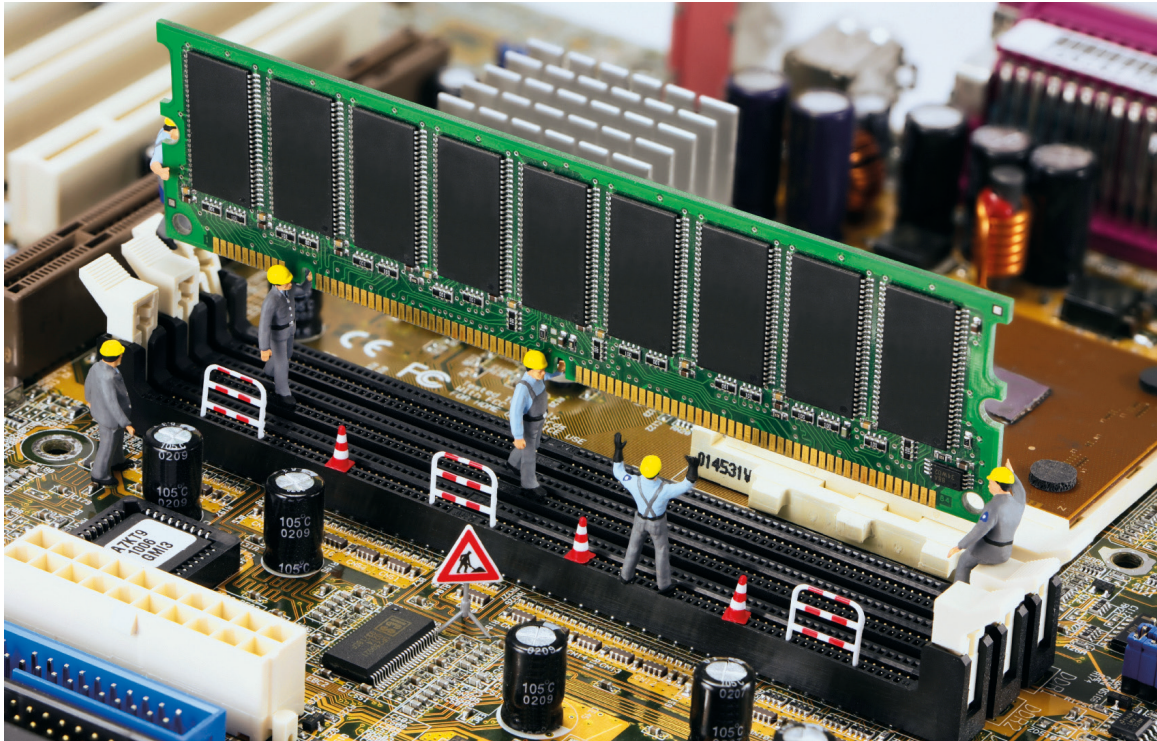


# COMPUTERS AND AUTOMATION

Automation is the use of machines, control systems and information technologies to optimise productivity in the production of **goods** and delivery of services. Automation is applied to increase productivity, and to create **economies of scale** and predictable quality levels. In the **field** of industrialisation, automation is a step beyond mechanization. Whereas mechanization provides human operators with machinery to assist them with the muscular requirements of work, automation greatly decreases the need for human sensory and mental demands while increasing load capacity, speed and repeatability. Automation plays an increasingly important role in the world economy and in everyday life. 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 labour costs and expenses.

Information technology, together with industrial machinery and processes, can assist in the design, implementation and monitoring of control systems. One example of an industrial control system is a **programmable logic controller** (PLC). PLCs are specialized hardened computers which are frequently used to synchronize the flow of inputs from physical sensors with the flow of outputs to **actuators**.



goods: *merci*  
 economies of scale: *economia di scala*  
 scope: *ambito*

whereas: *mentre*  
 throughput: *rendimento*

## 1 Find the English words in the text for the following Italian terms.

- a. *consegna*: .....
- b. *passo*: .....
- c. *macchinari*: .....
- d. *requisito*: .....
- e. *diminuire*: .....
- f. *carico*: .....
- g. *coerenza*: .....
- h. *spese*: .....
- i. *realizzazione*: .....
- j. *flusso*: .....

## 2 Complete the following sentence.

- a. Automation is the use of ..... control systems and information ..... to optimize ..... in the production of ..... and delivery of .....
- b. The aim of automation is to ..... productivity, and to create ..... and predictable ..... levels.
- c. Mechanization provides human ..... with ..... to assist them with the muscular ..... of work.
- d. Automation greatly decreases the need for ..... sensory and ..... demands while increasing load ....., speed and repeatability.
- e. Information technology can assist in the ....., implementation and ..... of control systems.
- f. PLCs are specialized computers which are used to synchronize the flow of ..... from physical ..... with the flow of ..... to actuators.

