

AI AND COMPETITIVE STRATEGY: HOW EARLY ADOPTION INFLUENCES MARKET DOMINANCE

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ABSTRACT

Artificial Intelligence (AI) has rapidly evolved into a crucial element of competitive strategy, transforming industries and influencing how organizations attain and sustain market dominance. The increasing digital disruption has made the early adoption of AI a crucial differentiator, enabling organizations to innovate, improve operations, and establish strong competitive barriers. This study analyzed the strategic implications of early AI adoption and its impact on long-term market positioning and leadership. The research indicates that early adopters benefit from accelerated learning, data-informed decision-making, and enhanced consumer experiences, but late adopters find it challenging to bridge the competitive divide. This study seeks to ascertain the extent to which early adoption of AI enhances efficiency, innovation, and market share. A qualitative methodology was employed to obtain secondary data from web databases. The inquiry analyzed the trajectories of early and late adopters to evaluate performance and strategy. Due to accelerated innovation cycles, enhanced consumer personalization, and superior brand positioning, early adopters can further reinforce their market dominance. The arguments recognize that adoption efforts may be impeded by issues like substantial initial costs, ethical dilemmas with AI implementation, and the necessity for workforce reskilling. Two conclusions can be derived from the research: This article elucidates the relationship between technological foresight and market leadership, aiding firms in aligning their strategic planning with the proactive integration of artificial intelligence. This study illustrates that the early implementation of artificial intelligence is essential for sustaining market relevance and achieving dominance in the digital economy.

Keywords: Artificial Intelligence; Competitive Strategy; Market Dominance; Adoption; Customers.

INTRODUCTION

Artificial Intelligence (AI) is changing corporate competition, innovation, and market sustainability [1, 2]. In the digital age, companies compete on money, labor, infrastructure, and technology. AI's ability to analyse massive data sets, produce predictive insights, and automate complex decision-making processes makes businesses more efficient and agile [1, 3, 4]. The competitive landscape is changing rapidly as early AI deployment becomes critical for market dominance. Early AI adopters often set high entry barriers, accelerate learning curves, and identify as industry innovators, while late adopters struggle to narrow the competitive gap [5, 6]. Figure 1 illustrates the AI Stages of Adoption (AISA), demonstrating the enhancement of organizational value corresponding to investment as

companies go through five maturity phases: Experimenting, Adopting, Optimizing, Transforming, and Scaling. Initially, firms experiment with and incrementally implement AI, yielding limited value; however, as they refine and incorporate it into fundamental operations, the advantages substantially increase. In advanced stages, AI facilitates transformation and extensive implementation, establishing significant competitive advantage and enduring market supremacy [7, 8]. The curve illustrates that timely strategic adoption enhances value development, whereas postponed or ineffective adoption may restrict results.

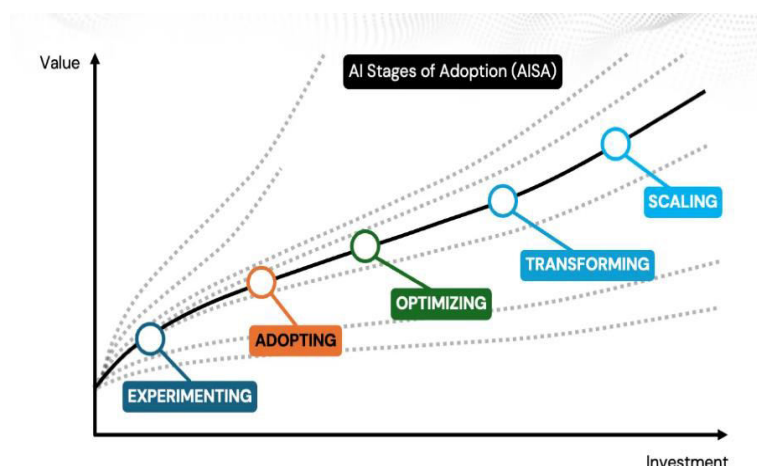


Figure 1. AI Stages of Adoption¹

Figure 2 highlighted AI's capacity to transform marketing via improved tailored customer insights, automation of marketing campaigns, and increased operational efficiency. The findings Kumar et al. not only encapsulated the present condition of AI in marketing but also delineate a trajectory for future research and advancements in this swiftly changing domain, demonstrating the extensive and significant potential for AI's incorporation into marketing strategies [9].



Figure 2. Marketing areas where AI can bring about transformative effects [9]

Research in this field indicates that early adopters of AI attain more than mere short-term operational enhancements; they successfully integrate AI-driven processes into their fundamental strategy, so

¹ <https://mariothomas.com/blog/ai-stages-of-adoption-explainer/>

ensuring sustainable growth and resilience to upheavals. These companies not only augment client experiences via personalization and predictive services but also optimize resource allocation, decrease expenses, and foster new opportunities for innovation. Nonetheless, early adoption presents challenges, including substantial financial commitment, labour adjustment, and ethical deliberations. The objectives that followed in this study are as follows:

1. To examine how early adoption of AI enables firms to enhance efficiency, productivity, and innovation cycles compared to late adopters, thereby creating pathways toward sustained market dominance.
2. To analyse how early AI adoption reduces market entry barriers for new enterprises and strengthens competitive barriers for established ones.
3. To evaluate how early adoption shapes strategic risks and how these factors influence long-term competitiveness.

Thus, this study examines how early AI deployment influences competitive tactics and market dominance across industries. This study examines secondary data from online databases, case studies, and industry articles to assess proactive AI deployment's benefits, risks, and strategic effects. This study emphasizes the need to combine competitive strategy with technology foresight to be relevant in an AI-driven industry. Previous research on this study is included below.

LITERATURE REVIEW

AI deployment impacts competitiveness, organizational growth, and sustainability, according to recent studies. According to Ferràs-Hernández, Nylund, and Brem [10], dominant AI designs show that early adopters can benefit from successful technology pathways as standards harden.

Krakowski, Luger, and Raisch [11] noted that AI has changed competitive advantage from real resources to data, algorithms, and adaptability. Abaddi [12] examined how organizational readiness, cultural context, and leadership affect Jordanian MSMEs' AI adoption. Human and AI streamers compete in the digital marketplace, showing how customer variety influences strategic positioning in technologically disruptive markets, according to Zheng, Ding, and Bai [13]. Cimino et al. [14] proposed an enhanced dynamic capabilities paradigm; intentional AI deployment boosts innovation and resilience, enabling SMEs to expand sustainably. Strategic AI investments maintain AI dynamism and competitiveness, Zhu and Sun [15] discovered. These studies reveal that AI adoption is important for organizational performance, competitive advantage, and sustainable growth, with early adoption essential for market domination in quickly changing industries.

Research Gap: AI adoption boosts productivity, decreases prices, and changes industrial competitiveness, but its long-term impact on market domination is unknown. Current studies on generic adoption patterns or industry-wide effects disregard early adopters' strategic gains and risks. Early AI integration lowers entry barriers for new companies and increases current firms' dominance, making it unclear if it creates long-term or short-term competitive advantage

RESEARCH METHODOLOGY

This qualitative study examined how early AI deployment affects market dominance in competitive industries using exploratory and analytical methods. Qualitative methods are best for studying strategic adoption decisions and their long-term competitive effects due to AI technologies' rapid advancement and vast range of applications. The analysis uses secondary data from Scopus, Web of Science, JSTOR, ScienceDirect, McKinsey Insights, PwC Reports, and Accenture Research. Research papers, peer-reviewed journals, industrial case studies, and government policy documents from 2018–2025 were evaluated for academic rigor and relevance. Efficiency benefits, market entrance dynamics, innovation cycles, competitive barriers, and collusion or concentration hazards were thematically synthesized. Lemonade and Upstart's disruptive AI showed how early adoption affects market positioning. Validity

was improved by triangulating insights from scholarly literature, industrial data, and practical examples. The methodology excludes primary data gathering but ensures generalizability through sectoral and contextual coverage due to its broad reach and cross-industry focus. This dependable analytical paradigm permits strategic analysis of early AI deployment on market dominance.

RESULTS AND DISCUSSION

The data reveals how AI adoption in competitive markets affects supply patterns, pricing equilibria, employment, and long-term strategic advantages. Firms' AI technology integration affects supply dynamics and stabilizes price expectations, as shown in Figure 3. In uncertain conditions, inflexible supply leads to price fluctuations between different equilibria seen in $P(1)$ and $P(2)$. $E[P]$, the expected price, is within these limits, reflecting enterprise risks from changing demand and insufficient knowledge. More stable results emerge from outward supply curve fluctuations. Early AI adoption allows organizations to acquire predictive insights and enhance supply chains, reducing instability that typically prevents continuous investment in competitive markets, according to Gans (2023) [2]. AI helps turn uncertainty into manageable risks, improving market positioning, as shown in the first figure.

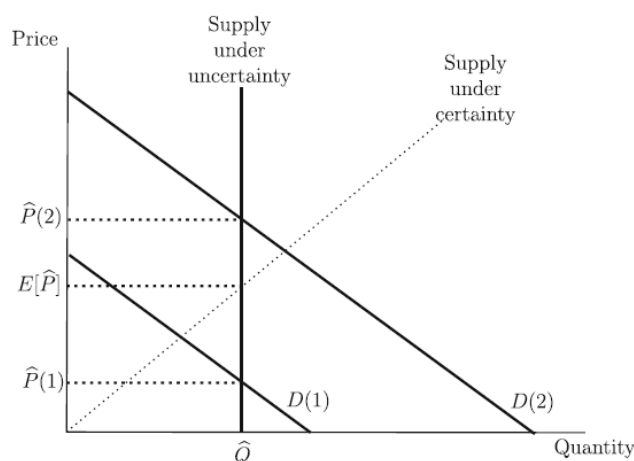


Figure 3. Market equilibrium without AI adoption [2].

The Figure 4 elaborates on this rationale by incorporating the impacts of many adopters inside the supply and demand framework. As the number of adopters θ increases, supply transitions from $\hat{Q}(1)$ to $\hat{Q}(2)$, illustrating that AI adoption is a dynamic process that evolves with diffusion across industries. In markets with a sole adopter ($\theta = 1$), enhancements in efficiency disproportionately advantage the innovating firm, providing it with a transient competitive edge. As more companies implement AI ($\theta=2$), the benefits start to disseminate across the industry, resulting in overall efficiency improvements while diminishing the competitive advantage of early adopters. Gupta (2024) [18] agreed that AI adoption lowers entry barriers and raises competitive pressures. New entrants may use AI to challenge incumbents, while established companies may gain market domination by developing AI capabilities faster. The graphic shows that early adoption reduces uncertainty and boosts productivity, while extensive adoption by competitor's changes industry equilibria and requires continuing innovation for companies to stay ahead.

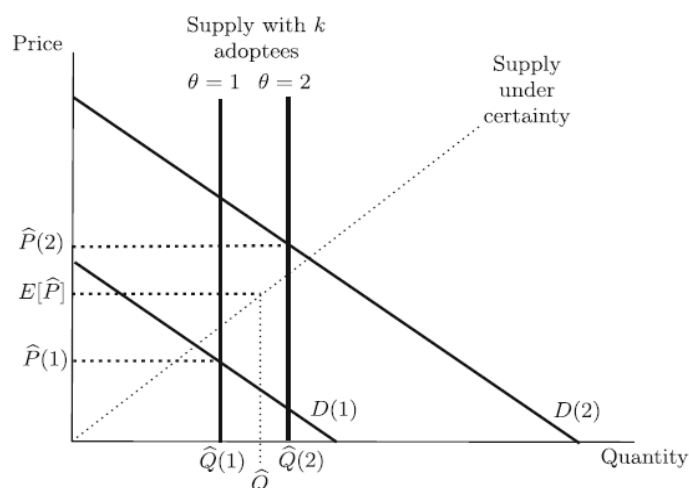


Figure 4. Market equilibrium with AI adoption by k firms [2].

These supply-demand variations support Zhu and Sun (2025) [15], who argued that strategic AI investments are necessary for sustainable competitive dynamics. They stress that early adoption and investments boost efficiency, customization, and innovation. However, these benefits depend on organizations' ability to deliberately grow adoption and link it to competences. The data illustrated in the second picture substantiate this claim by demonstrating that the competitive advantage of early adopters relies not alone on the act of adoption but also on future strategic reinvestments that preserve distinctiveness as adoption becomes more prevalent. The Figure 4 illustrates that although AI adoption reduces costs and stabilizes pricing throughout the sector, its potential to establish market domination depends on whether companies leverage adoption for revolutionary innovation or for their advantage to diminish as competitor's advance.

The figure 5 redirects focus from product markets to labour markets, highlighting the impact of AI adoption on employment and wage structures. The correlation between salary levels and employment outcomes is dependent on the signalling effects of AI implementation. When AI adoption is supported by reliable indicators of efficiency ($\theta=2$), wages increase at reduced employment levels, indicating the premium assigned to high-skilled workers that may complement AI systems. Conversely, in the absence of robust signals ($\theta=1$), wages are suppressed despite relatively high employment, illustrating how uncertainty regarding AI's worth can undermine labour's bargaining strength. This result is notably important considering the findings of Abdallah, Harraf, and Al Wael (2025) [16], who recognize organizational and institutional preparation as essential determinants affecting AI implementation. Their comparative analysis of the private and public sectors indicates that in environments characterized by unstructured or inadequately signalled AI adoption, employee adaptability is delayed, pay growth is stagnant, and overall organizational advantages are limited. The statistic demonstrates that AI's influence on employment is not predetermined but contingent upon the clarity with which organizations convey and execute AI strategies. Effective communication builds trust and productivity, whereas weak signals create uncertainty that hurts labor market performance.

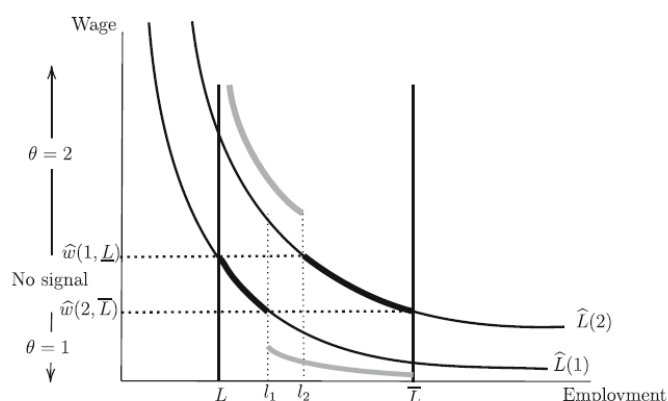


Figure 5. Labour market equilibrium with adoption by k firms [2].

The studies also emphasize workforce transformation that enables AI implementation. Figure 5 shows that AI integration divides labor markets. Effectively adopting and conveying AI preparedness ($\theta=2$) can result in increased remuneration and job security, whereas neglecting it may lead to low pay and job loss. This division coincides with Mehta et al. (2025) [17], who say organizational culture and leadership make AI adoption competitive. They found that personality factors and adaptive organizational cultures determine whether AI deployment fosters vital account management collaboration and creativity or rigidity and opposition. Therefore, Figure 5 shows that AI implementation labor market outcomes depend on technological preparation as well as cultural and organizational factors that affect adoption indicators.

Multiple dynamics are depicted by integrating three figures. Early AI deployment minimizes supply chain uncertainty and stabilizes prices, giving brief competitive advantages. Second, unless companies reinvest in innovation, personalization, and scalability, widespread use decreases these benefits. Signalling and organizational readiness control AI's wage and employment consequences. Gupta (2024) [18] found that AI adoption lowers market entry barriers but needs established enterprises to spend and develop.

Early adoption and dynamic capabilities are key to sustaining supremacy in AI-driven markets. Zhu and Sun (2025) [15] stressed that AI investments should be gradual and cumulative, with initial adoption laying the framework for eventual revolutionary projects. Companies that ignore this risk stagnate as competition reduces their initial advantages. In contrast, firms that match AI with culture, leadership, and market-oriented breakthroughs are more likely to stay on top. Data shows how AI affects product and labour markets, promoting early and sustained adoption.

The impact of uncertainty management on adoption outcomes is a key finding. Gans (2023) [2] said AI's usefulness is in its ability to forecast unknown scenarios and reduce inefficiencies. The initial graphic shows how AI adoption stabilizes pricing and reduces demand volatility risks by changing supply from uncertainty to certainty. The second picture shows that dispersion among users creates new equilibria that change competitiveness, therefore this stabilizing effect is not final. As usage grows, firms must reconcile short-term unpredictability with long-term industry fundamentals.

Equally significant are the job market effects. Figure 5 shows that AI adoption can lower wages under poor signalling or increase wages when credible and effective. Gupta (2024) [18] warned that AI use could increase competitiveness and concentration. Abdallah et al. (2025) [16] found that sectoral disparities—specifically between private and public sectors—moderate labour outcomes, with private companies better at capitalizing on adoption due to flexibility and resources. Without enough signalling and cultural congruence, private sector adopters may not get the full benefits.

These findings suggest that managers should establish dynamic skills that preserve competitive advantages rather than view AI deployment as a single investment. Mehta et al. (2025) [17] showed that human and cultural traits are essential to developing these skills, emphasizing the need for flexible, inventive cultures and technological integration. The numbers show that competitive performance depends on technological adoption, organizational alignment, and cultural preparation.

These discoveries have major policy implications. Governments must recognize early AI adoption's twin effects on supply chains and labour markets. Encourage adoption to boost efficiency, innovation, and competitiveness, coinciding with Figures 3 and 4 supply-side dynamics. Figure 5 shows that unregulated adoption may increase worker displacement, pay discrepancy, and market concentration. Regulators must balance adoption incentives with frameworks that ensure equitable labour market results and prevent anti-competitive practices. This supports Gupta's (2024) [18] claim that institutional reflexes can democratize or consolidate market power with AI.

In nutshell, statistics and associated research show that early AI adoption is a powerful but complex driver for market dominance. Companies that adapt to volatility, engage with labour markets, and reinvest to maintain individuality as adoption spreads reap the most benefits. Gans (2023) [2], Zhu and Sun (2025) [15], Abdallah et al. (2025) [16], Mehta et al. (2025) [17], and Gupta (2024) [18] show that AI adoption is a strategic endeavour integrated into competitive, organizational, and labour market frameworks. In AI-driven economies, companies that view adoption as a continual strategic effort are more likely to succeed.

CONCLUSION

To conclude, early AI adoption decreases uncertainty, boosts efficiency, and gives transient competitive benefits, but market supremacy requires constant reinvestment, good signalling, and organizational alignment. Entry is democratized, but concentration and labour disruption are hazards. Using AI as a strategic process builds resilience and long-term leadership.

REFERENCES

1. Horowitz, M. C., Allen, G. C., Kania, E. B., & Scharre, P. (2022). *Strategic competition in an era of artificial intelligence*. Center for a New American Security..
2. Gans, J. S. (2023). Artificial intelligence adoption in a competitive market. *Economica*, 90(358), 690-705.
3. Iansiti, M., & Lakhani, K. R. (2020). *Competing in the age of AI: Strategy and leadership when algorithms and networks run the world*. Harvard Business Press.
4. Chintalapati, S. (2021). Early adopters to early majority—what's driving the artificial intelligence and machine learning powered transformation in financial services. *Int J Financ Res*, 12(4), 43.
5. Sanchez-Cartas, J. M., & Katsamakos, E. (2022). Artificial intelligence, algorithmic competition and market structures. *IEEE Access*, 10, 10575-10584.
6. Ali Abbasi, G., Abdul Rahim, N. F., Wu, H., Iranmanesh, M., & Keong, B. N. C. (2022). Determinants of SME's social media marketing adoption: competitive industry as a moderator. *Sage Open*, 12(1), 21582440211067220.
7. Keegan, B. J., Canhoto, A. I., & Yen, D. A. W. (2022). Power negotiation on the tango dancefloor: The adoption of AI in B2B marketing. *Industrial Marketing Management*, 100, 36-48.
8. Wamba-Taguimdje, S. L., Fosso Wamba, S., Kala Kamdjoug, J. R., & Tchatchouang Wanko, C. E. (2020). Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects. *Business process management journal*, 26(7), 1893-1924.

9. Kumar, V., Ashraf, A. R., & Nadeem, W. (2024). AI-powered marketing: What, where, and how?. *International journal of information management*, 77, 102783.
10. Ferràs-Hernández, X., Nylund, P. A., & Brem, A. (2023). The emergence of dominant designs in artificial intelligence. *California Management Review*, 65(3), 73-91.
11. Krakowski, S., Luger, J., & Raisch, S. (2023). Artificial intelligence and the changing sources of competitive advantage. *Strategic Management Journal*, 44(6), 1425-1452.
12. Abaddi, S. (2025). Factors and moderators influencing artificial intelligence adoption by Jordanian MSMEs. *Management & Sustainability: An Arab Review*, 4(1), 47-73.
13. Zheng, D., Ding, Y., & Bai, S. (2025). The competition between human and AI streamers: live streaming strategies in a duopoly market considering consumer heterogeneity. *Acta Psychologica*, 256, 105040.
14. Cimino, A., Corvello, V., Troise, C., Thomas, A., & Tani, M. (2025). Artificial Intelligence Adoption for Sustainable Growth in SMEs: An Extended Dynamic Capability Framework. *Corporate Social Responsibility and Environmental Management*.
15. Zhu, P., & Sun, Y. (2025). Assessing Impact of Strategic Investments on Development of Sustainable Artificial Intelligence Dynamics. *Sustainable Futures*, 100884.
16. Abdallah, W., Harraf, A., & Al Wael, H. (2025). Factors influencing artificial intelligence implementation in the accounting industry: a comparative study among private and public sectors. *Journal of Financial Reporting and Accounting*.
17. Mehta, P., Chakraborty, D., Rana, N. P., Mishra, A., Khorana, S., & Kooli, K. (2025). AI-driven competitive advantage: the role of personality traits and organizational culture in key account management. *Journal of Business & Industrial Marketing*, 40(2), 543-569.
18. Gupta, D. R. (2024). How Does the Adoption of AI Impact Market Structure and Competitiveness within Industries?. *Open Journal of Business and Management*, 13(1), 223-236.