Impact of Internet of Things on Computer Communication Networks

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Abstract With the rapid development of China's social science and technology, the Internet of Things (IoT) is also developing at a rapid pace. The development of IoT has driven the development of computer communication networks. Today, IoT communication technology is widely used in people's daily life and work. It is the product of a new era and realizes the communication between objects. The IoT communication technology will have many changes in the future, and its development must be constantly innovated. This article mainly analyzes the impact of the IoT on computer communication networks to give full play to the advantages of the IoT and realize the value of the IoT on social and economic development.

Keywords Internet of things · Computer · Communication network

1 Introduction

With the improvement of social economy and productivity in our country, the speed of the development of IoT is also accelerating. The development of IoT has also led to the advancement of computer communication networks. The IoT technology includes many modern advanced technologies, such as infrared sensors, RF equipment, and global positioning systems, all of which are modern and advanced science and technology. The difference between the Internet of Things and the Internet is actually not very big [1]. The IoT is actually the expansion of the Internet. It perfects the communication technology on the basis of Internet technology. The development of computer communication networks and t IoT are inseparable from each other. Thus, it is of great significance to study the impact of IoT on computer communication networks.

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2   Overview of the IoT

IoT has the characteristics of intelligence, which enables the communication network to be automatically managed. The establishment of the IoT is based on the international standard communication protocol [2]. The rise of IoT is caused by people's understanding of information technology, and it is slowly accepted by people. The IoT is a kind of network information that is shared and transmitted between two objects by taking the IoT technology as a medium. IoT technology involves many technologies, such as modern information technology, perception information technology, identification information technology, and communication information technology, all of which are integrated with the IoT and the integration of information technology [3]. Only by combining these technologies with the IoT can we recognize the IoT in our life and work, and this technology can make the IoT technology be promoted. The IoT technology uses Internet technology to integrate information technology and communication technology to build a communication platform between objects, and between people, on which information can be shared and transmitted [4]. IoT communication technology has many advantages which are mainly embodied in management. That IoT can establish a communication platform between people and between objects also makes it easier for managers to manage their work [5].

3   Role of IoT in Computer Communication Network Technology

3.1   It Will Expand the Use of Computer Communication Network Technology

In the background of the information age, network technology has been widely used by people. The network can provide people with a high-quality and comfortable service at anytime on the basis of computer information technology and developed communication equipment. The development of computer communication technology is closely related to the scope of network utilization [6]. Where there is a network, there will be the existence of IoT. The development of computer communication technology in the future needs to continuously meet the needs of network use and build a good information communication environment in computer communication technology, so that computer communication technology can be widely used, and can continuously meet people's needs for computer communication technology. With the continuous expansion of the application scope of computer communication technology, the stability and accuracy of computer communication technology should be ensured when it is used. In the process of information transmission, it is also necessary to ensure the security of information [7].

3.2 It Can Support Heterogeneous Communication Technologies

With the rise of electronic information technology, the network hardware of computer communication technology is also constantly improving, which greatly promotes the complexity of communication technology networks and sensor technology network institutions [8]. Of course, it also causes many unnecessary troubles to the practical application of IoT technology. In the application of computer communication technology, there are many different types of networks. Under the condition that these networks are integrated, we need to integrate many kinds of wireless networks, and heterogeneous communication technology can provide a stable foundation for Internet communication technology [9].

3.3 It Will Promote the Development of Big Data and Cloud Computing

With the continuous development of information technology, there is a lot of data information in our life and work [10]. We can choose different data information according to personal needs. At the same time, the data information that computers need to save is also increasing. Therefore, we need to innovate and develop computer communication technology, which is a challenge to IoT technology. The level of information processing in the IoT needs to be constantly improved to meet people's needs for data information [11]. In the research and development of computer communication network technology, we need to collect and analyze data information, process, and save them. Therefore, in order to achieve the ideal level of service of computer communication network technology, we need to promote the development of big data and cloud computing with the use of the IoT, so that the level of big data and cloud computing can meet people's current demand for information [12].

3.4 Integration of 5G and LEO Satellites Communication Technology and IoT

With the continuous development of network technology, 5G network has been gradually applied to people's daily life. From the characteristics of 5G network communication technology, it can be concluded that communication technology fully conforms to the characteristics of contemporary IoT. Its characteristics, such as high speed, large capacity, and heterogeneity, can fully meet the needs of different groups and different industries [13]. With the help of 5G IoT communication technology, it can effectively solve the energy consumption problems faced by the current IoTs, and improve the speed of transmission and delivery. For example, the technology can be

applied to the field of intelligent transportation, and mobile devices such as vehicle sensors and cameras can realize an effective connection with the IoT, and provide higher security for vehicle safety [14]. At the same time, the application of this technology in the field of physiotherapy can realize the comprehensive supervision of patients' recovery and grasp the changes in patients' symptoms for the first time. In recent years, LEO satellites have also been developed in an all-round way. As far as the scope of use is concerned, LEO satellites are mostly used in the military field. This kind of IoT communication system can realize data and information communication in any corner of the earth [15]. Military technology can be further developed by using this kind of communication technology. In addition, it will gradually be implemented and applied in other fields to better serve the daily life of residents based on the advantages of LEO satellites.

4   Impact of IoT on Computer Communication Network

The IoT, which is widely used in the information society, is composed of perception layer, transmission layer, and application layer. Its specific functions can be known by the names of these fields. The main function of the perception layer is to cover the perception range and guide the acquired information [16]. The transmission layer is the receiving level of the perception layer, which processes the received information and transmits the processed information to the application layer [17]. And the application layer configures and optimizes the network resources by using all the devices with sensors. The IoT, a vital link in today's social environment, plays an important role in interpersonal communication.

4.1   Impact Analysis of Perception Layer

In the perception layer, the perception field can be directly contacted with the use of equipment and technology to the sensing domain. All the information in the perception field covered by the network is not the image information having received in real life. This information is artistic word information. Therefore, the perception layer needs to transmit the information by using the gateway in the network hardware system when processing and acquire data, and the gateway needs to process the information and the network through the computer, which requires that the computer system can use the function of gateway in real-time and complete the configuration and conversion by using the protocol and networking, and finally complete the data forwarding. The impact of IoT on data transmission requires that the computer can have the throughput of a large amount of data, and that information processing should be centralized and authentic. The influence of the IoT has enabled the current development of computer communication network technology and ensures the scale of physical networking.

4.2   Impact Analysis of Transmission Layer

The transmission layer plays a central or transit role in the IoT, and the central layer has higher requirements for the communication network. In our actual work, the transport layer uses bandwidth technology in computer communication. The bandwidth technology can make the connection between the broadband and the narrowband, and finally make the communication between the perception layer and the application layer. Nowadays, in social life work, the communication network technology in IoT technology is mainly used in the information exchange between people. In the construction of network technology, the human factor is an indispensable factor. Under the development of the IoT, the development of computer network technology is bound to be closer to the IoT technology, and computer network communication technology will be used to improve the functions of IoT communication technology. With the development of the IoT, a computer industry model and IoT application platform should be built [18].

4.3   Impact Analysis of Application Layer

The application layer is the last field of the IoT technology. The information data in the application layer is what be seen by the service object of the IoT. The application layer provides services for the service object and connects the network with the reality. In the actual application process of the IoT, it is necessary to use the application layer to realize various types of functions to meet the actual needs of service objects. In the IoT technology, the role of the application layer is the primary condition for the value of the IoT. In the operation process of the IoT, the functions of the application layer should be used to realize the integration between the network and the offline industry to link all offline industries into an industrial chain and complete the market operation. Computer network communication technology needs continuous research and development so that its functionality and the needs of the IoT can meet each other to have a broader market. Under the influence of the IoT, the computer communication network technology can establish the network communication operation platform of cloud computing. The construction of the platform can enable network operators to connect with the IoT directly, which can make more effective use of the platform. At the same time, it also plays a promotional role and eventually forms a virtuous circle [19].

IoT communication technology is limited in transmission distance, and it is not unimpeded transmission. If there is a shield in the transmission path, the transmission information will be affected, which greatly affects the transmission effect of IoT communication technology. In addition, the communication technology of the IoT needs to be combined with various communication technologies to achieve perfect transmission. However, in the process of the diversification of the IoT, the

combination of the IoT and various types of communication technologies is particularly prone to the unreasonable distribution of communication technology, or some impulses between these communication technologies having a great impact on the IoT communication technology.

Furthermore, with the improvement of people's living standards, people's requirements for communication technology will become higher and higher, which requires continuous innovation of IoT communication technology. The update of IoT communication technology must keep up with people's needs. In the update of IoT communication technology, a large number of innovative talents are needed who are the hope of the future of IoT. However, the IoT Communication technology today cannot meet the development needs of the IoT, so the IoT technology needs continuous innovation. Fourthly, the security of IoT communication technology and network security have always been the focus of people's attention. Because the whole process of IoT communication technology is carried out through infinite network technology, it is open to everyone in practical application, which requires that IoT communication technology should be strengthened in the management of security technology issues to ensure the security of IoT communication technology.

5   Conclusion

In summary, the IoT technology is a product of the combination of network technology and social progress. The main role of the IoT is to strengthen communication between people and networks. The IoT technology of China is still in its infancy, and there are many non-advanced technologies. Therefore, computer communication network technology should be continuously innovated and developed. The future development trend of the IoT is objective. Many experts predict that the future development of the IoT will be no less than the Internet market. In addition, the government will become the second-largest user group of the IoT that can make the government function better play. In the future, the adaptability of the IoT will continue to strengthen.

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