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# The Input-Output Statement Real-Time Tabulation Method and the Scientific Basis for the Modern Enterprise Management System

---- Realization of the Systems Modelization for the Financial Management and  
the Supply-Demand Chain Management & the Scientific Methods to Root out  
the Causes of Wastes and Corruptions

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## for the Modern Enterprise Management System

---- Realization of the Systems Modelization for the Financial Management and the Supply-Demand Chain Management & the Scientific Methods to Root out the Causes of Wastes and Corruptions

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**ABSTRACT:** This paper “Scientific Bases for the Input-Output Statement Real-Time Tabulation Method and the Modern Enterprise Management System” reflects the natural attributes of the enterprise management and the social attributes of the enterprise management; which would be characterized by the mutual penetration of natural sciences and social sciences. The “Realization of the Systems Modelization for the Financial Management and Supply-Demand Chain Management & the Scientific Methods to Root out the Causes of Wastes and Corruptions” presented in this paper should be the accounting theory, accounting principles, accounting standards, accounting and management methods based on the enterprise’s input-output plan model real-time analysis and the enterprise’s input and output statistic model timely analysis; which would be not only the scientific basis for the establishment of the modern enterprise management system; but also an indispensable integral part for normalizing the modern enterprise management system. Since the scientific basis for the establishment of the modern enterprise management system would not be independent of man’s will; which should be a sole determining factor, then also the scientific method for the enterprise’s overall governance; for rooting out the soils of generating wastes and corruptions, no matter at present or in the future, it should be a correct deed to solve the enterprise’s related issues.

**KEYWORDS:** Mutual penetration                      Natural attribute                      Social attribute  
Goal management                      Management system

## I Introduction

Management practice activities should be as long as the human history, many brilliant ideas would contain in the rich cultural heritages of the mankind. While analyzing the management issues in "Das Kapital", Marx once pointed out that, for any labor engaged by many people working in collaboration, the connection and unification of its processes would inevitably display in the commanding awareness and in relevant various functions with nothing to do with the local labor, but with relation to all workshop activities; just like a band required for a command. This should be a kind of productive labor, required to carry out with every combination mode of production (Marx's "Das Kapital ", Volume 3, P. 431, People's Publishing House). Thus it can be seen, management should be a kind of productive labor, which would be the prerequisite for bringing the role of the productive forces into full play; no matter what kind of social production modes would be, there must be management as long as the production process would have the form of social integration process. Calculating from the industrial revolution, the Science of Management has had a history of 200 years. In the past 200 years, especially in recent several decades, owing to the innovations in production technology and computer applications, industrial production has undergone tremendous changes. For example, due to the extreme complexity of the production cooperative relations, the extensive and close relations between enterprises and communities caused by the enterprise's unprecedented enormous production scale, the increased product technical complexity, the shortened cycles of the product update and upgrade, and the increasing socialization of production; production and according production management modes are being undergone fundamental changes. The production management would no longer be limited to controlling the individual production equipment or production line, but through the establishment of the production management information system, dynamically and timely drawing up the production plan, implementing and controlling the production plan, to realize the computer integrated manufacturing. The management features of this stage would be: considering from the standpoint of the entire enterprise business management, taking the systems engineering ideas as the guidance, extensively adopting mathematics or quantitative methods of systems engineering, operations research or management science, industrial engineering, etc., to establish a computer-aided management information system based on the models and to strive to achieve the overall objectives of the entire enterprise up to the optimal system management. Although this optimal system management would be very effective not only to the implementation of the production system, but

also to the improvement of the enterprise's management level; however, considering from that the management can bring the organizing role of productivity into full play (the natural attributes of the management) and can achieve the objectives of maintaining and consolidating certain production relations (the social attributes of the management), since the principles, systems and methods of maintaining the production relations would serve to achieve the specific purpose, they should not be publicly owned by a variety of production modes; therefore, for the management, as a function of economic activities, how can it reflect the mutual penetration characteristics of its natural and social attributes? How to make it bring the organizational role of productivity into full play and achieve the goal of maintaining and consolidating certain production relations; which would still remain a hot topic to have to be settled urgently so far in theoretical, economic, management and enterprise circles. In addition, in practical economic activities, since the malpractices would become increasingly apparent due to too unitary management methods for the financial management and the supply-demand chain, with their natures getting more and more severe, their harms getting more and more serious; it would be difficult to estimate the economic losses caused. A large number of financial scandals at home and abroad would indicate indubitably, "Falsified Accounts" has become a major obstacle to restraint economic development. Therefore, how to improve the enterprise management level from a more comprehensive viewpoint, especially to improve the theoretical level of corporate accounting, should be the key to solve the issue to ensure the financial information authenticity. The "scientific basis" would be proposed to fill this gap on the management function and to improve the theoretic level for the enterprise accounting. For the convenience of narration, we still take the discrete manufacturing as the example, the "scientific basis" sometimes mentioned in this paper should be the shorter form for the "scientific basis of the modern enterprise management system".

## **II. Scientific Bases for the Modern Enterprise Management System**

The modern enterprise system should be an essential part of the market economy; which would contain the content of three aspects: modern enterprise property rights system, modern enterprise organizational system and modern enterprise management system. The "scientific basis" for the modern enterprise management system would reflect not only the key characteristics of the modernization management i.e., the enterprise management thoughts modernization, management organization systematization, management method quantification management means automation and the integrated system for the procurement of supplies, production and marketing, etc.; but also the connections and unification of the enterprise's cooperative labor and processes; which would be a kind of organizational and managerial technique for the enterprise to adapt to the modern

development of productive forces, and to make full use of and make optimal allocation of resources. Since it can take a particular quantitative form as the bases and criteria abided by various parties concerned, therefore it would be of mutual penetration characteristics with natural attributes of the management and social attributes of the management.

### **1. Background of scientific bases**

Marx ever pointed out while analyzing the management issues in the "Das Kapital": that any direct production process having the formation of social combination processes, rather than revealing as the isolated work place for independent producers, there would definitely produce supervising and commanding labor. Yet it would have duality"(Marx's "Das Kapital" Volume III, p. 431). As the production process of general enterprises would have the formation of social combination processes, therefore, it would become the core issue for the enterprise management as to how to supervise labor and command labor. The duality for the enterprise management would be caused by the socialization of labor, and determined by the unification of the productive forces and production relations during the production process. It would bring the organizational role of productivity into full play, and maintain and consolidate certain production relations as well. Since the former would have no direct connections with the social system, only related to productive features, mainly depending on the development level of productive forces and the degree of labor socialization; rather than on the property of production relations; so, it should have natural attributes of the management. Since the latter would have the property of being directly depended on the social relations, and changed along with the change of the natures of the production relations, so it would have social attributes of the management. Yet, how to reflect the characteristics of mutual penetration between them has failed to attract enough attention of the public so far.

### **2. Implications of scientific bases**

The characteristics of the enterprise management with duality would show that, the enterprise management should stretch across the two spheres of natural sciences and social sciences, characterized by mutual penetration of natural sciences and social sciences. How to describe their characteristics can organically combine and connect certain ideas, theories, methods, etc. in natural sciences and social sciences according to the requirements of management functions should be the key to this issue.

**Labor, process connection and unification between various production departments.** In my another paper the "Realization of the Enterprise's Input-Output Statement Real-Time Analysis", the exposition concerning the "Input-Output Statement Real-Time Tabulation Method" would reveal

that: the basic method combined the enterprise's input-output model with engineering design, production and manufacturing, management and control can integrate them into a complete and unified system; take the micro-economic information flow basic data (such as product mix, technological line, consumption norm, man-hours norm, capacity resources, inventory information, etc.) for the establishment or used for references for MRP, MRP II, etc. and facing the supply-demand chain management flow as the data bases for generating the enterprise's input-output model macroeconomic information flows to solve the issue of the input-output statement tabulation method, thus you can realize the real-time analysis for the enterprise's input-output plan statement.

Since the realization of the real-time analysis for the enterprise's input-output plan statement and for the enterprise's physical input-output plan statement, it should be both the enterprise's material balance sheet and the connecting analysis statement between the enterprise's various production departments (products). For the enterprise's value input-output plan statement, since the equation group for the value-form distribution would be corresponding to the production equation group, the former expressing product motion in terms of physical aspects, while the latter expressing product formation process in terms of value, that is, the processes of product value transfer and surplus-value creation; therefore, in any one production cycle, the enterprise's input-output plan statement would objectively reflect the labor, process connection and unification between various production departments.

**The mutual penetration "interface of natural attributes and social attributes of enterprise management.** "In my still another paper the "Realization of the Input-Output Statement Real-time Tabulation Method and Maximum Profits and Minimum Costs", key characteristics of the modernization management i.e., the enterprise management thoughts modernization, management organizations systematization, management method quantitation, management measures automation; and the explication concerning the enterprise's realization of benefits-focused and profits-maximum development and of cost-focused and expense-minimum restraint, would make clear that, the input-output model should mainly solve the issue of the inter-departmental coordination development; which would be the essential condition for the enterprise to achieve the best economic returns, if combined with quantitative management technology (operations research), it can establish the enterprise's optimal input-output planning model to achieve maximum economic benefits with minimum inputs. Based on the basic methods of combining the enterprise's optimal input-output planning model with the management and operation procedures of ERP, lean manufacturing, agile manufacturing, supply-demand chain management, etc., we can enable the

enterprise to produce their own needed respective basic data based on the common "basic data". Since the former would emphasize the integrated optimization of the enterprise's macro-economic benefits, while the latter should emphasize the production process of the enterprise's micro-economic activities, with the former as the latter's basis, the latter would be engaged in the production and business activities on the basis of the former. Then, such organic combination and connection of "Giving consideration to both macro-micro controls" can give full play to their integrated advantages and their respective management thoughts, management norms and management techniques, thus making the enterprise's management modernization "Like a tiger with wings ---- with added strengths". Based on the basic method of combining the enterprise's optimal input-output planning model with the modern management methods of the TFP theory, goal management, etc., and on the basis of using the basic data in the optimal input-output plan statement to conduct quantitative analysis, we can also give fully play to their integrated advantages and their respective management thoughts, management norms and management techniques. We can not only identify the enterprise's itself changed causes in operation and management through vertical comparison of the TFP indexes to reveal the regularity for the enterprise's business management; but also sum up experiences, find out gaps, make clear the orientation to improve the management and promote technological progress through horizontal comparison of the TFP indexes. We can not only transfer the enterprise's mission into the goals and the goal system to fulfill the mission, so that making the goal system become the enterprise's specific expectations and orientations striving for; but also coordinate and unify the management work of the enterprise's goal management scientification, systematization, standardization and institutionalization, etc. to establish a complete set of scientific goal management. Apparently, according to the requirements of the basic structures, basic theory, economic content, economic significance, internal relations and management for the enterprise's input-output model, and the basic methods for the establishment of the operating mechanism data for the enterprise's operation and control and for the product cost budget and accounting, various goals between the vertical levels (for example, the decision-making, planning and execution layers), and those between various departments (products) on the same horizontal level, would inevitably reveal in one commanding will, in the functions related to a variety of all workshop activities yet nothing to do with local labors. The "goals" or "goal system" at this point, should be the task that must be completed in the obligations for the enterprise's various work items prescribed in the performance of the standardization law, metrological law and product quality law, and as well the economic responsibility that must be undertaken upon the violation of the "obligations" in the enterprise's various work items; it would be of the duality for the enterprise management; namely: natural attributes and social attributes of enterprise management. The mutual

penetration "interface" would be various management data connecting them based on the enterprise's input-output plan model real-time analysis and the enterprise's input-output statistic model timely analysis. The implication of the "scientific basis" would make use of such data to organically combine and connect the natural attributes with those of the social attributes for the business management.

### **3. Scientificness for the scientific basis**

First of all, we have noted that: First, for the management information technology, though having undergone four development stages from the basic MRP, to the closed-loop MRP, then to the MRPII, and until the existing ERP; yet there would be not any mathematical models for it. In the entire production system, though the engineering design, production manufacturing and management control have formed certain respective computer-tool systems, within which the automatization degrees of the information and material processing would be very high, yet they would like certain automatized "Isolated islands", lack of organic connection and coordination between them. Therefore, the decision-making, planning and execution control levels for the ERP (for the convenience of narration, here the ERP should include the entire content of the above-mentioned four development stages experienced for the management information technology) would respectively introduce the enterprise's input-output models and draw up enterprise's corresponding optimal input-output plan statements to command the enterprise's operation, thus it would help solve this issue. Second, although the goal management can integrate the enterprise's management work of scientification, systematization, standardization and institutionalization, etc.; yet, compared with the input-output model established on the basis of the modern scientific enterprise management system with the management thought modernization as the guide, the management organization systematization as the measures and the management method quantification as the bases; the management measures automation as the tools, and the integration of product production, supply and marketing as the goals; the established management system; then in the content of drawing up the development plan, forecasting the development trends, setting goals, decomposing goals, implementing goals, assessing goals, information feedback, etc., since the "realization of the enterprise's input-output statement real-time analysis" can carry out scientific analysis in the form of mathematical models, therefore, there would be clear deficiencies existing in the "goal management".

Secondly, we also have noted that: First, considering from the basic structures of the enterprise's physical input-output model, the enterprise's internal flow matrix sheet would reflect the productive and technological relations between the enterprise's various internal material production

departments; the end product vectors would be a group of amounted numbers, generally referring to the quantity of goods in kind of export oriented products and variable increase or decrease in stocks, and other consumptions of non-productive departments. Under considerable regular conditions, it would primarily reflect the quantity of goods in kind provided for the society (or distributors, service providers and customers) by the enterprise's various productive departments; total output vectors would be the amounted numbers of the enterprise's various outputs; it would satisfy the balance relationship of the input-output statement established by lines; the flow matrix sheet for the outsourcing goods purchased would reflect technical and economic relations between the enterprise's various material production departments and relevant departments of the national economy (e.g., suppliers). Second, considering from the basic structures of the enterprise's value-type input-output model, the fixed assets depreciation and overhaul costs of various material production departments would reflect the fixed assets value transferred to various products; the labor reward matrix would be the wages, allowances and benefits costs allocated to the enterprise's various products, which would reflect the value of that part created for their own by the laborers of the enterprise's various material production departments; the social net income matrix would be the value of that part created for the society by the laborers of the enterprise's various material production departments, including profits and taxes, etc. Third, considering from key balance relations of the enterprise's input-output model, the balance relations established by lines would show: Intermediate products (consumed by various material production departments) + End product = Total product output; the balance relations established by rows would show: Materials consumption (by various material production departments) + Newly- created value = Total value of output; the balance relations between the horizontal row and the vertical line would show: total product output and total value of output by various material production departments would equal to the total production volume and total input; the balance relations between the national income and end products would show: in an economic system the national income in a given period would equal to the national income of the final use in the aggregate. Fourth, linear equations of the input-output model would describe the operation mechanism of systematic management and normalized management, especially after the introduction of the direct consumption coefficient A, the mathematical theory of the input-output model would fully reflect the objective law of the enterprise's economic development. Since the direct consumption coefficient A can reflect the direct contacts between various material production departments, full consumption coefficients would completely reflect direct and indirect links among various material production departments, they should be the foundation for carrying out a series of economic analyses and computations.

All the above-mentioned would show: the scientificness for the scientific basis would lie in that, through collaborative work and connection and unification of the processes, the “realization of the enterprise’s input-output statement real-time analysis” can effectively put the enterprise’s various systems, resources and personnel together to upgrade the theoretical level of the enterprise management, and to add to vitality and strength for the systematic modelization of the financial management and supply chain management. On the premise of the essential condition that the "coordinated development" between relevant departments in the input-output model should be to achieve the best economic benefits, give full play to the integrated advantages of the combination of the enterprise’s input-output optimal planning model and the operational management modes of ERP, lean production, agile manufacturing, supply-demand chain management, etc. and the modern management methods of TFP theory, goal management, etc. and respective management thoughts, management norms and management techniques; thus we can improve the enterprise’s overall efficiency and economic benefits from still better and more complete viewpoints. Since the scientificness of the "scientific basis" would centralizedly embody the basic ideas of the Control Theory, Information Theory and Systems Theory, therefore, taking it as the scientific basis to standardize the modern enterprise management system, it would obviously be scientific, correct and reasonable.

#### **4. Characteristics of the scientific basis**

Since the scientific basis for the modern enterprise management system would be situated between the two of natural and social attributes; therefore, the scientific basis should be of mutual penetration characteristics. With regard to the scientific basis itself, considering from the collaborative labor and connection and unification of the processes, it should be characterized by the natural attributes; considering from the commanding sense and relevant functions related to entire workshop activities, it would be characterized by social attributes, yet it could not exist independently from the natural attributes.

Since the "scientific basis" would, on the basis of the combination of the enterprise’s input-output model with engineering design, production and manufacturing, and operation and management, can upgrade the collaborative labor and connection and unification of the processes in the corresponding production cycles and processes to the ideological state and height of the systems management or model management. The accounting theory, accounting principles, accounting norms, accounting and management methods based on the enterprise’s input-output plan model real-time analysis and the enterprise’s input-output statistical model timely analysis, can not only realize the system modelization of the financial management and the supply-demand chain management; but also

promote the enterprise management modernization with the systems management theory, model and method. If the social attributes for the enterprise management would be taken this as the basis, thus the relations of production therefrom, no matter what kind of the social systems would be, can bring the organizational role of the productive force into full play through the "scientific basis". In this sense of normalizing the scientific basis for the modern enterprise management system, it would still belong to the category of natural attributes, only related to productive characteristics.

Apparently, having understood the natural attributes of the enterprise management, in the study of the enterprise's productive technology and rational productivity organization, etc., we can absorb and learn the advanced experiences from different countries, especially from those of the developed countries; having understood the social attributes of the enterprise management, we can differentiate essential distinctions between different social systems and managements. More importantly, in the maintenance and consolidation of certain production relations, according to one's own social system and management characteristics, apply the scientific development concept to keep overall situation of economic and social development in mind and plan accordingly, adhere to the people-oriented, change the concept of development, give full play to the advantages of the social system and management, conscientiously sum up the experience of business management, thus creating the modern enterprise management system with different peculiar features. It must be pointed out that, since the input-output model would, through drawing up the input-output statement, reflect, research and quantitatively analyze the technical and economic links between various fields (production, distribution, exchange and consumption) of social reproduction processes, between various departments of the national economy and between various regions and various countries; therefore, it should be an important tool for drawing up the development plans and forecasting development trends. Thus, the principles, systems and methods for the maintenance and consolidation of the production relations should not violate, weaken or even destroy the position and role of the scientific basis for modern enterprise management system in operation and management; to which great attention should be paid just as the maintenance and consolidation of production relations, thus can give full play to the organizational role of the productivity and achieve desired economic results.

### **III. Realization of the Systems Modelization for the Financial Management and the Supply-Demand Chain Management**

The input-output model would be generally used for discrete, continuous and semi-continuous manufacturing sectors. Since according to the demand of the "pure" departments (classifying the

departments and products to achieve the correspondence of product and department one by one) and the "3-same" (same consumption structures, same process technologies and same use values) principles; the production, processing and assembly processes of technological lines for the manufacturing sectors may be divided into different production departments, making the basic structures of the input-output model consistent with the enterprise's actual production processes. Thus, the specific issues in the "actual world" may be turned to the abstract representative in the "model world".

Currently, while the enterprise's accounting computerization should be used for daily routine accounting affairs, daily accounting budgeting and accounting, it would still remain at the stage of pro forma manual accounting, accounting computerization replacing mainly in hand-billing, posting, closing, drawing up financial statements, etc. It would be very difficult for the current product cost budgeting and accounting methods to get it well done; if, according to the enterprise's production characteristics (e.g., characteristics of technological processes and production organizations) and management requirements, and in line with basic one-to-one correspondent relations of material flows and information flows during the production processes, the cost budgeting and accounting would be carried out in batches, by steps and in classifications for the production, processing and assembly processes of different categories, different models and different specifications. Especially for those small- and medium-enterprises with varied descriptions and specifications, small batch sizes and short production cycles, obviously it would be all the more difficult to carry out such product cost budgeting and accounting, since there would exist obvious differences in structures, materials, quantity of components and parts, technological processes, processing man-hours, cost, quality, value, etc. for products' different categories, different models and different specifications. In contrast, making use of the basic ideas, principles and methods of the "input-output statement real-time tabulation method" to treat such issues would seem very simple and convenient.

From the above we can see, since the enterprise's product cost budgeting and accounting methods would be confined to a certain level, lack of system height, breadth and depth; therefore, in the aspects of the enterprise's simulated economic activities for such product cost budgeting and accounting methods, not only it cannot comprehensively and deeply reflect the inherent law of economic activities, but, since the advanced product cost budgeting items and economic indicators and ex post product cost accounting items and economic indicators would often not be correspondent one-to-one; or, in general, the advanced product cost budgeting items and economic indicators and ex post product cost accounting items and economic indicators would be much less; thus the ex post product cost accounting items and economic indicators would fail to check out the

implementation status of the advanced product cost budgeting items and economic indicators. Obviously, for the advanced product cost budgeting items and economic indicators, if failed to conduct effective plan, organization, coordination and control, then it would be difficult to ensure the effectiveness of the ex post product cost accounting items and economic indicators. While conducting accounting, analysis, evaluation and assessment on the ex post product cost accounting items and economic indicators, if failed to check out the implementation status of the advanced product cost budgeting items and economic indicators, then for such product cost budgeting and accounting methods due to being lack of responding as echo to sound, lack of carefulness or completeness, lack of mutual influence and mutual restriction, they would lead to more input, high consumption, serious wastes of resources, or even become the soil to foster breeding and infesting of the social corruptions; therefore, far below the requirement of the enterprise management modernization.

**The systems modelization for the financial management and the supply-demand chain management.** The realization of the systems modelization for the financial management and the supply-demand chain management, that is, based on the use of the principles for the enterprise's input-output model to simulate the inherent laws of the enterprise's or company's economic system, to uniformly draw up the business accounting titles and methods in accordance with the accounting framework furnished by the enterprise's input-output model; then under the common "basic data" and unified "data environment", the basic data and their quantitative analysis between various internal material production departments and those between various internal material production departments and relevant departments of the national economy would be taken as an significant part for the financial management and the supply-demand chain management. Since the systems modelization for the financial management and the supply-demand chain management should be realized through the enterprise's input-output plan model real-time analysis and the input-output statistic model timely analysis, so that it can objectively reflect, research and quantitatively analyze the quantitative dependence relationship between the enterprise's various material productive departments, between various internal material production departments and relevant departments of the national economy (such as suppliers, distributors, service providers and customers). Thus, the realization of the systems modelization for the financial management can make up serious shortages for current product cost accounting budgeting and accounting methods; while the realization of the systems modelization for the supply-demand chain management can make up serious shortages for current productive and business management methods. By the way, since the commercial enterprises should be characterized by their goals of profitability; for the outsourcing

products purchased, they would generally sell out without any processing in addition to the input of the links of transportation, storage, etc.; while the institutions and government departments should not be characterized by their goals of profitability, yet they would directly furnish grassroots-oriented, public-oriented and community-oriented services within their functional scopes. In regard to the commercial enterprises, institutions and government departments, for the sake of adapting to the market economy and economic globalization, we may take the department numbers of the basic structures (i.e., basic structures of internal flow matrix) of the enterprise input-output model as the special case of  $N = 1$ . During the process of treatment, according to the characteristics of commercial enterprises, institutions and government departments, we may treat and regard the institutions and government departments as the specific conditions of the commercial enterprise's profits equal to zero. In this way we may borrow the basic structures, basic theory, economic content, economic significance, inherent connections and management demand of the input-output model to normalize the design and development of the management information systems for commercial enterprises, institutions and government departments; at the same time with the realization of the real-time analysis for the financial management and the supply-demand chain management of commercial enterprises, institutions and government departments, uniform data standards would be provided for drawing-up macroeconomic input-output models at the prefectural and the national levels. Obviously, the realization of the financial management and the supply-demand chain management would inevitably be the important symbol for the 21<sup>st</sup> century national economy internal management system.

#### **IV. Scientific Methods to Root out the Causes of Wastes and Corruptions**

**The essence and characteristics of crimes by taking advantages of duty should be abuses of powers.** As to the legal systems in economic management, for the law enforcement agencies, strengthening the law enforcement and strengthening the efforts to handle cases would undoubtedly find and block up loopholes existing in the systems for the enterprise management, so as to reduce the opportunities of job-related crimes. Considering the business management, the establishment of defense mechanism (such as the implementation of Accounting Law, Business Law, Trade Union Law, etc.) can promote the enterprise functional departments to perform their duties according to law and to prevent occurrences of such crimes. However, such reducing and preventing defense mechanisms and measures, due to their characteristics lack of mutual penetration of natural sciences and social sciences, would fail to objectively reflect the inherent laws of economic activities; so it would be impossible to have the tracking and monitoring functions for

job-related crimes. Since on the one hand it would be impossible to timely disclose the occurrences of job-related crimes, on the other not all the crimes can be revealed; just for this, it would give an opportunity that can be exploited to others' advantages. Under such circumstances, there would still be considerable difficulties to root out the soil causes for wastes and corruptions; among them, lots of uncertain factors would be key causes for such difficulties.

**From a macro point of view:** no matter what kind of social productions, in various production areas, there would objectively exist proportional relationships in the distribution of labor time. "The necessity of the distribution of social labor in definite proportions would by no means be canceled by certain forms of social productions, yet possibly be changed only in its form of expression". Developing economy in proportion should be the objective requirement of all communities. Since the input-output model should reveal in such an objective law of the development of national economy in proportion, it would be an important means for overall balance; therefore, not only it would be a kind of organization and management techniques for making full use of and reasonable allocation of resources, but also a scientific method to realize the model analysis, model design and model management. Since the input-output model would be unique in that it can provide accounting framework, policy analysis means and forecasting (plan) methods; therefore, only making use of the input-output model to forecast the development trend of the national economy and to draw up economic development plans, can we make the limited resources fully exploited. Only making use of the combined methods of the input-output model and the quantitative management techniques (Operations Research) to establish the optimal input-output planning model, can enable enterprise's limited human, material and financial resources to have optimal allocation; thus making the enterprises to achieve maximum economic efficiency with minimum input. It must be point out that since the human needs would be unlimited, but resources for satisfying the human needs should be limited, how we can make full use of the limited resources would be our inescapable responsibility. According to the objective law of the "coordinated development" between relevant departments under the input-output model, it would be know that when an increase in the input in certain productive departments (such as increasing the input in the power generation department, once the cause of excess electricity can cause idle assets) would cause not only wastes, but also may lead to the reduction of the input in other productive departments; when a decrease in the input in certain productive departments (such as decreasing the input in the power generation departments, once resulting in power shortages can contain the economic development of the entire system) would not only fail to achieve the desired economic effects, but also lead to the idle assets of other related production departments. Thus it can be seen that in the distribution of labor time, only making use of

the objective law of the "coordinated development" between relevant departments under the input-output model to allocate resources, can ensure the limited human resources be fully utilized. This should be the source; not only the source for resources allocation, but also the source for rooting out the causes of wastes and corruptions. To root out soils generating wastes and corruptions should be started from here.

**Considering from the micro-point of view:** since each product between various material production departments of the national economy would reveal not only in such direct connection as consuming other products, but also in the indirect consumption of the production of one product to form more other kinds of products. If any changes or other issues should occur in any a department, it would immediately affect many other departments. According to such an objective law of the interdepartmental "coordinating development" of the input-output model, for the degrees of direct and indirect effects, the financial responsibility to be born by relevant departments, etc., we can timely, accurately or accurately calculate them out and bare them to the light of day. The basic ideas, principles and methods of the "input-output statement real-time tabulation method" would tell us: based on the basic structures, basic principles, economic content, economic significance, inherent relations and management requirements of the enterprise's input-output model to carry out the information system design for the enterprise's input-output model, the financial management and supply-demand chain management, can not only enhance the basic functions to carry out data processing for the original ERP, but also compensate the severe shortage for the optimal plan to be drawn up and the quantitative analysis to be carried out under the original ERP. As long as we should only control the enterprise's relevant "basic data" (such as product mixes, technological lines, consumption norms, man-hours norms, capacity resources, inventory information, and also basic data of the logistics, information and cash flows between the enterprises with suppliers, distributors, service providers and customers), make use of mutual connections between the basic data (using how many) in the enterprise's input-output statement and the inventory status of various resources (having how many), implementation status (lacking how many) and procurement (how many required), and of mutual connections with other aspects; then for the losses of fixed assets, current assets and current funds, we can timely, accurately or accurately calculate them out and bare them to the light of day.

**From the above-mentioned we can see:** the realization of the systems modelization for the financial management and the supply-demand chain management, since it can objectively reflect the inherent law of the enterprise's economic activity processes, not only can reduce and block up the occurrences of crimes by taking advantages of duty in enterprises, but also, what is more

unusual would be its basic functions of tracking and supervising and controlling the occurrences of crimes by taking advantages of duty. In other words, under the conditions of giving no opportunities that can be utilized by somebody, not only the number of such crimes can be significantly reduced, but also the number of such crimes would be likely to reduce to zero. Since, once the crimes by taking advantages of duty should occur in enterprises, it would be as clear as if it were exposed to view by making use of the basic functions of the pre-set computer program, timely limiting such crimes in the bud. In addition, owing to the dignity and punishment of the law, those mad fellows daring to challenge the law personally would be extremely few. In our opinions, only the realization of the systems modelization for the financial management and the supply-demand chain management, the use of its own tracking measures and mechanisms of the inherent law for the systems modelization without energy consumption or additional costs, can be the best controlling measures and defense mechanism. Since such supervisory control measures and defense mechanism not only can ensure the smooth implementation of economic laws, but also would not depend on man's basic quality, it should have nothing to do with people's knowledge level and moral concepts; Therefore, it should be the scientific method to root out the causes of wastes and corruptions.

## **V. The Input-Output Statement Real-Time Tabulation Method and the Scientific Basis for the Modern Enterprise Management System**

**The objectiveness of the scientific basis should be a scientific method for overall governance.** As to the input-output statement real-time tabulation method and the scientific basis for the modern enterprise management system, the main contents and characteristics would reveal in that: the internal management system and the internal management institution of the modern enterprises should be two completely different concepts; there would be differences in essence but close connections between them. The so-called essential difference would refer to the modern enterprise management system and the modern enterprise management institution should be two separate systems; the so-called close connections, would refer to the modern enterprise management system and the modern enterprise management institution should exist side by side and play a part together; each side should exist on the premise of another's presence, so as to give full play to the role of their organization and management. Under normal circumstances, the enterprise's internal management system would refer to the quantitative dependent relations and its inherent laws between the enterprise's various components, of objectivity; while the enterprise's internal management institution would refer to relevant rules and regulations that must be observed and enforced in the economic activities engaged by the employees from various components in the

enterprise, of legal natures. Since the management system here would refer to the accounting theory, accounting principles, accounting standards, accounting and management methods based on the enterprise's input-output statement real-time tabulation method and the modern enterprise management system; therefore, it should objectively reflect inherent laws of the enterprise economic system; of the natural attributes for the management; since the management institution here would refer to the management methods established on the basis of the management system, it should objectively reflect relevant rules and regulations that must be observed by the employees in the enterprise, therefore, it would be a scientific method for the comprehensive improvement and rectification; of the social attributes for the management. Since the management system and the management institution here would exist side by side and play a part together, so they would be characterized by mutual penetration of natural sciences and social sciences. In view of this, for those enterprises only paying attention to the establishment of the enterprise's internal management system other than to the establishment of the enterprise's internal management institution, no matter how well the management system would be established, it would be difficult to sustain; because such management system must be protected by law, it can bring the role of the existing enterprise into full play; for those enterprises only paying attention to the establishment of the enterprise's internal management institution other than to the establishment of the enterprise's internal management system, no matter how many the management rules and regulations would be established, it would be difficult to produce effects; such management institutions would inevitably be with a certain degree of blindness. In this sense, both would be indispensable; otherwise it can not effectively supervise labor and command labor. As the enterprise's internal management system should reflect the inherent laws of economic activities engaged by the enterprises, yet the laws would be difficult to reveal and quantify; as the enterprise's internal management institution should reflect the people's good wishes, yet good wishes would often be impacted and interfered by man-made factors. Since the "coordinating development" between relevant departments of the enterprise's input-output model should be interrelated, mutually influenced and mutually constrained; characterized by linkage effects; therefore, using it to allocate resources not only would have the functions to supervise labor and command labor, but also can timely reflect the changes of various departments in the enterprise, as well as the conditions and extents of such changes. Therefore, at first establishing the enterprise's internal management system, then establishing the enterprise's internal management institutions according to the inherent laws of the economic activities engaged by the enterprise based on the enterprise's internal management system, making the enterprise's internal management institutions penetrate into various processes of economic activities engaged by the enterprise through the internal management system, thus can overcome the influence and

interference of man-made factors. It must be pointed out that the law itself would not be omnipotent. For lots and lots of issues (such as waste issues, corruption issues, etc.) in real social life, their final solution would not count on the law for help, at least not simply count on the law for help. In many cases, certain issues themselves and their solutions would come from political, economic, cultural and technological dependable aspects. Since the accounting theory, accounting principles, accounting standards, accounting and management methods based on the enterprise's input-output plan model real-time analysis and the enterprise's input-output statistic model timely analysis should be a unique definite factor, so that only the establishment of such modern "science-based" management concepts, can we achieve the management goals and objectives. It is crystal clear that, if the "scientific basis for the input-output statement real-time tabulation method and the modern enterprise management system" would be compared with other enterprise's internal management systems and internal management institutions, the basic distinctions should be here.

## **VI. Systems Assessment**

**As is known to all**, only the notary with the rules can have the notary with the results. So far as the law for the corruption itself is concerned, from "corrupting officials" expanding to "corrupting society"; it would be an inevitable result. Corruption and degeneration have penetrated into several levels of the regime and spread to every corner of the society; the consequences would be very serious. Under such social corruption conditions, though everybody would still hate corruption morally, yet what to be concerned about most would no longer be how to curb corruption, but how to obtain benefits from the state that seems difficult to change. The corruption, penetrating everywhere and spreading all over the places, would corrupt not only the social body, but also the society and the human hearts. A great quantity of case facts would show that behind the system failure, in fact it would be out of order of a series of decision-making and supervision departments. Behind the ineffective supervision departments would be part of supervisors going along in their evil deeds. Considering the reform of enterprises, no matter from the bigger growing to the stronger in the past or from the stronger growing to the bigger today, their reorganization should not inevitably bring about the establishment of a new and better system. In our opinion, realizing the systems medolization of the financial management and the supply-demand chain management, and analyzing the problems in need of urgent solution in the economic system reform on the basis of accounting theory, accounting principles, accounting standards, accounting and management methods according to the enterprise's input-output plan model real-time analysis and the enterprise's input-output statistical model timely analysis; would be undoubtedly of important theoretical and

practical significance; it would produce significant impacts on the researches of the follow-up work. In this regard, it would not be difficult for us to arrive at the following conclusions:

**1. The “Scientific Basis” should be a transparent rule.** Like game rules of the WTO, it should be transparent. Each party involving the game, only after making its commitment, can effectively participate the game. To normalize the modern enterprise management system, first of all, we should have the transparent rules; then rules and regulations for various departments; then some administrative documents, detailed operating rules and make clear how to implement them, etc. for the rules and regulations; it should be an irresistible and violable fundamental rules. As we know, the sunlight should be the best preservative; while the public rights in the know should be the premise for the sun illuminating every corner of the land. We would lay stress on the role of the “scientific basis”, regard it as an essential and absolute necessary part to standardizing the modern enterprise management system; then we can put relevant principles and policies into effect. Otherwise, it would be impossible to carry out enterprise’s economic activities on a normalized basis and on a transparent rule basis, then it would eventually lose the practical significance of the establishment of modern enterprise management system.

**2. The “Scientific Basis” should be a set of combination mechanism.** In the rapidly changing and competitive market environment, it can help the enterprises to determine goals, arrange production plans and carrying out production and business operation activities in accordance with the factors such as the enterprise’s own actual situation, the market demand, and the price fluctuation, etc. When the issues should be made clear as to what to produce, how to produce and for whom to produce; through the input-output model, the "combination mechanism" would effectively readjust the enterprise’s various internal systems, resources and personnel to the corresponding optimal states; it should be a key link to enhance core competitiveness of the enterprise. So far as the maintenance and consolidation of the superstructures for certain productive relations, only through such combination mechanism to give full scope to the organizational role on the productive forces, can we ensure full utilization and optimal configuration of resources. In addition to the competition between essential factors, what is more, the international competition should be the competition between essential factors’ competition. In many cases, what would ruin the enterprise should often not be the factors, but the set of the combination mechanism for the factors. The "Scientific Basis" would show that, the manager's responsibility should be to establish and to improve the mechanism, through the mechanism to carry out management, but not by commanding. The correct commanding should solve the problems difficult to be solved, yet owing to being lack of reasonable mechanism; correct commanding would be difficult to play its role.

**3. The "Scientific Basis" should be an anti-corruption system.** The system would be mainly characterized by: its irrefutable moral rules striking root in the inner world of the human hearts. In the current international and internal economic situation and economic environment, this system can help the enterprise, according to the requirement of the principles and objectives, etc., grasped by property owners, to carry out effective monitoring on each item of economic information in the economic system. We know that since the prevention of the emergence of corruption phenomena would be much more difficult and complicated than fighting and punishing the corruption phenomena, of greater significance. The severe reality of gradually increasing advance corruption wave upon wave, nest criminal cases, cross criminal cases, etc. on a same occupation presenting in the corruption crime phenomena, would further expose malpractices of purely relying on cracking down on criminal activities. Currently the common view formed on the anti-corruption front should be: "For corruptions, as a complex social phenomenon, to crack down it should not be the only means to bring under control, only the organic combination of fighting against with the prevention can treat both principal and secondary aspect of corruptions". Clearly, such anti-corruption system of the "scientific basis" should be in line with the principles and positions of treating both principal and secondary aspect of corruptions. Only such anti-corruption system of the "scientific basis" can root out the soil causes of corruptions; timely, comprehensively and accurately expose the corruption in broad daylight. Only such anti-corruption system of the "scientific basis" can provide scientific and theoretical bases to encircle and suppress corruption and root out the causes of corruption on every side. Thus it can be seen, the establishment of such anti-corruption system of the "scientific basis" would mean the initial formation of a high pressure situation from purely relying on cracking down on criminal activities to encircle and suppress corruption on every side; thus marking the awareness toward the anti-corruption work has entered a scientific new stage of the "Systems Anti-corruption".

**4. The "Scientific Basis" should lay stress on preventive measures, on bringing the role of management into full play and on starting from rooting out soil causes of wastes and corruptions.** Since the fundamental basis for a harmonious society should be that the systems would reflect social justice. As a manager, first, we should think of how to avoid the national interests or the interests of property owners from infringements, and do everything possible to take various measures to protect national interests or the interests of property owners. It would be unreliable for one to expect for the acquaintances or for the morality. Too reliable for the morality, when one should over-expect for the morality, and put one's all stakes on the morality, one may lose. For example, in building public facilities, if non-renewable materials would be used in public facilities, even if the materials would be stolen, they could not be changed into money; if the facilities should

be extremely sound, then no matter how frustrating them, they would not fear of being damaged; if certain non-durable products should be installed in public places, which would always expect the public to take care of, in case there would be a little problem, someone would wave the banner of morality to make irresponsible remarks; then just forget what they should do. Thus it can be seen, many moral issues would often occur under the conditions without any precautions; many technical measures and devices can solve many ethical issues, and even improve moral standards. The "scientific basis", just like many technical measures, can solve many ethical issues or even improve moral standards to achieve the purpose of killing two birds with one stone.

**5. "Scientific Basis" should be a solution program to upgrade personal performance and organizational enforcement.** Effective implementation as a kind of thinking way and operating technique has become popular sweeping the global management sectors. For any an organization, effective implementation should not be a matter just for leading officials, or a matter just for employees, but the core mission for the entire organization. For example, why would a plan seeming ambitious be always a dead failure? Why would good decisions always be gone with the eastward over and over again? Why the payment should be more than the plan by ten times, would the results be less than one-tenth of the planned income? Why the enterprise would often fall into the vicious circle: the high-level would blame the intermediate level, the intermediate level would blame the employees, and the employees would blame the high-level? Main reasons should be lack of organic internal connections and coordination between various components of the enterprise, leading to the performance and enforcement problems. Thus it can be seen, only the realization of the organic combination and connection between key modern management characteristics of the enterprise's management thoughts modernization, management organizations systematization, management methods quantitation, management means automation and integrated system for the procurement of supplies, production and marketing, etc.; so as to achieve highly perfection and harmony, thus fundamentally solving the distortion of performance and enforcement and winning in implementation.

**6. The "Scientific Basis" should be a kind of corporate culture.** In the scientific research project of the "Input-Output Statement Real-Time Tabulation Method and the Enterprise Management Modernization ---- Realization of the Enterprise's Input-Output Model & the Financial Management and the Supply-Demand Chain Management Real-Time Analysis", the scientific thoughts of the "Input-Output Statement Real-Time Tabulation Method" should be the theoretical basis for the corporate culture. The basic content concerning the "Nine-Must"\* of the enterprise modernization management should be the core of the corporate culture. The accounting theory,

accounting principles, accounting standards, accounting and management methods based on the enterprise's input-output plan model real-time analysis and the enterprise's input-output statistical model timely analysis, should be the essence of the corporate culture. The method for model analysis, model design and model management should be the means to realize the corporate culture. They should be mutually and complementary inter-indispensable as a whole; the entire processes for the formation of the goal management system and the management institutions would be accomplished at a stretch. Such kind of corporate culture would comprehensively and systematically embody advanced management ideas, advanced management theory and advanced management methods; it should be the advanced labor productivity. Even if any an enterprise should have a good system, yet it would be lack of operational mechanism for optimal allocation of the resources, then it won't give full play to its own advantages. In this sense, the "scientific basis" should not be changed due to the change of the legal entity, or because of the changes of legal entity's views or attentions.

**7. The theoretical basis for the "Scientific Basis" should indicate that: the democratization of the "legal institution" and the democracy of the "institutionalization" must be expressed in the "rule by law".** The use of the objective law for the economic development and the law's itself own unique monitoring role to supervise and control the total processes of the production and management activities engaged by the enterprise, to make the enterprise's various work execute its duties and undertake the financial responsibility due to running counter to duties according to law should be the most reliable, scientific and impartial "rule of law". The use of the objective law of relevant interdepartmental "coordination development" of the enterprise's input-output model to allocate resources, and quality combatant between individuals and management combatant between groups should be necessary conditions for the realization of the enterprise's economic growth mode transformation. The establishment and perfection of the modern management system, the full use of the objective laws for the enterprise's economic development and their constraint functions, in front of the "absolute transparency" data, in various fields of production, distribution, exchange and consumption, the enterprise management can not only effectively enhance the ability of people's autonomy self-awareness to control the generation of wastes and corruptions, but also avoid falling into the "system decision theory" quagmire while the rules and regulations of the departments would play a key role in regulating human behaviors in such different fields. In this way, the "scientific basis" to normalize the modern enterprise management system, can make the establishment of the modern enterprise management system like nature itself ---- highest quality of art, clear and wonderful, both simple and efficient.

**8. The theoretical meaning for the "Scientific Basis" should indicate that: the material determines consciousness, and motivation and results must be unified.** Any practices contrary to objective laws, no matter how good of their wishes would be difficult to eliminate wastes and corruptions. On the basis of the combination of the input-output model and the engineering design, production and manufacturing and business management, and according to the ideas and power of the management information technology, owing to the statement compilation method for the "input-output statement real-time tabulation" would be taken the computer technology as the tool, taken the micro-economic information flow basic data (such as product mix, technological line, consumption norm, man-hours norm, capacity resources, inventory information, etc.) for the establishment or used for references for MRP, MRP II, etc. and facing the supply-demand chain management flow as the data bases for generating the enterprise's input-output model macroeconomic information flows to solve the issue of the input-output statement tabulation method, thus you can realize the enterprise's input-output plan statement real-time analysis and the enterprise's input-output statistic statement timely analysis. Taking the basic data and the quantitative analysis in the enterprise's input-output statement, and the basic data for the logistics, flow and capital flows between the enterprise and suppliers, distributors, service providers and customers as the important constituent part for the financial management and the supply-demand chain management; would carry out considerable accurate quantitative analysis on complicated and confused economic connections; which should be the key to solve practical problems. The realization of systems medelization of the financial management and the supply-demand chain management, essentially, should be the realization of systems medelization of the financial accounting and the value chain accounting, and the management accounting and value chain accounting; they should be the theoretical basis for promoting the realm of thought of the enterprise's modern management into model management or systematic management. If the enterprise's modern enterprise management can take this "theoretical basis" as the basis, then the formed modern enterprise management system and scientific management system can effectively supervise labor and direct labor. Obviously, only the virtuous cycle formed on this basis, can the accounting information constantly maintain the authenticity.

**9. The realistic significance for the "Scientific Basis" should indicate that: in today's society, the mankind would be faced with lots of issues,** such as energy consumption, resource development and configuration, environment issue, population expansion, etc. Only relying on a certain branch of learning alone cannot solve such issues, but must give full play to the integrated advantages of various disciplines to seek reasonable ways to solve these issues. Just the same with

the solution of corruption issues, only relying on a certain management method or management system should not solve the issue of corruption once and for all; we must give full play to various management thoughts, management norms, management techniques and their integrated superiorities to root out the causes of generating waste and corruption. As it is known to all, lacking supervision, under-the-counter operation, without a sound system, etc. would be the root sources of corruption; while strengthening the financial management, and standardizing the duty consumption, open, just and fair should be the crux to solve the issue of corruption. However, with regard to the existing supervision and management mechanism concerned, especially to the operation and supervision of financial terms, neither conforming to the standards nor put in order, it would be very difficult to achieve the intended purpose of curbing corruption. Owing to the poor transparency, it would be very difficult to grasp the real financial situation, not to mention to master it at all times. Under such conditions of "how many system reforms would be pressed to the difficult positions by defect human nature", concerning the "appraisal of fixed assets and circulating funds", etc., it would be far from enough only by relying on the enhanced post-audit to be "better late than not". The "Power lack of supervision will inevitably lead to corruption"; to restrain corruption and promote honest and upright, it would be unnecessary to seek other ways, first of all, to ascertain and implement the basic system should be of vital importance. Until the end of the "binding power" means, and after the power should be bound effectively, then again consider other systems innovated, it would be the right way. Otherwise, no matter how good of an idea should be, it would be dissipated by the absolute power itself. This paper, based on such a simple truth and common sense, would display before property owners the objective operating situation concerning the financial management and supply-demand chain management in the enterprise's economic activities from the inside to the outside, completely, systematically, accurately or precisely. During the operation processes we can not only timely find the issues generated in the process of business production and management engaged by the enterprise, but also timely help the property owners or corporate employees to know the real conditions of the enterprise's many resources. As the interior of such openness and transparency "scientific basis" should be the objective basis of the external community oversight, of real-time auditing features; therefore, the realization of their organic combination and connections can promote healthy and orderly development of the enterprise, and form effective monitoring mechanism and harmonious social environment as well; therefore, it may after all be a scientific method for the good solution for this issue.

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.

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**\*“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 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 the enterprise's input-output optimal planning model and the supply-demand chain management?
9. Why must it be necessary to use the “harmonious development” theory between relevant departments to allocate resources?