

INNOVATIONS IN THE FIELD OF MOBILE COMMUNICATIONS

Azimov Jumanazar Turgunovich
Associate Professor of the Department of Natural
Sciences of the Academy of Armed Forces of the Republic of Uzbekistan

Abstract

In this article, we have collected the main trends in the field of mobile communication for the present and the coming years. The latest innovations in the field of mobile communication, mobile applications, and mobile technologies and their role in society are covered in detail.

Keywords: mobile communication, innovation, mobile applications, mobile technologies.

Introduction

Smartphones and tablets open the door to many opportunities for humanity, users prefer to use sites and services through portable devices, because it gives them convenience and freedom. In such conditions, mobile developers set an important task ahead of them to create convenient, simple, affordable innovative technologies that open up new opportunities and make human work easier. The proliferation of communication gadgets has led to significant growth in the mobile application industry. Thus, user needs are the main driving force of application market growth [1]. The rise of the main trends in mobile technology in recent years is beneficial for all industries, as well as for developers of applications for smartphones and tablets. Most importantly, the program serves as a practice for learning new things and generating new ideas. Below we will consider mobile applications that are becoming very popular, but at the same time, they have little place in today's innovative development era [2].

Blockchain applications

You can find many blockchain-related apps on the App Store and Google Play. They are mainly electronic wallets, currency converters, digital asset trackers and network solutions. But blockchain is not only for cryptocurrencies, it has been integrated into many industries to create more complex projects.

This technology provides a unique approach to security, which allows you to strengthen the protection of your mobile platform and provide transparency to customers. The main advantages of applications using blockchain are: improved data protection and reduced risk of data loss; quick operations; simplicity; transparency.

IoT applications.

In the last few years, "internet things" have developed rapidly and are becoming less and less popular. The increasing demand for smart devices is leading to an increase in the number of IoT applications. A smartphone serves as a bridge between intelligent systems and people, and an app is the primary tool for managing connected devices.

IoT applications enable:

- monitoring the indicators of devices and sensors;
- analyze data, create charts and reports;
- device management (on/off, alarm signals, etc.);

They are equally useful for consumer-facing solutions (smart home appliances, wearables, traffic sensors) and enterprise-level management (oil and gas networks, railways, autonomous cars). Also, IoT in the automotive industry: creating self-driving cars. IOT is becoming mainstream in many industries from healthcare, education to manufacturing and transportation. Currently, the development of applications for the industry is developing rapidly, the main representatives of which are smart watches, fitbits and applications for home assistants.

Cloud applications.

Developers began to actively invest in cloud applications, thus creating the era of mobile clouds. Applications that integrate advanced technologies such as artificial intelligence, machine learning, IoT, etc. require a lot of space to store data in the device's internal memory. Cloud technology easily solves this problem. Remote servers provide the necessary space for the uninterrupted operation of the application, which downloads quickly and does not affect the internal memory of your device.

Cloud means:

Secure operation on multiple devices; save money on hosting; much higher efficiency of use; quality storage and loading capacity; increase user retention; simplify operations. There are more and more mobile apps that are becoming very popular, such as Google Drive and Dropbox.

5G connection.

Due to the increase in wireless connectivity, the advanced technologies mentioned above (IoT, AI, AR, cloud) can be applied to applications. The 3GPP, the regulator of cellular communication standards worldwide, officially approved the first technical specifications of 5G technology in December 2017 in Lisbon. A year later, the fifth generation mobile communication network went on sale. As of 2019, 5G technology continues to expand globally and serve to increase communication needs for billions of devices. The expansion of the 5G standard will provide high-speed connection (100 times faster than the current 4G), improve the user experience and promote the introduction of advanced technologies into the mobile phone [3].

Mobile payments.

Online shopping is also one of the top trends in mobile technology. Currently, e-commerce is one of the fastest growing industries. Many customers prefer online shopping to traditional shopping.

Online customers used to make payments through Internet banking or credit cards. The situation has changed with the proliferation of smartphones and tablets and the introduction of Google Wallet, Apple Pay and other payment applications. As a result, we can now observe



the rapid development of the so-called "mobile commerce" process, which gives users the right to perform all operations faster, easier and from anywhere. Many advanced Internet stores have already created and distributed their own software. Now they can take advantage of the increased sales.

In recent years, the trend of creating e-commerce applications for mobile payments has not slowed down, and there is a gradual transition from e-commerce to mCommerce.

Summary

Currently, the place of IlonMask company in innovations in many areas of the world, including mobile communication devices, should be highlighted. Examples of this are the latest innovations, namely the improvement of neural systems and the creation of smart flexible notepad-shaped smartphones. Despite the rapid development of technologies, there are several obstacles in their implementation. While 5MHz bands are sufficient for signal transmission and reception in 3G technologies, at least twice as wide bands are required to achieve the speed advantages of LTE and WiMAX technologies, besides, currently used transit (backbone) channels have limited transmission capacity (1.5-2 Mbit/sec), which additionally requires the modernization of these channels.

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