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Summary of the report IO1-A1: Key study on current skills, knowledge, and qualifications regarding digitalisation

Project:

Fostering diGitalisation and blonic transformation of SMEs through the development of a novel and innovative Training material for overcoming COVID-19 crisis



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Introduction

The GIST project aims at developing and implementing innovative training material for small and medium enterprises (SMEs), which will provide the basic competencies to reach a "bionic status".

The first phase of the project was dedicated to an in-depth research of SMEs, VET providers and HE institutions and consultancy organizations knowledge related to digital and bionic transformation of SMEs. The survey was conducted in the form of a questionnaire, and it was completed by 71 respondents, out of which 30 SMEs, 24 other organizations (VET providers and HE institutions, consultancy organizations) and 17 unemployed and students interested in digitization among other topics.

The study was conducted from July to October 2021 through a survey based on 71 respondents from Spain, Slovenia, Poland, Croatia, Ukraine, Austria, Italy, Germany, Macedonia, Switzerland, Belgium, and Hungary. Respondents in the first part of the questionnaires provided general information on their nationality, gender, education, and occupation. In the second part of the questionnaire, the questions focused on the analysis of knowledge needs regarding digital transformation. Most of the respondents were male and only the fifth were women. Most of the respondents' level of education is Master's Degree. The majority of the respondents have 20 or more years of professional experience, followed by 15-19 and 10-14 years. 14 students filled up the questionnaire.

The results of analysis in SMEs showed that most of the participants are familiar with 4.0 technologies and find them important. The most important technologies according to SMEs are robotics and 3D printing and custom manufacturing. Moreover, these are the technologies most of the participants are familiar with and/or have experience with. However, even though they are rated as most important, these technologies are mostly not used by SMEs. Main barriers for the implementation of 4.0 technologies, according to SMEs, are the lack of skills and knowledge among staff and the cost of technologies.

According to the SMEs, the readiness for digitalization process, which includes the existence of a thought-out strategy for improving the online experience of customers, culture of communication, awareness of risks, carrying out a comprehensive analysis of the company's strengths and weaknesses, systematic inventory of all- important aspects of current business model, experience with methods of analysis, impact of GDPR, reaction of the company to the fears of employees, as well as being able to present ideas, preparation for future challenges and preparation for implementation of new business model, is at quite high level. Moreover, the fact that most of the SMEs have a digitization expert also supports that they are ready for digital transformation.

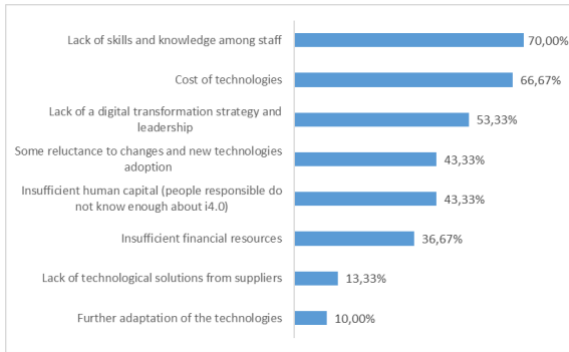


Figure 2: Main barriers for the implementation of 4.0 technologies (SMEs)

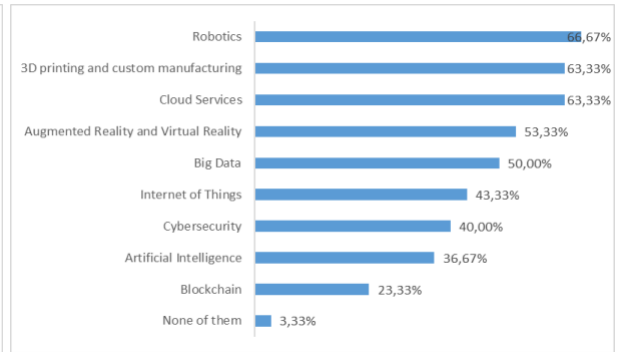


Figure 1: Importance of technologies for sector (SMEs)

Most of the institutions from public bodies, non-governmental organizations, high education institutions, vocational education and training providers and consulting organizations are familiar with 4.0 technologies and find them important for industry, especially traditional sectors, such as furniture. As the most important technologies the respondents listed robotics, Internet of Things and 3D printing and manufacturing, while as the largest barrier to successful implementation of industry 4.0 technology they find a lack of digital transformation strategy and leadership.

For furniture and related industries, the most important technologies according to respondents are robotics and 3D printing and manufacturing, while the most important technologies in traditional sectors are robotics and Cloud Services. Regarding the experience of respondents, the readiness of SMEs for digital transformation, which includes the existence of a thought-out strategy for improving online experiences of customers, existence of a thought-out strategy for optimizing and obtaining benefits of social media, open culture of communication, awareness of risks, carrying out a comprehensive analysis of the company's strengths and weaknesses, systematic inventory of all-important aspects of current business model and impact of GDPR, is still not at the satisfactory level, which is a contradiction to the results of questionnaire related to SMEs.

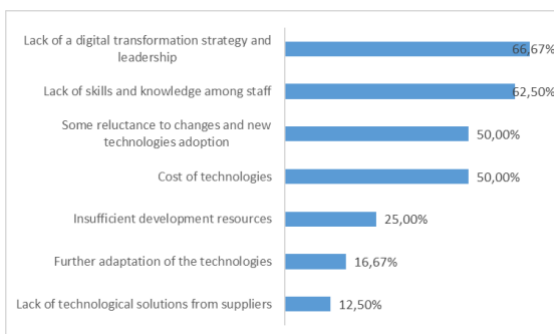


Figure 3: Main barriers for the implementation of 4.0 technologies (other organisations)

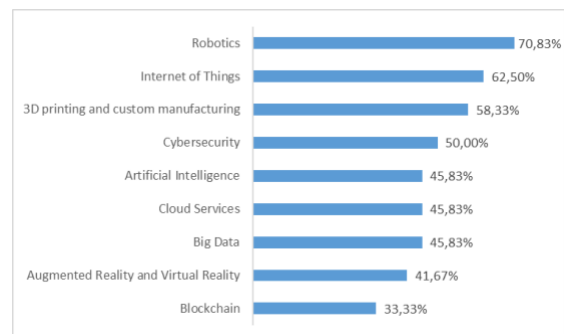


Figure 4: Importance of technologies (other organisations)

The familiarity of students and unemployed people with 4.0 technologies is a little bit smaller in this group, but they are still found very important for industry, especially traditional sectors, such as furniture. The most important technologies according to this group of participants are 3D printing, custom manufacturing, and robotics. The analysis of the questionnaire showed that 4.0 technology skills are not yet fully present in the educational system although students find it helpful to find a job and important to apply in future work. Even though students and unemployed are mostly lacking knowledge and skills regarding 4.0 technology, their self-assessment showed that they are rather experienced with a thought-out strategy for online customer experiences, have good communication skills and know different methods of analysis.

The results of all three questionnaires show that 4.0 technologies and related skills are already important and will become of even greater importance. However, SMEs are still not completely ready for digital transformation. Additionally, students still do not have enough knowledge on 4.0 technologies.

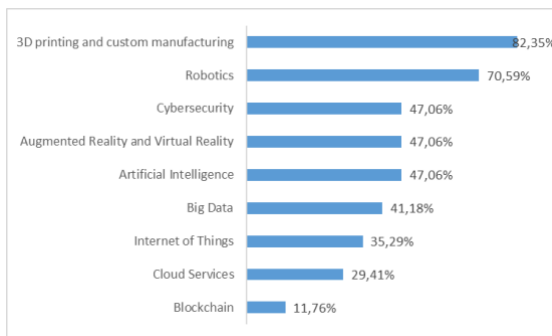


Figure 5: Importance of technologies for the furniture and other related traditional sectors (students and unemployed)

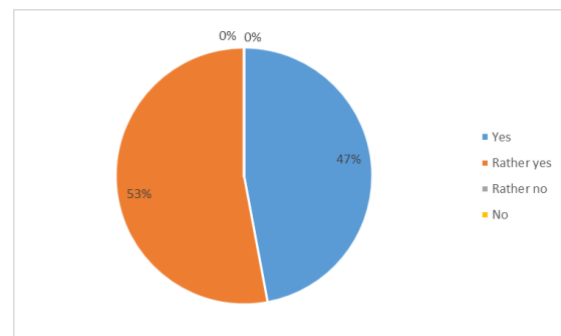


Figure 6: Importance of 4.0 technologies (students and unemployed)

The conclusion of the analysis of current skills, knowledge and qualifications regarding digitization is that the new and innovative programme regarding 4.0 technologies is necessary in order to use all of the advantages of digital transition, such as cost reduction and improved efficiency. This analysis showed that it is important to include 4.0 technologies in education and training to ensure having an educated and qualified workforce.

Based on this conclusion, the next steps of the GIST project will be the definition of GIST learning outcomes (specific knowledge, skills and competencies) based on the defined and endorsed knowledge gaps to be covered in terms of digitalization), the definition and design of the complete structure of the future GIST training course in the form of modules, units, methodology to be implemented, etc., and the validation of the Joint Curriculum in order to guarantee the interest of associated partners, target groups and stakeholders regarding the training course before its development.

The full analysis of this study is available in English at the following link:

https://drive.google.com/file/d/1h-RFmJEOSgBKjDVyfit-VGNJ_hEVHveK/view

