Discussion on Computer Information Processing based on Big Data Era

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Abstract. In order to give full play to the role of computer information processing technology in the era of big data and ensure data security, a relevant analysis of computer processing technology is made. In addition, the definition of computer information processing technology is given, and the basic functions of the computer information processing technology are described. Furthermore, the problems and development trends of computer information processing technology in the era of big data are further discussed. The results show that if the computer processing technology cannot meet the needs of development of society, it will become the bottleneck of the development of big data and delay the process of social development. Therefore, it is necessary for relevant researchers to make further improvement of computer information processing technology so as to make it meet the needs of all aspects in the era of big data.

Keywords: big data age; computer information processing technology; storage.

1. Introduction

With the continuous development of computer network applications, the acceleration of information process, and the continuous reform of Internet technology, many Internet users produce massive data every day, and the massive data indicate the arrival of the era of big data. Conventional computer information processing technology has been difficult to meet the needs of massive data processing, which brings new challenges to computer information processing technology. People need to use new innovative ideas to deal with big data problems.

Big data is of great value in the current era. There are two main meanings to study big data. Firstly, big data is a national information strategic resource, and its research depth has reference significance to enhance the competitiveness of national information security. Secondly, under the background of using big data, the analysis of industrial strategy will be more accurate, which is of great significance to industrial upgrading and adjustment of economic development structure in China. Therefore, it is necessary to further study the computer information processing technology in the era of big data in order to improve the corresponding requirements of processing technology and make social resources more effectively allocated to meet people's different needs.

2. Literature Review

Especially in recent years, relevant academic research has made in-depth exploration on big data, which has been highly valued by academia and industry, so there has been the upsurge of big data in both theoretical research and practice. Massive data has become an important factor affecting economic growth. McKinsey Global Research Institute first put forward the concept of big data: a data set that is large enough to exceed the capabilities of traditional database software tools in terms of acquisition, storage, management and analysis. It has four characteristics: massive data scale, rapid data flow, diverse data types and low value density [1]. Victor Mayer Schoenberg studied big data, and he was also known as the prophet of the big data era. He put forward the view that prediction is the core of big data. Conversion from sample to whole data and pursuit of acceptance uncertainty and relevance rather than causality are indispensable. In his book Big Data: A Revolution that Will Transform How We Live, Work, and Think, he proactively points out that the information storm brought by big data is transforming our life, work and thinking. Big data has opened a major era transformation, and narrates the change of thinking, business change and management change in big data era from three parts [2]. As early as 2008, Nature published a special issue on big data, describing

the potential value of big data and the challenges posed by Internet data processing technologies in biomedical and environmental sciences, cloud technology and other fields. In 2012, the European Society of Informatics and Mathematics studied big data, including the management of massive data, as well as the direction and results of academic research [3]. Information processing technology, such as mass data storage technology and intelligent analysis of video image, is closely related to big data. With the passage of time, massive data is not only a hot IT vocabulary, but also the focus of the researches.

3. Computer Information Processing Technology in the Age of Big Data

3.1 Definition of Computer Information Processing Technology

Computer information processing technology plays an extremely important role in modern office and enterprise management data. It combines data transmission, information analysis and processing technology to manage data information more conveniently and quickly. Computer information processing technology involves many fields. It takes computer technology as its core, and includes advanced science and technology such as sensing, microelectronics, communication engineering, network engineering, etc. At present, especially in the management of enterprise data processing and modern office, computer information processing technology has been fully utilized.

3.2 Basic Functions of Computer Information Processing Technology

Computer information processing is mainly divided into three functions: information acquisition, data storage and information security.

Information acquisition is the most basic function of computer for information processing. For information acquisition, it is necessary to ensure its accuracy. This is the basic requirement of information processing and transmission.

Data storage solves the problem of mass data storage and saves more time. After completing the storage of data, it achieves the purpose of easy access, and ensures the characteristics of large and fast computer storage of information. However, due to the limitation of the current computer hardware capabilities, its storage capacity cannot meet the growing needs of people, which needs continuous innovation. The structure of computer storage technology is shown in Figure 1 and the frame structure is shown in Figure 2.
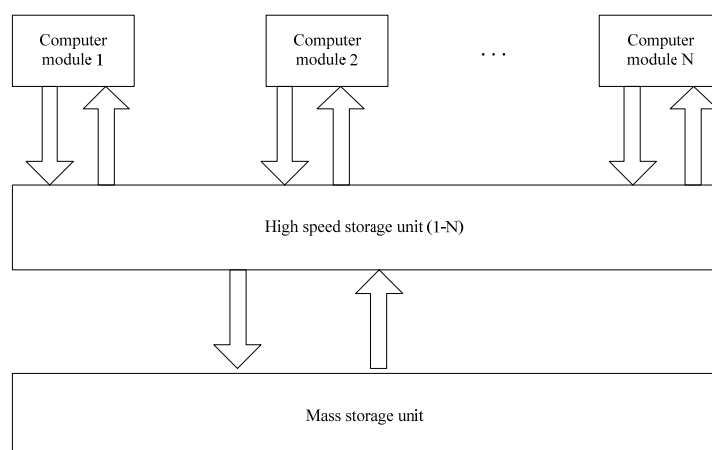
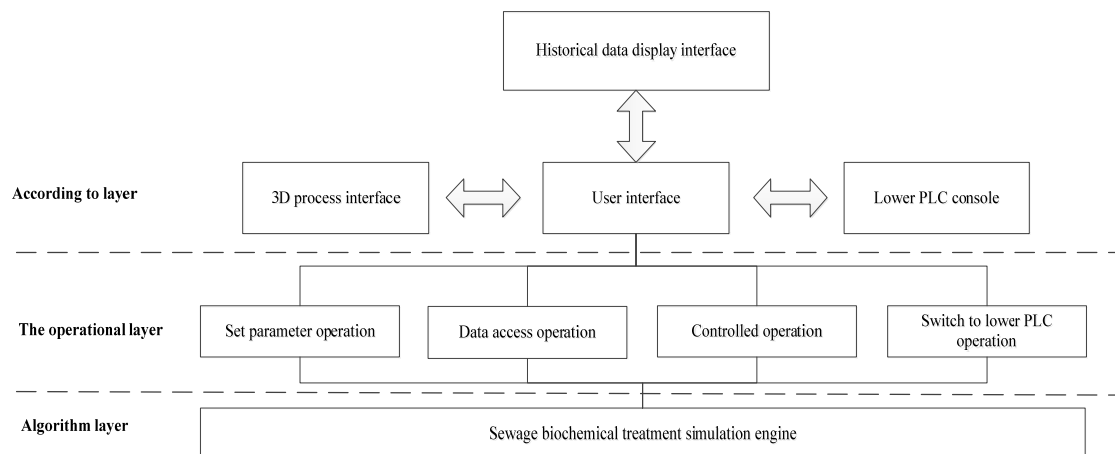Figure. 1 Structure diagram of computer storage technology

Figure. 2 The frame structure diagram

Information security is extremely important. In the process of computer information processing, it is supposed to pay attention to information security. It is also necessary to pay attention to the security of information while ensuring the validity of information acquisition. However, in the actual operation process, it is found that, due to the constraints of many factors, there are also many problems in the actual information processing process of computers, and the most important one is data security. The era of big data has provided many conveniences for people's lives, but its hidden information security problems have brought great information security risks to individuals and society. Therefore, in the specific information processing process, it is necessary to track and detect the information, make contributions to the maintenance of the network environment, and introduce more advanced big data information products, security technology products, etc. [4] to enhance the security of data information and ensure the validity and security of information in the transmission process. It also needs to timely process some potential threat information and make targeted investigation and research on it. At the same time, it is urgent to strengthen the training of professionals, constantly update technology and improve the system, so as to further improve the security of computer information processing in the era of big data.

4. Results and Discussion

4.1 Problems in Information Processing Technology in the Age of Big Data

In the era of big data, computer information processing technology has been highly helpful, but it also makes computer information processing technology face new challenges. Risks and opportunities often coexist. Specifically, in the development of big data, database security performance will be reduced, and information and data security will be threatened. The database contains a large amount of data and information, which will have higher requirements for information security, and will also have a certain impact on the development of computer technology. With the development and popularization of network communication technology, massive data can be disseminated through the network, and the speed and extensiveness of dissemination have been improved. Therefore, the security issues in information data transmission are also worthy of attention.

Therefore, it is necessary to strengthen the research on data storage and data transmission, and achieve related goals through firewall technology and data storage technology. For data storage problems, it is supposed to set a certain time limit for information storage, and after reaching this limit, eliminate the data in the database and reserve more capacity for the database. Of course, information and data security is also an important challenge for information processing technology in the era of big data. The network has the characteristics of openness and popularity. Therefore, users can acquire and transmit related data through the network, and related computer viruses, Trojans and phishing links emerge in endlessly. There are still some hackers making malicious attack, alteration on the network or stealing useful information and data, which sounds an alarm for information security protection. Computer technicians must take these problems seriously, formulate information

processing schemes according to relevant specific conditions, and set up security protection measures to ensure absolute security of information in network transmission.

4.2 Development of Computer Information Processing Technology in Big Data Era

In the era of big data, the development of computer information processing technology has shown a remarkable direction of development, especially the application of cloud computing technology, which has become an important part of the current development of new computer processing technology. Firstly, with the development of cloud computing technology, the development space of computer information processing technology has been expanded. Cloud computing can further improve the computer information acquisition, storage and other technical capabilities, so as to better meet the technical requirements of the era of big data. Secondly, integrated development has become an important feature of the current development of computer information technology. On the one hand, because computer information processing technology involves many disciplines, integrated development can ensure the innovation and development of technology to the greatest extent; on the other hand, computer network plays a leading role in computer information processing technology, and through the connection among networks, data information processing efficiency can be effectively improved. Thirdly, the development of computer information processing technology will move towards an open network direction. The future network data information will undergo tremendous changes, and gradually be separated from computer hardware, which greatly improves the storage and security construction of data information, and is also the characteristics of development of current computer information processing technology.

4.3 Inevitable Trend of Computer Network Development - Cloud Computing Network

At present, the development trend of big data is very rapid. Conventional computer software cannot meet the huge information processing requirements. There are a series of problems that need to be solved urgently in conventional computer data processing system. For example, the use of computer hardware cannot meet the needs of data processing, and it is far behind the pace of network development. At the same time, the traditional computer network technology has many drawbacks [5]. For instance, the computer hardware in the current static mode cannot adapt to the rapidly changing network in time, resulting in a lot of infrastructure redundancy similar to the data center. Therefore, it is necessary to improve the efficiency of cloud computing technology and achieve efficient use of cloud storage space. This requires continuous improvement of rules, scientific classification of data, and effective reduction of storage capacity. The establishment of cloud computing network is not only limited to the traditional network center, but also in line with the needs of government and enterprises for massive data information, providing reliable technical support for the development of the era of big data. Because computer software lacks flexibility and responsiveness, while network software just has these advantages, cloud computing is gradually changing to the Internet model [6]. That is to say, it presents the development trend of cloud computing network. Cloud computing network not only has complete server computing and data processing capabilities, but also has huge information storage capacity, which effectively avoids the problems of low efficiency of traditional computer information processing and slow feedback speed. Cloud computing network, with its huge advantages, will surely promote the computer information processing technology to be more efficient, fast and convenient, thus leading the new era of the development of computer information processing technology.

5. Conclusion

In summary, in the process of big data development, computer information processing technology is also constantly changing, at the same time facing many challenges. With the popularization of information technology, computer processing technology has become an indispensable technology in all walks of life. If the computer processing technology cannot meet the needs of development of society, it will become the bottleneck of the development of big data and delay the process of social

development. Therefore, computer researchers should formulate reasonable measures to effectively deal with the challenges brought by the impact of the Internet in the era of big data, control information processing, information security and other aspects, strengthen innovation, and ensure that computer information processing technology plays a valuable role.

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