

Research on the Application of Electronic Information Technology in the Internet of Things

Baofei Huang, Changhui Sun

Qinghai Higher Vocational and Technical Institute, Haidong, Qinghai Province, China

Keywords: Electronics, Electronic information, Information technology, Internet of things

Abstract: As a technology with strong comprehensive performance, electronic information technology can effectively improve work efficiency through the collection and processing of information. The article gives an overview of electronic information technology, and analyzes the Internet of Things, and conducts research on the application of electronic information technology in the IoT through bar code recognition technology, satellite tracking technology, electronic ordering agencies, and intelligent transportation agencies.

1. Introduction

The Internet of Things (IoT) is an important technical guarantee to promote the stable development of Chinese society. In recent years, advances in science and technology have brought earth-shaking changes to the lives of Chinese people. People's thinking is constantly changing compared with the past, whether it is study, work or life. These new technologies are inseparable. Electronic information technology and IoT technology are both emerging technologies that have gradually developed with the development of science and technology in recent years. The application of electronic information technology in the field of IoT is conducive to accelerating the development of a technological society [1].

2. Overview of Electronic Information Technology and the Iot

2.1 Electronics and Information Technology

Electronic information technology is the description of things through the application of electronic information. And use Xinhua or text to process or transmit information. Among them, electronic information and technical content include sensors, embedded systems, navigation communications and network platforms. With the continuous advancement of science and technology, the application of disciple information technology in all aspects of the industry has become more and more extensive. It plays a role in promoting the development of all walks of life [1]. With the continuous development and penetration in all walks of life, electronic information technology and our lives are getting closer and closer. These applications have also made our lives more convenient, the quality of life has also been improved, and work efficiency has also been continuously improved. .

2.2 Iot Technology

The IoT refers to the technology of intelligent sensing and recognition, which is widely used in network integration. It is an extension and development based on the Internet. The rise of the IoT has promoted the exchange of information between people, people and things, and things and things, making the communication and contact between these three closer and more convenient, so as to achieve rapid information transmission. The IoT is the extension and expansion of the Internet [2]. Therefore, the content of the Internet cannot cover the content of the Internet. One of the differences between the Internet and the IoT is that the content between the two is problem-oriented. The content covered on the IoT is privatized, while the content covered by the Internet is open to the public. The IoT also includes three aspects:

- 1) Information sensing aspect;

- 2) Processing of information data;
- 3) Application of information.

During the operation of the IoT, the first thing is to sense objects, and then to control them, and then master and understand a large amount of information and data, so that the information will be in a state of circulation, as shown in Figure 1. Secondly, most of the items in the IoT environment are personal items, so while transmitting information, we must pay attention to the protection of privacy [2]. This puts forward safety performance requirements for the operating environment of the IoT.



Fig.1 Schematic of the Iot

3. The Application of Electronic Information Technology in the Iot

3.1 Grid Matrix Code Technology

Grid matrix code technology is also called two-dimensional bar code technology. It refers to a new technology that integrates coding, printing, data collection, and information recognition developed from the combination of computer technology and information technology [3]. The commodity packaging barcodes that can be seen everywhere in people's daily lives are one-dimensional barcodes, which have a small information capacity. So on this basis, two-dimensional barcode technology came into being. Two-dimensional bar code technology not only includes the advantages of one-dimensional bar code, but also has the characteristics of large information capacity and high security performance, which meets the higher demands of people. Two-dimensional bar code is actually a high-density, high-information portable data file, which can effectively realize machine-readable functions [3]. Under normal circumstances, fingerprints, pictures, text, sounds, etc. can be converted into digital information for coding processing, making information dissemination easier. At the same time, the use of printing technology can print a two-dimensional bar code on the performance of each object to facilitate people to obtain information.

3.2 Network Communication Technology

Network communication technology has been widely used in people's daily life, such as WeChat, Weibo, and websites. These have long become an indispensable part of modern people, providing convenience to people's lives and increasing the joy of life. Due to the rapid development of IoT technology, higher requirements are also put forward for network communication technology [4]. China's network communication technology can be divided into three aspects: communication media, data communication, and communication modules. Its biggest purpose is to realize the sharing of information resources, which greatly facilitates people's communication and access to information sources, and promotes social development. Progress has brought new impetus to the development of various industries. For example, the most important role of network communication technology in

China's navigation technology is to innovate the technology of various types of warship and ship equipment, which greatly improves the efficiency of navigation operations. At the same time, with the development of warship and ship information operations, people have developed The CAN bus technology has realized the information exchange between equipment and systems, and has promoted the development of China's maritime industry [4].

3.3 Electronic Order Generation System

Electronic information technology is applied in various forms in the IoT. The electronic order generation system belongs to the important application content. With the Internet, people can buy and sell goods remotely, generate system orders, facilitate suppliers to sell goods, save intermediate costs, and directly benefit both buyers and sellers. In the electronic order generation system, the application of electronic information technology first needs to ensure the security of the network operation environment, ensure that the detailed information of the transaction items can be displayed to people, and set up security protection procedures in the display area [3]. The program is designed in a detailed and precise manner, using electronic data as a reflection of the ordering system to ensure that the Internet can be used as the main tool for data transmission in the ordering system, so as to achieve rapid order generation, timely arrangement of goods sales, and ensure the effectiveness of electronic order generation .

3.4 Barcode Technology

At present, the main way to identify goods is electronic identification. Through barcode technology, companies can quickly transmit item information, ensuring that customers can control the actual situation of goods through barcodes. Barcodes are an important tool for data transmission. The specific information of the commodity is displayed in the barcode completely and intuitively. The barcode scanner can achieve the effective purpose of data conversion [2]. The barcode can also be identified by the computer, and the application effect is remarkable.

Through electronic information technology, the barcode can be better coded for technical terms, so that the computer can quickly recognize the barcode symbol, and process it through the corresponding program, and quickly transfer it to the terminal system. Because different barcodes have different widths, shapes, and bar gaps, the data symbols reflected are different, so different commodity barcodes are different [5]. People can use the scanner to identify the special symbols in the barcode. Generate information corresponding to the attributes of the product to record the price of the product in a reasonable manner.

3.5 Satellite Positioning Technology

Satellite positioning technology can organize information through the data reflected by satellites back to the ground, so that it can better control the condition of the goods, and can respond to important information such as the number, volume, and weight of items in a timely manner based on the feedback information. It can control items through satellite positioning system, reasonably choose the way of receiving and transportation, track and feedback its storage location and the actual transportation of items, and organize the route of logistics information, thus improving the IoT system [5]. It satisfies the needs of buyers well, but the application of this electronic information technology requires a higher cost, so there are fewer applications in the IoT.

3.6 Intelligent Transportation System

The intelligent transportation system refers to the ability to respond to the transportation process of the goods throughout the whole process, communicate between the transportation vehicle and the relevant personnel at any time, and ensure that the transportation of the goods can arrive on time [6]. The intelligent transportation system covers road transportation, vehicle transportation, navigation transportation and other systems. In the process of using the intelligent transportation system to supervise the goods, it can timely feedback the data of the vehicle transportation status, and can provide feedback on the map, road conditions, traffic, etc. Weather and other factors react reasonably. In addition, it can comprehensively monitor the entire process of goods transportation to arrival,

rationally and scientifically plan transportation routes, and save transportation costs as much as possible. People can transport goods at any time through the terminal system of the IoT. The data in the query. And the transportation safety of the system is relatively high. It can monitor the status of commodities in real time [6]. Once a transportation problem occurs, it can solve it in time, plan the rescue route reasonably, increase the problem solving rate, and better meet the needs of consumers.

4. The Development Prospect of Electronic Information Technology in the Era of Iot

4.1 Integrated Circuits Are More Miniaturized

In the era of the IoT, due to the volume and performance requirements of equipment, integrated circuits will continue to develop in the direction of miniaturization. To connect small items such as watches to the Internet, miniaturization of chips is an inevitable choice. The emergence and application of nano-processing technology has made it possible to produce miniaturized integrated circuits [7]. At present, the integrated circuits in devices such as smart phones and notebook computers have been developing in a highly integrated direction. In the future, with the continuous development and progress of microelectronics technology, the area of chips such as CPU and GPU will become smaller and smaller, but the performance will become more and more powerful.

4.2 Diversified Development of Communication Technology

The development and progress of communication technology is the basis for realizing the effective connection of objects and the prerequisite for realizing the interconnection of everything. Communication technology includes wireless communication technology and wired communication technology, and wireless communication technology can be divided into short-distance wireless communication technology and medium and long-distance wireless communication technology. In order to meet different needs, a variety of communication technologies have emerged. For example, in the field of short-distance wireless communication, WiFi technology, ZigBee technology, etc. are different in terms of security, scalability, and transmission rate [7]. They each have their own advantages, so they have been applied and developed. It is foreseeable that in the era of the Internet of Everything, communication needs are more diversified, sometimes requiring high rates, sometimes focusing on security, and sometimes requiring more device access. In order to meet different communication needs, communication technology in the IoT era will continue to develop in a diversified direction [7].

5. Summary

With the continuous improvement of China's scientific and technological level, electronic information technology has also continued to develop and progress, making electronic information technology play an increasingly important role in people's production and life. Under the current social environment, the IoT technology is developing rapidly. In the process of development, electronic information technology provides guarantee and support for its development. Therefore, the article analyzes the application of electronic information technology in the IoT from the perspective of electronic information technology and the IoT, and puts forward corresponding opinions on the development of the IoT.

References

- [1] Y.F. Luo, Discussion on the Application of Electronic Information Technology in the IoT, *Electronic Testing*, vol.19,135-138,2018.
- [2] G.K. Deng, Application of Electronic Information Technology in the IoT, *Computer Fan*, vol.10, 105-108, 2018.
- [3] G. He, Discuss the Application of Electronic Information Technology in the IoT, *Electronic Testing*, vol.16,137-138,2018.

- [4] Sh.X. Xu, Application and Analysis of Electronic Information Technology in the IoT, Computer Fan, vol.7, 93-94, 2018.
- [5] T.Ch. Luo, Analysis of the Application of Electronic Information Automation Technology in “IoT+”, China New Communications, vol.10(24), 121-123, 2018.
- [6] S.L.Wang, Discussion on the Training Mode of IoT Professionals in the Background of Electronic Information Engineering Technology, Science and Technology Wind, vol.10, 55-57, 2018.
- [7] Y.Y. Liu, Application of Electronic Information Technology in the IoT, China New Communications, vol.10(21), 139-140, 2018.