

Research on the Development Trends and Prospects of Internet of Things Technology

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Abstract: Speaking of the Internet of things, now we are no longer unfamiliar. Internet of things technology is an important part of the new generation of information technology. Some people compare the Internet of things to the third information revolution after computer and communication technology. The Internet of things industry is one of the most potential industries. Under the guidance of Internet of things technology, our work and life are quietly undergoing profound changes. This paper introduces the Internet of things technology and its characteristics, and analyzes the development trend and prospects of Internet of things technology.

The Internet of things has a lot in common with the Internet of things. The main difference between the two is that the Internet of things is connected primarily to things, and the Internet is connected primarily to people. Some people call the Internet of things the connected Internet of things, which to some extent reflects the characteristics of the Internet of things. From this statement we can see that the core of the Internet of things is still the Internet of things. As a result, some scholars define the Internet of things as an extension of the Internet.

1. Basic features of the Internet of things

Compared to the traditional Internet of things, the Internet of things has its own distinct characteristics. The characteristics of the Internet of things can be summed up as connectivity, communication and recognition, intelligence. Connectivity, as its name implies, means that the Internet is still the foundation and core of the Internet of things, but the individual information in the nodes of the Internet of things is integrated with the Internet in a wired or wireless way to get specific information out there. The communication and identification of the Internet of things refers to the Internet as a system with a mass of memory cells, each of which is an information node, regardless of the content of the information obtained by different types of sensors It's all different in format. Intelligence means that the IOT system is not only a simple connection of sensors, but also has certain intelligence information processing ability, which can control the connected nodes through specific instructions. The Internet of things and each information unit is an organic whole, they form a specific automatic control structure through intelligent command and control system.

At present, the application of Internet of things system is mainly concentrated in industry and other fields, and the application of Internet of things technology in daily life is still rare. However, due to the unique characteristics of the Internet of things technology, in the foreseeable future, internet of things technology will have a profound impact on all aspects of our lives. Today, the Internet system in the computer technology, information technology, storage technology, is in an irresistible trend of rapid development.

2. The status quo of the development of Internet of things technology

The rapid development of Internet of things technology in recent years is directly related to the strong support of the state. Some people compare the Internet of things technology to a new scientific and technological revolution, which is another technical high point after computer technology and communication technology. Therefore, from the birth of Internet of things technology, whether at the national level or the enterprise level, the development of Internet of

things technology has given considerable attention and invested a lot of human, material and financial resources. In general, the development of Internet of things technology in China has maintained a positive momentum. Although the construction of the Internet of Things in China started later than that in foreign countries, it has formed a complete industrial system with considerable technological reserves and application foundation.

In recent years, China's demographic dividend is gradually disappearing. Human cost has become an important factor in cost accounting in all walks of life. Internet of things technology through the intelligent control system, effectively reduce the high cost of human problems, and improve the efficiency of enterprise operations .According to statistics, in 2014, China's Internet of things sales have exceeded the 600 billion yuan mark. Especially in recent years, the Internet of things related to the overall growth rate has been maintained at about 30%.From these data, we can see that the Internet of Things, as a new industry, is developing rapidly, driving many industries and has a good market prospect.

At present, China's Internet of things technology and Internet of things industry development mainly presents the following characteristics:

2.1. The industry chain related to the Internet of Things is gradually maturing

At the beginning of the development of the Internet of things, there were no relevant and mature technical standards and technical systems in China. The industry as a whole was rather scattered, and the development model was basically driven by the needs of enterprises the industrial development trend of centralization has not been formed. RFID and other major applications in the field of logistics. Due to the long industrial chain, complex organizational structure, high transaction costs and other reasons, the whole market development is relatively slow. Later, with the realization of industrial scale and the standardization of industry standards, the cost of the Internet of things industry has been effectively resolved, and the industry ushered in the golden period of development. In the foreseeable future, the Internet of Things technology and the Internet of Things industry will further effectively control costs along with the advancement of industrial reform, which will greatly promote the stability and long-term development of enterprises.

2.2. The obvious policy guidance

The development of IOT technology and IOT industry in China is closely related to the policy guidance of the country. At present, China has many policy inclinations towards the development of Internet of Things technology and Internet of Things industry. And multi-level policy support is the most powerful driving force for the rapid development of China's Internet of things technology. Internet of things technology has been listed as one of the five emerging strategic industries in the country, which has been widely concerned by the society. In 2015, China's long-term goal for Made in China 2025 is to change the backward situation of China's high-tech industry, improve China's voice in the high-tech field and enhance the value of enterprises in the industrial chain. The Internet of Things technology is one of the key technologies to realize this transformation. China is also vigorously promoting the national level internet + Strategy, information technology, network technology, big data technology into a platform. The Internet of things technology based on this platform is bound to produce a qualitative leap.

2.3. The perfecting supporting industries

The Internet of things technology cannot be separated from the support of network and sensor hardware. At present, China has made a lot of breakthroughs in the field of sensors, and we have formed a whole industrial chain of processing and production patterns. The supporting enterprises in the fields of perception manufacturing, network manufacturing, information processing and application services are growing day by day. Compared with the past, the scale of the industry has increased by more than one order of magnitude. The Pearl River Delta region as a representative of the industrial integration base, as a whole, shows the trend of agglomeration development. Well-known Internet technology companies have sprung up like mushrooms, the value of the Internet of things industry began to emerge gradually. Now the Internet of things technology and the

Internet of things industry have become the object of competition for capital.

3. Trends and prospects of Internet of Things technology

The development of Internet of things has become a trend and trend. From the application field, in addition to the industrial field, the Internet of things technology has gradually entered our corner of life, smart city, smart water meter is only a small trial of its skills. In the near future, the application of Internet of things technology will gradually replace the tedious and dangerous work in our life. In my opinion, the development trend of Internet of things technology in the future can be summarized as follows:

3.1. Big data

The Internet of things will grow in size. Whether it is a single internet of things, or the convergence of multiple Internet of things, its scale will show the growth of geometry. There will be more and more data nodes in the Internet of things. In the case of smart cities, the amount of data they need to process and transmit is staggering, and it's hard to overstate the magnitude of the data. At present, many aspects of Internet of things technology are not complete, but with the improvement of technology capability, big data has become the inevitable trend of future Internet of things technology development. Driven by big data, Internet of things technology can bring more convenience to our lives.

3.2. Networking

Networking technology is not only the foundation of Internet of things technology, but also the mainstream trend of its development. At present, our Internet of things technology is still at the stage of perfection, many of the functions of the Internet of things system is relatively single, and there is no scientific and standardized access standards between the Internet of things and the Internet of things. But networking is the general trend of the Internet of things and the general direction, this is basically the academic and industrial community has reached a consensus

3.3. Life

The current Internet of things technology is mainly used in the industrial field, and the Internet of things technology in the field of life is still a long time to be widely used. This is due to our level of technology, on the other hand, the construction of the Internet of things system needs more complete hardware support. Whether it is our city building, or our living equipment, their standards are based on the previous system, in order to achieve a short period of time to the two organic integration is not easy. At present, some cities and households in the early stage of the construction of a wealth of interfaces for the incorporation of the Internet of things in the hardware to create conditions

3.4. Standardization

The related technologies of the Internet of Things are continuously developing, and the application fields of the Internet of Things are continuously expanding, but the construction of the corresponding standardized standards is relatively lagging behind. Whether it is industrial access or living applications, it all needs a standardized system and framework. How to achieve the unification of Internet of things technology standard, is not an enterprise, a city can complete by oneself, it is a systematic, scientific process, need the whole society's extensive participation and joint efforts. Now, a number of scholars and relevant management units on how to standardize, standardize the Internet of things related to the technical rules have carried out a lot of research and in-depth study. Standardization is not only the demand of the market, but also the demand of the market

3.5. Scale

As mentioned earlier, the development and application of Internet of things technologies in

China are mainly led by different companies. The advantage of this is that each manufacturer can develop corresponding IOT devices according to its own technical strength and actual needs, but the disadvantage is also very obvious. There is no way to integrate the strengths of the industry to focus on overcoming major problems and bottlenecks. In contrast, foreign IOT technology development is mainly concentrated in the hands of a few large companies, they have enough technology reserves and financial resources to promote the development of IOT technology. The single-player model of China's enterprises can no longer meet the needs of market development and technological breakthroughs. This is not only a problem that can be solved by the Internet of things industry itself. It needs the joint efforts and cooperation between the relevant competent units and enterprises, so as to put forward the corresponding technical joint plan as soon as possible, and solve the rope that is restricting the development of the industry as a whole.

4. Conclusion

Internet of things technology is a new technology, the development of Internet of things technology in our country is more and more concerned by the society. Internet of things has its own unique technical characteristics, is the inevitable choice for the development of smart city in the future. In the foreseeable future, Internet of things technology development potential is huge. We should view the development of Internet of things technology with a high sense of responsibility and urgency, and promote its healthy and orderly development as much as possible, as soon as possible and as well as possible.

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