Research on Computer Network System Integration Environment

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Abstract: In the era of information society, computer network system integration technology has developed rapidly, has a very wide range of applications, and plays an important role in different fields. With the deepening development of the Internet, the national economy has achieved comprehensive development based on computer network systems. With the globalization of the internet, computer technology has been widely applied in various fields. The popularization and promotion of network technology marks that we have entered the era of informatization. Computers not only promote the production and convenience of people's lives, but also enable many enterprises to further develop. Computer network system integration technology is an advanced scientific and technological development based on the Internet and computer technology. By integrating computer network systems, effective integration of computer hardware devices and transmission media can be achieved, thereby providing great convenience for people's production and life in today's society. Integration technology, as one of the key technologies in computer network systems, has achieved the organic integration of computer hardware and software, meeting the needs of current social development. This article starts with the analysis of integration technology in computer networks and discusses the application of integration technology in computer network systems.

1. Introduction

Science and technology are productivity. With the continuous development of computing technology, network technology has become an indispensable component of people's production and life. Nowadays, computer network system integration technology has a wide range of applications, promoting social production efficiency, and to a certain extent, helping to promote China's economic construction. The computer network technology used in various fields is achieved through integration technology [1]. With the development of the times, traditional integration models are no longer able to meet the needs of the times, which puts forward higher requirements for computer network system integration technology and is also a severe test of network system integration technology. In the application process of integration technology in computer network systems, people need to master system integration methods and fully utilize the role of integration technology.

With the development of computer network technology, computer network system integration technology has also begun to be widely applied in various industries and has shown its significant advantages. This technology can use the Internet as a carrier for storing information and provide guarantees for different system functions through network platforms and network security platforms. Since the promotion of the concept of "Internet plus", the Internet, as a high-tech industry, has once again been developed in depth, which has led to a major change in the way people live and businesses operate [2]. In addition, with the increasing coverage of computers and fiber optic networks, people are more accustomed to using computers for shopping and socializing. And nowadays, internet technology is also being frequently applied in government departments, state-owned enterprises, and private enterprises. The efficiency of computer-based enterprises and governments has been significantly improved, and its importance has become increasingly prominent. Currently, computer network system integration technology has been widely applied in the operation and management process of large enterprises. The application of the Internet of Things, user database analysis, OA systems, CRM systems, etc. in enterprises are all manifestations

of the application of computer network integration technology [3]. Large enterprises such as Alibaba and Haier Group have utilized computer network system integration technology to improve communication efficiency between departments. Procter&Gamble has simplified the workflow and realized integrated management through the informatization process management of daily work [4].

Due to the bottleneck in the development stage of integration technology, if we want to delve deeper into the research of integrated science and technology, we need to understand the characteristics of different development stages of integrated science and technology. However, integrated information technology is very complex, and researchers must master each method before applying it to different fields based on the characteristics of different stages, in order to increase the economic benefits of enterprises [5]. Currently, computer network system integration technology is widely used in various industries in China. As a system integration technology, it has different system integration methods and technical manifestations. In the application of integration technology in computer network systems, people need to master the system integration methods and fully utilize the role of integration technology.

2. Analysis of Application Forms of Computer Network System Integration Technology

2.1. Data Integration and Method Integration

Data integration is the basic form of computer network system technology application and also the intuitive embodiment of integration technology, including two forms: data conversion and data aggregation. Data conversion refers to the effective integration of data resources between different subsystems through the use of a certain conversion tool to convert data information from different information systems. Digital information resource conversion is the foundation of information resource integration. When processing data, data transformation refers to the use of relevant transformation tools to transmit the information that needs to be exchanged and transformed. Of course, this information belongs to data in different information systems, so that the data of each subsystem can be integrated and processed [6]. When in a virtual global data mode, there will be data sources that are different from local ones, and data aggregation is the integration and processing of these data sources. The main purpose of data aggregation is to accelerate the improvement of data management content and achieve the ultimate integration of data.

The focus of method integration is on software that primarily focuses on business logic, and then proposes some shared methods to achieve the goal of integration and sharing through the use of method integration. Compared to other integration methods, the main advantage of method integration lies in significantly improving integration efficiency. Due to this advantage, it is widely used in school student management systems and can efficiently manage student related information.

2.2. API Integration and Distributed Integration

The main purpose of API integration is to integrate the single structures of different customers, and then integrate numerous single structures to achieve the goal of data integration. It is an effective method with its own unique functions and is widely used in library management systems. It can effectively transmit and share various data of the library, and its application is very convenient, In the management system, various information data of the library can be effectively transmitted. In practical work, most library management systems use API integration, which can directly obtain various information needed, improve the efficiency of system data transmission, reduce the complex procedures for information transmission between departments, facilitate resource sharing, save manpower and material resources, reduce capital investment, improve work efficiency, and promote the improvement of management level [7]. Compared to other integration technologies, the main advantage of API integration technology lies in data integration, which enables access to system data and abstract transformation of data. API integration technology can improve the standardization and standardization of data transmission when collecting data, allowing it to be carried out in a programmatic manner, thereby facilitating the improvement of data integration effectiveness.

Distributed integration is developed through optimization and improvement on the basis of a single integration technology. Distributed integration effectively solves the problem of diversified data information in a single integration, reduces system development time, has broad equipment requirements, reduces research and development investment, and promotes the development of computer network integration technology [8]. Summarize and integrate the above content, as shown in Figure 1.
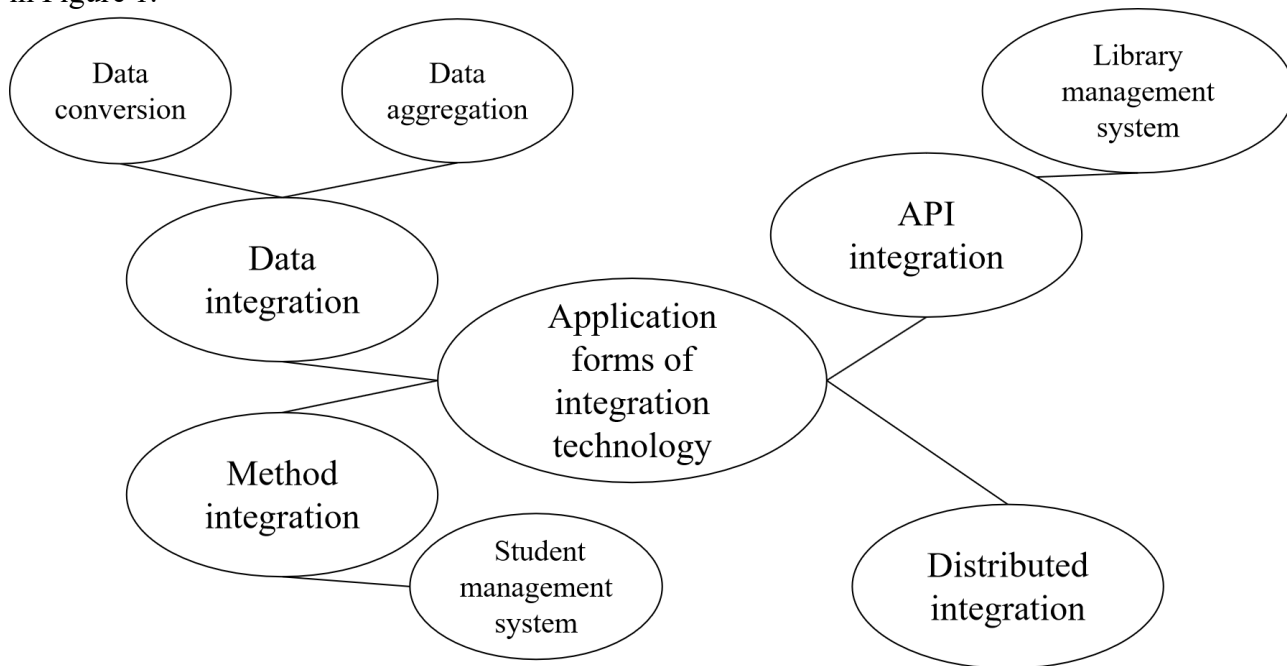

Figure 1 Application analysis of integration technology

3. Application of Computer Network System Integration Technology

3.1. Application of Integration Technology in High-Risk Industries

The integration technology of computer network systems is widely used and has good application effects in many fields, which can effectively integrate data information and improve work efficiency. However, in different fields, due to significant differences in production nature, the application effectiveness of computer network system integration technology may also vary.

Integration technology is of great significance in high-risk industries, as in the era of big data, data collection and organization can improve industry development and comprehensive competitiveness. For high-risk industries, data collection and organization should be given sufficient attention to prevent data leakage and other hazards [9]. And it is also necessary to ensure the security of information transmission and sharing, in order to strengthen the utilization of data by enterprises. When the security of the network environment can be ensured, the use of integration technology will have a greater effect, which can help the industry improve work efficiency and secure development. In addition, using computer network system integration technology in high-risk industries can collect, quickly process, and analyze important information data, identify potential problems in enterprises, and promptly address them, enabling enterprises to operate more safely.

The coal chemical industry, as China's energy industry, is crucial for China's economic development. The application of integration technology in the coal chemical industry involves establishing a stable and efficient internet information platform, strengthening enterprise internet information security, establishing a mechanism to prevent network viruses, enhancing the security performance of integration technology, and enhancing the application of integration technology in coal chemical enterprises, thereby ensuring the healthy development of the coal chemical industry. In the information age, in order to achieve rapid development of the industry, controlling the security performance of information sharing and transmission in the industry is the foundation for

ensuring the development of the coal chemical industry.

3.2. The Application of Integration Technology in the Engineering Industry

The competitiveness in the engineering industry is strong. To improve the overall development of the engineering industry, the application of computer network system integration technology will play an important role. In the early stages, engineering construction faces many details, and the use of integration technology can improve work efficiency. For example, when there are problems with the design drawings, by using integration technology, the design drawings can be converted into electronic form. According to the construction situation, computer technology can be used to adjust the details of the drawings, such as the ability to modify the wiring direction and position of the drawings.

The construction process, as an important part of engineering construction, directly determines the quality and safety performance of the project. During the construction process, monitoring the quality of the project is very important. By using computer network system integration technology, monitoring the quality and progress of the project can be achieved, thereby reducing the frequency of problems occurring during the construction process [10]. Engineering supervision personnel use system integration information technology to conduct corresponding data analysis on the actual building conditions, select effective construction procedures, and then summarize and analyze them. This work mode can better ensure that the system collects a large amount of data information. After comparison, the data can prompt engineering leaders to make reasonable decisions in a timely manner, thereby improving the accuracy of construction methods and the quality of engineering construction. During the completion of the project, quality inspection and other work are required, and there will also be many important information data. During this period, the use of integration technology can assist workers in completing the completion phase.

By utilizing integration technology, it is possible to ensure the collection and accuracy of important information data throughout the entire process of engineering construction, organize various data, and detect the quality of the project to determine whether there are quality issues. When problems are found, timely correction is needed to reduce the incidence of safety accidents, as shown in Figure 2.
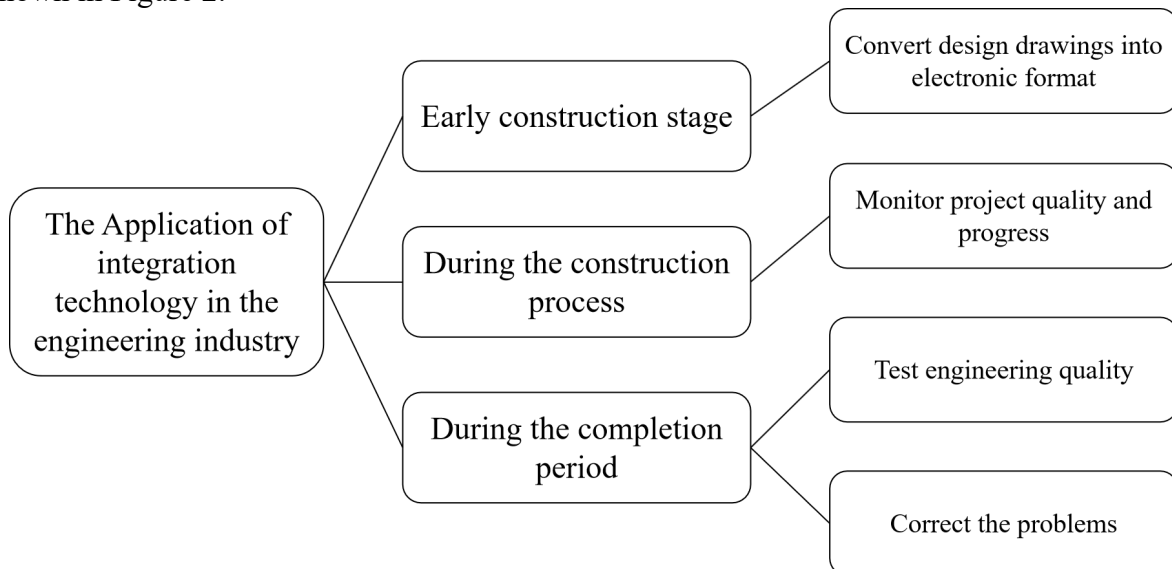
Figure 2 Application of integration technology in the engineering industry

4. Conclusions

The application of computer network integration technology is a necessity for economic reform and an inevitable choice to adapt to the development of the times. Computer network integration technology mainly focuses on information technology and integrates with various technologies to quickly achieve the integration of computer network systems. Computer network system integration

technology plays a very important role in the development process of today's society, which can improve the work efficiency of enterprises, make more scientific and reasonable decisions for enterprises, and enhance their comprehensive competitiveness. At present, in the application process of computer network integration technology, people need to master the methods and applications of computer network system integration technology in order to play the role of this technology in computer management and maintenance work, improve work efficiency, and further promote the rapid development of integration technology. With the development of information technology in China, computer network system integration technology will further develop and continuously improve to meet the various needs of users. The application of computer network integration technology can not only save costs and improve efficiency, but also promote a virtuous cycle of enterprises, enhance their competitive strength, and bring many conveniences to modern economic development. The development of computer network system integration technology is a long and arduous task, and continuous reform and innovation are needed to unleash greater application value.

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