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Analysis of the Impact of "Artificial Intelligence +" on the Digital and Intelligent Transformation of Sichuan Changhong - Taking Finance as an Example

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Abstract. Under the background of the national strategy of the integration of artificial intelligence and real economy, financial digital-intelligent transformation has become imminent for traditional manufacturing enterprises. By conducting a case study of Sichuan Changhong, this paper investigates how the "Artificial Intelligence+" (AI+) strategy shapes the mechanisms and pathways underlying financial digital intelligence transformation in manufacturing companies. Empirical evidence from the case reveals that enterprise-wide digital and intelligent transformation is fundamentally propelled by financial digital intelligence. The evolution of "AI + finance" unfolds progressively, shifting from operational process automation to intelligent decision-making, which can only be achieved through integrated alignment among technology, organizational structure, and corporate strategy. Changhong has embedded AI into the core scenario of expense reimbursement, and achieved cost reduction and efficiency increase through intelligent order creation, approval and data analysis. The financial function has shifted from accounting to strategic, and the period expense ratio has decreased, and ROE and other profit indicators have steadily improved. This study explores the feasible path of "AI + finance" for traditional large enterprises, provides practical reference for the transformation of similar enterprises, and enriches the case studies in related fields.

Keywords: Artificial Intelligence, digital and intelligent transformation, data driven, financial management, case study

1. Introduction

At present, digital technology represented by artificial intelligence and big data is setting off a new round of industrial transformation. The integration of artificial intelligence into the real economy and the advancement of industrial transformation and upgrading have been clearly emphasized in both China's "14th Five-Year Plan" for Digital Economy Development and The State Council's Opinions on Seriously Implementing the "Artificial Intelligence +" Action. In the new era, enterprise finance is the core link responsible for data processing and value management. The degree of enterprise finance digitalization is closely related to the operational status and major business decisions of enterprises. The previous financial accounting and supervision models were mostly

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post-event accounting and supervision. Such work often remained superficial and had problems such as overly heavy responsibility division, delayed information transmission, and untimely response. In the complex and changeable environment of big data, it can play a relatively limited role in enterprise decision-making. The so-called "Digital and Intelligent Transformation" of finance aims to utilize technologies such as artificial intelligence to efficiently handle simple and repetitive transactional tasks driven by data, which is more conducive to the automation or intelligent transformation of financial work. And traditional manufacturing enterprises with large organizational structures and complex business lines are now facing the problem of how to apply AI technology to the core financial work of the enterprise and improve the organizational capacity.

Sichuan Changhong is a representative enterprise in China's manufacturing industry and has always earnestly implemented relevant national policies. Artificial intelligence technology has been widely adopted in financial reimbursement processes across diverse real-world applications, representing a pioneering and exemplary implementation. Based on Changhong's experience, this research constructs a practical framework for the digital-intelligent transformation of traditional manufacturing companies, providing meaningful guidance for companies in the same industry.

2. Literature review and theoretical framework

Existing literature has documented that enterprise digital and intelligent transformation is jointly shaped by both the external technological context and the institutional environment. Industry 4.0 technology, with AI and big data as the core, has brought many new possibilities to all aspects of enterprises [1]. Looking at the specific applications of AI, machine learning has played a relatively significant role in enhancing customer service experience, while the effect of predictive analysis is relatively limited [2]. The synergy between diverse technologies, particularly the integration of artificial intelligence and financial innovation, has garnered significant academic and industrial interest. It can, to a certain extent, promote the market-based trading of data elements and is a key link in assisting enterprises in their digital and intelligent transformation [3]. Data element marketization (DEM) can play an obvious role in promoting the digital transformation of enterprises, and the specific ways include stimulating digital technology innovation [4]. Regarding the institutional and policy context, a digital-oriented public policy system can further strengthen innovation as a core driver in the digital transformation process, thereby enhancing corporate performance [5]. For state-owned enterprises, the system pressure is the main external driver of its digital transformation [6]. Research from the Kosovo region also shows that digitalization is a general external trend driving sustainable transformation in the financial accounting field [7].

For organizations exposed to external opportunities and pressures, their own choices, resource reserves and capabilities will directly affect the actual effect of transformation. The accumulation of data elements plays a certain intermediary role in the transformation key of AI investment. AI investment improves the digital transformation performance of enterprises by promoting the accumulation of data elements. The enterprise's own technology absorption capacity is also critical. The stronger the capacity is, the more obvious the promotion effect of AI investment will be [8]. Innovation resource allocation logic constitutes a pivotal determinant of corporate performance; specifically, the adoption of AI technology optimizes the deployment mode of such resources, thereby fortifying the dual innovation capabilities encompassing both exploratory and exploitative endeavors [9].

Enterprise financial digital and intelligent transformation relies on artificial intelligence and other technologies to achieve business digitalization, so as to promote the improvement and upgrading of the financial system itself. Digital and intelligent transformation is a complex process that will

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fundamentally change the core business process and value creation mode of an enterprise and is by no means a simple adjustment that can be achieved overnight. In finance, AI is pushing accounting from purely historical records to supporting strategic decisions, with significant improvements in the accuracy and efficiency of data processing and predictive analysis [10]. Many people confuse digitization with digital transformation, but there is a clear distinction between the two, with the latter involving a more fundamental reinvention of the business model [11]. As for the paths through which the transformation will have an impact, many empirical studies have provided evidence from different perspectives. Digital transformation can improve enterprise performance, among which the stimulating effect on innovation momentum is obvious [5]. To address the innovation dilemmas faced by enterprises, digitalization relies on elevating innovation quality and strengthening technology absorption and transformation capabilities. However, such efforts have not been effectively translated into productivity gains, particularly in the context of research and development investment [12]. The application of AI can improve total factor productivity (TFP) and promote the modernization transformation of productivity [9]. The positive effect of investing resources to develop AI on digital transformation performance has been proved by large sample data [8]. This article takes the relevant measures of Changhong's digital and intelligent transformation as an example to deeply analyze the impact, effectiveness and feasible path of "Artificial Intelligence +".

3. Case study

As a traditional manufacturing giant with diversified business and huge volume, Changhong has achieved remarkable results in the transformation by relying on the investment in digital intelligence and the core strategy of "Artificial Intelligence +". The following will be elaborated from three aspects: specific application, financial performance and field synergy.

3.1. The specific application scenario mechanism of "Artificial Intelligence +"

Changhong financial digital and intelligent transformation focuses on expense reimbursement and control scenarios with frequent manual docking and large amount of data. Through the cooperation of three core applications, intelligent order creation, intelligent approval and intelligent data analysis, a circular optimization system is formed. Intelligent order creation uses Optical Character Recognition (OCR), natural language processing and knowledge graph technology to realize automatic identification and extraction of voucher information and automatic generation of reimbursement forms. The mode is changed from "people looking for information" to "information looking for people", the processing time of a single bill is reduced to 40 seconds, the input error rate is reduced to 5%, and the reimbursement experience is greatly optimized [13]. Intelligent approval relies on the rule engine and model to carry out automatic compliance verification, compliance documents automatically pass, and abnormal documents are marked with risks and manually reviewed. Man-machine collaboration enables financial personnel to break away from mechanical work and focus on high-risk matters. Compared with the traditional mode, the interception rate of abnormal documents is 60% higher, and the accuracy rate of risk control is over 98%, realizing the double improvement of efficiency and risk control [13]. Intelligent data analysis summarizes enterprise data to the data center, predicts cost trends, identifies cost anomalies and warns in time through big data analysis and machine learning, and promotes financial analysis to upgrade from lagging static mode to dynamic mode of prediction and follow-up. After the integration of the three applications, Changhong's financial process efficiency and data accuracy have been significantly improved, operating costs have been optimized, risk control has been upgraded from manual spot

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check to intelligent control, financial personnel's energy has been redeployed, the proportion of strategic financial personnel has been increased, and the financial function has been successfully gradually transformed from "accounting" to "strategic".

According to the official website, the order delivery cycle of Changhong's smart display factory has been directly reduced from 49 days to 11 days, and the inventory turnover rate has increased by 145%, saving nearly 100 million yuan in total costs. Since 2023, through the linkage with Chengdu data space and the integration of tax, credit investigation and other data, more than 2,500 chain enterprises have been helped to obtain low-interest financing of more than 10.7 billion yuan, making data become credit. AI technology is applied to accounting processing, automatically generating accounting vouchers, improving accounting efficiency by 50%, and reducing error rate from 0.3% to 0.05%. The smart tax declaration system automatically matches tax policies, shortening the declaration period from 3 days to 1 day, and improving the accuracy of tax planning by 30%.

3.2. Artificial intelligence application in enterprise finance to reduce costs and increase efficiency

Changhong's digital and intelligent transformation has achieved obvious results in both cost reduction and efficiency increase. The positive trend of using technology to drive operations and relying on data to assist management has gradually emerged in daily operation. Table 1 below records the key financial indicator data of Changhong from 2020 to 2025.

Table 1. Important financial analysis indicators of Sichuan Changhong from 2020 to 2025

	Year of important indicators	2020	2021	2022	2023	2024	Half-year 2025	Third Quarter 2025
Reduce costs	Operating cost ratio	0.898	0.900	0.884	0.885	0.900	0.904	0.906
	Period expense ratio (Sales management and research finance)	0.089	0.084	0.088	0.087	0.077	0.071	0.073
Increase in efficiency	Turnover of fixed assets	12.200	12.571	11.992	13.051	14.204	7.758	11.221
	Inventory turnover rate	5.049	5.129	4.515	4.486	4.400	2.345	3.557
	Accounts receivable turnover	8.771	9.841	8.402	7.053	6.738	3.366	5.217
	Total asset turnover	1.238	1.261	1.121	1.083	1.070	0.558	0.826
	Net interest rate	0.002	0.007	0.012	0.018	0.017	0.020	0.023
	Gross profit margin	0.102	0.100	0.116	0.115	0.100	0.096	0.094
	Equity multiplier	3.604	3.671	3.692	3.837	3.952	4.033	3.886
	Return on equity (ROE)	0.011	0.031	0.051	0.077	0.074	0.045	0.074

Data source: Juchao information network and Sichuan Changhong official website corporate financial reports

In order to reduce operating costs, enterprises have significantly optimized the expenditure control work during operation with the help of process automation and intelligent control system.It can be seen from the table that the period expense ratio of Changhong has dropped from 8.9% in 2020 to 7.3% in the third quarter of 2025. This change shows that in the process of expense approval, budget implementation and daily operation, the level of refinement and automation of the enterprise has been improved, and the management cost has been saved in various aspects.

In terms of efficiency enhancement, enterprises gradually improve the efficiency of asset use and profitability by relying on data center and intelligent analysis tools. In Figure 1, the turnover of fixed

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assets in 2024 reaches 14.2, and the allocation of production resources is in a relatively efficient state; In addition, ROE is generally on the rise from 1.1% in 2020 to 7.4% in the third quarter of 2025. Enterprises adjust their operations in a data-driven way, improving the overall quality of earnings and providing important support for decision-making, which has had some practical effects in the steady growth of shareholder returns. However, in recent years, due to the influence of external factors such as weak industry demand, inventory turnover rate and accounts receivable turnover have declined, but the decline of Changhong is less than the average of the industry (the average inventory turnover of the manufacturing industry will decrease 0.5 times in 2023-2024), which also shows that AI can reduce inventory overstocking by accurately forecasting demand and giving early warning. And slow down the external impact, reflect the "defensive value" of digital intelligence.

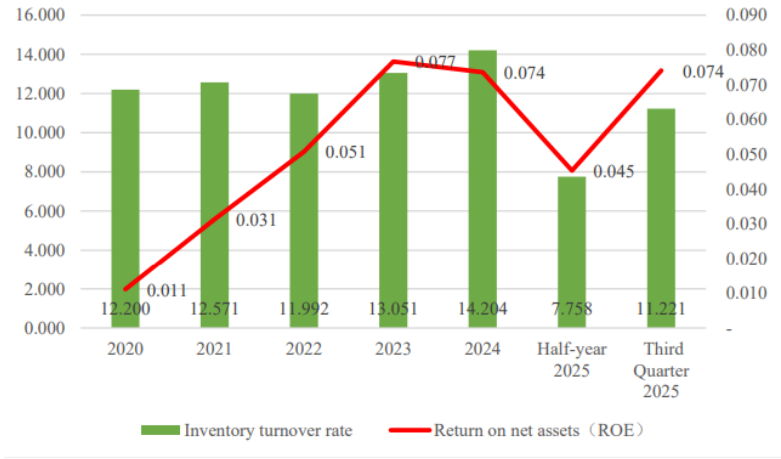

Figure 1. Trend of efficiency enhancement indicators

Supported by the application of digital intelligence, Changhong has significantly enhanced asset efficiency and profit resilience while controlling operating costs, laying a more flexible and insightful management foundation for the sustainable development of the enterprise.

3.3. Artificial intelligence in other ways

From 2022 to 2024, under the guidance of its "Artificial Intelligence +" strategy, Changhong has also taken many digital and intelligent transformation measures in other fields. At the strategic level, Changhong has deepened its strategic positioning year by year from "Wisdom + Intelligence" in 2022 to "Intelligent Transformation and Digital Reform" in 2024. On the basis of technology, starting from the application of AI algorithm, the company gradually launched the world's first AI platform for smart household appliances based on large model "Yunfan Large Model" and further extended to the vertical field to create "Canghai Agent" and white power vertical domain large model. Core products are also updated and iterated, from 5G ecological set, the world's first star flash technology TV, to AI full-scene home appliance series. In terms of intelligent manufacturing, it has achieved a three-level leap from industrial automation, national double cross-platform empowerment to excellent intelligent factory, and all key indicators have been significantly optimized.

According to the data of Sichuan Changhong Environmental, Social and Governance (ESG) report from 2022-2024, Changhong's production line automation has increased the per capita efficiency several times, the supply chain digitalization has covered 874 suppliers, and 100%

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investigation of credit risks has reduced the bad debt rate of accounts receivable from 1.2% in 2020 to 0.5% in 2024.Despite the remarkable achievements, there were still some potential risks of information leakage during the transformation process. Changhong effectively reduced these risks through relevant encryption technologies. While focusing on patent applications, it also made efforts to cultivate versatile talents and enhanced the enthusiasm of employees through equity incentives and other means. Overall, it has presented a virtuous development trend of simultaneous progress in technological deepening, benefit release and asset accumulation.

4. Suggestions

4.1. For enterprises

Enterprises should closely follow the strategic direction and start to promote it in stages. Enterprises should integrate financial digital intelligence into the overall digital strategy, select those high-frequency and high-value scenes as the entry point, and gradually expand the coverage. Do not blindly pursue everything.

Enterprises need to pay attention to the collaborative reform of multiple factors such as technical means and organizational structure. When introducing AI technology, people should not only focus on technology implementation but also make flat and agile adjustments to the organization simultaneously. For financial personnel, it is also necessary to promote systematic skills remodeling training programs on a large scale to create T-shaped composite talents who understand finance, technology and business.

Enterprises should also cover the whole process of the integration of data management system. High-quality data is the core prerequisite for AI to play a role in practical applications. Enterprises need to start with the development of unified data standards and governance norms, one by one to break through the data barriers between business and finance, internal and external, and build a data platform with complete functions.

4.2. For industry

The industry should develop unified standards in line with the actual needs of the industry while promoting the collaboration between industries, universities and research institutes. Industry associations can lead and organize leading enterprises, universities and research institutions to jointly develop financial AI application solutions, relevant data interface specifications, security protection standards and ethical requirements that are suitable for the operation characteristics of the industry.

Build a unified exchange and sharing platform at the industry level. Promote the sharing of excellent cases, accumulate experience, promote the faster spread of "AI+" in communication, reduce the cost of details in the transformation process of the whole industry, and make the implementation of "AI+" in the financial field faster.

5. Conclusion

This study takes Sichuan Changhong as an example to conduct in-depth analysis and finally concludes that "AI+ finance" is a gradual process from "process automation" to "decision-making intelligence". Digital intelligence in the field of finance, namely data intelligence, is the core force to promote transformation. Only by integrating AI technology into all aspects of enterprise production,

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using AI to collect, clean and analyze data, and finally extracting valuable information, can finance jump out of the limitation of traditional functions. Furthermore, digital intelligence is often the result of the coordinated promotion of technology, organization, strategy and other aspects. Relying solely on the introduction of technology without top-level strategic determination and corresponding organizational adjustments, as well as the improvement of personnel capabilities, it is difficult to achieve a more comprehensive digital transformation.

This paper summarizes Changhong's "AI+ finance" feasible path and specific practical operation scheme from various aspects, provides a Changhong scheme for other transformation enterprises to refer to, and also adds new content to the case studies in related fields.

This study focuses on the single case of digital and intelligent transformation in the manufacturing industry, and the conclusions drawn are mainly applicable to similar situations. Future research can further test its applicability in a wider range of samples, start to do comparative analysis of multiple cases, explore the similarities and differences of financial digital and intelligent transformation models in different situations, and sort them out with quantitative research methods. Use larger-scale sample data to examine the correlation between AI technology investment and financial performance as well as enterprise value. For all kinds of actual situations brought by human-machine collaboration mechanism in the transformation process, it can also be further expanded.

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