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Research on the application of computer software technology in the era of big data

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Abstract: *By optimizing and innovating CST (computer software technology) in the era of BD(big data), BD can be realized as an effective support for the development of CST. Therefore, in the era of BD, the use of CST has a very important practical role. With the advent of the era of BD and cloud computing, CST can process data content in batches, define the application characteristics of data carriers in different application scenarios according to the demand relationship presented by data information ontology, and combine with the preset standards of the system to realize autonomous driving processing. In this case, it is undoubtedly necessary to comprehensively improve the application ability of CST and explore reasonable application methods. The article discusses this. Firstly, this paper summarizes the development status of BD and analyzes the expression of CST. Secondly, it expounds the types of CST in the era of BD; Finally, the application scenarios of CST in the era of BD are analyzed.*

Keywords: *Big data; Computer software; Application*

1. Introduction

With the development of the times, the word BD (big data) has gradually entered people's field of vision. BD is more and more closely related to our lives, and it has an increasing impact on us [1]. The virtual information can be materialized, and at the same time, different data information can be used to guide the system operation and improve the application efficiency of data information. The traditional computer software development technology can no longer meet the needs of the times and the new development trend, which is contrary to the goal of promoting the healthy development of market economy on the basis of scientific and technological innovation and development in China [2]. In this case, it is undoubtedly necessary to comprehensively improve the application ability of CST (computer software technology) and explore reasonable application methods. The article discusses this.

2. Overview of BD development

In recent years, with the rapid development of China's social economy, the rise of CST has promoted the transformation of industrial structure and industrial upgrading in all walks of life in China to a certain extent, effectively promoting China's social construction [3-4]. BD technology is a relatively huge concept, which can be subdivided into multiple core management functions. The realization of these functions cannot be separated from various professional software tools and corresponding programming techniques. By optimizing and innovating CST in the era of BD, BD can be realized as an effective support for the development of CST. Therefore, in the era of BD, the use of CST has a very important practical role.

In the BD processing environment, CST has been able to achieve a variety of data and information operations such as data collection, data analysis and data protection. No matter in the process of work or study, people will use the auxiliary functions of computer hardware, and with the increasing pressure, the data in the database is also increasing, which shows that the supply of data is far below the demand, so it is necessary to develop and innovate the existing technology.

At present, China's BD industry has entered a stage of high-quality development, and the demand for BD software and BD services has been increasing [5]. The proportion of BD hardware has declined, but it still dominates. In China's BD market structure in 2021, the market share of BD hardware, BD software and BD services is 41%, 26% and 34% respectively (Figure 1). In recent years, the proportion

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of BD hardware is gradually declining, and the proportion of BD software and BD services is gradually increasing. In the future, China's BD software and service market will show a better development trend than the hardware market.

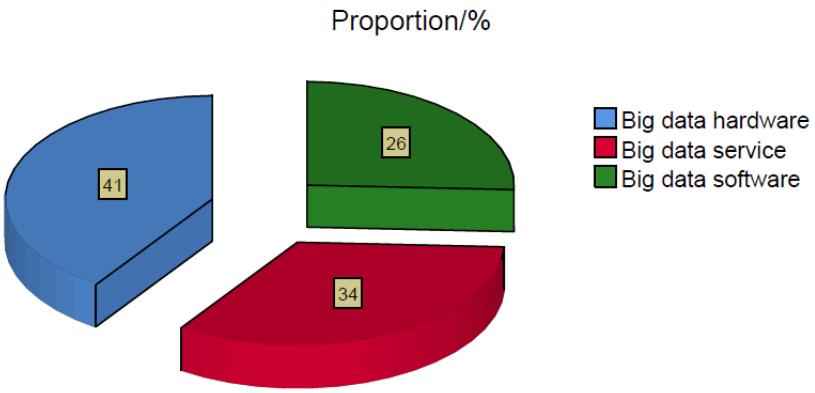

Figure 1: China's BD market structure in 2021

The application and realization of CST can build a supportable data processing system according to the system operation index, for example, the computer system can be regulated by data information, so as to ensure independent feedback on the implementation of related software tasks in different application modes [6-7]. With the advent of the era of BD and cloud computing, CST can process data content in batches, define the application characteristics of data carriers in different application scenarios according to the demand relationship presented by data information ontology, and combine with the preset standards of the system to realize autonomous driving processing.

3. CST types

3.1. Cloud storage technology

Computer software based on cloud storage technology is mainly aimed at simplifying and analyzing the data information in the process of enterprise development and operation, and building a software-driven system integrating protection and storage functions through data-driven mode. Cloud storage technology is shown in Figure 2.

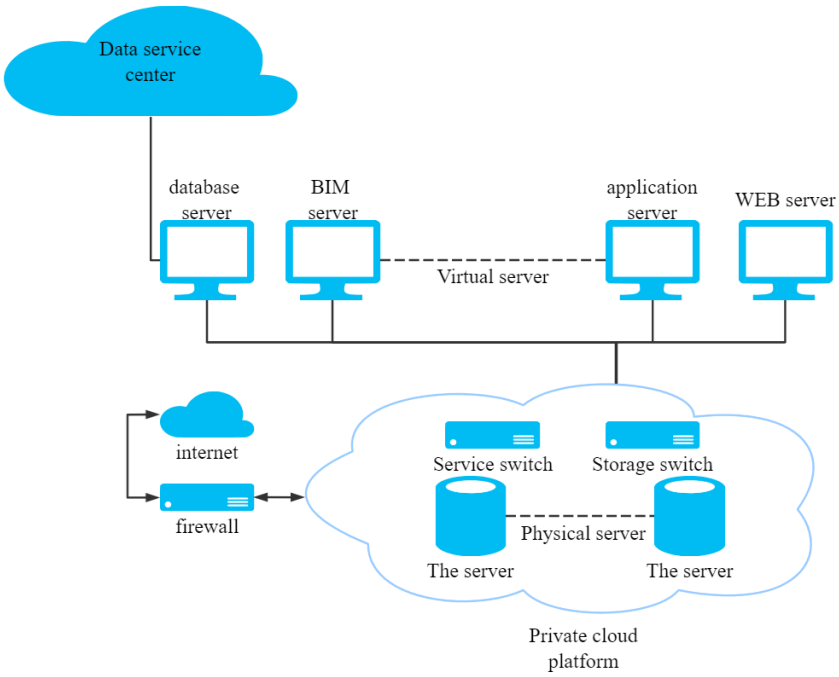

Figure 2: Cloud storage technology architecture

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From a physical point of view, the focus of computer software development is how to better develop high-quality and high-performance software. Cloud storage technology is mainly composed of connection layer and access layer, which not only ensures the stability of the system itself, but also shares the information storage load to a certain extent, and prolongs the basic service life of the system to the greatest extent.

The development of BD technology has further increased the quantity and types of information data. In this case, the demand for storage has naturally increased greatly [8]. In the process of storage, we should not only strengthen the quantity of storage, but also improve the necessary classification management and efficient transmission requirements, which naturally puts forward higher requirements for cloud storage technology. Ensure data security and save storage space, so that users can connect to available networks at different times and in different locations, and extract information and data through computers. In addition, cloud storage technology has high security and can ensure information security.

3.2. Virtualization technology

In recent years, virtualization technology has been widely concerned by the society. Through this technology, we can effectively use resource management and make our applications more practical. At present, this technology is widely used in the computer field of our country and in all fields of people's production and life, and is loved by the majority of users, which provides convenient conditions for enterprises and people, reduces the cost of enterprises and promotes the rational distribution of manpower and material resources. But for users, they need to have certain professional knowledge. Virtual data can also be used to realize operations that are difficult to carry out in reality, and it has a more intuitive data representation for related experiments, which is convenient for statistical updating of technical loopholes.

3.3. Information security technology

In the era of BD, network security has become a key issue for the healthy and long-term development of major enterprises. Both personal privacy and business information need to be well preserved under safe and reliable network security technology. After all, BD technology serves people and society. All kinds of massive data should not only be satisfied with the calculation, storage and query of software tools, but more importantly, these BD should be displayed with the help of front-end pages to form a data visualization management model. Intelligent firewall can integrate the existing network risk data with machine learning technology, and analyze the program logic of the feature segments by using cloud computing power on the basis of extracting the feature segments, so as to optimize the firewall protection mechanism and comprehensively improve the active protection capability of the firewall.

4. Application of CST in the era of BD

4.1. Application in communication technology industry

At present, China's CST has also been widely used in the field of communication. Its application in the field of communication can effectively analyze the information of some communication customers and carry out relatively personalized services, thus effectively increasing the benefits of communication enterprises. In the past economic environment, enterprises faced great resistance to commercial operation, but in the era of BD, enterprises can improve the efficiency of commercial operation by using computer technology, thus laying a solid foundation for improving the economic benefits of enterprises [9].

Technicians can also use iterative features and algorithm models to improve the accuracy of this link and ensure the number of users. In order to further improve the user's stickiness, it is necessary for short-term users to make statistics on their purchasing behavior and services, and regularly push some marketing-related content to effectively save the lost users.

4.2. Application in enterprise manufacturing production

CST, in the process of enterprise management in China, has received unanimous praise, which can

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not only help enterprises improve the collection of information and data, but also create favorable conditions for enterprises to expand their business, thus achieving higher economic benefits for enterprises. Applying computer network technology to the financial aspects of enterprises can effectively realize the unified management of financial work. With the development of society, the scale of enterprises is constantly growing, and the management system is gradually becoming more and more perfect, so realizing the information sharing of enterprises is conducive to improving the work efficiency of enterprises and facilitating effective communication between employees.

According to the development needs of enterprises, combining with the application of CST and actively integrating into the daily operation of enterprises can effectively simplify the workflow of enterprises, realize the electronic storage and backup of information materials, and greatly increase the efficiency of information screening, extraction and application. CST can provide more systematic management software for individuals and enterprises, so that users can flexibly choose corresponding CST based on their own needs. For example, ERP software can be used to strengthen the management of production resources, and OA software can be used to strengthen the management of employees. In addition, the application of CST can also maximize the allocation of resources, increase the economic benefits of enterprises, and promote the pace of social development [10].

4.3. Application in commercial operation

In the context of BD, the demand for software and hardware equipment is increasing. While the demand is increasing, the R&D technology of software and hardware interacts with each other, which makes many people interested in the R&D technology of computer software and hardware. The network environment needs to be changed and rectified, so that the security of the network environment can be improved and the data and information can be safely transported to the end users. In the process of microcomputer development, an advanced layered technology is adopted appropriately, which can effectively improve the efficiency of computer use and expand its application fields. Due to the adoption of hierarchical design technology, the status of hierarchical design technology in computer software has been further improved, and it also provides convenience for people's work and life.

From the technology-driven point of view, in the process of transmission machine transfer, data information logically processes basic data points through application programs defined by the system. Build a network information sharing platform through mobile phones and intelligent terminal devices, build data scenes and share them in real time. To achieve the guidance work for daily management, at the same time, take the data as the target and object of basic data analysis, comprehensively discuss the situation of enterprise personnel flow and operational risk conditions, improve the overall development process of internal data of the system, and ensure the basic effect of information data monitoring management structure.

Through the application of CST, we can effectively sort out and collect massive information, and provide targeted services for decision makers to meet objective needs by collecting and summarizing these information. When developing technology, enterprises will use cloud computing software to sort out and analyze the existing customer information, and assist enterprises to budget and analyze the information of customer needs and potential customers, so that enterprises can set the products needed by users according to their actual needs and improve economic benefits. At the same time, before designing products, enterprises analyze market information through CST, and create rational and targeted product design schemes according to market positioning and customer needs; In the production and sales stage of enterprises, CST can also be used to accurately analyze the product sales, estimate the approximate income according to the sales situation, and provide data to support the formulation of sales plans.

5. Conclusions

In recent years, with the rapid development of China's social economy, the rise of CST has promoted the transformation and upgrading of industrial structure in all walks of life in China to a certain extent, effectively promoting China's social construction. The virtual information can be materialized, and at the same time, different data information can be used to guide the system operation and improve the application efficiency of data information. In the BD processing environment, CST has been able to achieve a variety of data and information operations such as data collection, data analysis and data protection. While constantly developing software technology, we focus on computer

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technology innovation and explore the timeliness of software technology in view of the current social situation and its characteristics. CST determines the future direction of national economic and technological development.

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