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**What Is Automation and Why Is It Needed?**

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Studying automation of technological processes and productions can bring a lot to the world. What does it represent?

This area of science allows to engage in modern hardware and software, which can conduct diagnostics and researches in the industry. People who have mastered this profession can also create their own control systems. There are several fields of activity in automation such as: industry, energy, instrumentation and transport. In simple terms, it means creating systems which can do the job of a human without human intervention, or leaving the most serious decision-making to humans. What is the purpose of my profession? Well firstly it is the reduction of the service character, although many are against it, although it allows us to replace humans in dangerous areas of production. It also increases the quality of production. That is, automation provides a precise, fine-tuned production mechanism, while eliminating the human factor. There will be an increase in productivity as labor intensity decreases and this will lead to a reduction in production costs, making quality affordable. There are many more targets for my specialty. But we will not go into them here.

The pinnacle of automation, on the other hand, is industrial robots, which are our future. There is even such a form of automation called robotic automation of technological

processes. Which is very popular nowadays and is increasingly being used in production.

Since mid of 90's, automatized systems at workstations have been able to make full modeling capabilities of product design, production and tool making, including casting, stamping, bending processes design. In result there was a fundamental change in the organization of production preparation, named Concurrent Engineering that means parallel and component production design [1].

Statistic shows that realization of parallel designing concept reduces time and cash spend to 50 percent and improve quality of production to 60 percent. And the resulting cost savings occur by replacing full-scale mock-ups with computer simulation of products and their manufacturing processes, as well as by eliminating errors in tooling design. In result production and further modification cost of production significantly decreases that pays off costs of automatization [1].

Automatization begins from analysis of project activities of enterprise subdivision that should be automatized (what's designed, how, what are the problems, goals and reasons of automatization). After we searching opportunities to save already automatized workplaces (saving previous costs). Then we design complexes with maximum proportion of efficiency and cost. If it needed, we design intranet of enterprise. Delivery and installation of software and hardware according to the list set earlier [1].

#### References:

1. Поэтапная автоматизация подготовки производства. [Electronic resource]. – Mode of access: <https://www.osp.ru/ap/1997/03/13031633> – Date of access: 14.03.2022.