

# Research on the Application of Computer Network Technology in Electronic Information Engineering

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**Abstract:** Computer network technology has a very important role in electronic information engineering. The application of this technology not only enriches the traditional information engineering functions, but also effectively guarantees the efficiency and quality. At present, due to the wide variety of external information that Chinese citizens are exposed to, in addition to the variegated and mixed content, it is easy for information to be leaked or stolen. In order to avoid similar situations, it is necessary for people to pay more attention to network system security, so as to ensure that the quality of life of citizens can be guaranteed. In view of that, this paper discusses and analyzes the application of computer network technology in electronic information engineering.

**Keywords:** Computer network technology; Electronic information engineering; Application and management

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## 1. Overview of computer network technology and electronic information engineering

### 1.1. Computer network technology

Up to now, topological structure is the main content in China's computer network. Compared with other structural types, this kind of structure is externally described and expressed through the combination of communication lines and nodes, so as to complete the subsequent network application work. In terms of structural forms, needles, and wires that can be used to substantiate network structural relations to a certain extent, there are generally five types: star structure, ring structure, tree structure, network structure, and bus structure<sup>[1]</sup>. Among them, star structure is more widely used, and the market prospect is relatively optimistic. It uses centralized communication control to carry out management work. Computers in any area must be connected to the central system through the application of a star coupler to complete the corresponding connection work. Compared with other techniques, the star structure can effectively reduce failures. Even if a stage fault occurs, other first-level computer devices will not be adversely affected in view of the parallel connection. Meanwhile, the fault can be detected and addressed right away, thus laying a solid technical foundation for follow-up work<sup>[2]</sup>.

### 1.2. Electronic information engineering

From a macro point of view, the application scope of electronic information engineering is relatively broad, and the content is extremely complex, including a great deal of system management content, such as data collection work, information high-speed processing work, and electronic information system application, among other things. Since electronic information engineering itself is relatively complex in the application of disciplines, closely related with other disciplines, and more stringent in terms of professional

requirements, the application of electronic information engineering will be influenced by external factors if a personnel's comprehensive quality cannot be effectively guaranteed, resulting in insecurity of a project's quality <sup>[3]</sup>. In order to prevent this situation, relevant enterprises need to effectively combine it with computer network technology in the application process of electronic information engineering, in order to ensure that the development of electronic information industry is not affected and secure the development of processing, so as to lay a solid foundation for China's information construction.

## **2. Characteristics of electronic information engineering**

### **2.1. High convenience**

In the running state, electronic information engineering involves information processing, and the whole process is closely related to the computer system and hardware equipment. Affected by the lag in the system, it is difficult to carry out effective means of processing massive information with traditional information technology, thus follow-up work cannot be carried out smoothly. In order to avoid similar situations, it is necessary to select more advanced electronic information engineering technology and use cloud technology to carry out mass processing of information. In this way, not only the efficiency of information processing can be effectively improved, but also the reliability can be guaranteed <sup>[4]</sup>. Compared with information processing methods used before, advanced electronic information engineering technology has greater advantage in terms of efficiency, and its processing speed can also reach the expected standard, which not only promotes the change in traditional information processing methods that have various restrictions, but also meets the needs of China's social development. Nowadays, enterprises in China are actively opting for advanced and effective electronic information engineering in the application process, which not only effectively improves the application efficiency of information processing technology, but also lays a good theoretical foundation for China's social development. Information processing can be completed via the operation of software on the computer system <sup>[5]</sup>.

### **2.2. Extensive coverage**

At present, with the continuous development of the society, people are more dependent on information. Under this background, it is difficult for traditional information technology to be effectively developed, which will not only result in the inability of information content to be effectively processed, but also affect business and personal applications. In contrast, advanced electronic information engineering breaks the limitation of existing space and expands the functional performance range of technology, which will not only effectively improve the efficiency of information processing, but also guarantee the quality of application. From the perspective of coverage, all industries in China will be affected by electronic information engineering, which covers a wide range and is also an indispensable and important part of China's modernization construction. In the context of the new era, the emergence of 5G technology has laid a good foundation for the development of China's information technology and created a relatively complete living and working environment for the people, whether individuals or subjects, who are becoming increasingly reliant on the application of information resources. Under this trend, handling information resources at a high level has become an important guarantee for determining the quality of social development. In other words, the role of electronic information engineering in China's social development will become increasingly important. For enterprises, if they choose not to apply electronic information engineering or continue to uphold traditional information management methods, not only their market competitiveness will suffer, but so will their economic development and sustainable development strategy needs <sup>[6-8]</sup>.

### **3. Specific application of computer network technology in electronic information engineering**

#### **3.1. Information transmission**

Information transmission can be said to be the reflection of human civilization. With the continuous development of the era, varying degrees of change can occur in the process of information transmission, especially under the influence of information technology, followed by the people themselves or the development of life, with living conditions beginning to present trends of diversification. In the process of acquiring information, people can choose different kinds of channels. If the analysis is carried out from the perspective of the carrier, whether it is learning, life, or even in the field of social production, all information will involve the existence of the carrier. The processing ability of traditional information technology is relatively poor, which easily causes problems to varying degrees in the process of information transmission. In order to avoid similar situations, relevant enterprises must choose computer networks and technologies, as well as use the characteristics of the times and technological advancement to improve information processing efficiency, and at the same time, to ensure that the quality of information transmission will not be affected by external factors <sup>[9]</sup>.

In the 21st century, the manufacturing industry will face a more challenging issue. A large amount of information data will be generated in the production and operation state. These data themselves are repetitive, complex, and unstable. In the process, the frequency of interaction is relatively high. If WAN is used for operation, it will not only lead to a substantial increase in expenditure and an ineffective guarantee of economic development, but also a certain impact on China's informatization construction. Through the application of computer network technology and effective control of the local area network, the negative effects of external factors can be reduced, and the quality of information transmission can be effectively guaranteed <sup>[10-12]</sup>.

If the enterprise itself has a relatively large-scale operation, it will involve the subordinate processing of relevant branch structure. In order to ensure that the quality of internal information transmission meets relevant standards, it is natural to manage data and information based on the actual situation, so as to ensure that important files can be transferred in real time. In this process, enterprises need to lay out the lines according to the location, so as to ensure that the information can be smoothly transmitted to the branches without being limited by time and space, which will not only effectively improve production efficiency, but also bring a positive effect in promoting enterprise and social development <sup>[13-15]</sup>.

#### **3.2. Electronic communication engineering**

Through the application of computer network technology, the transmission quality of electronic information data can be improved. As an important part of electronic communication engineering, the existence of this technology has high practical significance. With the continuous development of the times, information technology has become the mainstream trend, and it is closely related to the quality of life and work content of the people. Under this background, the living conditions of the people have also undergone fundamental changes. As an indispensable part of information engineering, electronic engineering has an important role for social construction and development in China, and computer network technology can simplify the working mode of information processing, the information transmission process of fault frequency, and the efficiency of optimizing management, which will not only effectively improve the security and stability of the operation, but also lay a solid technical foundation for China's informatization construction <sup>[16-19]</sup>.

Today, the communication between people has changed. Due to the influence of electronic communication engineering, there is no need to face the obstacles of space and time. Video and voice calls can be carried out by using mobile information terminals. Milestone performance is the basis for the development of the industry. Communication engineering has a very close relationship with China's social development. For this reason, enterprises should cooperate with various departments to optimize

communication projects, emphasizing the application and analysis of current technology, which will not only meet the needs of national life, but also bring a positive impact on the development and construction of human civilization [20].

### **3.3. Realize resource exchange and sharing of electronic information system**

Through the application of computer network technology, the interoperability of relevant electronic engineering information resources will also improve, and relevant standards will be met in terms of sharing capabilities. In this context, staff can use network protocols to carry out compilation operations, which will not only improve the efficiency of information processing as well as strengthen the quality and security of transmission, but also prevent national information leakage, which will adversely affect their own interests. Not only that, with network protocol, it is possible to strengthen the analysis of the network structure, clarify the corresponding content of different interfaces, and carry out layered architecture work in line with the actual situation, so as to meet the operational needs of the information database. It can be seen that the application of computer network technology can effectively improve the operation quality of data and information resources, realize interoperability and sharing, as well as promote the quality of life of citizens and social development.

### **4. Conclusion**

In conclusion, computer network technology is a product of the information era, a necessary part of the development of human society, and plays an extremely important role in social construction. The application of computer network technology in electronic information engineering can improve the security, diversity, and systematicness of a project, which will not only realize the stable application of the system, but also guarantee the economic development at the social level. However, from the current point of view, there are still several issues in the application of computer network technology in China, making it a challenge to guaranteeing the quality of information processing and affecting the management of information technology projects to a certain extent. Hence, it is necessary for enterprises and personnel in China to carry out more in-depth innovation and research in this field.

### **Disclosure statement**

The author declares no conflict of interest.

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