

Case Study of Financial Sharing in CNPC

Wenqing Zhu^a

School of economics and management, Dalian Jiaotong University, Dalian 116000, China

^atiffanyzhu2004@163.com

Abstract

This study delves into the implementation and implications of the financial shared services model at China National Petroleum Corporation (CNPC), a pivotal entity in the global energy sector. Amidst the backdrop of digitalization and globalization, CNPC has embraced financial shared services to augment management efficiency and curtail operational expenditures. The research provides an exhaustive analysis of the model's inception, its integration into CNPC's financial management framework, and its application in management accounting. The study underscores the model's proficiency in streamlining financial operations, enhancing data precision, and bolstering risk mitigation strategies. It also identifies challenges such as information system security and the transition of personnel, proposing strategic solutions to these impediments. The research elucidates that CNPC's adoption of financial sharing not only amplifies capital operational efficiency but also significantly underpins business process reengineering and strategic decision-making. This study serves as a compendium of practical instances and theoretical insights for the financial management metamorphosis of large-scale energy corporations.

Keywords

Financial Shared Services; CNPC; Financial Management; Management Accounting; Digital Transformation.

1. Introduction

The convergence of economic globalization, digitalization, and intelligent technologies has rendered traditional financial systems inadequate for the contemporary developmental needs of corporate groups. Consequently, a plethora of enterprises are pursuing financial transformation strategies to address these challenges [1]. Originating from Ford Enterprises, the financial shared services model has emerged as a pioneering financial management approach, offering large enterprises a robust framework for enhancing efficiency, reducing costs, and fortifying risk management [2].

As a vanguard in the energy sector, CNPC wields significant influence in the global energy landscape. Amidst the dynamic shifts in the global economy and industry competition, CNPC has undergone substantial transformations in its financial paradigm. The integration of a financial shared services model has become integral to CNPC's financial management, exerting a profound impact across all financial management facets. This evolution is pivotal for CNPC, as it not only bolsters internal financial management efficiency and mitigates costs but also underpins the corporation's global energy strategy and sustainable development trajectory.

This paper provides an exhaustive analysis of CNPC's financial shared services model, elucidating its significance in charting the course and delineating the value of financial management transformation within the context of large energy enterprises in the emergent era.

2. Background

CNPC, a comprehensive international energy conglomerate, operates an extensive network of subsidiaries and branches globally, with its operations spanning exploration and production, refining and chemicals, sales, natural gas, and pipelines. The expansive organizational structure and intricate business processes have outgrown the capabilities of the traditional financial management model, giving rise to issues such as fragmented financial processes, non-uniform standards, and delayed information dissemination. These challenges escalate financial management costs and compromise the timeliness and precision of strategic decision-making. The energy sector's competitive intensity necessitates that CNPC sustains its competitive edge amidst market volatility. Exogenous factors, including international oil price fluctuations, the energy transition trend, and stringent environmental regulations, continuously affect CNPC's financial standing. Concurrently, industry competitors are innovating in financial management to augment operational efficiency and resource allocation.

The advent of information technology has catapulted digital transformation to the forefront of corporate development, with the financial sector benefitting from technologies like big data, cloud computing, and artificial intelligence. CNPC is at the vanguard of this transformation, leveraging these technologies to achieve centralized financial management, automated processing, and intelligent analysis, thereby enhancing financial work efficiency and quality to better align with strategic development objectives.

Against this backdrop, CNPC's adoption of financial shared services and the establishment of a dedicated financial sharing platform have become imperative. Initiated in 2017 with the establishment of a financial sharing center in Beijing, CNPC has since strategically established regional centers in Daqing, Xi'an, and Chengdu, capitalizing on the oil production and refining hubs of the Daqing, Changqing, and Southwest Oil and Gas fields [3]. The successful implementation of these initiatives has positioned CNPC as a frontrunner in the adoption of financial shared services.

3. CNPC Financial Sharing Overview

CNPC is the largest oil and gas producer and distributor in China and one of the world's leading energy companies. Founded in 1999, CNPC is a holding company of China National Petroleum Corporation (CNPC) and is mainly engaged in the exploration, development, production, transportation, refining and sales of oil and natural gas. The company has a complete industrial chain covering upstream exploration and development of oil and gas resources, midstream transport and pipeline services, and downstream refining, chemical and refined oil products sales, building a comprehensive business system.

Following the strategic management accounting theory of value-based management (VBM), CNPC has built a financial management and operation control system, referred to as the '1359 System', with 'comprehensive coverage, triple centralisation, five platforms and nine transformations'. CNPC's shared services follow the construction concept of 'unified platform, diversified sharing', and currently mainly provide shared services in finance and human resources. The organisational structure is as follows:

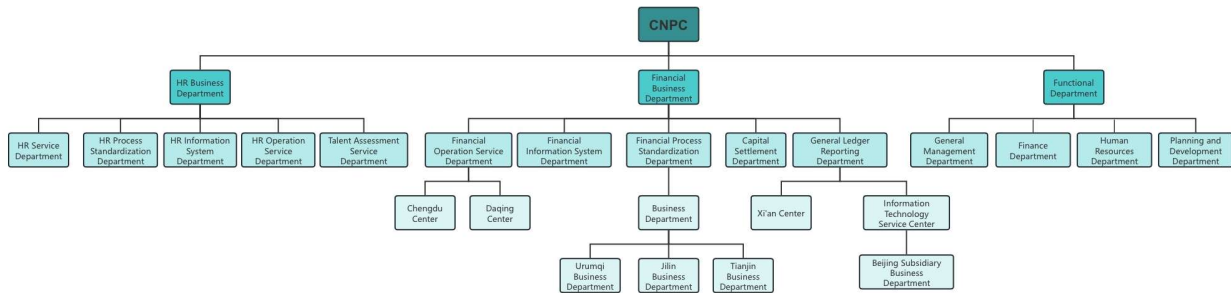


Fig. 1 Enterprise Organisation Chart

3.1. CNPC's Financial Performance

CNPC's financial performance for H1 2024 exhibited robust growth, reflecting the company's market potential. As of June 2024, total assets reached RMB 2,768,039 million, a year-on-year increase of 0.6%, with operating revenue at RMB 1,553,869 million, up 5.0%, and net profit to parent company shareholders at RMB 88,611 million, marking a 3.9% rise. The return on net assets stood at 5.9%, indicating stable growth and a strong financial stance [4].

Aligning with global energy transition trends, CNPC has ramped up investments in renewable energy and materials, rapidly expanding its renewable energy portfolio, which includes wind, solar, and geothermal. H1 2024 saw wind and solar power generation surge to 2.17 billion kWh, a 154.5% increase year-on-year. Additionally, CNPC's advancement in carbon capture, utilization, and storage (CCUS) projects underscores its dedication to ESG principles.

3.2. CNPC Finance Shared Service Model

CNPC has integrated a financial shared service model to enhance management efficiency and curtail operational expenses. This model delineates distinct roles for headquarters finance, regional company finance, and the financial shared service center, covering strategic, operational, and shared financial functions within a cohesive 'four-in-one' framework. It streamlines financial processes and optimizes resource distribution, bolstering the enterprise's sustainable development through a centralized financial information management system.

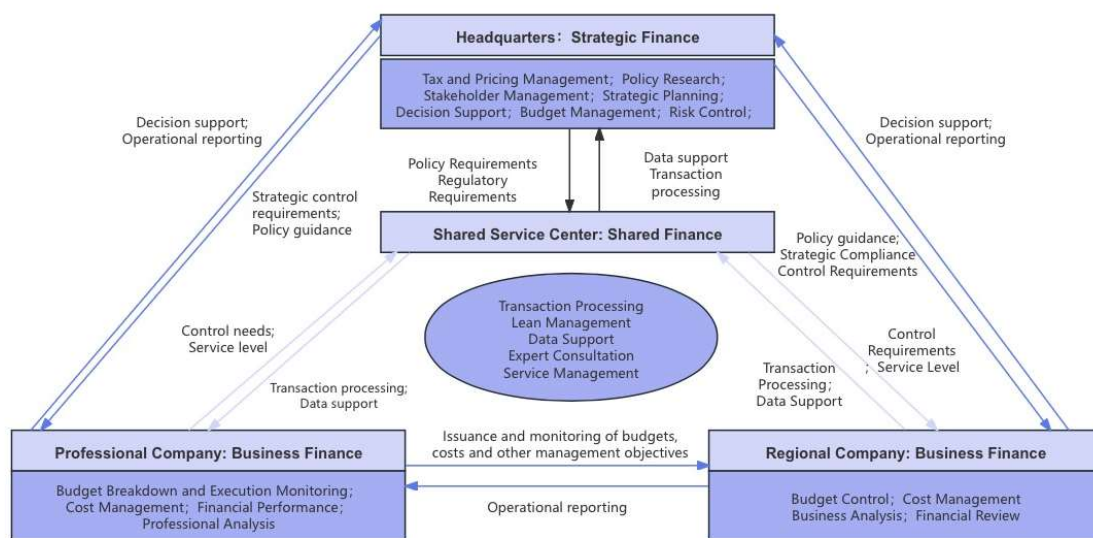


Fig. 2 CNPC's new financial management model

4. Specific Construction of the Financial Sharing Platform

4.1. Basic Business Processes

The Financial Shared Services Center of China National Petroleum Corporation (CNPC), serving as the core hub of the enterprise's financial management, undertakes twelve key financial functions, including procurement, payment, sales, collection, and the preparation of financial statements. Since its official operation, the center has successfully established and refined an efficient service process model[5].

Within this process, financial personnel are primarily responsible for gathering relevant payment and sales data from various outlets and sales companies. Subsequently, this data is accurately entered into CNPC's Enterprise Resource Planning (ERP) system, and the business process is initiated by submitting corresponding vouchers. After the vouchers undergo a rigorous review procedure, the original documents are immediately uploaded to the financial shared services system. Within the system, these documents undergo professional imaging and archiving to ensure the integrity and traceability of the data. Ultimately, the accounting department will perform unified accounting and accounting calculations based on this information.

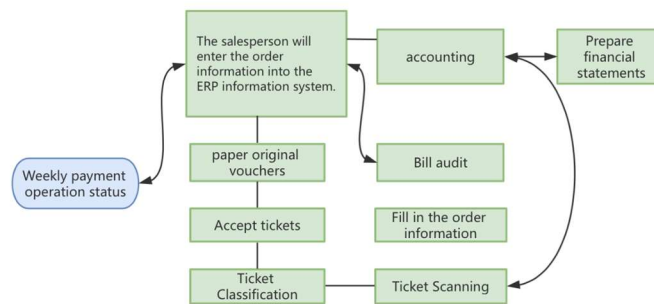


Fig. 3 Schematic diagram of the business processing flow of CNPC's financial sharing centre

4.2. Scope of Business Operations

The financial shared services of CNPC encompass a diverse array of operational processes, with various entities operating in a highly integrated and collaborative manner. The specific scope of these operations is delineated below in a tabular format.

Table 1. Financial Sharing Business Scope Table

Business Segment	Core Actions by Shared Service Center	Key Actions by Regional Companies
Revenue-Related	Management of customer data, accounting, and accounts receivable	Management of credit, contracts, and debt collection
Expenditure-Related	Management of accounts payable, payment processing, and expense analysis	Management of credit, contracts, and debt collection
Capital-Related	Management of capital, payment transactions, and maintenance of bills of exchange	Formulation of capital plans and management of bills and notes
Asset and Accounting-Related	Processing of asset depreciation and reconciliation of accounts	Management of capital expenditures and provision of accounting documentation
Reporting and Tax-Related	Preparation of financial statements, tax processing, and inventory management	Auditing of reports, tax filing, and inventory control

4.3. Controlled Business Process Management

CNPC has implemented numerous innovations in the domain of business process management, with a particular focus on the management of "two types of accounts receivable and payable" (i.e., accounts receivable and accounts payable) since the implementation of financial shared services. The following provides a detailed exposition of the management processes for accounts receivable and accounts payable at CNPC.

4.3.1. Accounts Payable Management

The accounts payable management process at CNPC is characterized by the following sequential steps:

Information Collection: Invoice data is gathered by business personnel from various experimental sites.

Data Entry: Invoice information is uniformly entered into the system using imaging scanning technology or a financial shared services data analysis platform.

Accounting Processing: Appropriate accounting procedures are conducted based on the distinct payment entities involved.

CNPC categorizes accounts payable into three types: public, private, and external transactions. The specific process for each category is as follows:

i. Private Transaction Process

a. **Business Approval:** Reimbursement forms generated from business activities must undergo an approval process.

b. **Voucher Review:** The approved forms are subsequently reviewed by the shared service center.

c. **Payment Processing:** The treasury department completes the payment, confirms the disbursement, and conducts accounting procedures, thereby establishing a closed-loop system.

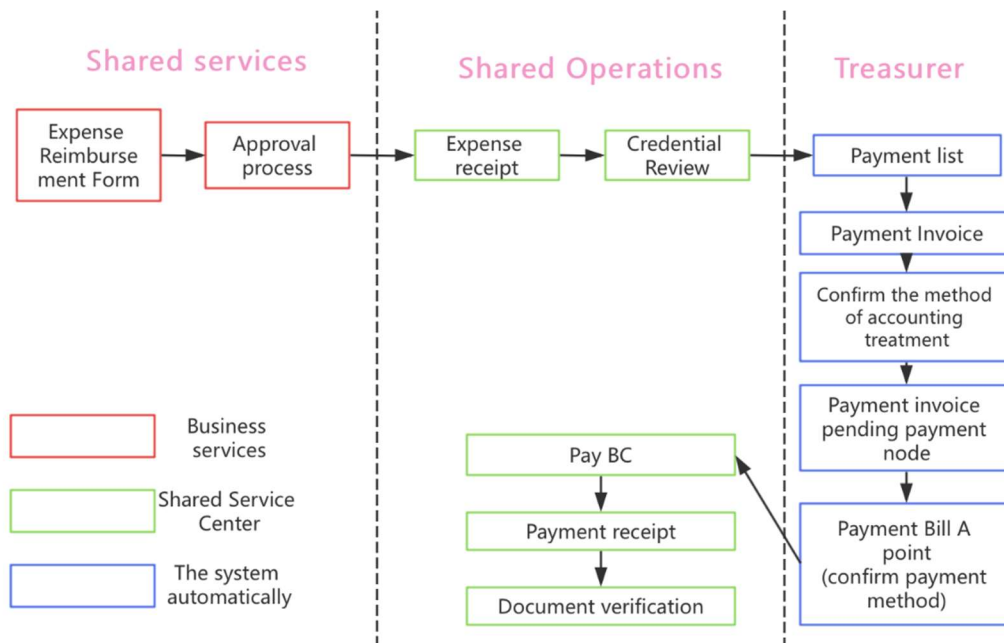


Fig. 4 CNPC Reimbursement and Payment Flowchart (Private)

The process guarantees real-time data updates, minimizing errors in business registration and instances of returned documents.

ii. Public Transaction Process

- a. Prior Application: Business expenses require prior application and the completion of a reimbursement form.
- b. Approval Processing: The form undergoes scrutiny and approval by both the business and financial authorities.
- c. Payment Selection: Upon local financial review, a public payment method is selected.
- d. Accrual and Payment: If immediate payment is necessary, an expense voucher is created, reviewed, and then forwarded to the treasury platform for the creation of a payment order.
- e. Payment Voucher Production: Once confirmed, the shared platform finalizes the production and review of the payment voucher, completing the cycle.

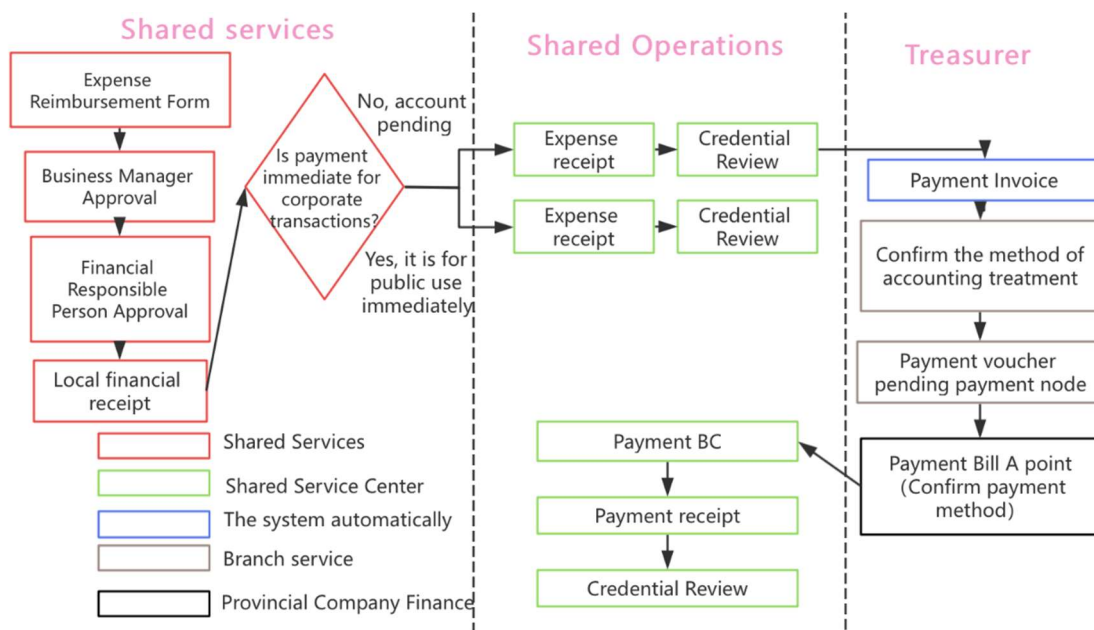


Fig. 5 CNPC Reimbursement and Payment Flowchart (Public)

This procedure delineates the responsibilities of the parties involved, thereby reducing the potential for financial fraud.

iii. External Payment Process

- a. Accrual Approval: The process adheres to a "post-accrual, pre-approval" protocol.
- b. Voucher Production: Vouchers are produced and payments are executed, ensuring the security of external disbursements.

4.3.2. Accounts Receivable Management Process

CNPC has established a dedicated mechanism for the collection of accounts receivable, effectively managing receivables through the following process, The conglomerate enforces credit risk management to preempt legal disputes and defines the terms for accounts receivable. Clients are required to apply for business in advance and undergo a preliminary review. The business finance manager approves the applications on the financial shared services platform, after which the center proceeds with the processing. Ultimately, the interconnection with the banking system facilitates real-time transfers, achieving an integrated financial shared services and direct link with corporate banking.

CNPC implements a dynamic classification management system for accounts receivable, where subsidiary enterprises assess the credit risk of projects and partners, thereby enhancing the credit scrutiny of clients to prevent non-performing debts. The company exercises full-process control over accounts receivable, from reporting to assessment. To reduce the occupation of

"two types of capital" (working capital and fixed capital), CNPC expands its scale and diversifies its operations to manage the risk of bad debts and to mitigate the growth of liabilities, the details of which are illustrated in the accompanying figure:

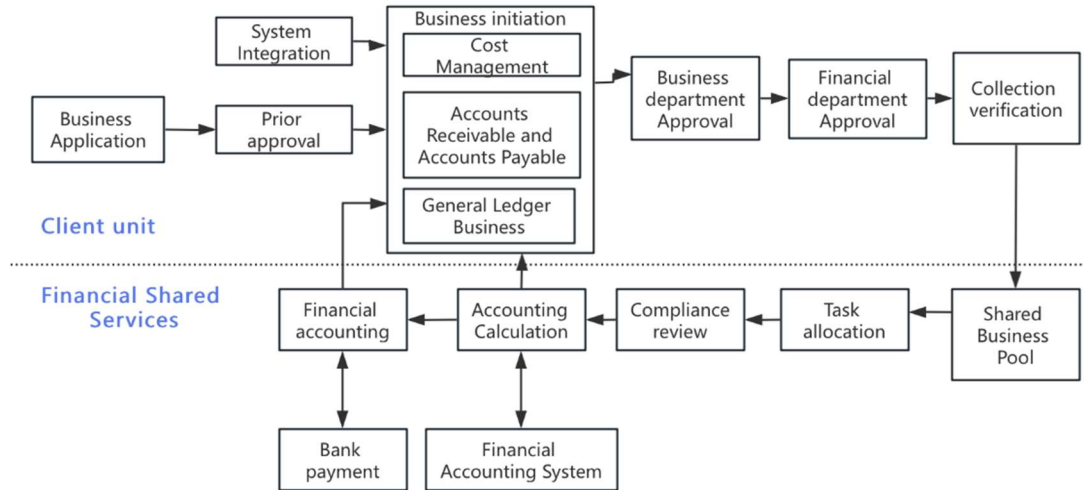


Fig. 6 CNPC receivables management flowchart

4.4. Value-Added Services

The financial shared services platform of CNPC integrates a suite of value-added services, including but not limited to business travel, invoice management, salary disbursement, electronic accounting archives, and tax filing. The platform leverages technological advancements to standardize and enhance the efficiency of the expense reimbursement process. It achieves proceduralization of internal control management, expedites the verification of reimbursements, enables real-time budgetary control and analysis, and advances the informatization and electronicization of financial management. An overview of the platform's functionalities is presented in the following table:

Table 2. Financial Sharing System Function Table

Function	Content
New Type of Reimbursement	Online reimbursement, paperless reimbursement, automatic reimbursement
Electronic Budgeting	Terminal-based automatic processing, budgetary control, financial analysis
Internal Control Process	Electronic internal control procedures, clear delineation of responsibilities within the financial shared service center, uniform regulations across branches and outlets
Flight and Hotel Booking	Flight search, online hotel booking, unified merchant interface, outlet interface
Other Functions	Rapid business application, electronic generation of vouchers, mobile app for CNPC's business travel

CNPC's mobile financial shared services client streamlines the reimbursement process, standardizes review forms and expense criteria, and enhances efficiency through automated information retrieval and remote services. Electronic approval facilitates dynamic budgetary control and swift multi-level approval processes. The uniform handling of documents ensures data consistency, and the integration with bank cards or online banking enables rapid payments from any location, thereby increasing the efficiency of reimbursements.

4.5. Automation and Intelligent Applications

CNPC has enhanced its financial shared services center's operational efficiency and precision by integrating advanced technologies such as RPA, intelligent reimbursement, form filling, and voice recognition. The deployment of RPA "Little Iron Man" robots in December 2017 has automated tasks like financial voucher creation, review, electronic archiving, fund disbursement, and sorting of bank slips and invoices, achieving over tenfold the efficiency of manual processes. Additionally, CNPC's intelligent reimbursement system leverages recognition technology and a knowledge graph to automatically deduce business scenarios and perform calculations, while its intelligent form filling feature is designed to recognize and process ticket information, leading to automated form completion. These innovations collectively contribute to a more streamlined and accurate financial management process.

4.6. Development History

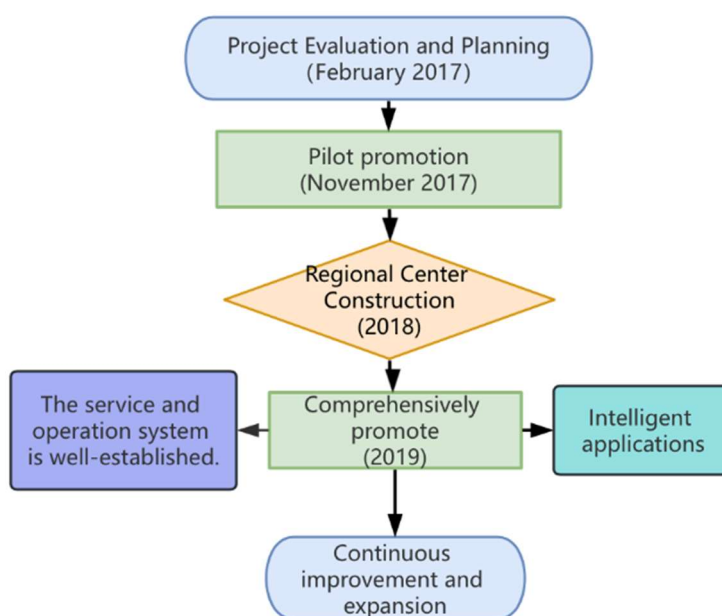


Fig. 7 CNPC Shared Services Development Process Diagram

In early 2018, China National Petroleum Corporation (CNPC) expanded its financial shared services pilot to include seven additional companies in Shaanxi. By May 15th, the Beijing Management Center and associated research institutions launched their shared services, with the Xi'an center following suit by year's end.

April 2019 saw the official operation of CNPC's overseas financial shared services center, with Great Wall Drilling Company integrating accounting for seven international projects, marking CNPC's first overseas financial shared services implementation abroad. The Daqing center also commenced shared services that year.

By the end of 2020, the Chengdu center joined the network, further extending the reach of CNPC's financial shared services.

4.7. Insights from the Perspective of Management Accounting.

Standardization of Processes Sinopec has enhanced its internal control environment by implementing a group-wide internal control system and unified accounting policies, thereby achieving consistency and compliance in processes. This practice serves as a paradigm for other enterprises, particularly large conglomerates facing the challenges of diversified operations

and cross-regional management, on how centralized management can improve operational efficiency and financial transparency [6].

Talent Transformation Sinopec has facilitated the transition of financial personnel from transaction processing roles to strategic decision support roles through continuous professional education (CPE) and career development planning. This transformation not only enhances the core competitiveness of employees but also provides insights for other enterprises in the realms of human resource management and knowledge management [7].

Technological Adaptability Sinopec has integrated big data analytics and artificial intelligence technologies into its financial shared service platform, enabling automated accounting and intelligent decision support. This technological application has improved the efficiency of data processing and the quality of financial reporting, offering enlightenment to other enterprises in technology-driven financial management. In managerial accounting, this reflects the utilization of information technology to support the development of management information systems and decision support systems, which is a crucial pathway for enhancing a company's information processing capabilities and decision-making quality [8].

5. Analysis of Issues in Financial Sharing

5.1. Enhancing Information System Security and Stability

For multinational corporations like CNPC, the financial sharing system is crucial for handling global financial data and must navigate diverse regional requirements for information security and legal compliance. Despite CNPC's strategic "1+3+4" framework and a "two-tier, three-layer" regional sharing structure, operational challenges persist due to business variances across regions and subsidiaries. From 2021 to 2023, CNPC experienced frequent security incidents, significantly impacting system stability. According to "China Cybersecurity Research" 2022, there were five major security events in 2022, leading to over 48 hours of business disruption. An internal 2021 report revealed direct economic losses of 130 million RMB due to data breaches[9].

5.2. Human Resource Challenges in Financial Sharing

5.2.1. Transition of Traditional Finance Staff

The transition to a financial sharing model poses a significant challenge for traditional finance staff at CNPC, requiring a shift from transactional roles to shared services and management. This transition necessitates skill and role adjustments, often met with inadequate skill sets and knowledge base, leading to inefficiencies. The emphasis on real-time data accuracy in financial sharing services contrasts with the strengths of traditional staff, highlighting a need for technical skill enhancement. Transition management theory underscores the need for a period of adaptation and restructuring, including skill acquisition and psychological adjustment, to facilitate this shift.

5.2.2. Placement and Management of Current Finance Staff

The concentration and repetition of daily tasks in financial sharing centers have led to decreased job satisfaction, especially during peak periods like year-end closings, which can extend work hours beyond 10 hours daily. This has resulted in a rising turnover rate, increasing from 2021 to 2023, reaching 8.2% in 2023, a 3% increase from 2021. The standardized and centralized workflow in financial sharing centers has also led to a lack of diversity and growth opportunities, diminishing job engagement and stability. The traditional promotion and performance incentive systems are less applicable in shared centers, necessitating more flexible assessment and advancement mechanisms to boost employee motivation and efficiency.

6. Recommendations and Insights for CNPC's Financial Sharing

To advance CNPC's financial shared services, a focused enhancement on information system security is academically robust and strategically essential. In an era where cyber threats are increasingly sophisticated, CNPC must implement advanced cybersecurity measures, including firewalls, Intrusion Detection Systems (IDS), and Intrusion Prevention Systems (IPS), to ensure real-time monitoring and prevention of cyber incidents. The adoption of Advanced Encryption Standard (AES) for sensitive financial data is crucial for safeguarding information during transmission and storage. Moreover, establishing a multi-layered authentication system, incorporating Two-Factor Authentication (2FA) and Multi-Factor Authentication (MFA), enhances login security and restricts access to authorized personnel, thereby significantly reducing the risk of data breaches.

Regular security audits and penetration tests are indispensable for proactively identifying and rectifying system vulnerabilities. These practices not only fortify the system against potential attacks but also demonstrate a commitment to maintaining high standards of data integrity and confidentiality. By prioritizing information system security, CNPC can ensure the reliability and continuity of its financial shared services, which is fundamental to supporting the company's strategic goals and sustainable development in the highly competitive energy sector. This focus on security also aligns with broader corporate governance and risk management frameworks, reflecting a mature and proactive approach to managing the complex financial landscape of a global energy leader.

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