So, augmented reality is more than just smartphone fun. It's a technology that finds uses in different areas from business to warfare and medicine.

References:

1. Bonsor K., Chandler N. How augmented reality works [Electronic resource]. – Access mode: https://computer.howstuffworks.com/augmented-reality.htm
2. Maes P. Meet the sixth sense interaction [Electronic resource]. – Access mode: https://www.ted.com/talks/pattie_maes_demos_the_sixth_sense.

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THE IMPORTANCE OF THE INTERNET OF THINGS

The internet of things (IoT) is a technology that has the capacity to revolutionize the way that we live in sectors ranging from transport to health, from entertainment to our interactions with the government. This fantastic opportunity also presents a number of significant challenges. The growth in the number of devices and the speed of that growth presents challenges to our security and freedom. This paper discusses the evolution of the IoT, its various definitions, and some of its key application areas.

What is meant by "Internet of things"?

The Internet of things (IoT) is heralded as a development that can cause dramatic changes in the way we live. It is recognized as an enabler that will increase efficiency in a number of areas, including transport and logistics, health, and manufacturing. The IoT will assist in the optimization of processes through advanced data analytics, and can be the catalyst for new market segments by capitalizing on its cyber-physical characteristics, giving rise to cross-cutting applications and services.

The evolution of the IoT

The idea of connecting 'things' to the internet extends much further back than the use of the term 'Internet of Things'. In the early 1980s students at Carnegie Melon University fitted internet-connected

photosensors to a soft drinks vending machine, which allowed them to count the number of cans that were being dispensed. This enabled anyone with access to the internet to determine how many drinks had been dispensed, and thus how many were remaining.

Even before the first webpage was created, John Romkey and Simon Hackett introduced a toaster that was connected to the internet in 1990. Romkey's presentation at the Interop Conference featured an internet-connected Sunbeam Deluxe Automatic Radiant Control toaster, and arose as the result of a challenge at the previous year's conference from Dan Lynch, President of Interop, to Romkey. The toaster was connected using TCP/IP and had a Simple Networking Management Protocol Management Information Base (SNMP MIB) controller; its one function was to turn the power on or off. The first use of the term 'Internet of Things' came much later, and is widely attributed to Ashton, when he used it as the title of a presentation at Procter and Gamble in 1999.

In a global sense, why do we need it?

Internet of things greatly transforms the personal and social aspects of life, as well as business and even the whole industry. Also, this technology has the potential to solve some of the global problems of our time.

For example, the Verizon mobile operator conducted an analysis and found that today, up to 50% of the harvested harvest never reaches the end user. This problem can be solved through an automated food logistics system. Also, about 25% of the harvest can be saved through online weather monitoring. This may be one of the components of solving the global hunger problem.

Internet of things can have a positive impact on the health and longevity of the population.

In Australia, now with the help of portable sensors, doctors can remotely track patients' health and respond in real time. And the AT & T mobile operator in the US has developed a system designed to solve one of the most dangerous problems for the elderly – an unexpected fall.

A small device automatically detects a sharp change in the position of the owner's body and connects to the call center for immediate assistance. Even such a "niche" IoT solution greatly improves people's quality of life.

How will it affect the lives of ordinary citizens?

In people's lives there will be less space for domestic problems, which means more time can be spent on families, creativity, and hobbies. Internet-connected devices will also give people more opportunities for rational resource management. Already today, they help to optimally spend heat, water, light and save on payment of utilities.

It is important to note that not only the lives of individuals, but also entire industries will change. One of the sectors most likely to change is probably a telecom, as mobile operators will gradually change their business models from network providers to smart service providers and applications.

What are the risks associated with it?

Of course, there are risks. The main one is security. Experts say that up to 80% of devices will be vulnerable from the outside. In the industrial Internet industry, the problem is solved in a radical way: stringent rules and regulations, as well as special security protocols. For critical devices, as it has been already mentioned, absolute reliability of the network will be necessary, since the slightest failure can lead to injury or death of people.

In order to implement many IoT scenarios, it is necessary to implement 5G networks. Networks of the fifth generation will allow us to reduce delays, simultaneously maintain a huge number of connections, extend the service of "smart" devices up to 10 years, and also achieve incredibly quick speed of mobile data transmission.

Who can and must make decisive steps for Internet things to become reality?

It is difficult to distinguish one side. In order to realize the potential of the Internet of things it is required close cooperation between business, telecom operators, governments and even ordinary users.

The development of the market will depend on many factors, but all the participants in this process will have to change much faster than they do today. Therefore, it is likely that very soon we will be surrounded by hundreds of "smart" robots and devices. The main thing is to make sure that none of them plans to seize the world!

References:

1. ABI Research. 2017. What Is the Internet of Things? [Electronic resource]. – Access mode: [https://www.abiresearch.com/pages/what-is-internet-things/].
2. BITAG. 2016. Internet of Things (IoT) Security and Privacy Recommendations. BITAG Broadband Internet Technical Advisory Group,

November 2016. [Electronic resource]. – Access mode: [http://www.bitag.org/documents/BITAG_Report_-_Internet_of_Things_(IoT)] .

3.Farooq M.U., Muhammad Waseem, Sadia Mazhar, Anjum Khairi, and Talha Kamal. A Review on Internet of Things (IoT) // International Journal of Computer Applications. – Volume 113 (1), 2015. – P. 1 – 7.

4. Li Shancang, Li Da Xu, and Shanshan Zhao. The Internet of Things: A Survey // Information Systems Frontiers. – Volume 17 (2), 2014. – P. 243 –259.

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COMPUTER SCIENCE, TECHNOLOGY AND ITS ENHANCEMENT IN THE WORLD

Computer Science and technology have been benchmarks and pivots for innovations, substantive ideas and suggestions that are paramount to the advancements of livelihood and making life easier. Our daily lives have the involvement of computers. With the aid of Computer Science, there have been progressive developments in our world today, i.e., Computer Science and Technology are needed tools for every business, bank, government, entertainment, daily life, industry, education, administration, etc. With the advancement of Computer Science and Technology, one can use online maps to get to a destination that they've never been to before, use phones to make communications, inventions and updates of health care facilities have been substantial and beneficiary, navigation system for aircraft, created an easy learning environment with electronic books and so on. Each organization usually has one or more large computer system(s) and a number of microcomputers. The large Computer systems are great computers for data processing tasks, while many small micro-computers are used as word processors.

Moreover, Computer Science gave rise to technology and its components and the use of technology in our society is irresistible and undeniable because without technology life is almost meaningless. Technology basically refers to bringing together tools that ease creation, use