Discuss the Application of Informatization Data in the Electric Power Industry from the Perspective of Computer Data Analysis Technology

Liyuan Liu1,*, Jinman Luo1, Youjun Feng1, Shanlong Zhao1

1Dongguan Power Supply Bureau of Guangdong Power Grid Corporation, Dongguan City, Guangdong Province, China, 523900

*Corresponding author e-mail: liyuan@dongguan.psb.org

Abstract. With the iterative development of social economy, the demand for the power industry continues to deepen. Traditional basic operations such as simple editing of information data in the power industry have been difficult to achieve the timely and effective processing of the growing information data, and can not effectively analyze and mine the data type and data value. Based on this, this paper first analyzes the characteristics and functions of computer data analysis technology, and then studies the application of power industry information data based on computer data analysis.

Keywords: Informatization Data, Electric Power Industry, Computer Data Analysis

1. Introduction

With the iterative expansion of computer big data tech, data analysis tech has also made significant progress. Computer data analysis tech has been more in-depth research and application in many industries and fields, especially in the power industry, which greatly promotes the improvement and expansion of the information level in the field, and significantly promotes the progress and improvement of the data analysis level in the industry [1]. On the other hand, with the improvement of the application depth and breadth of data information tech represented by big data and IoT in the power industry, a large number of operation data have been generated in the power industry. How to mine the value behind these data and bring about the effective mining of data information has become the focus of the application and research of computer data analysis tech in the power industry.

In the past, the application of data analysis system in power industry is mainly based on its existing business process and model architecture. This level of application can meet the basic operation of the power industry such as simple editing of information data, but it is difficult to achieve the timely and effective processing of the growing information data, and can not effectively analyze and mine the data type and data value. The application of computer data analysis tech can effectively focus on the quantity and quality of data processing, so as to get rid of the structural constraints of traditional data analysis system and bring about more direct and efficient analysis and mining of data. Therefore, based on the computer data analysis tech, it can bring about the effective mining of data value, data
rules and data significance of the power industry, so as to lay a solid basis for realizing the utilization of data value and improving the income of data information.

In addition, through the full use of data analysis tech, the power industry can fully mine the value of various data types, and give full run to the potential or hidden value of power operation data. With the iterative expansion of social economy, its demand for power is also continuously improving and growing [2]. Many links in the operation process of the power industry will produce a large amount of information data, for example, a large number of data to be processed and managed will be generated in several links as shown in Figure 1 below, which has higher requirements for its data analysis ability. In order to achieve more effective statistics, mining or prediction of these data, it is essential to further use the potential of computer data analysis tech to improve the quality and effect of data analysis, so as to ensure the healthy and stable operation and sustainable expansion of the power industry. Therefore, it is of great practical value to study the application of computer data tech in power industry information data.

![Diagram](image)

**Figure 1.** Links in the operation process of electric power industry.

2. **Characteristics and functions of computer data analysis tech**

2.1. **Features of big data under the background of computer data analysis tech**

Computer data analysis tech has typical 4V characteristics, as shown in Figure 2. In terms of capacity characteristics, with the super large scale and growth of semi-structured and unstructured data, these two types of data grow much faster than structured data, and much larger than the capacity growth of traditional data warehouse [3]. Secondly, at the level of diversity, the heterogeneity and diversity of big data has various forms of expression, such as text, image, video, etc., and there is no mode, or the mode is not obvious, incoherent grammar or sentence meaning.

In addition, at the value level, big data has low value density, single data has no value, there are many useless data, and the comprehensive value is large. It can predict the future trend and mode, and can carry out deep and complex analysis. Finally, in terms of speed, the computer data analysis tech has a fast processing speed, and the system can respond in a short time, which can bring about real-time analysis rather than batch analysis, data input, processing and discarding, so as to achieve instant results.
2.2. The necessity of the application of computer data analysis tech
First of all, the traditional data analysis and processing mode has been unable to meet the increasingly rich information for processing efficiency and accuracy needs, it should improve the ability and level of information data analysis and processing based on new technologies and strategies, so as to meet the needs of information data analysis and application with lower cost and higher performance. Computer data analysis tech has a higher critical point of data hierarchy, which can enhance the value of data processing with more cost-effective data. At the same time, the application of this tech makes the data stratification more optimized and comprehensive, which can guarantee the efficiency of data analysis and processing. In addition, with the continuous improvement of the real-time requirements of information processing and analysis in various industries, the processing efficiency of information data needs to be further improved, and the computer data analysis tech has more advantages than the traditional big data application and data warehouse tech, so it is essential to further improve the application intensity and level of computer data analysis tech.

2.3. Functions of computer data analysis tech
Computer data analysis tech can bring about distributed storage and distributed parallel computing of big data, and can bring about efficient data processing. The multi node allocation, calculation, calculation and storage of computing tasks are integrated [4]. The calculation is close to the data, and there is no dependency between tasks. The system has high scalability. Secondly, the distributed and multi copy file storage makes it possible to use ordinary devices for data storage, so the hardware investment is low. In addition, the system has high scalability, which can dynamically increase storage nodes and achieve high data transmission rate data access. The core architecture of data analysis and processing is shown in Figure 3 below.

![Figure 3. The core architecture of data analysis and processing.](image)
3. Application of power industry information data based on computer data analysis

3.1. Application value of computer data analysis tech in power industry
First of all, the application of computer data analysis tech can greatly promote the reform of the power industry. As an important data support for the reform of the expansion concept, management system and technical route of the power industry, big data of the power industry is an important data resource and support basis for the reform of the power industry [5]. Secondly, the application of computer data analysis tech can reshape the core value of power. At present, the power supply and demand of the power industry is still dominated by one-way transmission, and there is a long-term lack of analysis on the feedback data of social resources, which makes it difficult for the power industry to meet the personalized needs of the market and the benign expansion of the enterprise itself.

In addition, the application of computer data analysis tech can change the mode of power expansion. Under the background of the rapid consumption of resources, the traditional investment driven and experience driven rapid and extensive expansion mode of power industry has faced more and more social problems. The optimization of power system production and operation mode based on computer data analysis not only helps to guide the whole society to form the concept of energy conservation and emission reduction, but also promotes the transformation of power industry to green expansion mode. Finally, the power industry optimization based on computer data analysis is helpful to optimize the management and control mode and enrich social benefits. Power industry data can provide users with more abundant value-added services. Data integration of various departments in power enterprises will optimize internal information communication, help enterprises to implement refined operation management and improve management and control level.

3.2. Application scenarios of computer data analysis tech in power industry
At present, the power industry is faced with the background of the rapid increase of data processing capacity and the continuous improvement of data quality requirements. Among them, real-time change sampling, higher and higher acquisition frequency, more and more data acquisition points and more and more abundant data monitoring points make the relational database model unable to meet the needs of massive and efficient processing [6]. Therefore, it is essential to use computer data analysis tech to carry out low-cost and high-performance data processing in power industry. Secondly, the current decentralized power grid information system needs to establish a unified metadata definition, data storage and control, data analysis and processing mode, and computer data analysis is required to provide corresponding data processing support.

Currently, most of the power enterprises have built an integrated enterprise level information integration platform, which can meet the processing requirements of daily business. However, in several aspects as shown in Figure 4 below, it is still essential to use computer data analysis tech to bring about the requirements of power industry data transmission, storage, processing, exchange, performance and interaction.

![Figure 4. Process and link of information data processing in electric power enterprises.](image)

In terms of data acquisition and timeliness, it is essential to improve the data integrity and timeliness in power industry with the help of computer tech. Secondly, in the power industry, the guarantee of data source uniqueness, timeliness and accuracy requires the support of computer
In the power industry information data sharing level, the application of computer data analysis tech can improve the unity of data model definition, master data management and data caliber of power industry, so as to eliminate information island and data barrier, and bring about efficient sharing and exchange of business data. And promote the accurate storage of power industry information data. In the defense level of information data in the power industry, power enterprises need to build a balanced protection system and a unified information security level with the help of computer data analysis tech so as to ensure the effective establishment of the whole region, whole process and high security protection system. automatic data analysis, so as to ensure the efficiency and accuracy of data collection, and build a complete data control strategy, organization and control process.

4. Conclusion
In summary, power industry through the full use of data analysis tech, can bring about the full mining of the value of a variety of data types, and give full play to the potential or hidden value of power operation data. The application of computer data analysis tech can effectively focus on the quantity and quality of data processing, so as to get rid of the structural constraints of traditional data analysis system, and bring about more direct and efficient analysis and mining of data. Through the analysis of the characteristics and functions of computer data analysis tech, this paper studies the characteristics of big data under the background of computer data analysis tech, the necessity and function of computer data analysis tech application. Through the research on the application of power industry information data based on computer data analysis, this paper analyzes the application value of computer data analysis tech in the power industry and the specific application scenarios.

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