

The Implementation Path of Artificial Intelligence Technology Assisted Optimization of Financial Shared Service Center

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Abstract: *With the advancement of technology, artificial intelligence technology has been widely applied in various industries, and the application of intelligent financial shared service centers is a new financial management model that has emerged in response to the development of the times. The article elaborates on the necessity of constructing an intelligent financial shared service center and the impact of artificial intelligence technology on its development. Based on this, the article analyzes the construction and operational optimization measures of the intelligent financial shared service center through top-level design and planning, technical architecture construction, organizational and talent transformation, and explores in detail the phased implementation path of AI assisted financial shared service centers. Taking the intelligent financial shared center of China Construction Third Engineering Bureau as an example, it demonstrates the core model and innovation of the intelligent financial shared center of China Construction Third Engineering Bureau. The application of intelligent financial shared service centers not only has significant advantages in releasing human resources and reducing operating costs, but also ensures compliance and decision support capabilities, helping financial management develop towards higher efficiency and intelligence, thus building an intelligent financial shared service center that adapts to the high-quality development of enterprises. With the further development of AI technology, intelligent financial shared service centers will provide enterprises with more extensive business support and innovation momentum.*

Keywords: *Artificial Intelligence, Financial Shared Service Center, Optimization, Implementation Approach*

1. Introduction

In recent years, with advancements in technology and artificial intelligence, the application of big data, robotics, and automatic recognition technologies has driven rapid societal development. Meanwhile, artificial intelligence has been integrated into corporate financial shared service centers, promoting the evolution of financial management toward a more scientific, systematic, and efficient direction, thereby providing a solid financial foundation for the healthy growth of enterprises. This paper focuses on the impact of artificial intelligence on the development of new financial shared service centers in enterprises, aiming to enhance corporate mastery of AI technologies, improve financial management standards, and foster stable corporate development.

2. The Origin and Development of Artificial Intelligence Technology and its Impact on the Development of Financial Shared Service Centers

2.1. The Origin of Artificial Intelligence Technology

Artificial Intelligence (AI) is a technological science that simulates human intelligence through computers, with the core objective of enabling machines to possess perception, learning, reasoning, and decision-making capabilities. Its operation relies on a dual core model of data and algorithms, which predicts or makes judgments by analyzing patterns in massive amounts of data. In 1950, the "father of computers" Alan Turing published "Computers and Intelligence" and proposed the famous "Turing Test". If a machine can engage in dialogue with humans without being identified as a machine, then the machine has intelligence. This provides direction for the development of artificial intelligence. In 1956, at Dartmouth College in the United States, John McCarthy first proposed the term "artificial intelligence",

marking the official birth of artificial intelligence[1].

2.2. The Development of Artificial Intelligence Technology

In the early stages of the development of artificial intelligence, from the 1960s to the 1970s, artificial intelligence entered a period of practical research and application exploration from the embryonic concept. Researchers in this stage are conducting in-depth theoretical research and application attempts in different fields, gradually developing artificial intelligence from an abstract concept into a tool that can be used to solve practical problems. The 1980s and 1990s were a stage of revival and growth for artificial intelligence. During this period, artificial intelligence research has regained vitality, experienced significant technological breakthroughs and application expansion, focused on and adopted AI technology, and promoted the transition from theoretical exploration to practical application in this stage of research. Since the beginning of the 21st century, artificial intelligence (AI) has undergone rapid development and transformation, ushering in a modernization stage. During this period, emerging technologies such as big data and deep learning were widely applied, and artificial intelligence made astonishing progress. AI technology has not only achieved multiple milestone breakthroughs in academic research, but also gained widespread popularity in practical applications, penetrating into various industries. The construction of an intelligent financial shared service center is a new financial management model that has emerged in response to the development of the times.

2.3. The Impact of Artificial Intelligence Technology on the Development of Financial Shared Service Centers

2.3.1. Process Automation and Efficiency Improvement

Artificial intelligence technologies such as RPA and OCR significantly optimize the repetitive workflow of financial shared service centers. For example, implementing automatic invoice recognition and input through RPA can reduce manual operation time by over 80%; The intelligent accounting function supports invoice recognition and verification, automatic voucher generation, and intelligent matching of accounts based on transaction records, significantly reducing manual intervention and improving accounting processing efficiency.

2.3.2. Data Driven Risk Management and Decision Support

Machine learning algorithms help build financial risk prediction models, improving the accuracy of abnormal transaction detection to over 90%, achieving early warning and effective response to financial risks. At the same time, AI technology supports deep financial analysis and industry comparison, combines with custom report functions to provide real-time and accurate data analysis for enterprises and promote the transformation of financial shared service centers from cost centers to value creation centers

3. The Necessity and Advantages of Building an Enterprise Intelligent Financial Shared Service Center

3.1. The Necessity of Building an Intelligent Financial Shared Service Center[2] [3]

The core necessity of building an intelligent financial shared service center is reflected in two aspects: on the one hand, it can significantly improve the operational efficiency and management level of enterprises. By integrating financial processes, standardized and procedural operations can be achieved to avoid potential process redundancy and operational irregularities in traditional decentralized financial management; On the other hand, it can effectively reduce enterprise costs, centralize processing the accounting business of different regions and entities, reduce repetitive manpower and system investment, and achieve effect of scale, which is aligned with the general advantage of financial shared service centers saving system and artificial costs through centralized operation.

The application scenarios of intelligent financial shared service centers are extensive. In addition to common basic scenarios such as daily financial accounting and expense reimbursement, they can also be applied to cross-border financial control of enterprise groups. Through standardized processes and a unified platform, real-time monitoring and management of the financial status of branches around the world can be achieved; In the process of corporate mergers and acquisitions, it is possible to quickly integrate the financial data and processes of the acquired company, accelerating the financial integration after the merger; At the same time, it also applies to the digital transformation strategy of enterprises, as

the core link of financial digitalization construction, providing strong financial support for the overall digital transformation of enterprises.

3.2. Advantages of Intelligent Financial Shared Service Center over Financial Shared Service Center

Financial Shared Service Center is an organizational model for centralized management of enterprise financial functions. It integrates financial processes (such as accounts payable, accounts receivable, expense reimbursement, general ledger accounting, etc.) scattered in different business units or regions into a centralized platform to achieve standardized, efficient, and scalable financial management. Ford Motor Company is one of the first large enterprises in the world to attempt financial shared services, with the aim of reducing operating costs and improving efficiency by centralizing the processing of repetitive financial processes such as accounts payable and expense reimbursements.

The Intelligent Financial Shared Service Center (iFSSC) is an intelligent upgrade of the traditional Financial Shared Service Center (FSSC), which integrates advanced technologies such as artificial intelligence (AI), big data, cloud computing, and robotic process automation (RPA) to achieve automation, intelligence, and digitization of financial processes. Compared with traditional financial shared service centers, intelligent financial shared service centers exhibit significant differences shown in the following Table1:

Table 1. Advantages of Intelligent Financial Shared Service Centers Compared to Traditional Financial Shared Service Centers

Comparative dimension	Traditional Financial Shared Service Center	Intelligent Financial Shared Service Center
1. Process efficiency	Standardization and automation: relying on established rules and a small amount of RPA to improve basic efficiency.	Intelligence and adaptability: AI drives the entire process, such as OCR automatic invoice recognition and RPA 7x24 hour execution. The process can be self-optimized.
2. Value of data	Data recording and reporting: The main output is standardized reports, with data being "historical results"	Data Mining and Insight: Data is a 'factor of production'. By analyzing and mining, predicting risks, and providing decision support, we can transform 'passive recording' into 'active empowerment'.
3. Labor costs and structure	Scale effect cost reduction: By centralizing the handling of repetitive work, grassroots labor costs can be reduced.	Structural cost reduction and value-added: AI replaces most basic operational positions, frees up manpower to engage in high-value analysis, decision-making, and business support work.
4. Accuracy risk control	Manual review and sampling inspection: relying on manual experience, with relatively high error rates and lagging risk control.	Full real-time monitoring and warning: AI models conduct real-time audits on 100% of transactions, accurately identifying anomalies and fraud, and implementing advance warning

From the above table, it can be seen that the advantage of the intelligent financial shared service center over the financial shared service center is an essential leap

If the core value of traditional FSSC lies in achieving economies of scale through "centralization" and "standardization", it solves the problems of "cost" and "efficiency" in financial operations.

So the core value of intelligent FSSC lies in achieving scope economy and intelligent empowerment through "intelligence" and "data-driven". It not only solves the problems of cost and efficiency, but also the value mining of financial data, forward-looking control of risks, and effective support for business decisions.

In short, intelligent FSSC is not a simple 'technological upgrade', but a 'paradigm revolution'. It transforms the finance department from a tedious transaction processor to a core driver of enterprise value creation.

4. Construction and Operation Optimization of Intelligent Financial Shared Service Center

4.1. The Relationship between the Construction and Operation Optimization of Intelligent Financial Shared Service Center

The construction and operation optimization of an intelligent financial shared service center complement each other throughout its entire lifecycle, reflecting a dynamic relationship of continuity and mutual promotion.

Construction is a prerequisite for optimization. During the construction phase, it is necessary to clarify business requirements, technology selection, and process design, which lay the foundation for subsequent optimization and ensure that the system has flexibility and scalability. After construction, the operational phase needs to dynamically adjust strategies through the PDCA cycle (Plan, Implement Do, Check, Act), such as intelligent upgrades and cost control. Then, optimization feeds back to build improvements, and operational data feedback can guide adjustments during the construction phase. For example, if a certain process is found to be inefficient, it is necessary to reevaluate technology selection or process design, forming a closed loop of "construction operation optimization". High quality construction can reduce the complexity of optimization, while the sustainability of optimization can extend the lifecycle of construction results. Through continuous iteration, the two jointly achieve the stable operation and continuous innovation of the intelligent financial shared service center.

4.2. Construction of Intelligent Financial Shared Service Center[4]

The construction of the Intelligent Financial Shared Service Center (iFSSC) is a systematic project that requires collaborative efforts from multiple dimensions, including top-level design and planning, technical architecture construction, and organizational and talent transformation. The following is a phased construction strategy:

4.2.1. Top Level Design and Planning

Clarify strategic positioning, distinguish between basic goals (cost reduction and efficiency improvement) and high-level goals (data-driven decision-making), and develop an iFSSC roadmap in conjunction with the enterprise's digital strategy. Enterprises should identify high-frequency, high repetition, and high error rate processes (such as invoice verification and expense reimbursement) through process mining, and serve as the first pilot for intelligent transformation.

4.2.2. Technical Architecture Construction

Deploy cloud native ERP as the data center on the basic platform. The intelligent tool layer includes processes with clear RPA automation rules; AI+OCR realizes intelligent recognition and verification of unstructured data; The big data platform integrates business system data and supports real-time analysis.

4.2.3. In terms of organizational transformation

Architecture reshaping requires breaking down traditional barriers in the finance department and establishing a three center architecture of "accounting center data center innovation laboratory" to achieve cross departmental collaboration through standardized processes; Agile transformation requires the use of project-based teams, such as Xiangke Group achieving rapid response through the four functional centers of "accounting processing data mining intelligent innovation talent incubation"; ecological extension can build a "finance+business+IT" iron triangle, such as central enterprises achieving full process connectivity from procurement to payment through an integrated system of business and finance.

4.2.4. In terms of upgrading talent capabilities

Team restructuring requires three types of talents simultaneously: process experts and end-to-end process optimise; Technical operation and maintenance, managing RPA/AI models; Data analyst, mining the value of financial data; Innovation of incentive mechanism, implementation of "40-hour flexible work system + value contribution points", such as a certain enterprise improving personnel efficiency by 30% through remote work.

5. Operation Optimization of Intelligent Financial Shared Service Center [5]

5.1. Adaptive Process Scheduling Based on Multidimensional Indicators

During the operation phase of the intelligent financial shared service center, real-time monitoring and data collection of various financial transactions can be carried out through a multidimensional indicator system. After collecting real-time indicators, the system can input them into adaptive algorithms to identify inefficient processes through rule engines or machine learning models, and then automatically generate process restructuring or priority adjustment plans in the background.

5.2. Resource Load Balancing and Elastic Scaling for Multiple Scenarios

In the daily operation of the intelligent financial shared service center, there are differences in resource load between time periods and scenarios. Therefore, it is necessary to establish a multi scenario prediction model to analyze the probability distribution of possible business peaks or sudden demands. When the business access or concurrent processing volume in a certain scenario approaches the set upper limit, the scheduling component automatically allocates temporary nodes from the containerization platform or cloud environment, and then quickly distributes the pressure to the new nodes to maintain service stability.

5.3. Cross departmental financial data control and heterogeneous system integration

The operation of intelligent financial shared service centers often spans multiple business departments and external systems. Therefore, it is necessary to develop refined control strategies in the data exchange and access process, establish cross departmental collaboration mechanisms, and clarify the financial data access permissions and update cycles of all parties. If cross departmental collaboration involves transaction records or sensitive financial information, encryption algorithms can be introduced in the message body, while preventing data leakage through digital signatures and permission verification mechanisms.

5.4. Operational Strategy Iteration Driven by Behavior Log Mining

The mining of behavior logs can provide rich clues for strategy iteration in the continuous operation of intelligent financial shared service centers. To this end, log collection agents can be deployed at key nodes in the system to finely record user clicks, form filling, and automated program execution, and store the generated raw logs on a distributed log platform.

6. Implementation Path of AI Assisted Intelligent Financial Shared Service Center

6.1. Infrastructure Construction Period (6-12 Months)

Guided by the enterprise's digital transformation strategy, establish a standardized framework. In the construction phase of the intelligent financial shared service center, enterprises should clarify the core goals of the intelligent financial shared service center, such as improving financial efficiency, reducing operating costs, and strengthening risk control. Enterprises should build an overall plan covering modules such as finance, taxation, and supply chain, determine the application scenarios of AI technology (such as intelligent accounting, risk warning, and data analysis), and develop a phased implementation plan and resource investment plan. They should choose an appropriate control or service model based on enterprise size to ensure coordinated operation with the group's finance department; break down traditional organizational barriers, establish a "three-center" architecture, and achieve cross-departmental collaboration through standardized processes; refactor systems and processes, deploy basic information systems, integrate RPA to handle repetitive tasks so as to cover 80% of basic business and reduce labor costs; and finally cultivate a composite talent team with strong financial expertise and process reengineering capabilities.

6.2. Deepening Operation Period (1-2 Years)

6.2.1. Data Driven Decision-Making

Data governance and integration, by unifying data standards, establish data warehouses, integrate multi-source system data from financial shared centers (such as ERP, tax, and fund systems), eliminate data silos, and ensure data quality and consistency; Build a data mart based on business themes such as expenses, supply chain, and taxation, analyze business trends to support strategic adjustments.

6.2.2. Optimize the Process.

Unified financial system, centralized processing of accounting, settlement and other businesses, reduce labor costs by more than 30%; Real time monitoring of process anomalies through intelligent risk control systems can weaken manual operation audits; Identify bottlenecks through data analysis and regularly optimize core processes.

6.2.3. Introduce Intelligent Technology.

The intelligent financial shared service center utilizes AI agents to automatically complete data extraction, modeling, and trend recognition, generate natural language analysis reports, and assist management decision-making. For example, it gradually applies AI and machine learning technologies to optimize risk control models and enhance real-time monitoring capabilities.

6.3. Intelligent Upgrade Period (2-3 Years)

6.3.1. Technological Upgrade.

Introduce AI middleware, knowledge graph and other technologies; Through OCR (Optical Character Recognition), RPA (Robotic Process Automation), and NLP (Natural Language Processing) technologies, the entire process from document entry, intelligent review to payment archiving can be unmanned.

6.3.2. Ecological collaboration.

Directly connect with suppliers, banks and other ecological partner systems through API interfaces to achieve real-time data exchange. The sharing center can provide standardized services (such as tax compliance and fund management) to ecological partners, integrate with industry platforms or financial technology services, and enhance the scalability of the service center.

6.3.3. Support the global layout of enterprises.

Form an integrated ecosystem of "business, finance, taxation". Enterprises should develop a plan for the construction of a global financial shared center and clarify the control mode; Unified accounting policies and language standards to adapt to local differences.

7. Optimization Case of Intelligent Financial Shared Service Center——Taking the Smart Finance Sharing Center of China Construction Third Engineering Bureau as an Example

7.1. Establishment and Development of China Construction Third Engineering Bureau Smart Financial Sharing Center

The Smart Finance Shared Center of China Construction Third Engineering Bureau was officially launched and put into operation in February 2025 at China Construction Third Engineering Bureau Digital Engineering Company, marking a new stage in the digital transformation of enterprise finance. The center achieves full process intelligent upgrading through a three in one model of "business standardization + tool digitization + operational intelligence". Through independently developed financial digitization products, it achieves full process intelligent upgrading of accounting, audit management, financial settlement, and file management.

7.2. The core model and innovation of the Smart Financial Sharing Center of China Construction Third Engineering Bureau

7.2.1. Mode Innovation, Improving Work Quality and Efficiency

Since its trial operation, the centralized certification and binding of accounting vouchers have exceeded 100000, and the unified audit of accounting accounts has exceeded 180000. A comprehensive service system of "1 headquarters+7 branch offices" has been established, supporting 400+profit centers to settle accounts on a monthly basis. The efficiency of accounting basic work has been improved by more than 30%, and the average monthly labor hours have been saved by more than 1000 hours. The level and efficiency of business processing have been significantly improved. The Smart Finance Sharing Center of China Construction Third Engineering Bureau participated in the launch of the first batch of electronic accounting archives of China Construction Group, completed the electronic archiving of over 30000 vouchers and achieved standardized management of paper electronic correlation and archives.

7.2.2. Innovate Management and Reshape the System Ecosystem.

The center is building a management concept of "standardized and solid foundation, intensive quality improvement and efficiency enhancement, and digital and intelligent innovation empowerment". By unifying financial management standards, standardizing business process configuration, establishing work model references, and building a business sharing platform, it realizes personnel from physical

centralized office to efficient intelligent remote collaboration, promoting spatial integration and unified management of financial business. The center adopts an operational strategy of "streamlined and efficient architecture, refined and professional personnel, flexible and replicable modes", and creates maximum value through resource allocation optimization.

7.2.3. Product Innovation Empowers Smart Finance.

The center focuses on independent innovation and empowers financial management to transform and upgrade. We have independently developed the Xinxiaocai RPA financial robot, which achieves full process automation processing in business scenarios. It has been applied in more than ten bureau level secondary units, enabling the digital transformation of enterprise finance to enter a new stage of intelligent empowerment. Through practical verification, the first batch of certification robots, audit robots, checkout robots, and rapid filling robots that have been promoted and applied have achieved automatic certification, intelligent auditing, self-service checkout, and rapid form filling. They work 24×7 without interruption, with an accuracy of 100%. They have demonstrated multiple advantages in releasing manpower, reducing costs, compliance and controllability, and empowering decision-making.

7.3. The Future Development and Promotion of the Smart Finance Shared Center of China Construction Third Engineering Bureau

24-hour uninterrupted operation with a precision of up to 100%, the intelligent financial sharing center releases human resources, reduces operating costs, while ensuring compliance and decision support capabilities. Driven by innovation, the center will follow the development strategy of "starting from scratch, setting an example, and promoting on a large scale", continuously promote the deep integration of intelligent technology, help financial management develop towards higher efficiency and intelligence, and thus build a new intelligent financial system that adapts to the high-quality development of enterprises.

8. Summary

The Intelligent Financial Shared Service Center (iFSSC) is the core carrier of financial digital transformation. By integrating technologies such as artificial intelligence, big data, and cloud computing to reconstruct traditional financial processes, it can not only improve the accuracy and efficiency of financial data processing, but also promote the transformation and upgrading of financial functions through real-time analysis and intelligent decision support. Future research can further explore the deep application of intelligent financial shared service centers in specific industries, achieving global optimal resource allocation through real-time data flow and intelligent decision-making. Its value is no longer limited to cost savings, but rather drives the strategic transformation of enterprises from "experience driven" to "data-driven". At the same time, with the continuous advancement of technology, how to integrate cutting-edge technologies such as blockchain and enhanced analytics into intelligent financial shared service centers to enhance system transparency and intelligence is still worth further research.

References

- [1] Lin Yixing, *Research and Value Enhancement of RPA Robot Application in Artificial Intelligence and Financial Shared Service Center* [J]. *Value Engineering*, 2024 (41) 28:84-86.
- [2] Chen Guiying, *The Impact of Artificial Intelligence on the Development Trends of Corporate Shared Service Centers for Finance*[J]. *Shanghai Business*, 2023(01), 142-144.
- [3] Huang Yipeng, *Construction of Enterprise Group Financial Shared Center under the Background of Artificial Intelligence* [J]. *Finance and Accounting Learning*, 2020 (29): 07-08.
- [4] Wang Yi, *Exploring the Development of Corporate Financial Shared Service Centers in the Digital Era*. *China Convention & Exhibition (China Conference) 2025*, 128-130.
- [5] Chen Hui, *Discussion on the Construction and Operation Optimization Strategy of Intelligent Financial Shared Service Center* [J]. *Market Weekly*, 2025, 38 (27): 45-48.