

Research on Industrial Economic Information Analysis Based on Big Data and Its Influence on Macro Decision

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Abstract. Data information in the Internet era is expanding at an alarming rate, while showing a trend of diversification and fragmentation. How to make rational use of this intricate information and apply it effectively to work, it is extremely urgent to give full play to the value of big data. This paper starts with the big data basic theory and industrial economic information model, and combines the industrial economic information analysis method to systematically analyze the service value of big data to macro economy. Make full use of big data analysis, apply data acquisition, analysis and refinement to all aspects of the steel industry, greatly improve the ability of an industry to acquire, analyze and use data information, and promote the transformation and upgrading of the steel industry. Using big data to analyze industrial economic information and improve the efficiency of information analysis is the general trend. The analysis of industrial economic information will be fully integrated into the services from relevant practitioners to national authoritative management departments, but the analysis of economic and economic information still needs to deeply explore the value of big data.

Introduction

In the past three decades, the Chinese economy has been rushing all the way beyond imagination, ranking second in the world economy. China's gross national product is also growing, and it once became the second-ranked country in the world. Gross domestic product (GDP) is considered to be the core indicator of national economic accounting. It is considered to be the best indicator when measuring a country's economic situation. When we want to judge the ups and downs of a country's economic situation, we can start with the change of GDP. In the early 1980s, China began to involve the United Nations GDP indicators for the national economic accounting system, and in 1993 officially established GDP as the core indicator of national economic accounting. The industrial economic system is an important part of the national economic system and one of the more complex subsystems^[1-2]. It needs to carry out overall planning and comprehensive analysis of complex industrial economic theories and macroeconomic situations. Compared with the entire national economic system, although the industrial economic system is open, it has many subsystems and has multiple material production departments and non-material production departments. Different subsystems are interdependent and mutually constrained, and subsystem adjustments in the industrial economic sector will directly affect the entire economic system. Science and technology are constantly developing, industry classification is gradually improving, and the links between industrial sectors are getting closer.

In this paper, based on the analysis method of industrial economic information, the characteristics of industrial economic information such as authenticity, purpose, timeliness, systemicity, asymmetry and correlation are analyzed one by one. Industrial economic information is classified according to structure, semi-structured and unstructured. The technical analysis and strategic analysis are used to comprehensively analyze the level of industrial economic information analysis. Take a steel enterprise as an example to analyze its big data application. Based on the traditional information platform, the enterprise relies on big data technology to build a big data management chain from a series of links such as data collection, integration, storage, analysis and utilization.

Industrial economic information analysis method

According to the mathematical analysis method, the research method can be divided into qualitative methods and quantitative methods. Qualitative research methods focus on the overall characteristics of the object, which is an analytical research method for the nature of things, including: abstract analysis: mainly three forms of scientific concepts, scientific judgments and scientific reasoning; comparative analysis: through comparative analysis, To reveal the similarities and differences between things is the basis of analysis, reasoning and synthesis^[3]. By comparison, screening, screening, and making choices, after making the right choice, there is scientific decision. The correctness of decision-making determines the success or failure of the development of things; the abstract thinking method^[4]: first, the whole thing is disassembled and analyzed, and the diversity of things is analyzed; secondly, the components of each part are analyzed; finally, the analysis between the various components contact.

Empirical Analysis of Industrial Economic Information Analysis Based on Big Data and Its Influence on Macro Decision

Iron and steel enterprises should take the lead in the fierce market competition and the strong downward pressure of the macro economy. They must strengthen the analysis and processing capabilities of big data, and make full use of the massive data generated by enterprises, industries and related industries to enhance data informatization. Level. According to the enterprise information system established by Liu Yubing, combined with the practical experience of the steel industry, there are five data informatization systems related to iron and steel enterprises, set to pick the ball distance as far as the objective function is as follows(1):as shown in Figure 1^[5]:

$$F(x, a) = f(x) + a \sum_{i=1}^m [\max(0, g_i(x))] \quad (1)$$



Figure 1 Steel industry data information framework

A special big data information management center was set up, which was mastered by the general manager and managed by the department manager. The general manager manages the overall work in a coordinated manner. The data of each department is responsible for the real-time transmission of the data information of each department to the data network in real time, and the entire data informationization work channel is unblocked. To set up a big data management center, you need to train professional technicians to make full use of the company's data resources. In terms of personnel training, first, it has the ability to extract, analyze, and integrate data, and cultivate data analysis teams. Second, it has the ability to make data decisions and make full use of data values, and cultivate information decision-making teams. Third, it is fast based on the results of data analysis and processing. Ability to move efficiently and develop an effective execution team. As shown in Figure 2. At the same time, four dimensions are established: one is data collection. Realize

production, business, management data collection, automated management; second, data integration. Realize business integration data and process; third is data storage. Data management is updated in real time, using big data technology to build a big data platform to achieve data storage and interaction^[6-7]; Fourth, data analysis and utilization. This is the most important dimension. Through data analysis, using scientific management, building mathematical models, discovering valuable information, and predicting the future development trend of the steel industry and enterprises, as shown in Figure 3.



Figure 2 Big data application process

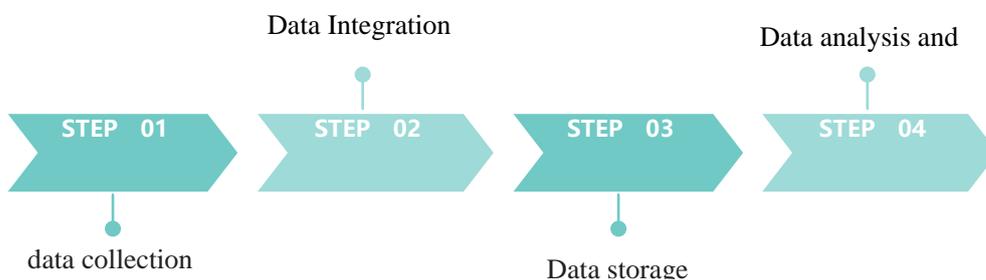


Figure 3 Four dimensions of the big data management chain

The data in the data warehouse is generated externally, it does not generate any data itself, but provides an environment for data storage and analysis. The data in the data warehouse can be opened for external use, and many reports are generated to better analyze the original data, and provide data support for data mining. The supporting technologies mainly include DataMining data mining, DB database, ETL, Report forms report, OLAP. Online analytical processing, etc., as shown in Table 1.

Table 1 Database main support technology

DW	Function	Main Production
ETL	Extraction\transformation\loading	Datastage
DB	Integrate	Oracle
OLAP	Analysis	Analysis Server
DM	KDD	SAS\SPSS
Report forms	DSS	Crystal reports

The basic information management layer of the database system is implemented on the database server platform, based on the relationship data magic to the unified management of the industrial economy and related regional macroeconomic data required by the system.

The first category is the data that is copied from the database of the subordinate professional functions, such as enterprise basic information, corporate taxation information, and labor basic information^[8]. This type of data is updated regularly while retaining the primary fields and table structure of the original data.

The second category is based on the raw data to calculate the derived indicator class data, mainly stored in the form of time series. Part of the main sentence of this class is the measured value calculated based on the actual economic industry information, and the other part is the expected value generated in the process of the simulation calculation of the policy. The meanings of the two are the same as the table structure, that is, the same type The index value is used to express the relationship table of the structure, and the programming of the software of the household is implemented.

The third category is the proprietary data of the system, mainly including template data of the production and economic indicators such as index calculation rules, benchmark parameters, parameters of the evaluation and analysis model, and calling rules.

Test Results

The testing process is an important part of the software development project. The industrial economic information management system adopts two methods: white box testing and black box testing. The software test specifically for the industrial economic information integrated management system is divided into two aspects. The verification of the program not only requires correct calculation but also needs to verify that the program is completely correct for the key intermediate variables and the management of temporary data. Taking the production and evaluation evaluation as an example, the intermediate variables and test requirements that need to be tested in the test are shown in Table 2.

Table 2 Productivity index analysis and evaluation module key test variable data results

Key variable	Testing requirements
Industry-wide revenue growth rate indicator	Consistent with data sample time changes
Labor force indicator	Consistent with imported data
Industry-distributed energy consumption indicators	Consistent with energy statistics
Industry-distributed corporate credit indicators	Consistent with financial statistics
Comprehensive evaluation index	Mean square error is below the statistical threshold
Relative weight	Consistent with the target group
Index Weight	Constant

Conclusion

Future big data will play a very important role in social and economic development, just as important as transportation, electricity and communication networks. In the context of big data, many disciplines such as politics, economy, and society will undergo different changes from the past, achieving unprecedented development, and thus fundamentally affecting people's lifestyles, knowledge structures, and value systems. This paper makes full use of big data analysis to apply data acquisition, analysis and refinement to all aspects of the steel industry, greatly improving the ability of an industry to acquire, analyze and use data information, and promote the transformation and upgrading of the steel industry. The system is based on database platform programming. The preliminary trial operation shows that the system has effectively supported the FF to improve the government's economic management capabilities, and initially achieved the purpose of the system.

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