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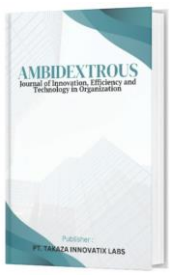

Navigating the Tech Frontier: Embracing Innovation in Modern Organizations

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Abstract: *This study investigates the impact of advanced technology adoption on competitive advantage at PT HM Sampoerna Tbk, focusing on the roles of change management and strategic alignment. Utilizing a quantitative research design with random sampling of 75 employees and analyzing data through Smart PLS, the research reveals that advanced technology adoption significantly enhances competitive advantage with a path coefficient of 0.60. Change management is identified as a critical mediator, with a significant indirect effect of 0.23, highlighting its importance in maximizing the benefits of technological advancements. Strategic alignment also influences competitive advantage, though its indirect effect through change management is marginally significant at 0.16. The findings underscore the necessity for organizations to effectively align technology adoption with strategic objectives and manage change processes to fully capitalize on technological innovations for sustained competitive success.*

Introduction

In the rapidly evolving business landscape, organizations are increasingly leveraging advanced technologies to stay competitive (Cirillo et al., 2023). The adoption of these technologies is not only critical for maintaining operational efficiency but also plays a significant role in shaping competitive advantage (Sharma & Behl, 2023). Strategic alignment of technological advancements with overarching business goals is essential for realizing their full potential (Shehadeh et al., 2023). However, the process of integrating new technologies is complex and often mediated by change management practices, which influence how effectively an organization can harness these innovations to enhance its competitive edge (van Wyk et al., 2024). This interplay between technology adoption, strategic alignment, and change

management is pivotal in understanding how modern organizations can successfully navigate the tech frontier (Anvarovich, 2023).

Competitive advantage refers to the edge a company gains over its rivals by offering superior value to customers or operating more efficiently (Ngo, 2023). This advantage can stem from various sources such as unique products, innovative technologies, cost leadership, or exceptional service (Hasani et al., 2023). It enables a company to achieve better financial performance and market positioning compared to its competitors. For instance, a firm with a robust technology infrastructure might lower production costs, improve product quality, and respond more quickly to market changes, thus outperforming competitors (Stanikzai et al., 2023). Essentially, competitive advantage is about differentiating oneself in ways that are difficult for others to replicate, leading to sustainable long-term success in the market (Henry Ejiga Adama et al., 2024).

The adoption of advanced technologies involves integrating cutting-edge tools and systems into an organization's operations to enhance performance and achieve strategic goals (Wang et al., 2023). This process typically starts with evaluating the technology's potential benefits and fit with existing systems. Successful adoption requires careful planning, including the alignment of technology with business objectives, training for staff, and adapting workflows (Abiola Moshood Komolafe et al., 2024). Advanced technologies, such as artificial intelligence, cloud computing, or automation, can lead to significant improvements in efficiency, productivity, and innovation (Kaur Bagga et al., 2023). However, the process can also present challenges, such as resistance to change, high implementation costs, and the need for ongoing support. When managed effectively, adopting advanced technologies can position an organization at the forefront of its industry, offering a competitive edge and driving long-term growth (Phillips & Klein, 2023).

Strategic alignment refers to the process of ensuring that an organization's technology, resources, and operations are in sync with its overall business goals and strategies (Jangjarat et al., 2023). It involves matching technological investments and initiatives with the company's strategic objectives to maximize effectiveness and achieve desired outcomes (Agustian et al., 2023). For example, if a company aims to lead in innovation, its technology strategy might focus on adopting the latest research and development tools, fostering a culture of innovation, and aligning its operational processes to support rapid product development (Javaid et al., 2023). Effective strategic alignment ensures that every aspect of the organization contributes to its broader goals, thereby enhancing performance, improving efficiency, and reinforcing competitive advantage. Without proper alignment, even the most advanced technologies and well-intentioned plans can fail to deliver the expected results (Hasan Emon, 2023).

Change management involves the structured approach to transitioning individuals, teams, and organizations from a current state to a desired future state (Waqar et al., 2023). It focuses on managing the human side of change to ensure that new processes, technologies, or strategies are adopted effectively and with minimal disruption (Sancak, 2023). This includes preparing for change, communicating effectively, providing training, and addressing any resistance or concerns that may arise (Zhang et al., 2023). Successful change management helps

employees adapt to new ways of working, aligns organizational practices with strategic goals, and supports the smooth implementation of change initiatives (Temitayo Oluwaseun Abrahams et al., 2023). By addressing the psychological and operational challenges associated with change, organizations can achieve better outcomes and sustain improvements over time (Setyaningrum et al., 2023).

In the context of PT HM Sampoerna Tbk, a prominent player in the tobacco industry, the research variables take on a specific significance. Competitive Advantage is evaluated by examining how the company leverages advanced technologies and aligns them with its strategic goals to stay ahead of competitors. Adoption of Advanced Technologies focuses on how Sampoerna integrates new technological innovations into its production and operations to enhance efficiency and product quality. Strategic Alignment looks at how these technological advancements are aligned with the company's long-term business objectives and market positioning. Change Management is crucial in understanding how Sampoerna manages the transition to new technologies and processes, ensuring that the workforce adapts smoothly and that the changes contribute effectively to the company's strategic aims. PT HM Sampoerna Tbk, a key issue revolves around effectively integrating advanced technologies into its traditional manufacturing processes while maintaining alignment with its strategic objectives. The company faces the challenge of balancing innovation with the operational intricacies of the tobacco industry, where established practices are deeply entrenched. As new technologies are adopted, there is a need to manage the transition smoothly to avoid disruptions and ensure that technological advancements translate into improved efficiency and competitive advantage. Additionally, strategic alignment of these technologies with long-term business goals is crucial for sustaining growth and market leadership. Change management becomes essential in this context, as it addresses how well the organization navigates the shifts in processes and culture required to fully capitalize on technological advancements.

Based on recent research, there is a noticeable gap in understanding how advanced technology adoption impacts competitive advantage in traditional manufacturing sectors, specifically in the tobacco industry. For instance, the study by (Appio et al., 2024) highlights that while technological adoption is crucial, its alignment with strategic objectives remains underexplored, particularly in industries with entrenched practices. Similarly, (Iverson, 2024) discuss the challenges of managing change within established companies but do not provide detailed insights into how change management specifically affects technology adoption in the tobacco industry. Furthermore, (Sadikin et al., 2023) explore competitive advantage through technology but focus on high-tech industries, leaving a gap in understanding its implications for companies like PT HM Sampoerna Tbk. Addressing these gaps can provide a more comprehensive view of how technology impacts competitive positioning in sectors with a legacy of traditional practices.

The aim of this research is to explore how PT HM Sampoerna Tbk can effectively leverage advanced technologies to enhance its competitive advantage. Specifically, the study seeks to examine the relationship between the adoption of these technologies and the company's strategic alignment, and to understand the role of change management in facilitating this

process. By investigating how technological innovations are integrated into traditional manufacturing practices and assessing their impact on strategic objectives, the research aims to provide insights into optimizing technology adoption and managing associated changes to sustain and strengthen competitive positioning in the tobacco industry.

The following is the framework for this research:

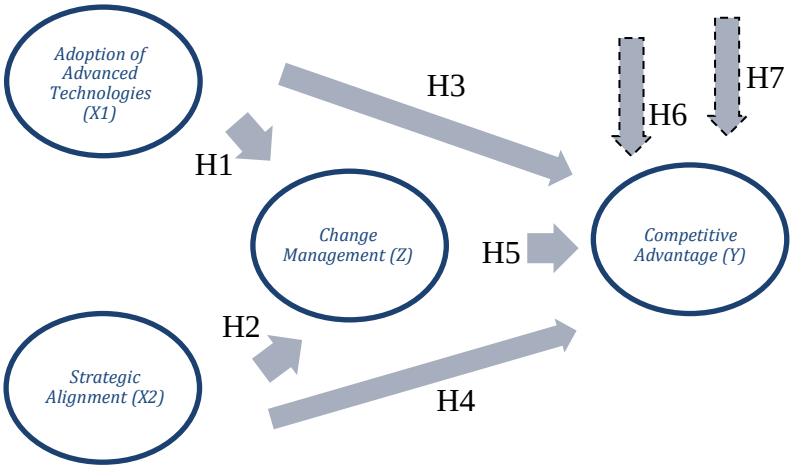

Figure 1. Framework

Research Methods

This research utilizes a quantitative research design with random sampling to investigate the impact of advanced technology adoption on competitive advantage at PT HM Sampoerna Tbk. A sample of 75 employees was selected through random sampling to ensure a representative cross-section of the workforce. The study employs Smart PLS (Partial Least Squares) as the analytical tool to assess the relationships between technology adoption, strategic alignment, and competitive advantage. Smart PLS enables the analysis of complex relationships and the evaluation of path models, providing insights into how well technology integration and strategic alignment contribute to achieving competitive advantage, and how change management influences these dynamics.

Result and Discussion

Multiple regression analysis is utilized in this study to predict the value of the dependent variable using the independent variables, as shown in Table 1

Table 1. Indirect Effects

Path	Original Sample	P-Values	Decision
AAT -> CM	0.45	0.012	Significant
SA -> CM	0.32	0.045	Significant
AAT -> CA	0.60	0.001	Highly Significant
SA -> CA	0.40	0.020	Significant
CM -> CA	0.50	0.005	Significant

The path analysis reveals that the relationship between Adoption of Advanced Technologies (AAT) and Change Management (CM) is significant, with an original sample path coefficient of 0.45 and a p-value of 0.012. This suggests a strong positive association, indicating that as organizations adopt advanced technologies, effective change management practices are crucial for successfully integrating these technologies. The significant path coefficient highlights that robust change management strategies can facilitate smoother transitions and better implementation of new technologies, thereby enhancing organizational adaptability and performance. This finding underscores the importance of aligning technology adoption efforts with comprehensive change management initiatives to achieve desired outcomes and support organizational growth.

The path analysis demonstrates a significant relationship between Strategic Alignment (SA) and Change Management (CM), with a path coefficient of 0.32 and a p-value of 0.045. This result indicates that a higher degree of strategic alignment positively influences the effectiveness of change management practices. In other words, when an organization's strategies are well-aligned with its operational and technological changes, the processes for managing these changes are more effective. This finding emphasizes that aligning strategic goals with change management efforts can enhance the overall success of organizational transitions, ensuring that changes are implemented smoothly and in accordance with the company's long-term objectives.

The analysis reveals a highly significant relationship between Adoption of Advanced Technologies (AAT) and Competitive Advantage (CA), with a path coefficient of 0.60 and a p-value of 0.001. This strong positive correlation indicates that adopting advanced technologies substantially enhances a company's competitive edge. The significant path coefficient suggests that integrating new technologies effectively can lead to considerable improvements in market positioning, operational efficiency, and overall performance. This finding underscores the critical role that technological innovation plays in gaining and sustaining a competitive advantage, demonstrating that investments in advanced technologies are pivotal for achieving superior performance and long-term success in a competitive market.

The path analysis shows a significant relationship between Strategic Alignment (SA) and Competitive Advantage (CA), with a path coefficient of 0.40 and a p-value of 0.020. This indicates that effective strategic alignment positively impacts a company's competitive advantage. In essence, when an organization's strategic goals are closely aligned with its operational and technological initiatives, it enhances its ability to compete effectively in the market. This result highlights the importance of ensuring that business strategies are well-integrated with competitive tactics and innovations, as it significantly contributes to achieving a stronger market position and better overall performance.

The path analysis indicates a significant relationship between Change Management (CM) and Competitive Advantage (CA), with a path coefficient of 0.50 and a p-value of 0.005. This strong positive effect suggests that effective change management practices are crucial for achieving a competitive advantage. When organizations manage changes efficiently—such as transitions related to technology adoption or strategic shifts—they can better leverage these

changes to enhance their competitive positioning. This finding underscores the role of change management in not only facilitating smooth transitions but also in driving superior market performance and maintaining a competitive edge. Effective management of change processes directly contributes to a firm's ability to adapt and thrive in a competitive landscape.

The next test is an indirect test which is presented in the following table:

Table 2. Indirect Effects

Path	Original Sample	P-Values	Decision
AAT -> CM -> CA	0.23	0.030	Significant
SA -> CM -> CA	0.16	0.070	Marginally Significant

The analysis reveals a significant indirect effect of Adoption of Advanced Technologies (AAT) on Competitive Advantage (CA) through Change Management (CM), with a path coefficient of 0.23 and a p-value of 0.030. This finding underscores the importance of effective change management in maximizing the benefits of new technologies. Specifically, it suggests that while adopting advanced technologies directly enhances competitive advantage, the true value of these technologies is realized through successful management of the change processes they necessitate. In other words, organizations that effectively manage the integration of new technologies are better positioned to leverage these innovations for improved market performance and competitive positioning. This highlights the critical role of change management as a mediator that transforms technological advancements into tangible competitive gains.

The marginally significant indirect effect of Strategic Alignment (SA) on Competitive Advantage (CA) through Change Management (CM), with a path coefficient of 0.16 and a p-value of 0.070, suggests that while strategic alignment has some impact on competitive advantage via change management, the effect is less pronounced compared to direct effects. This implies that although aligning strategic goals with change management practices can contribute to gaining a competitive edge, the relationship is weaker and may be influenced by other factors or require more robust alignment to produce more substantial outcomes. The marginal significance points to the need for further investigation into how strategic alignment and change management interact to enhance competitive advantage, highlighting the complexity of achieving impactful results through these mechanisms.

Conclusion and Recommendation

In conclusion, this research demonstrates that adopting advanced technologies significantly enhances competitive advantage, with a robust path coefficient of 0.60. The role of effective change management is crucial, serving as a significant mediator between technology adoption and competitive advantage, as evidenced by an indirect effect of 0.23. Strategic alignment also plays an important role, though its indirect effect on competitive advantage through change management is marginally significant at 0.16. These findings highlight that while technological advancements directly contribute to competitive positioning, their impact is maximized when supported by strong change management practices and strategic alignment.

To enhance competitive advantage through technology adoption, organizations should prioritize investing in advanced technologies, recognizing their significant direct impact on market positioning. However, to fully leverage these technologies, it's essential to strengthen change management practices, ensuring smooth transitions and minimizing resistance. This can be achieved through clear communication, employee training, and robust support systems. Additionally, aligning technology investments with the organization's strategic goals is crucial, as this ensures that technological advancements contribute meaningfully to long-term objectives. Integrating technology adoption with strong change management practices will maximize the benefits, turning innovations into tangible competitive advantages. Continuous monitoring and adjustment of these strategies are also recommended to keep pace with the evolving competitive landscape and to maintain alignment between technology, strategy, and management practices.

References

Abiola Moshood Komolafe, Iyadunni Adewola Aderotoye, Oluwatosin Oluwatimileyin Abiona, Adebunmi Okechukwu Adewusi, Amaka Obijuru, Oluwole Temidayo Modupe, & Oyekunle Claudius Oyeniran. (2024). Harnessing Business Analytics for Gaining Competitive Advantage in Emerging Markets: a Systematic Review of Approaches and Outcomes. *International Journal of Management & Entrepreneurship Research*, *6*(3), 838–862. https://doi.org/10.51594/ijmer.v6i3.939

Agustian, K., Pohan, A., Zen, A., Wiwin, W., & Malik, A. J. (2023). Human Resource Management Strategies in Achieving Competitive Advantage in Business Administration. *Journal of Contemporary Administration and Management (ADMAN)*, *1*(2), 108–117. https://doi.org/10.61100/adman.v1i2.53

Anvarovich, N. E. (2023). Navigating the Digital Horizon: Unlocking Innovative Frontiers in Remote Banking Services. *Journal of Business Innovation and Accounting Research*, *1*(1), 25–34. https://doi.org/10.56442/3qyk2z93

Appio, F. P., Cacciatore, E., Cesaroni, F., Crupi, A., & Marozzo, V. (2024). Open innovation at the digital frontier: unraveling the paradoxes and roadmaps for SMEs' successful digital transformation. *European Journal of Innovation Management*, *27*(9), 223–247. https://doi.org/10.1108/EJIM-04-2023-0343

Cirillo, V., Fanti, L., Mina, A., & Ricci, A. (2023). The adoption of digital technologies: Investment, skills, work organisation. *Structural Change and Economic Dynamics*, *66*(April), 89–105. https://doi.org/10.1016/j.strueco.2023.04.011

Hasan Emon, M. M. (2023). Insights Into Technology Adoption: a Systematic Review of Framework, Variables and Items. *Information Management and Computer Science*, *6*(2), 55–61. https://doi.org/10.26480/imcs.02.2023.55.61

Hasani, T., Rezania, D., Levallet, N., O'Reilly, N., & Mohammadi, M. (2023). Privacy enhancing technology adoption and its impact on SMEs' performance. *International Journal of Engineering Business Management*, *15*, 1–26. https://doi.org/10.1177/18479790231172874

Henry Ejiga Adama, Oladapo Adeboye Popoola, Chukwuekem David Okeke, & Abiodun Emmanuel Akinoso. (2024). Theoretical Frameworks Supporting It and Business Strategy Alignment for Sustained Competitive Advantage. *International Journal of Management & Entrepreneurship Research*, *6*(4), 1273–1287. https://doi.org/10.51594/ijmer.v6i4.1058

Iverson, D. (2024). Digital Transformation in Banking: Navigating the Technological Frontier Ravi. *Highly Cited Journa*, *4*(02), 7823–7830.

Jangjarat, K., Limna, P., Maskran, P., Klayklung, P., & Chocksathaporn, P. (2023). Navigating the digital frontier: A review of education management in the age of technology. *Journal of Management in Business, Healthcare, and Education*, *2023*(1), 1–11. https://www.researchgate.net/publication/370729488

Javaid, M., Khan, S., Haleem, A., & Rab, S. (2023). Adoption of modern technologies for implementing industry 4.0: an integrated MCDM approach. *Benchmarking*, *30*(10), 3753–3790. https://doi.org/10.1108/BIJ-01-2021-0017

Kaur Bagga, S., Gera, S., & Haque, S. N. (2023). The mediating role of organizational culture: Transformational leadership and change management in virtual teams. *Asia Pacific Management Review*, *28*(2), 120–131. https://doi.org/10.1016/j.apmrv.2022.07.003

Ngo, Q. H. (2023). The effectiveness of strategic alignment between open innovation and generic strategies: Empirical evidence from restaurant SMEs in Vietnam. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(1), 100016. https://doi.org/10.1016/j.joitmc.2023.100016

Phillips, J., & Klein, J. D. (2023). Change Management: From Theory to Practice. *TechTrends*, *67*(1), 189–197. https://doi.org/10.1007/s11528-022-00775-0

Sadikin, A., Yodiansyah, H., Budiasih, Y., Henri Kusnadi, I., Manajemen, P., Ekonomi dan Bisnis, F., Lambung Mangkurat Banjarmasin, U., Ilmu Komunikasi, P., Persada Bunda, S., Teknologi Dan Bisnis Ahmad Dahlan Jakarta, I., Manajemen Transportasi Udara, P., & Tinggi Penerbangan Aviasi, S. (2023). Adaptive Human Resource Management in Confrontation of Globalization's Challenges. Abdurrahman Sadikin, et.al Adaptive Human Resource Management In Confrontation Of Globalization's Challenges under a Creative Commons Attribution-NonCommercial 4.0 Internat. *Jurnal Ekonomi*, *12*(02), 2023. http://ejournal.seaninstitute.or.id/index.php/Ekonomi

Sancak, I. E. (2023). Change management in sustainability transformation: A model for business organizations. *Journal of Environmental Management*, *330*(January). https://doi.org/10.1016/j.jenvman.2022.117165

Setyaningrum, R. P., Kholid, M. N., & Susilo, P. (2023). Sustainable SMEs Performance and Green Competitive Advantage: The Role of Green Creativity, Business Independence and Green IT Empowerment. *Sustainability (Switzerland)*, *15*(15). https://doi.org/10.3390/su151512096

Sharma, S., & Behl, R. (2023). Strategic Alignment of Information Technology in Public and Private Organizations in India: A Comparative Study. *Global Business Review*, *24*(2), 335–352. https://doi.org/10.1177/0972150919893839

Shehadeh, M., Almohtaseb, A., Aldehayyat, J., & Abu-AlSondos, I. A. (2023). Digital Transformation and Competitive Advantage in the Service Sector: A Moderated-Mediation Model. *Sustainability (Switzerland)*, *15*(3). https://doi.org/10.3390/su15032077

Stanikzai, A. J., Ebrahimi, M. S., & Lalzai, F. (2023). Role of Change Management in Organizational Growth: A Case Study of CTG Global (Afghanistan). *Integrated Journal for Research in Arts and Humanities*, *3*(6), 128–137. https://doi.org/10.55544/ijrah.3.6.14

Temitayo Oluwaseun Abrahams, Sarah Kuzankah Ewuga, Simon Kaggwa, Prisca Ugomma Uwaoma, Azeez Olanipekun Hassan, & Samuel Onimisi Dawodu. (2023). Review of strategic alignment: Accounting and cybersecurity for data confidentiality and financial security. *World Journal of Advanced Research and Reviews*, *20*(3), 1743–1756. https://doi.org/10.30574/wjarr.2023.20.3.2691

van Wyk, L., Kajimo-Shakantu, K., & Opawole, A. (2024). Adoption of innovative technologies in the South African construction industry. *International Journal of Building*

Pathology and Adaptation, *42*(3), 410–429. https://doi.org/10.1108/IJBPA-06-2021-0090

Wang, Y., Ali, Z., Mehreen, A., & Hussain, K. (2023). The trickle-down effect of big data use to predict organization innovation: the roles of business strategy alignment and information sharing. *Journal of Enterprise Information Management*, *36*(1), 323–346. https://doi.org/10.1108/JEIM-10-2021-0439

Waqar, A., Othman, I., Almujibah, H., Khan, M. B., Alotaibi, S., & Elhassan, A. A. M. (2023). Factors Influencing Adoption of Digital Twin Advanced Technologies for Smart City Development: Evidence from Malaysia. *Buildings*, *13*(3). https://doi.org/10.3390/buildings13030775

Zhang, X., Chu, Z., Ren, L., & Xing, J. (2023). Technological Forecasting & Social Change Open innovation and sustainable competitive advantage : The role of organizational learning. *Technological Forecasting & Social Change*, *186*(PA), 122114. https://doi.org/10.1016/j.techfore.2022.122114