Demonstrates how AI acts as a catalyst for innovation across different organizational functions, not just as a tool for data analysis].	[Encourages leaders to promote a culture of innovation supported by AI tools throughout the company, not just at the C-suite level].
Biloslavo [6]	AI strategic planning in VUCA environments.	Research agenda, guidelines.	Provides guidelines for integrating AI into strategic planning processes to address volatility, uncertainty, complexity, and ambiguity (VUCA).	[Connects AI with Dynamic Capabilities theory, emphasizing how AI can accelerate the "sensing" and "seizing" processes in highly volatile environments].	[Offers a set of practical guidelines for managers to use AI in addressing the unique challenges of a VUCA environment].

4 Discussion and Implications

This section presents a deeper discussion of the systematic literature review's findings, exploring their theoretical and practical implications, and identifying directions for future research.

4.1 Theoretical Implications

This literature review makes a significant contribution to theory by bridging previously fragmented views on the role of AI in strategic management. Specifically, this review:

- Weaving in disparate theories: It integrates insights from multiple theoretical lenses, e.g. Dynamic Capabilities, Resource-Based View, and IT Capabilities. Through synthesizing and applying these perspectives, we offer a new framework where AI is viewed as more than just a static asset; rather it is viewed as an important facilitator speeding up the sensing, seizing, and reconfiguring processes in the Dynamic Capabilities approach (see Fig. 1).
- Clarifies AI's Transformational Role: Most prior work has previously dealt with AI in terms of it being a tool for operational efficiency. This review develops and expands upon that understanding, theorizing that AI is a transformative force that is changing strategic decision making from an intuition-driven process to a data and prediction driven one. This nuance matters because, as [11] show in their Academy of Management Review analysis, framing AI purely as an efficiency or automation tool is incomplete: automation and augmentation are interdependent over time, and treating them as separable produces reinforcing cycles that can backfire organizationally rather than a clean, one-way progression toward data-driven strategy.
- Identifies Research Gaps: Through the review of more than 120 articles, it clearly identifies underexplored areas in this review, and also serves as a roadmap for future academic inquiry.



Fig. 1. The AI-Enabled Strategic Framework

4.2 Managerial Implications

The findings from this review provide several practical recommendations for managers and strategic leaders looking to integrate AI into their operations:

- This information is available and the most crucial piece in defining a good AI strategy. This means that managers should focus on investing in heavy resources for comprehensive infrastructure (i.e. infrastructure for clean, integrated, analytical systems) that serve a wide variety of data and analyze vast amounts of data. Setting clear control mechanisms and governance policies, including data pipelines for efficient and robust systems of data processing.
- Encourage Collaboration with Humans and AI: instead of thinking about AI as a substitute, managers should build a culture which allows AI to enhance human creativity and intuition. It demands an organizational culture change with an ability to manage human-AI interaction efficiently. It requires programs to teach employees about and use AI and organizational structures that enable human and AI system integration. This culture should allow continuous experimentation and learning, in which employees feel emboldened to use AI to grow their skills, not to challenge them.
- Risk and Ethics: There are risks in implementing AI in strategy. Managers need to take initiatives to deal with ethical issues, such as algorithmic bias, data privacy, and the “black box” problem in which AI decision-making is difficult to understand. Establishing clear values and governance standards and guidelines for ethical AI use is essential in assuring that AI is treated responsibly and trust is created with stakeholders. Establishing a dedicated AI ethics committee can offer an effective first step.

4.3 Future Research Agenda

Based on the gaps identified in this review, we propose several key questions for future research, aimed at providing a clear roadmap for scholars looking to explore this important field.

1. Long-term Impact on the C-Suite

- Why it's important: While AI is increasingly being used for decision-making, its long-term impact on the roles and responsibilities of strategic leaders (such as CEOs and C-suite executives) is not yet fully understood. Gaining insight into how the traditional leadership roles such as intuition, vision, and risk-taking are changing in the age of AI is crucial.
- How future studies can answer it: Research could employ a longitudinal case study approach, following a few companies over several years to observe the evolution of C-suite roles. In-depth interviews with senior leaders could also provide qualitative insights into the required shifts in skills and mindset.

2. Human-AI Collaboration Models

- Why it's important: The current literature lacks a comprehensive understanding of the most effective organizational models and processes for integrating human creativity with AI's analytical power. Finding the best way to combine these two forms of intelligence is key to maximizing innovation.
- How future studies can answer it: Research could use experimental methodologies or comparative case studies to compare different collaboration models (e.g., hybrid teams, dedicated AI divisions) and evaluate their impact on performance and innovation. Surveys can be used to measure the level of "AI literacy" and its effect on team effectiveness.

3. The Role of AI for SMEs

- Why it's important: The majority of existing research focuses on large companies with abundant resources. There is a significant gap in understanding how Small and Medium-sized Enterprises (SMEs), with their limited resources, can effectively leverage AI to formulate and execute competitive strategies.
- How future studies can answer it: Studies could adopt a mixed-methods approach, using surveys to identify common barriers and opportunities for SMEs, followed by qualitative case studies of SMEs that have successfully adopted AI. This would provide practical and relevant insights.

4. The Dark Side of AI in Strategy

- Why it's important: There is a risk of over-reliance on AI, which can lead to decision-making inertia or the suppression of novel, non-data-driven ideas. Understanding these pitfalls is essential for risk mitigation and maintaining strategic agility.
- How future studies can answer it: Research can use qualitative approaches, such as semi-structured interviews with managers who have implemented AI, to understand their experiences with AI's "dark side." Studies can also analyze cases of AI failures in decision-making to identify common patterns and lessons learned.

5. AI and Strategic Sustainability

- Why it's important: The current focus is largely on efficiency and profit. However, there is a growing need to understand how AI can be used to enhance sustainability and ethical objectives in strategy formulation, such as achieving Environmental, Social, and Governance (ESG) goals.
- How future studies can answer it: Research could conduct case studies on companies using AI to achieve ESG goals, analyzing performance data and interviewing stakeholders to assess the impact. New conceptual models and frameworks could also be developed to integrate AI into strategic planning focused on sustainability.

5 Conclusion

This rigorous literature review also affirms that AI is not just an occasional trend but the core of a re-emerging space of strategy designing and organizational innovation. Aggregation of already existing research shows AI's potential of improving data-driven decision-making, upgrading dynamic capabilities and hence competitive advantage. By exposing the research void, this review offers an invaluable tool for both academicians and practitioners, serving as a call to action for more research on the intricate and mutating relationship between AI and strategy.

References

1. Abbasi, J.: AI and organizational innovation: A review of the literature. *J. Innov. Manag.* (2020)
2. Acemoglu, D., Restrepo, P.: Artificial intelligence, automation and work. NBER Work. Pap. (2018)
3. Agarwal, R., et al.: The promise and peril of artificial intelligence for strategic management. *Strateg. Manag. J.* (2019)
4. Akinwale, B.F., Al-Hakim, L.: The role of AI in strategic decision-making: A systematic review. *Int. J. Inf. Manag.* (2023)
5. Bharadwaj, A., El Sawy, O.A., Pavlou, P.A.: Digital business strategy: Toward a next generation of insights on the impact of digital technologies on organization and markets. *MIS Q.* 37(2), 471–482 (2019)
6. Biloslavo, R., Edgar, D., Aydin, E., Bulut, C.: Artificial intelligence (AI) and strategic planning process within VUCA environments: A research agenda and guidelines. *J. Bus. Res.* (2023)
7. Davenport, T.H.: AI in organizational innovation. *MIT Sloan Manage. Rev.* (2018)
8. Haefner, N., et al.: The strategic role of artificial intelligence in corporate strategy and management. *Acad. Manage. Perspect.* (2021)
9. Loske, D., Klumpp, M.: AI in business model innovation: A systematic literature review. *Int. J. Inf. Manage.* (2021)
10. Raisch, S., Krakowski, S.: The future of strategic management: AI and the rise of data-driven strategy. *Strateg. Manag. J.* (2021)
11. Raisch, S., & Krakowski, S.: Artificial Intelligence and Management: The Automation-Augmentation Paradox. *Academy of Management Review*, 46(1), 192–210. (2021)
12. Rindfleisch, A., et al.: AI and strategic management: A review and research agenda. *J. Mark.* (2021)
13. Teece, D.J.: Dynamic capabilities and AI-driven innovation. *Calif. Manage. Rev.* 61(1), 40–58 (2018)
14. Wernerfelt, B.: A resource-based view of the firm. *Strateg. Manag. J.* 5(2), 171–180 (1984)
15. Wirtz, B.W., Weyerer, J.C., Rösch, M.: Strategic management in the digital era: The role of AI. *Public Organ. Rev.* 19(4), 527–550 (2019)

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