Application Research of Transmission Technology in Information Communication Engineering

Meng Jiang
ShanDong Modern University, 250000

Abstract: In the planning, design and concrete construction of information communication engineering, transmission technology has an irreplaceable role in the transmission system because it has very important influence and effect. The overall application effect of the transmission technology will directly affect the basic situation of the entire information communication project during construction and utilization. Therefore, this paper analyzes the specific application of transmission technology in information communication engineering, and lays a good foundation for improving the efficiency of information communication engineering.

1. Introduction
When the information communication system is constructed, the transmission system has a very important influence and role in it, and it is also an indispensable important link. The main form of transmission system is the application of transmission technology in communication engineering projects. Through the effective combination of the two, not only can the transmission efficiency of the communication engineering system in the normal use process be effectively improved, but also the reliability, security and stability of the entire transmission process can be ensured. In the actual application process, the transmission technology usually directly uses various different types of technical means to realize the transformation and upgrade of the local technology of different channels, and at the same time, the reconstruction of the overall structure of the technology can be realized in practice. When the technology is applied, the most basic goal is to make the communication system itself effective and timely in transmitting data. With the continuous advancement and rapid development of science and technology, more and more new technologies are widely used in the construction of information communication engineering. For example, 5G technology is more popular at this stage.

2. Analysis of the application status of transmission technology in communication engineering
With the continuous advancement and rapid development of science and technology, more and more new technologies are widely used in many fields, especially when designing, planning and constructing information communication engineering, many new technical means are needed in it. A certain amount of assistance, is in order to get the desired effect. In the process of communication engineering construction and specific application, transmission technology has a very important influence and effect, and this technology can be regarded as the foundation in engineering projects. When the transmission technology is applied, its main purpose is to realize the analysis of the main communication technologies of the current information communication engineering. At present, there are many technologies in the research, basically focusing on the division of technology categories, and many technologies are lacking. Practicality, the overall application effect is not very
On this basis, it is necessary to realize the importance of transmission technology in the construction and application of information communication engineering, as shown in Figure 1.

![Figure 1](image-url)  
**Figure 1 Schematic diagram of the application of transmission technology in communication engineering**

First of all, in the practical application process of optical fiber transmission technology, the technology mainly uses light waves as the main carrier form. Based on the relevant data statistics and survey results, it is found that the entire range of wavelengths is the near-infrared region, and the wavelength is usually controlled within the range of 0.8 μm to 1.8 μm. In the transmission process, if the fiber is directly used as the main coal mass for transmission, then it is divided into several different forms based on the new transmission mode, which can be different from the actual situation, such as Common types include multimode fiber and single mode fiber. When combined with the actual situation, it is found that the transmission technology has certain efficiency and reliability characteristics in the actual application process. Therefore, in the construction process of information communication engineering in recent years, the overall application range of the technology is wider and wider.

Secondly, SDH transmission technology can be regarded as one of the most widely used technical means in digital communication at this stage. When combined with the actual situation, it is found that this technology can effectively respond to PDH technology. One of the most obvious advantages of this technology in application is the modularization and systematization of network node device functions. In this way, scientific and rational use can not only promote the network structure to be presented in a more simplified and efficient manner, but also have very good compatibility features. At present, in China, the actual application process mainly uses PCM30/32 way to operate. The system can guarantee the running speed of 2.048 Mbit/s during operation. In addition, the optical wave multiplexing technology can also be utilized. The proposed technology and its application in practice are mainly based on the optical fiber technology. When applied, the technology not only can properly expand the current information transmission capacity, but also realize effective control of existing optical fiber resources. When WDM technology is applied, it can be regarded as dividing on the basis of channel spacing. In the division, it can be divided into CWDM and DWDM according to the actual situation. In addition, in the practical application process of the microwave transmission technology, the technology usually transmits the information by electromagnetic waves directly through the use frequency of 300 MHz to 300 GHz, and the wavelength is generally controlled within the range of 1 mm to 1 m. The most obvious advantage of this technology in application is that it can directly penetrate the ionosphere at high altitude, and its own frequency band is also wide, and the information transmission capacity is very large.
3. specific application of transmission technology in communication engineering

3.1 short-distance transmission network
For short-haul transmission networks, the application of transmission technology is actually subject to very severe restrictions. When the technology is applied, its entire application range is not very large, and it is basically controlled at the most central position of the city. One of the most obvious advantages of the short-distance transmission network in the actual application process is that the cost price is relatively low, and the cost performance is higher than that of the long-distance transmission network. Therefore, one of the most obvious problems for short-haul transmission is to realize how to improve the utilization of the fiber. When combined with the actual situation, it was found that the existing technology can be appropriately improved and optimized in practice. Through the study of the time operation, it is found that the improved scheme can also achieve good transmission when applied. However, this technology cannot form an effective fusion with other information technologies during transmission. This will directly affect the stability of the transmission process, so when it is improved and optimized in the later stage, it is necessary to ensure the rational use of the transmission technology in communication engineering.

3.2 long distance transmission network
The proposed long-distance transmission network and the specific application in practice, compared with the short-distance transmission mode, the coverage area involved in the application itself is very large. However, this also indicates that the long-distance transmission network has higher and higher requirements for transmission technology in the actual application process. When compared with the traditional technical solutions, it is found that in the specific operation process, the sdh technology is usually used directly. However, after the technology has been used for a period of time, it is apparent that the technology consumes a very large amount of cost when applied. At the same time, after China has fully entered the era of network, the number of users in the network is increasing, showing a trend of rising. When analyzing and processing the problem, it is necessary to effectively integrate various types of technologies according to the actual situation, so that not only stable transmission but also wider flow can be ensured.

3.3 wireless transmission
When combined with the actual situation, it is found that there is a very significant difference between wireless transmission and other transmission methods. In the actual application process, the wireless network mainly realizes effective transmission through electromagnetic waves. This transmission mode has obvious advantages when presented and applied. This technology can not only ensure the stability and effectiveness of the transmission process, but also achieve effective cost control. At the same time, wireless transmission is usually implemented directly by wireless monitoring when it is applied, so it is not affected by the objective factors such as time, space and geography. This kind of transmission not only has the advantages of convenience and quickness, but also has certain free features. It can be regarded as an ideal technology at the present stage, and it has a very broad development space in the future.

4. future development trend of communication technology in communication engineering

4.1 Multi-transmission technology integration promotes intelligent communication engineering functions
Information communication engineering is one of the most important engineering projects in people's daily life. The construction effect of information communication engineering will directly affect the efficiency and quality of people in information transmission and acquisition. Especially under the influence of continuous advancement and rapid development of science and technology, more and more new technologies can be reasonably applied to the project. In the future development process,
the function of transmission technology will gradually become more diversified. The trend is developing. The fundamental purpose of this development trend is to promote the efficiency of the information transmission process, and at the same time, the effectiveness of the technology in the application can be fully utilized. Through the reorganization of various types of functions, the future intelligent development of communication engineering can be realized in practice, and its own intelligent function can be fully exerted. In addition, the transmission technology equipment can be integrated and designed, so that the transmission channel network structure can be reconstructed and utilized, and the existing transmission mode can be optimized and improved. In practice, it is necessary to appropriately expand the existing channel capacity, so that the transmission equipment can gradually develop toward a more diversified trend in the actual application process, and realize intelligent operation.

4.2 Transmission technology convergence promotes communication engineering information transmission balance
With the advent of the information age, consumers' demands for information communication are becoming more diverse, and the requirements are also generally higher. The transmission technology is scientifically and rationally utilized in the communication engineering system, and it is necessary to gradually maintain the balance between each other. This balance is mainly used in the rational use of transmission technology to achieve effective integration of the two. In the actual application process, the transmission technology can gradually promote the development of communication engineering information transmission towards a comprehensive trend. This not only enables the efficiency and stability of the information in the transmission process, but also meets the basic requirements put forward in terms of economy. For example, the integration of asom technology and mstp technology in the actual application process can not only reduce the hardware quantity of communication engineering as much as possible, but also fundamentally promote the efficiency of channel broadband in application, and ensure the information transmission throughout. The process is safe and stable.

5. Conclusion
The application effect of transmission technology in information communication engineering basically depends on the level of the technology in application, and it has a crucial influence on the performance of communication engineering equipment. In the future construction and development of information and communication engineering, the effective integration of transmission technology and its two can gradually develop towards the trend of intelligence and digitization, laying a good foundation for the future sustainable development of information and communication engineering.

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