

## OSKA study of manufacturing industry

### *Key findings*

#### **More industry managers, engineers and works managers are needed**

- Because of digitalization, automatization and the development of the technology of materials, the demand for industry and product development engineers is growing.
  - Employment can only be increased if there is skilled labour force available.
- The demand for mechatronics and technicians increases by 3% in the next 10 years.
  - Although in the future more people are needed for the maintenance and setting up of production equipment the change is not rapid enough.
- The number of jobs for industrial operators and product assemblers will remain the same.
- The employment of manufacturing industry will not change as much in the next decade.
  - First and foremost, the positions of retiring employees in the next years need to be filled.

#### **The shortage of employees in manufacturing industry hinders the development of Estonian economy**

- Manufacturing industry is lacking 2/3 of engineers.
  - The number of accepted students to manufacturing and processing programmes has dropped by half and to engineering, manufacturing and construction programmes by quarter in the last six academic years.
- To meet the demand for engineers, amendments in migration policy should be considered to hire foreign workers in the manufacturing industry.
- There are not enough young graduates from vocational educational institutions to fill the jobs of manufacturing industry.
  - Not enough people study electricity and energy, electronics and automation and mechanics and metalworking.
  - The number of accepted students to the fields of engineering has decreased by one-tenth.
  - More bakers, tailors, seamstresses, carpenters and car-mechanics are trained than there is a need for them.
- Work processes should be automatized to decrease the demand for skilled workers.
  - It is important to offer state measures to support automatization and digitalization.

#### **Manufacturing industry needs employees who have the knowledge of industrial product development and automatization of production**

- There is an increasing need for specialists who have the knowledge of managing and setting up automatic control systems, data analysis and interpretation, robots set-up and operating automated devices and robots.
- Employees are lacking product development and marketing skills.
- Employees who know the technology of materials and high technology equipment are wanted.
- Employees must advance their digital and general skills.

- The added value of manufacturing industry could be increased with highly qualified employees.
  - Some positions that require higher education are filled with employees with lower education level.
  - The positions of retiring employees with general education should be filled with new workers who have at least VET education, but ideally they are specialists with a degree in higher education.
  - The wealthier the state is, the bigger is the proportion of specialists with higher education working in the manufacturing industry.

## **Background**

- Over 120,000 people are employed in the manufacturing industry, which is about 18% out of all the employees in Estonia.
- Manufacturing higher education programmes are offered at the University of Tartu, Tallinn University of Technology, the Estonian University of Life Sciences, Estonian Aviation Academy and Tallinn University of Applied Sciences.
- Manufacturing vocational education programmes are offered at 23 VET institutions in Estonia.
- The OSKA study of manufacturing industry analysed the need for labour force and skills and made proposals how to meet it.
- The OSKA forecasting system produces projections of the need for labour force and skills in all fields of the Estonian economy and compares these to the education and training offered by higher education institutions and continuing education courses.
- OSKA studies of the labour force and skills demand help to make smarter career choices and shape the employment and education policies with a view to the future.
- OSKA studies are conducted by the Estonian Qualifications Authority (*Kutsekoda*) and funded by the European Social Fund.