

# Automatization

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# Automatization is...



- the use of various control systems for operating equipment such as machinery, processes in factories, boilers and heat treating ovens, switching on telephone networks, steering and stabilization of ships, aircraft and other applications with minimal or reduced human intervention. Some processes have been completely automated.

# There are three types of processes automation:

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- Process Automation
- Factory Automation
- Hybrid Automation



- The biggest benefit of automation is that it saves labor; however, it is also used to save energy and materials and to improve quality, accuracy and precision.

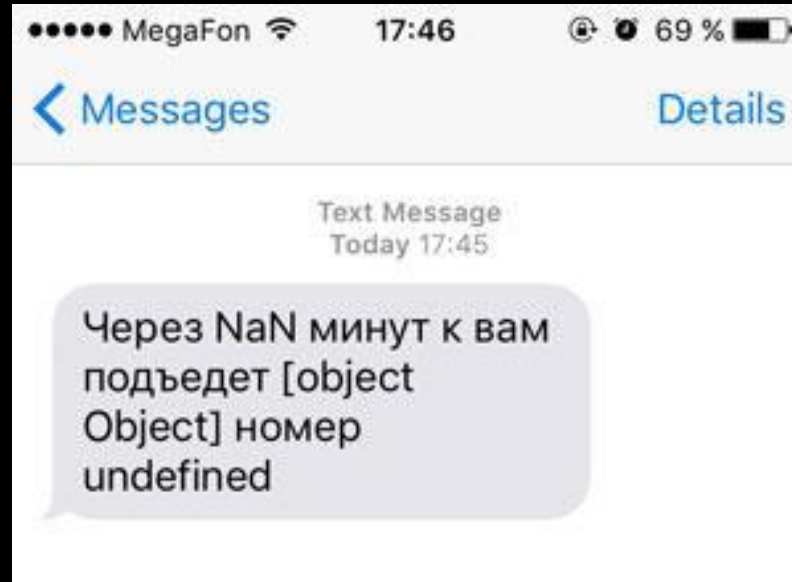
# The main advantages of automation are:

- Increased throughput or productivity.
- Improved quality or increased predictability of quality.
- Improved robustness (consistency), of processes or product.
- Increased consistency of output.
- Reduced direct human labor costs and expenses.

# The main disadvantages of automation are:

- Security Threats/Vulnerability
- Unpredictable/excessive development costs
- High initial cost

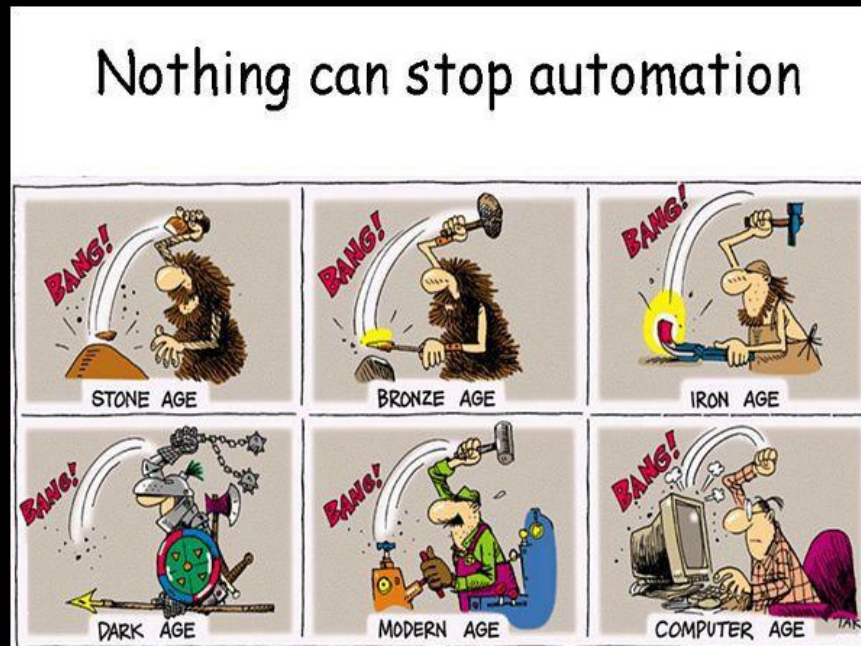
# The Paradox of Automation



says that the more efficient the automated system, the more crucial the human contribution of the operators. Humans are less involved, but their involvement becomes more critical.

If an automated system has an error, it will multiply that error until it's fixed or shut down. This is where human operators come in.

# Automated waste management

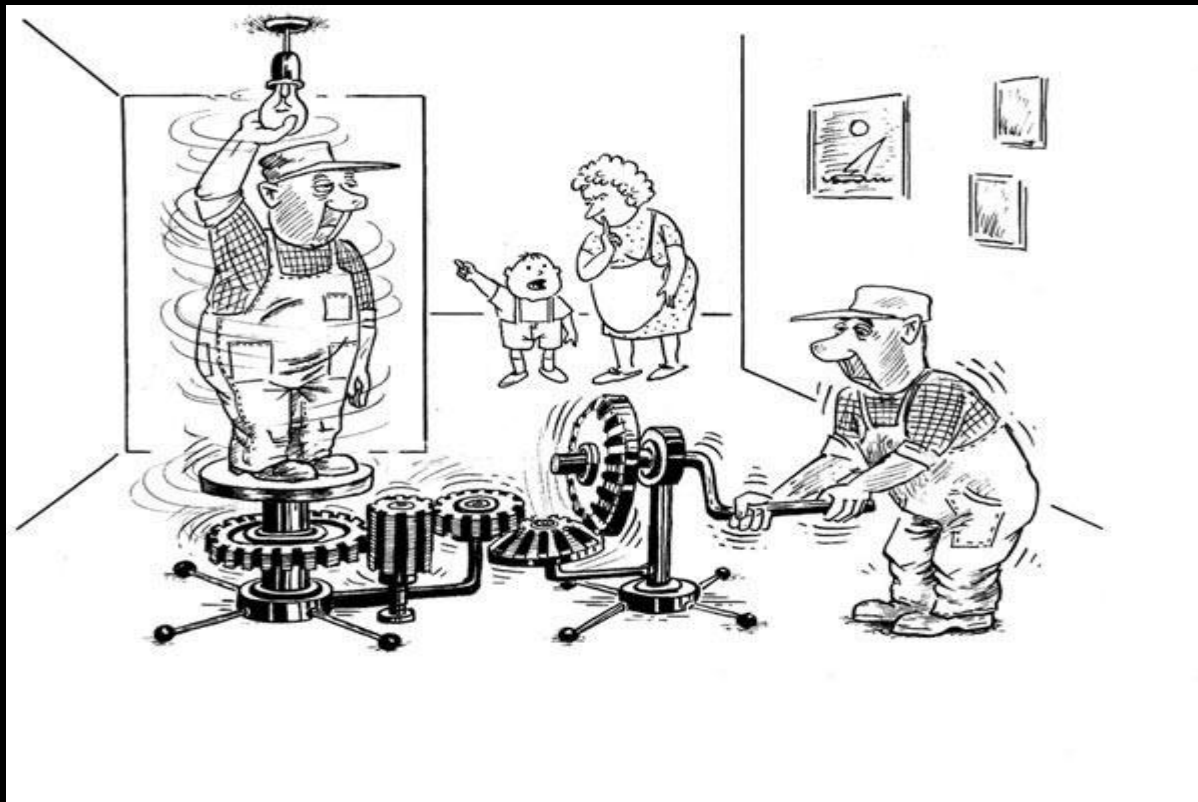


Automated waste collection trucks prevent the need for as many workers as well as easing the level of labor required to provide the service.





Teachers of Lviv National Forestry University teach us -  
future professionals of automation



Automation is an integral part of the production  
The use of new technologies allows the manufacturer to save money raw materials, energy, labor, the production process and other.