# Explore the Impact of Generative AI on Finance and Taxation

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**Abstract.** With the rapid development of generative AI in today's era, the application of financial sharing systems in the corporate finance and taxation fields has been continuously deepening, prompting the operation and management models of modern financial systems to transform towards digitalization and intelligence. This has greatly changed the appearance of enterprises and influenced their upgrading, efficiency improvement, and revenue generation. This paper takes Xiaomi's Financial Sharing Center and Deloitte as research objects, adopts the case analysis method and literature research method, and combines the technical characteristics and development status of generative AI to analyze its specific applications in different enterprises' financial accounting, fund management, tax declaration, risk control and other aspects, and explores the impact of generative AI on aspects such as the improvement of financial and tax efficiency, cost optimization, and risk management and control. The research finds that the application of generative AI has significantly improved the efficiency and accuracy of corporate finance and tax work, but it also faces various deficiencies and challenges. Accordingly, this paper puts forward a number of relevant suggestions to enrich the application research of generative AI in the corporate finance and taxation fields and provide a reference for the digital and intelligent transformation of other enterprises.

**Keywords:** Generative AI, Xiaomi, Deloitte, Financial accounting, Taxation, Digitalization.

## 1. Introduction

In recent years, generative AI has been rising, developing, and upgrading at an unprecedented speed. Core technologies such as big data model applications and AI algorithms have gradually penetrated into the operating systems of various industries with their unique values, profoundly influencing social progress.

The emergence of generative AI has enabled AI programs to replace the repetitive work of accountants, and digital models can predict the potential risks of enterprise operations, providing new ideas for the digital and intelligent development of finance and taxation. It has significant advantages, especially in the fields of fraud detection, risk management, and real time decision making [1]. This paper uses the case analysis method and literature research method, taking Xiaomi's Financial Shared Service Center and Deloitte as research objects. By searching and analyzing their financial reports, ESG reports, relevant industry materials, and literature on generative AI technology, this thesis focuses on the practical applications of generative AI in financial accounting, fund management, tax planning, risk control and other aspects. The aim is to construct a theoretical system for the interactive integration of generative AI and financial and tax services, and to explore whether the situation of generative AI can provide referential methods for the digital and intelligent transformation of other corporate financial shared service centers; whether it can enrich the research results in the field of digital transformation, thereby contributing to the improvement of the social financial and tax system.

## 2. Literature Review

### 2.1. Research results

As a new generation of artificial intelligence technology, generative AI has attracted extensive attention from the academic and practical circles. Many scholars and experts have conducted research on the application of generative AI in finance and taxation from different perspectives and achieved a series of results.

The accomplishment shows that the application of generative AI in the financial field not only improves the quality and efficiency of decision making, but also further promotes the development of the financial management and financial service industries towards intelligence and automation. It helps analysts and investors better understand and interpret financial data and provides more comprehensive information [2]. Taking the application of Kimi in financial auditing as an example, Liu Shu pointed out that Kimi can significantly improve work efficiency in aspects such as regulation sorting, content retrieval, document comparison, and financial report analysis, especially showing advantages when dealing with a large amount of text information and data. However, Kimi has deficiencies in the completeness and accuracy of document comparison and the depth of text content generation, which will affect the accuracy of audit conclusions and there are also risks such as privacy leakage [3]. Moreover, the number of basic accounting positions may be greatly reduced in the future. The "Blue Book on Financial Intelligence of Chinese Enterprises" shows that 40% of basic accounting positions will disappear in the next three years. However, the demand for positions such as management accountants and financial business partners (BP) will increase, which requires financial personnel to have core skills such as financial principles, data tools, and business insights.

In terms of tax declaration, for example, the Danish Tax Agency uses TaxGPT to automatically calculate tax amounts and discover tax deductions. AI automatically processes most declarations and selects high risk cases. In narrowing the tax gap, the U.S. Government Accountability Office reported that AI may help the U.S. Internal Revenue Service (IRS) narrow the tax gap. AI models are used to select samples of taxpayers' tax returns for auditing to estimate the tax gap. In screening suspicious information, the U.S. IRS uses AI models to screen and audit taxpayers applying for refundable tax credits. Based on continuous pre-training and fine-tuning of the model, generative AI can quickly understand complex tax data structures and analysis logics. The AI application system can combine prompts to generate multi-dimensional data analysis results, such as tax payment and tax burden situations by tax type and period, and the categories and amounts of preferential treatments [4].

### 2.2. Research gap

First, most existing studies explore the application of generative AI from the perspectives of financial management and tax management separately. There is a lack of systematic integration research on the two, and the comprehensive impact of generative AI on the financial and tax fields as well as the synergy between the two fields has not been comprehensively analyzed.

Second, although many studies mention the advantages and potential value of generative AI in the financial and tax fields, there are relatively few relevant case and empirical studies. There is a lack of actual data support to verify its actual application effects and specific benefits brought. The research on the application differences of generative AI in enterprises of different scales and industries is also not in-depth enough.

Third, there is a lack of research on the operability of coping strategies. When discussing the challenges and risks brought by generative AI, most of the coping strategies and suggestions put forward are relatively macroscopic. There is a lack of specific and operable implementation steps and methods, and the existing research on how enterprises and tax authorities can specifically implement the coping measures is insufficient.

### 2.3. Theoretical framework and logical reasoning

Based on the case analysis method and literature research method, this study constructs a theoretical framework through the Technology Acceptance Model (TAM) and the Innovation Diffusion Theory. The Technology Acceptance Model holds that users' acceptance of technology mainly depends on perceived usefulness and perceived ease of use. In the context of the application of generative AI in the finance and taxation fields, the perceived usefulness (such as improving work efficiency and enhancing the scientific nature of decision making) and perceived ease of use (such as simplicity of operation and level of learning cost) of generative AI by financial and tax personnel will affect their willingness to accept and use this technology. The Innovation Diffusion Theory

emphasizes the process and influencing factors of the spread of innovation in the social system. As an innovative technology, the spread speed, scope, and effectiveness of generative AI in the finance and taxation fields are affected by factors such as relative advantage, compatibility, complexity, and trialability.

And a logical reasoning chain has gradually formed: As an emerging technology, generative AI has characteristics such as powerful data processing and analysis capabilities. Its application in the finance and taxation fields will change traditional work models and processes. From a financial perspective, it affects all aspects of the financial system, such as financial sharing, management, and decision making; from a tax perspective, it affects tax governance, tax declaration, and tax auditing. These changes will have an impact on financial and tax personnel, and at the same time bring challenges in many aspects such as data, technology, ethics, and supervision. Based on the Technology Acceptance Model and the Innovation Diffusion Theory, personnel's acceptance of technology and the diffusion situation of technology in the field will in turn affect the application effect and development prospect of generative AI in the finance and taxation fields.

## 3. Overview of Generative AI

Generative AI is an important part of the field of artificial intelligence. Its core logic is to automatically find logic and patterns through learning from massive amounts of data, and generate new content or creative results that meet specific needs, rather than simply recording and presenting the current data. Generative AI (GAI) applications can fundamentally change economic and financial activities by completely transforming the way humans interact with machines and generating new production and behavior patterns [5].

### 3.1. Data-driven and learning

Through deep learning models, such as the Transformer architecture, which is a deep learning architecture based on the self-attention mechanism. The core is the Encoder Decoder structure. It achieves parallel computing through the self-attention mechanism (dynamically assigning weights by calculating the similarity of Query, Key, and Value), thus solving the sequence dependence problem of traditional RNNs. Generative AI can automatically generate structured or unstructured content based on the patterns and analyses in massive amounts of data. By inputting the structural logic and format of financial reports previously written by accountants, as well as the latest accounting standards currently in implementation, generative AI technology can automatically generate the first draft of financial reports for subsequent manual review. This significantly reduces the cumbersome costs of accounting preparation work and achieves transformation and efficiency improvement in corporate financial work.

### 3.2. Real-time interaction and adaptability

Through natural language processing technology (NLP), generative AI can understand human language, provide cross cultural and accessible data, and interact in natural language, breaking the barriers of different languages in traditional systems [6]. The core is to convert text into machine processable numerical values through text vectorization (such as Word2Vec and BERT context vectors). By combining rule-driven methods, statistical learning (such as N-gram), or deep learning (such as Transformer), tasks like word segmentation, semantic understanding (entity recognition, sentiment analysis), and text generation (translation, summarization) are completed to achieve natural human-machine interaction. Financial and tax personnel can input commands by voice, such as "Generate the financial statements for this quarter", "Automatically generate vouchers from the bank journal", "Generate vouchers from this month's electronic invoices", etc. They can get the results without learning code, and gradually optimize the process to improve the efficiency of human-machine collaboration.

# 4. Application and Practice of Generative AI in Xiaomi's Financial Shared Services

## 4.1. Overview of the development of generative AI in Xiaomi Financial Shared Services Center

As the core carrier for enterprises to centrally process financial operations, the financial shared service center holds greater practical value when integrated with generative AI. To overcome the efficiency bottleneck of decentralized management, Xiaomi Group established a financial shared service center in 2016, gradually achieving centralization and standardization of multiple financial and tax operations. In 2020, it introduced generative AI into the financial sharing scenario, propelling the process to leap from "automation" to "digital intelligence," thus becoming a typical case of financial transformation for technology companies.

## 4.2. Application of generative AI in Xiaomi's finance and tax scenarios

### 4.2.1 Improvement of financial work efficiency

Based on the data model, generative AI can automatically convert the business data of procurement invoices and business sales orders into accounting vouchers. According to Xiaomi's 2023 ESG report, combined with the dynamic changes of the business, the first draft of the financial report automatically generated by generative AI complies with financial standards, supports multi-language interaction, and reduces the preparation time for accountants by 40%. The RPA + AI intelligent account reconciliation robot project that Xiaomi began to explore in 2020 has been continuously optimized. It now performs account reconciliation work for more than 1,000 suppliers. The workflow greatly reflects the intelligent automation of generative AI, with a data matching rate of up to 82% and an accuracy rate of up to 100%, laying the foundation for Xiaomi's digital and intelligent transformation.

### 4.2.2 Tax filing automation and tax planning scheme generation

Reviewing contracts and documents from a tax perspective is an important part of an enterprise's tax risk management and compliance management. Xiaomi's business spans countries around the world. Generative AI can automatically generate tax returns based on the tax laws of different regions using the tax data of each subsidiary, greatly reducing the manual filling errors in previous tax work. It is reported that the accuracy of Xiaomi's tax filings has been significantly improved in 2024.

Based on the changing tax incentive policies, AI can produce highly targeted tax planning solutions by combining different business scenarios such as cross border mergers and acquisitions, accumulated amortization, R & D and management investment. For example, in the annual R & D expense accounting, by using AI to classify additional deduction items and automatically match the changes in tax incentives to determine the tax incentives (in this paper, a simple calculation is made at the enterprise income tax rate of 25%, and the special contribution of GAI is not clearly distinguished for the time being), the R & D tax can be reduced.

# 5. The application and practice of generative AI in Deloitte

## 5.1. Intel AI software enables empowerment

The AI layout of the world's top four accounting firms has taken initial shape. Among them, Deloitte has launched over 100 pre-built AI agents covering various aspects such as contract review and credit automation in fields like law and finance. Its Smart Chain Audit Platform has achieved 95% automatic verification of vouchers.

Financial efficiency is achieved by relying on internal infrastructure [7]. The deployment of Intel Granulate AI software has dynamically optimized the workflow of generative AI in processing financial data, reduced the company's cloud-computing costs, and improved the operating efficiency

of the financial system. By integrating data models to detect financial anomalies, conduct compliance assessments, and optimize financial data encryption and access control, the company's operational risks are reduced, ensuring data compliance and the legal operation of the enterprise. Combining OpenVINO and Core Ultra processors, Deloitte applies edge AI in financial audits, improving data processing speed by reducing cloud dependence.

In invoice processing, GAI is bringing about a "second-level revolution". This end-to-end digital process of GAI has shortened the manual entry process that originally took several days to just a few minutes, while greatly improving the accuracy. The financial robot launched by Deloitte, combined with Intel's AI technology, automatically completes tasks such as invoice authenticity verification and tax declaration, improving the efficiency and accuracy of tax work.

### 5.2. Independently developed the DelphAI enterprise-level AI platform

The DelphAI platform, independently developed by Deloitte China, is a modular and lightweight platform that supports multi-modal large models. It is also a successful application of generative AI. The platform is based on a five-layer architecture, including the scenario layer, human-machine collaboration and multi-agent layer, model layer, knowledge layer, and trustworthy AI layer (as shown in Figure 1). A series of cases, such as intelligent contract review, service assistants, tax reviews, and financial content generation, demonstrate how generative AI can improve a company's operational efficiency, optimize the experience, and unleash the creativity of financial personnel through the data middle platform, thus building a digital capabilities foundation for enterprises.

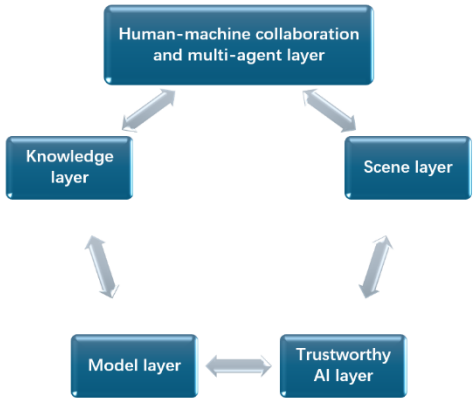


**Fig 1.** Deloitte China's DelphAI Architecture

## 6. The challenges faced by generative AI

Finance and taxation involve various difficult and time-consuming tasks that require a large amount of manpower and are highly error-prone, such as creating and managing financial documents and reports. Therefore, it is necessary to combine GAI to simplify the process and ensure its correctness and compliance [8]. However, the application and rapid development of GAI in financial management also face different degrees of challenges, such as data quality issues, integration and embedding issues, as well as ethical and security risk issues [9].

### 6.1. Technical and social aspects

Nowadays, there is an endless stream of software and platforms for generative AI. Inevitably, the accuracy and credibility of the content generated by them are questioned. Many companies have encountered situations during application where the financial or tax processing results generated by generative AI seem reasonable but are actually wrong. This may lead to serious consequences in professional fields such as finance, scientific research, and healthcare. Meanwhile, the operation of

GAI's big data models requires huge capital expenditure and is extremely costly, which restricts the popularization and development of GAI technology in small and medium-sized enterprises.

In addition, the emergence of GAI will inevitably replace some repetitive labor (such as drafting financial reports and asset accounting), leading to changes in the employment structure of the financial industry. This requires enterprises to strengthen the training of labor adaptability. There may also be a risk of privacy leakage during the human-machine interaction process, which affects the legitimate rights and interests of users to a certain extent.

### 6.2. Regulatory and normative aspects

Currently, the legal system for generative AI in China and even globally is not yet perfect. The supervision of the R&D and application process of big data models in the financial and tax fields is also not standardized enough, and there is a lack of clear regulations on relevant liability determination and review standards [10].

## 7. Conclusion

The above research shows that generative AI has brought significant changes to the financial and tax work of Xiaomi and Deloitte, promoting enterprises to continuously transform and upgrade in the digital age, facilitating the transformation of financial management towards pre-event prediction, and improving the efficiency of tax work. However, it still faces many problems in aspects such as data security, technology optimization, decision making compliance, and social iteration. In future development, it is necessary to continuously balance the technology and the institutional design system. The government, enterprises, and the academic community also need to increase their support for the digital economy and generative AI to promote its further development and application.

This article suggests that in the future, efforts should be made in the aspects of technology desensitization, institutional authority, and audit verification. Cultivate dual track compound talents and connect with policy APIs, that is, register a developer account on the government platform, obtain interface permissions, and connect the policy data interface with the enterprise system through technical debugging to achieve automatic synchronization of policy information and compliant declaration. In addition, select typical scenarios (such as financial review), configure data samples and AI tools for small-scale pilot verification. Optimize and iterate after comparing the effects of manual and AI processing, and then gradually promote it to the entire process. Strive to benefit the entire fields of finance and taxation with the achievements of generative AI, and empower enterprises to create cost effectiveness and promote social and economic progress.

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