AI Business Review

Journal homepage: https://theaibr.com/index.php/aibr

Artificial Intelligence in International Supply Chains: Strategies for Digital Optimization

David Hua*, Oluwaseni Adeyinka, Racheal Ankunda, Oghenemarho Karieren, Mustapha Seidu

CICS, CCIM, Ball State University, Muncie, Indiana, USA, hesham allam, duhua, oluwaseni adeyinka, racheal.ankunda, oghenemarho.karieren,Mustapha.seidu@bsu.edu

Abstract: Nowadays, supply chains have taken the form of highly complex networks that are becoming ever more interdependent, unpredictable, and vulnerable to disruptions. Their complexity stretches traditional SCM models, requiring the use of more brilliant and reactive systems. An enabling technology that transforms, Artificial Intelligence (AI) provides solutions in predictive intelligence, automation, real-time tracking, and intelligent decision-making. This paper consolidates recent research to investigate how AI technologies are reshaping global SCM. I then explore the digitalization of the supply chain, the core AI technology landscape, and the ethical reasons for it. Building on a foundation established from the Resource-Based View (RBV) and Dynamic Capability Theory (DCT), this paper contextualizes AI's strategic importance. It details AI's potential to increase the accuracy of demand forecasting, reduce operational costs, and improve resilience, but recognises data quality, enormous upfront implementation costs, and algorithmic transparency as obstacles. This has to be concentrated in the (research and practice) next phase in ethical frameworks, human-AI cooperation, and SME inclusivity as key contributing fields to ensure future digital transformation.

Keywords: Artificial Intelligence, Supply Chain Management, Predictive Analytics, Prediction, Automation, Globalization, Resilience, Digital Transformation, Ethics, Machine Learning, Supply Chain Disruption

Academic Editor(s): Zahoor Khan
Received: 10 September 2025
Revised: 9 October 2025
Accepted: 26 October 2025
Published: 29 October 2025
Citation: Hua et al. (2025). Artificial Intelligence in International Supply Chains: Strategies for Digital Optimization, AI Business Review, 1(2),

1 Introduction

AI is transforming industries and reshaping our lives, sparking new business models that capitalize on the immense value from the vast amounts of data available today. It plays a role in revolutionizing education and healthcare to support business, public services, and manufacturing, among other sectors (Pavaloaia, Martin-Rojas & Sulikowski; Harmon et al., 2025). In both the private and public sectors, AI is being used to deliver profound improvements in operational efficiency, customer personalization, and data-driven decision-making. In the meantime, and while transitioning to the Fourth Industrial Revolution, AI is enabling proactive systems from being reactive or predictive-prescriptive ones—allowing organizations to predict changes, react in a real-time manner, and build a strategic competitive edge based on data and automation (Haseeb, Hussain & Jermsittiparsert; Allam et al., 2025b; Orlando et al., 2024).

This change is particularly welcome in the field of global SCM, where volatility, uncertainty, and complexity are now the norm. There has been unprecedented dislocation in global supply chains over the past decade, as multiple crises have collided. These include the COVID-19 pandemic, recurring geopolitical events (such as the U.S.-China trade war), climate change, and the sweeping impacts of high-speed globalization and e-commerce (Olowonigba, 2025; Attah et al., 2024). Today, these stresses have exposed the inherent fragility of old-fashioned supply chain models that handcuff complex linear systems, slow manual coordination, and minimal real-time visibility. Many businesses hesitated to realize that their supply chain strategies are not aligned to address the urgent need for change and agility, as is evident today.

In that sense, one of the most highlighted enabling technologies in the supply chain's transformation is Artificial Intelligence (AI). Robotics and AI have diverse capabilities to enhance agility, responsiveness, and resilience in the supply chain system (Allam et al., 2025b). For instance, machine learning models can process large quantities of historical and real-time data to forecast demand or enhance logistics (and highlight potential disruption early to intervention) (Nweje & Taiwo, 2025). It is used for both computer vision, which can assist industries with automated quality inspections, and procurement and supplier communications, marking a new era in the operations floor through NLP tools. Among other things, these technologies enable organizations to transform static, passive systems into intelligent, proactive networks that can self-optimize in response to changing environments (Vijaya, 2025; Allam et al., 2025c).

AI is not just about operational optimisation; strategic intelligence can also be gained, which can affect resource allocation and top-level planning. By leveraging AI at the heart of SCM activities, businesses can achieve complete 360-degree visibility across their supply networks, track shipments in real time, and run virtual scenarios to make more informed decisions. Besides, the role of AI in sustainability efforts can be perceived; e.g., demand forecasting, waste minimization, and intelligent routing can trigger green actions (Allam et al., 2025c). However, the path to AI-driven supply chains is not smooth. Integration is still a significant challenge, particularly for older

institutions with data sitting in silos. The ethical aspects, including algorithmic bias, data privacy, and the interpretability of AI decisions, are also barriers to adaptation, according to Allam et al. (2025a). Moreover, there are fears that new AI systems will displace and create skill gaps in the current job market. However, to address these challenges, we need to explore upskilling programs and change management strategies (Harmon et al., 2025; Orlando et al., 2024). The digital divide is also likely to worsen among SMEs due to the lack of basic infrastructure (ibid.; Swann, 2014) and poor data quality (Garber, 2017), as well as resource constraints. This suggests that equity issues around DT become much more significant.

In light of these potentials and challenges, focusing particularly on AI's transformative impact on GSCM is identified as the primary purpose of this special issue. Through a targeted review of existing literature, it assesses the strategic deployment options for AI in different supply chain functions. It reviews key implementation challenges and ethical and organizational issues related to sustainable digital transformation. Leveraging theories such as the Resource-Based View (RBV) and Dynamic Capability Theory (DCT), a new conceptualization of AI is proposed. It defines AI not only as an advancement in technological innovation but also as a driver of long-term competitive advantage, alongside organizational agility, governance, and human capabilities.

2 Literature Review

2.1 The Revolutionary Impact of AI on Industries and Supply Chain Management

Artificial Intelligence (AI) is redefining all things modern society through the power of data-centric innovation and real-time automation. It reaches across domains ranging from health services to learning, public services, and manufacturing. AI has played an increasingly important role in public and private digital transformation, enhancing decision-making, operational efficiency, and customer segmentation (Beheshti et al., 2025; Alim et al., 2025). Its worth lies not only in automation but also in strategically repositioning organisations so they can transition from reactive to proactive processes by counter-correcting their habitats through ecosystems (Hammad et al., 2025; Mandavilli, 2025). This is crucial if we are going to evolve from Industry 4.0 to Industry 5.0, which is not just about tech-driven innovation but human-centric design for sustainability.

The global SCM market has particularly embraced AI because SCM requires resilience as complexity continues to escalate. The meeting of world crises, ranging from the COVID-19 pandemic to geopolitical conflict to climate disruption, has brought to the fore the vulnerability of conventional supply chains (Rabhi et al., 2025; Atif, 2024). Traditional SCM systems are known for manual modes, denseness, and limited agility. To help address these challenges, AI-based tools such as predictive analytics and machine learning have been used to predict disruptions, simplify procurement, and enable adaptive logistics optimization (Jain et al., 2025; Ali, 2025). Such innovations not only improve response capability but also unlock the pathway to Digital Twins and Stairway Value Chains.

In addition, SCM's role in AI is strategic, extending beyond the SC's current operating efficiencies to focus on long-term planning and sustainability. Intelligent systems can take on demand forecasting, inventory optimization, and dynamic routing, all of which, when combined, assist in meeting environmental goals and sustainability compliance (Suri et al., 2024; Kandhare et al., 2025). In manufacturing scenarios, computer vision is used for defect identification, while natural language processing (NLP) enables automated communication with suppliers, thereby minimizing bottlenecks and manual errors (Dev et al., 2025; Mishra et al., 2025). Such applications adhere to the conventions of the Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT), with AI serving as a source of sustained competitive advantage through organizational agility and innovation.

Nevertheless, the universal adoption of AI across supply chains is still facing obstacles. Historical systems and disjointed data infrastructures pose significant constraints on effortless adoption, particularly for SMEs (Allam et al., 2025a). Organizational ethics, including algorithmic bias, data confidentiality, and the lack of AI explainability, further confuse the integration agenda (Orlando et al., 2024). Worker displacement concerns also prompt strong upskilling programs alongside adaptable leadership agendas. Overcoming such socio-technical impediments remains crucial to achieving fair AI-led transformation worldwide (Rana et al., 2025). The future of AI across chains thereby evolves as the confluence of technological potential, organizational ethics, and human adaptability.

2.2 Human-Centered Integration of AI in Supply Chain Management

Early applications of Artificial Intelligence (AI) in Supply Chain Management (SCM) emphasized efficiency through automation. However, newer research highlights the significance of a human-centric approach to integration (Devi et al., 2023). As AI's total value is not embedded in the tools themselves, it is realized when people and organizations transform these tools for themselves. Accordingly, research adds that organizations perform better when they integrate AI's computational intelligence with human knowledge. This synthesis nurtures an organizational culture of cooperation and continuous learning (Jarrahi et al., 2023). Accordingly, data scientists, logistics experts, and executives collaborate to interpret insights driven by AI on its own merit, then abstract these insights as actionable strategies (Zong & Guan, 2025).

This evolution is such that organizations no longer view AI as a tool but as a strategic partner. Instead of replacing employees, AI usually collaborates with humans. For example, it supports judgment in demand forecasting, ethical sourcing, and supplier selection (Horowitz et al., 2022). In our illustration above, for instance, while an algorithm can rapidly determine the least expensive shipping route, a manager may consider geopolitical or social risks that automation might ignore. In essence, linking machine accuracy with human judgment and ethics is critical. This is essential for creating robust, fair, and smart operations across the globe (Sundaramurthy et al., 2022).

Successful AI implementation relies on organizational readiness and confidence (Karieren et al., 2025). As a case in point, organizations that invest in digital literacy and open AI governance can arrest resistance and mitigate fears of job losses (Rane, Choudhary, & Rane, 2024). This aligns with concepts such as the Resource-Based View (RBV) and Dynamic Capability Theory (DCT), which indicate that long-term competitiveness arises through an organization's capacity to reconfigure, learn, and evolve its resources (Sun, Chen, & Mei, 2024). In effect, deploying a human-centric supply chain ensures maximum efficiency while promoting ethical and sustainable approaches, with human governance forming the foundation of intelligent system management.

3 Methods

To anticipate the range and depth at which AI may shape global SCM, this paper employs a narrative literature review. In accomplishing this, a synthesis of qualitative and quantitative evidence from across the information disciplines (Operations Management, Computer Science, and Ethics) has been developed.

Selection Criteria:

- **Publication Dates:** Articles from 2022–2025
- **Sources:** Academic journals, peer-reviewed papers, academic chapters, and proceedings
- **Keywords:** 'Artificial Intelligence in supply chain,' 'AI logistics,' 'digitally transforming,' 'AI SCM ethics,' predictive analytics, and 'logistic machine learning'

3.1 Thematic Categorization:

The selected literature was categorized into five main categories:

- Diversity and Difference: Readings
- AI Applications in SCM
- Digitalization of the Supply Chain: A New Paradigm
- Ethical and Operative Considerations
- Future Directions

Such an approach enables a deep understanding of prevailing AI breakthroughs, SCM applications, and theoretical advancements under the RBV and DCT.

4 The Complexity of Supply Chain Disruptions

Disruptions have been so pervasive and severe that they are causing production lines and global supply chains to halt briefly. The above does not even account for geopolitical factors such as Brexit or trade wars, which prompt changes in regulation,

taxes, or borders. In connection with the above, climate change events (wildfires, flooding, etc.) have locked down key trade routes (Olowonigba, 2025). Supply interruptions result in increased lead times, higher costs, and lower customer satisfaction. Moreover, variability in consumer demand for lightning has been driven by globalization, customized marketing, and e-commerce. Firms confront stockouts and overstock (Nweje & Taiwo, 2025). Ups and downs in demand (especially for FMCG and seasonal products) make the case for more reactive, predictive supply chains. Globalization and Interdependence

4.1 Demand Fluctuation

Lightning consumer demand variability has been driven by globalization, customized marketing, and e-commerce. Businesses grapple with stockouts and excess stock (Nweje & Taiwo, 2025). Fluctuating demand (particularly in FMCG and seasonal goods) requires more reactive and predictive supply chains.

4.2 Globalization and Interdependence

Supply chains have expanded outward on a quest to maximize efficiency, crossing continents as they go, but in the process, have made networks more susceptible to external shocks. That feedback is obvious anyway: A hiccup in some remote corner of the world can ripple through whole systems. For example, in 2021, the Suez Canal closure disrupted global trade and exposed the fragility of the world system's interconnections (Attah et al., 2024). It requires systems to reconfigure more intelligently, in a decentralized, real-time manner.

5 AI as a Transformative Solution

5.1 Predictive Analytics

Using AI, it filters historical sales data alongside weather, social mood, and geopolitical cues to predict demand precisely. Firms leverage the technology to maintain 'just enough' inventory, schedule production (Nweje & Taiwo, 2025), and minimize risk (Vijaya, 2025).

5.2 Automation and Real-Time Monitoring

Sortation, process automation, and mechanization have reduced human involvement in warehousing, order picking, and order transportation (Olowonigba, 2025). Automation not only increases efficiency but also reduces mistakes and speeds up your time to fulfillment. Further, as part of IoT integration and digital twins, AI systems enable visibility into machines and processes. Real-time monitoring of assets, machine conditions, and the environment creates an opportunity for businesses to intervene before minor problems become nuisances (Attah et al., 2024).

6 Evolution of Supply Chain Digitalization

Digitalization of Supply Chain Management has been divided into three phases.

6.1 Automation Stage

In its early phase, businesses used basic RPA tools to automate routine, ad hoc functions such as invoice matching, barcode scanning, and order processing. This reduced paperwork, minimized errors, and saved time, resulting in the outcome (Khan et al., 2025).

6.2 Logistic Stage

Into this big-data landscape, businesses were starved for machine learning models that drive predictive maintenance, demand planning, and transportation optimization (Kennedy et al., 2024). The models facilitated evidence-based decision-making and strengthened the reliability of the supply plan (Bhuvaneswari, 2025).

Today, the focus is on intelligent supply networks—supply chains that self-optimize and self-heal with the help of AI. These networks incorporate cloud computing, AI, IoT, and blockchain to develop real-time, adaptive, and robust systems (Suganya et al., 2025).

6.3 Core AI Technologies in SCM

Technology	**Function**	**Applications**
Machine Learning	Pattern recognition, predictive modeling	Demand forecasting, risk detection, quality control (Nathany, 2022; L. Bhuvaneswari, 2025)
Natural Language Processing (NLP)	Language understanding	Automating procurement, supplier communication (Suganya et al., 2025)
Computer Vision	Image recognition	Automated inspection of goods, warehouse monitoring (Khan et al., 2025)
Reinforcement Learning	Adaptive learning	Route optimization, warehouse layout design (Suganya et al., 2025)

These technologies enable supply chains to become not only more efficient but also increasingly autonomous.

7 Ethical and Practical Implications

7.1 Practical Benefits and Ethical Considerations

Misuse or non-use of AI may drive users to lose control over decision-making. For instance, AI algorithms trained on biased data could “forget” about minority suppliers. There are also questions about algorithmic transparency; most AI models operate as "black boxes" with only poorly understood decision-making biases (Purwanto et al., 2024).

While AI replaces some jobs, new positions are created that demand digital literacy and data analysis skills. Organisations need to train employees to cope with a world of AI and build trust in human–AI teamwork (Ghosh, 2025).

7.2 Workforce Adaptation

While AI replaces some jobs, new positions are created that demand digital literacy and data analysis skills. Organisations need to train employees to cope with a world of AI and build trust in human–AI teamwork (Ghosh, 2025).

8. Challenges and Limitations

Despite the above advantages of AI, several issues challenge the deployment of AI:

- **High Capital Required:** Implementation of AI in enterprises requires high capital for all systems and the software, infrastructure, and talent (Bhat & R, 2023).
- **The Scarcity and Quality of Data:** Several companies, especially SMEs, encounter challenges comprising the absence of clean, structured, and sufficient data for training AI models (Nyakuchena & Tsikada, 2024).
- **Model Transparency:** Non-interpretability of AI decision making is seen as a challenge from both regulatory (Antonie et al., 2025) and ethical perspectives (Purwanto et al., ffs2).

These problems underscore the importance of solid planning and a policy framework before deployment.

8 Discussion

Strategically speaking, the application of Artificial Intelligence (AI) to supply chain management (SCM) can be framed under the Resource-Based View (RBV), which suggests that a firm's sustained competitive edge is based on procurement and utilization of resources that are valuable, rare, inimitable, and non-substitutable. In this context, the forms of knowledge embodied in AI technologies can be considered as resources when integrated into operational and strategic configurations. AI functionalities such as predictive analysis, autonomous actions, and real-time operations are scarcely substitutable and can significantly enhance forecasting accuracy, cost-effectiveness, and flexibility (Dempere et al., 2023).

The Dynamic Capability Theory (DCT) also offers another important vantage for viewing the effects of AI on supply chains. DCT focuses on an organization's capacity to (re)integrate, build, and reorganize internal and external competences in response to rapidly changing environments. AI technologies are driving the idea that companies can prepare for shifts in demand, forecast and model future scenarios, and reconfigure logistics networks in real time (Purwanto et al., 2024). For instance, reinforcement learning models and AI-powered digital twins can model disruptions and help

companies reallocate resources in real time, enhancing their ability to respond to and withstand shocks.

Nevertheless, several technical barriers exist. The literature abounds with success stories of how large global brands have innovated and upended their supply chains utilizing AI. Amazon uses AI to optimize delivery routes and manage inventory; DHL applies machine learning for demand forecasting and real-time tracking. However, these developments are not equitably available to all organizations and have primarily been the purview of large firms that possess the financial and technical resources needed for AI implementation (Harmon et al., 2025).

However, Small and Medium-Size Enterprises (SMEs) lack the ability, expertise, and infrastructure needed to scale AI implementation. Their inaction on AI revamp creates a digital gap that not only constrains productivity but also impedes broader economic development. Multiple studies have stressed the need for scalable, lightweight AI models for low-resource settings, especially in developing countries (Michael, 2025). Future efforts should develop an inclusive model that enables SMEs to embrace AI via modular, open-source, and public–private partnerships.

Another important hurdle is the ethical deployment of AI in SCM, aside from technology and cost constraints. The main issues are algorithmic bias, data security, and the black-boxing of AI decision-making. These ethical issues can erode stakeholder confidence and expose organizations to legal and regulatory risks (Gatto et al., 2023). For instance, if biased datasets are fed into AI systems, these systems may end up omitting procurement decisions for minority- or woman-owned suppliers. Besides, unresolved contentious issues related to data ownership rights, intellectual property rights, and responsibilities for AI-generated solutions can impede fair AI deployment (Misuraca et al., 2020).

Currently, the moral discussion surrounding AI in SCM lacks coherence. There is still a pressing requirement for standardized governance models, ethical audit tools, and AI compliance regulations to filter appropriate, transparent implementation. Meanwhile, as AI development continues to advance and its impact on Supply Chain Networks grows, institutions need guidance on people-oriented tech implementation to monitor the societal risks and ensure equal access to innovation for everyone (Allam et al., 2025f; Allam et al., 2025i). This needs inter-faculty collaboration among ethicists, engineers, Supply Chain professionals, and policymakers to provide a more balanced, sustainable digital future.

10. Conclusion and Future Directions

The use of AI to achieve efficiency, flexibility, and sustainability in the supply chain is evolving, and, as in other fields, this is just the beginning—"just the tip of the iceberg," as we say. However, achieving such outcomes involves more than just technology; it requires organizational change and should be driven by an ethical mindset with an inclusive vision.

Recommendations for Practice

- **Introduce Governance:** Create AI ethics boards and regulations to guide the responsible use of AI, especially among employees.
- **Interpretability-Oriented:** stress the importance of an explainable AI for transparency and stakeholder trust purposes.
- **Empower SMEs:** Design financing frameworks and scalable products that work for smaller businesses and mid-sized enterprises.

Future Research Directions

A novel Paradigm in order to adapt Multi-Agent AI Systems to Decentralized Collaborative Decision Making. Researchers are investigating how to build middleware for multi-agent systems that can facilitate decentralized collaborative decision-making. Furthermore, there is also more attention to how humans and AI can work better together in fields like procurement and logistics. Research with long horizons explores how AI governance will affect supply chain resilience over time. There is excellent potential in AI, but it can only be fully realized if the same level of consideration, reflection, and investment is put into tackling the technical, ethical, and organizational challenges.

References

1. Ali, A. (2025). Advancements and transformative applications of blockchain technology. *Journal of Engineering and Computational Intelligence*. https://jecir.com/index.php/jecir/article/view/8
2. Alim, I., Imtiaz, N., Al Prince, A., & Hasan, M. D. A. (2025). AI and blockchain integration: Driving strategic business advancements in the intelligent era. *Journal of Engineering and Computational Intelligence*. https://jecir.com/index.php/jecir/article/view/25
3. Allam, H., Gyamfi, B., Makubvure, L., Graham, K. N., & Akinwolere, K. (2025a). When machines write: The business and ethical impact of AI text automation. *The Artificial Intelligence Business Review, 1*(1). https://doi.org/10.64044/aavxrb27
4. Allam, H., Lazaros, E. J., Davison, C. B., & Truell, A. D. (2025b). Enhancing supply chain efficiency through AI-driven demand forecasting: A comprehensive analysis. *Issues in Information Systems, 26*(4), 65–77. https://www.iacis.org/iis/2025/4_iis_2025_65-77.pdf
5. Allam, H., Lazaros, E. J., Davison, C. B., & Truell, A. D. (2025c). The AI-driven sustainability: transforming supply chains for a greener future. *Issues in Information Systems*, *26*(2), 258-266.
6. Attah, R. U., Garba, B. M. P., Gil-Ozoudeh, I., & Iwuanyanwu, O. (2024). Enhancing supply chain resilience through artificial intelligence: Analyzing problem-solving approaches in logistics management. *International Journal of Management & Entrepreneurship Research, 6*(12). https://doi.org/10.51594/ijmer.v6i12.1745
7. Beheshti, A., Rabhi, F., & Gill, A. (2025). Business transformation through AI-enabled technologies. *Frontiers in Artificial Intelligence*. https://www.frontiersin.org/articles/10.3389/frai.2025.1577540/full
8. Bhat, M. S., & R. D. L. (2023). Leveraging artificial intelligence for enhanced inventory management: A theoretical study. *International Journal of All Research Education and Scientific Methods, 11*(2). https://doi.org/10.56025/ijaresm.2023.1201242071
9. Dempere, J., Modugu, K., Allam, H., & Ramasamy, L. K. (2023). The impact of ChatGPT on higher education. *Frontiers in Education, 8*, 1206936. https://doi.org/10.3389/feduc.2023.1206936

10. Dev, A. N., Pandey, A. K., & Awasthi, M. K. (2025). *Design optimization using artificial intelligence*. Springer. https://books.google.com/books?id=YY5ZEQAAQBAJ
11. Devi, M. K., Dhar, M. M., Unnamalai, K., & Shobana, S. (2023). A human-centered approach to artificial intelligence in the supply chain. In *Data-driven technologies and artificial intelligence in supply chain* (pp. 1-30). CRC Press.
12. Gatto, F., Re, C., & Bovino, A. (2023). Artificial intelligence, ethics, and policymaking in the supply chain: Challenges and opportunities. *Sustainability, 15*(4), 3182. https://doi.org/10.3390/su15043182
13. Ghosh, U. K. (2025). Transformative AI applications in business decision-making. In *Advances in Logistics, Operations, and Management Science Book Series*. https://doi.org/10.4018/979-8-3373-1687-1.ch001
14. Hammad, M. Y., & Rahamaddulla, S. R. (2025). From Industry 4.0 to 5.0: Leveraging AI and IoT for sustainable and human-centric operations. *International Journal of Industrial Engineering and Operations Management*. https://www.emerald.com/ijieom/article/doi/10.1108/IJIEOM-04-2025-0070
15. Harmon, J., Lazaros, E. J., Allam, H., Davison, C. B., & Truell, A. D. (2025). The growing adoption of artificial intelligence (AI) is driving innovation, resulting in enhanced competitiveness. *Issues in Information Systems, 26*(3), 285–290. https://www.iacis.org/iis/2025/3_iis_2025_285-290.pdf
16. Haseeb, M., Hussain, H. I., Kot, S., & Jermsittiparsert, K. (2020). Impact of industry 4.0 on organizational performance: Evidence from Malaysian manufacturing. *Journal of Business Economics and Management, 21*(1), 63–85. https://journals.vgtu.lt/index.php/JBEM/article/view/11389
17. 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
18. Jain, S., Kaushik, K., & Kumar, A. (2025). *Blockchain-assisted technologies for sustainable healthcare system*. Springer. https://link.springer.com/content/pdf/10.1007/978-981-96-3928-1.pdf
19. Jarrahi, M. H., Askay, D., Eshraghi, A., & Smith, P. (2023). Artificial intelligence and knowledge management: A partnership between human and AI. Business Horizons, 66(1), 87-99.
20. Kandhare, P., Kurlekar, M., & Deshpande, T. (2025). A review on revolutionizing healthcare technologies with AI and ML applications in pharmaceutical sciences. *MDPI*. https://www.mdpi.com/2813-2998/4/1/9
21. Karieren, O., Olaniyi, R., Olugbile, H., & Okwuobi, O. (2025). *The role of artificial intelligence in networking: A review. GMJSD – Global Management Journal for Social Development.* https://gmjsd.org/journal/index.php/gmjsd/article/view/75
22. Kennedy, G. W., Ikpe, S. A., Nassa, V. K., Prajapati, T., Dhabliya, D., & Dari, S. S. (2024). *From tradition to technology*. https://doi.org/10.4018/979-8-3693-1347-3.ch007
23. Khan, A., Jhanjhi, N. Z., Ray, S. K., Amsaad, F., & Sujatha, R. (2024). Ethical and social implications of Industry 4.0 in SCM. https://doi.org/10.4018/979-8-3693-1363-3.ch009
24. Khan, M. R. I., Barua, A., Karim, F., & Das, N. (2025). Artificial intelligence and business analytics: Driving efficiency in digital supply chain management. https://doi.org/10.38124/ijisrt/25jun1161
25. L. Bhuvaneswari. (2025). Artificial intelligence in supply chain management: A strategic tool for efficiency. *European Economics Letters, 15*(2). https://doi.org/10.52783/eel.v15i2.3350
26. Mandavilli, V. K. C. (2025). The transformative power of SAP AI across industries: A technical overview. *Journal of Computer Science and Technology Studies*. https://al-kindipublishers.org/index.php/jcsts/article/view/9525
27. Michael, O. (2025). *Maximising the potentials of small and medium scale business enterprises in developing nations through the use of artificial intelligence*. In *The Future of Small Business in Industry 5.0*. IGI Global. https://www.igi-global.com/chapter/maximising-the-potentials-of-small-and-medium-scale-business-enterprises-in-developing-nations-through-the-use-of-artificial-intelligence/366173
28. Misuraca, G., van Noordt, C., & Boukli, A. (2020). AI watch: AI ethical and societal impact assessment. *Publications Office of the European Union*. https://publications.jrc.ec.europa.eu/repository/handle/JRC119974

29. Mishra, S. R., Dev, A. N., Pandey, A. K., & Awasthi, M. K. (2025). *Impact of digital transformation on business growth and performance*. Google Books. https://books.google.com/books?id=xldSEQAAQBAJ
30. Nathany, D. (2022). Artificial intelligence in supply chain: A comprehensive analysis of applications, impacts, and future directions. *Indian Scientific Journal of Research in Engineering and Management*. https://doi.org/10.55041/ijsrem15629
31. Nweje, U., & Taiwo, M. (2025). Leveraging artificial intelligence for predictive supply chain management: Focus on how AI-driven tools are revolutionizing demand forecasting and inventory optimization. *International Journal of Science and Research Archive, 14*(1). https://doi.org/10.30574/ijsra.2025.14.1.0027
32. Nyakuchena, N., & Tsikada, C. (2024). Enhancing supply chain resilience through artificial intelligence and machine learning. In *Advances in Marketing, Customer Relationship Management, and e-Services Book Series*. https://doi.org/10.4018/979-8-3693-6760-5.ch006
33. Olowonigba, J. K. (2025). Exploring AI-driven supply chain automation to enhance global logistics, reduce operational costs, and ensure resilient business continuity. *Engineering Science & Technology Journal*. https://doi.org/10.51594/estj.v6i8.2021
34. Orlando, V., Lazaros, E. J., Davison, C. B., Truell, A. D., & Allam, H. (2024). Artificial intelligence (AI) applications in education: Implications for information systems instructors. *Issues in Information Systems, 25*(1), 469–473. https://www.iacis.org/iis/2024/1_iis_2024_orlando.pdf
35. Pavaloaia, V. D., Martin-Rojas, R., & Sulikowski, P. (2025). Advanced research in technology and information systems. *Electronics, 14*(8), 1677. https://www.mdpi.com/2079-9292/14/8/1677
36. Purwanto, A., et al. (2024). Ethical governance of artificial intelligence in business applications: A theoretical framework. *Journal of Business Ethics and Technology, 14*(2), 99–115.
37. Purwanto, A., Fauzan, M., Widya, T., & Azzaky, N. S. (2024). Ethical implications and challenges of AI implementation in business operations. *Techcomp Innovations, 1*(2). https://doi.org/10.70063/techcompinnovations.v1i2.52
38. Rana, A. K., Sharma, V., Dewan, R., & Rana, S. K. (2025). *Intelligent data-driven techniques for security of digital assets*. Google Books. https://books.google.com/books?id=T8lIEQAAQBAJ
39. Rane, N., Choudhary, S. P., & Rane, J. (2024). Acceptance of artificial intelligence: key factors, challenges, and implementation strategies. Journal of Applied Artificial Intelligence, 5(2), 50-70.
40. Suganya, P., Subramanian, R. S., Ananthi, S., Thilagam, T., Elavarasi, J., Gracious, L. A. A., & Girija, P. (2025). The role of artificial intelligence in transforming supply chain management. In *Advances in Computational Intelligence and Robotics Book Series*. https://doi.org/10.4018/979-8-3373-0923-1.ch011
41. Sundaramurthy, S. K., Ravichandran, N., Inaganti, A. C., & Muppalaneni, R. (2022). AI-powered operational resilience: Building secure, scalable, and intelligent enterprises. Artificial Intelligence and Machine Learning Review, 3(1), 1-10.
42. Suri, G. S., Kaur, G., & Shinde, D. (2024). Beyond boundaries: Exploring the transformative power of AI in pharmaceuticals. *Springer*. https://link.springer.com/article/10.1007/s44163-024-00192-7
43. Sun, W., Chen, K., & Mei, J. (2024). Integrating the resource-based view and dynamic capabilities: a comprehensive framework for sustaining competitive advantage in dynamic markets. EPRA International Journal of Economic and Business Review, 12(9), 1-8.
44. Vijaya, G. S. (2025). The role of artificial intelligence in supply chain optimization. https://doi.org/10.62422/978-81-981590-7-6-002
45. Zong, Z., & Guan, Y. (2025). AI-driven intelligent data analytics and predictive analysis in Industry 4.0: Transforming knowledge, innovation, and efficiency. Journal of the knowledge economy, 16(1), 864-903.