

ERAS OF AUTOMATION EVOLUTION

Buynovskyi B. M.,
Scientific supervisor – senior teacher Nasonova N. A.

Nowadays the history of automation is a very important topic. Without understanding our past, it's impossible to understand present and future situation and I'd like to mention some facts concerning automation.

Automation is the use of the technology which partially or completely replaces manual human operations.

Speaking about automation, it's usually divided by people into four time periods.

The 1st Era, which can be called as “primitive automation, began with the inventions of wheel, mill, and blast furnace. That era is characterized by the automation of individual management functions performed by individual people.

The invention of computer technologies allowed humans to start the implementation of the first autonomous, intellectual active elements. The majority of functions remained non-automated were performed manually by human workers. That was the beginning of the 2nd Era of Automation, and it includes fragmentary, partial, or narrow automation. Industrial robots were designed to perform different tasks.

Today, developed countries have entered the 3rd Era of Automation, which includes complete or wide automation. In most organizations it is now very difficult to find a person who does not use automation of some sort somewhere. Automation nowadays is a technology, based on communication, computation and control. The truly automated devices must possess one or more of the following elements: system approach, programmability, feedback. For example, as for the system approach, factories make things without people working at the transfer lines.

The examples of automated systems in manufacturing are: fixed automation or “hard automation”, programmable automation and flexible automation.

It is difficult to think of any aspect of life that has not been improved by computers. They are able to make complicated mathematical calculations at an incredible speed, and when operated under the instruction of skilled programmers they can accomplish incredible feats.

Today the human society stays at the doorstep of the 4th and, possibly, last automation era: the era of comprehensive or total automation. In this coming era, automation technologies will replace humans in most areas of production and services, and only a few areas may still remain under human control.

Unfortunately, it will cause a lot of different problems. There is no theory to support everything. Only God knows what will happen when humans decide to trust their lives to machines.