The Strategic Role of Artificial Intelligence: From Crisis to Transformation

Prof. Gajendra Sharma, PhD[1]

Narayan Niroula[2]

School of Engineering, Kathmandu University[1]

School of Management, Kathmandu University[2]

Abstract

The advent of artificial intelligence (AI) constituted skepticism including ethical dilemma, social inclusion, and bias along with its opportunities. While it is crawling to cultivate in its early stages, the stakeholders of all levels have concerns about the impact that it would bring in the future. Simultaneously, organizations and individuals are utilizing it for several automated tasks despite criticism and rumors in online platforms. As a matter of fact, the conventional ICT digitalized modern business. However, there still remained several business bottlenecks due to insufficient automated instrumentation, information overload, and delayed decision-making. The business process was eased but not satisfyingly handled as numbers of employees were still needed to accomplish the performance. There were various sectors which were impacted with suboptimal productivity, and poor services in the absence of right instrumentation. The objective of this study is to explore outweighing factors of AI-driven systems over the prevailing skepticism and rumors. This study's thematic approach to analyses the secondary data. A total of 105 articles were analyzed in this research. This analysis focused on the studies published from 2020 to 2025. The analysis was emphasized around two key areas: contribution and opportunity. This study found that AI powered systems revolutionized the business today in comparison to conventional digitalization. Efficiency in decision making and operation of business have been improved. Chatbot assisted in various communications of business. The AI system saved time on scheduling new candidates in the HR department.

Keywords: AI ethics, artificial intelligence, crisis, digitalization

Introduction

A business crisis refers to a series of interruptive events or a single event that threatens the viabilities, business objectives, reputation and survival of organizations and its stakeholders (Bundy et al., 2017; Coombs, 2007, Pearson & Clair, 1998). These business crises usually

create bottlenecks disrupting the flow of the services leading to damaging profitability. Such crises were faced by conventional business processes which require outright attention from the top-level management. Prior to the advent of Artificial Intelligence (AI) business needs were fulfilled by using computer systems that exploited if-then-else or rules-based algorithms. A study showed that the digitalized process of business sustained more than non-digitalized ones in the Middle East and Central Asia in difficult times (Abidi et al.,2023)). The digitalizing business process helped China to save many SMEs in COVID-19 period (Guo et al.,2020). In this way, businesses utilized conventional computer systems to solve business problems, which was better than manual handling. However, various challenges still existed because the computer system only worked as tools and those tools were handled by humans. In other cases, organizations outsourced other companies such as Monster, Career builder, indeed, Job Get etc. to acquire talent from a large pool of resume data. These jobs were still handled by human employees, not yet automated.

Although Google had started working on deep learning in collaboration with the University of Toronto, the stream of AI boomed after OpenAI's ChatGPT was launched in 2022. It did not only catch business leaders' attention but also it produced believable results to a greater extent with high impact on various sectors of society (de Winter et al.,2025). Since then, business leaders have rapidly turned to AI to automate business. Recent literature confirmed that AI is being massively used in many companies to improve the existing problems. For example, in Australia, only 10% of fortune 500 companies will be left to use AI in the financial sector despite worries (Mitchell, 2025). Recently, AI designers have been advised to work on process intelligence because AI must map with business processes (Reinkemeyer, 2024). In this way, the use of AI became prominent in modern business indicating greater and speedier benefits. It added values to the business by automating the task, decision making, saving cost and time.

Therefore, this research aims to explore how artificial intelligence contributed to modern business and became an asset of the organization. I understand that at the time of writing this article, we are still transitioning towards general AGI. However, the use of AI vigorously reshaped the way business processes are designed in the post-ChatGPT era.

Current Scenario of Artificial Intelligence in Business till 2025
At the time of writing this report, there were 70,000 AI companies though other sources also reported the existence of 90, 904 companies (Alexandrea, 2025; Tilawat, 2025). These authors suggested that the global investment in AI by the end of 2025 would be $244 billion and will sharply rise by 2030. Another source wrote that the AI economy would enlarge up to $ 826.7 billion by the year 2030 (Bradbury, 2025). This indicates the magnitude of exploitation of AI in global business is higher than before. Out of 359 million companies in the world, 78% used AI components partially or fully in their business model (Kumar, 2025). 45 % of companies used AI systems in at least three business functions and 63% companies used two business functions (Alexandrea, 2025b). The most common areas where companies used AI are marketing, sales, and service operations. One of the AI news sites (Sventeckis, 2025) reports that 39 % portfolio companies prioritized AI tools in their company and 30 %

companies used AI for customer-facing chatbots. IT professionals reported that AI helped them to save time in programming the automated task which was previously completed using a batch processing system. Academic research indicated that generative AI is not only automating the existing task but it is also completely transforming the business landscape (Singh et al., 2024).

The past three decades yielded tons of data in the warehouses. In addition to this, social media data was streamed in a high volume and variety. To get insight from this data, the conventional computing system remained slow and did not suffice. AI handled it with accuracy. As a result, the organization turned to AI for its solution. Moreover, reports (AI Index Report, 2025) reveals that AI affordability and accessibility in many ways have increased to the various types of end users.

Literature Review

In 2019, the Organization for Economic Co-operation and Development (OECD) recommended the design and use of artificial intelligence in business in mainly two principal areas: stewardship of AI towards humanity and national policy initiation and internal cooperation (Yeung, 2020). The rationale of this recommendation comes from massively collected data till the recent time. When data became the wealth of organizations, it was inevitable to find some ways to handle that data and extract business insight for decision making. Coincidentally, since ChatGPT's launch, modern business turned toward AI for solutions. And thus, in recent years, business processes have been enabled by AI systems in many organizations. From hiring new employees to final decision making, AI became mandatory assistance in modern business. In this review, research articles have been reviewed summarizing and synthesizing its theme into various 15 business categories.

AI in Customer Services

A quantitative study conducted in Thailand about customer services revealed that the use of AI in chatbots increased customer responsiveness, ease of use, trust and usefulness indicating positive influence towards the use of AI in service delivery (Srisakun & Niyomsamit, 2025). Employment of AI provides improved customer experience in inquiry systems that use AI powered chatbot. AI use can interact with customers when there is no human employee present. Similarly, another study also indicated that adoption of AI in customer service reduced cost by 20 % and customer satisfaction increased due to speed and relevance of the services(Susanto & Khaq, 2024). Voice prompts added additional values onto the business systems.

AI in Sales and Marketing

Content based personalization and customization improved than before in real time (Garcia & Perez, 2024). Personalized services give a customer a preferred feature which makes it comfortable to use in a repetitive manner. In this case customers are engaged in their preferred time, around the clock. Furthermore, live chatbot 24 hours facilitates customer need in time which is a critical factor in sales and marketing (Rane et al.,2024). In this way, AI assisted in customer experience improving relationships with customers. Automation of

such services sets human resources free and gives opportunities to prioritize high-valued customer service (Mayer et al.,2025).

AI in Supply Chain and its Operation

The ERP system complicates when the information system of each layer increases. In supply chain management, manual record keeping, stock take, route management, and real time tracking of logistics are transformed into automation to ease the task when the AI system is adapted. AI system additionally helps inventory management and its key performance indicators (Munoz et al., 2021). For example, in Bangladesh, inventory management has been found to be a key element of the ecosystem of supply chain in SMEs (Alam et al.,2024). Using AI systems amid the ecosystem of supply chain management would ease the task of dynamic route optimization algorithms. One study argued that the Random Forest model provided high performance in relating working components with 94% accuracy with 93% precision (Rahman et al.,2024).

AI in Finance and Accounting

Bookkeeping and documentation of finance and accounting is a complex task. Artificial intelligence contributed to simplify this task, especially in data entry, transaction processing and reconciliation, invoice processing. For example, a study illustrates a big picture of machine learning techniques in business, finance and accounting tasks (Gao et al.,2024). Another study indicated that blockchain technology along with AI systems reduced cost, increased efficiency and allowed real-time reporting (Kanaparthi, 2024;). This study further illustrated that bookkeeping tasks were automated and audit tasks sped up. Another independent study in Thailand advised Robotic Process Automation (RPA) automated various routines taken to improve operational quality and compliance to policies (Thamsermsang & Intalar, 2024).

AI in Business Communication

Untimely business communication has several costs including customer and business loss. Business competition is possible due to timely communication. However, due to market niche and fast generation of data demanded speedier communication to meet business environments. This was not possible by conventional communication systems. AI systems impact business communication to interact with customers, personalize communication available 24 hours through chat bot and other agentic environments (Balmer et.,2020). AI systems keep track of communication with customers and forecast the future subject of future interaction. A review study in Telecom industries shows that 45 separate studies report the use of AI in communication and thus it has been completely revolutionized by AI systems (Gupta & Goyal, 2024). Internal communication among employees has been simplified by AI systems. A survey conducted with 625 business decision makers about the use of AI systems in communication. This report shows that 42% decision makers reported they already used it and the remaining 29% said that they were testing AI powered communication systems (Cora sanity, 2025).

AI in Search Engine and Optimization Business

 Traditional web search in Google, Yahoo, Alta vista or AOL only indexed the link using their scripting algorithm. Users still had to perform a lot of steps to reach the desired information. With AI powered search engines, this has ended. AI powered communication chats the way human chats. Authors (Chen at al., 2025) argued that AI powered search engines earned media attention more than branded and paid content and advised content creators to optimize their content less, while searching AI systems may drop it. The study in Cornell University indicated that generative search engines preferred content predictable for large language models (LLMs) (Ma et al.,2025). Tech news reports that search engines turn to AI mode to make more interactive users which provides users accurate information in a timely manner with high precision due to interactive prompts (Shittu, 2025).

AI in Podcasting Business

Business podcasting was prepared by human intelligence till the date. With the advent of AI, it has been widely accepted to create and develop podcasts for targeted customers. Doing this, it has not only helped the regular customer, it also helped visually handicapped individuals. Normally, the podcast is embedded at the button of the textual information. A study argued that AI in podcasting helps reach to audience AI powered podcasts adding value in podcasting work for medical and education purposes with accurate reference; therefore, it has become an alternative to traditional way of podcasting (Desmedt et al.,2025).

AI in Medical Business

Medical Business can be broadly categorized into three sections: diagnosis, medicine and surgical. AI, especially machine learning and deep learning, became prevalent in all these categories. AI systems are being used in MRI, CT scanning and X-rays in diagnosis to identify disease with a faster result, handling large volume and accuracy (Kitsios et al., 2023). Administrative, automation, scheduling, handling insurance claims are already common in all businesses and therefore, various medical fields are using it. A study conducted to compare unimodal AI and multimodal AI reported that the latter outperformed the former by 6.2% in AUC (Schouten et al.,2025). A systematic review conducted using PRISMA guidelines about the surgical validation recommended use of AI in preoperative assessment (Kenig et al.,2024). Similarly, another study presented a synthesis of their review stating that AI powered robotic machines help mapping tumors precisely during surgery while still preserving the health tissues of the patients (Leszczynska et al.,2025). In a study conducted in the field of radiology with 889 pulmonary nodules, human radiologists detected only 385(43.31%) but AI powered systems detected 881(99.01%) with $p < 0.001$(Yang et al.,2025).

AI in Music Industry

The music industry has not been untouched in the use of AI. it has massively adopted the use of AI in composing, arranging and producing music. Music tokenization has been facilitated by AI powered systems (Fradet et al.,2023). There are a number of python packages to

handle various works of music. For example, MiDIToK is a Python package for MIDI file tokenization. Google, Spotify, Apple Music customize individual listeners' preferences using AI systems which recommend the best music based on listener preferences (Schedl, et al.,2018; Ricci et.,2021).

AI in Economy
AI economy refers to a set of economic activities transformed by AI powered systems using hardware, software and services. At present such increased economics were based on the developed country. In China there are 4400 AI organizations and 500 billion Yuan (Liu, 2024). China and the USA are spending more and harvesting more on AI systems in automation, manufacturing and smart cities, surveillance and infrastructure (Chopra et al.,2024). The news reports stated that China could get 26% of GDP boost by 2030. World Economic Forum (Bednarski, 2025) forecast that 78 million AI jobs would be created by 2030.

AI in Language learning and Testing Business
The language learning and testing business widely adopts AI power systems especially in listening, reading and writing, vocabulary building and error analysis and correction (Almehmadi, 2025). British Council (2025) adopts AI in reading, writing and speaking in their test. Research conducted by Syuhra et al., (2025) argued that personalized learning can be offered to the learning along with grammar learning and organizations like ELSA Speak, Duolingo and even ChatGPT provides language learning facilities. Online language learning size is projected to reach USD 54833.2 million by 2030 according to Grandview Report (2024).

AI in Sentiment Analysis Business
Sentiment analysis refers to an opinion mining sub-branch of natural language processing (NLP) and computation linguistics to understand emotion, subjectivity, polarity of expression from various sources such as Twitter, Facebook, LinkedIn etc. (Liu, 2015;Bhadane et al.,2015;Taboada et al.,2011). Sentiment analysis can be performed in two ways: one by human and next by machine learning algorithm. Some studies reported that machine learning systems can handle large amounts of data from streaming sources (Dhaoui, et al.,2017; Batista et al.,2018).

AI in Human Resource
AI systems are used in human resource management from job posting, resume collection to hiring decision making (Cohen et all., 2025). Training and development, performance measuring, appraisal, employee relation, workforce planning, compensation and benefits, employee turnover forecasting, and their wellbeing measurement are the core area where AI systems are implemented (Afzal et al.,2023; Chowdhury et al.,2023; Qamar et al.,2021).

AI in Fraud Detection and Reporting

Fraud refers to unacceptable activities devised from human ingenuity. The term is generic and it has other types of fraudulent activities. The majority of the fraudulent action happens to be financial related, and therefore; financial institutions define it as transportation of money not defined by government, misinterpretation of act or knowledge, deception, forgery, and any kind of manipulation (Akers & Gissel, 2006) despite social fraud exists. Fraud is an intrinsically complex phenomenon. AI systems are better than human systems to identify fraud. It is important to explore the patterns and modes of fraud in the large data sets. Studies have identified that AI algorithm such as Neural Networks (NN), Convolution Neural Networks (CNN), Recurrent Neural Network (RNN), Long Short-Term Memory, and Auto encoders resulted in high level of precision in detecting fraud (Mohan et al.,2024; Chotrani et al.,2024).

AI in Big Data and Predictive Analysis

AI took the place of all previously used computing instrumentation and became a transformative force in processing Big Data and predictive analytics despite big data's abstraction still increasing (Madhavaramet al.,2024). Recent studies highlighted the considerable advancements of Ai in Big Data and predictive analytics domain. A recent study conducted in the field of contribution of AI in Big Data revealed that AI technologies including machine learning and deep learning underscore huge business revolutions across domains such as health care, autonomous decision-making and finance (Feng et al.,2024).

AI in Military Business

Increasing use of AI travelled and reached the military domain as well. Various studies indicated that AI related technologies have been used in the military including object detection and cybersecurity domain (Rashin et al.,2023; Gaire,2023;). Locating enemy locations using deep learning especially, using random forest algorithms and ANN () made easier by AI (Baeza et al.,2025). Military planning, calculating and mitigating risk was found accurate due to the use of AI (Lewis & Vavrichek, 2024).

Table 1: Result Summary Tabular Form

SN	Business Domain	AI Use in Business	Contribution Area	Reference
1	Customer services	Chaptbots, Scheduling	Customer responsiveness increase, Ease of use, Usefulness, cost reduction by 20%, Improved satisfaction	Srisakun & Niyomsamit, 2025; Susanto & Khaq, 2024; Zaheer et al., 2025
2	Sales and marketing	Customization and personalization, Chatbot, Social media automation	Improved customer experience on 24/7, Operational efficiency, data-driven marketing	Garcia & Perez, 2024; Rane et al., 2024; Mayer et al., 2025; Bisaria et al., 2025
3	Supply chain and operation	Inventory and logistics management, ERP	Automated stock management, route optimization, Enhanced KPIs, Accuracy in performance prediction	Munoz et al., 2021; Alam et al., 2024; Rahman et al., 2024
4	Finance and Accounting	Machine learning, Blockchain, Robotic process automation (RPA)	Automated bookkeeping, speedier audits, expense categorization, Optimized forecasting	Gao et al., 2024; Kanaparthi, 2024; Thamsermsang & Intalar, 2024; George et al., 2025; Wasserbacher & Spindler, 2022
5	Business communication	Chatbots and AI assistance	Uninterrupted customer interaction 24/7, easy internal communication among employees, Teaching-Learning support	Balmer et al., 2020; Gupta & Goyal, 2024; Corasanity, 2025; Kuhail et al., 2023; Emdad et al., 2024
6	Search Engine Optimization	AI driven search	Prompt-driven queries, Semantic search, accurate content ranking	Chen et al., 2025; Ma et al., 2025; Shittu, 2025; Zhao et al., 2025; Veluru et al., 2025; Ahluwalia et al., 2024
7	Medical business	Diagnostics use, Surgery, Administration	Quick and more accurate diagnostics, Precision in surgery, workflow automation	Kitsios et al., 2023; Schouten et al., 2025; Kenig et al., 2024; Leszczynska et al., 2025; Yang et al., 2025; Vara et al., 2024
8	Music industry	Music composition and recommendation	Personalized music to audience, MIDI file type handling, Music generation using deep learning	Fradet et al., 2023; Schedl et al., 2018; Ricci et al., 2021; Briot et al., 2017; Herremans et al., 2017
9	Economy	AI based economic activities	Automation in business, Smart cities development, GDP growth, AI employment increase	Liu, 2024; Chopra et al., 2024; Bednarski, 2025
10	Fraud detection	Machine learning, Neural networks	Complex fraud detection, real time prediction	Mohan et al., 2024; Chotrani et al., 2024; Wahid & Hassini, 2024
11	Big data and Predictive Analytics	Machine learning, Deep learning, Long-short term memory (LSTM)	Large data sets handling, improved and accurate decision making, predicting the trends and preemptive estimates	Madhavaram et al., 2024; Feng et al., 2024; Menges & Rasheed, 2024

Conclusion

This study explored how Artificial Intelligence (AI) contributed to a wide variety of modern businesses. A comprehensive study shows that AI outweighs scholars' skepticism. Soon, the AI economy will be sharply boosted and new employment opportunities will be created for digital generation all over the world. As there exist various inherent blackbox systems, it is natural that skepticism remains valid, pointing to the issues of bias, social inclusion, ethics, threat to employment, and implementational challenges. Despite this skepticism, the comprehensive analysis of articles published about opportunities that AI offers to humankind, AI systems outweigh the drawbacks when implemented responsibly despite rumors of skepticism.

The OECD (Organization for Economic Co-Operation and Development) website mentioned the five AI principal initiatives. This indicates that countries are responsibly working towards the improvement to overcome the shortcomings. And therefore, it is believed that the issues will be overcome in course of time.

The most prominent and quantifiable benefit of AI adoption has been realized by business organizations in terms of its operational efficiency. Accuracy and speed issues have been improved by the research and development. Had it not been beneficial for modern business, the government and large corporations would not have spent millions of dollars on it. While criticism pertaining to AI, its brighter sides outweigh the darker sides.

Authors' ORCID iDs

Gajendra Sharma: https://orcid.org/0000-0001-5695-8611

Narayan Niroula: https://orcid.org/0009-0009-1187-9894

References

Abidi, N., El Herradi, M., & Sakha, S. (2023). Digitalization and resilience during the COVID-19 pandemic. *Telecommunications Policy*, *47*(4), 102522.

Akers, M. D., & Gissel, J. L. (2006). What is fraud and who is responsible?. *Journal of Forensic Accounting*.

Alam, M. K., Thakur, O. A., & Islam, F. T. (2024). Inventory management systems of small and medium enterprises in Bangladesh. *Rajagiri management journal*, *18*(1), 8-19.

Alexandrea, J. (2025, May 6). *How many companies use AI in 2025? Key statistics and industry trends* (Hostinger). [128–187]

Ali, A., Abd Razak, S., Othman, S. H., Eisa, T. A. E., Al-Dhaqm, A., Nasser, M., ... & Saif, A. (2022). Financial fraud detection based on machine learning: a systematic literature review. *Applied Sciences*, *12*(19), 9637.

Balmer, R. E., Levin, S. L., & Schmidt, S. (2020). Artificial Intelligence Applications in Telecommunications and other network industries. *Telecommunications Policy*, *44*(6), 101977.

Batista, H. R., Junior, J. C. G., Miranda, M. D., Martiniano, A., Sassi, R. J., & Gaspar, M. A. (2018). "If We Only Knew How You Feel"—A Comparative Study of Automated vs. Manual Classification of Opinions of Customers on Digital Media. *Social Networking*, *8*(1), 74-83.

Bednarski, R. (2025, June 8). Global AI Adoption Trends (2025–2030). Great Report. https://great.report/global-ai-adoption-trends-2025-2030/?utm_source=chatgpt.com

Bradbury, T. (2025, February 6). *77 AI Statistics & Trends to Quote in 2025 + Own Survey Results*. Planable. https://planable.io/blog/ai-statistics/?utm_source=chatgpt.com

Bundy, J., Pfarrer, M. D., Short, C. E., & Coombs, W. T. (2017). Crises and crisis management: Integration, interpretation, and research development. *Journal of management*, *43*(6), 1661-1692.

Chen, M., Wang, X., Chen, K., & Koudas, N. (2025). Generative Engine Optimization: How to Dominate AI Search. *arXiv preprint arXiv:2509.08919*.

Chopra, C., Ankit Kasare, Gupta, P., & World Economic Forum. (2024, May 24). How venture capital is investing in AI in these 5 top economies. World Economic Forum. https://www.weforum.org/stories/2024/05/these-5-countries-are-leading-the-global-ai-race-heres-how-theyre-doing-it

Chotrani, Aakash & Najana, Madhavi & Ranjan, Piyush. (2024). Ai in Fraud Detection: Evaluating the Efficacy of Artificial Intelligence in Preventing Financial Misconduct. Journal of Electrical Systems. 20. 1332-1338. 10.52783/jes.1508.

Coombs, W. T. (2007). *Ongoing crisis communication: Planning, managing, and responding*. Sage.

Corasaniti, M. (2025, January 13). *The state of AI in business communications: Key insights from RingCentral's 2025 trends report*. RingCentral Blog. https://www.ringcentral.com/us/en/blog/the-state-of-ai-in-business-communications-key-insights-from-ringcentrals-2025-trends-report/

de Winter, J., Hancock, P. A., & Eisma, Y. B. (2025). ChatGPT and academic work: new psychological phenomena. *AI & SOCIETY*, 1-14.

Feng, P., Bi, Z., Wen, Y., Pan, X., Peng, B., Liu, M., ... & Wang, T. (2024). Deep Learning and Machine Learning, Advancing Big Data Analytics and Management: Unveiling AI's Potential Through Tools, Techniques, and Applications. *arXiv preprint arXiv:2410.01268*.

Fradet, N., Briot, J. P., Chhel, F., Seghrouchni, A. E. F., & Gutowski, N. (2023). MidiTok: A python package for MIDI file tokenization. *arXiv preprint arXiv:2310.17202*.

Gao, H., Kou, G., Liang, H., Zhang, H., Chao, X., Li, C. C., & Dong, Y. (2024). Machine learning in business and finance: a literature review and research opportunities. *Financial Innovation*, *10*(1), 86.

Guo, H., Yang, Z., Huang, R., & Guo, A. (2020). The digitalization and public crisis responses of small and medium enterprises: Implications from a COVID-19 survey. *Frontiers of Business Research in China*, *14*(1), 19.

Gupta, M. C. & Goyal, R. . (2024). A Systematic Review on Application of AI in Telecom Industry. *International Journal of Intelligent Systems and Applications in Engineering*, *12*(19s), 654–666. Retrieved from https://ijisae.org/index.php/IJISAE/article/view/5110

Kanaparthi, V. (2024, January). Exploring the impact of blockchain, AI, and ML on financial accounting efficiency and transformation. In the International *Conference on Multi-Strategy Learning Environment* (pp. 353-370). Singapore: Springer Nature Singapore.

Kenig, N., Monton Echeverria, J., & Muntaner Vives, A. (2024). Artificial intelligence in surgery: A systematic review of use and validation. *Journal of clinical medicine*, *13*(23), 7108.

Kitsios, F., Kamariotou, M., Syngelakis, A. I., & Talias, M. A. (2023). Recent advances of artificial intelligence in healthcare: a systematic literature review. *Applied sciences*, *13*(13), 7479.

Kumar, N. (2025, April 16). *How Many Companies Use AI (2023-24 Data)*. Demandsage. https://www.demandsage.com/companies-using-ai/

Kumar, N. (2025, April 16). *How Many Companies Use AI In 2025? (Global Data)* (DemandSage). [97–127]

Leszczyńska, A., Obuchowicz, R., Strzelecki, M., & Seweryn, M. (2025). The Integration of Artificial Intelligence into Robotic Cancer Surgery: A Systematic Review. *Journal of Clinical Medicine*, *14*(17), 6181.

Liu, D. (2024). The Impact of Artificial Intelligence on Economic Growth—An Industrial Structure Based Perspective. *Advances in Economics, Management and Political Sciences*, *123*(1), 192-199.

Ma, L., Qin, J., Xu, X., & Tan, Y. (2025). When Content is Goliath and Algorithm is David: The Style and Semantic Effects of Generative Search Engine. *arXiv preprint arXiv:2509.14436*.

Madanchian, M. (2024). The impact of artificial intelligence marketing on e-commerce sales. *Systems*, *12*(10), 429.

Madhavaram, Chandrakanth & Galla, Eswar Prasad & Gollangi, Hemanth Kumar & kuraku, chandrababu & Sunkara, Janardhana Rao. (2024). AI-DRIVEN DATA ENGINEERING TRANSFORMING BIG DATA INTO ACTIONABLE INSIGHT. 10.5281/zenodo.13743094.

Mayer, H., Yee, L., Chui, M., & Roberts, R. (2025). Superagency in the Workplace. *Empowering people to unlock AI's full potential. McKinsey & Company. AI in the workplace: A report for*.

Mitchell, S. (2025, March 17). AI adoption grows among finance leaders despite worries. CFOtech Australia. https://cfotech.com.au/story/ai-adoption-grows-among-finance-leaders-despite-worries?utm_source=chatgpt.com

Mohan, R., Boopathi, M., Ranjan, P., Najana, M., Chaudhary, P. K., & Chotrani, A. K. (2024). Ai in fraud detection: evaluating the efficacy of artificial intelligence in preventing financial misconduct. *Journal of Electrical Systems*, *20*(3s).

Muñoz Macas, C. V., Espinoza Aguirre, J. A., Arcentales Carrion, R. N., & Peña Ortega, M. P. (2021). Inventory management for retail companies: A literature review and current trends.

OECD. (2024). *AI principles*. OECD. https://www.oecd.org/en/topics/sub-issues/ai-principles.html

Ojika, F. U., Owobu, W. O., Abieba, O. A., Esan, O. J., Ubamadu, B. C., & Daraojimba, A. I. (2022). The Role of Artificial Intelligence in Business Process Automation: A Model for Reducing Operational Costs and Enhancing Efficiency.

Online Language Learning Market Size | Industry Report 2030. (2024). Grandviewresearch.com. https://www.grandviewresearch.com/industry-analysis/online-language-learning-market-report

Pearson, C. M., & Clair, J. A. (1998). Reframing crisis management. *Academy of management review*, *23*(1), 59-76.

Prentice, C., & Nguyen, M. (2020). Engaging and retaining customers with AI and employee service. *Journal of retailing and consumer services*, *56*, 102186.

Qamar, Y., Agrawal, R. K., Samad, T. A., & Chiappetta Jabbour, C. J. (2021). When technology meets people: the interplay of artificial intelligence and human resource management. *Journal of Enterprise Information Management*, *34*(5), 1339-1370.

Rahman, M. A., Modak, C., Mozumder, M. A. S., Miah, M. N. I., Hasan, M., Sweet, M. M. R., ... & Alam, M. S. (2024). Advancements in retail price optimization: Leveraging machine learning models for profitability and competitiveness. *Journal of Business and Management Studies*, *6*(3), 103.

Rana, M. S., Longa, F. E. A., Riaz, A., & Alamu, O. S. (2025). Artificial Intelligence in Early Diagnosis of Neurodegenerative Disorders: A Systematic Review of Clinical Applications and Challenges. *International Journal of Medical and Health Research*, *3*(3), 81-91.

Reinkemeyer, L. (Ed.). (2024). *Process Intelligence in Action: Taking Process Mining to the Next Level*. Springer Nature.

Ricci, F., Rokach, L., & Shapira, B. (2021). Recommender systems: Techniques, applications, and challenges. *Recommender systems handbook*, 1-35.

Schedl, M., Zamani, H., Chen, C. W., Deldjoo, Y., & Elahi, M. (2018). Current challenges and visions in music recommender systems research. *International Journal of Multimedia Information Retrieval*, *7*(2), 95-116.

Schouten, D., Nicoletti, G., Dille, B., Chia, C., Vendittelli, P., Schuurmans, M., ... & Khalili, N. (2025). Navigating the landscape of multimodal AI in medicine: a scoping review on technical challenges and clinical applications. *Medical Image Analysis*, 103621.

Secinaro, S., Calandra, D., Secinaro, A., Muthurangu, V., & Biancone, P. (2021). The role of artificial intelligence in healthcare: a structured literature review. *BMC medical informatics and decision making*, *21*(1), 125.

Shittu, E. (2025). *Google expands Gemini model, Search as AI rivals encroach*. Search Enterprise AI; TechTarget. https://www.techtarget.com/searchenterpriseai/news/366624201/Google-expands-Gemini-model-Search-as-AI-rivals-encroach?utm_source=chatgpt.com

Singh, N., Chaudhary, V., Singh, N., Soni, N., & Kapoor, A. (2024). Transforming business with generative ai: Research, innovation, market deployment and future shifts in business models. *arXiv preprint arXiv:2411.14437*.

Srisakun, C., & Niyomsamit, P. (2025). Factors Influencing the Impact of Chatbots and AI in Service Delivery on Customer Satisfaction in Bangkok, Thailand. *Journal of Design, Management and Technology Innovation*, *2*(1).

Susanto, E., & Khaq, Z. D. (2024). Enhancing customer service efficiency in start-ups with ai: A focus on personalization and cost reduction. *Journal of Management and Informatics*, *3*(2), 267-281.

Sventeckis, A. (2025). *AI Stats Every Startup Should Know* (HubSpot for Startups). [55–96]

Thamsermsang, J., & Intalar, N. (2024). *Robotic process automation adoption in accounting firms in Thailand* (Doctoral dissertation, Thammasat University).

The 2025 AI Index Report. (2025). Stanford.edu. https://hai.stanford.edu/ai-index/2025-ai-index-report?utm_source=chatgpt.com

Tilawat, M. (2025, August 28). *AI Companies 2025: Who's Winning the Global Race?* (AllAboutAI.com). [1–54]

Wilson, H. J., Daugherty, P., & Bianzino, N. (2017). The jobs that artificial intelligence will create. *MIT Sloan Management Review*, *58*(4), 14.

Yang, Y., Wang, P., Yu, C., Zhu, J., & Sheng, J. (2025). Application of artificial intelligence medical imaging aided diagnosis system in the diagnosis of pulmonary nodules. *BMC Medical Informatics and Decision Making*, *25*(1), 185.

Yeung, K. (2020). Recommendation of the council on artificial intelligence (OECD). *International legal materials*, *59*(1), 27-34.