D.T3.4.1 REPORT ON LEARNINGS FROM THE USAGE OF AI BY AMS

Summary of the individual country reports

Version 1
03 2022

Within the international research project “Progressing Service Performance and Export Results of Advanced Manufacturers Networks” the developed tool “Service Export Radar” demonstrates in its form a unique market research tool based on artificial intelligence algorithm. “The Service Export Radar” investigates company webpages operating in NACE codes 26, 27, 28, regarding their promotion and offer of industrial related services on their webpages. The tool exemplifies how online data on webpages can be gathered and analysed with natural language processing and machine learning algorithms. The following report contains learnings from the usage of the artificial intelligence tool by advanced manufacturers and what support is necessary by policy makers on a regional level in the participating countries to support the development of artificial intelligence applications. The report aims to establish a current IS status in the regions regarding the usage, development, and governmental support in the field of artificial intelligence deployment. This report functions as a summary of the individual feedbacks from the CE-countries.

The situation in Austria regarding AI is that companies recognize the potential of AI which is especially true for the engineering segment. Regarding the service sector AI is in use but not all potentials are exploited so far. Even though being small in number (in an international comparison) especially start-ups utilize AI more often than other sectors in this country.

Regarding research on AI implementation status and assessment of potentials for companies and employees the Austrian economic chamber is conducting a study about the current state of the human centred AI applications in Austrian companies to determine the barriers for implementation and the process of implementing AI in companies. Policies aiming at AI are the “aim 2030” strategy which has three goals, namely, firstly orientation on the common good and execution of AI in a responsible way based on civil rights and human rights, European baselines, and the following European legal framework. Secondly, positioning of Austria as a research and innovation location for AI and thirdly, the development and use of AI should foster and secure the competitiveness of the Austrian technology and economic location. The AI strategy of the Austrian government is defined as an agile strategy. The strategy will not be singular or final for the next years but open for change, adaption, and precision. Learning should be possible, and the strategy should develop and evolve.

Even though being a highly industrialized country the Czech Republic lags behind in AI and the Czech affiliated partner SBCC mentioned that Czech companies need to undergo internal transformations in their structure, organization of production and use of employees in order to not lose up to half of its value added especially in the automotive industry and therefore the enhancements in technology are crucial for the future growth of not only the Czech Republic but also due to its affiliation with German industrial clusters for other CE-country economies. In general, it is mentioned that the Czech Republic needs to invest in research and transfer of research into practice to foster the competitiveness for the future of the country according to the SBCC. For policy making the Czech Republic will mostly follow the initiatives of the EU, OECD, WTO and UN also in the field of implementation of the right legal framework for this practice. Lawmakers in the Czech Republic will have to respond flexibly and continuously to the development of technologies by setting up research and development friendly legislation, as well as emerging economic models, removing obstacles and, conversely, setting legal certainty. All this while maintaining a high level of protection of fundamental and other rights and in line with the European approach of human-centric AI.

The TGZ in Bautzen (Germany) mentioned in their report that in their area AI is not a topic for most companies as they are usually SMEs with less than 10 employees. Apart from the absence of usage of AI companies are interested in the technology and would utilize it if they have the possibility. In the German context they furthermore state that in Germany younger companies are more prone to use AI than established companies. In regard to the strategy of the state of Saxony especially mechanical engineering companies are strong and belong to the world leaders in their niches and especially those have great pre-requisites to integrate AI further in their products. Big hurdles for the implementation of AI especially in the Saxony region in Germany by companies are a lack of skilled workers, an economy depending on SMEs, and a lack of venture capital, access to the necessary data and lack of application knowledge in companies. In the overall strategic considerations of the German state servitization does only play a minor role while digitalization in general is regarded to be one of the most important drivers for innovation. The state of Saxony as well has an AI strategy in place and wants to make Saxony one of the AI centers in Europe and as a first step an AI campus in Dresden will be established. Several funding programs with the goal to enhance digitalization are in place and an especial emphasize is pointed at education.

The PP3 Innsokart states that the Hungarian economy is largely dependent on foreign investment and external resources and has its distinct challenge in a low labor productivity which should be enhanced by innovation and investing in knowledge. Furthermore, the value added of work processes shall be enhanced through AI-driven technologies and Innoskart is confident that Hungarian companies will jump on the opportunity also due to EU funding which could be available to them to develop technologies. The Hungarian government recognizes the importance of innovation and technology, and the chamber of commerce is supporting this endeavor with companies and furthermore they encourage smaller firms and SMEs to cooperate with international companies as those are the one on the forefront of the AI development. Furthermore, the necessity of STEM driven subjects in educational institutions already from an early age on is emphasized to close the gap in innovation and digitalization to other EU countries especially in regards to mitigate the education of an unskilled workforce which is uncoupled from modern working techniques.

The PP7 FINN states that the manufacturing sector in Italy has the highest deployment rate of AI tools in Italy and also in the public sector there are potentials for digitalization of government services even though those have improvement potential due to the low degree of utilization of digital government services by the people. There is in general a growing understanding in Italian companies that AI is of importance especially with its data processing capabilities. The biggest problem also in this country is the lack of skilled workforce which has the statistical and mathematical skills to utilize in a business context. In the Italian region Friuli Venezia Giulia which is a highly innovative region which utilizes modern technologies there are numerous examples of companies utilizing new technologies for servitization and are highly successful with doing so. Challenges in the matter of digital servitization are the limited knowledge and awareness of the functionality and potential of the industry 4.0 technologies, the lack of digital skills within the company, to which one must add the lack of sufficient financial resources to plan investments in industry 4.0, the latter aspect is more relevant for smaller companies which especially also relates to the technology of AI. AI is one of the major turnover contributors in the industry 4.0. There is still improvement potential in regard to AI solutions in Italy also in comparison to other European countries.

PP4 CCIS from Slovenia states that their country is above the average of the EU in the utilization of AI tools especially with larger companies but also within a study around 50% of SMEs reported utilization of AI tools. AI tools utilized mainly refer to business intelligent systems and data warehouse layouts but also there are numerous other applications how companies utilize them. Also, in this country there is a shortage of skilled workforce. Also, Slovenia implemented in a European context several initiatives to foster digitalization and usage of AI as well as the ethical application of the tools in the shape of legislation initiatives.

The PP10 EUBA states that Slovakia is very automatized in its manufacturing ranking 15th in the world in terms of robotization. Around a third of the industrial companies aim to implement a strategy in regard to the industry 4.0 or has already done so and over a half of the companies say that they are compiling task forces in this regard to tackle this issue. A study with 247 respondents revealed that 149 companies from all industry segments have not been in direct contact with AI applications. Most AI providers in Slovakia focus on B2B solutions mostly for the finance or IT sector but as well as for transport, logistics, sales and marketing. A Digital Transformation Strategy is also in place to support the digital transformation of schools and education to promote skills for the digital era, to strengthen the digital foundation of the data economy to improve the ability of public administrations to use data for the benefit of citizens and to support the artificial intelligent ecosystem. In general, there are several initiatives from the government to foster the adoption of new technologies by companies. Slovakia is lacking behind the introduction of a digital innovation hub (only 3 other

members do not have one). AI is in general perceived as a technology which holds a lot of opportunities for the Slovakian economy but also raises some ethical questions.

To conclude the learnings from the usage of AI by AMs one can state that in all investigated CE-countries the chambers of commerce and affiliated partner do recognize the need for digitalization and usage of AI tools also but not only in regard to servitization. There seems to be a general lack of skilled workforce across all CE-countries and all CE-country governments are implementing strategies on the European, national and state level to enhance digitalization in regard to AI which applies to all countries the ProsperAMnet got feedback from. Also, companies in general recognize the need for innovation to not lose ground in the international comparison. Even though countries such as Germany, Slovenia, Austria and Italy seem to be more advanced in the utilization of AI applications as well as having companies who provide those applications, they still state that those actions need to be enhanced. Reports from Slovakia, the Czech Republic and especially Hungary draw the picture that those countries need to massively invest in digitalization and servitization as those are trailing other European countries in the utilization of AI applications and digitalizaiton initiatives. A general theme across all countries was that larger companies are more innovative than their SME counterparts as well as that younger companies are more innovative in their approaches than already established market participants. According to all CE-country participants, education on digitalization matters must already start in the educational sector as there is a skilled labour shortage in all CE countries. In general there is in all countries still a lot of potential in the matters discussed which needs to be exploited in order to stay competitive.