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An Effective Application of Transmission Technology in Information and Communication Engineering

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Abstract: The rapid development of network information has made the communication industry achieve great progress. With the functional structure and engineering specifications being gradually expanded, transmission technology has gained certain developments. In this paper, the author analyzes the advantages of transmission technology, based on elaborating the concept of information and communication engineering, and then discusses the application of transmission technology.

Key words: Information and communication; Transmission technology; Application
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1 Introduction

With the rapid development of social economy and the continuous improvement of people's living standard, the network of information technology gradually plays an important role in exchange and cooperation between humans. Although the future of the wireless transmission technology is very bright for development, the cable transmission technology still occupies the dominant position in communication engineering. The fundamental reason is that the cable transmission technology can provide people with more efficient and convenient transmission services with its long-term stable network signals, and faster information dissemination, compared with the wireless transmission technology. It can be seen that it is very necessary to enhance the research and exploration on the cable transmission technology in information and communication engineering.

2 Overview of Information and Communication Technology

Computer communication technology is mainly used in two fields: one is computer information transmission and the other is multimedia data transmission. Cable or wireless network carriers can help overlay connect the computer terminals to form a network-based transmission structure, to promote continuous expansion of information transmission. Multimedia communication uses computer as its control center, applying with a variety of information transmission means to achieve information transmission and applications in multimedia devices. Computer communication technology will help break the limitation of the original information transmission and help harmonize the communication data, so as to lay a good foundation for information services in the field. The advantages of this technology can be fully reflected in distance education and multimedia teaching. Users can achieve efficient and convenient information sharing by integrating communication technology with computer technology, to improve the application value of information. In this communication system, information is more flexible, and especially in short-distance information transmission, each device port can be effectively connected by the cable to achieve a more stable transmission environment. In long-distance information transmission, users need to set up a multimedia in the system to build a long-distance information transmission network. In the information society, information technology has become the driving force behind the

diversified development of social economy and culture, which has shown its power. Relevant data show that the application of information technology has played a significant role in promoting the country's economic development. This trend is characterized by globalization. So far, the information economy has become a major mode of social development.

3 Characteristics of Transmission Technology Application

3.1 Multifunction of the Products

With the development of information and communication engineering, it is a necessity to achieve multifunctional transmission products, since the combination of various businesses may need many functions for transmission equipment. Multifunctional transmission products can help improve the utilization efficiency of the transmission equipment. In addition, the development and utilization of multifunctional transmission products can reduce energy consumption and adapt to market needs for development, bringing considerable social benefits. Nowadays, the development of information and communication engineering requires multifunctional transmission equipment to connect different kinds of businesses, to improve the utilization efficiency of transmission equipment. Developing multifunctional transmission products and making full use of them not only enhance the development of the market and meet people's needs, but also reduce energy consumption and increase social benefits.

3.2 Small-scale Development of the Products

Transmission products in the market are generally characterized by small size, portability, easy installation and mobility with the development of science and technology. Some products such as optical fiber receivers are even smaller than human hands. The miniaturization of the products' volume enables the development of optical transmission equipment with low speed and helps realize single-board equipment, as well as reduces the transmission and production costs, so as to effectively improve the cost performance of the products. Miniaturization and high-performance of the transmission products have become the overall trend of the market in the future.

3.3 Development and application of the all-in-one machine

Today, the development and application of the all-in-one machine is an important feature of the application of the transmission equipment in information and communication engineering. All-in-one transmission equipment can monitor and manage multiple devices in one system by integrating various equal-speed single-board machines. What's more, the all-in-one machine can not only combine different kinds of devices, but also optimize the configuration of the devices by its system, so as to improve the overall utilization of the equipment package. In addition, the backup system of the all-in-one transmission equipment can control the switching and running of programs and effectively combines with information changes.

4 Practical Application of Transmission Technology in Communication Engineering

4.1 Applications of Transmission Technology in Short-distance Transmission Network

Transmission technology is mainly applied in the central pipe cables of the counties and cities in the short-distance transmission network. The limited capacity of the LAN is a notable feature of the transmission technology applied in the short-distance transmission network, which leads to some defects in the transmission and upgrade of transmission devices in the actual application, and makes difficulties for the backup, maintenance, management, and upgrade of the transmission devices. Therefore, stability and high level should be focused when applying transmission technology in short-distance transmission network.

4.2 Applications of Transmission Technology in

Long-distance Transmission Network

Transmission technology has a very wide range of applications in the long-distance transmission network, which needs high-level transmission technology. In the continuous construction and development of information and communication engineering, the efficiency and quality of information transmitted by the wireless transmission network should be improved to solve various security problems caused by the application of transmission technology in long-distance transmission network. The combination of transmission technology and ultra-wideband technology can enable a safe and convenient long-distance transmission network.

4.3 Applications of Transmission Technology in Local Backbone Transmission Network

Advantages and problems coexist in the application of transmission technology in the local backbone transmission network. The backbone transmission network is more concentrated in the relatively developed urban area. Compared with long-distance trunk lines, the backbone transmission network has a higher cost performance and great advantages in its maintenance and upgrade. However, there are also problems when applying transmission technology in the local backbone transmission network with the main one being the low utilization rate of optical fiber resources. Although problems exist, technologies are constantly updated. In order to make full use of fiber optic technology, a number of powerful ASON network are built in the SDH network.

5 Conclusion

Although some emerging technical difficulties have not been compromised yet, with the development of the times and the advancement of science and technology, many practical problems of transmission technology have been overcome based on the existing research results. The future transmission technology can be briefly expected by the grasped knowledge and existing development. The application of communication engineering will be expanded in many aspects in the future, and transmission technology as its key technology will bring greater impetus to social development.

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