



Artificial Intelligence and Machine Learning Integrated for Innovation: The Future of Business Strategy

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Abstract. The implementation of the technologies of Artificial Intelligence and Machine Learning is inevitable in the contemporary changing environment of businesses as they promote innovation and influence strategic decision-making. This study encompasses the artificial intelligence and machine learning, their functioning, and their transforming the nature of the business operations. The insights based on data will be of paramount importance as the Artificial Intelligence and Machine Learning have a potential to transform strategy planning through the analysis of big data, pattern identification, and predictive models' development. Artificial Intelligence and Machine Learning help businesses to get a competitive advantage, simplify their workflows, and become more efficient, generating new ideas based on real-life experiences. Research shows that Artificial Intelligence and Machine Learning may improve supply chain operations and customer service. Businesses cannot encourage an innovative spirit without combining creative thinking with data-driven analysis. Making decisions, creating products, and interacting with customers will all be drastically altered by Artificial Intelligence and Machine Learning. Responsible innovation is more likely to occur when companies think about the ethical and practical issues that come with using AI and ML on a wide scale. For companies to succeed in the dynamic future of business strategy, this chapter offers guidance on how to include AI and ML for innovators, strategists, and company executives.

Keywords: Artificial Intelligence, Machine Learning, Innovation, Business, Strategies, Organizations.

1 Introduction

For a company to be successful in today's fast-paced and technologically-driven industry, it is essential for them to be adaptable and creative. Artificial intelligence (AI) is a robust tool that has the potential to revolutionize business processes and increase profitability. Only a few of the areas in which artificial intelligence has ignited a revolution include improved prediction, learning of customer behaviour, and process efficiency. It has the potential to improve the operations of the organization, reduce ex-

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penditures, and boost earnings over the long term. By embracing artificial intelligence (AI) and learning how to utilize it effectively to generate cash and stay ahead of the competition, companies may experience a paradigm shift. There will be a dramatic shift in the company's strategy because of the incorporation of AI-based tools and concepts for reaching objectives. To remain competitive in today's economic world, companies need to adapt and use AI.

AI's ability to shift through mountains of data and make informed judgements may completely alter the way companies operate. Comparable to a virtual assistant, it studies consumer behaviour, learns their tastes, and forecasts their needs. Technological innovations have provided people with the opportunity to focus on activities that are of higher priority since the functioning processes and overall efficiency have been improved. It has enhanced the process of organization and efficiency in all activities including the ability to regulate the supply chain as well as helping the customers. The use of AI technologies makes personalized solutions possible since the consumer experience can be customized. Data-driven decision making eliminates guesswork because the strategic plans adopted are based on real-time information. This enables new organizations to focus on what is important and advance on their overall firm plans, which differentiate them among the rest.

The supply chain management is also made better using AI-powered systems that ensure that the correct goods are presented on time and appropriately. Robots and automation tremendously enhance production through reducing errors and augmenting production. In addition, one should consider the issue of cybersecurity, which relies on the latest technologies to keep personal information safe and avoid the threats that can change continuously. Nevertheless, stopping the integration of AI and technology into business planning has some issues. Organizational resistance to change can slow down growth and new ideas. To keep data from being misused, privacy and moral issues must be carefully dealt with. Data management and analysis skills are necessary for workers who can find useful information in huge amounts of data [1].

1.1 Understanding the Landscape: AI and ML

Before going any further, it is important to understand the different ways that AI and ML can be used in business. The achievement of making machines that can perform tasks traditionally done by human beings is known as artificial intelligence or AI. Machine learning or frequently referred to as ML is a technique through which computers can learn about information and subsequently apply the learned information in making their predictions or judgements. It is not only that machine learning involves judging, understanding spoken language, identifying patterns, learning, but also it involves learning by past errors.

1.2 Revolutionizing AI in Business

It is only a relatively short period that artificial intelligence (AI) has nurtured itself to become a significant element of the business strategy developmental tool. This

change has happened in a very timely fashion. The scholarly community at mid-twentieth century was the key consumer of artificial intelligence (AI). At the time, there were very few practical applications of AI in the business sector. Over the course of the last several decades, there has been a significant amount of change that has occurred. Artificial intelligence (AI) has gone from theoretical models to real-world applications thanks to improvements in computer power and data analytics. It has become an important part of how businesses run. AI is changing the business world by giving companies high-performance tools that help them make more money, spend less, and work more efficiently [2]. Artificial intelligence is already being used by big businesses, small and medium-sized businesses, entrepreneurs, and single proprietorships.

AI's influence is currently pervasive across numerous corporate functions. AI algorithms examine customer data in marketing [3] to identify trends and personalize ads. Operations teams use AI to ensure productivity and supply chains optimization, and customer care departments use chatbots, operated by AI, to enhance better user experience. Such integration is an important change in the way businesses approach challenges and become innovative [4-5].

2 Benefits of AI

The integration of AI, and ML into business operations offers several benefits that translate into better outcomes:

- **Data-Driven Decision-Making:** These technologies enable organizations to make well informed judgements informed by data insights as compared to relying solely on intuition. This leads to improved precision in tactics, reduction of risk and the overall improvement in decision making. Leaders can make effective decisions since AI systems are able to collect and analyze vast volumes of business data.
- **Process Automation:** Artificial intelligence (AI) and machine learning (ML) automate tedious and time-consuming jobs so that humans may concentrate on critical and expert-level work. There will be less room for error and more production as a result.
- **Improved Customer Experience:** Customers are happier and more loyal to brands when they get personalized recommendations, fast customer care via AI chatbots, and tailored advertising. By quickly addressing problems and learning from previous contacts, AI-powered robots may improve firms' 24/7 customer support.
- **Increased Product and Service Innovation:** Fresh trends and opportunities might be found, market gaps can be occupied, consumer desires can be analyzed, and design processes can be facilitated using sophisticated analytics, AI, and machine learning.
- **Competitive Advantage:** When organizations embrace these technologies, the organizations get competitive advantage as they make them more agile, flexible, and responsive towards any changes in the market.
- **Automated Workflows:** Artificial intelligence (AI) algorithms can process large volumes of information much faster and more accurately than traditional human-

based algorithms, improving the workflows of businesses. Using machine learning models, it is possible to optimize logistics, automate repetitive processes, and predict the trends.

- **Control of Sustainability:** Businesses have increasingly become concerned about the importance of sustainability [6]. The impact that AI can make in this aspect can be considerable as well. It can optimize the use of energy in manufacturing and logistics and reduce wastage through the provision of better predictive analytics and manage the carbon footprint of an organization.
- **Cybersecurity Enhancement:** AI has the potential to identify the trends in cyber-attacks, easy action, and react instantly to cyber-attacks as digital-related threats increase. This protects business in a slightly more interconnected world environment.

3 Implications of AI cases in business

AI has revolutionized various industries over the last few years. It can assist organizations foresight in conducting foreseeable analysis, perfecting the business activities, and taking advantage of attitudes on consumer behaviour. Virtual assistant, fraud detection in the financial industry. The use of AI in customer service, and focused marketing campaigns are some examples. law cases of considerable gravity. Companies can automate operations, cut down costs, and increase revenue through the introduction of AI. In the context of business that aims to have a competitive advantage and win, the implementation of AI and the accurate identification of its fitting usage can become an innovation.

3.1 Conducts data analysis predictive sales forecasting

AI technologies provide the capability to efficiently analyse extensive volumes of sales data, thereby detecting patterns and correlations on a large scale that may elude human analysts.:

- **Tableau:** With the help of Tableau, an AI-powered application, organizations can easily find patterns and forecast their financial performance by transforming raw data into a user-friendly manner.
- **Salesforce Einstein:** The Einstein artificial intelligence layer in Salesforce helps with sales trend prediction, customer management, and forecasting by analyzing historical data.
- **Akkio:** Companies can construct and use predictive models powered by artificial intelligence. These models can be used to make decisions based on data in areas such as anticipating customer loss, identifying fraud, and enhancing sales.

3.2 Automate tedious administrative tasks

There are several ways in which artificial intelligence (AI) has revolutionized administrative labor. Some examples include the creation of reports, the entry of data, and the scheduling of events. Using machine learning algorithms that can learn from data patterns, artificial intelligence (AI) has the potential to raise the level of accuracy and usability of task automation.

- **UiPath:** Renowned for its ability to automate repetitive processes across many systems and applications, UiPath is an RPA solution that simplifies administrative duties.
- **Zapier:** This platform automates workflows between multiple apps, simplifying tasks like scheduling, email sending, and data syncing.
- **Automation Edge:** The AI-powered RPA tool streamlines administrative tasks, automates business operations, and coordinates processes, IT, and AI-driven automation.

3.3 Improve customer service and boost customer lifetime value

The field of customer service is undergoing a transformation because of artificial intelligence, which is bringing forth individualized interactions as well as services such as data analysis and sentiment analysis. Using artificial intelligence tools to enhance customer service and increase client lifetime value:

- **Zendesk AI:** The ZenDesk AI system, which has been trained on billions of customer service encounters, can automate responses and direct inquiries to the appropriate personnel, thereby improving both the speed and quality of customer care.
- **Intercom Fin:** Providing customer service support around the clock, the chatbot powered by artificial intelligence at Intercom can respond to simple consumer inquiries and direct more sophisticated inquiries to human agents.
- **Zoho Zia:** Zia, the artificial intelligence assistant for businesses offered by Zoho, can forecast client behavior, which enables organizations to better adapt their interactions with customers and get more out of their customer relationship management system.

3.4 Upgrade customer marketing efforts

Application of the artificial intelligence technologies, specifically, generative AI-based ones could be used to boost the marketing processes through creation of engaging content, creation of unique visual representations, and personalization of the communication with the customers. The use of artificial intelligence can assist marketing teams in the execution of their campaigns and the acquisition of new customers [7]. This assistance can range from the generation of landing page copy to the segmentation of email marketing lists [7]. Artificial intelligence techniques to improve your company's marketing efforts:

- **Midjourney:** With the help of this application, which is powered by artificial intelligence, the generation of visual material can be automated based on written prompts. This makes it a lot easier to make things for campaigns, social media, and blogs.
- **Jasper:** Artificial intelligence is used by Jasper to write marketing copy for websites, social media posts, email messages, and blog posts.
- **Copy.ai:** Artificial intelligence is used in this technology to help people write marketing copy, such as blog posts and ad headlines. It does this by giving creative ideas and rough drafts.

3.5 Enhance cybersecurity and fraud detection

Artificial intelligence solutions could make cybersecurity and fraud detection services a lot better by using machine learning methods to find problems, predict breaches, and quickly respond to attacks [8]. By analyzing massive amounts of data, learning trends, and differentiating between routine operations and suspicious ones, they can detect possible threats in a preemptive manner. AI tools that improve cybersecurity and the detection of fraudulent activity:

- **Darktrace:** To detect and respond to threats in real time, an artificial intelligence cybersecurity platform learns from data patterns to adapt to new and developing threats.
- **CrowdStrike:** The AI-driven endpoint security platform comes with features like automated incident response and real-time threat detection. Overall, this helps to decrease downtime and avoid breaches.
- **Splunk AI Ops:** Utilising machine learning to sift through mountains of data, Splunk's AI solution draws conclusions that speed up threat detection and response times.

4 Methodology

The research paper follows qualitative research to investigate the application of Artificial Intelligence (AI) and Machine Learning (ML) in business innovation and strategic decision-making. Thematic coding and content analysis were used to determine the main trends, advantages, and issues connected to AI-based innovation. As well, the measures of performance outcomes have been compared before and after the implementation of AI/ML. Best practices and regulatory frameworks that were documented were used to consider ethical and practical issues. Such an approach will guarantee the global perspective of how AI and ML are reshaping business practices, enabling the use of data-driven strategies, and responsible innovation in dynamic organizations.

5 Opportunities for Business Innovation with AI

The fake intelligence is enhancing a revolutionary change in the business arena and introducing new developmental and inventive prospects [9]. The artificial intelligence is a potent instrument that influences the functional gains, client experiences, and creates valuable outputs [10]. AI can follow business processes on a real-time basis and analyze them [11]. This facilitates the effective detection and identification of problems. The use of artificial intelligence can significantly enhance the customer experiences, providing companies with a chance to create personalized customer interactions and increase customer loyalty [12]. AI can offer services or products which are in the interest of the customers and through the application of natural language processing can make conversations smooth.

Artificial intelligence (AI) can enhance customer experience by providing them with personalized interactions, which leads to customer satisfaction and customer loyalties. With the help of the natural language processing, the businesses will be able to communicate with their customers efficiently and offer personalized suggestions regarding the product or the services offered [13].

For example, Amazon's recommendation engine has contributed to the company's rise to become one of the greatest e-commerce companies in the world, while Google's search algorithm has completely transformed the way people look for information online. Additionally, businesses such as Coca-Cola and PepsiCo are utilizing artificial intelligence to enhance their supply chain management [14], and healthcare providers are utilizing AI to detect diseases in a manner that is both more accurate and more operationally efficient.

6 Use Cases for AI and ML

Using data, both AI and ML are contributing to the delivery of improved business insights. In a word, these technologies are providing businesses with new options to make use of the data that they already possessed but were unable to make sense of. Additionally, they are releasing a whole new set of use cases for various forms of data, including the following:

6.1 Gambling

At the most prestigious hotels and casinos, gambling is a well-liked pastime. Analytics that are powered by artificial intelligence are utilized by gaming establishments to determine which modifications are the most beneficial to provide to clients. Using predictive analytics, the organization can determine which enhancements to provide to assist in bringing in better revenues.

6.2 Self-service

Across a wide range of businesses, the use of self-service alternatives is enabling improved customer service experiences. With self-service, there is no longer a requirement to wait on hold for the next available agent to respond to a straightforward inquiry that is being asked during a conversation. AI and ML have brought about a change in this sector by enabling chatbots and virtual support to provide answers to frequently asked concerns regarding customer care.

6.3 Semi-automate decisions

With completely new capacities to generate semi-automatic decisions based on training data, artificial intelligence is bringing about a revolution in the field of analytics. There are some circumstances in which semi-automatic decision-making is not relevant; but, for some use cases, it revolutionizes the method in which a company generates rules, judgments, and predictions without the need for complex human knowledge or physical labor.

6.4 Sensors

The rising frequency of sensors in machinery, cars, industrial plants, and other hard equipment locations has made it possible for artificial intelligence to also create digital representations of physical equipment and monitor them. The ramifications for efficiency, cost, and safety are immense because of this.

6.5 Fraud detection

Fraud detection software that is based on machine learning and artificial intelligence is utilized in a wide range of industries, with the banking and insurance industries being the most common users. Because fraud can be conducted in a variety of ways and is frequently difficult to detect, the most efficient use of these processes is real-time monitoring. Data analysts are an example of real-time detection because they are responsible for developing algorithms that can identify trends and anomalies.

6.6 Markets

Machine learning and artificial intelligence can forecast future market trends and how they will behave. In terms of consumer loyalty or what will occur in the future, these new technologies could assess and forecast anything from what customers desire to what will be popular in the coming year. This includes everything from what customers want to what will be big tomorrow.

7 Real-World Applications

Numerous companies are undergoing a period of fast transformation because of the increasing integration of artificial intelligence (AI). It is the leading firms that are utilizing artificial intelligence to redefine operations and drive innovation [15] across a variety of industries that are at the forefront of this revolution. Here is a glimpse into how artificial intelligence is transforming many industries:

- Amazon utilizes artificial intelligence to personalize product suggestions, streamline supply chains, and prevent fraudulent activity using the technology. Bank of America uses artificial intelligence in the financial sector to manage investments, detecting fraudulent activity, and interacting with customers.
- Siemens employs artificial intelligence to forecast which pieces of machinery will fail, improve production procedures, and strengthen quality control. In the meantime, Uber uses artificial intelligence in the transportation sector to anticipate traffic patterns, improve routes, and match riders with drivers in an effective manner.
- IBM Watson is the transformer in the healthcare industry: By using machine learning to forecast analogy processes and decision-making process Watson can analyze medical pictures with higher accuracy than a person can. Watson together with medics devise customized patterns of treatment to each unique patient depending on their genetic possession. This opens the way to more productive treatment and even life-saving discoveries. A good example of the power of technology is IBM Watson, as it is a medical manpower that involves technology breakthroughs to transform patient care.
- Uber's AI: The artificial intelligence and machine learning enable Uber to do much more than a mere ride-finding application due to the seamless integration of AI under the hood. It does a dynamic analysis of live traffic patterns which are converted into your traffic analyst. It is a brilliant system capable of predicting congestion and offering a ride and a journey that has been well planned.

8 Ethical Considerations

The ethical question is gaining more relevance as companies use AI and ML to become more innovative. To achieve the confidence of the stakeholders, it is important to find a balance between artificial intelligence and responsible innovation. To make certain about the non-occurrence of unintended consequences and biases, it is essential to focus on such priorities as openness, justice, and accountability in artificial intelligence algorithms. This will help in coming up with sustainable and ethical business strategy.

8.1 Addressing Bias in AI Algorithms

The questions of the influence of bias in algorithms have appeared because of the introduction of artificial intelligence (AI) into the corporate processes. Organizations

need to implement massive systems to detect and address biases in both information and algorithms and make sure AI and machine learning (ML) innovations processes are ethical. The quality and impartiality of data that AI and ML systems are trained on is very crucial to the objectivity of these systems. In case the data as such is not objective, then chances are that the systems derived will be biased as well.

8.2 Transparency and Accountability

Artificial intelligence (AI) and machine learning (ML) are becoming advanced phenomena, and there is a growing need to be more transparent and accountable in decision-making. Businesses need to set down clear regulations and standards so that they can guarantee proper utilization of emerging technologies. These systems are not always easy to understand and support even to the people that were involved in building those systems. Businesses should focus on transparency, verifiability, and sincerity when it comes to the data utilization and system processes.

8.3 Privacy

This is a certain amount of uneasiness of people about the information gathered and processed by AI and ML systems. This discomfort is occasioned by concerns on the existence of the possibility of unintended and unwanted utilization of this information. The transparent nature of the information that companies gathered and how it is used should be significant. Also, the businesses must focus on ensuring that privacy rights of customers are safeguarded.

8.4 Responsibility

Automation can be used to streamline the processes and decision making with the help of machine learning and artificial intelligence, which may be of an advantage to companies. It should however be noted that there may be problems associated with ambiguous accountability and unforeseen consequences. The fact that the newly created firms are aware of people responsible of their system is of paramount importance, and the precautionary measures are enforced to decrease any possible negative consequences. This is important to them in ensuring that their system is efficient and appropriate precautions are put in place.

9 Future Trends and Challenges

As artificial intelligence (AI) and machine learning (ML) become more pervasive in business, companies will need to take ethical considerations into account. More of our everyday lives are being impacted by artificial intelligence (AI), which aims to design computers to behave like humans, and machine learning (ML), which teaches computers to learn and become better over time. There are several ways in which AI and ML enhance human life. For instance, streaming platform recommendation algo-

rhythms and voice-activated virtual assistants such as Siri and Alexa. These technologies have applications in both healthcare and finance, including in the detection of diseases and the prediction of market trends.

- **AI-Powered Healthcare:** AI has the potential to further transform the healthcare industry. Increasingly, we can anticipate AI-assisted surgery, early disease identification, and individualized treatment programmers. For better patient care, medical experts will collaborate with AI systems.
- **Autonomous Vehicles:** The arrival of autonomous vehicles is imminent. When it comes to improving the safety and efficiency of these vehicles, AI will be crucial. Congestion will be reduced because of improved traffic management systems.
- **AI in Education:** In the future, schools will provide students with more individualized lessons. Making education more accessible and effective, AI will adjust courses to student needs.
- **AI Ethics:** There will be more concerns around privacy, bias, and ethics as AI is incorporated into society. Responsible AI development and use will be ensured by evolving regulations and guidelines.
- **AI Creativity:** More works of art, songs, and books created by AI will appear. Industries that deal with creativity will work together with AI systems to create new and exciting content.

10 Conclusion

Businesses that want to succeed in today's dynamic market must adopt an AI and ML integration strategy, since it is more than simply a trend. Industries are changing and businesses are going through a revolution because of the merging of AI and ML [16]. The revolutionary application cases are many and consequential, ranging from supply chain efficiency to healthcare diagnostics, personalized marketing to predictive maintenance. Better results, competitive advantage, and innovation are possible in today's fast-paced business world when companies can automate processes, make data-driven decisions, and extract insights from data. The combination of AI and ML [17] is not a fad; businesses that intend to succeed in the current marketplace must use all the two. The AI and ML aligned and then the industries transformed and companies experienced revolution. There are numerous key and innovative applications, both in making the supply chain more effective and in the treatment of health issues, personalized advertising as well as in the anticipation of the time when maintenance is required. In the modern business environment where everything moves in a fast pace, firms can achieve quality results, have the competitive advantage, and create new ideas when they are able to make things simpler, make decisions that are based on information, and they are able to get insights out of information. In case the businesses prefer to continue to use such technologies, one should understand what each of the use cases requires, identify the appropriate tools and techniques, and encourage a culture of constant learning and evolution. With proper application of AI and ML, companies will be successful in the present and position themselves to succeed in the future.

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