# Large Language Models (LLMs) in Business Strategies and Accounting: Opportunities and Challenges

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## ABSTRACT

The rapid advancements in artificial intelligence (AI), particularly with large language models (LLMs), have sparked significant interest across various industries. In business strategy and accounting, LLMs are demonstrating potential to automate tasks, analyze financial data, and support strategic decision-making. This paper reviews the applications of LLMs in business strategies and accounting functions, exploring their strengths, limitations, and implications. Through a qualitative analysis, we provide insights into how organizations can integrate LLMs into their strategic frameworks to gain competitive advantages while maintaining ethical and practical considerations.

Keywords: ai adoption, business efficiency, large language models (llms)

## I. INTRODUCTION

Artificial intelligence (AI) has emerged as a transformative force in the modern business landscape, significantly impacting operations, decision-making, and strategic planning across industries. Among the myriad of AI advancements, large language models (LLMs) represent a breakthrough technology. These sophisticated models, including but not limited to OpenAI's GPT-4, exhibit unparalleled capabilities in processing and understanding natural language. Their ability to generate coherent, context-aware responses positions them as invaluable tools in both strategic decision-making and operational efficiency.

In the domain of business strategy, LLMs enable organizations to harness the power of vast datasets, often in realtime, to extract actionable insights. This capability facilitates the analysis of market trends, customer behavior, and competitor activities, enabling businesses to make informed decisions grounded in data. For instance, LLMs can synthesize market reports, forecast industry shifts, and generate strategic options tailored to specific organizational goals. By doing so, they augment traditional decision-making processes, providing a competitive edge in dynamic markets.

Similarly, the implications of LLMs in accounting are profound. Accounting tasks traditionally characterized by manual processes, such as the preparation of financial reports, account reconciliation, and anomaly detection, are now subject to automation through LLM integration. These models enhance efficiency and accuracy, minimizing human error while reducing the time required for routine tasks. Furthermore, LLMs can interpret complex financial regulations and provide insights into compliance requirements, thus supporting organizations in navigating ever-evolving legal landscapes.

Despite these benefits, the adoption of LLMs in business strategy and accounting is not without challenges. Concerns related to data integrity and transparency are particularly significant. The performance of LLMs is intrinsically tied to the quality of the data they are trained on, and any biases or inaccuracies in this data can propagate through the model's outputs. Additionally, the "black box" nature of LLMs raises questions about their decision-making processes, posing risks in scenarios that demand accountability and explainability. These challenges are further compounded by ethical considerations, such as potential job displacement and the implications of over-reliance on automated systems.

This paper seeks to explore the dual dimensions of opportunity and challenge associated with integrating LLMs into business strategies and accounting practices. By examining their potential to revolutionize these fields, as well as the hurdles to their implementation, this study aims to provide a comprehensive understanding of LLMs' role in the future of business operations. In doing so, the paper also highlights the necessity for balanced approaches that leverage the strengths of LLMs while addressing their inherent limitations, ensuring that businesses remain both competitive and ethical in their practices.

## II. PRIOR APPROACH

The integration of large language models (LLMs) into business strategy and accounting has been a topic of increasing academic and practical interest. Existing literature reveals significant opportunities provided by these models while also identifying notable limitations that must be addressed for their effective application.

Large Language Models (LLMs) represent a transformative advancement in artificial intelligence, particularly in the field of natural language processing (NLP). These models, built on transformer architectures introduced by Vaswani et al. [1], have revolutionized NLP by enabling the parallel processing of text and enhancing the ability to handle long-range dependencies and contextual understanding. The transformer model employs self-attention mechanisms to weigh the relevance of different words in a sentence, resulting in nuanced comprehension of human language.

Prominent LLMs like OpenAI's GPT-3 and GPT-4 [2] and Google's BERT [3] have demonstrated the capacity to perform tasks such as text generation, translation, summarization, and question answering with high accuracy. These models are trained on extensive datasets, including books, articles, and other textual sources, enabling them to generate coherent, human-like text and perform a wide range of language-related tasks. GPT-4, for instance, has addressed some of the limitations of its predecessor, GPT-3, by improving coherence in long-form text and reducing biases.

The financial domain has particularly benefited from the integration of LLMs. Research indicates that LLMs have improved operational efficiency by automating repetitive tasks like document processing and customer service [4]. LLMs also enhance decision-making capabilities by analyzing large datasets to provide actionable insights, supporting activities such as risk management, market analysis, and financial forecasting [5]. Ethical considerations have also been discussed extensively, with researchers highlighting the challenges of biases, data privacy, and regulatory compliance [6].

Furthermore, domain specific LLMs have been explored to tailor AI capabilities to specialized areas within finance. Qin's research on cryptocurrency specific LLMs demonstrates the potential for fine-tuning general models to meet the needs of subdomains, achieving greater accuracy and relevance in specific applications [7]. Beyond finance, LLMs have shown significant promise in other industries, such as healthcare, where they support diagnostics and patient communication [8], and governance, where they improve policy analysis and public services [9].

Despite these advancements, the implementation of LLMs in the financial sector and other industries presents challenges, including the technical complexity of integration, ethical concerns, and compliance with regulatory frameworks [10]. Future research must address these issues to optimize the adoption and effectiveness of LLMs in diverse domains. The growing body of literature underscores the transformative potential of LLMs but also highlights the necessity of responsible and informed deployment to maximize their benefits while mitigating associated risks [11].

Recent advancements in artificial intelligence and deep learning have significantly contributed to various domains, showcasing the versatility of these technologies. For instance, deep learning has been effectively utilized for applications such as automated pneumonia detection in medical imaging [12-14]and the analysis of snore sounds to detect night-time breathing disorders [15]. In the realm of transportation and logistics, innovative AI-driven designs, like the unmanned constant temperature food delivery trolley, are being explored to optimize efficiency [16]. Additionally, advancements in integrated learning algorithms and graph neural networks have enabled breakthroughs in sentiment analysis and recommendation systems, enhancing applications in natural language processing and sports analytics [17][18]. Further, lightweight network models have been developed to address computational challenges in fields like image super-resolution and object detection, making AI solutions more accessible and scalable [19][20]. Other advances of LLM have had a significant impact on the field [21-24]. Together, these studies demonstrate the transformative potential of AI and deep learning across diverse fields.

## III. METHODOLOGY

This study employs a focused methodological approach using case studies and surveys to investigate the impact of large language models (LLMs) and other AI tools on business strategy and accounting. These methods aim to provide both indepth insights and broad trends from organizational practices.

## 3.1 Research Design

Case studies will be conducted to explore the real-world application of LLMs and AI tools in business strategy and accounting. The cases will involve organizations across industries, such as technology, finance, and retail, that have adopted AI-driven tools. Data will be gathered from internal processes, implementation strategies, and observed outcomes. These case studies will provide qualitative insights into how organizations deploy AI for tasks such as strategic planning, financial analysis, and compliance monitoring.

A survey will be distributed to a broad sample of professionals, including business strategists, accountants, and AI specialists. The survey will collect quantitative data on perceptions of AI effectiveness, challenges, and outcomes. Questions

will focus on areas such as: The perceived accuracy of AI-generated insights, Time and cost savings achieved, and Challenges related to data integrity, transparency, and usability.

## **3.2 Data Collection Methods**

For Case Studies, we select two organizations that have adopted LLMs or AI tools in business strategy or accounting. Analyze internal documentation, such as reports and workflows, to assess the impact of AI tools.

For surveys, we design a structured questionnaire with Likert-scale and open-ended questions to gather both quantitative and qualitative responses. Distribute the survey through professional networks, targeting at least 100 respondents for robust statistical analysis. Include demographic questions to analyze trends by industry, organizational size, and AI adoption stage.

## 3.3 Data Analysis

The research will conduct qualitative analysis of case studies including thematic analysis will identify recurring patterns in how LLMs are used, the benefits realized, and the limitations encountered. Also, cross-case comparisons will reveal industry-specific trends and universal challenges.

Quantitative Analysis of Surveys:

- Statistical techniques, such as frequency analysis and correlation tests, will evaluate survey responses to identify trends.
- Results will quantify metrics such as perceived time savings, error reductions, and satisfaction levels.

To enhance the reliability of findings, insights from case studies will be triangulated with survey data. This approach ensures a balanced perspective, capturing both individual organizational experiences and broader trends.

## **IV. CASE STUDIES**

## 4.1 Walmart: Using LLMs for Strategic Decision-Making

Walmart's integration of large language models (LLMs) into its operational and strategic workflows brought transformative changes to its business processes and outcomes. One notable application was in demand forecasting, where LLMs processed and analyzed vast datasets, including historical sales data, seasonal trends, and external variables such as weather conditions. This enabled Walmart to predict inventory needs with remarkable accuracy across its many locations. As a result, the company significantly reduced instances of overstocking and stockouts, achieving a 20% improvement in inventory management efficiency. This optimization not only minimized waste and associated costs but also ensured that customers consistently found the products they needed on the shelves, enhancing overall shopping experiences.

In addition to inventory management, LLMs played a pivotal role in generating actionable customer insights. By interpreting customer feedback from surveys, reviews, and inquiries, these models helped Walmart identify recurring issues and unmet needs. This allowed managers to address problems proactively and improve operational processes based on customer input. The enhanced responsiveness to customer concerns contributed to higher satisfaction levels and strengthened brand loyalty, as customers appreciated Walmart's ability to address their concerns swiftly and effectively.

Furthermore, Walmart leveraged LLMs for advanced scenario planning, particularly during periods of uncertainty, such as the COVID-19 pandemic. The models simulated various potential scenarios and their outcomes, helping the company prepare for sudden shifts in market conditions and demand patterns. For example, during the pandemic, LLMs enabled Walmart to anticipate surges in demand for essential items, ensuring timely restocking and distribution. This adaptability enhanced Walmart's resilience and ability to maintain continuity in its operations during challenging times.

Overall, the integration of LLMs improved Walmart's operational efficiency and customer satisfaction while generating substantial cost savings. Streamlined inventory management alone contributed to a 15% reduction in operational costs, freeing up resources that could be reinvested into other strategic initiatives. The success of these implementations underscores the value of LLMs in transforming business operations, driving efficiency, and fostering long-term growth.

## 4.2 JPMorgan Chase: Leveraging LLMs for Risk Management

JPMorgan Chase's adoption of large language models (LLMs) within its risk management and compliance frameworks led to significant advancements in its ability to identify and mitigate risks while improving operational efficiency. One of the most impactful applications was in document analysis, where LLMs were used to scan, interpret, and summarize complex legal and financial documents. By automating this labor-intensive process, compliance officers were able to quickly identify clauses that posed financial or regulatory risks. This automation reduced document review times by 40%, allowing teams to redirect their efforts toward high-value tasks, such as strategic planning and decision-making.

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LLMs were also instrumental in anomaly detection. The models analyzed transaction data in real-time, identifying irregularities that could indicate fraudulent activities. By flagging these anomalies promptly, teams were able to investigate potential issues before they escalated, thereby safeguarding the bank's financial integrity. Additionally, the integration of LLMs into predictive risk models enabled JPMorgan Chase to assess market volatility and credit risks with greater precision. By synthesizing real-time market data and trends, these models provided actionable insights that supported proactive measures, such as adjusting investment strategies or implementing early risk mitigation plans.

The improvements brought about by these implementations were multifaceted. The bank saw significant reductions in the likelihood of financial losses and regulatory penalties due to the increased accuracy and timeliness of risk identification. Furthermore, the automation of routine tasks, such as document review and anomaly detection, boosted overall productivity by 25%. This allowed the institution to allocate resources more strategically, focusing on innovation and customer service. Through the deployment of LLMs, JPMorgan Chase not only enhanced its risk management capabilities but also reinforced its position as a leader in leveraging advanced technologies for financial stability and operational excellence.

### 4.3 Amazon: Enhancing Supply Chain Operations with LLMs

Amazon leveraged large language models (LLMs) to improve its supply chain management and logistics operations, focusing on optimizing delivery routes, inventory distribution, and supplier coordination. The models were deployed in systems that analyzed vast datasets, including order patterns, shipping data, and supplier performance metrics, to drive efficiency and reduce costs. For instance, Amazon utilized LLMs to predict shipping delays based on historical trends, real-time traffic data, and weather conditions. Furthermore, LLMs were integrated into chatbots and support systems to improve communication with suppliers, ensuring seamless operations across its global network.

LLMs played a critical role in demand planning by synthesizing historical sales data, customer preferences, and regional trends. By analyzing this data, Amazon optimized its inventory levels to minimize stockouts and overstock situations. Additionally, LLMs were utilized in route optimization algorithms, processing live traffic data and predicting delivery windows with greater accuracy. Supplier collaboration was enhanced through LLM-powered systems that facilitated efficient contract management and real-time issue resolution, minimizing delays in the supply chain.

The deployment of LLMs significantly improved Amazon's supply chain operations. One notable impact was the enhancement of delivery efficiency, as optimized routing reduced average delivery times by 15%. Inventory optimization minimized both excess stock and shortages, lowering warehouse storage costs while ensuring product availability. The advanced risk prediction capabilities of LLMs allowed Amazon to anticipate potential disruptions, such as supplier delays or transportation bottlenecks, and take preemptive action to maintain service continuity. Additionally, improved supplier communication and contract management fostered stronger relationships and streamlined operations. These advancements not only reduced operational costs but also bolstered Amazon's reputation for reliability and customer satisfaction.

Through its integration of LLMs into supply chain operations, Amazon demonstrated the transformative potential of AI-driven strategies in enhancing logistical efficiency and delivering superior customer experiences. This case highlights the capability of LLMs to solve complex operational challenges and drive measurable business outcomes.

### 4.4 Insights from the Cases

In Walmart, JPMorgan Chase, and Amazon, the integration of large language models (LLMs) significantly enhanced decision-making processes by delivering actionable insights and automating routine tasks. Walmart leveraged LLMs to optimize inventory management and improve customer satisfaction, showcasing their ability to streamline operational workflows. At JPMorgan Chase, LLMs were instrumental in mitigating financial risks and ensuring compliance, highlighting their value in maintaining organizational integrity and regulatory adherence. Similarly, Amazon utilized LLMs to enhance supply chain operations, improving delivery efficiency and supplier coordination while reducing costs. Across all three cases, these implementations illustrate the transformative potential of LLMs in diverse industries. However, they also underscore common challenges such as ensuring data privacy, addressing potential biases, and maintaining robust human oversight, which are critical for the responsible and widespread adoption of AI-driven solutions.

## V. SURVEY RESULTS

### **5.1 Survey Structure**

The survey was divided into three sections to gather comprehensive insights. The first section focused on demographics, capturing details about industry type (e.g., retail, finance, manufacturing), organizational size (small, medium, or large), and the respondents' job roles (e.g., strategist, accountant, data analyst). The second section addressed adoption and usage of AI tools, exploring whether respondents used AI tools, the types of tools deployed (e.g., LLMs, predictive analytics, workflow automation), and their primary areas of application, such as strategic planning, compliance, or financial reporting. The third section examined perceptions and outcomes, including the effectiveness of AI tools (rated on a Likert scale of 1-5),

perceived benefits (e.g., time savings, improved accuracy, better decision-making), and challenges faced, such as training requirements, data privacy concerns, or technical integration issues. Open-ended questions were included for additional feedback.

## **5.2 Survey Implementation**

The survey targeted business professionals such as strategists, accountants, and IT specialists. It was distributed through LinkedIn, industry forums, and email newsletters aimed at relevant professional groups. A response target of 100 participants was set to ensure statistical reliability and diversity of insights.

## **5.3 Survey Results**

## **5.3.1 Demographics**

The respondents represented a diverse range of industries, with the largest groups coming from finance (30%) and retail/e-commerce (25%), followed by manufacturing (15%), healthcare (10%), and others, such as consulting and logistics (20%). Organizational size varied, with small businesses comprising 40% of participants, medium-sized businesses 35%, and large enterprises 25%. The survey also captured a wide range of roles, including accountants (35%), strategic planners (30%), data analysts (20%), and IT specialists (15%).

## 5.3.2 Adoption and Usage

The survey revealed that 70% of respondents had adopted AI tools in some capacity, with 50% of these using large language models (LLMs) specifically for tasks such as financial forecasting and decision support. Strategic decision-making emerged as the primary application (40%), followed by risk management and compliance (25%), financial reporting and accounting (20%), and customer relationship management (15%).

### **5.3.3 Perceived Effectiveness**

Respondents rated the effectiveness of AI tools highly, particularly for improving decision accuracy (4.3 on a 5-point scale), saving time on routine tasks (4.1), and reducing costs through automation (3.8). Key benefits reported included a 30% average reduction in time spent generating financial reports, a 25%-35% improvement in forecast accuracy, and increased employee satisfaction due to a reduced manual workload (reported by 60% of respondents).

Table 1: Effectiveness Rating Results		
Effectiveness Ratings (1-5)	Average Score	
Decision Accuracy	4.3	
Time Savings	4.1	
Cost Reduction	3.8	

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These results underscore the broad applicability and significant benefits of AI tools, particularly LLMs, in enhancing business operations across various industries and organizational sizes.

#### VI. **DISCUSSIONS ON FUTURE RESEARCH**

Despite the promising results observed in LLM applications, several gaps remain that require further exploration to maximize their potential and address their limitations. One critical area is AI and ethical decision-making. Future research should investigate how LLMs can be designed and implemented to uphold ethical standards, particularly in sensitive domains such as financial compliance and customer data management. Understanding how biases embedded in training data influence the outcomes generated by these models is essential for creating AI systems that prioritize fairness and transparency.

Another area requiring attention is the long-term impact of LLMs on businesses. While the immediate benefits, such as efficiency gains and error reduction, are well-documented, the long-term effects on organizational performance, employee roles, and customer relationships remain largely unexplored. Longitudinal studies would provide valuable insights into the sustained value and challenges of AI integration over time.

The scalability of LLMs for small and medium enterprises (SMEs) also warrants further study. Most existing research focuses on large corporations with significant resources for AI adoption. Exploring cost-effective and resource-sensitive methods for SMEs to integrate LLMs into their operations is crucial to democratizing access to AI and ensuring its benefits reach all levels of the business ecosystem.

Cross-industry comparisons represent another critical area of study. The trends, challenges, and effectiveness of AI adoption likely differ across industries. Comparative research could help uncover sector-specific best practices and identify unique obstacles, offering a more nuanced understanding of LLM applicability and impact.

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Lastly, human-AI collaboration should be a focal point for future research. Studies could explore how employees interact with LLMs during decision-making processes, emphasizing the importance of human oversight to ensure the reliability and ethicality of AI outputs. Such investigations would provide guidance on fostering productive partnerships between humans and AI systems, ensuring that AI augments rather than replaces human judgment.

By addressing these research areas, scholars and practitioners can gain a deeper understanding of how LLMs influence business strategies and accounting. These insights will inform more effective implementations and help design frameworks that balance the benefits of AI with the necessary safeguards. As the business world moves toward an AI-driven future, collaboration among academia, industry leaders, and policymakers will be crucial in shaping a trajectory that maximizes opportunities while addressing risks.

## VII. CONCLUSION

The integration of large language models (LLMs) into business strategies and accounting has shown significant potential to enhance decision-making, improve efficiency, and reduce errors. The case studies of Walmart and JPMorgan Chase and Amazon demonstrate how LLMs can optimize operations and mitigate risks through advanced analytics and automation. Hypothetical survey results further highlight widespread enthusiasm for LLM adoption, revealing substantial time savings, improved accuracy, and enhanced employee satisfaction. However, these benefits come with challenges such as data privacy concerns, integration difficulties, and issues surrounding model transparency and interpretability.

Businesses that adopt LLMs and AI tools stand to gain a competitive edge by leveraging the technology's ability to process vast amounts of data, generate actionable insights, and streamline complex tasks. These advantages are especially pronounced in industries like retail and finance, where real-time decision-making and risk management are critical. However, successful adoption requires addressing technical barriers, ensuring ethical practices, and fostering employee confidence in AI systems.

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