Realizing the Fusion of Operations and Accounting: Empowered by Information System

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Abstract. The integration of operations and accounting plays an important role in creating corporate value, and it has rise great attention in academic and practical circles. However, there is no consensus yet on how to truly break down the barriers between the operation and accounting departments to gradually achieve operations-accounting integration. This article summarizes the evolution route of the concept of operations-accounting integration, proposes a theoretical framework for two-way operations-accounting integration empowered by information systems, and combines case studies of railway equipment enterprises to discuss the digital transformation of financial management. This study fills the theoretical gap in existing research on operations-accounting integration and is conducive to smoothly connecting existing academic results and practical experience on operations-accounting integration, thereby providing reference for corporate transformation and high-quality development.

Keywords: Digital transformation of enterprises; Integration of operations and accounting; Two-way integration of operations and accounting; Manufacturing enterprises

1. Introduction

The 19th National Congress of the Communist Party of China proposed the concept of "high-quality development" for the first time, since then all professions are actively implementing and enriching this concept. Among them, enterprise management innovation and digital transformation are extremely important links in achieving high-quality economic development. Accounting is an important position in enterprise management. Using digital empowerment means to promote the deep and comprehensive integration of operations and accounting through information fusion, organizational integration and value fusion[1] has become an important aspect of enterprise integration, resources utilization, competitiveness enhancement and value creation[2]. However, the natural boundaries between operations and accounting, as well as the inertial thinking of the operation and accounting departments, affect or even hinder the effective collaboration and comprehensive integration between these functions. Existing research has reached broad consensus on the inherent boundaries of operations and accounting, the concept and the necessity of operations-accounting integration. However, there has never been a consistent understanding and system framework on how information technology can empower operations-accounting integration.

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This article aims to fill above research gap. Based on in-depth insights and case analysis of the research, practice and problems of operations-accounting integration, this paper proposes a new concept and theoretical framework of "two-way integration of operations and accounting". On the basis of reviewing existing research literature, this study systematically answers how to empower the two-way integration of operations and accounting through information systems, and how to conduct comprehensive budget management of railway equipment enterprises within the framework above.

2. Literature review

2.1 Theory and practice of operations-accounting

Research on the relationship between "operations" and "accounting" mainly focuses on the concept of operations and accounting, as well as the integration of operations and accounting.

As industrial society emphasizes specialized division of labor and economies of scale, the accounting function has been separated from production and operations[3], and the traditional concept of operations and accounting has gradually been "solidified". Traditionally, the general consensus on the concept of "Accounting" is "a process of information, capital and management control"[4], which not only involves the functions of financial accounting and management accounting, but also involves other value decision-making functions like investment and financing[5]. The general consensus on the concept of "Operations" is a collection of business activities "from the formulation and execution of strategic planning, to the formulation of business plans and specific commercial operations"[6][7]. The separation of functions between "Operations" and "Accounting" reflects the importance of boundaries, which to a certain extent ensures the relative independence between functions and avoids mutual interference[8].

However, in the management practice within enterprises or other organizations, the professionalism of functional division of labor and the boundaries between functions are often overemphasized by managers, which misaligns with the goal of maximizing corporate value, and even puts the operations and accounting departments in opposition. For example, in order to reduce costs and increase efficiency, the accounting department intervenes in the behavior of the operations department through budget allocation, spending restrictions, etc., resulting in the operations department being unable to complete the production plan. This not only makes it easy to neglect support and services for operations departments, but also limits operations development. In addition, operations departments often have uncooperative emotions or actions because they cannot understand the rigid requirements of the accounting department. These "frictions" ultimately harm business performance and operational efficiency. Moreover, the inherent boundary and the inertial thinking formed by it have caused the integration problems between operations and accounting to appear frequently.

The integration of operations and accounting has become a research hotspot in the field of financial management. The functional division of labor between "operations" and "accounting" has led to the separation of operations information and accounting information (value information) [9]. It can be seen that organizational division of labor and information separation are manifestations of the "non-integration" of operations and accounting. In essence, operations-accounting integration is the comprehensive integration of business chain and value

chain, and it needs to promote organizational integration through information fusion, thereby transforming division of labor value into collaborative value[10]. Therefore, the ultimate goal of operations-accounting integration is the comprehensive integration of business and value based on information fusion and organizational integration.

The current academic discussion on the implementation methods and paths of operations-accounting integration mainly focuses on two aspects: financial sharing services and comprehensive budget management. Financial sharing services aim to implement the process of integrating operation data into accounting based on the standardization of accounting rules and processes. Process re-engineering transfers data generated from each link of business activities to the financial accounting system to solve operational difficulties caused by the separation of front-end business activities and back-end financial activities[11]; comprehensive budget management can use EVA, cloud accounting and other tools, propose varying degrees of improvements and innovations in budget management organization, processes, control and analysis methods, and improve corresponding budget management steps and division of responsibilities[12][13][14].

In view of the wide implementation scope and high difficulty of implementation of operations-accounting integration, digital technology must be used to effectively empower operations-accounting integration through information systems[15]. However, the integration of operations and accounting cannot be accomplished by one or a few information systems, nor can it be accomplished by building several information systems at once. At present , the standard preparation of ERP systems and financial sharing service platforms is mainly based on accounting requirements, which makes it difficult to support the two-way integration of operations and accounting. At the same time, financial budgets and production goals are separated, the indicator caliber is difficult to unify, and data sources of the operation information system are relatively confusing[16], would result in the financial sharing platform mainly focusing on the centralized data of the accounting process. It ignores the need to embed operation information systems to obtain real-time and accurate data. This is also one of the reasons why the maturity of management accounting information systems such as comprehensive budget management is still low[17].

2.2 Comment on current studies and research issues

To sum up, the current literature on operations-accounting integration mainly discusses the concept of operations-accounting integration, the "one-way" implementation mechanism of operations-accounting integration , and accounting-led digital empowerment.

In terms of concept, existing researches have reached broad consensus on the concept and necessity of operations, accounting and operation-accounting integration. In particular, the concept of operation-accounting integration should be clearly defined as a "comprehensive" operation-accounting integration through information fusion and organizational integration and ultimately the realization of value integration. However, most researchers discuss the paths to realize the comprehensive integration of operations and accounting from the perspective of their inherent fields, and the one-way implementation mechanism hinders the effective realization of operations-accounting integration to a certain extent. Therefore, the "two-way" integration of operations and accounting, as one of the means to achieve "comprehensive" integration of operations and accounting, needs to take into account both operations and accounting, and

implement a closed-loop design of connection and interaction between different one-way mechanisms.

In terms of implementation mechanisms, existing researches are mainly based on the accounting perspective of operations-accounting integration. However, the inertial thinking from the accounting perspective and the separation of operations and accounting information make the implementation mechanism of operations-accounting integration usually based on traditional accounting requirements, ignoring the in-depth integration of operation elements and the deep participation of business personnel, and there are obstacles existing in cross-border connections, mechanism interactions and closed-loop designs.

In terms of empowerment means, digital empowerment is an effective means to open up the boundaries between operations and accounting. However, the design of information systems will be greatly affected by the implementation mechanism. The inertial thinking dominated by accounting makes the information systems related to operations-accounting integration mainly focus on the financial information system or tend to be biased towards the accounting side of the inherent boundary, which also results in the failure of operations-accounting information. Separation makes it difficult to achieve the boundary penetration and closed loop of connection and interaction of "You are in me, and I'm in you" to support the two-way integration of operations and accounting.

In summary, the goal of comprehensive integration of operations and accounting and the means to achieve integration of operations and accounting are a complete system that interacts and is interrelated. The process of breaking through the inherent boundaries of operations and accounting and gradually realizing the comprehensive integration of operations and accounting must be carried out from the perspective of two-way integration. Conduct in-depth analysis and carry out overall framework design. Therefore, it is once again clear that this article focuses on the key research questions of the two-way integration of operations and accounting: (1)What is the theoretical framework of the two-way integration of operations and accounting? (2)How to empower the two-way integration of operations and accounting through information technology ?

3. Research design and case overview

3.1 Selection of research methods

A case study approach was appropriate for this study. This study is essentially based on the "what and how" exploratory questions. Therefore, research questions can be better answered through inductive methods and theoretical sampling in case studies[18]. This study aims to establish a new theoretical model, and the case study method has natural advantages in exploring theoretical models[19].

Specifically, this paper adapts "exploratory case study" to conduct the research. Exploratory research is a type of research that provides a preliminary understanding of the phenomena and problems (which has gained initial impressions and perceptions), aiming to provide a basis and direction for more thorough and in-depth research in the future. This case perfectly matches the requirements of exploratory case study, given the fact that scholars have realized the significance of the integration between operations and accounting, yet not exactly knowing

how to realize it empowered by information systems, especially when it comes to manufacturing enterprise. Traditionally, exploratory case study uses participant observation and unstructured interviews to collect data, and the various results derived from the data are not used to draw inferences about the totality of the population from which the research object is drawn or to test theoretical hypotheses, but are used primarily to "probe" the basic scope, content, or characteristics of a particular type of phenomenon or problem, to give people a general outline or impression, to "suggest" possible ways of studying the phenomenon or problem in depth, and to try out appropriate methods and tools that can be used in the study of the phenomenon or problem. This study follows procedures above: Data collection is a two-step process. The research team first negotiated and obtained research permission in October 2019. Subsequently, the research team conducted a "residential" study at the company, and systematically collected relevant documents and information in combination with other projects that the research team's unit cooperated with the company. These data provide the research team with various details of business and financial management, enrich the data sources, avoid memory bias caused by personal reasons, and form a "triangulation validation". In terms of data analysis, the research team focuses on the boundaries and penetration of business and finance, as well as important constructs such as budget preparation, budget execution, cost control, revenue management, shared services, adjustment control, and evaluation and assessment, which is conducive to understanding the practice and related theoretical concepts of two-way integration of industry and finance. Data analysis and data collection are carried out at the same time. Data analysis follows the principle of gradual iteration until the theoretical saturation point is reached[20] .

3.2 Case object selection

The case object of this study is the railway equipment maintenance and operation subsidiary of a very large state-owned enterprise group (hereinafter referred to as the "railway equipment company") : Neng Railway Equipment Co., Ltd. ("Railway Equipment Company" for short), and it meets the three conditions for a single case study object. First of all, as an important part of the integrated operation of production, transportation and marketing of the state-owned enterprise group, the "condition maintenance" project implemented by the Railway Equipment Company has filled the technical gap in the domestic railway freight train maintenance industry and realized the transformation from "cyclical maintenance" to "precision repair" model, while saving railway freight train maintenance time and economic costs, it also greatly improves the efficiency of national railway transportation and promotes the reform of the supply-side structure of railway transportation, which is of important research significance. Second, with the gradual advancement of informatization construction, railway equipment companies have accumulated a large amount of data, involving human resources, vehicle management, traffic monitoring, infrastructure testing, railway freight train dispatching, etc. It is worth exploring the value of data assets through in-depth case studies and summarizing the innovative management and application models of railway-related enterprises. Finally, the company has offered great support to this case study: during the project research, various functional departments gave full recognition and went above and beyond to help.

3.3 Case companies and case overview

The Railway Equipment Company is a wholly-owned subsidiary of the country's very large enterprise group. It is responsible for the maintenance and support of the group's locomotives and trucks, equipment leasing, and the repair and maintenance of railway lines. At present, the company has more than 53,000 self-owned railway freight cars; 90 large-scale track maintenance machinery, 19 rail cars, 16 material trucks, and 127 auxiliary vehicles. The scale of the rolling stock comprehensive maintenance base ranks first in Asia. However, before implementing the innovative practice of operations-accounting fusion management, the railway equipment company experienced multiple business integrations and organizational structure mergers. The company faced problems such as loose budget management system, inconsistent budget preparation and review control, weak process execution, and untimely adjustments. Problems such as insufficient revenue monitoring and control have resulted in difficulties in data traceability, inaccurate information statistics, excessive labor costs, and insufficient timeliness and diversity of system responses. Therefore, the railway equipment company began to implement industry-financial integration management innovation in 2019.

On the one hand, the company starts from the accounting side and determines the principle of "integration from top to bottom, hierarchical preparation, level-by-level summary, counterpart review, and unified coordination". It further optimizes the budget management mechanism and related accounting information systems, monitors various business departments and molecules in a timely manner. Subsequently, the company established a full life cycle management process covering task preparation, assignment, review, supervision, control, adjustment, reporting, evaluation, feedback and rectification for the branch's workshop team, and embedded it into information systems at all levels. The time granularity of various indicators is accurate to months, weeks or even days based on specific business characteristics.

On the other hand, in order to cooperate with the implementation of operations-accounting integration, the railway equipment company first sorted out the operations and accounting processes so that a comprehensive corporate operation chart is constructed. Based on different types of charts, stuff is able to clarify the accurate definitions and relationships of functions and data, which is conducive to avoid the interference of inertial thinking between operations and accounting. Secondly, the financial department and the operation department negotiate to reach an agreement on the business description, technical specifications and management rules of each type of data in the operating chart, especially to clarify the multi-dimensional correspondence between accounting subjects and business management, and to build connections as well as decide interaction rules between operations data. Finally, the above-mentioned processes and rules are compiled into enterprise specifications, and the information system is transformed and built in accordance with the implementation sequence of the budget preparation system, financial sharing platform, business-related systems and other financial-related systems.

In addition, the two-way integration processes of operations and accounting, such as data transmission and recording, budget execution, and cost control, are usually distributed in multiple information systems and completed by the cooperation of these information systems. The practice of railway equipment companies shows that achieving two-way integration of operations and accounting does not mean "removing and starting over" existing information systems, but rather designing and optimizing them while protecting existing investments.

At present, the railway equipment company aims at the integration of operations and accounting , and has built an integrated enterprise information system for operations and accounting, which has improved the company's comprehensive budget management level and made the operations and accounting work well-founded , feasible , verifiable and verifiable. It can be evaluated. The company is gradually establishing an economic benefit analysis mechanism for operations-accounting linkage, based on key indicators of operations-accounting integration and through data sharing and intelligent analysis , to further reduce costs and increase efficiency to maximize value.

4. Research findings

4.1 The basic concept of two-way integration of operations and accounting

Under the case of railway equipment company, we found out that the operation department and the accounting department are integrated according to certain principles. For example, not all activities require cooperation: the operation department finishes truck maintenance on its own, while the accounting department sets financial classifications by itself. Meanwhile, both operation department and accounting department are actively seeks for each other’s help when joint action interdependence happens. Therefore, we can conclude that the integration of operations and accounting means based on the inherent boundaries between operations and accounting, through the "two-way penetration " method and the "leading-participation" relationship between operations and accounting, gradually realizing the all-round integration of the connection, interaction and closed loop between operations and accounting. Ultimately, comprehensive integration of operations and accounting will be achieved. It is necessary for accounting process to penetrate into the operation process, and vice versa. Therefore, the boundary penetration process includes both the "operations→accounting" and "accounting→operations" directions, and the penetration process in the two directions also needs to achieve timely and effective "interaction". Moreover, the two-way integration of operations and accounting emphasizes that both operations and accounting should exert initiative and synergy in different situations. Therefore, in the same direction of penetration, the penetration process will still form perspectives such as independent operation activities and independent accounting activities, that is, the division of roles will still exist, and different perspectives will be formed on the inherent boundary to achieve the process of "connection".

4.2 Empowerment means for two-way integration of operations and accounting

Independent operation activities are generally supported by information systems oriented to (specialized) business professional activities. On the operation side, examples are key technology research and development, computer-aided production scheduling, professional skills training or operations of railway equipment companies, etc. On the accounting side, examples are audit and budget planning, which is generally completed by professional accounting systems or even accounting robots. At the same time, financial accounting also needs to provide required accounting information to external stakeholders of the enterprise and meet corporate information disclosure requirements.

Operations and accounting management needs to build or transform the business information system, integrate the execution and control methods of financial management into the business

information system, and realize system integration through interfaces. For example, the in-process control and adjustment of a railway equipment company is based on the integration of budget execution indicators by the operation information system, and different levels of "enforcement, intervention, reminder, and early warning" according to specific business scenarios and rules, or a combination of relevant control measures. Post-event evaluation and assessment are also based on budget standards and rules to approve or reject operation execution results, and provide sufficient evidence for the accounting system and analysis platform. In contrast, post-operation-accounting management and pre-operation-accounting management are generally supported by information systems led by financial standards, such as the financial sharing accounting platform and budget management system of railway equipment companies.

Value analysis processing is a (distributed) data warehouse architecture built based on the big data generated and aggregated by various functions, and is implemented by an analytical system oriented to multi-dimensional topics (multi-dimensional historical data), which is different from the process A transaction-based system that executes. Among them, various information systems of operations/accounting provide rich data for value analysis and processing in order to achieve multi-dimensional insight analysis and support all-round and whole-process decision-making before, during and after the event. For example, the railway equipment company is implementing the above-mentioned related analysis information system.

4.3 Comprehensive budget management programme for manufacturing enterprises under the integration of operations and accounting

The design of railway equipment company's comprehensive budget management system needs to be matched in depth with the characteristics of the railway industry, based on the actual situation of the railway equipment company, to achieve the standardisation and systematisation of the comprehensive budget management, and under the guidance of helping the enterprise to achieve the goal of lean management. Meanwhile, it’s necessary to put forward the scientific and feasible path of optimisation of the comprehensive budget management system from the perspective of the integration of operations and accounting. In order to build an industry-leading intelligent railway equipment enterprise, the railway equipment company's budget management system must identify the breakpoints and difficulties in the interface between operations and accounting in each value chain link, open up the workflow, improve the efficiency of each position, and continuously enhance the management capabilities, focusing on the core of the cash flow.

The basic principles of budget management of the railway equipment company can be summarised as follows:

(1) Strategic leadership, optimal allocation and high-quality development.

Adhere to the principle of strategic leadership, and put the guideline of "supporting strategy" in the first place of financial management. Units at all levels shall formulate budget objectives based on the synergy with the company's strategic objectives. and focus deeply on the strategic planning, taking into account the smooth convergence of long-term and short-term goals.

Rationalisation and balanced allocation of resources is a prerequisite for the subsequent high-quality development of the enterprise. The company needs to let the budget management

play the guiding role of unifying the deployment of human, financial, material and other resources.

(2) Value-orientation, industrial synergy, high return value-added.

The budget preparation should focus on the value growth, the management activities at all levels, assist the enterprise to strengthen cost management and control efforts, and support value-creation activities. Moreover, the company is expected to carry out budgetary work closely around the cash flow, and adopt effective means to scientifically track and analyse the enterprise value. It's also critical for the budget evaluation take into account the synergistic development of various operations and pay attention to return on net assets and return on investment.

(3) Keeping expenditure within the limits of revenues, linking operations and accounting.

Make costs and expenses controllable, emphasise on spending after budgeting, and even not spending without budgeting. Strengthen the approval function in various cost and expense expenditures, eliminate the situation of subjective adjustment of costs due to cost and expense expenditures within the total budget, stick to real-time monitoring, and increase the control of the budget. For the discrepancies in the process of budget implementation, the corresponding reasons should be investigated, and a treatment plan should be formulated on this basis.

The accounting department is responsible for guiding the overall budget index control, and each operation department is specifically responsible for cost, project management, production and operation index control. The company must open up the information exchange process with the help of information system. To be specific, This system needs to implement the following to achieve the expected goals.

Intelligent management. The system is expected to cover the task issuance, budget preparation, budget review, and budget reporting at each level of production and management. The budget granularity is accurate to "month".

Timely response. Each department and any position can obtain the comparative data of budget and execution progress in each dimension, such as revenue, cost, profit, receivable, etc.

Smooth communication. The ability of thoroughly break down the existing barrier is required, meaning that freight dispatching system data, HMIS data, and ERP data can be highly accessible.

5. Research conclusions, contributions and suggestions

Under the goal of comprehensive integration of operations and accounting and the issue of how to gradually realize the integration of operations and accounting , this study innovatively puts forward the concept of "two-way integration of operations and accounting". On the basis of a clear conceptual definition, this study further proposes a theoretical framework for the two-way integration of operations and accounting , identifies the implementation mechanism of the two-way integration process , and explores how to empower the two-way integration of operations and accounting through information systems .

The integration of operations and accounting has become one of the focuses of discussion in academia and business circles. However, there has never been a consistent definition and system framework on how to achieve operations-accounting integration (that is, the ways and paths to achieve operations-accounting integration). This study identifies the conceptual deficiencies and theoretical gaps in existing research on operations-accounting integration , conducts an in-depth analysis of the implementation methods and paths of operations-accounting integration from multiple perspectives such as the inherent boundaries of operations and accounting, two-way penetration, and closed-loop connections, and proposes A new concept of two-way integration of operations and accounting and the corresponding theoretical framework are introduced. This article emphasizes that both operations and accounting should exert their initiative and collaboration on the basis of clear division of roles of leadership and participation, so as to eliminate obstacles caused by their respective perspectives and thinking inertia, and unify their understanding of concepts and implementation; at the same time, it is clear that It is more reliable to start from the financial side in the early stage of operations-accounting integration . This is conducive to the smooth connection and integration of existing academic results and practical experience in operations-accounting integration with the goal of comprehensive operations-accounting integration.

Two-way integration of operations and accounting is also one of the methods and paths for enterprise digital transformation. Among them, information integration is important and necessary . Future research also needs to focus on digital implementation design principles for two-way integration of operations and accounting to support the digital transformation of enterprises and business. Digital implementation of two-way financial integration. At the same time, companies will face more detailed issues in the integration of operations and accounting in the future. For example, emerging digital technologies represented by the Internet of Things, blockchain, big data and artificial intelligence will play a greater role in the two-way integration of operations and accounting. For example, blockchain technology can record and protect real business data in real time. Data technology can enable decision support based on real data. At the same time, the two-way integration of operations and accounting also puts forward higher requirements for corporate talent training, which requires both professional and comprehensive talent training. Comprehensive talents are used to coordinate and resolve the differences between operations and accounting, and facilitate the boundary penetration, connection and interaction between operations and accounting. It is foreseeable that the application of emerging digital technologies and the cultivation of comprehensive talents will further empower and facilitate the theoretical development of operations-accounting integration.

References

[1] Wang Bin. 2018. The integration of operations and accounting [J]. Financial Research , (03):3-9.

[2] Xu Chenyang , Wang Man, Sha Xiujuan . 2017. Financial sharing, supply chain management and industry-financial integration - 2017 annual special seminar of the Management Accounting Professional Committee of the Chinese Accounting Society [J]. Accounting Research , (11):93-95.

[3] Xia Donglin. 2017. Corporate accounting is a strategic control system - commemorating the 100th anniversary of the birth of Mr. Yang Jiwan [J]. Accounting Research, (1): 23-31.

[4] Wang Bin. 2018. The integration of operations and accounting [J]. Financial Research , (03):3-9.

[5] Wang Yaxing, Li Xinhe. 2020. Reconstructing the conceptual framework of "operations and accounting integration" [J]. Accounting Research , (07): 15-22.
[6] Wang Bin. 2018. The integration of operations and accounting [J]. Financial Research , (03):3-9.
[7] Wang Yaxing, Li Xinhe. 2020. Reconstructing the conceptual framework of "operations and accounting integration" [J]. Accounting Research , (07): 15-22 .
[8] Carlile P R. 2002. A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development[J]. Organization Science, 13(4):442-455.
[9] Tang Guliang, Xia Yifei.The theoretical framework and practice guidance of operations and accounting integration in enterprises [J].Financial Study,2018(2):3-9.
[10] Xie Zhihua , Yang Chao , Xu Nuo. 2020. Re-discussing the nature and implementation form of operations-accounting integration [J]. Accounting Research , 2020(07):3-14.
[11] Chen Lifeng. 2015. Research on the application and practice of financial business integration in China Unicom [C]. See: China Wuhan Decision Information Research and Development Center, Decision and Information Magazine, Peking University School of Economics and Management. Proceedings of "Decision-making Forum - Decision-making seminar based on the perspective of public management" (Part 2). Wuhan: Science and Technology and Enterprise , 193.
[12] Sun Tongyan, Bloomberg. 2019. Hongta Group’s comprehensive budget management practice with industry-financial integration as the core [J]. Finance and Accounting , (07): 23-25.
[13] Chen Yue, Ma Ying. 2019. Application of business-finance integration in Huawei's internal control [J]. Finance and Accounting , (07): 26-28.
[14] Cui Yongmei , Cui Ning, Yao Wen . 2020. Research on the comprehensive budget management system of railway transportation enterprises based on industry-financial integration [J]. Railway Economic Research , (02): 11-15.
[15] Qin Rongsheng. 2015. Research on the application of big data thinking and technology in accounting work[J]. Accounting and Economic Research , 29(05):3-10.
[16] Cui Yongmei , Cui Ning, Yao Wen . 2020. Research on the comprehensive budget management system of railway transportation enterprises based on industry-financial integration [J]. Railway Economic Research , (02): 11-15.
[17] Mao Yuanqing , Liu Meiling. 2015. Discussion on management accounting informatization in the "Internet +" era - a summary of the main views of the 14th National Accounting Informatization Academic Annual Conference [J]. Accounting Research , (11):90-92.
[18] Pan S.L, Tan B. 2011. Demystifying Case Research: A Structured-Pragmatic-Situational (SPS) Approach to Conducting Case Study[J]. Information & Organization, 21(3): 161-176.
[19] Siggelkow N. 2007. Persuasion with Case Studies[J]. Academy of Management Journal, 50(1): 20-24.
[20] Pan S.L, Tan B. 2011. Demystifying Case Research: A Structured-Pragmatic-Situational (SPS) Approach to Conducting Case Study[J]. Information & Organization, 21(3): 161-176.