

# The Real-Time Tabulation Method of the Input-Output Model and the Realization of the Real-Time Analysis for the Financial Management and the Supply-Demand Chain Management

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**Abstract** Realization of an enterprise's input-output plan model real-time analysis and the enterprise's input-output statistical model just-in-time analysis is a scientific basis of exploration, and research of the "Organic Combination and Connection between the Enterprise's Input-Output Model and the Financial Management and the Supply-Demand Chain Management". In order to cope with the challenge of the Enron Event, the use of the accounting framework furnished by the enterprise's input-output model to uniformly draw up the enterprise's accounting titles and methods should be a scientific method to realize the real-time analysis for the input-output model and the financial management and the supply-demand chain management. we may establish not only a set of accounting theory, accounting principles, accounting standards, accounting methods and management methods accepted by the whole world based on the enterprise's input-output plan model real-time analysis and the enterprise's input-output statistical model just-in-time analysis, but also a set of scientific law or principle research models from the management ideas to the management methods and the management tools. And we may expand the research height, breadth and depth for the combination of management and accounting under the framework of such a new research mode field. Note: For the brief reason, "an enterprise's input-output model" sometimes is the shortened one of "an enterprise's input-output plan model and an enterprise's input-output statistical model". And the "Organic Combination and Connection between the Enterprise's Input-Output Model and the Financial Management and the Supply-Demand Chain Management" is the one for the organic combination and connection between input-output plan model and financial accounting and value chain management, and between input-output statistical model and management accounting and value chain management. Also, realization of the real-time analysis of an enterprise's input-output model and financial management is shortened for realization of real-time analysis of an enterprise's input-output plan model, financial accounting and value chain management as well as realization of just-in-time analysis of input-output statistical model, management accounting and value chain accounting. Finally, new accounting theory, accounting principles, accounting standards and management methods stand for the ones based on real-time analysis of an enterprise's input-output plan model and just-in-time analysis of input-output statistical model.

**Keywords** Enterprise's Input-output model, Financial management, Supply-demand chain management, Accounting theory, Accounting principles, Accounting standards, Accounting method/ approach, Management method

## 1. Connection and Unification of the Supply-Demand Chain Management, the Value Chain Management and Value Chain Accounting

Before the statement of the organic combination and connection between input-output model and financial

management and supply-demand chain management, it is necessary to understand the organic combination and connection between supply-demand chain management and value chain management and value chain accounting. It is known that any enterprise cannot exist alone, it would require the support by the market and by all sorts of other enterprises. Nowadays, the mode of operation of modern enterprises is collectivization, along with multinational groups' appearance, separated parts of an enterprise develop geographically and an enterprise's business activities become more and more complicated. As for a small-sized company, in order to improve service and quality and lower

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costs, its activities are also bound to be complicated such as the formation of a supply-demand chain: from the start, internal management of purchasing production materials, storing, planning, manufacturing and selling to external management of logistics, collaborative processing, shipping and commercial circulation. Actually, such kind of chain has long been functioning, which only appears to be more prominent with its logistics, information and cash flows under the circumstances of competition in globalized market.

**Supply-demand chain management.** Supply-demand chain is a new mode of structure of an organization which forms itself gradually in the process of the change of management concept. In short, it is a net formed by raw material suppliers, manufacturers, wholesalers, retailers and customers (As in [1]). Since the relationship between various partners on the supply-demand chain (for example, the cooperative partnership of suppliers, distributors, service providers and customers), would mean the joint development of new products and new technology; the exchanging and sharing of data and information; and joint sharing of the market environments and adventures; therefore, the replacement for the decision-making system lack of flexibility and with poor integration with that covering the whole supply-demand chain, would make both supply-demand parties clearly know the flow direction and trend of the logistics, information and cash flows; better the mutual coordination and reduce costs, lower the delay time of each link, and eliminate the information distortion and amplification effects. Whether various flows on the supply-demand chain should be unblocked or not, it not only would be impacted by certain restraining factors of the material supply, all sorts of ability resources, markets, transportation, etc.; but also restricted by the management and mechanism. In order to realize the overall objectives of the enterprise, such restricting factors and impacts must be eliminated. In order to eliminate such restricting factors and impacts, it would be solved through optimized management on various flows. The supply-demand chain management should be a plan, organization, coordination and control process carried out centering in logistics, information and cash flows between the supplier and the demander. The constraint theory used in the supply-demand chain management should be TOC; which would be the concept and approach developed based on the OPT (As in [2]). Since the strength on the supply-demand chain should be determined by the weakest link's among numerous chain links; so, to find out the weakest one and strengthen it would be equal to strengthening the competitiveness of the whole supply-demand chain. When a weakest link should be strengthened, another relatively weaker one would be found out and then strengthened; in such a way going round and round and then making progress step by step; thus it would be the application of the constraint theory in the supply-demand chain management. Another basic concept of TQM (total quality management) concerning the "next working procedure should be the customer of the last one, the customer's satisfaction should be the standard for

quality" should be applied in the supply-demand chain management, TQM should be emphasized during the whole process from product development, supply, production, sales, transportation to the after-sales service; emphases should be placed on the total quality control to strive for the customer's maximum satisfaction.

**The management of the value chain.** The original meaning of the value chain, would mean a series of links and activities experienced by an enterprise from its establishment to putting into production and management; describe the formation process for the enterprise's internal product value(As in [3]). Along with the rapid spread of the ideas of ERP (enterprise resources plan), BPR (Business process reorganization), etc. among the enterprises; and the formation of the continuous supply chain concept promoted by the enterprise's trans-functional department team cooperation; the meaning of the value-chain would become more extensive. The Operating Costs the United States and the United States Supply Chain Technology Company Bureau once defined the value chain; they pointed out, the value chain would mean from the start all the value-added activities of raw materials as the assets input until the raw materials sold to customers through different processes; they would consist of the components of the value chain. Such a definition would extend the category of the value chain from the internal of core enterprises forwarding to distributors and extend backwards to the distributors, service providers and customers. The value chain would implement the enterprise's business process according to the characteristics of the chain, make each link both related to each other and having self-organizing and self-adaptive ability for handling logistics flow, information flow and cash flow, to make the production, supply and marketing system to form an integrative "value chain". The management of the value chain should be a new type of management method emerged in response to all kinds of challenges in the logistics flow, information flow and fund flow and for upgrading the network value-added capacity in the flow of the network environment consisting of suppliers, manufacturers, distributors and service providers and customers. This management method, with customers' demand as the guide, with the realization of the value and the enhancement of the enterprise's competitiveness as the goal, would make full use of modern enterprise management thinking and management standard and management technology, to attain the goal of effective planning, organization, coordination and control for the logistics flow, information flow and fund flow on the whole supply-demand chain; not only should require to know the flow of funds flow (volume of funds) and the flow rate (turnover time of funds), but also to know whether the funds chain would be broken at the same time with the coordination of various chain links, and pre-warning the breakage of all kinds of uncontrollable chain links in the external part; therefore, the value chain management should be a kind of integrated management ideas and method, a kind of management concept of the association between

strong enterprises based on their respective core competitiveness, which would integrate different enterprises to improve the efficiency of the whole value chain, through the cooperation between enterprises, finish the allocation of resources from supplier to end users. The management of the value chain would be mainly characterized by the "Flow-Process" management, its essence should be constantly to optimize the business process, improve the core competitiveness of the enterprise, through the strategic analysis on the enterprise in the industry and the entire internal value chain of the enterprise, to find out the priority link to achieve the enterprise's value added advantage in market competition, to build enterprise core competitive ability and to form the competitive advantage.

**The accounting of the value chain.** The accounting of the value chain would be formed to adapt to the needs of the value chain management, with the enterprise's value added as the target and with the aid of the management information technology and network technology; it would be a management information system to account, analyze, evaluate and check up logistics, information and cash flows on the value chain. This information system, in addition to accounting, analysis, evaluation and checking up the logistics, information and cash flows on the value chain, but would check up the implementation conditions concerning the logistics, information and cash flows on the chain. You may well say so that the management of the value chain (For example, logistics, information and cash flows) should be the carrier of the accounting for the value chain; in case there would be no value chain management, there should be no produce of the value chain accounting. Since the accounting subject for the value chain accounting would be the strategic alliance (the virtual enterprise) consisted of suppliers, manufacturers, distributors, service providers and customers, such an alliance should be an economic main subject but not a legal subject, which would break the boundary of a single enterprise and would be an important aspect different from the traditional accounting for the value chain accounting (As in [4]). Therefore, making use of the data of logistics, information and cash flows on each link of the value chain may strengthen the value chain management and develop the core competitiveness; thus serving the "win-win" purpose.

**Origin, formation, connection and unification of the supply-demand chain management and the value chain management and accounting.** Though the factors would be different for the origin, formation, etc. of the supply-demand chain management and the value chain management and the value chain accounting, and the concept, connotation and the form of expressions would also be different, yet the logistics, information and cash flows connecting the enterprise and the market should be the common ground between them. Therefore, through the common ground of the supply-demand chain management and the value chain management and the value chain accounting; the organic connection and unification would

be realized between them. Since the logistics, information and cash flows on each link of the supply-demand chain should be a value-added process for the constant increase of its market value or its additional value; therefore, from this point of view, the supply-demand chain would be actually a value chain. On such a value chain, accompanied not only by logistics flow, but also by the information flow and the fund flow, the turnover would be carried out in logistic operation. Since the cost budget and cost accounting for the supply-demand chain would be realized through the value chain management and the value chain accounting, therefore, they should be an integrated organic unity, both closely related and tightly connected. Though the value chain accounting would be formed to adapt to the needs of the value chain management, yet the organic connection and unification between the supply-demand chain management and the value chain management and the value chain accounting should be mainly the organic connection and unification between the supply-demand chain management and the value chain management. However, along with that the accounting internationalization should be the inevitable demand for the global economical development, and also the inevitable trends for the global accounting; thus, just as the value chain management, the value chain accounting should be an indispensable part consisting of the supply-demand chain management. That is, the organic connection and unification between the supply-demand chain management and the value chain management, should be not only the organic connection and unification between the supply-demand chain management and the value chain management; but also inevitably the organic connection and unification of the supply-demand chain management, the value chain management and the supply-demand chain management and the value chain accounting. To make clear the organic connection and unification issue between them, it would not be difficult to understand the organic connection and unification issue between the value chain management and the value chain accounting.

## 2. Organic Combination and Connection between the Enterprise's Input-Output Model and the Financial Management and the Supply-Demand Chain Management

To realize the organic combination and connection of an enterprise's input-output model and the financial management and the supply chain management can not only give full play to the leading role of the enterprise's input-output model in the economic management and to the significance of management theory, management specification and management technology, but also can ensure the enterprise's management modernization with its comprehensive application.

### 1. Organic combination and connection between the enterprise's input-output model and the financial management

**An enterprise's input-output model is a significant tool for the drawing up of the national economic development plan and forecasting the trend of the national economy.** The input-output analysis, through drawing up the input-output statements, would reflect, research and quantitatively analyze the technical and economic connections between various fields (production, distribution, exchange and consumption), various national economic sectors, various regions and various countries during the reproduction process of the society; which should be an significant tool for the drawing up of the national economic development plan and forecasting the trend of the national economy. So far as for the enterprise's input-output statements, the drawing up of the input-output plan statement would predict (plan) the forming process and the constitution for the product cost and the value of various material production departments and sectors (For example, the input conditions of various products on the vertical line to various essential factors on the horizontal line), and the drawing up of the enterprise's input-output statistical statement would account the forming process and the constitution for the product cost and value of various material production departments and sectors.

**The financial management should be a kind of value management.** By means of the monetary form, it would carry out integrated management on the enterprise's funds movements and business revenue and expenditure activities. The content of financial management should be habitually divided into three parts of fund management, cost management and profit management. The process for the financial management should be the effective supervision and control carried out on the enterprise's production and business activities to promote the enterprise in compliance with the national policies, decrees, laws and regulations; to strengthen economic accounting and to improve economic benefits. Such a characteristic for the financial management should not be replaced with any other management modes, which would be a significant component for the business management. The tasks for the financial management should be reasonably to raise money, scientifically to use funds and improve the effects of funds utilization to lower costs and increase the enterprise's profits; to distribute the enterprise's income and complete the profits turned over to the state; to carry out financial supervision and safeguard financial and economic disciplines (As in [5]). Since the enterprise's funds movements and business revenue and expenditure activities and its economic effects would be finally reflected in the monetary form on the financial positions. Therefore, the financial position should be an integrated reflection for the enterprise's economic activities and a thermometer to measure the enterprise's management and administration. The financial management should be, according to the enterprise's management objectives and

demands and in light of the content of financial management, to plan, organize, coordinate and control the funds, costs and profits beforehand for the enterprise's production and business operation activities, and to carry out accounting, analysis, evaluation and assessment in time for the funds, costs and profits afterward of the enterprise's production and business operation activities.

**The organic combination and connection between the enterprise's input-output model and the financial management.** Their organic combination and connection should be realized based on the enterprise's accounting titles and their accounting methods uniformly drawn up with the accounting framework, economic significance, economic content, operational forms and management requirements provided by the enterprise's input-output model. In such a way, based on "basic data" (such as product structures, parts for producing products, processing, rate of consumption and task time), and with the unified "data environment" (such as the unified basic data from input-output plan model and input-output statistic model), the use of the basic data and their quantitative analysis in the enterprise's input-output plan statements as the information guidance for carrying out budget, record, computation, analysis, report and check up for the reproduction process would make the basic data and their quantitative analysis in the enterprise's input-output plan statement become a significant constitutional part for drawing up the accounting statements in the enterprise's financial accounting and to realize the real-time analysis for the enterprise's input-output plan statement and the financial accounting. In the meantime, based on shared "basic data" and under the unified "data environment", the use of the basic data and their quantitative analysis in the enterprise's input-output statistic statements as the implementation of the inspection plan would make the basic data and their quantitative analysis in the enterprise's input-output statistic statements become a significant constitutional part for drawing up the accounting statement in the enterprise's management accounting, to realize the just-in-time analysis for the enterprise's input-output statistic statement and the management accounting. This should be a scientific method to realize the enterprise's financial accounting system and the management accounting system modeling; they should not only the perfect combination for the "quantity", but also the leap-frog for the "quality".

### 2. Organic combination and connection between the enterprise's input-output model and the supply-demand chain management

**The enterprise's input-output model.** The enterprise's input-output model can simulate the inherent laws of the enterprise's engaging in the production and business operative activities; in addition to its reflecting the internal technical and economic connections between the enterprise's various internal material production departments; it can still reflect the technical and economic

connections between the enterprise's various internal material production departments and relevant departments/sectors of the national economy. The technical and economic connections between the enterprise's various internal material production departments would mean various essential factors input (consumed) in the enterprise's various material production departments; the technical connections between the enterprise's various internal material production departments would refer to the material and technical connections revealed in the distribution and exchange of raw materials, materials, fuel, power and auxiliary materials; occurred during the process of production; and mainly determined by its productive and technological level; and the economic connections between the enterprise's various internal material production departments would refer to the value connections revealed through the product distribution and exchange; occurred during the process of production of various material production departments; such connections would be mainly impacted by the price fluctuation and the alteration of the production organizational structures. The technical and economic connections between the enterprise's various internal material production departments and relevant departments of the national economy, would refer to those between the enterprise's various internal material production departments and the suppliers and to those between the enterprise's various internal material production departments and the distributors, service providers and customers. The former would be realized with the basic data in the outsourcing product flow matrix table; which would reflect the products (such as the outsourcing products of raw materials, materials, fuel, power, auxiliary materials, etc.) needed to purchase from the supplier by the enterprise's various internal material production departments; while the latter would be realized with the basic data in the final product vector table; which would reflect products and services needed to provide to the distributors, services providers and customers by the enterprise's various internal material production departments. With respect to the enterprise's management, the technical and economic connections between the enterprise's various internal material production departments would be the logistics, information and cash flows of various essential factors input (consumed) within the enterprise's various material production departments; while the technical and economic connections between the enterprise's various internal material production departments would mean the logistics, information and cash flows of the enterprise's various internal material production departments; and the technical and economic connections between the enterprise's various internal material production departments and relevant departments of the national economy would mean the logistics, information and cash flows between the enterprise's various internal material production departments and the suppliers and those between the enterprise's various internal material production departments and the distributors, services

providers and customers (demanders).

**The management of the supply-demand chain.** The supply-demand chain should be a kind of new organizational and structural mode which would be formed step by step in the process of the changeable management concept. In fact, the supply-demand chain would be an objective reality existing long before. Only under the globalization situation of the market competition, would the significance of logistics, information and cash flows on the chain be revealed all the more prominent. Because each link on the supply-demand chain would contain the supply-demand double meaning, it would exist not only the basic one-to-one correspondent relation between the "supplier" and the "buyer" (for example, the enterprise would be the supplier to the market to provide products or services for the market, and also the demander of the market as well, needed to provide raw materials and parts for producing products by the market); but also the logistics, information and cash flows under flowing; therefore, the management of the supply-demand chain would involve throughout the whole process of the raw material supply, manufacturing and sales, etc. and closely integrate together the suppliers, manufacturers, distributors and service providers and customers, it would be an integrated system. Such a system should focus on the demand of the distributors and service providers, based on the close cooperation between trade partners; and should apply modern science and technology (such as the bar code technology, scanning technology, electronic data exchange EDI technology, etc. modern science and technology); thus making the cost minimum for the logistics flow, data processing and organizational management; and providing maximum value and the best service for end users with the minimum cost in the shortest possible time so as to bring about huge economic benefits for all the trade partners on the supply-demand chain. The core ideas of this system would be that the enterprises should inspect the enterprise's business effects from the point of view of total cost on the supply-demand chain, yet not by optimizing the purchasing, production, distribution, and other functions in a one-sided and isolated way(As in [1]). The management for the supply-demand chain would, according to the organizational structure model on the supply-demand chain, plan, organize, coordinate and control the logistics, information and cash flows on the "chain" beforehand and account, analyze, evaluate and assess the logistics, information and cash flows in time on the "chain" afterwards.

**The organic combination and connection between the enterprise's input-output model and the supply-demand chain management.** Their organic combination and connection, based on the realization of the enterprise's input-output plan model real-time analysis and the enterprise's input-output statistical model just-in-time analysis, through the realization of the connection of various material production departments within the enterprise forward with the supplier, and on the realization

of the connection backward with distributors, service providers and customers. Since their logistics, information and cash flows would be the common concern issue for the enterprise's input-output model and the supply-demand chain management; therefore, taking the logistics, information and cash flows as the basic research object, and placing them in the enterprise's input-output model; on the basis of the realization of the enterprise's input-output model real-time analysis, we may plan, organize, coordinate and control the logistics, information and cash flows on the whole "chain" during the process of drawing up the statement; on the basis of the realization of the enterprise's input-output model just-in-time analysis, we may account, analyze, evaluate and assess the logistics, information and cash flows on the whole "chain" at the final plan moment. Therefore, the exploration, research and analysis of the organic combination and connection between the enterprise's input-output model and the supply-demand chain management, can make not only the supply-demand chain management from the interface between the enterprise and the market orderly penetrate into the enterprise's various internal material departments, to improve the supply-demand chain management, so as to upgrade the theoretical level of the basic data and that of the quantitative analysis for the research of the supply-demand chain management, but also the theoretical and quantitative analysis for the supply-demand chain management synchronized with the basic theory for the basic data and its quantitative analysis in the enterprise's input-output model and to realize the real-time analysis of the logistics, information and cash flows using input-output plan model and the just-in-time analysis of the logistics, information and cash flows using input-output statistic model.

### **3. Organic combination and connection between the enterprise's input-output model and the financial management and the supply-demand chain management**

**The enterprise's input-output model can clearly and accurately reflect the whole process of the enterprise's production and operation activities.** Viewing from the accounting framework provided by the enterprise's input-output model, it can reflect not only the enterprise's internal product cost composition of the enterprise's various internal material production departments, but also the internal product value composition of the enterprise's various internal material production departments. For example, for the tabulated enterprise's input-output balance sheet, the horizontal line can reflect the product distribution of the enterprise's various material production departments, namely, the input to other departments, which would be the general balance sheet for all kinds of products; while the vertical line can reflect the materialized labor cost structures (i.e. the production consumption constitution) of the enterprise's various material production departments; which would be the raw materials consumption constitution statement for various material production departments.

Since the internal technical and economic connections between the enterprise's various material production departments would be the logistics, information and cash flows of various products on the vertical line to be input (consumed) to various essential factors on the horizontal line; the internal technical and economic connections between the enterprise's various internal material production departments would be the logistics, information and cash flows between the enterprise's various internal material production departments; the technical and economic connections between the enterprise's various internal material production departments and relevant departments of the national economy would be the logistics, information and cash flows between the enterprise's various internal material production departments and the suppliers, and those of the enterprise's various internal material production departments and the distributors, service providers and customers. Therefore, it would be easy to see that the enterprise's input-output model would objectively reflect the actual situation of the enterprise's various logistics, information and cash flows; within the enterprise's various material production departments, the logistics, information and cash flows of various input (consumed) essential factors, would be not only the basic data for the enterprise's financial management and financial statements tabulation, but also the basic data for the logistics, information and cash flows between various material production departments composing of the enterprise. For the sake of brief description, the value chain consisting of the logistics, information and cash flows input with various essential factors of the enterprise's internal various material production departments and the value chain between the enterprise's various internal material production department would be called the enterprise's value chain for short; and the value chain consisting of the logistics, information and cash flows between the enterprise's various internal material production departments connected forwarding with those between suppliers and backward with those between distributors, service providers and customers would be called the supply-demand chain for short; then, the enterprise's value chain would consist of not only the foundation and core of the financial management theory, but also the foundation and core of the supply-demand chain management theory. The enterprise's input-output model would not only objectively reflect the constitution condition of the enterprise's value chain, but also constitute the scientific basis for the supply-demand chain. In addition, as for the new accounting theory, accounting principle, accounting standard, accounting methods and management methods and the corresponding outcome of modern enterprise scientific management system, since the management content involved would be calculated based on the independent demand plan (the predicted value) of the current end product varieties and quantity and the corresponding materials quantity which would be not only related to the demand of market, but also changed with the

change of the market demand, it would be of the time-effectiveness; since the basic structures of the modern enterprise scientific management system would be related to the accounting framework of the enterprise's input-output model, its format should be determined to a certain extent, it would help the managerial personnel of the enterprise's decision-making level, management level and competitive functional level to monitor the accounting information (accounting data) and related information (related data) for the enterprise's financial management and the supply-demand chain management; it would be of initiative. It must be made clear that throughout the process of monitoring the accounting information (accounting data) and related information (related data) for the enterprise's financial management and the supply-demand chain management, for those enterprises which would not produce according to the contract order or for other reasons, except the final products would directly be sold to distributors, service providers and customers, the surplus products would increase the reserve of finished products; for certain outsourcing products purchased, except those directly input (consumed), they would be used for inventory buildup, it would show that related resources (such as relevant resources of raw materials, materials, fuel, power and auxiliary materials, etc.) would be unused or occupied. For certain products purchased outside, except those directly input (consumed), no conditions of being unused or occupied would occur due to inventory buildup. For example, electric power energy should be a kind of invisible and un-storable secondary quality energy resources, the power production, circulation and consumption would be closely connected, simultaneously carried out in an instant and simultaneously accomplished; there would be no such conditions of being unused or occupied occurring for electric power energy.

**Organic combination and connection between the enterprise's input-output model and the financial management and the supply-demand chain management.**

Their organic combination and connection should be realized based on the organic combination and connection between the realization of the enterprise's input-output model and the financial management, and the organic combination and connection between the enterprise's input-output model and the supply-demand chain management. The enterprise's input-output plan model can carry out planning, organization, coordination and control for relevant resources of the enterprise's production and business operation activities; the enterprise's input-output statistic model can carry out accounting, analysis, evaluation and assessment for relevant resources of the enterprise's production and business operation activities; for the financial management as a kind of accounting method, in case it would carry out planning, organization, coordination and control for relevant resources of the enterprise's production and business operation activities, then the financial management should be the financial accounting; in case it would carry out accounting, analysis,

evaluation and assessment for relevant resources of the enterprise's production and business operation activities, then the financial management would be the management accounting; for the supply-demand chain management as a kind of accounting method, in case it would carry out planning, organization, coordination and control for relevant resources on the chain, then the supply-demand chain management should be the value chain management; in case it would carry out accounting, analysis, evaluation and assessment for relevant resources on the chain, then the supply-demand chain management should be the value chain accounting. Thus it can be seen that the management method for the enterprise's input-output model would be in fact the financial accounting or the management accounting, the accounting method for the supply-demand chain management would be in fact the value chain management or the value chain accounting, the organic combination and connection between the enterprise's input-output model and the financial management and the supply-demand chain management would be in fact the organic combination and connection between the enterprise's input-output model and the financial management and the value chain management or the enterprise's input-output statistics model and the management accounting and the value chain management. It must be remarked that during the process of realizing the "organic combination and connection between the enterprise's input-output model and the financial management and the supply-demand chain management", the realization of the "enterprise's input-output plan model real-time analysis" and the "enterprise's input-output statistic model just-in-time analysis" would be the most significant two keys and links. They would be the foundation, core and soul which would improve the scientific level of the modernization management for the enterprise's management ideas of modernization, management organization systematization, management method quantitative, management means automation and production-supply-marketing integration, etc. and would certainly promote the enterprise's economic development, especially promote the economic construction and the building of a harmonious society. Not only introducing the market rules into the enterprise, which would become the scientific basis for the internal economic contract system carried out in all management links, all working procedures and all job posts; but also breaking through the malpractices of using the management system, regulatory regime and management methods of the "industrial age" to manage the "information age"; thus making the enterprise's management modernization enter into the thinking realm of systematic management or model management.

**3. Real-Time Tabulation Method of the Input-Output Model and the Realization of the Real-Time Analysis of the Financial Management and the Supply-Demand Chain Management**

Since the scientific ideas of the “Real-Time Tabulation Method of The Input-Output Model” can reveal the objective law of the basic data required for the enterprise’s input-output plan statement real-time analysis and the enterprise’s input and output statistic statement just-in-time analysis, it can realize the enterprise’s input-output plan statement real-time analysis and the enterprise’s input-output statistical statement just-in-time analysis. Not only have we thoroughly solved the “Assumption” issue that the direct consumption coefficient  $A$  for the enterprise’s input-output statistical statement should remain the same during the process of drawing up the enterprise’s input-output plan statement, but also thoroughly overcome the greatest “out-of-date” shortcoming of failing to work out the enterprise’s input-output statistical statement by the end of the tabulation due to the reason that long time is required to gather, process and sort out relevant accuracy and reliable basic data. We can exactly calculate not only the variety and quantity of the products, but also their physical quantities and values. Thus, it not only should be the theoretical basis for the realization of the enterprise’s financial accounting and value-chain management real-time analysis and the enterprise’s business management accounting and the value chain accounting just-in-time analysis, but also the important symbol for achieving the modernization for the enterprise’s business management and supply-demand chain management system.

**Cost Management.** The scientific ideas of the “Real-Time Tabulation Method of Input-Output Model” can realize not only the enterprise’s input-output plan model real-time analysis, but also the enterprise’s input and output statistical model just-in-time analysis, which would lay solid theoretical foundation for making full use of such a characteristic input-output model to reflect the economic development in a certain proportion to solve the issue of coordination and harmonious development concerning the enterprise’s economic system, economic construction and economic development. The input-output model should be a kind of quantitative economic analysis method; proceeding from the situation of various departments of the national economy as a whole, it would study their quantitative relationship; for which, there would be both comprehensive indexes (such as total social products, intermediate products, accumulation fund, consumption fund, etc), and decomposition indexes grouped in product departments or product categories; so it would be more comprehensive and more concrete. It can not only study local parts under the whole guidance, but also reflect the whole with various local conditions. It can not only reflect the movement process between product departments simultaneously both from the product production, distribution and utilization and from the production consumption constitution; but also still study the economy in the four links of production, distribution, exchange, consumption for the reproduction in a unified way. It can not only inspect the material object movement and the value movement of the enterprise’s products in a penetrating way simultaneously from both the

use value and the value of the enterprise’s products; but also make use of various coefficients provided by the input-output model to reflect the quantitative relationship of the technical and economic process. For example, direct consumption coefficients can reflect the quantitative relationship between intermediate products and total products; and complete consumption coefficients can reflect the quantitative relationship between end products and total products. Thus it can be seen, various coefficients provided by the input-output model, not only can carry out quantitative economic analysis for the national economy; but also would be the scientific basis for connecting the plan targets and for carrying out comprehensive balances. In addition, the business process provided to distributors, service providers and customers by the enterprise would be composed of a series of orderly operation from beginning to end. The enterprises would be such operational chains connecting the operations from one to the other and from inside to outside. Since completing an item of operation would consume certain resources, so the output of the operation should form certain value transferred to the next operation, according to this going on, until end products finally would be provided to the enterprise’s external distributors, service providers and customers to meet their needs. The final products, as the aggregate of the enterprise’s a series of internal operations, would condense and form on each operation and finally transfer to the customer’s value; therefore, the enterprise would be the value chain formed due to the transfer of the values between various operations on the operation chain. At present, during the process of implementing the operation cost management, the enterprise would mainly carried out the analysis centering on other above-mentioned value chains. Since the realization of the enterprise’s input-output plan model real-time analysis and of the enterprise’s input-output statistical model just-in-time analysis would be the results of coordinate labor, process connection and unification, it would not only objectively reflect the forming process of the enterprise’s value chain, but also use the principles of the enterprise’s input-output model as the theoretic basis for the cost management of implementing co-operations among departments (products) and as the guarantee to optimize economic benefits. thus, fundamentally solves the serious shortage problem of single cost management.

**The realization of the Real-Time Tabulation Method Of The Input-Output Model and of the financial management and the value chain management real-time analysis.** In the scientific research project “Real-Time Tabulation Method Of The Input-Output Model” and the Enterprise’s Management Modernization- The Realization of the Enterprise’s Input-Output Model and the Financial Management and the Supply-Demand Chain Management Real-Time Analysis, the scientific ideas of the “Real-Time Tabulation Method Of The Input-Output Model” should be the theoretical basis for the scientific research project and the basic content concerning the “Nine-Must” (As in [\*])



for the enterprise's management modernization should be the core of the scientific research project. The accounting theory, accounting principles, accounting standards, accounting methods and management method based on the enterprise's input-output plan model real-time analysis and the enterprise's input and output statistical model just-in-time analysis should be the essence of scientific research project. The methods of model analysis, model design and model management should be the scientific means for the realization of scientific research projects. Their relationship can exist side by side and can play a part together and none would be dispensable. Since the "Real-Time Tabulation Method Of The Input-Output Model" not only can precisely (referring to products' varieties and quantities) and accurately (referring to the products' physical quantities of varieties and quantities) calculate the basic data required for drawing up the enterprise's input-output model; but also, based on the basic data (how many to be used) in the input-output model and the balance relationship between various resources' inventory (how many), implementation (how many wanted), purchasing (how many needed); and the ability resources, the basic data of the logistics, information and cash flows between the enterprises and the suppliers, distributors, service providers and customers; can precisely and accurately calculate the basic data required for the financial management and the supply-demand chain management of the balance sheet, income statement, etc. to realize the real-time analysis and the just-in-time analysis. For the convenience of narration, in this paper the enterprise's input-output model would be short for the enterprise's input-output plan model and the enterprise's input-output statistical model; the realization of the real-time analysis for the enterprise's input-output model and the financial management and the supply-demand chain management would be short for the realization of real-time analysis for the enterprise's input-output plan model and the financial accounting and the value chain management and the realization of just-in-time analysis for the enterprise's input-output statistic model and the management accounting and the value chain accounting; the modern enterprise's scientific management system would be the scientific management system built up with the accounting theory, accounting principles, accounting standards, accounting method and management methods based on the enterprise's input-output plan model real-time analysis and with the accounting theory, accounting principles, accounting standards, accounting method and management method based on the enterprise's input-output statistic model just-in-time analysis. Although their names would be different, yet their content, meaning and value would be equal.

## 4. System Evaluation

**An important symbol for the 21<sup>st</sup> century enterprise's management system.** Leontief once pointed out, such

conditions would occur in today's Science of Economics: on the one hand there would be no facts in the theoretic academic degree, on the other hand there would be no theory among the mountainous pile of facts; while the input-output analysis would be a try to combine the economic facts with the theory to enrich the "Empty Box of the Economic Theory" (As in [6]). Obviously, realization of an enterprise's input-output plan model and financial accounting and value chain management real-time analysis and the input-output statistic model and management accounting and value chain accounting just-in-time analysis can not only upgrade the management level of production and business operation activities engaged by the enterprise to the ideological realm of the system management or model management, but also make the enterprise's financial operations in all fields of production, distribution, exchange and consumption carried out under the conditions of "absolutely transparent" so as to help the enterprise realize the desire of "completely solving the waste of needed resources, forever controlling the product cost the lowest, and nobody can play tricks".

It must be pointed out that new accounting theory, accounting principles, accounting standards, accounting methods and management methods together with the modern enterprise management system set up therefore, will not only be the scientific method for upgrading the enterprise's core competitive ability, but also would become an important symbol for the 21<sup>st</sup> century enterprise's management system. Although this is just a good start, yet there should be a long way to go. However, with regard to the upgrade of an enterprise's financial accounting and management accounting and value chain management and value chain accounting, it would not be difficult to arrive at the following conclusions:

**1. Effectiveness of accounting methods.** The enterprise's accounting method should always depend on the accounting object, as for evaluating whether the accounting object be scientific, we should see not only whether the accounting method would accurately reflect the accounting object, but also whether the accounting method would effectively control the accounting object. As for evaluating whether the value chain accounting would be effective, we should see not only whether it would deeply reflect and analyze the enterprise's value movement process, but also whether it would effectively control the enterprise's value-added process (As in [3]). From this we can see that, the scientific quality of the enterprise's financial accounting and management accounting and the value chain management and the value chain accounting would depend, to a great extent, on the effectiveness of the accounting method as derived from the above as to the effectiveness of the accounting method, it would depend not only on the objective situation of the accounting object, but also on certain factors of the correct degree that the accounting method can reflect the accounting object and the effective degree of the objective situation can control the accounting object etc.. Obviously, new accounting theory, accounting

principles, accounting standards, accounting methods and management methods and their scientific quality, objectiveness and effectiveness together with the research, analysis, evaluation and control of the accounting object would play an un-replaceable role and would be of the foundation significance.

**2. Entirely new financial management.** The United States of America Coors Brewing the company's financial manager, Pipkin, under the ERP (Enterprise Resources Plan) environment, proposed in 1989 that, the information technology would be making the financial work completely changed and redefined the whole financial system. Just as the influence on the whole enterprise, the information technology would be changing the occupation of the financial controller. Until the 21<sup>st</sup> century, the financial management work would be carried out in a completely new and exciting way. Under the new economic conditions characterized by the network science and technology and knowledge management, the enterprise's management ideas would be undergone major transformations, the enterprise's traditional "function-type" organizational form would look to be out of date; the new concept of the value chain management and the value chain accounting would be formed and become a new trend in the enterprise's management. Obviously, new accounting theory, accounting principles, accounting standards, accounting methods and management methods would not only be beneficial to the application of information technology to completely change the occupation of the treasurer, but also can completely change the enterprise's traditional "function-type" organizational form. They can not only realize the complete change of the treasurer's work, but also make the enterprise's financial management work carried out in a completely new and exciting way.

**3. A scientific method to cope with the Enron Event.** At the turn of this century, faced with the impacts of the Enron Event, Sam DiPiazza (President of the United States the international accounting firm Price Waterhouse Coopers) once pointed out that to cope with the challenge, we should set up the "Company's 3-Level Transparency Mode". Here the three levels should include: first, a set of accounting principles really accepted by the whole world; second, criteria for measuring and reporting information, such criteria should be applied to various specific trades and industries and occurred in an understandable form; third, the Company's specific information manuals, including such information as strategy, plan, risk management, salary and wage policy, corporate governance and the performance evaluation, etc.. Since the Real-Time Tabulation Method Of The Input-Output Model is based on the financial targets of the enterprise's 2-7-year business plans and through drawing up the enterprise's input-output optimal plan statements, may be formulated, amended and adjusted by the ERP decision-making level; to satisfy the enterprise's 2-7-year long-term planning concerning production resourcefulness, such as the enterprise expansion, production equipment, capital investment, etc. at the ERP

plan level, according to the enterprise's annual targets of 1-3-year production programs, and through drawing up the enterprise's input-output optimal plan statements, the input-output statement real-time tabulation may be formulated, amended and adjusted to satisfy the enterprise's 1-3-year annual planning concerning production strategy, such as how many products needed to be produced for each category, what resources needed to produce these products, which actions to be taken to coordinate the relationship between the enterprise's production demand and resources available at the ERP implementing level, according to the monthly targets during all the time period of key production plans (that is, the final product plan), and through drawing up the enterprise's input-output optimal plan statements, the input-output statement real-time tabulation may be formulated, amended and adjusted to satisfy the enterprise's monthly plans concerning the monthly planning, such as the items of final products' production, material purchase, supply, financial cost, labor wages, sales, etc. Since the enterprise's physical-type input-output statements would both be the material balance statistical sheets and the connection analysis sheets between various material production departments, it can reflect both the balance relationship between the production, consumption, export sales and inventory of raw materials, semi-finished products and finished products; and also can reflect the technical and economic links between various internal production departments in the enterprise's production and business activities, and between various material production departments and relevant departments of the national economy. Since the horizontal direction of the enterprise's value-type input-output statement would reflect the distribution conditions according to the use of self-made products by various material production departments, it would be designed to compensate for the consumed production materials, or enter into the end product column; while the vertical direction would reflect the input conditions of various products by various material production departments to various essential factors on the horizontal line, i.e. the production consumption constitution (such as the enterprise's internal resources, outsourcing resources, fixed assets depreciation and big repair, basic wages and welfare fund, namely the so-called factory cost), and plus taxes and profits, etc.; all these should be the total output of various products. In addition, the enterprise's input-output model can not be only combined with economic mathematic methods of the quantitative management technology (Operations Research), forecast, etc.; but also with the managerial and administrative modes of ERP, lean production, agile manufacturing, etc. and with the modernized management methods of TFP theory, management by objectives, etc., it would become a more perfect method. Obviously, new accounting theory, accounting principles, accounting standards, accounting methods and management methods would reflect the objective requirement of the world economy development and should be the inevitable trend for the global accounting

development. It should be not only the scientific basis to standardize the enterprise's financial behaviors, to unify the accounting standards, to ensure the quality of accounting information and to be helpful for fair competition; but also the theoretic basis to strengthen the enterprise's financial management, to establish and perfect the internal financial management system, to do a good job in the basic work of the financial management, to report the financial situation accurately, to calculate and pay the national tax in accordance with the law and to guarantee the rights and interests of investors from infringement; therefore, it would completely meet and satisfy the conditions and requirements to establish the "Company's 3-Layer Transparency Mode" and it would be the scientific method to really meet such a desire.

**4. Updating of the existing financial management system.** The existing financial management information system (including the information system of the value chain management and the value chain accounting management) would lack of complete theoretical system, mainly revealed in that it cannot objectively reflect the enterprise's contribution of various economic activities to the value. It cannot scientifically analyze the inner relation between the enterprise's all kinds of economic activities; or provide corresponding control tools for scientific management. As we know, the past accounting work would only face the history, mainly play the role of recording; later, the financial management would try to control certain aspects of the production management through cost accounting, yet, since the enterprise had no detailed required plans or control methods, so data used would not be accurate, the financial management failed to timely collect, transmit and record the material movement information. While the financial personnel should use such data, naturally it would lead to the distortion to a more degree, the financial controller would often through taking the year-end stock find still more serious conditions that there perhaps would be no such stock materials at all or serious defection of those recording in the account book. The existing financial management information system, combined the production subsystem and the financial subsystem into one integrated system according to the manufacturing resource planning MRPII system, should claim to record the inventory item by item according to the inventory records and pre-fixed cost data, it can not only easily account the inventory value, but also realize the circular stock taking. While doing a good job in the circular stock taking, it would be unnecessary to carry out year-end stock taking. Its advantage would be to solve the problem as soon as it is found, thus keeping the accuracy of inventory records and making complete changes for the above-mentioned issues (As in [2]). However, because manufacturing resource planning MRPII system focuses on planning and control and functions internally with its aim on enterprise overall efficiency which has its limitations. The financial accounting and management accounting formed with the information integration of the enterprise's input-output model and the

value chain management and the enterprise's input-output mode, the managerial and administrative modes of ERP, lean production, agile manufacturing etc. , and the value chain management and value chain accounting formed with the information integration of the above mentioned factors, the enterprise's input-output model with the modernized management methods of TFP theory, all of these management methods, based on the improved enterprise's organizational and management structures, would not only be beneficial for the solution of the above-mentioned issues, but also can reflect the information of the entire system, including suppliers, distributors, service providers and customers. Obviously, new accounting theory, accounting principles, accounting standards, accounting methods and management methods can not only objectively reflect the contribution to the value of the enterprise's various economic activities, but also scientifically analyze the inner relations between the enterprise's various economic activities; can not only become the common object for the enterprise's financial accounting and the value chain management or management accounting or value chain accounting, but also become the platform converging the financial accounting with the value chain management, management accounting and the value chain accounting; can provide not only scientific tools for corresponding management and control, but also more scientific productive management system as the theoretic basis for updating the existing financial management system.

**5. Enterprise Competitions in the 21<sup>st</sup> century.** The enterprise competitions in the 21<sup>st</sup> century should no longer be those in an individual enterprise, or those between individual enterprises and the enterprise chain either, but those between the enterprise chain and the enterprise chain. In the internet era, though the competitive environments facing the enterprises would occur changes, yet the basic competition principles followed by the enterprises should remain the same. According to Michael Porter's competitive principles, if an enterprise would want to succeed, it should achieve differential advantages or low cost advantages or both at the same time (As in [7]). In the knowledge-base economy era, the differential competition has become the most basic competitive strategy for modern enterprises; analyzing and building activity differences with important significance would be important means to seek competitive advantages. That is to say, the value chain should be the activity process for the people with objectives and organizations. Since the advantages for the value chain management would lie in its thinking highly of the output and the resource allocation, they would be the strategic thinking concept for the interest-oriented guiding. The analysis method for the value chain should be used to analyze the enterprise's competitive advantages; which would be conducive for the enterprise to get a clear understanding of the advantage and disadvantage links on the operative activity chain, to adjust the structures of the value chain, to reinforce the weak links, to keep the original strong points and to create new competitive advantages. For

example, in the field of cost management, the cost accounting with the operation as the basis, first of all, should allocate the cost and expenses to the operation in accordance with the volume of resource consumption, then allocate the cost to the product in accordance with the amount of the operation occurred for each product. That is to say, operation would cause the consumption of resources, and the product formation would again “consume” a series of operations. The enterprise’s value activities would be the cost behaviors; therefore, we may make use of the advantages of the value chain management to induce and allocate the cost. In restructuring the enterprise’s accounting business process, it would improve the work efficiency by making use of the value chain to analyze the economic business process and to constantly optimize the process structure. In the market mechanism, since the market mechanism would be consisted of organically-connected and mutually-interacted pricing mechanism, supply-demand mechanism, competitive mechanism, interest rate mechanism, wage and salary mechanism, risk mechanism, etc.; therefore, it would bring the role and position of the value chain management in the market mechanism into full play, which would be beneficial to following the most basic competitive principles, it would be the key to a successful enterprise. Obviously, new accounting theory, accounting principles, accounting standards, accounting methods and management methods not only would pay attention to the control and reduction of the manufacturing cost, but also to the control and reduction of the value chain cost; not only can analyze the existing links of the variance advantages or low cost advantages, but also would be the scientific methods to overcome the defects of traditional accounting; can build not only a set of academic research mode from the management concepts to the management methods until the management tools, but also a unified research framework in the new fields combining economy, management and accounting; can not only gradually expand their height, depth and breadth of the study under such a framework, but also still set up a set of perfect market mechanism, thus achieving the objectives of optimizing the social and enterprise resources allocation, lowering cost and enhancing the competitive advantages by means of bringing the role of the economic lever of the market mechanism into full play.

**6. A significant means for the sustainable development.** The enterprise should be only one cell of the society; it would have a thousand and one links with the external physical world from the acquisition of the essential production factors and the final product sales and uses. Since the value chain may decompose the enterprise’s a thousand and one links with the external physical world into many activities related to strategy, the enterprise would win the competitive advantages just through conducting such important strategic activities more cheaply or more remarkably than its rivals; therefore, the value chain analysis would be the essential way for the enterprise to create and maintain competitive advantages. In order to find the effective method to lower cost, and to find, analyze and

control the cost driver for each value chain operation, while analyzing the value chain, first of all we should determine the enterprise’s value chain, industrial and social value chains; and then distribute the cost, income and assets to the value operation. For the enterprise’s value chain, since it would have both the value chain of various input essential factors within the material production departments and that between various material production departments; therefore, while analyzing the enterprise’s value chain, first of all we should find the basic value chains; and then decompose them into separate value operations; considering the sizes of cost consisting of and the increasing trend of each operation, and the operational cost behaviours and variance conditions to conduct the operations of the competitive rivals, we may lower the operation cost to the maximum through restructuring and innovation of the value chain. For the industrial value chain, since it would be consisted of a series of logistics, information and cash flows input by the enterprise’s relevant internal material production departments from the first raw materials to the hands of distributors, service providers and customers of final products; it can make the enterprise know itself at certain stage of the value chain within its own industry (the value chain); therefore, conducting the industrial value chain analysis can know its own enterprise at certain position within its industry; and conducting the analysis of making use of various possibilities of upstream and downstream value chains may achieve the optimizing industry value chain. For the social value chain, since it would be the value chain consisting of the logistics, information and cash flows between the enterprise’s internal relevant material production departments and the suppliers, and between the enterprise’s internal relevant material production departments and the distributors and service providers. Therefore, the social value chain analysis can clearly know the exchange value relationship between the enterprise and the external physical world; from which to choose the optimal exchange form of materials and the value, thus we can improve the economic benefits of the enterprise. In addition, considering the cost consumption and the compensation issue from the entire material world circular process, we should consider not only the compensation for the human labour consumption; but also fully consider the consumption and compensation of various material resources in the natural world so as to realize the sustainable development. Obviously, new accounting theory, accounting principles, accounting standards, accounting methods and management methods can not only reflect the objective conditions of the enterprise’s value chain, industrial value chain and social value chain, but also win the competitive advantages through the comparative analysis of strategic activities to realize the enterprise’s creations; not only would be beneficial to the solution of the above-mentioned issues, but also still more conducive to the realization of the enterprise’s sustainable development.

**7. Cost drivers.** Cost drivers would include the structural drivers and the executive drivers. The structural driver

would refer to the cost driver to decide the enterprise's economic structures, such as the enterprise's scale, geographical position, experiences, technology; etc.; while the executive driver would refer to the cost driver for the enterprise's operational procedures, such as the staffs' centripetal force toward the enterprise, the application of the production capacity, product structures, plant layout and planning, etc. Since the structural drivers would be decided by the strategy adopted by the enterprise, after the strategic decision it would be of the uncontrollable nature; therefore, the cost control should focus on executive drivers. The enterprise's basic activities would refer to the enterprise's production, supply and marketing activities for the production and operation and such activities would be directly related to the commodities entity processing and circulation. The relation of supporting activities would not only lie in the enterprise's value chain interior; but also between the enterprise and the industry's value chain. The operations within the enterprise's value chains may be divided into increasable value ones and un-increasable value ones; therefore, optimizing the value chain should eliminate the un-increasable value ones as far as possible and upgrading the operating efficiency of the increasable value operations as far as possible; in this way the enterprise can reduce the occupation and consumption of resources. If an enterprise would get and keep the competitive advantages, which would depend not only on the understanding of the internal links within the enterprise's value chain, but also on the understanding of mutual links within the enterprise's entire value chain system. Or rather, there would be only profound understanding for the formation of the enterprise's relative cost position, can help the enterprises to find effective methods to reduce cost. Obviously, new accounting theory, accounting principles, accounting methods, accounting methods and management method would be beneficial not only to the real-time analysis for the structural drivers, but also more beneficial to the real-time analysis for executive drivers; can objectively reflect not only the inner relations among supply, production and marketing activities, but also the links between the enterprise's internal value chain and the enterprise's and the industry's value chains; would be beneficial to the analysis, research and understanding not only of the mutual relationship of the value chains in the entire value chain system, but also of the formation of the relative cost positions.

**8. Connections and variances between the accounting objects for the fund movement and the value chain.** For the convenience of narration, the enterprise's value movement expounded in the fund circulation and the fund flow theory would be called the accounting objects for the fund movement, and the enterprise's value movement revealed by the value chain would be called the value chain object. The connection between the two accounting objects, would mainly refer to their focuses on the same value movement or the value-added movement; and the variances between the two accounting objects, would be mainly

revealed in the following aspects:

- (1) Fund movement, also known as the fund circular and turnover. During the movement, funds, in the forms of respective monetary, productive and commodity funds, would continue to extend in time and coexist mutually in space, move in circles and go around and begin again. As a value form, the fund movement would reflect the three stages of supply, production and marketing, the processes of one stage transformed to another would be the unification of the value production and circulation. The value production should be the value formation and creation process, considered as the interruption of the value circulation, the value circulation would be considered as the value realization process. The enterprise's value chain would be a series of mutual separation and mutual transmission activities engaged in the enterprise's design, production, marketing and delivery processes and the auxiliary processes; each kind of activities would be the source of value, and would create the value.
- (2) Fund movement, as the process of the value movement, should be the abstraction and integration of the enterprise's economic activities; and the development and the discard for the concrete activity processes of the specific enterprise's supply, production and marketing, etc.; those abstracted would be numerous enterprises' movements with the common value form; after explaining numerous enterprises' movement framework with the common value form, the value chain would analyze the differences of various activities in details between enterprises; and hold that the differences between the enterprise's value chains should be one of the important sources for the competitive advantages.
- (3) Funds can only be understood as the movement and would be value-added in the movement. Funds' circular processes would pass three stages in three forms and respectively in three functions. Only the capital would cycle without stop from one stage to another, can it operate regularly. The value chain should be the enterprise's economic activity processes, to understand the enterprise's economic activity processes, an important goal would be, through an enterprise's activity space to exert its influence on the value chain to control the enterprise's competitive advantages. It would not be natural for the enterprise to own competitive advantages; it must focus on the enterprise's value chain, through strategic planning, strategic formulation and the strategy implementation to strive for the competitive advantages.
- (4) The fund movement should be to use the value form to reflect the enterprise's actual economic business activities. Though it cannot be completely equated, yet now that the value movement would achieve its independent existence and movement forms, it would have the motion laws independent of the enterprise's

economic activities. What the value chain would describe should be the enterprise's actual economic activities, the enterprise's various activities should become one source of the value; the transmission process from one activity to another should be the progressive increase process.

- (5) In the fund cycle and turnover the enterprise would be considered as a basic element, in the capital movement the enterprise would be taken as an integration; which would be in the form of the enterprise's entire value movement. The value chain would divide the enterprise's economic activities, separate those similar ones from others to gather in one department for effective uses, it would be the differentiation. Owing to the differentiation of the organizational units to the needs for coordination; it would be the integration. The mutual relationship between various activities established by differentiation and integration would be the important source of the enterprise's competitive advantages; and the organizational structures identical to the value chain would be the resources for enhancing the enterprise's creation and maintaining competitive advantages.
- (6) The fund movement, with the enterprise's fund movement, namely, the individual value movement as the basis; the summation of each individual value movement would consist of the total social fund movement; it would be the simple social reproduction and expanded reproduction movements. The products and services provided by the enterprise's value chain would finally become part of the customer's value chain; the value chain transfer and the value increase by degrees carried out in various chain-type activities of the enterprise's value chain interiors would finally depend on the customer's value chain.

In short, the accounting object would be the content reflected and controlled by the accounting; it would be the objective existence independent of the accounting system. Although the objects of the enterprise's fund movement and the value chain accounting would focus on the same value movement or the value-added movement, yet, there would exist obvious differences in the explanation for the value movement by the two. Obviously, new accounting theory, accounting principles, accounting methods, accounting methods and management method would make it easy for us to see: in the various fields from the value reflection to the value creation, from the abstract process to seeking different process, from the natural process to the activity process, from the value circulation process to the value increase process by degrees, differentiation and integration from the enterprise's integration to the organization, from the individual value to the social value and from the enterprise's value chain to the value chain system, etc.; although the accounting object of the fund movement and that of the value chain would have different understanding on the value movement, reveal different information volumes and give different functions for the accounting

system; yet it would be more beneficial for the transmission from the accounting object of the fund movement to the accounting object of the value chain accounting; and with the adaptive value chain accounting method as the basis, making the information systems of the enterprise's financial accounting and the management accounting set up on the new foundation; then under the new environment they would bring the role of their reflecting and controlling functions into full play, thus eventually pushing forward the development of the accounting science.

**9. The value chain management and the value chain accounting.** The value chain management would be claimed to carry out effective plan, organization, coordination and control for the logistics, information and cash flows on the entire value chain; while the value chain accounting would be claimed to carry out accounting, analysis, evaluation and assessment for the logistics, information and cash flows on the entire value chain. At the time of requirement, in case it should fail to get various types of information on the value chain timely, accurately or precisely, then it would be difficult for us to move a single step in carrying out the value chain management and accounting; in case it should fail to provide classified and integrated information timely, accurately or precisely, then the information on the value chain would be revealed in disorder and would fail to play its proper role. Obviously, the accounting theory, accounting principles, accounting methods, accounting methods and management method can provide not only various types of information timely, accurately or precisely on the value chain at the time of requirement, but also the classified and integrated information timely, accurately or precisely; not only would be the critical technology to realize the value chain management real-time analysis and the value chain accounting just-in-time analysis, but also the scientific method and the significant way to upgrade the theoretical level of the value chain management and the value chain accounting.

**10. The comprehensive value chain management.** The comprehensive value chain management should be the 4-stage circulation management of the value target programming, value index analysis, value management evaluation and value issue treatment. The value objective programming should be to determine the enterprise's value targets and to decompose the enterprise's performance targets; to determine the value performance targets to be attained in layers from bottom to up. The value index analysis should be the strategic decision to carry out the value evaluation, to evaluate the input and output efficiency of necessary resources for the implementation of the specific strategy, and to help the enterprise to make decisions between different business strategies. The value management evaluation should, with the value evaluation groups as the foundation, make clear the value links for the business operations and the responsibility center, divide the performance targets for groups, and carry out tracking evaluation on the implementation results. The value issue

treatment should be to lay stress on the key points for the value factors analysis, to verify key value impact factors, to weigh up one thing against another among various impacting factors, to find key factors impacting the value and to take the value countermeasures. Obviously, since the new accounting theory, accounting principles, accounting standards, accounting methods and management method can timely, accurately or precisely provide required data and information for the comprehensive value chain management, they then would be the important method to realize the value target programming, value index analysis, value management evaluation and value issue treatment.

**11. The management mechanism with the value chain as the center.** To build the management mechanism with the value chain as the center, should be to break down the barriers of the functional fields to establish the management mechanism with the operations as the center. Through certain methods, determining the functional operations required to complete for the enterprise's strategy into the enterprise's internal units and operational posts; then to determine the flow processes; based on these to establish the personality performance appraisal system and the incentive system. For example, to carry out the control design would be to solve the scientific decision-making and to prevent against mistakes and corruptions for high-level management (e.g., the shareholders' meeting, board of directors and the board of supervisors and managers group, etc); to carry out the organizational design would be, from the enterprise's objectives point of view, to determine the functions to be completed, to decompose these functions laterally and longitudinally and to determine the organizational structure setups and the responsibility and power of each organ; to carry out the post design would be, based on the control design, the organizational function design and the post design, to determine the procedures and methods for the completion of various functional operations. Obviously, new accounting theory, accounting principles, accounting methods, accounting methods and management method not only can break down the barriers of the functional fields, but also would be the scientific methods for building up the management mechanism with the operations as the centre can provide not only relatively accurate cost information for the enterprise's managerial level, but also the strategic decision support for the enterprise's strategic level.

**12. The real-time analysis of the network value chain and the optimal configuration of resources.** In the new economy era, the development of the network technology would make the enterprise's management scope not only go beyond its own, but also extend to the entire value chain. Since the enterprise's mission in the network era should be to create and deliver the value, the relationship in the value production and practice would be interdependent between the product manufacturer and supplier, distributors, service providers and customers; therefore, the enterprise's ability would not be equal to its ambitions by only relying on its own resources, the cross-industry network alliance should

become the mainstream of the internet era. Since the network value chain should be to describe the value-added process of the value on a unified and high seamless chain integrated the supplier, manufacturers, distributors and service provider and customers; therefore, under the ideal state, for the network value chain there would be no value-added environment and the friction cost. Obviously, new accounting theory, accounting principles, accounting methods, accounting methods and management method can realize the real-time analysis not only of the enterprise's value chain, but also of the competitive rivals'; can realize not only the real-time analysis of the network value chain composed of the suppliers, manufacturers, distributors and service providers and customers, but also the optimal configuration of the strategic resources of the enterprise's value chain; can realize not only the enterprise's mission to create and deliver the value and the value-added process on the high seamless chain, but also the strategic design analysis and the business process reorganization technical analysis.

**13. Auditing on the supply chain.** During the process of the supply-demand chain management, the audit on the supply chain would be not only very important; but also very necessary. Since the value chain between the enterprises (manufacturers) and the suppliers should be the initial part of the entire value chain, so, the management on the suppliers would be the basis for the realization of the objectives for the value chain management. Since the audit on the supply chain would be produced accompanied by the value chain management, therefore, the audit on the supply chain should be the comprehensive and systematic and independent evaluation on a series of operational activities of the business environment, business objectives, business strategy, organizational structures and management process control and management performance for the supply chain management, to determine the management objectives of the enterprise's supply chain, to find the problems existing in the current supply chain, to seek effective ways to improve the operation activities on the supply chain, to put forward correct plans and measures and to upgrade the overall rates and efficiencies of the enterprise's supply chain. Since all the activities on the supply chain would reveal the operational activities, therefore, the whole supply chain should be in fact a series of orderly operational integration established based on satisfying the customers' needs. While the resources on each link of the supply chain would be consumed for the audit of the supply chain, the operations should be taken as the object of the cost audit. Obviously, new accounting theory, accounting principles, accounting methods, accounting methods and management method would be completely beneficial to taking the operations on the supply chain as the object of the cost audit. They would not only provide scientific basis for the enterprise to decide the management objectives of the enterprise's supply chain, but also pave the way for the operation cost method of the enterprise; not only can calculate and distribute the costs for various operations in

accordance with cost drivers, but also can calculate the product cost or service. It must be pointed out that it is far from enough just deriving and establishing a separate management function from production function of accounting or achieving enterprise management goal afterwards by auditing of “better late than never” style.

Nevertheless, nothing is without shortcomings in the world. The new accounting theory, accounting principles, accounting methods, accounting methods and management method and the modern enterprise scientific management system established therefore are sure to be imperfect. However, with social, scientific and technical progress and development, methods will be found to improve them.

Last but not the least, due to my limited knowledge, there are bound to be mistakes or errors in the paper and I humbly request the readers’ criticism and correction.

### “Nine-Must”\*

1. Why must it be necessary to draw up the production and management plans with the input-output model?
2. Why must it be necessary to draw up inventory strategies with the input-occupancy-output model?
3. Why must it be necessary to establish the grey input-output model to study the connection between grey factor input and output?
4. Why must it be necessary to establish the dynamic input-output model to carry out dynamic analysis?
5. Why must it be necessary to realize the organic combination and connection between the enterprise’s input-output optimal planning model and the business management modes such as ERP, lean production, agile manufacturing, etc.?
6. Why must it be necessary to realize the organic combination and connection between the enterprise’s

input-output optimal planning model and the modern management methods such as TFP, total factor productivity, and management?

7. Why must it be necessary to realize the real-time analysis for the enterprise’s input-output optimal planning model and the financial management?
8. Why must it be necessary to realize the real-time analysis for the enterprise’s input-output optimal planning model and the supply-demand chain management?
9. Why must it be necessary to use the input-output model to conduct the analysis of policy?

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## REFERENCES

- [1] Wang Guozhang. *ERP Principles, Implementation and Cases* P. 169 Electronic Industry Press 2003.1
- [2] Yang Qianli. *E-Commerce Technology Practice*. Chapter 21. Electronic Industry Press 2001.3
- [3] Michael E. Porter, Chen Xiaoyue (translated) *Competitive strategy* [M]. Huaxia Publishing House 1997.1
- [4] Li Baixing. *Several Theoretical Issues On Value Chain Accounting Research* [J] Communication Of Finance and Accounting 2003.7
- [5] Chen Yiqun. *New Industrial Enterprise Accounting* Chapter 1. Li Xin Accounting Publishing House 1995.3
- [6] Wassily W. Leontief. *Input-Output Economics*. pp.12~13, Commercial Press, Beijing. 1980
- [7] Michael E. Porter, Chen Xiaoyue (translated) *Competitive strategy* [M]. Huaxia Publishing House 1999.3