

# A Study of Influence of Artificial Intelligence in Commerce and Management

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**Abstract:** *This research examines how Artificial Intelligence (AI) is incorporated in commerce and management. This research studies the origin, evolution of AI, evolution of information management, terminology, definition, meaning, types, uses, transformation, role, influence, technology and applications, tools, benefits, future and recommendations. The challenges in the proper implementation of AI in commerce and management are discussed. Based on the available sources, technical information about AI has been collected and research conclusions have been drawn..*

**Keywords:** Artificial Intelligence (AI), Generative Artificial Intelligence (Gen AI), Robotic Process Automation (RPA), Natural Language Processing (NLP), Automation Operating Model (AOM), Application Programming Interface (API), Graphical User Interface (GUI), Global Business Services (GBS) and Shared Services Centers (SSC), Machine Learning (ML), UiPath, Zendesk AI, Zoho Zia, Zapier, Chat GPT, Mid Journey, Dark trace and Crowd strike

## 1. Introduction

Technology has accelerated the world around us and now everything is at the click of a button. A simple example is the recent rise of artificial intelligence. AI is seen as a double-edged sword. AI is machine-based intelligent behavior beyond the natural intelligence of humans and other animals. In computer science, AI is described as a 'smart agent' that studies any device, understands its behavior, and takes actions that increase the likelihood of success that we expect.

In this branch, machine learning, its intelligent behavior and ability to adapt to situations, etc. are studied. Research in this field is mainly concerned with machines capable of performing intelligent behavior required to perform automated tasks; for example, planning, participating, the ability to find answers to diagnostic questions, handwriting, voice and face recognition, etc. In this way, AI solves problems in everyday life. There are systems with AI used in commerce, management, economics, health sciences, engineering, defense, computer games, customer service, accounting, financial services, human resources, supply chain management, and computer systems, etc.

AI is interconnected in various ways. AI brings intelligence and learning capabilities to automation, making it more adaptive, intelligent, and capable of handling complex tasks. Through the use of AI, organizations can achieve more efficient and effective processes, improve customer experiences, and drive innovation across industries.

## Objectives of Study

1. To study Artificial Intelligence (AI).
2. To understand the various concepts related to AI.
3. To study the influence of AI in commerce and management.
4. To study the applications and implementation of AI in commerce and management.

## Research Methodology

Research Type: - This research is descriptive research.

Source of Information:-This research study is based on secondary sources of information.

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Secondary sources of information- Collected from books, journals and related websites.

### **Evolution of Artificial Intelligence (AI):-**

One of the challenges in developing intelligent solutions is the ability to measure their success. Throughout history, the power of automation has been harnessed to make human life more convenient and efficient. Alan Turing is a towering figure in computer science and AI. In 1950, Alan Turing developed the Turing test that helped determine whether a machine was intelligent or not. He is often called the "father of AI". The phrase "Artificial Intelligence" was coined at a conference in 1956. AI was established as an academic discipline. AI refers to the demonstration of intelligence by machines. John McCarthy used the term in 1956 at a meeting at the Massachusetts Institute of Technology in Dartmouth. The term refers to the imitation of human intelligence processes, such as learning, reasoning, or self-improvement, by machines so that they can make approximate or implicit inferences. In the 1960s, MIT computer scientist Joseph Weizenbaum developed a chatbot called Eliza, which mimicked human-like conversations. While Eliza's capabilities were limited, it sparked significant interest in artificial intelligence and laid the foundation for the AI revolution we are witnessing today.

The growth of artificial intelligence solutions began in 1974. Interest in artificial intelligence increased, peaking in the 1980s and waning in 1988 after the limitations of if-then logic were revealed. Then, in 1995, the widespread availability of computing power and big data led to a massive increase in artificial intelligence, opening up the possibility of developing more complex artificial intelligence solutions. Since then, AI has grown rapidly. In 1997, an IBM computer called Deep Blue defeated Russian champion Garry Kasparov in a game of chess.

Many businesses are focusing on using artificial intelligence to create better solutions and address various challenges they face. Both small and large businesses are leveraging the power of AI. According to Digital Ocean's May 2023 Currents survey, 61% of companies expects to increase their use of Generative AI and machine learning (ML) this year. Therefore, understanding the Influence of artificial intelligence in commerce and management is of utmost importance.

### **Evolution of Information Management:**

Information management has always been an important aspect of business operations. Traditional information management systems had difficulties in maintaining consistency. They were not designed to manage large amounts of collected information. With the advancement in technology, the characteristics of information have also evolved. Information has become digital and the volume of data has increased rapidly. This digital transformation has brought new challenges. These challenges are related to the storage, processing and exploitation of this huge amount of data. In this, AI has overcome these problems.

### **Definitions**

**Artificial Intelligence (AI):** AI is a technical and scientific field that creates systems to generate content, predictions, recommendations, or decisions based on human-defined goals. AI is a branch of science that helps machines finds solutions to complex problems in a more human-like manner. AI helps us make faster and more accurate decisions, maintain data quality, and handle large data sets. It uses algorithms and machine learning to analyze data, identify patterns, and make predictions or decisions.

**Commerce:** Commerce is the exchange of goods and services between organizations, including national and international trade. It includes trade, marketing, banking, insurance, and transportation, which act as a link between production and consumption.

**Management:** Management is the administration, coordination and control of business activities and employees to achieve objectives. It includes planning, organizing, staffing, leading and controlling.

**Commerce and Management Relation:** Commerce is the "what" (business), while management is the "how" (implementation). Commerce requires management to run, and management requires commerce to create value.



### **Types of Artificial Intelligence Algorithms:**

An algorithm is a set of step-by-step procedures, rules, or instructions to solve a problem or complete a specific task. Generally, there are 4 main types of artificial intelligence algorithms.

**1) Supervised Learning Algorithms:** These algorithms learn from labeled data, where each input is associated with an appropriate output. The goal is to learn a mapping function that can accurately predict the output for new, unseen data. These algorithms are highly effective at learning the task at hand.

**2) Unsupervised Learning Algorithms:** These algorithms work with unlabeled data to discover hidden patterns, structures, and relationships in data without human supervision. Such algorithms can be extremely effective in uncovering naturally occurring patterns from data.

**3) Reinforcement Learning Algorithm:** In reinforcement learning, an agent learns to make decisions by interacting with the available environment and receiving feedback in the form of rewards or penalties. This trial-and-error approach helps the agent optimize its actions to maximize cumulative rewards over time.

**4) Deep Learning Algorithms:** Deep learning is a subset of machine learning that uses artificial neural networks with multiple hidden layers to learn complex patterns and representations in large amounts of data.

### **Use of Artificial Intelligence in Commerce and Management:-**

The use of AI has enabled new types of commerce such as voice commerce, social commerce and experiential commerce. This provides customers with a seamless and personalized shopping experience.

Using the power of AI, users can revolutionize the product by providing personalized, engaging, and seamless experiences at every moment of management.

AI can be used to automate tasks such as inventory management, order processing, and quality control in manufacturing companies.

AI can be used to automate tasks such as purchase order processing and payment, inventory level monitoring, shipment tracking, data entry, and predictive maintenance and after-sales service support in logistics and supply chain management companies.

AI helps in policy development and business planning by analyzing market trends and financial data.

Every company's human resources department can use AI to automate tasks like on-boarding and off-boarding, updating employee information, and timesheet submission processes.

### **Transforming Commerce and Management through Artificial Intelligence:-**

AI can automate and optimize many business processes. For example, it can handle routine tasks like data entry and report generation, freeing managers to focus on more important activities.

AI excels at analyzing large amounts of data and finding useful patterns. It can process complex information quickly and provide valuable insights, helping managers make informed decisions based on real-time data.

### **Role of Artificial Intelligence in Commerce and Management:-**

AI is changing the way businesses, especially large and complex organizations like Global Business Services (GBS) and Shared Services Centers (SSCs), manage their daily operations.

AI is not just a futuristic idea but a practical tool that helps companies streamline their processes and make data-driven decisions. Understanding how AI can be used in management is crucial to staying competitive in today's fast-paced business world.

AI involves creating computer systems that can perform tasks that normally require human intelligence.

### **AI Influence in Commerce and Management:-**

**Data-driven decision-making:-** AI analyzes vast data sets, performing predictive analysis and providing actionable insights for better, faster and more informed strategic planning.

**Operational efficiency and automation:-** AI automates routine tasks like scheduling and data entry, increasing productivity and freeing up managers for higher-value work.

**Human resources and specialized skills management:-** AI streamlines recruitment by vetting resumes, matching candidates and providing personalized training recommendations.



**Supply Chain and Logistics:-** AI optimizes logistics, manages inventory, and forecasts demand, resulting in reduced waste and improved service levels.

**Customer Experience and Marketing:-** AI-powered chat bots and CRM systems personalize customer interactions and tailor marketing strategies based on individual preferences.

**Risk Management:-** AI tools enhance cyber security and fraud detection by enabling proactive risk assessment and mitigation.

#### **AI Technology and Applications in Commerce and Management:-**

AI spans a variety of domains, and the following specific applications can benefit businesses in various sectors:

**Machine Learning (ML):** This allows systems to learn from data and improve over time without having to be programmed.

**Deep Learning:** A subset of ML that uses neural networks to make complex decisions, helping industries in areas such as speech recognition, computer vision, and autonomous driving.

**Natural Language Processing (NLP):** This helps computers understand and communicate with human language.

**Robotic Process Automation (RPA):** AI is used to automate repetitive tasks such as data entry.

**Generative AI:** This rapidly growing field of AI can create digital content such as images, music, and video, making it a valuable tool for creative industries.

#### **AI Tools for Data Analysis:-**

**Tableau:** This tool visualizes data to highlight trends.

**Sales force Einstein:** This tool predicts sales trends based on historical data.

**Accio:** This tool easily creates and deploys predictive models.

#### **AI Tools for Automation:-**

**UiPath:** Robotic Process Automation (RPA) is used for workflow automation.

**Zapier:** This tool automates workflows within apps.

**Automation Edge:** Streamlines business operations using AI.

#### **AI Tools for Customer Service:-**

**Zendesk AI:** These tools automate responses and route questions to agents.

**Intercom Fin:** These tools provide 24/7 support with AI chat bots.

**Zoho Zia:** These tools predict customer behavior for more effective communication.

**Jasper and Copy:** These tools are transforming marketing by Generating AI content, optimizing campaigns, and personalizing interactions.

**Mid Journey:** These tools help marketers create compelling copy by automating visual content creation.

**Dark Trace and Crowd Strike:** These tools strengthen cyber security by detecting AI anomalies, predicting threats, and responding in real time.

#### **Benefits of AI in Commerce & Management:-**

There are many benefits of AI in commerce and management. To understand AI and commerce and management together, we need to know how it is benefiting businesses. Some of the important benefits of AI in commerce and management are as follows.

AI has unlimited capabilities for data processing. Thus, it can analyze all of customer's interactions along with identifying patterns in customer service metrics and score.

AI has a positive impact on business as it optimizes efficiency with CX software automating workflows. Repetitive work and unnecessary tasks are effectively reduced.

AI is effectively transforming wealth management by providing deeper insights into client behavior.



Using AI tools, corporations can increase their performance and increase customer satisfaction by making experiences more personalized.

Streamlining, workflows, making organizations more profitable, flexible, and responsive.

Enabling employees to be more productive.

Improved accuracy and consistency.

Reduced chances of errors and improved quality of work.

AI in trend analysis is that it has improved the decision-making process of corporate companies compared to previous situations.

Meeting the industry's growing customer expectations and regulatory requirements is creating opportunities.

#### **Challenges for implementation of AI:**

While AI offers significant benefits, it also presents unique challenges. To successfully implement AI, businesses should focus on the following.

AI systems sometimes produce false information, known as AI fallacies. This can lead to misinformation, as seen in examples such as Google Bard's false claims or Chat GPT creating fictitious legal cases.

AI systems can inadvertently retain bias from their training data, leading to discriminatory practices. Businesses should develop ethical guidelines to prevent biased decision-making, especially in important areas such as healthcare and finance.

The widespread use of AI could shift employees to more strategic roles. However, workers need training to use AI tools effectively.

Financial businesses face challenges such as offering personalized customer interactions and protecting sensitive data.

#### **Future of AI in Commerce & Management:**

AI is a great influencer creating a bright future, implementing AI-powered tools that solve major problems in customer interactions. Moreover, corporations in commerce and management can predict problems and proactively solve them in advance. The impact of AI is enormous, bringing about rapid and smooth evolution.

As routine monitoring becomes increasingly automated, the role of managers is expected to shift to leadership, empathy, and managing complex, non-routine, human-centric tasks.

AI is expected to have a transformative impact on the global economy. While AI technologies such as object detection and sentiment analysis are outperforming human performance in specific tasks, businesses must be aware of the ethical and socio-technical challenges that come with adopting AI.

As AI becomes more embedded in business operations, companies must balance its responsible implementation with ensuring that AI remains a tool for innovation, efficiency, and sustainable growth.

Businesses should embrace the introduction of trusted generative AI as an opportunity to make the customer experience more personalized, conversational, and responsive.

#### **Recommendations:**

To make the most of AI, companies should identify areas where AI can add value, such as process automation and data analytics.

Investing in training and development will help businesses effectively use AI.

Companies can benefit from the analysis of consultants and advisory firms that can create an assessment of their capabilities and opportunities for AI.

When adopting AI, companies should consider data security, integration challenges, and the impact on employees. For example, developing a clear strategy for AI implementation, prepared by experienced BSS consulting firms, will help ensure success.



## 2. Conclusion

AI is closely related to business and management and often goes hand in hand. The conclusion for AI is that it is a transformative, powerful technology that is deeply integrated into everyday life, offering enormous efficiency gains, personalized experiences, and problem-solving capabilities in commerce and management, but its future depends on responsibly managing significant ethical challenges such as bias, privacy, and job displacement, which require careful regulation and human oversight so that it benefits society at large rather than simply increasing risks.

AI is a simulation of human intelligence that is programmed to perform tasks that require human intelligence, such as visual perception, speech recognition, decision-making, and problem-solving. AI can analyze large amounts of data and identify inefficiencies in processes suitable for automation. As today's businesses gear up for emerging technologies, robot-led automation is an early step toward the future transition. It would be best to work closely with a partner who has process and business knowledge and a deep understanding of technology integration and analytics.

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