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Implementation of Real-Time Input-Output Tabulation Method and Real-Time Analysis for Sustainable Development

── Combinations and connections between optimal input-output planning model and automation, information, intellectualization, Big data, new cloud computing technology, Internet of Things or Internet-based new industries and AI

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[Abstract] This article explores the question of how to achieve the overall transformation of society, based on the definition, characteristics, implications, principles, development strategies, core ideas, and the unity of development and sustainability, as defined by the international community. The study primarily focuses on the path to sustainable development and its implications for societal transformation. The scientific approach to addressing these issues lies in the artificial intelligence technology and cross-boundary economic management information system formed based on the optimal input-output planning model and the integration of automation, informatization, intelligence, new technologies such as big data, cloud computing, IoT or the Internet's new industries, and the organic connection between artificial intelligence technologies. The innovation lies in: for countries or regions in different social forms and systems, by enhancing the technological levels of automation, informatization, and intelligence of machinery and equipment in the three major industries of agriculture, industry, and services, it

is possible to achieve transformations in areas related to productivity, production relations, economic base, and superstructure; based on the logical relationships among the core contents of sustainable development, the basic requirements and indicators of "development that satisfies the needs of contemporary people and does not harm the ability of future generations to meet their needs" can be used as constraints for formulating material-based optimal input-output planning models. On this basis, when conducting real-time analysis of the optimal input-output planning model and timely analysis of the input-output statistical model, it is possible not only to achieve transformations in many areas related to the core contents of sustainable development and basic requirements but also to realize the real-time analysis of sustainable development with coordinated development among "economic, social, population, resources, and environment" that humans collectively pursue.

【Note】 For the convenience of narration, the scientific thoughts, theories, and methods of “Real-Time Input-Output Tabulation Method” mentioned in this article refer to “Overall Design of Real-Time Input-Output Tabulation Method and Cross-boundary Economic Management Information Systems & AI - Organic combination and connection between the optimal input-output planning model and automation, information, intelligence, Big data, new cloud computing, technology, the Internet of Things or new industry of Internet, and AI”. The optimal planning model for input-output is abbreviated as the micro and macro input-output optimal planning model; the micro input-output optimal planning model is abbreviated as the micro material-based input-output optimal planning model and the micro value-based input-output optimal planning model; the macro input-output optimal planning model is abbreviated as the macro material-based input-output optimal planning model and the macro value-based input-output optimal planning model.

The input-output statistical model is abbreviated as the micro and macro input-output statistical model; the micro input-output statistical model is abbreviated as the micro material-based input-output statistical model and the micro value-based input-output statistical model; the macro input-output statistical model is abbreviated as the macro material-based input-output statistical model and the macro value-based input-output statistical model. The dynamic input-output optimal planning model is abbreviated as the micro and macro dynamic input-output optimal planning model; the micro dynamic input-output optimal planning model is abbreviated as the micro dynamic material-based input-output optimal planning model and the micro dynamic value-based input-output optimal planning model; the macro dynamic input-output optimal planning model is abbreviated as the macro dynamic material-based input-output optimal planning model and the macro dynamic value-based input-output optimal planning model.

Keywords: static input-output model, dynamic input-output model, sustainable development, automation, information, intelligence, Big data, new cloud computing technology, Internet of Things or new industries of Internet, AI, integrated circuits (chips)

I. Basic Knowledge

Since the 21st century, with the rapid development of the economy and society, while creating tremendous material wealth, human beings are facing increasingly prominent issues such as population growth, excessive resource consumption, environmental pollution, and ecological destruction, which seriously threaten human survival and development. In this severe situation, humanity must re-examine its behaviour and strive to find a sustainable development path that

promotes coordinated development among economy, society, population, resources, and the environment. Sustainable development is the result of human reflection on the industrial civilization process, a rational choice made by humanity to overcome global environmental pollution, ecological destruction, and the imbalanced relationship among them. The concept of sustainable development became an official topic of discussion at the United Nations Conference on the Human Environment held in Stockholm in 1972. In 1987, the World Commission on Environment and Development first defined the concept of sustainable development in the report "Our Common Future", which involves aspects such as economy, society, population, resources, environment, technology, and politics, and gained widespread consensus from the international community. According to the information disclosed by the International Standards for Sustainable Development Board (ISSB), the following basic knowledge related to the definitions of development and sustainable development, which have been widely adopted, are briefly summarized as follows:

1. Development and sustainable development. According to relevant information: (1) Development is a philosophical term that refers to the process of movement and change of things from small to large, from simple to complex, from low-level to high-level, and from old material to new material. The reason for the development of things is the universality of the connection between things, and the root cause of the development of things is the internal contradiction of things, that is, the intrinsic factor. Dialectical materialism holds that matter is a moving substance, and movement is the fundamental attribute of matter. The forward, upward, and progressive movement is development. The essence of development is the emergence of new things and the demise of old things, that

is, the replacement of old things by new things. (2) Sustainable development is a system that not only satisfies the contemporary needs but also does not harm the ability to satisfy the needs of future generations, and there is an inseparable connection between the two. In this system, we must not only achieve the goal of developing the economy but also protect the natural resources and environment such as the atmosphere, fresh water, oceans, land, and forests that are essential to human survival, enabling future generations to achieve sustainable development and live in peace and happiness.

2. The characteristics of sustainable development are as follows: (1) Economic growth as a premise. Economic growth is an important manifestation of national strength and social wealth. Sustainable development should not only focus on quantitative economic growth, but also pursue economic quality, improve economic efficiency, save energy, and improve traditional production and consumption patterns, implement clean production and civilized consumption. (2) Based on the protection of nature. Since development must be coordinated with the carrying capacity of resources and the environment, environmental protection must be carried out while developing, including controlling environmental pollution, improving environmental quality, protecting life-supporting systems, protecting biodiversity, protecting the integrity of the earth's ecology, and ensuring the sustainable use of renewable resources, so that the development always stays within the carrying capacity of the earth. (3) Aim to improve and enhance human quality of life. Currently, there are still a considerable number of people in the world who are in poverty or semi-poverty. Sustainable development must be linked to solving the poverty of the majority of the population. Because poverty and underdevelopment are the root causes of resource and environmental damage, only by eliminating poverty can the ability to improve resources and protect

the environment be enhanced. (4) The various characteristics of sustainable development are interconnected and indivisible. Pursuing economic growth alone will inevitably lead to economic collapse, and pursuing ecological sustainability alone cannot stop global environmental decline. Ecological sustainability is the foundation, economic sustainability is the condition, and social sustainability is the goal. The common pursuit of humanity should be the sustainable, stable, and healthy development of the natural-economic-social composite system.

3. The connotation of sustainable development is reflected in three aspects: economic sustainability, social sustainability, and ecological sustainability. Among them, (1) the meaning of economic sustainability emphasizes the necessity of economic growth. Only through economic growth can the contemporary welfare level be improved, national strength be enhanced, and social wealth be increased. However, sustainable development not only values the growth of economic quantity, but also pursues improvement of quality and efficiency, changes the traditional production methods of high input, high consumption, and high pollution, actively advocates clean production and moderate consumption, in order to reduce the pressure on the environment. Economic sustainable development includes sustainable industrial development and sustainable agricultural development. (2) The social sustainability is not equivalent to economic sustainability. Economic development is based on material things, centered on the expansion and reproduction of material resources, and mainly solves the problems among production, distribution, exchange, and consumption. Social development, on the other hand, is centered on people, satisfying people's survival, enjoyment, leisure, and development, while solving the common development problems of material and spiritual civilization construction. However, the two are closely

related. Economic development is the premise and foundation of social development, while social development is the result and purpose of economic development. The complementary and coordinated development of the two can promote sustainable, rapid, and healthy development of society, and enable the people to live a happy and fulfilling life. (3) The meaning of ecological sustainability is that when the intensity of human exploitation and utilization of resources and the discharge of waste do not exceed the limits of the ecological economy and environmental carrying capacity, and can meet the material and energy needs of human beings, and can maintain environmental quality and suitable living environment. Since the ecosystem can restore and maintain the balance, stability, and normal operation of the ecosystem through its own regulatory capacity and environmental self-purification capacity, such a virtuous cycle of development can continuously promote the generation of economic benefits, social benefits, and ecological benefits, which is the basic requirement of ecological sustainable development.

4. The principles of sustainable development include the principles of fairness, sustainability, and commonality. Among them, (1) the principle of fairness refers to sustainable development as a development that provides equal opportunities and benefits. This includes both inter-regional and intra-generational balanced development, which means that the development of one region should not come at the expense of the development of other regions, and it also includes inter-generational balanced development, which means meeting the needs of the current generation without compromising the ability of future generations to develop. This principle holds that humans coexist in the same living space and have equal rights to the natural resources and social wealth, and should have equal right to survive. Sustainable development puts the eradication of poverty as an important issue to be addressed, giving equal

development rights to people in different countries and regions, and to their descendants. (2) The principle of sustainability means that while meeting needs of the development, limiting factors must be considered. Since the most important limiting factors are the natural resources and environment on which humans depend, the core of the sustainability principle is that economic and social development cannot exceed the carrying capacity of resources and the environment, truly combining the current and long-term interests of humanity into an organic unity. In other words, the concept of development includes constraining factors, and in the process of meeting human needs, the existence of limiting factors must be considered. Other major limiting factors include population size, technological conditions, and social organization's satisfaction with the environment, as well as the limitations imposed on current and future needs. (3) The principle of commonality is that although the sustainable development patterns of different countries in the world are different, fairness and sustainability principles are common. Because the integrity and interdependence of the Earth determine that the world must unite, local interests and overall interests must be combined to understand the common home of humanity. Please note that sustainable development considers global issues from a perspective that transcends cultural and historical barriers. The issues discussed are related to all human beings, and the goal to be achieved is a common goal of all human beings. The specific model of achieving sustainable development cannot be unique due to different national conditions. However, whether it is a rich country or a poor country, the principles of fairness, coordination, and sustainability should be common. Therefore, countries around the world need to appropriately adjust domestic and international policies, and only with the joint efforts of all humanity can the overall goal of sustainable development be achieved.

5. Sustainable development strategy seeks the optimal combination of short-term and long-term goals, short-term and long-term interests that promote coordinated development among "economy, society, population, resources, and environment," which are commonly pursued by human beings. Sustainable development is a long-term strategy for economic and social development, mainly including sustainable development of resources and the ecological environment, sustainable development of the economy, and sustainable development of society. The sustainable development strategy is centered on people, based on the sustainable use of resources and a sound ecological environment, premised on sustainable economic development, and aimed at seeking comprehensive social progress. Obviously, since sustainable development involves all aspects of human society, walking the path of sustainable development means overall social transformation. In addition to changes in the core contents of sustainable development and its related basic requirements in many areas, it also includes changes in productivity and production relations, economic foundations and superstructures.

6. The core idea of sustainable development is that human beings should coordinate the relationship between "economy, society, population, resources, and environment" and development, and seek development without harming the interests of others and future generations. (1) There are two basic aspects of sustainable development: development and sustainability. Development is a premise and a foundation, and sustainability is key. Without development, it is unnecessary to discuss whether it is sustainable. Without sustainability, development will come to an end. (2) Development should be understood as at least including the growth of material wealth in human society, and economic growth is the foundation of development. Development is an inevitable process

of internal economic and social systems in a country or region, which should be based on the interests of all people and pursue comprehensive social progress as the ultimate goal. (3) Sustainability should be understood as the fact that the stock of natural resources and the carrying capacity of the environment are limited. The physical scarcity combined with economic scarcity constitutes the limiting conditions of economic and social development. During economic development, people should not only consider their own interests, but also pay attention to the interests of future generations, leaving sufficient room for their development.

From the basic knowledge above, it can be seen that: (1) the coordinated development of "economy, society, population, resources, and environment", which is pursued by all humans, is not only the core contents of sustainable development, but also a component of sustainable, stable, and healthy development process. Sustainable development is the unity of development and sustainability, complementing each other and having causal relationships. Without sustainability, there can be no sustainable development. If development is pursued without considering sustainability, the foundation for long-term development will be lost. (2) To achieve this coordinated development of sustainable development, it is crucial to clarify the logical relationships between the core contents during the process of system overall design. (3) On the basis of the overall social transformation, ensuring this sustainable development through real-time analysis of the input-output optimal planning model and timely analysis of the input-output statistical model is not difficult, and it is important to make this clear. (4) Based on the scientific thoughts, theories, and methods of the "real-time input-output tabulation method", only by realizing the real-time analysis of the input-output optimal planning model and timely analysis of the input-output statistical model

can we fundamentally change the traditional production mode of high input, high consumption, and high pollution, and achieve the desired results in actively promoting clean production and moderate consumption to reduce environmental pressures. (5) Once overall plans, such as urban-rural development, inter-regional development, economic and social development, harmonious development between humans and nature, domestic development and opening-up are determined, issues related to sustainable development, including the coordinated development of sustainability between various links and aspects, can be achieved by realizing the real-time analysis of the input-output optimal planning model and timely analysis of the input-output statistical model, as well as the basic content of "Nine Must" [1] and the linear model production pioneers [*] of enterprise management modernization.

II. Summary of Achievements

It is known that Mr. Vasily Leontief, Nobel laureate in science, American economist, and professor at Harvard University, proposed the input-output analysis method in 1936. However, the biggest flaw of this method since then is that the input-output statistical table is already outdated when it is made, and this problem has not been solved, which is when using the mathematical model in the input-output statistical table [$X = (I-A)^{-1}Y$] to compile the input-output planning table, the assumption is that the direct consumption coefficient A remains unchanged in the planning period, while in reality, the direct consumption coefficient A varies with objective factors such as product variety, product price, technological innovation, and management level. Therefore, the basic data in the input-output planning table is difficult to objectively reflect the actual social environment and production and operation activities. Due to unreliable and inaccurate basic data, it

will bring great harm and influence to the budget (plan), policy analysis, and accounting of the national economy. If this traditional or follower-based table preparation order and method cannot be thoroughly changed, whether it is for the preparation of micro input-output tables or macro input-output tables, the problem of outdated and presumed basic data required for input-output analysis will not be solved. Therefore, as a method that can solve the above problem, the basic content of the scientific thoughts, theories, and methods of the "real-time input-output tabulation method" as a research achievement can be summarized as follows.

1. In 1974, when I realized that the input-output model could mainly solve the coordinated development between sectors (products), which was a necessary condition for enterprises to obtain the best economic benefits, it was not only an important tool for macroeconomic regulation but also a scientific method for comprehensive governance. For example, the significance of compiling a macro input-output model is to formulate reasonable economic policies, while the significance of compiling a micro input-output model is to strengthen management and improve economic benefits. Because of the influence of my family and my work experience, I developed a strong interest in this. In order to thoroughly solve the above-mentioned "outdated" and "presumed" problems of the enterprise input-output analysis method, after nearly 10 years of exploration, the unique idea of "real-time input-output tabulation method" was finally established.
2. In 1990, according to the project contract signed with the Guizhou Provincial Economic Planning Commission, the first phase of the functional application software system with weak AI technology developed during the pilot project at the Guiyang Cotton Textile Factory achieved significant social and economic benefits for the enterprise. Mainly reflected in: because of the reduction of the

ratio of raw materials used reaching and exceeding the national second-level enterprise level, the enterprise saved 39.5792 tons of raw cotton, and the economic benefit obtained was 39.5792 tons × 7762 yuan/ton = 30.7258 million yuan. At the same time, the enterprise was also promoted from a third-level enterprise in Guizhou Province to a second-level enterprise. The conclusion of the appraisal by Mr. Tan Xin, the project appraisal committee chairman, former director of the Guizhou Provincial Quantitative Economics Society, deputy leader of the Guizhou Provincial Input-Output Expert Group, and Professor of Guizhou National University, presided over the appraisal was that the system design was innovative and had promotion value.

3. In December 2001, the "Chinese Economists Forum (2001) and International Symposium on Analysis and Forecast of China's Social and Economic Situation in 2002" was jointly held by the Development Strategy and Regional Economy Research Department of the State Council Development Research Center, the China Economic Analysis and Forecasting Center of the Chinese Academy of Social Sciences, and the China International Economic and Technical Exchange Center at the Great Hall of the People in Beijing. My speech at the special session received recognition and support from the forum's host, Mr. Qin Linzheng, who was also the Secretary-General of the China Future Research Society, Chief Advisor of the China Future Research Society, Researcher of the Literature and Information Center of the Chinese Academy of Social Sciences, and the attending representatives. In addition, the research paper and materials that I submitted to the conference won the first prize of "Real-Time Tabulation Method of Input-Output Table and Modernization of Enterprise Management". This award, as well as the first prize certificate presented to me, marks the first time that my research results

have received unanimous recognition from relevant departments of the State Council of China.

4. In July 2007, during the annual conference of the "7th National Conference of the Chinese Input-Output Association" held in Nanjing, I elaborated on the scientific thoughts, theories, and methods of the "Real-Time Tabulation Method of Input-Output Table" at the special meeting of enterprises' input-output analysis. I submitted a research paper titled "Implementation of Input-Output Tabulation Method and Real-Time Analysis of Financial Management and Supply Chain Management - The Organic Integration and Connection between Enterprise Input-Output Model and Financial Management and Supply Chain Management", which received unanimous recognition from Professor Tong Chengren, Vice Chairman of the Chinese Input-Output Association and a top expert in Chinese enterprise input-output analysis, and the attending representatives. At the time, I immediately stated that since my research outcome had already been made public, I hoped that promotion would be expedited, otherwise, the consequences would be unimaginable. Professor Tong Chengren replied that there was no need to hurry, and it would take three to five years for foreigners to understand. It is worth mentioning that Professor Tong Chengren pointed out in his summary report at the plenary session that the level of academic papers received at this conference was the highest among all previous conferences!
5. The deadline for paper submissions for the 19th International Input-Output Conference was December 31st, 2010. However, due to the personal reasons, I submitted my paper and presentation to the conference on May 15th, 2011. My paper was reviewed by a panel of experts organized by Professor Klaus from the University of Maryland, who is also the Vice Chairman of the American (local) Science Committee. They unanimously agreed that my paper was "very

innovative with a grand contribution."Afterwards, they recommended my paper to the Academic Committee Chairman of the 19th International Input-Output Conference. After being approved through the review process, my paper was exceptionally accepted and fully published on the official website of the International Input-Output Association for members around the world. Due to insufficient time to obtain a visa, I was unable to attend the Conference held in the United States. After the conference ended, I received a letter notifying me that they had decided to bring forward the 20th International Input-Output Conference, originally scheduled for 2013, to June 2012 in the capital of Slovakia, and specifically informed me that the content of this conference would be to review my research results.

6. In June 2012, the "20th International Input-Output Conference" held in the capital of the Slovak Republic provided me with an excellent opportunity to show my research results to colleagues from all over the world. I submitted two research papers, gave two presentations, provided examples and reference introductions, and also presented the "Real-Time Tabulation Method and Cost Price Model of Input-Output Table in Enterprise Application" system software developed during the pilot project at the Guiyang Cotton Textile Factory, the relevant project identification materials and photocopy materials. With the support of Professor Klaus, the International Input-Output Association invited Associate Professor Feng Kuishuang from the University of Maryland to review and translate my research materials presented at the conference. After more than seven hours of face-to-face questioning and communication, my research results were finally unanimously recognized by Professor Feng Kuishuang, the chair of the academic committee, the reviewer experts, and the attendees of the conference. In the subgroup meeting, I gave a report and a presentation as the moderator of the special session, which not only reflected

my personal honour but also demonstrated the recognition of my research results by the International Input-Output Association. During the conference, experts and attendees from countries such as the United States, the United Kingdom, France, and Japan showed particular interest in my achievements. We had extensive and in-depth exchanges, and I subsequently demonstrated to them an application software system with weak AI functions. After the conference, the Japanese representative invited me to implement my research outcome in Japan, but I declined because I could not let the research outcome serve only one country. I considered how to make this technology serve all mankind. Therefore, I told the Japanese representative that once my research result could be widely recognized, I would immediately publish the implementation methods to the world, enabling all countries and regions to achieve real-time analysis of the optimal input-output planning model and timely analysis of the input-output statistical model on the same starting line,, and better serving the national economy. I fulfilled my promise!

7. In May 2013, I was instructed by the leaders of Guizhou to have my research materials reviewed by experts from the Guizhou Province Bureau of Statistics, who examined all the materials I had submitted to the 19th and 20th conferences. During the review, they checked the system software that I had developed based on the method to understand its implementation and verified the basic content of the “Nine Must” - Production Pioneer of Linear Model in Enterprise Modern Management for reference. Leaders and experts of the Guizhou Bureau of Statistics, including Mr. Tao Mouli, Mr. Feng Yuyi, Mr. Wang Chaohui and Mr. Wang Mingfeng, suggested that the Economic and Trade Department should contact me to discuss the possibility of implementing my research, as well as for colleges and universities to conduct further research based on the “real-time input-output tabulation method”. They recommended

my research results to the Chinese Input-Output Association to promote the application, and also had my paper titled “Origin and Development of Real-Time Input-Output Tabulation Method and Scientific Thought of Enterprise Management Modernization - Input-Output Planning Tabulation Before Input-Output Statistical Tabulation” published in the Guizhou Statistics Magazine, sponsored by the Guizhou Bureau of Statistics. It showed that not only the Chairman of Committee of IIOA, reviewers, and participants, but also experts at home approved of the scientific thought, theory, and method of “real-time input-output tabulation method”.

8. On May 4th, 2022, B P international, a publishing company registered in India and the UK, published and included three papers of mine. Among them, two papers I had published in the “Journal of American Industrial and Business Management”. The papers were titled “Overview of the Input-Output Optimal Planning Model and Cross-boundary Economic Management Information System - Organic Integration and Connection between Input-Output Optimal Planning Model and Big data, new Cloud Computing, IoT or Internet New Industries” [2], and “Scientific Basis of the Real-Time Input-Output Tabulation Method and AI- Organic Integration and Connection between Input-Output Optimal Planning Model and Automation, Information, Intelligence, Big data, new Cloud Computing, IoT or Internet New Industries, and AITechnologies” [3]. And the third paper I had submitted titled “Scientific Thoughts, Theories, and Methods of the Real-Time Input-Output Tabulation Method [Introduction] - Overall Design for AI and Cross-boundary Economic Management Information System for the “28th International Input-Output Conference” held in Kuala Lumpur, Malaysia on March 22, 2022 [4]. The first two papers were recognized by Professor Satoshi Inomata, the President of the International Input-Output Association, Mr. Chairman Wiednmann, the

Planning Committee of the International Input-Output Association, Professor Mahajan, the chairmen of the British Input-Output Association and Professor Klaus.

From the above, it can be seen that my scientific research achievement and the first-stage application software system with weak AI technology are real and practical that can withstand the scrutiny of the world and the test of history, because they can be replicated. I would like to express my special gratitude to the International Input-Output Association, the presidents of the 19th, 20th, 27th, and 28th International Input-Output Association conferences, the Chairman of the Planning Committee of the International Input-Output Association, the President of the American Input-Output Association, the President of the Slovak Input-Output Association, the President of the UK Input-Output Association, and the President of the Malaysian Input-Output Association, as well as the leaders, reviewers, and participants who have shown me concern, support, and assistance. I would also like to express my special thanks to the leaders, experts, scholars, and entrepreneurs who have helped me in the past and are currently helping me with their concern, support, and assistance.

III. Achievements Content

The scientific thoughts, theories and methods of “Real-Time Input-Output Tabulation Method” or “Overall Design of Real-Time Input-Output Tabulation Method and Cross-boundary Economic Management Information Systems & AI - Organic combination and connection between the optimal input-output planning model and automation, information, intelligence, Big data, new cloud computing, technology, the Internet of Things or new industry of Internet, and AI”, as the results, It was successful during the pilot of “Real-time Tabulation Method and

Application of Input-Output Table and Cost Price in Enterprises" at the Guiyang Cotton Textile Factory, and based on the significant social and economic benefits achieved by the enterprise, it was developed using scientific methods that organically combine and link the scientific ideas, theories, and methods of input-output optimal planning models, automation, information technology, intelligent technology, new technologies such as Big data, cloud computing, Internet of Things, or the Internet industry, AI, as well as industrial software such as Enterprise Resource Planning (ERP), Computer-Aided Design (Auto CAD), Computer-Aided Manufacturing (CAM), Computer Integrated Manufacturing (CIM), and 3D printing [3]. Therefore, the basic content of this scientific research achievement is briefly described as follows:

1. Theory foundation. Georges Jules André Fernand Jèze, a French economist, once made a statement which was about the relationship between discoveries of new scientific truth and social upheavals[5]. Since the minimum discoveries of the eight scientific truths [1] exist objectively and are never subject to human will,This not only forms the theoretical basis of the scientific thoughts, theories, and methods of the "real-time input-output tabulation method", but also the scientific method for practical scientific development and building a harmonious society. The following content is briefly described: (1) Direct consumption coefficient A. It is known that the direct consumption coefficient A is introduced based on the basic data in the known input-output table. The direct consumption coefficient A can change with changes in objective factors such as the enterprise environment and production activities, as long as the basic data in the input-output table can change with changes in objective factors such as the enterprise environment and production activities. The "real-time input-output tabulation method" is a new tabulation method developed

based on this understanding. This method combines the enterprise input-output model with engineering design, production, and operation management, and uses the scientific ideas of management information technology and electronic computer technology as tools to use the basic data of microeconomic information flows such as MRP (material requirements planning) and MRP II (manufacturing resource planning) including product structure, process route, consumption quota, working hours quota, capacity resources, inventory information, etc. for producing macroeconomic information flows required for input-output analysis, thus solving the difficulties in tabulation. This method can achieve real-time analysis of input-output planning model and timely analysis of input-output statistical model. This small discovery of scientific truth is the theoretical basis for the unique concept of the "real-time input-out tabulation method". It can not only completely solve the problem of outdated and presumed basic data required for input-output analysis but also has extremely important theoretical and practical significance for changing traditional tabulation thinking, accounting methods, and management methods, etc. (2) The method of preparing the material-based input-output planning model for enterprises involves adhering to the "three identical" principle and the basic requirements of "pure" departments in the input-output model. Once the structure of the input-output model is determined, the basic data in the table can be divided into two categories: "independent demand" and "related demand". Independent demand data is a predicted value, while related demand data is a calculated value. In the material-based input-output plan for enterprises, the final product in quadrant II is independent demand data (predicted value), while the basic data in quadrants I and III are related demand data (calculated value). Based on market demand, once the variety and quantity of the final product and its corresponding physical amounts are determined, the

production plan for the preceding process can be issued, and its output can serve as input for the subsequent process to drive its production. Alternatively, the subsequent production needs can make requests to the preceding process to determine when and what kind of production should be carried out. The entire production process from material feeding to the end of the production cycle is already known in advance, including which components are self-made and which ones are purchased externally. The production department that needs to produce and process the self-made components and the production department that needs to assemble the purchased components are also predetermined. Therefore, the variety and quantity of intermediate products that need to be produced, processed, and assembled in each material production department can be accurately calculated, along with their corresponding physical amounts. Based on the variety and quantity of intermediate products that each material production department needs to produce, process, and assemble, along with their corresponding physical amounts, and utilizing basic data such as consumption and working hours quotas, the variety and quantity of external products that each material production department needs to purchase can also be accurately and precisely calculated. Then, based on the balance relationship established by the plan in the rows of the table, the total output of each material production department can be calculated, which is the entire process of preparing the material-based input-output planning model for enterprises. This scientific truth thoroughly solves the assumption that the direct consumption coefficient A in the material-based input-output statistical table for the reporting period remains unchanged in the planning period when preparing it. (3) The preparation method of the material-based input-output statistical model for enterprises. Based on the organic connections and differences between the material-based input-output statistical table and the

material-based input-output planning model, the material-based input-output statistical model can be prepared in a timely manner without the need to collect, process, and organize accurate and reliable statistical data at the end of the planning period. It is easy to understand that in the basic data of the material-based input-output statistical model and the material-based input-output planning model, once the variety and quantity of the final product and its corresponding physical quantities are determined, the variety and quantity of intermediate products and their corresponding physical quantities required to make up the final product are also fixed. Therefore, the variety and quantity of intermediate products and their corresponding physical quantities cannot be more or less. If there are too many, they can only be idle, if there are too few, they need to be replenished from the warehouse or reprocessed from the start of feeding until the intermediate product is reached. Otherwise, the production task cannot be completed on schedule, and the final product cannot be delivered to distributors, service providers, or customers on time. Based on this theory, it can be concluded that, except for the basic data of the variety and quantity of intermediate products and their corresponding physical quantities in the purchased flow matrix table in the quadrant III, the basic data in the internal flow matrix table in the quadrant I, the basic data in the final product vector in the quadrant II, and the basic data in the total output vector are completely the same in the material-based input-output statistical model and the material-based input-output planning model. The smallest discovery of this scientific truth has laid a solid theoretical foundation for the scientific concept of “real-time input-output tabulation method”. This discovery objectively reflects the organic connections and differences between the post-statistical data and the pre-planned data, which is the similarity between the basic data in the material-based input-output statistical model and the material-based input-

output planning, and the difference between the two. (4) The preparation methods of value-based input-output planning model and value-based input-output statistical model for enterprises. The value-based input-output planning model and the value-based input-output statistical model are prepared based on the corresponding material-based input-output planning model and material-based input-output statistical model. The preparation method of the value-based input-output plan is as follows: for the variety and quantity of the final products of different production schemes and their corresponding physical quantities, mainly using the basic data in the material-based input-output model, the direct consumption coefficients and complete consumption coefficients in the internal flow matrix table of the enterprise are calculated first. Since the prices or values of the varieties and quantities of the final products produced by each production department during the planning period and their corresponding physical quantities are known, the physical quantities of externally purchased products consumed by each production department in the production process of their own products in the flow matrix table can be converted into value quantities according to the specific methods of enterprise inventory management (such as the first-in-first-out, last-in-first-out, moving weighted average, and individual pricing). The row vector of depreciation expenses of fixed assets and the matrix of labor remuneration expenses for each production department are known, and the depreciation expenses of common fixed assets, other expenses, deferred expenses, and accrual expenses that each production department should allocate, as well as its profits, are also known. Therefore, they can be calculated according to the management requirements and specific allocation methods. The initial input costs and profits of each production department can be calculated from this. It must be pointed out that the product cost and product value are essentially formed by

the accumulation of these initial input costs and profits. Of course, to know the cost of a product, it is necessary to first know the price of the self-made product. Or, to calculate the price of self-made products first, and then calculate the cost of self-made products. Since the formation process of product cost is the process of initial input costs transferring and accumulating inside the product along with the processing of the product, and the formation process of product value is the process of initial input costs and profits transferring and accumulating inside the product along with the processing of the product, as long as the direct consumption coefficient A or the complete consumption coefficient is used for parallel transfer (the object of transfer is the various initial input costs and profits of each production department), not only can the price of the product be calculated, but also the composition of the product price can be seen. The product price calculated here is the ex-factory price of the self-made product, in which both the semi-finished products in the middle state and the finished products finally entered into the warehouse reflect the profit. Knowing the product prices and quantities of each production department, the physical quantities in the internal flow matrix table of the enterprise can be converted into corresponding value quantities based on the balance between columns and rows; based on the value quantities of the intermediate products of each production department and their corresponding initial input costs and profits, the total input value of each production department can be calculated; based on the value quantities of the intermediate products of each production department and their corresponding final product value quantities, the total output value of each production department can be calculated. This is the value-based input-output planning model that is seamlessly linked with the material-based input-output planning model, which reflects the actual situation of the enterprise environment and production

activities at the time of the preparation of the plan in the form of value quantities. The method for compiling a value-based input-output statistical model involves not only considering the aggregation and allocation of production costs between completed products and products, but also follows similar methods and steps as those used for compiling the corresponding value-based input-output planning model based on the material-based input-output planning model. The minimal discovery of this scientific truth indicates that the scientific thoughts, principles, and methods of the "real-time input-output tabulation method", as well as the timely budgeting (planning) methods and accounting methods, are objective and feasible. (5) Implementation of real-time analysis of input-output models and financial and supply-demand chain management for enterprises. The input-output models here refer to the abbreviation of the real-time analysis of input-output planning model and financial accounting and value chain accounting, as well as the timely analysis of input-output statistical model and management accounting and value chain management (hereafter referred to as the same). Therefore, whether it is the implementation of real-time analysis for input-output planning models and financial accounting, or timely analysis for input-output statistical models and management accounting, or the implementation of real-time analysis for input-output planning models and value chain accounting or input-output statistical models and value chain management, the former can be accurately calculated based on the balance relationship between the basic data (how much is used) and inventory situation (how much is held), execution situation (how much is different), procurement situation (how much is needed) in the input-output model, as well as resource capacity (such as fixed assets, current assets, and liquid funds), and the basic data required for financial accounting statements such as the balance sheet and income statement (referring to the variety and

quantity of products and the type and quantity of equipment). The latter is based on the value chain composed of logistics, information flow, and capital flow of various elements input within each production department in the input-output model and the value chain composed of logistics, information flow, and capital flow between various production departments within the enterprise, connected forward to the logistics, information flow, and capital flow with suppliers, and backward to the logistics, information flow, and capital flow with distributors, service providers, and customers, thus objectively reflecting the whole process of the supply chain. Therefore, the value chains within various production departments in the input-output model and among various production departments in the enterprise are the foundation and core of the supply chain management theory. The small discovery of this scientific truth shows that as long as the real-time analysis of the input-output planning model can be achieved, the real-time analysis of the input-output planning model and financial accounting and value chain accounting can be achieved. As long as timely analysis of the input-output statistical model can be achieved, timely analysis of the input-output statistical model and management accounting and value chain management can be achieved. (6) The preparation methods for the input-occupancy-output model and dynamic input-output model. For the input-occupancy-output model, the basic data required can be accurately (the product variety and quantity, the type and quantity of equipment) and precisely (the physical quantity of product variety and quantity, the type and quantity of equipment, and their corresponding values) calculated based on the balance between the basic data (how much is used) in the enterprise's input-output model, inventory (how much is held), execution (how much is the gap), procurement (how much is needed), as well as the coefficient of resource capability and other basic data. The generation of basic data required for the

dynamic input-output model is that the dynamized processing method of the static model and the staticized processing method of the dynamic model. Both can achieve the purpose of using static mathematical methods to study dynamic economic problems. By linking the monthly or monthly production cycle input-output models, the basic data required for dynamic analysis when establishing a monthly or monthly production cycle dynamic input-output model can be obtained. The discovery of the small scientific truth (referring to the preparation method of the input-output model) shows that as long as the compilation problem of the input-output model is solved according to the model analysis, design, and management information system design methods, the compilation problems of the input-occupancy-output model and dynamic input-output model will also be resolved accordingly. (7) The optimal input-output planning model, along with modern management methods such as ERP (Enterprise Resource Planning), Lean Production, Agile Manufacturing, TFP (Total Factor Productivity), and Goal Management, can establish an organic combination and connection based on common basic data (such as product structure "parts" or material list "formula", process route, consumption quota, working hours quota, capacity resources, inventory information, etc.) and a unified data environment (such as the input-output planning model and input-output statistics model, etc.). If collaborating with software engineering companies engaged in ERP, Lean Production, Agile Manufacturing and other system research and development, with world-class technical expertise and capable of mastering and applying the basic theory and tabulation method of "real-time input-output tabulation method", a fully integrated "commercialized" system software can be launched in about two years. This scientific truth not only thoroughly solves the problem of the lack of organic connection and coordinated development between engineering design,

production and management, but also serves as a scientific basis for the effective combination of various management concepts, norms, and techniques. (8) The allocation method of shared costs such as deferred expenses, accrued expenses, other expenses, auxiliary production expenses, and manufacturing expenses will directly affect the quality of the value-based input-output planning model and value-based input-output statistical model. Therefore, the matrix established based on the fuel, power, auxiliary materials and other purchased product costs required for each production department during the production process, the depreciation expenses of fixed assets for each production department, and the labor remuneration costs of human resources is usually a rectangular matrix. Then, this rectangular matrix used for accounting needs to be transformed into a square matrix through elementary transformations, and the eigenvalues of this square matrix are used as the basis for the weighting coefficients for the shared costs allocation. This ensures the scientificity of the allocation method. In addition, the basic data in this rectangular matrix can also be directly used to first calculate the total cost of each column separately, and then add up the total cost of each column to calculate the total amount, then, to calculate the percentage of the total amount and use this percentage as the weight coefficient for the allocation of common expenses. The smallest discovery of this scientific truth has overcome the influence and disadvantages brought by psychological factors in the evaluation criteria. The scientific thoughts, theories and methods of the “real-time input-output tabulation method” have been further improved. It should be pointed out that the basic conditions for enterprises to establish input-output models in the past were: having a large-scale production process with relatively complex processes and relatively stable production processes for products; the various accounting systems of the enterprise must be sound, the original records and

ledgers must be complete, and the business, statistical and financial accounting information must be complete. However, the "real-time input-output tabulation method" developed based on management information technology is not subject to any of the above conditions. It is not only suitable for enterprises of production technology types, but also for enterprises of non-production technology types. Similarly, for enterprises engaged in engineering project production, workshop task production, and continuous production, the "real-time input-output tabulation method" can help establish input-output models and improve the enterprise's management level to the best state of system management or model management, regardless of the past or present management level, when applied to enterprises engaged in process production (such as chemical, pharmaceutical, and continuous production of fertilizer products) and enterprises engaged in discrete production and assembly (such as construction, shipbuilding, machinery manufacturing, and repetitive production of television products). Even enterprises in non-manufacturing technological fields (such as financial enterprises), the management level of the management information system can be improved to the best state of real-time and timely analysis at once.

2. Important notice: (1) in the manufacturing industry, throughout the entire production cycle, from commissioning to completion, various factors come into play. These factors include the production plan created by the former to fulfill early orders and its output, which serves as input for subsequent orders to facilitate subsequent production. Likewise, the requirements set by the latter for early orders, in line with the production needs of the following orders, dictate when and what types of products need to be manufactured in the early orders. This intricate process involves engineers and technicians engaged in

designing product structures (components) or creating bills of materials (formulas). They need to understand the variety and quantity of input and its corresponding physical volume for each step in the production process. Additionally, they must grasp the variety and quantity of output and its corresponding physical volume at each stage of production. This knowledge extends to the variety and quantity of purchased products and their corresponding physical volume during the creation of semi-finished products. These details are essential to meet the desired variety and quantity of products and their corresponding physical volume. Therefore, to support the creation of micro material-based input-output planning models, it is crucial to provide the necessary fundamental data. It can be seen that the fundamental data required for the enterprise's material-based input-output model are derived from information on product design blueprints rather than other sources. This ensures the quality of compiling the optimal input-output planning model for the enterprises. (2) Applying the scientific ideas, theories, and methods of the "real-time input-output tabulation method" comprehensively and systematically enhances the technological level of automation, informatization, and intelligence of machinery and equipment in the three major industries. This is not only an important measure for revitalizing the national economy and promoting economic development and construction but also serves as the foundation for all research and subsequent development of this research project. Without it, everything is like a precarious structure in the air, and many problems in the operation of the national economy cannot be resolved.

3. The main content includes the following three parts: (1) In terms of compilation, based on the development of technology progress and productivity in the three major industries of agriculture, industry, and services,

including machine, equipment automation, information, and intelligence, the entire process from the massive basic data information generated by machines and equipment to obtaining the basic data required for input-output models can be automatically completed by AI technology, not only ensuring the accuracy and precision of the basic data required for input-output models (referring to the variety and quantity of products, as well as their physical quantity, value, and price), but also achieving flexibility, arbitrariness, real-time, and timeliness of the compilation [4]. (2) In terms of model usage, the real-time analysis of the optimal input-output planning model and the timely analysis of the input-output statistical model can lead and guide the operation of the national economy. Since the entire process of implementing the national economic budget (plan), policy analysis, and accounting is automatically completed by AI technology, the real-time analysis of the optimal input-output planning model can ensure the actual operation of the national economy and maintain the best state of coordinated development from start to finish, playing a leading and guiding role. The timely analysis of the input-output statistical model can not only track and check the implementation of the plan but also is a traditional sense of accounting and a modern sense of auditing and evaluation [4]. (3) In terms of the results of compilation and usage, based on the automation, information, and intelligence of machines and equipment in the three major industries, achieving real-time analysis of the optimal input-output planning model and timely analysis of the input-output statistical model is the scientific basis for achieving economic development or sustainable development. On this scientific basis, as the transformation of productivity will inevitably lead to the transformation of production relations, and the transformation of the economic foundation will inevitably lead to the transformation of the superstructure, as well as the core contents of sustainable

development and its related basic requirements in many areas, the transformations are not only the theoretical basis for achieving social development or sustainable development, but also can lay a solid scientific foundation for achieving sustainable development of coordinated development between "economy, society, population, resources, and environment" that humanity pursues.

4. The basic concept of the Internet of Things (IoT) covers a wide range of technologies, industries, and fields, making it almost impossible to develop a set of universally applicable and unified standards. The standards for the IoT industry will be a broad-based standard system that will develop and mature with the gradual development of the market. As IoT applications gradually expand and the market matures, applications that occupy a larger market share are more likely to become widely accepted standards. With the gradual maturity of industry applications, emerging, highly generic IoT technology platforms will emerge. As the industry matures, common technology platforms that support different devices, different interconnect protocols, and multiple integrated services will be the result of the mature development of the IoT industry. In the IoT era, mobile devices, embedded devices, and internet service platforms will become mainstream. With the gradual maturity of industry applications, large public and common technology platforms will emerge. Whether it is a terminal manufacturer, a network operator, a software manufacturer, a system integrator, or an application service provider, they all need to reposition themselves in a new round of competition. Innovations in business models in the IoT field will result in a full integration of technology and human behaviour patterns. Connecting the actions of a robot society in the IoT will result in new business models that fully integrate relevant IoT technology with human behaviour patterns. It can be certain that the optimal

input-output planning model combined with new technologies such as Big data, cloud computing, and IoT or internet new industries is a public platform and common technology platform that is as large as it can possibly be, and it is certain that this public platform and common technology platform is the one that will be discovered. On the one hand, the structure of the macro input-output model can change with future developments. On the other hand, the vertical columns in the structure of the macro input-output model contain all the various sectors and objects of the micro-economy, while the corresponding horizontal rows objectively reflect the technical and economic relationships between the different sectors and objects of the micro-economy. Because this feature is not possessed by any other platform or method, a standard system can be established based on the public platform and common technical platform according to the economic significance and content of the macro input-output model's structure, technical and economic relationships, and coordinated development. This system can meet the needs of both the public platform and the common technical platform. It is not only conducive to the establishment of different industry standards but also more conducive to driving the establishment of key technical standards through the establishment of industry standards, thereby gradually evolving into a trend of standard system formation [2]. It is not difficult to imagine that without a public platform and common technical platform like the macro input-output model to lead the formulation of various industry standards, what would be the result of trying to drive the establishment of key technical standards through the establishment of industry standards? In future of "Da Tong" world (a world of harmony), if the comprehensive balance between the various sectors of the national economy lacks real-time analysis in the beginning and cannot use timely analysis to verify plan implementation in the end, then macroeconomic

management will be difficult being accurately or precisely coordinated, guided, and regulated overall. And the result will be like the current social situation, in which many problems related to economic management cannot be fundamentally resolved.

From the above content, it can be concluded that: (1) As a whole, the small discoveries of the eight scientific truths in the theoretical foundation are all very important, but in terms of their status and role, the method of compiling the material-based input-output model for enterprises is particularly crucial. Without this groundbreaking discovery, subsequent research work cannot be carried out. In terms of the basic content relationship, as long as the compilation problems of the material-based input-output planning model, the value-based input-output planning model, the material-based input-output statistical model, and the value-based input-output statistical model are solved, it will be easy for the input-occupancy-output planning model, the dynamic input-output planning model, the input-occupancy-output statistical model, and dynamic input-output statistical table, as well as real-time analysis of enterprise financial accounting and value chain accounting, timely analysis of enterprise management accounting and value chain management, to be realized. And the other related problems will be solved as well. Since “flexibility” and “arbitrariness”, “being real-time” and “being timely” are the two pillars and foundations that constitute the scientific thoughts, theories, and methods of the “real-time input-output tabulation method”, achieving real-time analysis of the optimal input-output planning model can guide the actual operation of the national economy, while achieving timely analysis of the input-output statistical model is not only traditional accounting, but also modern auditing and evaluation. It must be pointed out that achieving real-time analysis of the micro input-output optimal planning model and timely analysis of the micro input-output statistical model are

the scientific basis for achieving the corresponding macro input-output optimal planning model and timely analysis of the macro input-output statistical model. (2) Regarding the two basic contents in the important notes stated above, the first one is not only the theoretical basis and scientific basis for forming the scientific thoughts, theories, and methods of the “real-time input-output tabulation method”, but also the core and foundation of the scientific research results. The second one is to promote the progress of science and technology in automation, information, and intelligence of machinery, equipment, and other related areas in the three major industries. This progress in production capacity serves as a basis or prerequisite for revitalizing the economy, improving productivity, and promoting the construction and development of the national economy. By using AI technology to automatically complete the scientific methods of compiling and using models, it not only serves as an important means for enterprises, regions, countries, and the United Nations Statistics Bureau to budget (plan), analyze policies, and calculate the national economy but also serves as the theoretical basis for achieving sustainable development and coordination among the “economy, society, population, resources, and environment”, which is a common pursuit of humanity. (3) From the theoretical basis, material basis, technical basis, theoretical significance, practical significance, and implementation methods of the “real-time input-output tabulation method”, it is known that the transformation of the economic foundation will inevitably lead to changes in the related fields of the superstructure. These changes are closely related to the core contents of sustainable development, which not only drives economic development but also serves as a scientific basis for promoting social development. It is not only an important symbol of human social civilization and technological progress but also a scientific basis for further promoting human social civilization and technological progress. (4) As the standard of the Internet of Things industry will be a broad standard system

that will develop gradually with the market and mature with its development, it is a unique scientific truth of the "real-time input-output tabulation method" to make use of the public platform and common technology platform of the macro input-output model as soon as possible to lead the formulation of standards in various industries and drive the establishment of key technical standards through the establishment of industry standards. As a scientific method of modern management, it is not only extremely beneficial for achieving sustainable development and coordination among the "economy, society, population, resources, and environment", which is a common pursuit of humanity, but also will achieve unexpected results.

IV. Relationship between Sustainable Development and Environment

According to the meaning of sustainable development, the relationship between sustainable development ad the environment shows that: because of the dominant position and role of economic development in achieving the coordinated development of "economy, society, population, resources, and environment" pursued by humanity, its importance also includes many aspects related to the environment. Or, it can be said that environmental factors not only directly affect economic development, but also indirectly affect changes in society, population, resources, and other aspects through economic development. In addition, the environment can be divided into two parts, namely natural environment and social environment, with the natural environment forming the basis of the social environment, and the social environment being a factor in the development of the natural environment. As the environment is relative to a particular subject, the size and content of the environment varies depending on the subject. Therefore, it is essential to understand the basic concepts, knowledge, and content of the

environment to conduct real-time and timely analysis of sustainable development. According to online sources, the following is a brief summary:

1. The natural environment refers to the material factors of geographical location, terrain, climate, soil, water sources, mineral resources, and even the cosmic space outside the earth, which are the basis for human survival. Human food, clothing, shelter, and transportation are all closely related to the natural environment. Humans must treat the natural environment well and strive to maintain the continuation of the animal and plant ecological chains, otherwise, humans will have to pay a heavy price. A complete ecological unit refers to a natural system that operates without significant human intervention, including all plants, animals, microorganisms, soil, rocks, atmosphere, natural phenomena occurring within that range, as well as natural resources and physical phenomena that should not be affected by human activity, such as air, water, climate, energy, radiation, electric charge, and magnetism. The ecological environment and the natural environment are very similar in meaning, but strictly speaking, the ecological environment is not the same as the natural environment. The ecological environment refers to a whole composed of various ecosystems formed by biological communities and non-biological natural factors, mainly or completely formed by natural factors, which indirectly, potentially, and in the long term affect human survival and development. The destruction of the ecological environment will ultimately lead to the deterioration of the human living environment. The extension of the natural environment is relatively broad, and all kinds of natural factors can be collectively called the natural environment, but only a system as a whole with certain ecological relationships can be called the ecological environment. A whole composed only of non-biological factors can be called the natural

environment, but not the ecological environment. In addition, the secondary environment refers to an environment where material exchange, migration, and transformation, energy, and information transmission have undergone significant changes under the influence of human activities, such as cultivated land, plantations, cities, industrial areas, etc. Although they have undergone changes in landscape and function, their development and evolution are still constrained by natural laws, so they still belong to the scope of natural circulation. For the sake of clarity, the following will use the ecological environment as an example to explain the relevant content. (1) The natural environment refers to the sum of various natural conditions on which human survival and development depend. First of all, the natural environment does not equal to nature, but is a special part of nature that refers to the sum of natural conditions that directly or indirectly affect human society. Secondly, with the development of productivity and the progress of science and technology, more and more natural conditions will certainly play a role in human society, and the scope of the natural environment will gradually expand. Human beings live in a limited space, and the natural environment on which human society depends cannot expand to the entire natural world. The natural environment includes a certain ecological environment, biological environment, and underground resource environment related to human life. On the basis of the natural environment, the environmental system created by human consciousness, long-term social labor, processing and transformation of natural substances, material production systems, and accumulated material culture is a concept relative to the natural environment. (2) The whole living environment that directly or indirectly affects human life and development, as well as various natural factors that have an actual impact on human psychology, is called the psychological environment. The humanistic environment is the sum

of material and non-material achievements created by humans. Material achievements refer to cultural relics, green spaces, buildings, tools and facilities, etc., while non-material achievements refer to social customs, languages, culture and art, education, laws, systems, etc. These achievements are all created by humans, bearing the cultural imprint and permeating the humanistic spirit. Different humanistic environments result from the historical accumulation of different ethnic groups, which not only reflects the history and culture of that society but also plays a role in cultivating and educating individuals in that society. Therefore, achieving the core contents of sustainable development is not a simple task. (3) Ecology refers to the mutual connections and interactions among organisms (including prokaryotes, protists, animals, fungi, and plants) and between organisms and the surrounding environment. Nowadays, the concept of environment generally refers to the geographic environment, which is the overall natural phenomena surrounding the human living space and can be divided into the natural environment, economic environment, and social and cultural environment. Contemporary environmental science is a comprehensive science that specifically studies the environment and its relationship with humans. Although ecology and environment are two relatively independent concepts, they are closely related, which has led to the emergence of the new concept of "ecological environment". This new concept refers to the sum of various natural factors and conditions necessary for the survival and reproduction of organisms. It is a large system composed of various "elements" in the ecological system and the environmental system. Therefore, understanding ecology and the ecological environment, as well as the role and impact of ecological systems and environmental systems in achieving real-time analysis and timely analysis of sustainable development, is the key to success. (4) Ecological environment is

the abbreviation for the environment composed of ecological relationships. It refers to the sum of various natural (including the second natural force formed under human intervention) materials, energy, or effects that are closely related to human activities and affect human life and production activities. It is also a general term for the quantity and quality of water resources, land resources, biological resources, and climate resources that affect human survival and development. It is a complex ecological system related to social and economic sustainable development. Ecological environment problems refer to various negative feedback effects that harm human survival and result from human destruction and pollution of the natural environment during the process of utilizing and transforming nature for their own survival and development. It is evident that the real-time analysis and timely analysis of the ecological environment is extremely important for achieving sustainable development. (5) Ecological environment and natural environment are very similar in meaning, therefore understanding the basic concepts of ecological environment and natural environment will play a doubly effective role in realizing real-time analysis and timely analysis for sustainable development. (6) An ecosystem refers to a unified body composed of organisms and the environment within a certain space in nature. In this unified body, organisms and the environment interact and restrict each other, and are in a relatively stable dynamic equilibrium state for a certain period of time. Environment refers to all external things (usually referred to as objects) that surround a specific thing (usually referred to as a subject) and have an impact on it, which is to say that the peripheral things which are relative to the specific central thing and related to it. The ecosystem is a natural system of interaction between the biological community and its geographic environment, consisting of four parts: inorganic environment, producer (green plants), consumer (herbivores and carnivores),

and decomposer (microbes). Therefore, the ecosystem has very important significance and role in achieving the core contents of sustainable development.

2. Social environment. The social environment is a concept that is opposite to the natural environment. It refers to the artificial and cultural environment created by humans based on the natural environment. This environment, in contrast to the natural environment, embodies the uniqueness of human creation, such as ideas, institutions, behavioural norms, and other non-material content, including markets, transportation, policies, politics, population, technology, and so on. In the real world, apart from material and organizational factors, the social environment is mainly composed of extensive and rich institutional and spiritual factors. In short, the social environment makes human survival possible. It is a system composed of various environmental elements and an important foundation for the realization of human desires for better survival and development. Humans have transformed the natural environment to meet their needs and promote economic and cultural development. However, if the balance of matter and energy in the environment is not given enough attention during the production process, the quality of the secondary environment cannot be guaranteed, which can harm humans. (1) Similar social environments or cultural backgrounds tend to make people's behaviour patterns gradually more consistent. Human existence is not abstract, isolated, or separate from the social environment, but rather various connections formed through different social relationships. From a spatial dimension, people's roles in society are established after forming certain social relationships with others. At the same time, the social environment can also change human genetic factors. For example, the primitive humans had thick body hair and were tall, which is completely different from modern humans. With changes in the social

environment, human bodies, personalities, and communication methods have undergone tremendous changes, and even changes in certain chemicals can cause genetic mutations, all of which are closely related to the environment in which humans exist. Therefore, it is evident that the impact of the social environment on real-time analysis and timely analysis for achieving sustainable development is significant and can be imagined. (2) On the one hand, the establishment of social environment is a sign of the development of human spiritual and material civilization, and on the other hand, it also continuously enriches and develops with the evolution of human civilization. Therefore, the social environment is also called the socio-cultural environment. Someone classified the social environment according to the nature of its elements into: geographic social environment, including buildings, roads, factories, etc.; biological social environment, including domesticated plants and animals; psychological social environment, including human behaviour, customs, laws, and languages. Others classify the social environment according to its functional aspects: settlement environment, including courtyard, village, and urban environments; industrial environment; agricultural environment; medical and leisure environment; cultural environment, etc. The social environment can be divided into narrow and broad categories. The narrow social environment refers to the specific environment for the survival and development of organizations, specifically the relationship network between organizations and people. The broad social environment includes categories such as the socio-political environment, economic environment, cultural environment, and psychological environment, which are closely related to the development of organizations. From this, it can be seen that the broad social environment is not only extremely important but also the fundamental basis for achieving real-time and timely analysis of

sustainable development. (3) It should be pointed out that in the core position of the modern market economy, traditional economics and finance often simply regard capital or funds as a factor of production, which is a primitive, narrow, and static view of financial resources. Mr. Bai Qinxian believes that finance is a resource, a scarce resource, and the most basic strategic resource of a country. Financial resources have three levels: broad monetary assets (funds), which are the basic core financial resources in the first level; the financial organization system and financial asset (instrument) system are the entity intermediate resources in the second level; and in the third level, it is the overall functional high-level financial resource. This theory summarizes the essence of the entire financial system, highlights the position of monetary assets as the basic component of financial assets, and emphasizes the overall functional role of the financial system as a whole in an economy. Financial resources have duality, from its natural attributes, it is a scarce social strategic resource, and this general attribute enables financial resources to automatically enter the sustainable development function; From a social perspective, it is also a resource with allocation function for other resources (natural and social resources). This special attribute forms an economic development ecological environment - the financial ecological environment. This determines that in order to achieve sustainable economic and social development, sustainable development of finance itself must be achieved first. Therefore, the problems of the sustainable use of financial resources and the protection and maintenance of the financial ecological environment constitute the two fundamental issues of financial sustainability. This complete and dynamic new financial resource theory builds a solid foundation for the theory of financial sustainability. Through the two channels of “dual attributes of general resources and special resources” and “high-level functional financial

resources", this theory maintains a smooth connection and transition with Western economic and financial theories in terms of perspective, and is considered a significant innovation in the field of financial scientific research not only domestically but also internationally. (4) In usual circumstances, financial information is disclosed in company reports, while sustainability information is disclosed in separate sustainability reports. However, as the impact of sustainability issues on value creation for businesses becomes increasingly apparent, investors and stakeholders expect to see ESG information related to value creation disclosed in mainstream company reports. Many regional and international organizations have developed relevant sustainability frameworks and standards, including the four-module guideline system of the Global Reporting Initiative (GRI), the climate change information disclosure framework of the Climate Disclosure Standards Board (CDSB), the five-dimension reporting framework of the Sustainability Accounting Standards Board (SASB), the four-element information disclosure framework of the Task Force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board (FSB), the four-pillar reporting framework released by the International Business Council of the World Economic Forum (WEF), the ISO 26000 Social Responsibility Guidance of the International Organization for Standardization, and the integrated reporting framework of the Value Reporting Foundation (VRF). These standards and frameworks provide important references for businesses to disclose sustainable development. Each reporting framework has different focuses and targets different audience groups, and these voluntary reporting frameworks and guidelines promote innovation and action, but also increase the costs and complexity for investors, companies, and regulatory agencies. Recently, international organizations such as G20, FSB, IOSCO, and IFAC have called

on the IFRS Foundation to use its rich experience, recognition, and influence in developing IFRS to lead the development of a globally unified set of high-quality sustainable reporting standards to bring sustainable global comparable reporting to the financial market. In September 2020, the IFRS Foundation released a consultation paper on the establishment of a Sustainability Standards Board. In March 2021, the IFRS Foundation established a Technical Readiness Working Group (TRWG), whose members include CDSB, IASB, TCFD, VRF, and WEF, with IOSCO as an observer. It is clear that based on the scientific thoughts, theories, and methods of development and sustainable development, if the overall design of the real-time inout-output tabulation method and AI and cross-boundary economic management information systems can be used as the scientific basis for developing sustainable development frameworks and standards in each of these areas, it can not only provide a more scientific theoretical basis for the world to develop a unified and high-quality sustainable development framework and standards, but also achieve sustainable development with coordinated development among "economy, society, population, resources, and environment", which will result in a win-win situation. In the above content, as each aspect is related to the core contents of development and sustainable development and is also related to the implementation of analysis of the input-output optimal planning model and the timely analysis of the input-output statistical model, it is crucial to consider the impact of these factors when implementing the "real-time input-output tabulation method" and the overall design of AI and cross-boundary economic management information systems to fully play their integrated role and achieve a synergistic effect.

From the relationship between sustainable development and the environment mentioned above, it can be seen that: (1) the harmonious and coordinated development between the natural environment and the social environment is the scientific basis for achieving the coordinated development of "economy, society, population, resources, and environment". This scientific basis not only fully expresses the inseparable relationship between sustainable development and the environment, but also is the basic requirement for measuring the overall transformation of society. From ancient times to the present, mankind has experienced a series of evolutions. The body is given to humans by nature, and in the process of growth, nature also guarantees its existence and continuity. Therefore, how to handle the relationship between the natural environment and the social environment is the key to guaranteeing sustainable development. Only by clarifying the basic concepts, basic knowledge, and basic content of the natural environment and the social environment, understanding their roles and significance in sustainable development, and finding the key to solving problems through their relationship, can human beings conduct real-time and timely analysis for achieving sustainable development. This is very important. (2) The natural environment contains the resources necessary for human survival. When humans exploit and use these resources, they inevitably cause a certain degree of impact and damage to the natural environment. These impacts and damages, in turn, have adverse effects on human survival. Therefore, how to ensure the balance between human survival and development and the protection of the natural environment by establishing corresponding rules is the key to achieving real-time and timely analysis for sustainable development. Since human socialization is mainly completed and manifested in the social environment, a certain subject should assume a certain social role in any social environment. Any social role also depends on the social environment as a system and is determined by this system. Therefore, only by

achieving real-time and timely analysis for sustainable development can the position of humans in the environment be determined to achieve balance and harmony between human survival and development and the protection of the natural environment. (3) To satisfy the needs of contemporary people without posing a threat to the ability of future generations to satisfy their own needs, these two aspects are interconnected and mutually restrictive. They complement each other, and each side is a prerequisite for the other's existence. This objective existence is an important standard for measuring real-time and timely analysis for sustainable development. Therefore, pursuing the path of sustainable development means a comprehensive transformation of society, In addition to changes in the core contents of sustainable development and its related basic requirements in many areas, it also includes changes in productivity and production relations, economic foundations and superstructures. (4) Due to the constant influence of various factors in the natural and social environments on the real-time and timely analysis of sustainable development, once this influence reaches a certain degree, it must be put on the agenda and be taken seriously. To prevent this from happening, Firstly, the international standards and related regulations for sustainable development formulated by relevant departments of the United Nations based on the various factors of natural and social environments are seen as factors restricting economic development. Then, ChatGPT is used to continuously monitor and analyze these limiting factors. If these factors exceed the balance with environmental factors in their impact on economic development, they must be used as constraints for establishing an optimal input-output planning model combined with linear programming models. By implementing real-time analysis of the optimal input-output planning model and timely analysis of the input-output statistical model, real-time and timely analysis of sustainable development can be ensured.

V. Scientific Method to Achieve Real-Time Analysis of Sustainable Development

Since the 20th century, with the rapid development of coal, steel, petroleum, chemical industry and transportation industry, new cities and industrial areas have continuously emerged, urban population has increased sharply, and therefore, wastewater, exhaust gas, waste residue, as well as organic synthetic substances such as pesticides, radioactive materials, and noise have seriously polluted the environment and become public hazards. As human social activities continue to affect the natural environment, this change in turn affects human health and normal life. Although human activities have little impact on the environment when production activities are relatively simple and small in scale, after the industrial revolution promoted the development of social productive forces, human living environment has also been impacted and destroyed, especially the ecological environment. The prerequisite for achieving sustainable development of "economy, society, population, resources, and environment" in a coordinated manner is not only the transformation of the core contents of sustainable development and its related basic requirements in many areas, but also the transformation of productivity and production relations, economic foundation and superstructure. Otherwise, achieving sustainable, stable and healthy development will become impossible. Today, realizing real-time and timely analysis of sustainable development is a major issue that humanity faces together. It is known that the input-output model mainly solves the coordinated development between departments (products), which is a necessary condition for achieving the best economic benefits. It is not only a tool for macro-economic regulation, but also a scientific method for comprehensive governance. Therefore, using the real-time analysis of the optimal input-output planning model and the timely analysis of the

input-output statistical model as tools, the basic method for realizing real-time and timely analysis of sustainable development will be briefly described as follows:

1. To achieve sustainable development that coordinates the development of "economy, society, population, resources, and environment", it is first necessary to understand the logical relationships among them. (1) It is believed that the logical relationships among the core contents of sustainable development are: centered around population demands, with economic development as a condition, social stability as a goal, controlling resources as a means, and protecting the environment as an objective. Then, based on the self-regulating ability of the ecosystem and the self-purification ability of the environment, it is necessary to restore and maintain its balance, stability, and normal operation. This can be achieved through the automation, information, and intelligence of machinery and equipment in the three major industries, and by establishing real-time analysis of input-output optimal planning models and timely analysis of input-output statistical models among each month or monthly-based production cycles, at the same time, resource consumption (inputs), intensity of resource development and utilization, and control of waste emissions should be kept within the capacity of the resource, ecological economy, and environment, in order to achieve real-time and timely analysis of sustainable development. (2) Sustainable development consists of two basic elements and two key components. The two basic elements are, income redistribution that ensures natural resources are not depleted due to short-term needs, and reduces the damage suffered by especially the poor due to natural disasters or farmers due to plummeting agricultural product prices; ensuring the basic conditions for sustainable survival, such as hygiene, education, unpolluted water and air, protecting and meeting the basic needs of the most

vulnerable groups in society, providing equal development opportunities and freedom of choice for the whole society, especially for the poor. The two key components are, meeting needs and limiting needs. Meeting needs primarily refers to meeting the basic needs of the poor; limiting needs mainly refers to limiting excessive needs on the environment, as such excessive needs will inevitably endanger natural systems that support life, such as the atmosphere, water, soil, and biodiversity.

2. The scientific basis for realizing the "real-time input-output tabulation method" and real-time analysis of sustainable development and the coordinated development of "economy, society, population, resources, and environment" in achieving sustainable development. According to the overall design of the "real-time input-output tabulation method" and AI and cross-boundary economic management information systems, as well as its theoretical, material, and technical basis and the basic requirements, theoretical and practical significance and implementation methods, the main content of the scientific basis should include: (1) For countries or regions with different social forms or social systems, in order to facilitate the compilation of statistical data from various countries in the world and make comparisons, in the overall design of the "real-time input-output tabulation method" and AI and cross-boundary economic management information systems, the national economy is first divided into 10 categories according to the "International Standard Industrial Classification" formulated by the United Nations Statistics Division, and then each category is divided into large, medium, and small subcategories. (2) According to this classification, the structure design of the macro input-output model is first carried out based on agriculture, industry, and service industry, and then the structure design of the micro input-output model is based on the related subordinate enterprises or units in these three

major industries. (For example, the subordinate units and enterprises in the agriculture industry include farming, forestry, animal husbandry, sideline, and fishery; the subordinate units and enterprises in the industrial sector include the product structure (components), material list (formula), or other departments in the manufacturing industry; the subordinate units and enterprises in the service industry including profit-making and non-profit service industries are education, health, culture, public services, and so on.) In the overall design, a huge "database" should be established. And this database should not only include basic data information related to engineering design, production and manufacturing, and management in the three major industries but also integrate all available contents of massive knowledge, information, and texts related to the national economy. (3) By using ChatGPT, a powerful and precise algorithmic advanced search engine can be used. On the one hand, based on the basic requirements of coordinated and sustainable development among "economy, society, population, resources, and environment", a user can directly obtain the results of how much final product and its variety, quantity, and corresponding material quantity are needed through massive relevant information under this algorithm, providing a scientific basis for AI to automatically compile and use tables. On the other hand, based on the basic data of the input-output optimal planning model, through new technologies such as Big data, cloud computing, the Internet of Things or the new industry of the Internet, and AI, it can track, regulate, and analyze whether the supply-demand balance in the national economy is in a state of coordinated development according to the objective law of coordinated development. If the actual operation deviates from the objective law of supply-demand balance and coordinated development, and the degree of deviation exceeds the inventory level and is difficult to compensate, it will provide a scientific basis for AI to

automatically recompile and use tables to achieve real-time analysis of the input-output optimal planning model and timely analysis of the input-output statistical model, and to achieve real-time analysis and timely analysis of sustainable development. (4) The transformation of productivity will inevitably lead to a transformation of production relations. The content mainly refers to, 1) as people play a decisive role in productivity, the transformation of the ownership of means of production, the organization and division of labor in the production process, and the distribution of products related to production relations are consequently caused by the transformation of productivity based on automation, information, and intelligence of machines, equipment, and products in agriculture, industry, and service industries. 2) It is evident that with the development of productivity, the production relations that is established based on the old-fashioned productivity may gradually become incompatible with it, making it impossible to maintain their stable state. In this case, partial changes in production relations become necessary. 3) And when production relations can no longer meet the objective requirements of continuing to develop productivity, a comprehensive transformation must take place, replacing the original production relations with new ones that are suitable for the development of productivity. Therefore, the demise of the old production relations and the establishment of new ones are both objectively necessary. 4) It should be noted that the transformation of production relations cannot happen naturally but must be achieved through human activities. (5) The transformation of the economic foundation inevitably brings about changes in the superstructure, and the content mainly refers to, 1) it involves in aspects of both. The economic foundation refers to the total sum of the dominant production relations in a certain society, which is in line with the dominant aspects of the material productive forces at a certain stage of

development. The economic foundation is the dominant production relations in a specific society. 2) It is mainly manifested in three aspects, firstly, the needs of the economic foundation determine the emergence of the superstructure, or there will be a superstructure that matches the economic foundation. Secondly, the nature of the economic foundation determines the nature of the superstructure, or changes in the economic foundation will determine the direction and changes of the superstructure. Thirdly, the change in the economic foundation determines the transformation of the superstructure, or the old superstructure will eventually be replaced after the old economic foundation is replaced by a new one. 3) As for the superstructure, it serves the economic foundation. When the economic foundation of a society is relatively advanced, the superstructure can consolidate and develop it, promote the development of productive forces, and promote social progress. 4) Conversely, the superstructure must work hard to maintain a backward and decadent economic foundation, thus hindering the development of productive forces and social progress. (6) The content of the basic requirement for implementing the core elements of sustainable development in various areas is, 1) to achieve coordinated and sustainable development among "economy, society, population, resources, and environment". This is the core contents of sustainable development. The essence of real-time and timely analysis of the coordinated development of sustainable development's core elements is to realize real-time analysis of forecasting (planning) and policy analysis of the national economy, as well as timely analysis of national economic accounting. 2) This transformation involves a series of theories, systems, and methods in the fields of economics, finance, statistics, accounting, auditing, management, sociology, law, etc. These are not only interrelated, interdependent, and mutually restrictive but also complementary to each other. (7) In the vision of

the future “communist society” in the “One World”, once the power switch is turned on, a massive amount of basic data information will be automatically generated from the machines and equipment in the three major industries. The entire process, from the compilation of the tables and the use of the tables required for budgeting (planning), policy analysis, and accounting of the national economy by enterprises, regions, countries, and the United Nations Statistics Bureau using the input-output model, will be completed entirely by AI, with full monitoring and management capabilities. From this, it can be seen that taking the international standards and related regulations formulated by relevant United Nations departments for sustainable development as constraints for the establishment of the input-output optimal planning model that combines input-output models with linear planning models is the scientific basis for achieving coordinated and sustainable development through real-time analysis of the input-output optimal planning model and timely analysis of the input-output statistical model.

3. In order to objectively reflect the coordinated development of “economy, society, population, resources, and environment" and achieve sustainable development in the optimal planning model of input-output, it is necessary to, before achieving real-time analysis of the optimal planning model of input-output and timely analysis of the input-output statistical model, expand or add corresponding functions based on the basic requirements in the above-mentioned fundamental knowledge and conduct relevant policy analysis respectively. This can not only lay a solid foundation for the core contents of sustainable development but also turn it into a reality. (1) For example, according to the meaning of social sustainable development, economic sustainable development is not equivalent to social sustainable development. Economic sustainable development is based on material and focuses on

expanding reproduction of material resources, mainly solving problems in production, distribution, exchange, and consumption. Social sustainable development is centered on people, aiming to satisfy human survival, enjoyment, well-being, and development, and the two are closely related. Economic development is the prerequisite and foundation for social development, while social development is the result and purpose of economic development, the two complement each other and coordinate with each other's development, so that the entire country can sustainably, rapidly, and healthily develop, and the good quality of life can be guaranteed. Therefore, based on the "International Standard Industrial Classification" method and the common development of material civilization and spiritual civilization, according to certain historical data, current and future desires, and different areas and levels in the classification of the national economy, different actual needs are analyzed and classified. Based on a clear understanding of the resources needed by different groups of people, policies that are jointly observed can be formulated under the premise of controlling all kinds of development within the range that the earth can bear or ensuring the reasonable consumption of the least known stored resources, which is an important way to achieve coordinated and sustainable development. (2) Since the realization of real-time analysis of the optimal input-output planning model and timely analysis of the input-output statistical model is based on or is a prerequisite for promoting technological progress and productivity change related to automation, information, and intelligence of machines and equipment in the three major industries, issues related to "economy" or "economic development" have also been addressed. (3) In achieving economic development, the three major industries are the foundation for human survival. For this foundation, since the transformation of productivity will inevitably lead to a transformation of

production relations, and the transformation of economic foundation will inevitably lead to a transformation of superstructure, as well as the core contents of sustainable development and its related basic requirements in many areas, once those transformations can be kept consistent with the objective requirement of coordinated development or measured and judged by the objective requirement of coordinated development as the goal, a series of theoretical, institutional, and methodological changes in relevant disciplines will meet the requirements, then the problem of achieving social development will be solved. (4) After achieving the sustainable development of coordinated development between the economy and society, the key to realizing sustainable development is to coordinate with the carrying capacity of resources and the environment. That is to say, controlling environmental pollution, improving environmental quality, protecting the support system of life, biological diversity, and the integrity of the earth's ecology, using renewable resources in a sustainable way, and controlling all kinds of human development within the carrying capacity of the earth. According to the "International Standard Industrial Classification", it is very necessary to establish corresponding personnel management information systems in different fields and levels of national economic classification. It must be pointed out that since sustainable development must be linked to the solution of poverty among the majority of the population, only by eliminating poverty can the carrying capacity of resources and the environment be improved. Therefore, in addition to including conventional management information, functions, and goals, this personnel management information system should also increase the population's demand for various resources in accordance with the basic requirements that ecological sustainability is the foundation, economic sustainability is the condition, and social sustainability is the goal, in

order to provide a scientific basis for improving and enhancing the quality of human life. (5) The United Nations World Summit on Sustainable Development was held in Johannesburg, South Africa from August 26 to September 4, 2002. The conference was attended by representatives from 192 countries, including 104 heads of state and government leaders, and focused on sustainable development. The conference adopted two basic documents, the "Plan of Implementation" and the "Political Declaration". This was another widely influential conference after the United Nations Conference on Environment and Development in 1992, which showed that humanity has taken another step forward in achieving sustainable development. According to those two documents, in addition to improving or establishing monitoring and management information systems for six major issues including global climate, water resources, health, poverty, population and food security, monitoring and management information systems related to resources, environment and ecology should also be improved or established to provide scientific decision-making basis for sustainable development of national economy. It is also the only way to achieve real-time analysis and timely analysis of sustainable development. For example, according to relevant international standards and regulations, the degree to which human resources are developed or waste is discharged should not exceed the limit of resource ecological economy and environmental carrying capacity, and it can be used as a constraint condition for compiling input-output planning model and linear planning model in order to build input-output optimal planning model, and through the realisation of real-time analysis of input-output optimal planning model and timely analysis of input-output statistical model, not only can the expected goals of controlling resource utilization and protecting the environment be achieved, the best economic benefits can be obtained as well. Or, when the degree of the above

activities can be controlled within a certain range for economic development, both human needs for material and energy and environmental quality, such as comfortable living environment can be met, and prevention of waste water, waste gas, waste residue, organic synthetic substances such as pesticides, radioactive substances and noise pollution from causing serious damage to the environment can be conducted. In addition, according to the international rules and systems that the international community must abide by together, once the resources invested (consumed) in production in agriculture, industry and service industry are controlled within the lowest range, the impact of resource utilization on the environment can be controlled so as to play a role in protecting the environment. In the process of realizing the coordinated development of "economy, society, population, resources and environment" in sustainable development, as long as the need for resources can be controlled within the lowest range, because of the environmental self-repair function, it is not difficult to understand the relevant issues of environmental protection. (6) In the process of realizing the coordinated development of sustainable development mentioned above, on the basis that human needs for resources have been met and can be stably controlled, because the economy or economic development has been protected, the relevant environmental problems caused by the economy or economic development can be solved; because society or social development has been protected, the relevant environmental problems caused by society or social development can also be solved; because society or social environment has been protected, the ecological environment corresponding to social or social environment problems will eventually be solved. Or, between economy or economic development and environment, between society or social development and environment, between environment and economy or economic development as well as social or social

development, and between economy or economic development as well as social or social development and ecological or ecological environment, they are organic unity that are interrelated and influence each other. (7) Establishing corresponding fixed asset management information systems in different fields and levels of national economic classification based on “International Standard Industrial Classification”. In addition to reflecting the basic information of machines and equipment itself, the system can also reflect the basic information such as the purchase time, purchase amount, place of origin, manufacturer name, service life of machines and equipment, and can be coded according to the affiliation relationship to meet the needs of statistical analysis and management, and to establish corresponding investment management information systems respectively. In addition to reflecting the basic information of investment projects, the system can also reflect the basic information such as investment time, expected completion time of investment projects, investment location and amount, profit situation, etc., and can be coded according to the affiliation relationship to meet the needs of statistical analysis and management, to establish management information systems for monetary funds and settlement business, deposit and loan accounting, fund-raising accounting, foreign investment, intangible assets and deferred assets accounting, wage accounting, product cost accounting, operating income and expenditure accounting, profit accounting and so on. They can be coded according to the affiliation relationship to meet the needs of statistical analysis and management. There are many other corresponding management information systems that can be established. They are not listed one by one here. (8) In the process of sustainable development, as long as the corresponding basic functions are expanded or added, and based on the real-time analysis of the optimal input-output planning model and the timely

analysis of the input-output statistical model, the basic data in the optimal input-output planning model can be used for relevant policy analysis. This is not only an objective need to achieve the core contents of sustainable development, but also can provide information needed for future economic, population, housing censuses and so on. Or, as long as the economic, population, housing census and other functions are separately included or used as auxiliary functions in the overall design of real-time of input-output tabulation method and AI and cross-boundary economic management information system, corresponding results can be obtained according to actual needs when realizing real-time analysis of optimal input-output planning model and timely analysis of input-output statistical model.

4. It is well known that the static input-output model mainly solves the coordinated development between departments (products), and is a causal model method based on data located in the cross section of the model for analysis. This causal model method emphasizes finding out the causes of changes in things, finding out the relationship between causes and results, and predicting the future based on this relationship. Coordinated development and sustainable development are only different in wording, and their essential meanings are completely consistent. Coordinated development focuses on observing from horizontal relationships, that is, putting forward requirements for development based on the mutual relationship of basic factors that restrict development. Sustainable development puts forward requirements from the relationship between vertical historical development process, current needs and future needs. The purpose of both is to protect social sustainable development. Therefore, realizing real-time analysis of optimal input-output planning model and timely analysis of input-output statistical model can not only achieve

coordinated development of national economy, but also provide a scientific basis for achieving sustainable development.

5. It must be pointed out that the dynamic input-output model mainly reflects that the social economy is a dynamic process of continuous change and development. It can not only connect the economic changes between the previous and later periods, but also comprehensively consider the changes of many factors in the process of time passing, so as to objectively reflect the interdependence relationship and quantity between various departments (products) of national economy in different periods. The static input-output model reflects the distribution and use of social total products in the national economy during a certain period of time, the value composition of social total products, the total amount and source of national income, and the allocation and use of labor resources. In the static input-output model, investment appears as an accumulation project, as an exogenous variable, which has no relationship with current production and is a component of final use. Therefore, it cannot reflect the intrinsic relationship between productive investment and next period production activities. Because the dynamic input-output model introduces time variables, it can continuously examine the whole process of social reproduction, study the organic combination and connection between social products, labor force, labor materials and labor objects and their changes. It can not only be used to study and analyze the process of social reproduction, but also to study the intrinsic relationship between productive accumulation and social reproduction. In the dynamic input-output model, because of the introduction of a capital coefficient, the exogenous variable is endogenized. Through the operation of the model, the investment demand is linked with economic development, present and future. Therefore, it can examine the relationship between investment and expanding reproduction on a time series

[5]. From this point of view, realizing real-time analysis of optimal dynamic input-output planning model and timely analysis of dynamic input-output statistical model can not only provide a powerful tool for achieving sustainable development of coordinated development, but also marks that human beings have entered a higher stage in realizing sustainable development of continuous, stable and healthy development.

6. Special reminder, although input-output models provide a scientific method for coordinating and developing between departments (products) and are a necessary condition for achieving the best economic benefits, the most important decision is how to determine the variety and quantity of the final product and its corresponding physical volume based on market demand. Because forecasting is the basis of decision-making, without correct decisions, even the best input-output analysis is in vain. For enterprises, determining the variety and quantity of the final product and its corresponding physical volume is an important basis for formulating production plans, arranging production schedules, and conducting inventory management. What products to produce in the next period? How much to produce? Can the produced products be sold on the market at reasonable prices? What inventory strategy can meet market needs without causing a backlog? All of these are related to correct forecasting. In particular, according to the international standards and related regulations developed by relevant departments of the United Nations for various fields around the world, using the limits specified by these regulations as constraints for determining the variety and quantity of the final product and its corresponding physical volume can be achieved through computer calculation, but this method requires a lot of time and cannot meet the needs of real-time analysis. With the huge database of ChatGPT, all available knowledge, information, texts, and other contents on the Internet can be integrated,

including all available contents required for real-time analysis and timely analysis to achieve sustainable development. All texts generated by ChatGPT come from constantly updated contents on the Internet. Essentially, it does editing and integration work and is a tool that can be utilized. From the Industrial Revolution to the present, machinery has played a crucial role in improving human productivity, living standards, convenience, and social prosperity. In the long run, the application of AI after this "brainpower revolution" will bring about earth-shattering changes in the social structure, occupational distribution, and education. However, overall, there is no need to worry about whether ChatGPT will replace humans, and relevant departments of the United Nations will formulate policies to limit the development of AI based on the opinions of international experts to ensure that it does not have adverse effects on human society. Reasonable use of AI will continue to benefit humanity and make new scientific and technological advances available for human use, bringing convenience instead of destruction. Therefore, ChatGPT can be used to calculate the market demand based on the constraints of the input-output optimal planning model to provide a scientific basis for determining the variety and quantity of the final product and its corresponding physical volume. It is evident that only correct decisions are the effective way to achieve sustainable development through real-time analysis and timely analysis.

From the above methods, it can be seen that sustainable development is an objective requirement for the coordinated development. In scientific methods, it is particularly important to realize real-time analysis of optimal material-based input-output planning model and timely analysis of material-based input-output statistical model. As long as the population’s needs for various resources can be

controlled within the lowest range, from promoting economic development to achieving social development and then to achieving sustainable development of protecting the environment, because they are all realized according to the main problem solved by the input-output model which is coordinated development. Therefore, the realization of "real-time input-output tabulation method" and real-time analysis of sustainable development is objective and feasible. It can not only realize sustainable development of coordinated development in related fields such as productivity and production relations, economic foundation and superstructure, but also realize sustainable development of coordinated development among the core contents in various fields and links. In addition, in order to ensure that the real-time analysis of optimal input-output planning model and timely analysis of input-output statistical model play a leading role in the construction and development of national economy, massive data generated by machines and equipment in the three major industries can be used according to the objective law of coordinated development to track, supervise and analyze whether the supply-demand balance situation of national economy operation is in a state of coordinated development. If the actual operation of national economy deviates from the objective law of supply-demand balance and coordinated development, and its deviation degree exceeds the inventory level and is difficult to make up for, AI can provide decision-making basis for automatic re-tabulation and use table based on coordinated development objective law, thus realizing real-time analysis and timely analysis of sustainable development. It must be pointed out that realizing real-time analysis of optimal input-output planning model is equivalent to realizing real-time analysis of sustainable development, and realizing timely analysis of input-output statistical model is equivalent to realizing timely analysis of sustainable development. However, those input-output models are static input-output models, if dynamic input-output optimal planning model is used to replace

real-time analysis of input-output optimal planning model, and dynamic input-output statistical model is used to replace timely analysis of input-output statistical model, then realizing real-time analysis of dynamic input-output optimal planning model is equivalent to realizing real-time analysis of sustainable development, and realizing timely analysis of dynamic input-output statistical model is equivalent to realizing timely analysis of sustainable development. Obviously, for the realization of "real-time input-output tabulation method" and real-time analysis of sustainable development, it not only embodies the powerful function combined with AI to automatically complete tabulation and use tables, but also clarifies the important implications combined with sustainable development, which is a concept with epoch-making and milestone significance.

VI. System evaluation

Based on the scientific thoughts, theories and methods of "real-time input-output tabulation method" or the basic content of the overall design of "real-time input-output tabulation method" combined with AI and cross-boundary economic management information system, as well as the implementation of "real-time input-output tabulation method" and real-time analysis for sustainable development, it is not difficult to understand the basic relationship between scientific technology and innovation or scientific invention and discovery. (1) Science is an activity of discovering, exploring the unknown and creating knowledge. It mainly solves the problem of how to understand the world and answers "what" and "why". Technology is an activity of inventing, creating and practicing by comprehensively using various knowledge. It mainly solves the problem of how to answer "what to do" and "how to do" through innovative methods, techniques and corresponding material means. The former is a scientific

system, while the latter is a technical system. The object of scientific understanding is the whole natural world, such as the types, states, properties and forms of motion of various substances in nature. The task of understanding is to reveal the essence of phenomena and processes that occur in nature, grasp the laws of these phenomena and processes, control them, anticipate new phenomena and processes, so as to rationally and purposefully use the laws of nature in various possible ways in social practice. The connection and difference between science and technology are mainly that, in addition to different goals and tasks, different forms and evaluation standards of research content and research results, different development processes, and different attributes of productivity, science is mainly manifested in the form of knowledge, while technology is mainly manifested in the form of materialization. Science is the study of creating knowledge, while technology is the study of synthesizing and utilizing knowledge to meet needs. Science provides the possibility of theoretical materialization, while technology provides the reality of materialization. Breakthroughs in science are called discoveries, while innovations in technology are called inventions. The evaluation of science mainly depends on its creativity and truthfulness, while the evaluation of technology mainly depends on whether it is feasible and whether it can bring social and economic benefits. (2) For human society, science and technology are both indispensable. For the scientific thoughts, theories, and methods of real-time of input-output tabulation method, science needs to solve the problem of the assumption of basic data required by the input-output optimal planning model, and the problem of outdated basic data required by the input-output statistical model; while technology needs to solve the problem of how to achieve real-time analysis of the input-output optimal planning model and timely analysis of the input-output statistical model. The so-called scientific system is based on the relevant theories, materials, technologies and theoretical, practical significance and implementation

methods of the overall design of “real-time input-output tabulation method” combined with AI and cross-boundary economic management information system. In the process of realizing the automation, information and intelligence of agriculture, industry and service industry, or on the basis of highly modern automation, information and intelligence, according to the basic structure of macro input-output optimal planning model, they are linked through computer network (Internet of things or Internet) system. AI is used as a means to realize real-time analysis of input-output optimal planning model and timely analysis of input-output statistical model. The required knowledge and logic of traditional Continuous Mathematics and modern Discrete Mathematics are conveyed to the computer. The so-called technical system is based on the scientific ideas, theories and methods of this scientific system. According to certain steps and calculation methods, it can accurately obtain the basic information of basic data required for real-time analysis of input-output optimal planning model in advance. After that, it can immediately obtain the basic information of basic data required for timely analysis of input-output statistical model without collecting and processing relevant statistical data. Based on this, a basic database and computer application program (algorithm) are established. It can be seen that the scientific thoughts, theories and methods of “real-time input-output tabulation method” as a scientific research achievement not only contain science and scientific system, but also technology and technical system. They are a perfect combination of both. It is important to understand the meaning of real-time in the “real-time input-output tabulation method” based on the integration. Starting from the first information integration that is realized with Manufacturing Resource Planning (MRP II) from Enterprise Resource Planning (ERP), then the second information integration which is realized by utilizing the whole information flow of computers and automatized management from Computer Integrated Manufacturing (CIM) and in

order to gain competitiveness, and to the third information integration (micro-economic information integration and macro-economic information integration) based on the overall design of the "real-time input-output tabulation method" and cross-boundary economic management information systems & AI, it can be seen that the real-time is based on the CIM function model with MRP II as the hub. It is achieved by using AI to implement real-time analysis of the input-output optimal planning model through information integration and online competition, to achieve optimal allocation and sharing of resources. When using AI to achieve real-time analysis of the input-output statistical model, the basic data in the input-output statistical model is not only traditional accounting but also modern auditing. The reason for naming it the "real-time input-output tabulation method" lies in this.

VII. Conclusion

Since the United Nations Conference on Environment and Development in 1992, the international community has actively promoted the implementation of the Rio Declaration on Environment and Development, Agenda 21, and the Agenda for the 21st Century, and various forms of international and regional environmental development cooperation have been carried out. Countries around the world have made tremendous efforts to promote sustainable development and have achieved some success in eradicating poverty and achieving the Millennium Development Goals. However, global economic development is still uneven, instability is increasing, the rich-poor gap is obvious, developed countries' official aid to developing countries is insufficient, the global energy structure has not fundamentally changed, CO2 emissions continue to increase, climate change is a prominent issue, and the ecological environment of some countries is relatively serious. In addition, due to the continuous increase in the world's total population,

it is difficult for countries to improve their employment levels and education levels are extremely uneven, the per capita medical and health expenditure in underdeveloped countries is low, and the health status of residents is worrying. Therefore, the sustainable development issue of the coordinated development of "economy, society, population, resources, and environment" that human beings are jointly pursuing is facing increasingly complex situations, and the global sustainable development cause still faces severe challenges. Once the realization of "real-time input-output tabulation method" and real-time analysis of sustainable development becomes a reality, it is not difficult to draw the following conclusions based on the theoretical, material, technological, and practical significance and implementation methods of the overall design of "real-time input-output tabulation method" and AI and cross-boundary economic management information system.

1. Since the application of computer technology in national economic management, the scientific thoughts, theories, and methods of the "real-time input-output tabulation method" or the overall design of the "real-time input-output tabulation method" combined with AI and cross-boundary economic management information system have been shown to the world through the scientific thoughts, theories, and methods of system management or model management that, by integrating the main characteristics of modern management, such as modernization of management concepts, systematization of organization, quantification of methods, automation of means, and integration of supply and production and sales, with the scientific methods, not only can a qualitative leap be brought in the field of economic management, achievements which have great significance that human beings have longed for can be realized as well. It is an important symbol of human social civilization

and technological progress and a scientific basis for further promoting human social civilization and technological progress.

2. Since the World Commission on Environment and Development first introduced the concept of sustainable development in Our Common Future in 1987, there has been widespread consensus within the international community. However, in such a complex, rapidly changing environment, sustainable development will lack its foundation if real-time analysis and timely analysis of the coordinated development of "economy, society, population, resources, and environment" cannot be achieved. What methods should be adopted to achieve real-time analysis and timely analysis of sustainable development? It is believed that a series of international standards and related regulations have been developed based on the fundamental requirements for sustainable development by relevant United Nations departments, the changes in the productive forces and relations of production, the changes between the economic base and the superstructure, and the changes of the core contents of sustainable development and its related basic requirements in many areas, by expanding or adding functionality related to the basic requirements for achieving sustainable development's core contents can ensure its core contents' sustainable, stable, and healthy development. Based on this, real-time analysis of the optimal input-output planning model and timely analysis of the input-output statistical model can ensure efficient use of resources, making it the best way to protect the environment. Therefore, once the"real-time input-output tabulation method" and the overall design of interdisciplinary economic management information systems and AI are used as the theoretical basis and technical support for achieving sustainable development, the beautiful wish of sustainable development can enter the ideal realm.
3. According to the principles and objectives of the United Nations Statistical

Division and the International Input-Output Association, while focusing on the sustainable development aspect of coordinated progress pursued collectively by humanity, the overall design of the "real-time input-output tabulation method", along with AI technology and cross-boundary economic management information systems, and the realization of real-time analysis of the optimal input-output planning models and timely analysis of input-output statistical models, it is especially essential to address potential issues of counterfeit products in various fields such as agriculture, industry, and services, as well as the corruption that might arise in social life. Presently, the losses incurred by corruption in education, healthcare, and administration are staggering. For instance, a primary school principal was involved in corrupt practices amounting to over 220 million Chinese yuan, while corruption within a hospital reached several billion Chinese yuan, and a piece of equipment valued at tens of millions of yuan was subject to kickbacks amounting to 16 million yuan. Corruption ranges from tens of thousands to billions, even trillions of Chinese yuan, sparking immense anger and dissatisfaction in society. This phenomenon seems to be a result of severe lapses or inadequacies in macro-level supervision and inspection, which, in reality, are connected to deficiencies or inadequacies in micro-level supervision and inspection. We understand that corruption in education, healthcare, and administration is akin to three enormous boulders pressing down on the populace. Therefore, when monitoring and inspecting educational, healthcare, and government institutions, (1) regarding the internal economic cycle, within different industries of the three major sectors, regardless of the nature of the enterprises, the management of value chains and value chain accounting formed by the logistics, information flow, and fund flow of purchased products such as micro-level machinery, equipment, raw materials, materials, auxiliary materials, fuel, and

power, constitute the scientific basis of enterprise value chain management and accounting. Furthermore, enterprise value chain management and accounting form the scientific basis for regional, national, and international value chain management and accounting. Therefore, ensuring the circulation of logistics, information flow, and fund flow in the micro-level value chain management and accounting through monitoring and verifying becomes crucial. Based on this, supervision and verification of the circulation of logistics, information flow, and fund flow related to value chain management and accounting can be achieved, ensuring the fundamental quality of the relevant value chain management and accounting. This helps eradicate the breeding ground for corruption and achieve the expected goals of supervision and verification. (2) As for the external economic cycle, in different industries within the three major sectors, apart from supervising and verifying basic data such as the sources and expenditures of funds in micro-processes like individual accounts and enterprise activities, it is essential to start monitoring and verifying the fundamental data of logistics, information flow, and fund flow of various goods, machinery, and equipment entering and exiting customs. Regardless of whether it's analyzing from the latter to the former or vice versa, the supply and demand chain formed through distribution should primarily be based on policies specifying how much additional cost each link in the "chain" should incur. Then, supervision and verification should be conducted based on the circulation data of logistics, information flow, and fund flow within the “chain”. This approach helps eliminate potential illegal activities in the circulation process within the supply and demand chain environment, involving handlers, enterprises, or government agencies engaged in import-export trade, comprising suppliers, manufacturers, distributors, service providers, and customers. Particularly in the process of circulation of logistics,

information flow, and fund flow, creating a societal environment where corrupt practices cannot be implemented, such as bribery through inflated prices, is pivotal. (3) If we can compare the material-based input-output optimal planning model based on the actual structure of products and material lists with fundamental data from the material-basedinput-output statistical model for regulatory purposes, it is possible to prevent counterfeit and harmful products to human health at the source. This highlights that by achieving real-time analysis of micro input-output optimal planning models and timely analysis of micro input-output statistical models, coupled with unified value chain management and accounting established through real-time analysis of macro input-output optimal planning models and timely analysis of macro input-output statistical models, effective supervision and verification of the circulation of logistics, information, and capital flows at various stages of the "chain" can be achieved through pre-planned, organized, coordinated, and controlled actions, followed by post-accounting, analysis, evaluation, and assessment, enabling more effective oversight and verification of the flow of logistics, information, and capital within the "chain".

4. We know that civilization can be used to assess the advancement of productivity, and advanced productivity can provide synchronous development to civilization, ensuring more comprehensive power support. It directly promotes the elevation of the level of civilization, giving a robust impetus to its development, while ensuring that civilization progresses in the right direction, thus ensuring its long-term sustenance. Since modern productivity systems encompass various components related to human and natural aspects, the knowledge-based component and the role of scientific and technological factors are becoming increasingly prominent and critical. The development of advanced productivity is primarily achieved through the advancement of

science and technology, making science and technology the primary indicator of productivity advancement. The standard for measuring the promotion of advanced productivity development lies in whether it favors the development of the scientific and technological attributes of productivity, whether it promotes the overall development function of individuals and society driven by productivity, and whether it aligns with the development of the entire ecological evolution law of productivity. Among these, the most fundamental and core aspect is the third point, which fundamentally determines the development path of contemporary advanced productivity. Since advanced productivity inevitably involves a rational approach to the ecosystem, the ecosystem will increasingly become more suitable for human survival and development, continually meeting the needs of the productivity system to promote sustained rapid socioeconomic growth. Advanced productivity is the ability of humanity to transform and coordinate nature to obtain material means of production and create a better ecological environment. Using productivity as the reference framework, intellectual productivity represents contemporary advanced productivity relative to power-based and experiential-based productivity entities. Considering the productivity structure as the reference framework, knowledge economy represents contemporary advanced productivity relative to pastoral, agricultural, and industrial economies. Considering productivity function as the reference framework, harmonious productivity represents contemporary advanced productivity relative to survival-based and conquest-based productivity. To summarize the above content, achieving a real-time analysis of optimal input-output planning models or the coordinated development among the core elements of sustainable development and implementing a timely analysis of input-output statistical models or the coordinated development among the core elements of

sustainable development is the scientific method to realize advanced productivity.

5. The implementation of the scientific ideas, theories, and methods of the "real-time input-output tabulation method" by various countries worldwide, or the overall design of the "real-time input-output tabulation method" with AI technology and cross-boundary economic management information systems, the difficulty does not lie in technical aspects, but rather in the attitude of governments worldwide towards comprehensive societal change. For instance, the coordination and development in many fields related to the fundamental requirements of harmonious development between productivity and production relations, changes in the domains related to economic infrastructure and superstructure, and the core contents of sustainable development. These areas are of paramount importance and their immense difficulty is self-evident. It is clear that from the comprehensive and systematic enhancement or realization of automation, informatization, and intelligence of machines and equipment in the three major industries, the starting point, to achieving overall societal change, and then to real-time analysis of sustainable development, the correct path for humanity to enter a future vision of "One World" and similar shared visions lies here.
6. Because of the fact that the basic data in the material-based input-output model is more intuitive, clearer, and more conducive to identifying and resolving issues compared to the basic data in the value-based input-output model, utilizing the principles and primary functions of ChatGPT, through a powerful and precise algorithmic advanced search engine, (1) within the three major industries, an immense amount of foundational data information is generated by machines and equipment. Utilizing the physical quantity-based data information related to products, it becomes possible to track, oversee, and

analyze the equilibrium status of supply and demand. If a deviation occurs, it can be traced to its point of origin, identifying the causes and corresponding fundamental data information such as the amount involved. This can provide theoretical grounds for decision-making for managers. In essence, this represents the aspiration to create an alternative to human thought and behavior through a certain technology or approach, aiding individuals in certain fields of work. (2) As achieving real-time analysis of macro material-based input-output optimal planning models involves specific enterprises within certain fields and industries, along with the machinery and equipment used in the production and processing processes of these specific enterprises, proper classification and coding of these labor materials not only accurately reveal the origins of relevant products and their associated logistics, information flow, and financial flow from particular fields and enterprises but also precisely indicate which fields and specific enterprises these foundational data information sources originate from. 3) According to the optimal planning model of input-output and the organic integration and connection between automation, informatization, intelligentization, new technologies such as big data, cloud computing, emerging industries like the Internet of Things or the Internet, and AI technology, it is understood that utilizing their comprehensive advantages along with their respective management philosophies, technologies, and methods will effortlessly allow for the excavation of basic data information related to the circulation of products and their logistics, information flow, and fund flow on a monthly or monthly-based production cycle. This approach not only enables tracking, supervising, and analyzing the actual operation of the national economy but also facilitates the inspection and supervision of the responsibilities that various functional departments should fulfill through coordinating development, an objective rule. (4) Achieving real-

time analysis of the optimal input-output planning model or the coordinated development among the core contents of sustainable development and timely analysis of the statistical model of input-output or the coordinated development among the core contents of sustainable development, from the macro-level goals pursued collectively by humanity to every basic data information in the micro-level domain, effective supervision and management can be attained. This ensures that countries, as well as individuals, engage in their respective production and business activities on the basis of fairness. This establishes the scientific foundation for a harmonious society that embodies global unity, fairness and justice, mutual benefit, equal competition, and can eradicate the breeding ground for financial and economic crises, resource wastage, deceit, and corruption at its roots, consistently keeping costs at a minimum. (5) In a socio-economic environment where fair trade, free competition, economic interests, and the pursuit of values are highly integrated, when departments and nations affiliated with the United Nations need to conduct macroeconomic regulation over issues arising in the market economy, this system can perform policy simulations tailored to the respective issues and provide the basis for scientific decision-making. (6) According to the scientific ideas, theories, and methods of the “real-time input-output tabulation method”, it is evident that real-time analysis of the optimal input-output planning model or the coordinated development among the core contents of sustainable development and timely analysis of the statistical model of input-output or the coordinated development among the core contents of sustainable development can be realized. Therefore, the objectives, desires, and requirements of microeconomic management or macroeconomic management can be implemented. Even in the event of natural disasters or human calamities causing severe losses and impacts, it is possible to ensure the coordinated

development of the national economy and immediately put it into a virtuous cycle.

7. The scientific foundation of the “real-time input-output tabulation method” and AI indicates: when at the level of weak AI technology, developed countries can completely solve the current problems of compilation and use of tables in about five years; when strong AI technology is applied, as both human cognitive abilities and artificial intelligence technologies can handle these issues, the problems related to compilation and use of tables will be resolved; when super AI technology can be applied, as it surpasses human capabilities in all aspects, it will not only automatically mimic human thought and consciousness to compile and use tables but will also have a much better ability to address any problems related to compilation and use of tables than what we expect. We believe that whether it is the application level of weak AI technology, strong AI technology, or super AI technology, although they can all achieve real-time analysis of coordinated development that humans collectively pursue, only by using super AI technology to achieve real-time analysis of coordinated development between the core contents of sustainable development can the needs of future industrial revolutions be met. It is evident that this is an extensive systematic project involving various aspects of the natural and social environments. It cannot be accomplished by any single entity or team. Only by mobilizing the efforts of the entire nation, even the entire globe, is it possible to achieve the beautiful aspiration of coordinated development between the core contents of sustainable development that humans collectively pursue.

VIII. Closing Remarks

I would like to reiterate, the implementing real-time analysis of the optimal macro input-output planning model and the timely analysis of the macro input-output statistical model are based on achieving real-time analysis of the optimal micro material-based input-output planning model and timely analysis of the micro material-based input-output statistical model. Moreover, realizing the real-time analysis of the optimal micro input-output planning model and the timely analysis of the micro input-output statistical model builds the foundation for this. Therefore, it is crucial to understand that (1) for all enterprises in different industries within the three major sectors, apart from accurately and precisely calculating the basic data required for real-time analysis of the micro material-based input-output optimal planning model (referring to product types and quantities) and their physical quantities, other basic data needed for realizing other micro material-based input-output optimal planning model analysis, despite predictions, techniques, or models applied, though product types and quantities can be calculated, but be precisely determined, some certain errors will always be there. However, with the further improvement of the scientific ideas, theories, and methods of "real-time input-output tabulation method" and the changes in various aspects such as new accounting theories, systems, standards, methods, and management techniques within enterprises, along with shortened compilation cycles, the basic data required for subsequent realization of timely analyses of other micro material-based input-output statistical model will be more accurate than those needed for prior realization of other micro material-based input-output optimal planning model analyses, especially concerning the timely analysis of micro material-based input-output statistical models related to seasonal agricultural products and service industries, which will be more precise. Hence, in terms of compilation and utilization, the impact is minimal and can be entirely disregarded. (2) The unique concept of the "real-time input-output tabulation method", like any

new creation in the world, undergoes a process from imperfection to relative perfection. This research achievement is independently conceived, designed, developed, programmed and self-funded by myself. Due to my personal limitations in knowledge and cognitive aspects, this research outcome inevitably remains in a considerably imperfect stage and might possess various problems or even errors. Therefore, I earnestly request relevant experts and scholars for criticism and guidance to refine this research outcome. (3) The realisation of real-time analysis among the core contents of sustainable development is our historical mission. Hence, under the direct leadership and guidance of relevant departments such as the United Nations Statistics Division and the International Input-Output Association, through joint efforts of the entire society, we must accelerate actions of governments, enterprises, financial institutions, local authorities, and civil society to swiftly achieve harmonious coexistence between humanity and nature, establishing a safer, peaceful, and sustainable world or "One World" of great harmony. (4) In my "Collected Papers" series, the published papers mainly discuss issues regarding compilation. As for utilization, we believe: any basic data within input-output models used for policy analysis, cost-benefit analysis, and other analyses achievable by humans or strong artificial intelligence, along with research outcomes obtained, can be compiled into specialized application software separately and achieve applicable results. Super AI can conduct comprehensive and systematic analyses, addressing numerous economic problems beyond human capability to identify or solve, making it worth our attention.

The leaders or experts who want to understand the implementation process of the first phase of the enterprise-developed system application software with weak AI capabilities, can refer our pilot project taken place at Guiyang Cotton Textile Factory in 1990, focusing on the real-time input-output tabulation method and the

application of cost-price models in enterprise management. Additionally, it encompasses the fundamental content of the “Nine Must” for Modern Enterprise Management, which I subsequently completed, and this includes the linear model for producing pioneers and the logical model of computer management information systems.

Finally, I extend special thanks to Ms. Guo Yu for translating this article. Due to my limited technical expertise in business, there might be certain deficiencies and errors in this text. I sincerely welcome readers' criticisms and corrections regarding any inaccuracies or inadequacies present.

[*] The Basic Content of the “Nine-Must” - Production Pioneer of Linear Model in Enterprise Modern Management

1. Why must it be necessary to draw up the production and management plans with the optimal input-output planning 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 input and output of grey factor?
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 realise the combination and connection between the optimal input- output planning model and the enterprise resource planning (ERP), lean production, agile manufacturing, etc.?
6. Why must it be necessary to realise the combination and connection between the optimal input- output planning model and the total-factor productivity (TFP), target management and other modern management methods?

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

REFERENCE

[1] Kang N. The Input-Output Real-Time Tabulation Method and Modernised Enterprise Management. American Journal of Economics, 4, 240-256.

American Journal of Economics. 2014;4(6):240-256. DOI: 10.5923/j.economics.20140406.03

[2] Kang, N. (06.2019) An Overview of Real-Time Input-Output Planning Model and Cross-Boundary Economic Management Information System. Paper I of the 27th International Input-Output Conference. American Journal of Economics 2015, 5(1): 1-8 DOI: 10.5923/j.economics.20150501.01

[3] Kang N. Scientific Foundation of Real-Time Input-Output Tabulation Method and AI. American Journal of Industrial and Business Management (09.2019) 1831- 1872]. American Journal of Industrial and Business Management. Paper 2 of the 27th International Input-Output Conference. 2021;11:719-766

Available:https://www.scirp.org/journal/ajibm ISSN Online: 2164-5175 ISSN Print: 2164-5167

[4] Kang N. Brief Introduction of Scientific Thoughts, Theories and Methods of Real-Time Input-Output Tabulation Method. B P International Publishing House 2022.05.04.

Paper presented at "the 28th International Input-Output Conference" 2022.03.28.

[5] Thomas Kuhn, The Structure of Scientific Revolutions, published by the University of Chicago Press, 1962.

[6] Dong, Chengzhang. (02.2000) Analysis of Input-Output. Chapter 1,3,4,12, Chinese Financial and Economic. Publishing House, Beijing.

As a reference, the names of the three research papers published by B P International (enter the password to check the original text) and the link are provided as the followings:

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Paper 3 : Scientific Foundation of Real-Time Input-Output Tabulation Method and AI - Organic Combinations and Connections between the Optimal Input-output Planning Model and Automation, Information, Intellectualisation, Big data, New Cloud Computing Technology, Internet of Things or New Internet Industry & AI

Paper 4 : A Brief Introduction of Scientific Thoughts, Theories and Methods of "Real-Time Input-Output Tabulation Method"

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