

Maxim Demchenko
I.M. Udovik, research supervisor
I.I. Zuyenok, language supervisor
National Mining University, Dnipro, Ukraine

Evidences of World`s Technical Revolution 4.0

Over last three centuries industry as it is now has dramatically changed and developed from global urbanization and steam machines to invention of PC with variety of digital devices and spreading of the Internet. The Fourth Industrial Revolution marked by emerging technology breakthroughs in a number of fields, including robotics, artificial intelligence, nanotechnology, biotechnology, the Internet of Things (IoT), 3D printing and autonomous vehicles. The Fourth Industrial Revolution was declared in Davos on “World Economic Forum” in 2016. This statement was built on the Digital Revolution, representing new ways in which technology becomes embedded within societies and even the human body.

The main principal of Industry 4.0 is Internet of Things. Internet has been known as a way of communication between people. Since then it has developed and transformed in the IoT. IoT is the next stage of connection where every physical device can be permanently connected to any database via a network of technologies.

IoT is a concept where devices or things have built-in technology that transfers and exchanges data over a network without any human interaction. At its most basic level this could simply be a sensor in a car connected to a central computer to send data to your smartphone.

Internet of Things has five essential technologies for its correct and productive work:

- *Cloud Integration* which is the complex of connecting, storing and using the data through a universal software service stored in a secure virtual network of servers.
- *Big Data* which is referred to as a technology which offers possibility to store huge amount of data, analyze it and make meaningful conclusions from it. This technology needs special developers in every language of programming.
- *3D Printing* or *Additive Manufacturing* is known as a process that starts with a computer aided design and builds up layers of material into a solid three dimensional object.
- *Autonomous Robots* are a machines than can move, perform tasks and maintain itself without direct human interaction. Actual object of IoT development.
- While Virtual Reality shows users a simulated world, *Augmented Reality* is a real-time simulation of a real world environment enhanced by computer aided sounds, videos and graphics.

Overall, World`s Technical Revolution 4.0 has a lot to offer for people. In future all the described technologies: Internet of Things, Cloud Integration, 3D Printing and others, will be an integral part of routine life.