



Application and research of ChatGPT in accounting technology

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Abstract. This paper explores the application of ChatGPT and its core technology in the field of intelligent accounting based on the artificial intelligence product ChatGPT and its core technology model. In particular, it is applied in intelligent accounting, intelligent financial sharing, intelligent financial decision-making, intelligent financial analysis visualization and intelligent internal control. Through the research of this project, a solid theoretical and technical foundation can be laid for the practical application of ChatGPT and its AI products such as Transformer model architecture and feedback learning mechanism in intelligent accounting. In addition, this project can also help the industry to carry out accounting intelligence and enterprise digital transformation, and in a sense, supplement the relevant theories and methods of intelligent accounting.[1]

Keywords: ChatGPT; Intelligent accounting; Intelligent financial decision-making; Intelligent financial sharing; Intelligent financial analysis visualization; Intelligent internal control

1 Introduction

ChatGPT (ChatGenerativePre-Trained Transformer) was launched in November 2022, and has set off an international craze and rapidly developed into a phenomenon application. Its potential impact on the traditional industry, especially the finance and accounting industry, immediately aroused the academic and industrial circles attach great importance and intense discussion. The general artificial intelligence embodied in ChatGPT will certainly bring great changes to the whole world, and accounting, as a basic work to promote the normal and orderly development of economy and society, will undoubtedly suffer the impact and test from all aspects. Explore a practical and feasible way to provide a new idea for the development of smart finance, provide a new idea for the development of smart finance, and serve smart finance. In order to realize the transformation, on the basis of the strategy of rejuvenating the country through science and education, the government has put forward the concept of comprehensive development concept, adhering to the principle of science and technology as the primary productive force, and the investment in science and technology has also increased year by year, as shown in Table 1.

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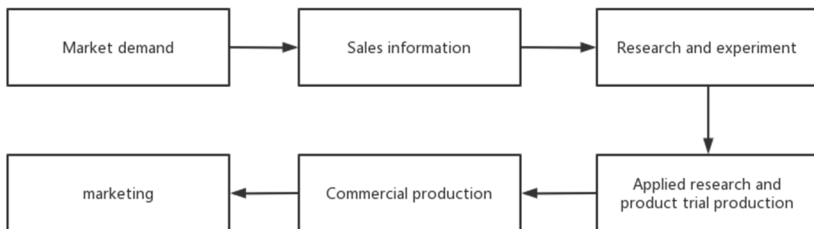
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Table 1. Intensity of government investment in science and technology from 2008 to 2010

A given year	Science and technology investment (100 million yuan)	Growth rate (%)
2008	4616.0	/
2009	5802.1	25.7%
2010	7062.6	21.7%

2 ChatGPT and its underlying technical logic

Compared with other artificial intelligence (AI) products, ChatGPT's Transformer series model is a new Transformer system that organically integrates the two modes. It uses a human-centered reinforcement learning (RLHF) training method, and uses a human-centered self-adjustment and self-adjustment of self-adjustment, so that it can understand the situation semantics in massive data, and improve the accuracy, responsiveness and intelligence of problem feedback. In addition, ChatGPT can only multi-task learning based on existing knowledge through massive parameters and existing topic data, and lacks a lifelong learning mechanism. If it is applied to the accounting field, there may be some shortcomings for the information processing and management of accounting, which is very institutionalized, regularized and purposeful. See Figure 1:

**Fig. 1.** Market pull model

3 ChatGPT and the internal logic of intelligent accounting

In the context of digital economy, smart accounting is the direction of accounting reform and development [2-3]

There is no doubt that this is the only way the accounting field can meet the challenge of ChatGPT. Of course, the application of ChatGPT and its core technology in the field of intelligent accounting is also the demand of The Times to promote the improvement and optimization of intelligent accounting, and there is a necessary internal interaction logic between the two. The existing research shows that intelligent accounting is the in-depth application of intelligent technology into accounting, and it is

the product of accounting actively integrating into science and technology. There is a mutual promotion relationship between the development of artificial intelligence technology and the transformation of accounting intelligence. Wang Aiguo [3] believes that the essence of "smart accounting" is a kind of human-computer symbiosis, co-evolution, management-enabled symbiosis between "people" and "things", co-evolution, based on the "integration of industry and finance", supported by artificial intelligence, and "people" as the main body of financial management behavior, which makes full use of the information resources of "people" and "things". Accounting in intelligent accounting refers to big accounting, which includes both financial accounting and management accounting. Driven by big data and artificial intelligence technology, it has upgraded its operation [3], and its connotation is very rich. From the perspective of accounting information and data processing process, the core contents of intelligent accounting mainly include: Intelligent accounting systems for the collection and processing of accounting data/information, external data acquisition systems to support corporate decision making, intelligent financial sharing centers for storing or integrating accounting/business data and responsible for data and process standardization (enterprise/financial data Center), intelligent financial decision systems for big data use (i.e., analysis, forecasting and decision making),for reporting There are six aspects of intelligent financial analysis miss full stops:[4] The third is to use big data, artificial intelligence and other technologies to establish a company digital warehouse based on the middle system structure (referred to as "accounting big data"), integrate all kinds of useful data inside and outside the company, unified design, unified standards, to achieve data storage and management, and establish a "smart finance" corporate governance and decision-making system, referred to as "smart finance". [8] Figures 2,3, and 4 show an intelligent accounting architecture and the logical connection between them.[5]

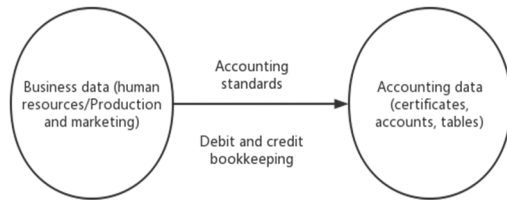


Fig. 2. Intelligent accounting system



Fig. 3. Smart Finance Sharing Center (Corporate/Financial Data Center)

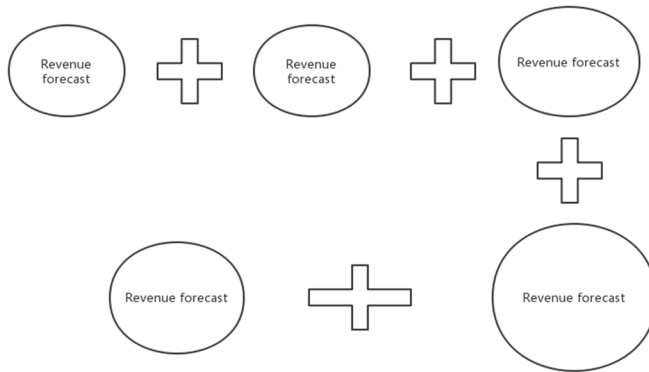


Fig. 4. Intelligent financial decision system

In smart accounting, there is a relationship between various systems. The internal data generated by the smart accounting accounting system and the external data collected from the external data collection information system together form the data content of the accounting big data platform in smart financial sharing.[6] At the same time, the data structure design of the smart finance sharing big data platform provides the corresponding standard for the generation and collection of internal and external data, and can preprocess, store and manage the data. In the smart financial sharing center, intelligent technology and mathematical models can be used to help the business prediction and decision-making of enterprises, and the visualization method is used to show it, that is, the intelligent financial decision system and the intelligent financial analysis visualization. The smart financial analysis visualization system can also use the massive information integrated by the smart financial sharing center to analyze the industry financial data and reports, and display them dynamically and vividly. In order to realize the scientific and smooth operation of the above system, it is necessary to realize the intelligence of the company's internal control system, that is, the so-called internal control intelligent system, its specific content is: digitalization of party building activities, digitalization of internal environment, digitalization of control activities, intelligent risk assessment, digitalization of information communication, and technical internal supervision. The function and technical realization means of each subsystem in intelligent accounting system are different, so their requirements for intelligent technology are also different. [7] In addition, due to technical limitations, non-uniform system data standards in the information stage, and non-uniform start time and transformation paradigm of intelligent enterprise accounting transformation, the implementation degree of intelligent accounting in various enterprises is also different. Therefore, when analyzing the application of ChatGPT and its core technology in intelligent accounting, not only the application scenario of fully intelligent accounting system should be taken into account, but also the application scenario of accounting system in the current stage of incomplete intelligence.

4 Table lookup GPT for generating financial information and collecting external information

We know that under normal circumstances, a company's information can be divided into two aspects: one is internal information, and the other is external information. The generation of accounting data, that is, an important component of enterprise internal data, it mainly relies on intelligent accounting system, which is a computer equipment system based on accounting concepts and accounting rules, in accordance with accounting logic and accounting cycle, and through digital technology automation, to realize the integration of economic business and accounting. Of course, in the past time, the accounting calculation has gone through the manual, computerized, information and intelligent development process, the current accounting calculation system is in the process of transformation from information to intelligent, more is to achieve partial or complete automation. In the accounting data generation stage, most of the methods used in the industry are strong matching, that is, through the joint combing of business personnel and financial personnel, combined with the database characteristics used in the accounting big data system, the account corresponding to the enterprise business data is sorted out according to the debit and credit bookkeeping method, and designed in the database field. This enables the ability to automatically generate credentials as soon as business data occurs.[10]

5 GPT of Smart Financial Sharing Center

One is based on informationization, unified processing of financial data, and optimization of the process, focusing on centralized accounting; The second is to use this sharing platform to connect the business system internally, connect the business system externally, and connect the tax system with the business system to achieve the unity of business and tax; The third is to use big data, artificial intelligence and other technologies to establish a company digital warehouse based on the middle system structure (referred to as "accounting big data"), integrate all kinds of useful data inside and outside the company, unified design, unified standards, to achieve data storage and management, and establish a "smart finance" corporate governance and decision-making system, referred to as "smart finance". [9] The Smart financial sharing center integrates digital strategic management ideas into it and defines the company's data standards. It is the basic logic between the smart accounting system and the external data collection system. In the process of establishing an information platform, it often involves the integration of internal and external information, and this "once and for all" work should be done by the financial director. Wang Aiguo believes that the financial director should use the idea of "big accounting" to plan intelligent accounting, use the idea of "big interdisciplinary" to build intelligent accounting, and use "revolutionary" measures to achieve intelligent accounting. The use of this method can help enterprises classify different types of big data, and standardize and integrate different types of big data, so as to accelerate the process of digital transformation of enterprises.

6 Conclusion

The advent of AIGC generative AI products represented by ChatGPT has indeed had some impact on traditional industries. However, in the era of intelligence, how to embrace new technologies and make full use of new technologies is a problem that academics and the industry should pay more attention to. Smart accounting is an industry combined with new technology, it needs to timely analyze the availability and adaptability of new products and new technologies when they appear. Under this background, this study combines the technical characteristics of ChatGPT with the essence of intelligent accounting. After a comprehensive analysis of the technical development context and the functions and characteristics of each subsystem of intelligent accounting, the application of ChatGPT and its technical mode in various systems of intelligent accounting is analyzed in detail. The results show that the tool can help accounting workers better use artificial intelligence technology and adapt to the development of intelligent accounting. We can regard this paragraph as a supplement to the future research of intelligent accounting. At the same time, through the application of ChatGPT and its key technology mode in intelligent accounting, it provides a theoretical basis for the application of other artificial intelligence products and intelligent technology in intelligent accounting and digital enterprises.

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