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Shaping Transitions with Evidence

Analysis of the possibility to strengthen the R&D infrastructure potential for the Industry 4.0 concept development needs

The Ministry of Education, Science, Research and Sport of the Slovak Republic

FUND COVERED

- ERDF

PROGRAMMING PERIOD

- 2014-2020

PROGRAMME COVERED

- Research and Innovation operational programme; in late 2019 the programme was merged with the Integrated Infrastructure operational programme

THEMATIC OBJECTIVES

- TO1. Research and innovation

TYPE OF EVALUATION

- Process/formative

YEAR OF COMPLETION

- 2020

MAIN OBJECTIVES

The analysis is to map the potential, capacities, and needs of Slovak R&D institutions and enterprises in relation to the Industry 4.0 global trends, and should establish prerequisites for the ESIF efficient management to stimulate cooperation of such institutions and enterprises, and enhance their excellency and internationalization rate.

METHODOLOGY USED

A mix of quantitative and qualitative evaluation methods:

- desk research
- questionnaire survey
- in-depth guided interviews

DATA SOURCES

- Scientific publications
- Government and EC documents
- Target group information
- Statistics

MAIN FINDINGS

The mapping of the environment has highlighted key development factors. Development of public R&D organizations and their ability to perform quality R&D and cooperate with enterprises are determined in particular by factors related to technology and by subsequent framework conditions and human resources creating conditions necessary for their operation.

In 5 years the activities carried out in all technology domains will become more significant in terms of the companies´ needs.

The investment debt is one of the barriers to the future cooperation of companies and institutions. Most of the investment needed within the following four domains:
• Simulations • Artificial intelligence
• Advanced robotics • Additive manufacturing.

The investment costs in the four most investment-intensive domains amount to 71.3 % of the total investment costs.

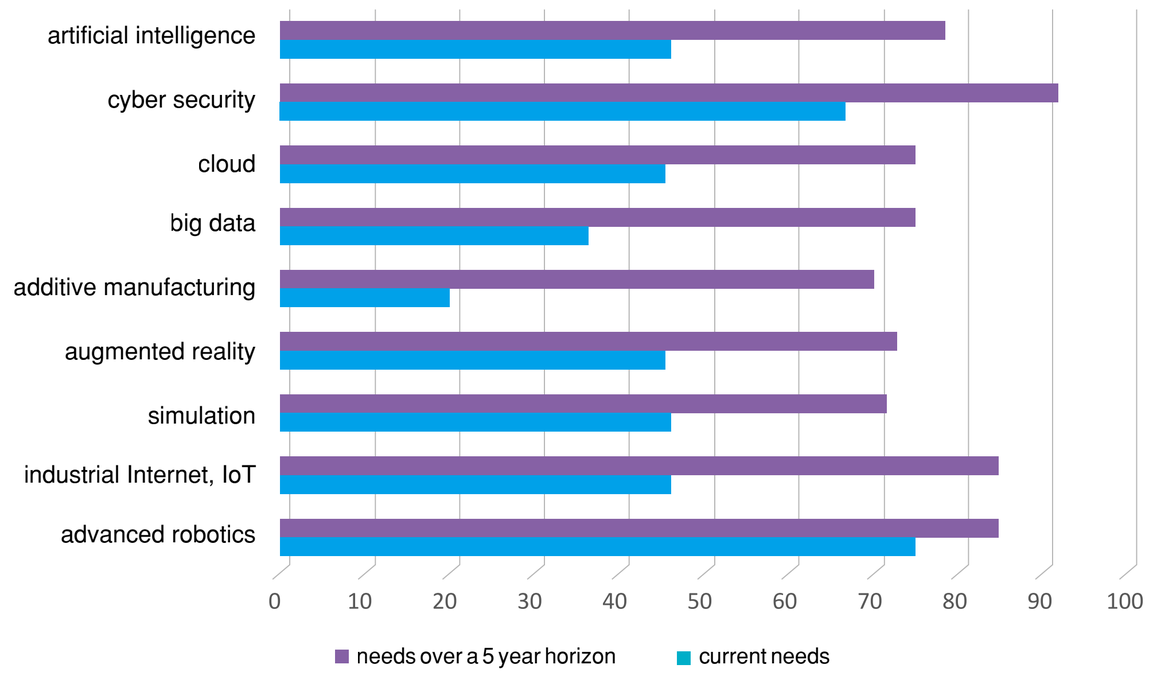
The findings point to the gradual convergence of the focus of public R&D organizations´ teams acting in the Industry 4.0 area with the industry needs. Common expectations of the industry needs relate to the areas of big data and simulations; the growth potential is evident in other domains, too.

The most intense cooperation of public R&D organizations with enterprises has been identified in the domains of advanced robotics, simulation, and industrial Internet and IoT. The most significant cooperation with foreign R&D organizations has been reported in the area of advanced robotics, simulation, and artificial intelligence.

CONCLUSIONS

The development of public R&D organizations´ networks and their ability to cooperate with enterprises have various forms depending on the external support setting. The public funds´ support is a key factor determining the further development and achievement of various direct and indirect effects on a wider-defined company (not only on R&D organizations).

A sample of enterprises predicts that in 5 years the activities carried out in all technology domains will become more significant.



EUROPEAN UNION
European Regional Development Fund
OP Integrated Infrastructure 2014 – 2020

MINISTRY OF EDUCATION, SCIENCE, RESEARCH AND SPORT OF THE SLOVAK REPUBLIC

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