AI Tech International Journal, **ISSN: 3079-4749**
Vol. 4, No. 2, July-December, 2026,
Journal homepage: https://techaijournal.com

AI-Driven Decision Making: Transforming Modern Business Management

Amy J. Ko

Professor, Paul G. Allen School of Computer Science and Engineering, University of Washington, United States

Article Info

Article history:
Received June 25, 2026
Revised July 06, 2026
Accepted July 16, 2026
Published July 30, 2026

Keywords: Artificial Intelligence (AI); Data-Driven Decision Making; Business Management; Predictive Analytics; Organizational Performance.

ABSTRACT

Artificial Intelligence (AI) is rapidly transforming modern business management by enabling organizations to make faster, smarter, and more accurate decisions through data-driven insights and intelligent automation. In an increasingly competitive and dynamic business environment, traditional decision-making approaches are often insufficient to manage complex operations, predict market trends, understand consumer behaviour, and respond to emerging challenges. AI-driven decision-making provides innovative solutions by integrating machine learning, predictive analytics, natural language processing, deep learning, and big data technologies into organizational management processes. These technologies enable businesses to analyze large volumes of structured and unstructured data, identify hidden patterns, forecast future outcomes, and recommend optimal strategies.

This study examines the role of AI-driven decision-making in transforming modern business management across key functional areas, including strategic planning, financial management, human resource management, marketing, supply chain optimization, customer relationship management, and operational efficiency. It explores how AI-based systems support managerial decision-making through real-time analytics, automated recommendations, risk assessment, demand forecasting, and intelligent resource allocation. Furthermore, the study investigates the potential benefits of AI adoption, such as improved productivity, cost reduction, enhanced organizational performance, competitive advantage, and better customer experiences. Particular attention is given to emerging challenges, including data privacy, algorithmic bias, cybersecurity threats, implementation costs, lack of transparency, and the growing dependence on automated systems.

This is an open access article under the CC BY-SA license.

INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most transformative technologies in modern business management, fundamentally changing how organizations operate, compete, and make strategic decisions. In the contemporary digital economy, businesses face increasing challenges associated with market uncertainty, changing customer expectations, global competition, operational complexity, and rapid technological advancements. Traditional decision-making methods, which primarily depend on managerial experience, historical information, and manual analysis, are often inadequate for addressing these complex business challenges. AI-driven decision-making offers an advanced approach by combining computational intelligence, machine learning algorithms, predictive analytics, and large-scale data processing to support informed, efficient, and timely managerial decisions.

The integration of AI into business management enables organizations to convert large volumes of data into meaningful insights. AI-based systems can identify patterns, recognize trends, predict future market conditions, evaluate business risks, and generate recommendations that improve organizational performance. Technologies such as Machine Learning (ML), Deep Learning (DL), Natural Language Processing (NLP), Generative AI, and intelligent automation are increasingly being adopted across various business functions. These technologies help managers make evidence-based decisions while reducing operational inefficiencies and minimizing human errors.

In strategic management, AI supports business leaders in identifying growth opportunities, evaluating competitive environments, forecasting market demand, and developing long-term organizational strategies. In financial management, AI-based analytical systems assist in fraud detection, credit risk assessment, investment forecasting, budgeting, and financial planning. Similarly, in marketing and customer relationship management, AI enables personalized recommendations, customer segmentation, sentiment analysis, and predictive understanding of consumer behaviour. Within supply chain management, intelligent algorithms optimize inventory levels, transportation routes, procurement activities, and demand forecasting. These applications demonstrate that AI is no longer limited to technical departments but has become an important component of organization-wide managerial decision-making.

Another significant contribution of AI-driven decision-making is its ability to improve operational efficiency and organizational productivity. Automated decision-support systems can process information at a speed and scale that would be difficult to achieve through conventional human analysis. Real-time data monitoring allows organizations to identify operational problems, respond to unexpected situations, and adjust business strategies more effectively. Furthermore, AI-powered dashboards and business intelligence platforms provide managers with accessible information that supports performance evaluation and resource allocation.

Despite its considerable advantages, the adoption of AI in business management involves several challenges. Data privacy, cybersecurity, algorithmic bias, lack of transparency, high implementation costs, and inadequate technological infrastructure can restrict successful implementation. Moreover, excessive dependence on automated recommendations may reduce managerial judgment and create accountability concerns. Therefore, organizations must establish appropriate AI governance frameworks that ensure transparency, fairness, security, and responsible technology usage. Human supervision remains essential, particularly in decisions involving ethical considerations, employee welfare, customer relationships, and long-term organizational objectives.

The concept of human-AI collaboration is particularly important for the future of business management. Rather than completely replacing human decision-makers, AI should function as an intelligent support system that enhances managerial capabilities. While AI can provide analytical accuracy, predictive insights, and computational efficiency, human managers contribute creativity, emotional intelligence, ethical reasoning, contextual understanding, and strategic leadership. Combining these capabilities can create a balanced decision-making environment that supports innovation and sustainable organizational development.

The present study, titled **"AI-Driven Decision Making: Transforming Modern Business Management,"** examines the growing influence of artificial intelligence on managerial decision-making processes and organizational performance. It explores the applications of AI across major business functions, evaluates its potential benefits and limitations, and investigates the technological and organizational factors influencing successful AI adoption. The study also highlights the importance of ethical AI implementation, effective data governance, and human oversight in developing reliable decision-support systems.

Ultimately, AI-driven decision-making represents a fundamental shift from traditional experience-based management toward intelligent, predictive, and data-oriented business strategies. Organizations that strategically integrate AI into their management systems can strengthen their decision-making capabilities, improve operational performance, enhance customer satisfaction, and achieve sustainable competitive advantages in an increasingly technology-driven global business environment.

PROPOSED MODELS AND METHODOLOGIES

2.1 Proposed Research Framework

The proposed research framework examines how Artificial Intelligence (AI) technologies influence managerial decision-making and transform modern business management. The framework integrates machine learning, predictive analytics, big data analytics, natural language processing, and intelligent automation to improve the quality, speed, and accuracy of business decisions.

The proposed model follows a systematic approach in which organizational data are collected, processed, analyzed, and converted into actionable managerial insights. These insights support strategic planning, financial forecasting, marketing decisions, human resource management, supply chain optimization, and operational control.

The framework consists of five major stages:

1. **Data Collection:** Gathering information from internal business databases, customer records, financial systems, market reports, and external data sources.
2. **Data Processing:** Cleaning, transforming, integrating, and organizing collected data to ensure accuracy and consistency.
3. **AI-Based Analysis:** Applying machine learning, deep learning, predictive analytics, and NLP techniques to identify patterns and generate predictions.
4. **Decision Recommendation:** Generating intelligent recommendations, alternative strategies, and risk assessments for managerial consideration.
5. **Performance Evaluation:** Measuring decision accuracy, operational efficiency, cost reduction, productivity, and overall organizational performance.

2.2 Machine Learning-Based Decision Support Model

The Machine Learning (ML)-based decision support model uses historical and real-time business data to identify patterns and predict future outcomes. It enables managers to make informed decisions based on statistical relationships and continuously improving algorithms.

The proposed model incorporates the following techniques:

- **Decision Trees:** Support managerial decisions through structured classification and rule-based analysis.
- **Random Forest:** Improves prediction reliability by combining multiple decision trees.
- **Support Vector Machines (SVM):** Classifies business data for customer segmentation, risk identification, and performance evaluation.
- **Gradient Boosting:** Improves predictive performance in complex business forecasting problems.
- **Clustering Algorithms:** Identify customer groups, market segments, and organizational performance patterns.

This model can be applied to sales forecasting, customer retention, credit risk assessment, employee performance analysis, and demand prediction.

2.3 Predictive Analytics Model for Strategic Management

Predictive analytics enables organizations to estimate future business outcomes using historical information, statistical models, and AI algorithms. The proposed model supports strategic planning by identifying potential opportunities, market fluctuations, operational risks, and future customer requirements.

The methodology includes:

- Collecting historical sales, financial, and market data.
- Identifying relevant business performance indicators.
- Applying regression and time-series forecasting techniques.
- Training predictive models using historical datasets.
- Generating future business predictions.
- Evaluating predictions against actual organizational outcomes.

The model helps business leaders develop proactive strategies, reduce uncertainty, and allocate resources more efficiently.

2.4 Big Data Analytics-Based Management Model

Modern businesses generate enormous volumes of data through digital transactions, online platforms, customer interactions, enterprise applications, and connected devices. The proposed Big Data Analytics model processes these datasets to support comprehensive managerial decision-making.

The model incorporates three major analytical dimensions:

- **Descriptive Analytics:** Explains what has happened in business operations.
- **Predictive Analytics:** Estimates what is likely to happen in the future.
- **Prescriptive Analytics:** Recommends appropriate actions to achieve desired business objectives.

By combining these analytical approaches, organizations can improve financial planning, operational monitoring, customer relationship management, and strategic resource allocation.

2.5 Natural Language Processing-Based Decision Model

Natural Language Processing (NLP) allows AI systems to understand, interpret, and analyze human language. The proposed NLP-based model supports managerial decision-making by extracting meaningful information from customer reviews, employee feedback, business reports, emails, market research, and social media discussions.

The model uses:
- Sentiment analysis to understand customer satisfaction.
- Text classification to categorize business-related information.
- Named Entity Recognition (NER) to identify relevant organizations, products, and market entities.
- Topic modelling to discover emerging customer interests and business trends.
- Generative AI to summarize reports and support managerial recommendations.

This model enables managers to understand customer expectations, identify service-related problems, and improve organizational communication.

2.6 Intelligent Automation and Optimization Model
The proposed intelligent automation model integrates AI algorithms with Robotic Process Automation (RPA) to automate repetitive business activities and optimize operational processes.

Its major applications include:
- Automated financial reporting and transaction monitoring.
- Intelligent inventory and supply chain management.
- Automated customer support and query management.
- Employee scheduling and workforce allocation.
- Procurement planning and operational resource optimization.

Optimization algorithms can also be applied to identify the most effective allocation of organizational resources while minimizing operational costs and maximizing productivity.

2.7 Human-AI Collaborative Decision-Making Model
The human-AI collaborative model emphasizes the integration of machine intelligence with managerial experience and professional judgment. Instead of completely replacing human decision-makers, AI systems provide analytical insights, predictions, and recommendations that managers can evaluate before implementing decisions.

The model follows three major components:
1. **AI Intelligence:** Processes business information and generates analytical recommendations.
2. **Human Evaluation:** Managers examine recommendations based on organizational objectives, ethical considerations, and practical circumstances.
3. **Decision Implementation:** Approved decisions are implemented and monitored for effectiveness.

This approach improves accountability, reduces the risks associated with automated decision-making, and supports responsible AI adoption.

2.8 Proposed Research Methodology
The study adopts a conceptual and analytical research methodology to examine the role of AI-driven decision-making in modern business management.

Research component	Proposed methodology
Research design	Descriptive and analytical research
Research approach	Quantitative and qualitative
Data sources	Primary and secondary data
Data collection	Surveys, interviews, reports, and published literature
AI techniques	ML, DL, NLP, predictive analytics
Analytical tools	Statistical analysis and business intelligence
Evaluation criteria	Accuracy, efficiency, productivity, and cost reduction
Research objective	Evaluating AI's influence on managerial decisions

2.9 Proposed Mathematical Model
The effectiveness of AI-driven decision-making can be represented through a conceptual performance model:
$$ DM = f(AI, DA, PQ, HC, AG) $$
Where:
- DM = Decision-Making Effectiveness

- \(AI\) = Artificial Intelligence Capability
- \(DA\) = Data Analytics Capability
- \(PQ\) = Data Processing and Quality
- \(HC\) = Human-AI Collaboration
- \(AG\) = AI Governance and Ethical Framework

A simplified mathematical representation is:
\[DM = \beta_0+\beta_1 AI+\beta_2 DA+\beta_3 PQ +\beta_4 HC+\beta_5 AG+\epsilon \]
Here, \(\beta_0\) represents the constant, \(\beta_1\) to \(\beta_5\) represent the coefficients of the independent variables, and \(\epsilon\) represents the error term.

The model proposes that improvements in AI capabilities, data analytics, data quality, human-AI collaboration, and governance can positively influence decision-making effectiveness. These relationships would need to be tested using empirical business data.

2.10 Model Evaluation and Performance Measurement
The proposed AI-driven decision-making framework can be evaluated using the following performance indicators:

Performance indicator	Measurement objective
Decision accuracy	Measures the correctness of AI-supported decisions
Processing time	Evaluates the speed of decision generation
Operational efficiency	Measures improvements in business processes
Cost optimization	Examines reductions in operational expenditure
Forecasting accuracy	Evaluates the reliability of business predictions
Customer satisfaction	Measures improvements in customer experience
Productivity	Assesses organizational output and efficiency
Risk management	Evaluates the ability to identify and minimize business risks

2.11 Overall Methodological Significance
The proposed models and methodologies establish an integrated framework for understanding the transformation of business management through artificial intelligence. By combining predictive intelligence, machine learning, big data analytics, NLP, intelligent automation, and human-AI collaboration, organizations can develop more effective decision-support systems.

The framework also recognizes that successful AI implementation depends not only on technological capabilities but also on organizational readiness, employee skills, data governance, ethical standards, and managerial supervision. Therefore, the proposed methodology provides a foundation for evaluating how AI-driven decision-making can improve business performance, strengthen strategic management, and create sustainable competitive advantages in the modern digital economy.

Note: These models constitute a proposed conceptual research framework; the mathematical relationships and expected benefits require empirical validation before being treated as experimental findings.

RESULTS & ANALYSIS

3.1 Overview of Results
The analysis of AI-driven decision-making demonstrates its growing importance in transforming modern business management. Artificial Intelligence provides organizations with advanced capabilities to process large datasets, identify business trends, predict future outcomes, and generate intelligent recommendations. The integration of machine learning, predictive analytics, natural language processing, and intelligent automation can improve managerial decision-making across different organizational functions.

The proposed research framework indicates that AI adoption can contribute to improved operational efficiency, enhanced decision accuracy, reduced decision-making time, better resource utilization, and stronger organizational performance. However, the effectiveness of AI-based decision systems depends on data quality, technological infrastructure, employee capabilities, and appropriate managerial supervision.

3.2 Impact of AI on Business Decision-Making

AI-driven decision-making influences several important dimensions of business management.

Business dimension	Impact of AI-driven decision-making
Strategic management	Improves forecasting and long-term planning
Financial management	Supports fraud detection and financial risk assessment
Marketing management	Enables customer segmentation and personalized marketing
Human resource management	Improves recruitment and workforce planning
Supply chain management	Optimizes inventory and demand forecasting
Customer relationship management	Enhances customer support and satisfaction
Operations management	Reduces operational inefficiencies
Risk management	Identifies potential threats and business uncertainties

The analysis suggests that AI has applications across almost every major business function. Its ability to combine historical and real-time information enables managers to make more informed decisions and respond proactively to changing market conditions.

3.3 Comparative Analysis of Traditional and AI-Driven Decision-Making

Traditional business management generally relies on managerial experience, manual data processing, and historical performance reports. In comparison, AI-driven decision-making uses automated analytical systems, predictive models, and real-time data processing.

Evaluation parameter	Traditional decision-making	AI-driven decision-making
Data processing	Primarily manual	Automated and intelligent
Decision speed	Relatively slow	Faster processing
Data analysis	Limited datasets	Large-scale datasets
Forecasting	Experience-based estimates	Predictive algorithms
Accuracy	Depends on human judgment and available data	Depends on model quality and data
Risk identification	Often reactive	Can be predictive
Resource allocation	Conventional planning	Algorithm-based optimization
Personalization	Limited	Advanced customer personalization
Scalability	Requires additional human resources	Supports large-scale analysis
Adaptability	Depends on managerial intervention	Can adapt through model updates

The comparison highlights the potential advantages of AI-based systems in complex business environments. Nevertheless, human judgment remains important for interpreting recommendations, handling exceptional situations, and ensuring ethical decision-making.

COMPARATIVE ANALYSIS IN TABULAR FORM

The following comparative analysis evaluates traditional business management and AI-driven decision-making across different organizational functions, technological capabilities, performance indicators, and managerial requirements. It highlights how artificial intelligence can improve business operations, strategic planning, resource utilization, and organizational effectiveness.

Table 1: Traditional vs. AI-Driven Decision-Making

Parameters	Traditional Decision-Making	AI-Driven Decision-Making
Decision process	Human-dependent	AI-assisted and data-driven
Processing speed	Relatively slow	High-speed processing
Data analysis	Manual analysis	Automated analytics
Decision accuracy	Depends on experience and information	Depends on data and model quality
Forecasting	Historical and experience-based	Predictive and algorithm-based
Risk management	Mostly reactive	Predictive risk identification
Scalability	Limited by human resources	Supports large-scale operations
Adaptability	Requires manual intervention	Can adapt through model updates
Resource allocation	Conventional planning	Intelligent optimization
Customer analysis	Basic segmentation	Advanced behavioural analytics

Table 2: Comparative Analysis of AI Technologies in Business Management

AI Technology	Primary Function	Business Application	Expected Benefits
Machine Learning	Pattern identification	Sales and demand forecasting	Improved predictions
Deep Learning	Complex data analysis	Image and speech recognition	Advanced automation
Natural Language Processing	Language understanding	Customer support and sentiment analysis	Better communication
Predictive Analytics	Future outcome estimation	Financial and market forecasting	Reduced uncertainty
Generative AI	Content and insight generation	Business reporting and planning	Improved productivity
Robotic Process Automation	Repetitive task automation	Accounting and administration	Time and cost efficiency
Computer Vision	Visual data interpretation	Quality inspection and security	Improved monitoring
Optimization Algorithms	Identifying optimal solutions	Inventory and logistics management	Efficient resource utilization

Table 3: Comparative Analysis of AI Applications across Business Functions

Business Function	Traditional Approach	AI-Based Approach	Organizational Impact
Strategic Management	Manual planning	Predictive strategic analytics	Better strategic decisions
Financial Management	Manual auditing and reporting	Intelligent financial analytics	Improved financial control
Marketing	Generalized campaigns	Personalized marketing	Better customer targeting
Human Resources	Manual recruitment	AI-assisted candidate screening	Efficient recruitment
Supply Chain	Traditional inventory planning	AI-based demand forecasting	Optimized inventory
Customer Service	Human-operated support	AI chatbots and virtual assistants	Faster customer assistance
Risk Management	Periodic risk assessment	Real-time predictive monitoring	Early risk identification
Operations	Manual workflow management	Intelligent automation	Higher operational efficiency

LIMITATIONS & DRAWBACKS

Although Artificial Intelligence (AI) has significantly transformed modern business management by improving data analysis, automation, forecasting, and decision-making capabilities, its implementation involves several limitations and challenges. Organizations adopting AI-driven decision-making systems must consider technological, financial, ethical, operational, and managerial barriers. The effectiveness of AI largely depends on data quality, algorithmic reliability, organizational readiness, and human supervision.

5.1 Data Quality and Availability

AI-driven decision-making systems require large volumes of accurate, relevant, and reliable data. Incomplete, outdated, inconsistent, or biased datasets can generate misleading predictions and inappropriate managerial recommendations. Organizations with limited access to high-quality data may experience difficulties in developing effective AI models.

5.2 High Implementation and Maintenance Costs

The implementation of AI technologies requires substantial investment in software, computing infrastructure, data storage, cybersecurity, and technical expertise. Small and medium-sized enterprises (SMEs) may face financial difficulties in adopting advanced AI systems. Furthermore, continuous system upgrades, maintenance, and employee training increase long-term operational expenses.

5.3 Data Privacy and Security Risks

AI systems frequently process sensitive business information, financial records, employee details, and customer data. Improper data management can expose organizations to privacy violations, unauthorized access, and cyberattacks. Therefore, strong data protection policies and cybersecurity mechanisms are essential for responsible AI implementation.

5.4 Algorithmic Bias and Discrimination

AI models may reproduce existing social, organizational, or historical biases present in their training datasets. Such biases can negatively influence recruitment, employee evaluation, customer profiling, lending decisions, and other business activities. Biased algorithmic recommendations may create unfair outcomes and damage organizational reputation.

5.5 Lack of Transparency and Explainability

Some advanced AI models, particularly deep learning systems, operate as complex black-box structures. Managers may find it difficult to understand how specific recommendations or predictions are generated. This lack of explainability can create challenges in auditing, accountability, regulatory compliance, and managerial trust.

5.6 Dependence on Automated Decision-Making

Excessive dependence on AI-generated recommendations may reduce independent managerial thinking and professional judgment. Automated systems may fail to consider emotional, cultural, ethical, and situational factors that influence complex business decisions. Human intervention is therefore necessary, especially for high-impact organizational decisions.

5.7 Workforce Displacement and Skill Gaps

AI-powered automation may reduce the demand for certain repetitive administrative and operational activities. This can create concerns regarding employment opportunities and workforce restructuring. Additionally, organizations may experience shortages of employees with expertise in AI, data science, machine learning, and digital management.

5.8 Integration with Existing Business Systems

Many organizations operate using traditional information systems, legacy software, and disconnected databases. Integrating modern AI technologies with these existing systems can be technically complex and time-consuming. Compatibility problems, infrastructure limitations, and data migration difficulties may affect implementation.

5.9 Cybersecurity Threats and Technical Vulnerabilities

AI systems can become targets of sophisticated cyberattacks, including data poisoning, adversarial manipulation, model theft, and unauthorized system access. Security weaknesses can affect the reliability of AI-generated decisions and expose confidential organizational information.

5.10 Limited Adaptability to Unexpected Situations

AI models generally depend on patterns learned from historical and training data. Unexpected market disruptions, economic crises, regulatory changes, and unprecedented business situations may reduce model reliability. Models also require regular monitoring and retraining to remain effective when business conditions change.

CONCLUSION

Artificial Intelligence (AI) has emerged as a transformative force in modern business management, reshaping traditional decision-making processes and creating new opportunities for organizational growth, innovation, and competitive advantage. The study, **"AI-Driven Decision Making: Transforming Modern Business Management,"** highlights the growing importance of integrating intelligent technologies into managerial and organizational activities. By utilizing machine learning, deep learning, predictive analytics, natural language processing, big data analytics, and intelligent automation, businesses can improve the speed, accuracy, and effectiveness of their decisions.

The proposed research framework demonstrates how AI-driven decision-making can support various business functions, including strategic planning, financial management, marketing, human resource management, supply chain optimization, customer relationship management, and operational control. AI-based systems enable organizations to analyze complex datasets, identify emerging trends, forecast market demand, assess business risks, and generate actionable recommendations. These capabilities can contribute to improved productivity, reduced operational inefficiencies, better resource allocation, enhanced customer experiences, and more effective business planning.

REFERENCES

1. Agrawal, A., Gans, J., & Goldfarb, A. (2018). *Prediction machines: The simple economics of artificial intelligence*. Harvard Business Review Press.
2. Al-Surmi, A., Bashiri, M., & Koliousis, I. (2022). AI based decision making: Combining strategies to improve operational performance. *International Journal of Production Research, 60*(14), 4464–4486. https://doi.org/10.1080/00207543.2021.1966540
3. Brynjolfsson, E., & McAfee, A. (2017). The business of artificial intelligence. *Harvard Business Review*.
4. Chen, H., Chiang, R. H. L., & Storey, V. C. (2012). Business intelligence and analytics: From big data to big impact. *MIS Quarterly, 36*(4), 1165–1188. https://doi.org/10.2307/41703503

5. Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review, 96*(1), 108–116.
6. Fountaine, T., McCarthy, B., & Saleh, T. (2019). Building the AI-powered organization. *Harvard Business Review, 97*(4), 62–73.
7. Giachino, C., Cepel, M., Truant, E., & Bargoni, A. (2024). Artificial intelligence-driven decision making and firm performance: A quantitative approach. *Management Decision, 63*(10), 3454–3476. https://doi.org/10.1108/MD-10-2023-1966
8. Guthrie, C. H., Fosso-Wamba, S., Queiroz, M. M., & Cai, H. (2025). The impact of artificial intelligence capabilities on decision-making performance: A longitudinal study. *Journal of Global Information Management, 33*(1), 1–27. https://doi.org/10.4018/JGIM.395344
9. Iansiti, M., & Lakhani, K. R. (2020). *Competing in the age of AI: Strategy and leadership when algorithms and networks run the world*. Harvard Business Review Press.
10. Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. *Business Horizons, 61*(4), 577–586. https://doi.org/10.1016/j.bushor.2018.03.007
11. Kaplan, A., & Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons, 62*(1), 15–25. https://doi.org/10.1016/j.bushor.2018.08.004
12. Lee, J., Bagheri, B., & Kao, H.-A. (2015). A cyber-physical systems architecture for Industry 4.0-based manufacturing systems. *Manufacturing Letters, 3*, 18–23. https://doi.org/10.1016/j.mfglet.2014.12.001
13. McAfee, A., & Brynjolfsson, E. (2012). Big data: The management revolution. *Harvard Business Review, 90*(10), 60–68.
14. Mikalef, P., Krogstie, J., Pappas, I. O., & Pavlou, P. (2020). Exploring the relationship between big data analytics capability and competitive performance: The mediating roles of dynamic and operational capabilities. *Information & Management, 57*(2), Article 103169. https://doi.org/10.1016/j.im.2019.05.004
15. OECD. (2019). *OECD principles on artificial intelligence*. Organisation for Economic Co-operation and Development. https://oecd.ai/en/ai-principles
16. Power, D. J. (2007). A brief history of decision support systems. *DSSResources.COM*.
17. Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. *Academy of Management Review, 46*(1), 192–210. https://doi.org/10.5465/amr.2018.0072
18. Ransbotham, S., Kiron, D., Gerbert, P., & Reeves, M. (2020). *Expanding AI's impact with organizational learning*. MIT Sloan Management Review and Boston Consulting Group.
19. Russell, S. J., & Norvig, P. (2021). *Artificial intelligence: A modern approach* (4th ed.). Pearson.
20. Shrestha, Y. R., Ben-Menahem, S. M., & von Krogh, G. (2019). Organizational decision-making structures in the age of artificial intelligence. *California Management Review, 61*(4), 66–83. https://doi.org/10.1177/0008125619862257