

SECTION 5

DIGITAL REALITY. INTERNATIONAL BUSINESS IN THE ONLINE ENVIRONMENT; TRENDS OF IT BUSINESS DEVELOPMENT IN BELARUS

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VIRTUAL REALITY AND AGRICULTURE: CAN THEY WORK TOGETHER?

Virtual technologies gradually change the majority of our world. We get used to gadgets and consider them an integral part of life, including science, technology, education, medicine and agriculture. As far as we know, agriculture in Belarus is an increasingly important branch in the economy. It accounts for 6.4% of the country's GDP, 15.6% of export, 8% of Belarusians are involved in this sphere [2]. That is why application of new information technologies and VR reality can make agriculture more profitable, easier and attractive for the young people.

Virtual Reality includes modern technologies, computer graphics, human – computer interaction, sensor technology, artificial intelligence. It is used in such spheres as electronics, especially computers, in various areas of electrical engineering, for instance slot machines, robotics, automation, measuring devices, radio and telecommunications devices and many other digital devices [2]. Virtual Reality enables the user to learn and explore various fields of science and technologies more properly, to identify all pros and cons while manufacturing any product or device. At present, application of the benefits of virtual reality has been involved in scientific research, education and training, engineering design, commercial, military, medical, film and television, and so many areas of people's lives. Experts say, that the 21st century is the century of rapid scientific progress, that is why we may make a conclusion that the future comes right now. Every day a new gadget is invented or an old one is improved.

Virtual Reality is based on using a computer-generated simulation of the environment, and astonishing variety of special equipment helps the user immerse into the environment, to interact in it and feel it. As we can see, virtual reality is made up of people's skills, machinery, and environment parts, which help to simulate the reality while testing any device or conducting any experiment [2].

The key technologies of Virtual Reality involved are: the scene of large-scale three-dimensional data modeling techniques; dynamic real-time three-dimensional vision, hearing, such as generating technologies; three-dimensional positioning; three-dimensional interactive software and system integration technology.

Virtual agriculture is a virtual reality technology applied to agriculture, which refers to the computer in the implementation of substance in virtual soil adsorption, emissions, the migration process, animal and plant growth process, crop breeding and so on. It can be widely used in Belarus as our country's agriculture can be divided into two segments: livestock production and crop production, which are equally significant for

the economy. The use of VR in Belarusian agriculture can widen its export and attract foreign investors.

Researchers explore various stress conditions, human intervention conditions on the role of these procedures, which help to improve the technology and identify any unexpected circumstances [3].

Virtual plant is a rapidly developed area of research, widely used in the agronomy, forestry, ecology, remote sensing multi-fields, etc. It was created to use VR technology in 3D simulation of plants' growth process and life cycle, to observe how the plant reacts to the changes of the environment.

Virtual plant technology allows simulating the whole process of plant life cycle without taking a long-lasting process of growing, which saves time, manpower and money. Farmers can study plant growth patterns, identify some of the predisposing and intolerant properties of the crop itself, and find a solution to increase crop yields [3].

What is more, VR technology not only shows us the model of the plant and its life cycle, but it also gives a wide range of possibilities to construct new agricultural machines and devices to make the process of cultivation and collection of harvest cheaper and easier. Among such devices are drones which help to supervise the territory of fields and make photos of crops' conditions, predict yields and identify low-production areas.

Various sensors, geographic information systems, transport monitoring systems, augmented reality, space imagery, robots, 3D printers – all these things are engineering technological advances which have been already invented to make agriculture better. Virtual reality technology can permeate various fields of agricultural production, beginning with simulating growth process and ending with creating seeds using a 3D printer.

In conclusion, VR technologies should be involved in any sphere of people's lives not to stop human development and to make our lives better.

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