Application of Big Data and Cloud Computing in the Construction of Economic Management Database

Xinxue Jin[(✉)]

Department of Culture Management, Shanghai Publishing and Printing College, Shanghai 200093, China
175771470@qq.com

Abstract. In order to discuss the application of economic management in database construction, an application research of big data and cloud computing in economic management database construction is put forward. This paper first summarizes the characteristics of big data and cloud computing, then analyzes the big data characteristics of economic management data, and finally explores the successful experience of building economic management database by using big data and cloud computing, and explores how economic management database can realize its continuous improvement and development by using big data and cloud computing.

Keywords: big data · Cloud computing · Economic management · database

1 Introduction

Business plays an important role in the development of the country and is important for participation in global competition. Stability and prosperity depend on the development of financial management. People's study of big data has deepened, the technology of data analysis using big data has become more and more sophisticated, and data can be used for many useful books from all walks of life. In terms of business management, the dissemination of technology from big data has a positive effect on improving the effectiveness and efficiency of financial management. Against this background, whether it is the macro management of the country's economy or the production and operation of many enterprises, we must follow the development needs, take advantage of the opportunities, actively study the use of big data in business management, and develop the business. We will develop Chinese-specific management concepts and management models and promote the stability of China's economic development [1, 2].

2 Characteristics of Big Data and Cloud Computing

2.1 The Meaning and Characteristics of Big Data

Big data or large information group has the following three main characteristics: (1) Big data. Big Data Big data covers many dimensions of data files, including encoding techniques, data types, and data types. (2) High performance. (3) Data rate. Big data

Table 1. Characteristics of Big Data

big data	Large data scale
	High processing requirements
	High-speed data persistence

overcomes the limitations of traditional data storage for data file storage, allowing for data storage quality, speed, and longevity. As shown in Table 1:

2.2 Data Analysis is More Complicated.

Due to the large volume, variety and strong timeliness of data, data analysis is complicated, and cluster computing is usually needed to meet the high storage and computing needs of big data. Different industries have different needs and requirements for big data, which requires higher flexibility in data analysis of big data [3, 4].

2.3 Application Significance

Big data has a wide range of applications, but the ultimate goal of big data applications is to tap more resources at the same cost, thus improving interests. Although the data volume of big data is very large, the most important thing is to discover more useful and valuable data, which is also the key for many industries to use big data to gain a dominant position in the competition. For example, for the e-commerce industry, big data can be used for precise marketing, and at the same time, preferential information that customers may be interested in can be pushed according to their purchasing habits; For some small and medium-sized enterprises, big data can be used to realize service transformation; At the same time, big data can also be applied to public transportation, and traffic routes can be planned in real time through data model analysis to avoid traffic congestion. These are some accurate visualization results obtained by collecting and analyzing the corresponding data, which can promote the development of various industries [2, 5].

2.4 Cloud Computing

Cloud is a metaphor for the network and the Internet, and cloud computing is a mode of increasing, using and delivering related services based on the Internet. The powerful computing function of cloud computing can predict the market development trend, climate change, simulate nuclear explosion, and let people experience 10 trillion wonderful computing speeds. According to the definition of the American Institute of Technology, cloud computing is charged according to the usage of users. Users only need to use mobile network devices such as computers, mobile phones and notebooks to enter the computing resource sharing pool according to their own needs, and they can extract corresponding information resources, which is very convenient and fast.

3   The Role of Big Data in Economic Management

3.1   Provide Data Sets for Economic Management

Economic development is related to many industries, such as agriculture, animal husbandry, light industry, heavy industry and service industry. If the above industries want to manage more scientifically, they need to collect data from all walks of life and make effective adjustments according to the actual situation and the situation at home and abroad. With the continuous development of economy and the continuous progress of network technology, the application of big data is more and more extensive. Big data is not only faster when collecting data, but also easier to save and extract, which is convenient for later query and use.

3.2   Data Information Processing Efficiency is More Efficient.

In the past, the speed of data calculation was not high because of the following aspects: first, China's land area is relatively large, the data capacity is correspondingly huge, and the collection speed is correspondingly slow; Second, the calculation method is too old, and the accuracy is not high, so it is impossible to achieve efficient operation; Third, the dissemination tools are not advanced, and the speed of data information dissemination is too slow, which leads to the lack of timeliness of data, which is not conducive to the rapid response of decision-making departments. Batch processing is a calculation method of big data processing data. Through the distributed map reduction calculation method of splitting, mapping, reorganization, reduction and assembly, the results can be calculated quickly and effectively, and the relevant data information can be sent to the decision-making organs at the first time, so that the decision-making organs can respond at the first time, formulate relevant policies and ensure the smooth operation of the economy.

3.3   Big Data Can Provide Diverse Data Information.

Big data contains many kinds of data, including many forms of information, such as text information, video information, picture information, voice information, etc. At the same time, the coverage of information is wider, which can take into account different dimensions such as local and whole, space and time. These diversified data information can help decision makers to make more scientific, specific and targeted decisions and improve the working ability of economic management staff [6].

4   Effective Ways to Build Several Economic and Management Databases Under the Background of Big Data and Cloud Computing

## 4.1   Tourism Economic Management Database Construction

At present, the tourism industry is booming and has become a sunrise industry in the new era. Accelerating the construction of tourism economic management database is the top priority of current tourism economic management, which is of great significance for

improving tourism economic benefits and realizing efficient development of tourism. In the new era, the local tourism industry is accelerating the construction of tourism big data centers, striving to achieve the convergence of tourism elements and resources of all parties, scientifically grasping the operating rules of tourism economy, boosting the transformation and upgrading of tourism industry, improving quality and efficiency, and achieving sound and rapid development of tourism economy. At this stage, the development of tourism has new features, such as a wide range of points, a continuous process and dynamic changes, and it is widely involved in many related industries and industries. The catering industry, hotel industry and handicraft industry, which are closely related to it, all interact and complement each other to varying degrees. It is difficult for the traditional sampling survey and statistical methods to dynamically monitor the operation of tourism economy. The tourism industry needs to grasp the operation of tourism economy in real time on the basis of big data analysis and scientifically promote the development of regional tourism industry. The construction of tourism big data center should take "tourism + "as the main line, follow the principles of standardized collection, intercommunication and sharing, safety and reliability, connect the platforms of national, provincial, district and county tourism bureaus vertically, exchange and share data with relevant regional departments horizontally, and expand the periphery, effectively integrate all aspects of tourism data, realize multi-dimensional mining and sorting, statistical analysis and scientific prediction of tourism data, and further improve tourism management, service and marketing, as shown in Fig. 1[7].

The construction of tourism big data center should aim at building a tourism data statistics system, a tourist source attribute analysis system, a tourist behavior analysis system, and a real-time monitoring and early warning system for passenger flow, so as to realize the dynamic monitoring of the operation of regional tourism industry, and effectively integrate and analyze the gender, education level, origin distribution and travel information of tourists, as well as the real-time traffic, tourist carrying capacity and saturation early warning of scenic spots. At the same time, the tourism data cloud platform and data visualization platform are established to display the dynamic situation of the whole city's tourism industry in a three-dimensional way at the data terminal, and realize real-time viewing and export of tourism data.

4.2 Financial Supervision Database Construction

Information technology is widely used in current financial supervision, and the importance of information construction is increasingly prominent. Using "big data" to carry out financial supervision and change to "process control", "refinement" and "daily" has become the key to financial supervision in the new period. Local financial supervision departments should attach great importance to information construction, make great efforts to crack various bottlenecks, actively implement the spirit of the Notice of the Ministry of Finance on Strengthening Financial Budget Supervision, explore the integration and processing of various scattered data in combination with the development of budget supervision in recent years, try to build a database model with the goal of data integration, and make full use of big data by effective information means to provide
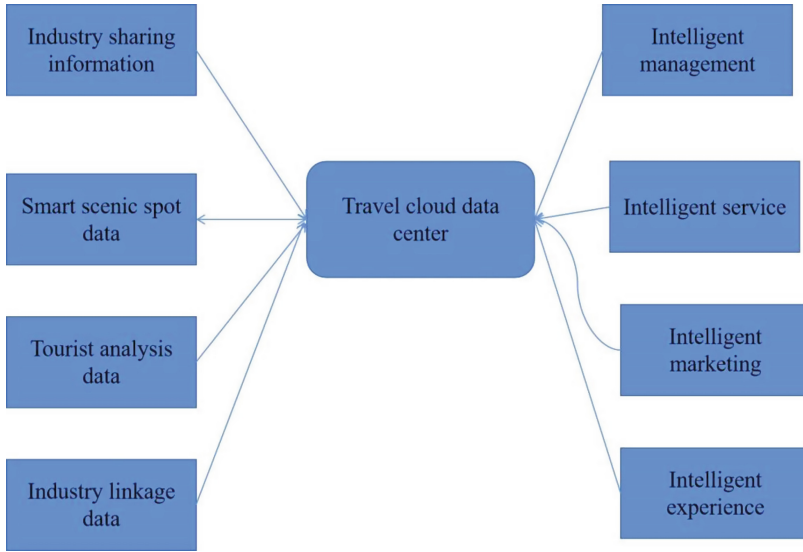
Fig. 1. Schematic diagram of modern tourism cloud data center system

support for scientific decision-making and risk prevention and control, so as to effectively improve the level of financial business supervision. To build a financial supervision database, we need to pay attention to the following points [8].

(1) Try to build a basic database of budget units to promote the supervision and coverage of budget units. Integrate the contents of key work and routine matters, sort out the budget supervision work since the transformation, and analyze the data elements of each work one by one to ensure the feasibility, data collection, data storage medium and data availability of the database. Combined with the development of various pre-budget supervision work, the data resources of supervision work such as final accounts audit and authorized payment are summarized and sorted, and the elements are queried based on the second-and third-level budget units, and templates are created, so that the data of electronic forms are automatically stored in the database, stored centrally, and shared among different departments and posts, so as to realize the construction of the basic database of budget units, and the information of gradually improving the basic situation of budget units and budget supervision business is embedded in the "one-household" database, so as to realize the complete financial management of territorial central budget units.

(2) Try to build a database of regulatory business problems and promote the full coverage of regulatory business (see Table 2). Combined with the final accounts audit and authorized payment monitoring, the final accounts audit report, record form, found problems and illegal cases of authorized payment dynamic monitoring are summarized and sorted, and a problem database is formed by classifying the problem types, and the specific manifestations, audit basis and problem occurrence units

Table 2. Financial Supervision Database Information Sharing System

Login system	Legitimacy verification	statistics
User login information	information	statistical information
feedback information	table of information	prompting message

of the same type of problems are quickly searched by taking the problem types as the directory index.

Relying on the electronic information network platform, making full use of new generation information technologies and concepts such as cloud computing, big data and internet plus, comprehensively integrating and collecting annual data, quarterly data, monthly data and thematic data on energy, material resources, personnel, information and capital, realizing the interconnection and information sharing of macroeconomic management departments, and gradually building a macroeconomic database with centralized and unified financial data and resource sharing, which will provide authority for the government, enterprises and the public.

4.3 Application of Big Data in Economic Management

Big data is very important in business management and has played an important role in the financial management process. Depending on the characteristics of the big data, it can be used for various big data connections in the target, which can better perform the meaning contained in the big data. Its application links are mainly discussed in the following points:

1. Used to build a big data economic model.

There are national laws and regulations as well as business influences on business management. However, we need a lot of information support to make decisions about managing our business anyway. By analyzing and disaggregating multiple sources of information, we can make business management decisions that benefit the construction industry. Therefore, in the process of processing large amounts of data, social workers combine data obtained from software and data in large quantities to create a business model. Print size. The use of big data in the business model is combined with the real situation, adjusted according to the actual business situation, identify the past development ahead of the market, predict the change, and then market management. Making decisions, - thereby making the development of economic management effective and ensuring the sustainable development of economic activity.

2. Used for risk early warning in economic management.

Economic management has certain risks. Using big data technology can effectively give early warning of possible wind risks and draw some upcoming development trends. The traditional mode of economic management, because it can't know the real-time information in time, has a certain lag in making decisions, which leads to the inability to face some temporary problems in the market, thus causing unpredictable losses. The application of big data can effectively solve the losses caused by this situation

in economic management. Using big data technology, the network information of the market can be monitored in real time, and the development trend of the market can be effectively grasped. For emergencies, some measures can also be taken to reduce losses. Big data can monitor market risks, and then with the help of Internet data analysis, some risk-related data can be kept in a specific range. If there is a problem, big data technology will give an early warning, and it can also analyze the risks and propose relatively reliable treatment measures to ensure the stable development of the market economy.

Used in the economic field to build a classified database In the economic management field, there are all walks of life, and different industries have their own unique characteristics. Therefore, when we make decisions in the field of economic management, we should analyze them in detail and not generalize them. Therefore, in order to ensure the normal implementation of economic management decisions, when using big data technology, the relevant departments of the country will take the lead, and then for different industries, a classified database will be built and the objects in the relevant database will be distributed to relevant industries. After the establishment of the classified database, in the field of economic management, no matter the country or social enterprises, they can search the database through their own authority and get the industry information they need, thus improving the application efficiency of big data, and with the support of data, economic management can better achieve the effect of economic management. However, the importance of big data is self-evident, so it is necessary to consider the unique characteristics of the Internet in order to better build a classified database. Because the Internet is open, this is the only feature that will affect the classified database. And the classified database is oriented to all objects, so there must be strict safeguard measures in data information security. On the one hand, strengthen the relevant security measures, on the other hand, make a good backup of the data to prevent the loss of data information [9].

5   Conclusion

Big data and cloud computing have become an important part of today's information technology, which has a significant impact on technological innovation. Information production relies on information technology. With the emergence of information technologies such as big data and cloud computing, the development of databases must also keep up with the times and constantly update and adapt to meet the needs of the times. Big data and cloud computing are rapidly developing information technologies in today's society and play an important role in the development of databases. The development of business management in databases based on big data and cloud computing enables powerful data processing, which will have a positive impact on the development of business management.

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