6g Networks: New Generation Cellular Communication

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Abstract

The development of 5G services has caused a wave of competition around the world and, more importantly, launched a race to develop 6G. Whoever manages the telecommunications technology sector sets standards for products and services and plays a major role in the future development of the industry.

Keywords: telecommunication, technology, digital

1 Introduction

In November 2019, the official Chinese research group on 6G was established. Developed countries such as the United States, Japan, South Korea and some European countries have begun to develop research and development plans for 6G, as the telecommunications sector has always been a competition point.

5G technology aims to create a comprehensive sensor system in which you can easily access information and tools. On the other hand, 6G will help build a perceptual nervous system that integrates artificial intelligence (AI) and wireless cognition, which can give intelligent responses.

Overview

Compared to 5G technology, 6G will have less latency, higher speed and higher bandwidth. And this advanced technology will help connect the real world with the virtual digital world. It will also make design, research and development and experiments much more efficient and significantly reduce their costs, enabling the production of digital products in the physical world using high-tech technologies, including 3D printing.

In terms of economic development, 3G promoted e-commerce, while 4G promoted e-commerce and mobile payments. The construction and application of 5G infrastructure marked the beginning of the intelligent production of Chinese enterprises and served as a basis for the rapid development of the sector. Similarly, the wireless cognitive technology associated with 6G technology, once it matures, will further contribute to the development of the digital economy. [1]

In the digital economy, big data intelligence will be a real impetus for innovation, and 6G networks will not only become backbones for data transmission, but will also integrate edge and core computing much more seamlessly as part of a combined communications and computing infrastructure. This will provide many potential benefits as 6G technology begins to work, including access to AI capabilities.

The 6G-based digital economy will be a determinant of a country's competitiveness. And 6G technology, wireless cognition as its main feature, will become the main technology and the main driver of the digital economy.

6G is expected to support speeds of up to terabytes per second, unprecedented capacity and latency, which will increase the performance of 5G applications, in addition to expanding the scope to support new and innovative applications in wireless cognition, sounding and visualization.

Prior to the introduction of 4G services, China remained a passive player in the field of advanced technology, mainly following the United States and European countries, and did not set standards for telecommunications technology.

But by developing 4G technology at the same time as a developed economy, China has become a major player in this field and contributed to the rule-making process. The fact that 4G in China is the most advanced and widespread in the world has also contributed to the rapid development of mobile payments in the country.

Decision

Starting with 5G, the Chinese telecommunications industry, thanks to its extensive research, has taken a leading position in the standardization and production of 5G telecommunications equipment.

And now that the United States and Europe are lagging behind China in 5G development, they want to drag China through uncompetitive means, such as limiting the development of Chinese companies such as Huawei, and launching 6G research and development before China to make money on the advantage they enjoy in the millimeter-wave industrial circuit.

In terms of R&D in 5G technology, China has two advantages. First, it is a world leader in the telecommunications sector and has a strong pool of talent.

Second, it has a relatively complete industrial network covering R&D, design, production and application, and is home to Huawei's leading 5G equipment manufacturer. [2]

Recent history shows that those who lead the telecommunications sector set standards for telecommunications products and services and play a greater role in the future development of the industry.

And as 6G becomes the engine of a new round of economic development, the Chinese government, businesses and research organizations need to step up cooperation to succeed in 6G's competition.

Conclusion

Ukraine is gradually closing the gap with Western countries in the process of launching new generations of communications. Thus, if 3G in our country appeared in 2015, lagging behind the developed world by more than a decade, the gap between the active development of our 4G (2018) and European 4G - 5-8 years. Fifth-generation networks, which appeared in the world en masse in the early 2020s, are likely to reach our country fairly quickly - by 2022.

Therefore, the introduction of 6G, if it appears in the world by 2030, should affect our market. [3]

References

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