Research on Construction of Accounting Information System Based on Real Model in Supply Chain Environment

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Keywords: Supply Chain, Real Mode, Accounting Information System

Abstract: Changes in the Business Model of Enterprises Will Bring Changes in the Demand for Accounting Information. the Accounting Information System Needs to Adapt to the New Business Environment for Changes. This Paper Examines the Enterprise Supply Chain Environment and Supply Chain Management, and Discusses the Construction of Accounting Information System under the Supply Chain Environment Based on Real Mode. This Paper Studies the Accounting Information System under Real Mode, and Compares the Differences between Real Mode and Traditional Mode. It Fundamentally Solves the Problems Existing in the Traditional Accounting Information System, Such as Single Information and over-Aggregation. This Paper Expounds the Characteristics and Implementation Steps of Accounting Information System Based on Real Model, Which Has Been Tested in Practical Application.

1. Introduction

In the 21st century, human society has entered a brand-new era of information economy. Economic informatization and globalization have intensified the competition among enterprises. Different from the previous social and economic environment, it is bound to have an impact on the demand for accounting information used by enterprises [1]. Accounting information system is the basis for the generation and transmission of accounting information products. Its goal is to collect and store data in the business process, and then generate and output meaningful information for decision makers to help them plan, implement, control and evaluate their various activities [2]. However, in practice, many enterprises' supply chain management operations have not achieved the desired performance. One of the important factors is the incompatibility between traditional accounting models and supply chain management. With the changes in the business environment, the information users are changing their information needs, and more demands are placed on the accounting information system. Therefore, the accounting information system must constantly adapt to the new business environment for self-change and reconstruction [3]. Event-driven information systems can better avoid these problems, support the information needs of management decisions well, and conform to the development direction of information technology and information system applications.

2. Supply Chain Environment and Accounting Information System

2.1 The Core Idea of Supply Chain Management

The supply chain consists of a series of enterprises such as raw material parts suppliers, manufacturers, wholesale dealers, retailers and transporters. Raw materials and parts pass through each enterprise in the "chain" in turn and gradually become products. The products pass through a series of circulation and distribution links and are finally delivered to the end users. This series of activities constitute all activities of a complete supply chain [4]. One condition for the success of supply chain management is the sharing of information between different enterprises in the supply chain, including logistics information, value information and capital information. On this basis, the

  DOI: 10.25236/ISMHI.2019.023

value of the whole supply chain can be maximized through effective planning of logistics and capital flow of the whole supply chain. In the supply chain environment, the business model of virtual entity makes the accounting measurement model no longer confined to the traditional single enterprise, but extended to the whole supply chain. There have been significant changes in the traditional accounting measurement model, measurement objects and measurement scope [5]. The idea of supply chain management is to regard the whole "chain" as an integrated organization, and all enterprises on the "chain" as partners to manage the whole "chain" in an integrated way. Accounting information needed in supply chain should be real-time and comprehensive, but traditional accounting information system can not meet this requirement in technology and management.

2.2 The Characteristics and Functions of Accounting Information System in Supply Chain Environment

The new accounting information system can not only be closely combined with the business execution within the enterprise, but also be able to exchange information and coordinate with the outside of the enterprise. The current cost accounting method distorts the product cost information under the high-tech production mode, and the product accounting information provided by upstream enterprises is inaccurate, which leads to the deviation of the decisions made by enterprises in the supply chain using the cost information of upstream enterprises, resulting in huge risks [6]. In the supply chain, with the establishment of the cooperative relationship between upstream and downstream enterprises, a virtual economic entity has been formed. This virtual economic entity generates overall benefits through cooperation, and gains advantages in competition. Therefore, supply chain cooperation makes enterprises compete. Become a competition between different supply chains. In this case, companies in the supply chain will work together to develop the operational plan for the needs of the end customer, so that effective forecasting and planning can be carried out.

Supply chain management is the integrated management of logistics, information flow and capital flow in a network of suppliers, manufacturers, wholesalers, retailers and end users. Its implementation premise is to quickly understand the real situation of each node enterprise in the network, and keep the information smooth [7]. Enterprises need to understand not only the improvement and coordination of each internal function, but also the establishment of efficient collaboration between customers, suppliers and transporters. Accounting information system always develops with economy and technology. From the perspective of integration of accounting and business, the development of accounting information system can be divided into three stages: Information integration within departments, process integration within enterprises and process integration between enterprises. In the supply chain environment, the accounting information system should give more play to its decision support role. The function of management accounting will be more obvious: rely on strict planning and control to improve manufacturing efficiency; The way of process integration among enterprises evolves continuously with the close and stable economic ties among enterprises [8]. At first, cooperation between enterprises was limited to purchasing. In the supply chain, the logistics, capital flow, value flow and information flow among different enterprises flow rapidly, realizing the process integration among enterprises in the business process.

3. The Structure of Accounting Information System Based on Real Model in Supply Chain Environment

3.1 System Architecture

The structure of accounting information system is a description of each component of accounting information system and its relationship. The system structure includes three aspects: the system platform of accounting information system. Accounting information system based on value management is a comprehensive system to measure the benefit of supply chain and is the core

content of supply chain management. Steps and methods of collecting, storing, processing and transmitting accounting information. The accounting information system is changing from passively relying on financial data reported by various business functional departments to closely combining with the business execution system to actively obtain detailed information when business occurs. After completing the integration of financial services, the accounting information system needs to further integrate the business processes in the supply chain virtual enterprises, exchange information and carry out business coordination with external cooperative enterprises. The position of accounting information system in the MIS system of the whole organization. When business happens, it is reflected in many subjects by filling out vouchers. After processing, accounting statements are generated. The items of the statements are also composed of accounting subjects. To meet the various demands of supply chain management for accounting information, to achieve a high degree of real-time and sharing of information, complete financial and non-financial information, traceability between upstream and downstream enterprises, as well as a good embedding of various methodologies and financial data.

3.2 Functional Structure of the System

The functional structure of accounting information system refers to which subsystems a complete accounting software consists of, what functions each subsystem completes, and the relationship between subsystems. REAL model can identify, collect and store financial data and non-financial data of business activities into an integrated database. Recorded information is the most original business activity information, not the result of aggregation. It can be concretely expressed as follows: for the same concept, the same concept has different connotations in different systems, different systems have different structures for event storage, lack of correlation between concepts, unable to display Association information. For the accounting information system based on REAL mode in supply chain environment, since the system is not based on user view, on the basis of business event processing, there should be flexible user information output module, focusing on user management decision-making at different levels in the functional design of the system. We believe that an efficient and adaptive accounting information system should be able to provide multi-objective cost accounting, such as customers, products, services, processes or activities; In order to meet the needs of end customers, a cross-enterprise operation process is formed in the supply chain management, and advance prediction and operation can be effectively made, thus maximizing the integration of supply chain resources and realizing enterprise benefits.

On the basis of the three databases and combined with the functions of supply chain management, this paper plans to design a new accounting information system structure. The system is mainly composed of three major modules: system setup and maintenance, business event processing, reporting and decision support, as shown in Figure 1.

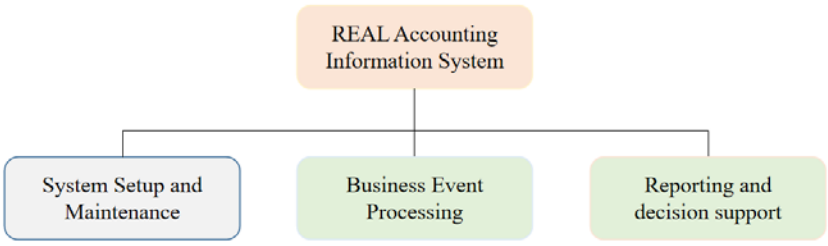

Fig.1 Functional Structure Diagram of Accounting Information System

The information system based on the REAL model does not need to process financial and non-financial data in multi-system segmentation, and does not need to coordinate the consistency of data between systems. It can quickly process the constantly changing data due to business occurrence and control the enterprise's operating conditions in real time. In the new accounting information system, this module will play a more important role. This module is mainly dedicated to the operation of business processes, and is committed to efficient operation of all aspects of the

business process. Therefore, the important step of constructing the supply chain accounting information system is to straighten out the internal accounting business process of a single enterprise itself, and only after straightening out the accounting business process of a single enterprise itself, can it be possible to build a smooth business process between enterprises in the supply chain.

3.3 Compared with the Traditional Accounting Information System

Under the traditional mode, the accounting information system is constructed according to the way of imitating manual accounting, and the theoretical framework follows the basic theory of financial accounting and management accounting. Resources are assets owned by enterprises and scarce assets under the control of enterprises. The REAL model emphasizes that it is now available. Accounts receivable, for example, are not resources, but can be derived from the difference between recorded sales and sales receivables. In contrast, structural methods can not provide semantic level retrieval. Semantic methods can use ontology as the semantic level, which can better solve the problem of heterogeneity. In this mode, business processing system and accounting information system complement each other, forming a powerful and flexible information system. In a business event-driven accounting information system, business personnel (not accounting personnel) input relevant data while performing business to form a business event database. The actual application situation is not ideal, and the construction of financial accounting module is relatively mature. Therefore, it is necessary for the accounting information system to have certain expansibility and openness, to support dynamic modeling among enterprises, and to flexibly define and maintain mapping relationships among business processes, business objects and software components, so as to support continuous improvement of processes.

4. Business Process Analysis and Design of Accounting Information System Based on Real Model in Supply Chain Environment

4.1 Understand the Organizational Environment and Objectives of Accounting Information System in Supply Chain Environment

To build an effective and complete model, we must have a deep understanding of the organization to be analyzed. Before analyzing the specific business process, we should observe the organization's objectives, industry, value chain, strategy, production line, and customers, and collect relevant data. By representing the location of events in the model and designing and implementing the system, we can reasonably determine the location of data acquisition, processing, storage and use, and transmission path. To manage the accounts of each customer, send reports regularly for customers, handle the accounts of returns and refunds, adjust accounts receivable and deal with bad debts. Supply chain management will lead enterprises to continuously improve themselves and their original business processes. Supply chain management is not a simple summation of individual enterprise processes. These data mainly include demand information, inventory status, capacity planning, production planning data, promotion planning and transportation planning data, etc. The sales activities of the enterprise are the regular business of the enterprise, and almost every day there will be a certain amount of sales business and payment settlement business to be handled. The decision support system is a man-machine dialogue process with the decision maker, which can help the decision maker to realize his requirements and ideas in a personalized way and well realize the role of decision support.

4.2 Examine the Business Process and Identify Important Strategic Business Events

In order to continuously improve adaptability, effectiveness and efficiency to maintain competitiveness, it is necessary to divide different business activities. The organization must understand and improve each function, and must effectively organize and coordinate all business functions. One group of events leads to the inflow of one group of resources and the other group of events leads to the outflow of resources. The inflow of resources and the outflow of resources are

always interrelated. In order to achieve good information sharing among supply chain enterprises, information itself needs to be common or easily converted. Therefore, the accounting data transferred between enterprises should be in the same caliber and standard, otherwise it will affect the real-time information sharing.

The information system architecture driven by business activities (events) has completely broken the traditional structural mode of manual simulation accounting information system, can strongly support the information requirements of management decisions, and conforms to the development direction of information technology and information system. The event-driven information system architecture is shown in Figure 2 below.

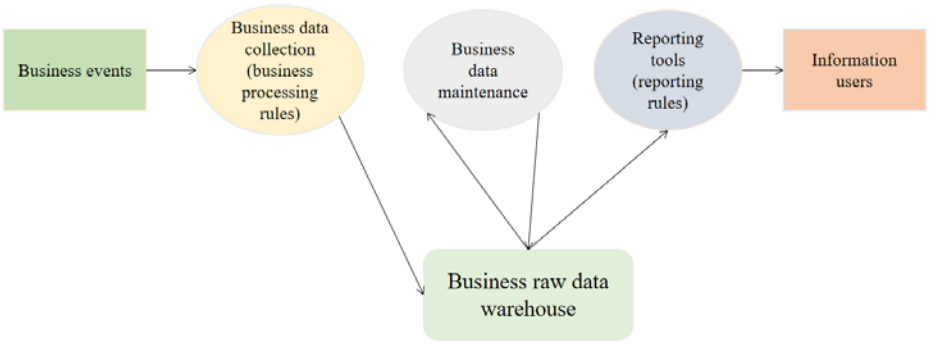

Fig.2 Event-Based Accounting Information System Architecture

Information processes and data will support activities that managers plan, control and evaluate. That is, the data flow and data storage files needed by the information system are abstracted by analyzing the specific process. Specifically, the global map, that is, the data flow exchanged between sales and accounts receivable subsystem and other external entities, is completed first. In the entire supply chain, this virtual operating entity is also optimizing its processes. Some of the original processes will change, some processes may disappear, and some new processes will follow. At the same time, the results of each member's execution plan and budget can also be collected; controlled by prior planning, budget and actual execution data, identify differences and use various business intelligence tools for analysis.

4.3 Establish a Real Model

After identifying the relationships between resources, events, participants, and locations, it is necessary to further precisely define the relationship between them: the concept of introducing relational technology represents business process rules, and the base is used to precisely define business process rules. In addition to the handling of transactional events, the accounting information system in the supply chain environment can provide better decision support. The record is established when the sales order is completed. After the goods are shipped, the sales order record is closed and transferred to the sales order history file. As historical data, for enterprises to make forecasts, budget analysis, etc. Each entity object (event, resource, participant, and location) in the REAL model becomes a relationship. Each relationship specifies a key attribute that uniquely identifies the object relationship. On the basis of satisfying the above two aspects, the new accounting information system can carry out activity-based costing through the supply chain process, analyze and evaluate the process, continuously improve the supply chain process and reduce costs. By storing data in this way, an accounting information system constructed by a REAL model can provide all the information needed by various views, and it will not produce problems such as repeated storage of data and inconsistency of data. The basic framework of REAL accounting model is shown in Figure 3.

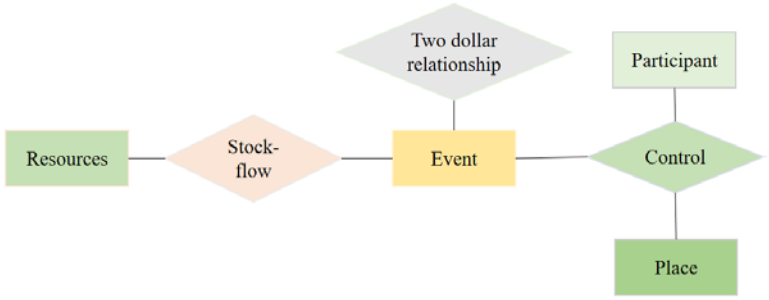

Fig.3 The Basic Framework of Real Accounting Model

5. Conclusion

To sum up, the current accounting information system can not support the extended supply chain management because of its inherent defects, so it is necessary to build a new accounting information system across enterprises. Real mode is the most perfect, deeply researched and thoroughly reformed accounting innovation mode among many new accounting modes, which may become the mainstream mode of enterprise information system design and application in the future. Both supply chain management and discussion of ERP are active efforts made by enterprise management and theoretical research to cope with competition. Establishing a scientific, perfect, timely and efficient enterprise accounting information system can enable enterprises to make full use of existing resources and make correct decisions quickly. The new accounting information system can not only meet the needs of operation, planning, control and decision support in a single enterprise environment, but also meet the needs of cross-enterprise decision-making, planning, budgeting, control and business operations. With a perfect enterprise accounting information system, enterprises have unique core competitiveness and a new and higher level development platform.

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