Level Up

NATIONAL REPORT POLAND

As part of Deliverable D3.1: Report on labour market need of emerging advanced digital skills

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AUTHORS:	MAGDALENA RACZYŃSKA, MAREK KRUSZEWSKI
REVIEWERS	GRANTXPERT CONSULTING LTD

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INTRODUCTION

The Level Up project is an ambitious and innovative initiative aimed at empowering European citizens through skills development and fostering lifelong learning. It is a collaborative effort among various stakeholders, including governments, educational institutions, and industry partners, with the goal of equipping individuals with the necessary knowledge and competencies to thrive in the rapidly evolving digital age.

Objectives

The Level Up project has set forth several key objectives to address the skills gap and enhance the employability of European citizens:

a) Upskilling and Reskilling: The project aims to provide accessible and high-quality upskilling and reskilling opportunities to individuals across Europe. It focuses on both digital and non-digital skills, acknowledging the importance of a well-rounded skill set in today's interconnected world.

b) Lifelong Learning: Recognizing that learning is a continuous process, the Level Up project promotes the concept of lifelong learning. It encourages individuals to embrace learning opportunities throughout their lives, enabling them to adapt to changing job market requirements and remain competitive.

c) Collaboration and Partnership: The project fosters collaboration among various stakeholders, including educational institutions, industry experts, and policymakers. By pooling resources and expertise, Level Up creates a comprehensive ecosystem for skills development and ensures the alignment of educational programs with industry needs.

d) Digital Transformation: As technology rapidly transforms various industries, the Level Up project emphasizes digital literacy and digital skills development. It equips individuals with the knowledge and abilities needed to navigate the digital landscape, fostering innovation and enabling them to leverage technology effectively.

Key Features

The Level Up project encompasses a range of features and initiatives designed to deliver its objectives:

a) Online Learning Platform: The project provides a user-friendly online learning platform that offers a diverse array of courses and learning materials. These resources cover a wide range of topics, including digital skills, entrepreneurship, leadership, and personal development.

b) Personalized Learning Paths: Recognizing that each individual has unique learning needs, Level Up offers personalized learning paths. Through assessments and tailored recommendations, learners can access relevant content and progress at their own pace, enhancing their learning experience.

c) Industry Partnerships: The project collaborates closely with industry partners to ensure the courses and programs offered are aligned with current and future job market demands. This partnership enables participants to acquire skills that are highly sought after by employers, increasing their employability.

d) Certification and Recognition: Upon completion of courses or programs, learners receive certifications that are recognized across Europe. These certifications validate the acquired skills and enhance individuals' profiles, giving them a competitive edge in the job market.

Potential Impact

The Level Up project has the potential to generate a significant impact on European citizens and the region's economy:

a) Increased Employability: By providing accessible and relevant skills development opportunities, Level Up enhances the employability of individuals, particularly in sectors experiencing digital transformation. This, in turn, contributes to reducing unemployment rates and strengthening the overall labor market.

b) Economic Growth: Equipping individuals with advanced skills and competencies fuels economic growth by promoting innovation, entrepreneurship, and productivity. The Level Up project empowers citizens to actively participate in the digital economy, fostering competitiveness on a global scale.

c) Social Inclusion: The project aims to address social inequalities by making skills development accessible to all individuals, regardless of their background or geographical location. By reducing barriers to education and fostering inclusivity, Level Up contributes to creating a more equitable society.

d) Lifelong Learning Culture: Through its emphasis on lifelong learning, the Level Up project instills a culture of continuous improvement and personal development. This mindset not only benefits individuals but also creates a society that is adaptable

National context

Digitalisation remains one of the key priorities of Polish government, along with simplifying legislation and improving the quality of regulations to support the business environment. Work is currently under way to identify further actions to be implemented under the new

financial perspective under the 2021-2027 European Social Fund Plus (ESF+) and the 2021-2027 European Regional Development Fund (ERDF). In addition, the digitalisation policy for education and the 2030 Digital Competence Development Programme are planned to be adopted in the third quarter of 2022 with a 2030 perspective.

Poland also supports digital technologies through national and EU-coordinated programmes.

1. National Digital Skills Development Strategy[1]: The National Digital Skills Development Strategy in Poland focuses on bridging the digital skills gap and enhancing digital literacy. The strategy sets out specific goals and action plans to improve digital competencies across various sectors, including education, business, and public administration. It emphasizes the importance of upskilling and reskilling programs, promoting digital entrepreneurship, and fostering digital inclusion.

2. Digital Poland 2020+ Strategy[2]: The Digital Poland 2020+ Strategy, initiated by the Polish government, is a comprehensive roadmap for digital transformation in the country. It encompasses multiple areas, including digital infrastructure development, e-government services, digital innovation, and digital skills. The strategy aims to strengthen Poland's digital capabilities, boost economic growth, and improve the quality of life for citizens through digital technologies and skills.

3. National Centre for Research and Development (NCBR)[3]: The NCBR is a key institution in Poland responsible for promoting research and development activities. It supports initiatives and projects related to digital skills development, innovation, and technology transfer. The NCBR provides funding and resources to research institutions, universities, and businesses engaged in digital skills enhancement projects.

4. Digital Competences for Poland (DC4PL) Program[4]: The DC4PL program, launched by the Ministry of Digitization, aims to enhance digital skills among the Polish population. It focuses on providing training, resources, and support for acquiring and improving digital competences. The program targets various groups, including students, teachers, employees, and entrepreneurs, and offers initiatives such as digital skills courses, workshops, and e-learning platforms.

5. National Qualifications Framework (NQF)[5]: The National Qualifications Framework in Poland provides a structured framework for recognizing and validating qualifications, including digital skills. It establishes levels and standards for different competencies, ensuring that digital skills are recognized and can be acquired through formal and non-formal education

1 HTTPS://WWW.BIZNES.GOV.PL/PL/PORTAL/004171

2 HTTPS://WWW.POLSKACYFROWA.GOV.PL/

3 HTTPS://WWW.GOV.PL/WEB/NCBR

4 HTTPS://WWW.GOV.PL/WEB/CYFRYZACJA

5 HTTPS://PRK.MEN.GOV.PL/EN/1EN/

and training pathways. The NQF promotes transparency and comparability of qualifications across different sectors and facilitates lifelong learning.

6. European Social Fund (ESF)[6]: The ESF plays a significant role in supporting skills development initiatives in Poland. It provides financial resources to programs and projects focused on upskilling, reskilling, and improving employability, including digital skills. The ESF supports training programs, vocational education, entrepreneurship development, and initiatives aimed at reducing the digital divide and fostering inclusion.

7. Digital Skills Initiatives: Poland has witnessed various digital skills initiatives at both the governmental and non-governmental levels. These initiatives include public-private partnerships, collaborative projects, and awareness campaigns. They aim to raise awareness about the importance of digital skills, provide training opportunities, and promote digital literacy among different target groups, including students, unemployed individuals, and marginalized communities.

8. Poland's Recovery and Resilience Plan (RRP)[7] seeks to leverage EU support to stimulate economic recovery, foster sustainability, and enhance social cohesion in the country. It aims to lay the foundation for a resilient and prosperous future by addressing the challenges posed by the pandemic and driving long-term transformation.

Digital in Poland's Recovery and Resilience Plan

Measures contributing to the digital transition account for 21.3% (over EUR 7.5 bn) of the plan's total allocation, exceeding the required minimum target of 20% outlined in the Regulation. Out of the plan's six components, component C on Digital Transition clearly stands out as the main contributor to the digital target with interventions in network deployment, e-services in the public administration, education, digital skills and cybersecurity. Digital features well also in other components. The comprehensive set of measures is expected to have a lasting impact on Poland's digital transformation, especially in developing the broadband and 5G network, improving the delivery of public services to businesses and citizens as well as the digitization of public administration, while strengthening their resilience and cybersecurity. They will also contribute to the digitalisation of the education system and the development of digital skills. This is also true for the other sectors: the digitalisation of electricity networks should contribute to a better integration of renewables and to reducing energy losses and emissions, the electrification of railways combined with traffic automation will provide incentives to users to switch from individual to collective mode of transportation,

[6] HTTPS://EC.EUROPA.EU/EUROPEAN-SOCIAL-FUND-PLUS/EN/SUPPORT-YOUR-COUNTRY/ESF-POLAND

[7] RECOVERY AND RESILIENCE PLAN FOR POLAND HTTPS://COMMISSION.EUROPA.EU/BUSINESS-ECONOMY-EURO/ECONOMIC-RECOVERY/RECOVERY-AND-RESILIENCE-FACILITY/RECOVERY-AND-RESILIENCE-PLAN-POLAND_EN

and making greater use of e-health digital solutions is also expected to strengthen the efficiency, accessibility and quality of health services. A crucial issue in implementation of the RRP is to ensure the correct implementation of the plan. The Ministry of Funds and Regional Policy is responsible for this task. It will be supported by a dedicated Monitoring Committee that will be composed of representatives of the bodies implementing the plan, social partners, non-governmental organisations and local governments. The plan stipulates that the Committee will monitor the implementation of reforms and investments, ensure that funds are spent properly, analyse the impact of measures on the economy and its sectors, society and regional development, and ensure that measures implemented under other funding sources are complementary.

Human capital in Poland's Recovery and Resilience Plan

The main measures addressing human capital concentrate on the digital skills. They run in two strands: first, to foster the development of a high-performing digital education ecosystem; second, to enhance digital skills and competences for the digital transformation. To achieve these broad goals, four different initiatives are planned. First, the adoption and implementation of a Digital Competence Development Programme, a multi-annual programme aimed at strengthening the development of digital competences in formal, informal and nonformal education. Second, the adoption of binding minimum legal standards for equipping schools with digital infrastructure that will support the implementation of investments in ICT, enabling the use of digital technologies in learning on an equal level in each school. Third, the policy on digitalisation of education, which is expected to create a comprehensive strategy, constituting the basis for changes in the education system and defining the directions of digitalisation of the education system in the short and long term. Fourth, the large-scale investment in the ICT equipment for primary and secondary schools (including in vocational education and training) and examination centres will support the implementation of the above policy measures, facilitating a more efficient and meaningful integration of ICT in education.

Connectivity in Poland's Recovery and Resilience Plan

The largest allocation of financial resources in the digital matters of the RRP is dedicated to connectivity, with the purpose of boosting the deployment of very high-capacity networks, including fibre and 5G. This will be done in line with the best practices of the EU Connectivity Toolbox. The total amount allocated to investments in network infrastructure is EUR 1.4 billion for fixed broadband and EUR 1.2 billion for mobile broadband. With these resources Poland aims to provide universal access to high-quality telecommunication infrastructure and modern electronic communication services in market failure areas throughout the country, narrowing the gap between urban and rural areas. The investments will focus on: (i) covering 930 000 households in white NGA areas, to achieve broadband internet access with a capacity of at least 100 Mb/s and possibly increasing it to Gigabit capacity; (ii) supporting the roll-out of 5G network through construction of the 5G bases stations in market failure areas. These measures are expected to contribute to the achievement of the goals set out by the National

Broadband Plan, namely speeding up the roll-out of ICT of the country by 2025, as well as achieving the EU's 2025 5G and Gigabit connectivity objectives.

Integration of digital technology in Poland's Recovery and Resilience Plan

With RRF support, Poland will participate in multi-country project on Cloud and Edge Computing, in order to develop the next generation of joint capabilities in data processing with the participation of Polish businesses and technological actors. The project is expected to develop the next generation of cloud and edge solutions, with high levels of innovation, energy efficiency and a positive environmental impact contributing to the EU Green Deal ambition. In the support of the digitalisation of businesses, digital competences for SMEs are targeted by the investment on equipping companies to work remotely. The RRP envisages supporting 3 000 micro, small and medium-sized enterprises out of nearly 2 million with advice to firms on digitalisation, remote training for staff and the purchase of licenses and software to enable remote communication.

Digital public services in Poland's Recovery and Resilience Plan

Poland's RRP includes relevant structural changes to the public administration and institutions, including the uptake of digital solutions, investment in e-governance infrastructure and the digital skills of public servants. In particular, cybersecurity has a prominent role, with the purpose of ensuring internet security and preventing cybercrime. Further to the growing number of cyber threats and incidents, Poland intends to increase the resilience of IT systems in the public administration, state services responsible for security and businesses as well as raise public awareness of security-related problems, in line with the Polish Cybersecurity Strategy. This includes improving capacity for incident detection and response, notably by setting up regional Security Operation Centres (ISACs), sectoral Computer Security Incident Response Teams (CSIRTs), as well as enhancing public-private information sharing and crisis management systems

Results from past national or regional survey

According to current Digital Economy and Society Index (DESI)[8] Poland ranks 24th of 27 EU Member States in the 2022 edition.

There are still persistent gaps regarding human capital, where Poland ranks 24th, scoring below average in all the indicators. Only 43% of people between 16 and 74 years have at least basic digital skills (54% in the EU) and 57% have at least basic digital content creation skills (66% in the EU). ICT specialists account for a slightly lower percentage of the workforce in

[8] THE DIGITAL ECONOMY AND SOCIETY INDEX (DESI) HTTPS://DIGITAL-STRATEGY.EC.EUROPA.EU/EN/POLICIES/DESI

Poland than the EU average. When looking at the number of ICT graduates, Poland is still scoring below the EU average. The shortage of specialists is significantly affecting businesses' integration of digital technology. Only 18% of enterprises provide a dedicated ICT training; paired with a low level of digital skills and the low propensity of the management to invest in training prevents businesses, in particular SMEs, from tapping into the full potential offered by the digital economy. With the low share of digital specialists in the Polish workforce and the future prospects being undermined by only average rates of ICT enrolment and graduates, a significant change of pace in the country digital skills' readiness is crucial for the EU to reach the Digital Decade targets for basic digital skills and ICT specialists.

Digital technologies kept on gaining popularity among Polish enterprises, with 19% using cloud solutions and 32% engaging in electronic information sharing (EU: 38%). Nevertheless, there is still a gap to be closed until 2030 to reach the Digital Decade target in cloud, big data and Artificial Intelligence (AI). The current uptake of those technologies ranges between 3% and 19% compared with the EU target of 75% by 2030. It is important to step up the efforts and promote capacity building among Polish enterprises to digitalise further, as only 40% have at least a basic level of digital intensity (EU average: 55%). This is in contrast with the Digital Decade target that at least 90% of SMEs should have 'at least a basic level' of digital intensity by 2030. Poland will be able to speed up its digital transformation through further incentives to invest, dedicated support and encouragement (especially for businesses in disadvantaged regions) and improved female digital entrepreneurship.

Despite various actions already initiated to improve digital skills, further efforts especially in increasing the number of ICT specialists and raising society's digital skills are needed in the light of the ambitious targets set out in the Digital Decade. They run in two strands: first, to foster the development of a high-performing digital education ecosystem; second, to enhance digital skills and competences for the digital transformation.

Digitalisation remains one of the key priorities of the government, along with simplifying legislation and improving the quality of regulations to support the business environment. Poland currently has no dedicated strategy on the digital transformation of the economy and society. Work is currently under way to identify further actions to be implemented under the new financial perspective under the 2021-2027 European Social Fund Plus (ESF+) and the 2021-2027 European Regional Development Fund (ERDF). In addition, the digitalisation policy for education and the 2030 Digital Competence Development Programme are planned to be adopted in the third quarter of 2022 with a 2030 perspective.

Poland also supports digital technologies through EU-coordinated programmes. It is a member of the EuroHPC Joint Undertaking on high-performance computing, it participates in PRACE (Partnership for Advanced Computing in Europe) and in the PIONIER-LAB National Platform for Integration of Research Infrastructures. It is also an active member of the European Blockchain Partnership Policy Group. The European Digital Innovation Hubs (EDIHs) will provide access to technical expertise and experimentation for enterprises.

Comprehensive Overview of Emerging Skills Needs in the Polish Labour Market

To support small and medium-sized enterprises (SMEs) in Poland during their digital transition and integration into specific industrial ecosystems, it is important to identify the advanced digital skills required. This comprehensive overview aims to analyze the labour market at the national level in Poland and highlight the emerging skills needs in various industries, including Healthcare, Food, Energy Intensive Industries and Renewable Energy, Agri-Food, Finance, and ICT companies.

Healthcare:

1. Data Analytics: The healthcare industry in Poland is generating vast amounts of data from patient records, medical imaging, clinical trials, and wearable devices. Professionals with skills in data analytics are needed to effectively analyze and interpret this data to drive evidence-based decision-making, improve patient outcomes, and optimize resource allocation within the healthcare system.

2. Health Informatics: As healthcare facilities in Poland transition to electronic health records (EHR) and digital health systems, there is a growing demand for professionals who can manage and ensure the secure exchange of patient information. Knowledge of health informatics, including EHR implementation, data privacy regulations, and interoperability standards, is crucial for efficient and secure healthcare data management.

3. Telehealth and Telemedicine: The COVID-19 pandemic has accelerated the adoption of telehealth and telemedicine services in Poland. Professionals with expertise in remote healthcare technologies, virtual consultations, and telemonitoring are needed to support the expansion of these services, ensuring seamless connectivity, patient privacy, and effective remote care delivery.

4. Artificial Intelligence (AI) in Healthcare: AI has the potential to revolutionize healthcare in Poland by enabling more accurate diagnoses, personalized treatment plans, and efficient drug discovery. Professionals with knowledge of AI algorithms, machine learning, and deep learning techniques are sought after to develop and implement AI-based solutions for medical imaging analysis, predictive analytics, and precision medicine.

Food:

1. Supply Chain Digitization: Digital transformation in the food industry in Poland involves the implementation of technologies that optimize supply chain operations. Professionals who can leverage digital solutions, such as inventory management systems, demand forecasting algorithms, and logistics software, are needed to improve efficiency, reduce waste, and enhance the traceability of food products.

2. Quality Assurance Technologies: Ensuring food safety and quality is of paramount importance. In Poland, professionals with knowledge of advanced food safety technologies, such as blockchain for traceability, IoT sensors for real-time monitoring, and data analytics for quality control, are essential for guaranteeing product integrity, regulatory compliance, and consumer trust.

3. Precision Agriculture: With the growing need for sustainable farming practices and efficient resource management, the adoption of precision agriculture technologies is increasing in Poland. Experts in digital tools like drones, remote sensing, and data analytics are in demand to optimize crop monitoring, irrigation management, and yield prediction, ultimately leading to higher productivity and reduced environmental impact.

4. Food Tech Innovation: The food industry is experiencing rapid innovation, driven by trends like plant-based alternatives, cellular agriculture, and smart packaging. Professionals who stay abreast of these emerging technologies and possess the skills to develop and implement them are crucial for the growth and competitiveness of the food sector in Poland.

Energy Intensive Industries and Renewable Energy:

1. Industrial Automation: Poland's energy-intensive industries, such as manufacturing and heavy industries, are seeking professionals with skills in industrial automation. Proficiency in programming and operating industrial robots, IoT devices, and advanced automation technologies is crucial for improving productivity, reducing downtime, and enhancing safety within these sectors.

2. Energy Management Systems: With a focus on sustainability and energy efficiency, there is a growing need for professionals who can implement energy management systems in various industries. These experts are responsible for monitoring energy consumption, identifying optimization opportunities, and ensuring compliance with energy efficiency standards and regulations.

3. Renewable Energy Technologies: As Poland aims to transition towards a greener and more sustainable energy landscape, professionals with knowledge of renewable energy technologies are in high demand. Expertise in solar, wind, hydro, and geothermal energy systems, including their design, installation, and maintenance, is crucial for the successful integration of renewable energy sources into the national grid.

4. Energy Storage Solutions: With the intermittent nature of renewable energy sources, efficient energy storage solutions are vital for ensuring a stable and reliable energy supply. Professionals who understand advanced energy storage technologies, such as batteries and hydrogen storage, are needed to support the development and implementation of energy storage systems in Poland.

Agri-Food:

1. Digital Farming: The agriculture sector in Poland is embracing digital technologies to enhance productivity, optimize resource utilization, and improve sustainability. Professionals with skills in farm management software, sensor technologies, and drones can help farmers implement precision agriculture practices, monitor crop health, optimize irrigation, and make data-driven decisions for improved yields.

2. Sustainable Packaging: Consumer demand for sustainable and eco-friendly packaging solutions is increasing in Poland. Experts in sustainable packaging materials and technologies, including biodegradable materials, compostable packaging, and recycling systems, are needed to support the shift towards a circular economy and reduce the environmental impact of the agri-food industry.

3. E-commerce and Direct-to-Consumer Channels: The rise of e-commerce and direct-to-consumer channels has created new opportunities for agri-food businesses in Poland. Professionals with knowledge of online platforms, digital marketing strategies, and logistics can assist SMEs in expanding their reach, building direct relationships with consumers, and implementing efficient farm-to-table initiatives.

4. Traceability and Certification Systems: Ensuring food safety, transparency, and compliance with regulations is critical in the agri-food industry. Professionals who understand blockchain technology, certification standards, and traceability systems can help implement robust systems that provide transparency throughout the supply chain, ensuring product authenticity and compliance with food safety regulations.

Finance:

1. Fintech Solutions: The financial industry in Poland is undergoing rapid transformation due to the adoption of financial technology (fintech) solutions. Professionals with skills in mobile payments, blockchain technology, robo-advisors, and online lending platforms are sought after to drive innovation, enhance customer experience, and streamline financial services.

2. Data Analysis and Risk Assessment: The availability of vast amounts of financial data presents opportunities for data-driven decision-making and risk assessment. Professionals who possess expertise in financial data analysis, statistical modeling, machine learning, and AI algorithms are needed to extract meaningful insights, identify patterns, and assess risks for informed financial decision-making.

3. Cybersecurity and Fraud Detection: As digital transactions increase, the importance of cybersecurity in the financial sector cannot be overstated. Professionals with knowledge of cybersecurity measures, encryption techniques, fraud detection systems, and regulatory compliance frameworks are essential for safeguarding financial transactions, protecting customer data, and ensuring compliance with data privacy laws.

4. Regulatory Compliance: The financial industry is subject to various regulations and compliance frameworks. Professionals who understand financial regulations, compliance requirements, and data privacy laws are in demand to ensure that financial institutions in Poland adhere to legal and ethical standards, mitigating risks and maintaining the trust of their customers.

ICT Companies:

1. Cloud Computing: As businesses in Poland increasingly adopt cloud computing, professionals with skills in cloud platforms, infrastructure management, virtualization, and containerization technologies are needed. These experts can assist SMEs in migrating to the cloud, managing cloud resources, and implementing scalable and flexible IT infrastructure.

2. Cybersecurity: With the rising threat of cyberattacks, ensuring the security of IT systems and data is critical for businesses. Professionals with expertise in cybersecurity protocols, threat intelligence, vulnerability assessment, and incident response play a vital role in protecting ICT companies from cyber threats and ensuring the integrity of their systems.

3. Software Development: As the demand for innovative digital solutions grows, professionals skilled in software development are crucial. Proficiency in programming languages, software engineering methodologies, agile development practices, and user experience design allows ICT companies to create and deliver cutting-edge software products and services.

4. Data Science and Big Data Analytics: The abundance of data generated by ICT companies presents opportunities for extracting valuable insights. Professionals with expertise in data science, big data analytics, machine learning, and data visualization can help businesses derive actionable intelligence from complex datasets, enabling data-driven decision-making and strategic planning.

It is important to note that the specific skills required may vary based on the size and nature of the organizations within each industry. Additionally, the rapid advancement of technology means that emerging skills needs may evolve over time, requiring professionals to stay updated and continuously upskill themselves to meet the changing demands of the digital era.

Results from large-scale national online survey

In Poland 228 companies took part in the survey from which half of them were micro (1 to 9 employees).

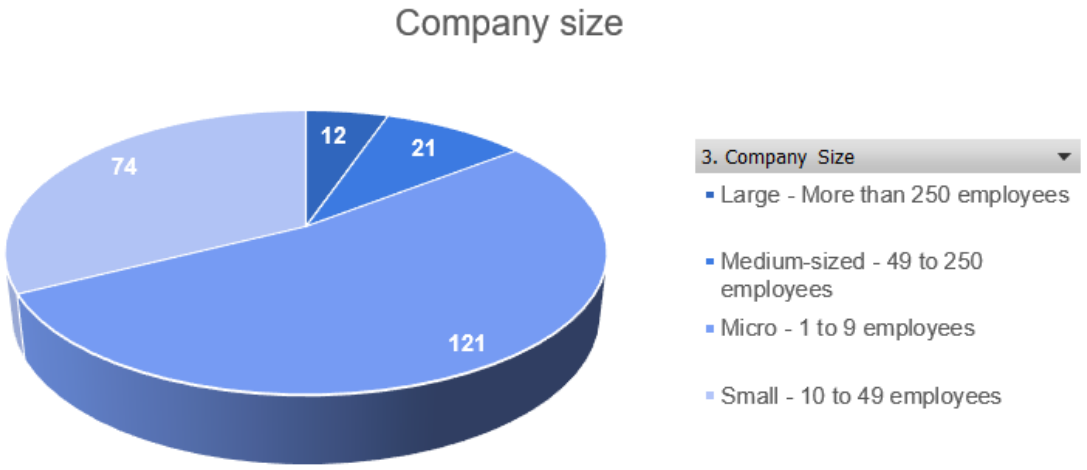

FIGURE 1: COMPANY SIZE

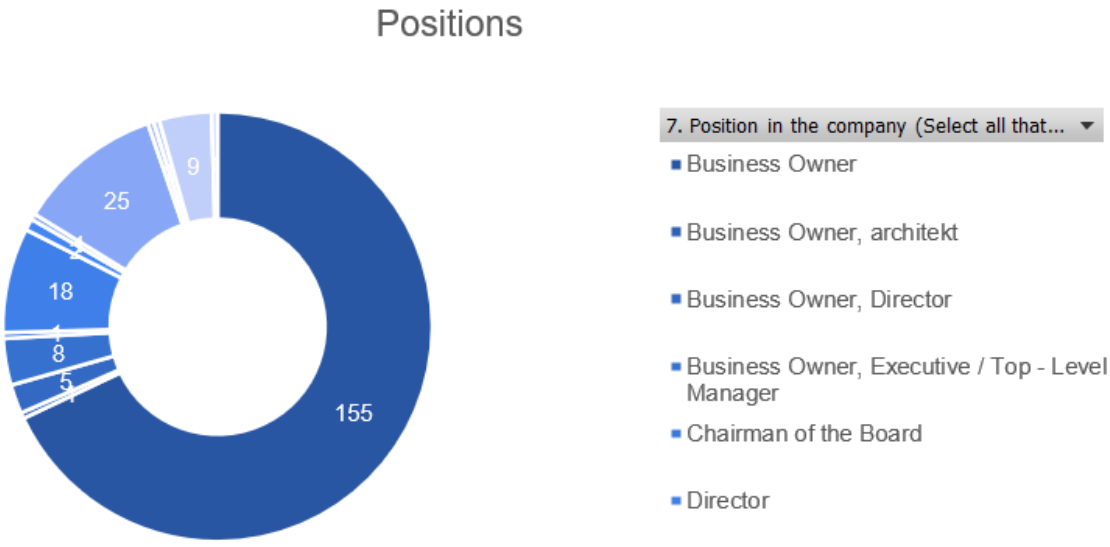

FIGURE 2: MANAGERIAL POSITIONS

Among the respondents, most were Business Owners (155). 25 were Executive / Top - Level Managers and 18 were Directors.

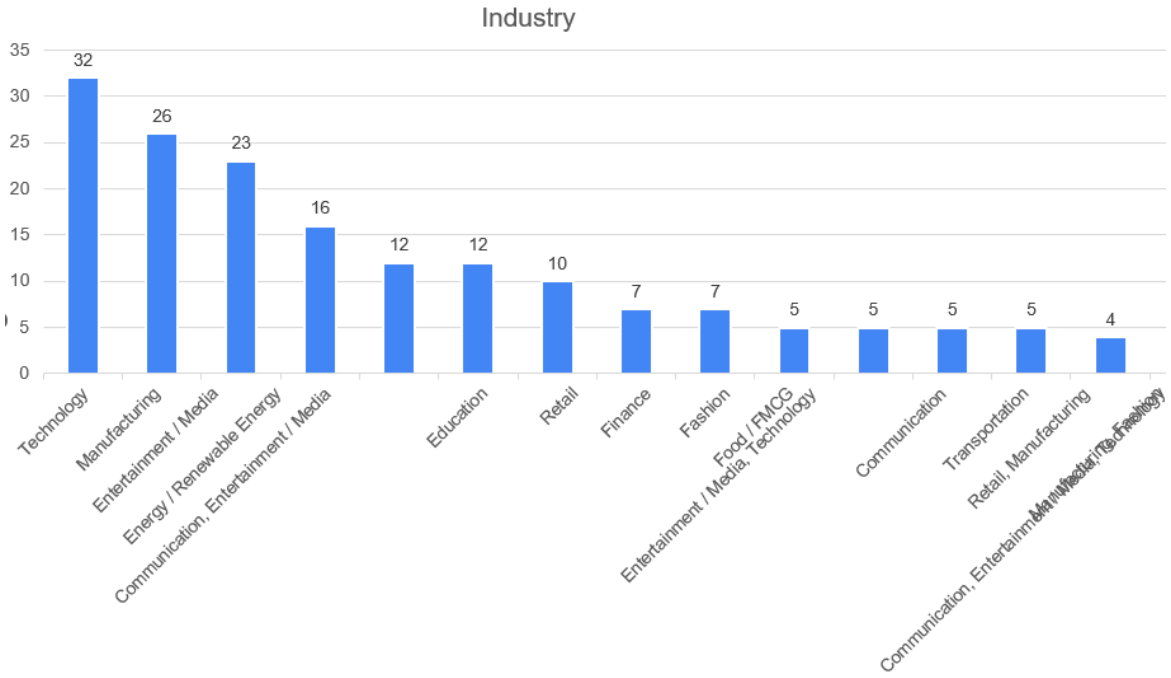

FIGURE 3: INDUSTRY

The most representative industry sectors were: Technology (32 companies), Manufacturing (26 companies), Entertainment / Media (23 companies); Energy / Renewable energy (16 companies) and Communication, Entertainment / Media (12 companies).

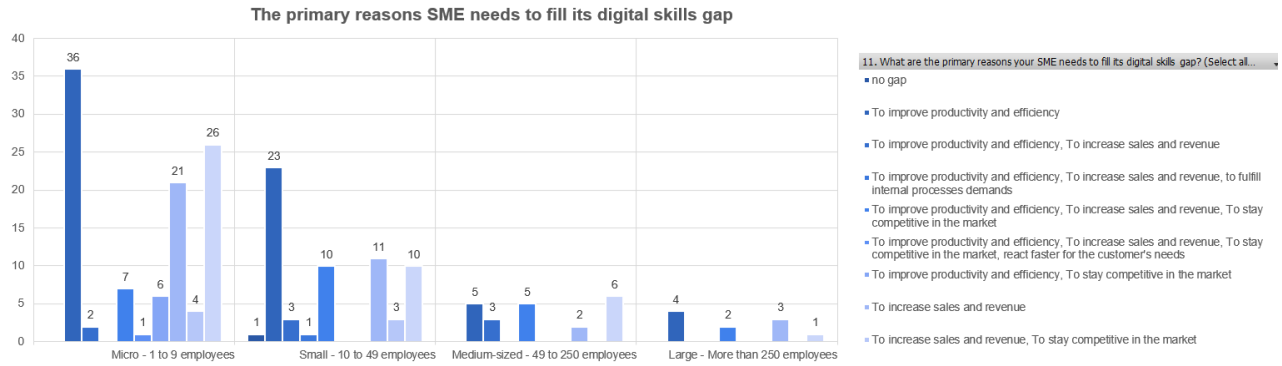

FIGURE 4: THE PRIMARY REASONS SME NEEDS TO FILL ITS DIGITAL SKILLS GAP

The most selected reasons why the SMEs needs to fill their digital skills gap were:

- To improve productivity and efficiency (68 companies)
- To increase sales and revenue & To stay competitive in the market (24 companies)

- To increase sales and revenue (37 companies)
- To stay competitive in the market (43 companies)

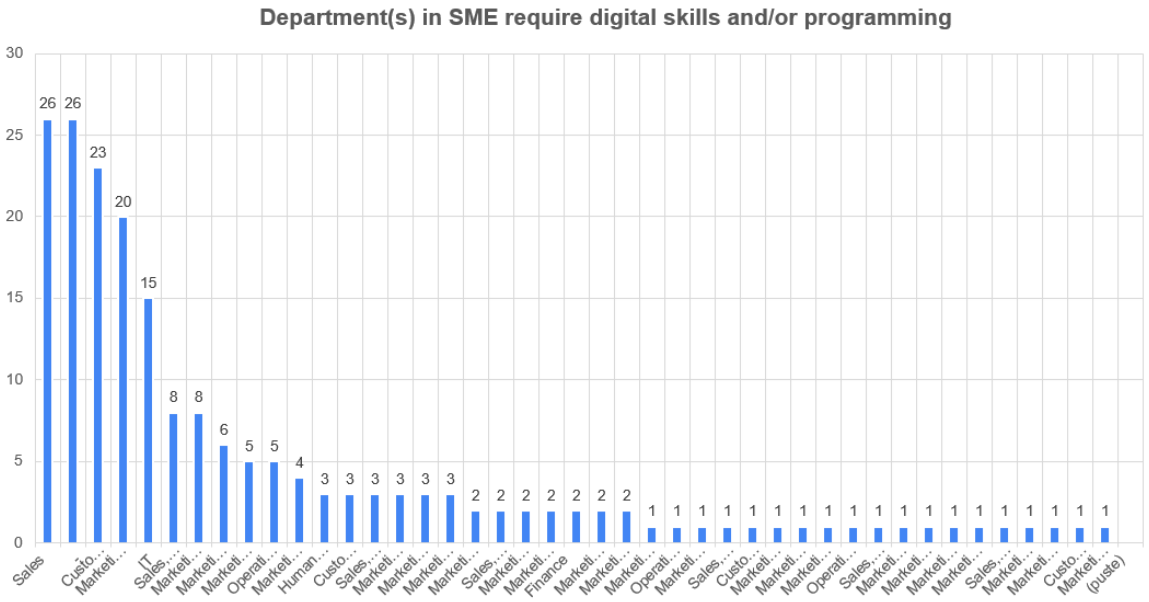

FIGURE 5: DEPARTMENT(S) IN SME REQUIRE DIGITAL SKILLS AND/OR PROGRAMMING

The results showed that only 43 companies have a dedicated team or IT department in their company. Additionally, it was found that over 80 Polish companies have a Sales department, and more than 20 companies have a Marketing department. It's important to note that respondents were able to select multiple options, leading to the cumulative counts for both Sales and Marketing departments.

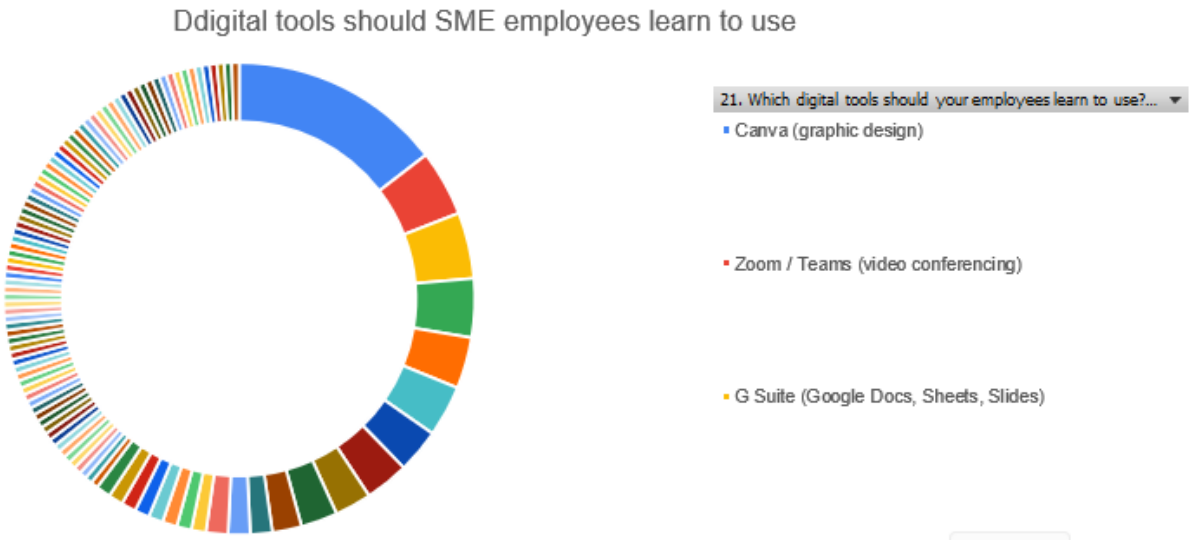

FIGURE 6: DIGITAL TOOLS SHOULD SME EMPLOYEES LEARN TO USE

The most popular digital tools among respondents were Canva (over 63 companies), Zoom/Teams (over 20 companies) and Gsuite (over 20 companies). The least popular were Microsoft Office Suite (Word, Excel, PowerPoint), Jira / Trello / Asana (project management), Slack (team communication), GitHub (version control for software development) - these tools have been chosen by only a few companies.

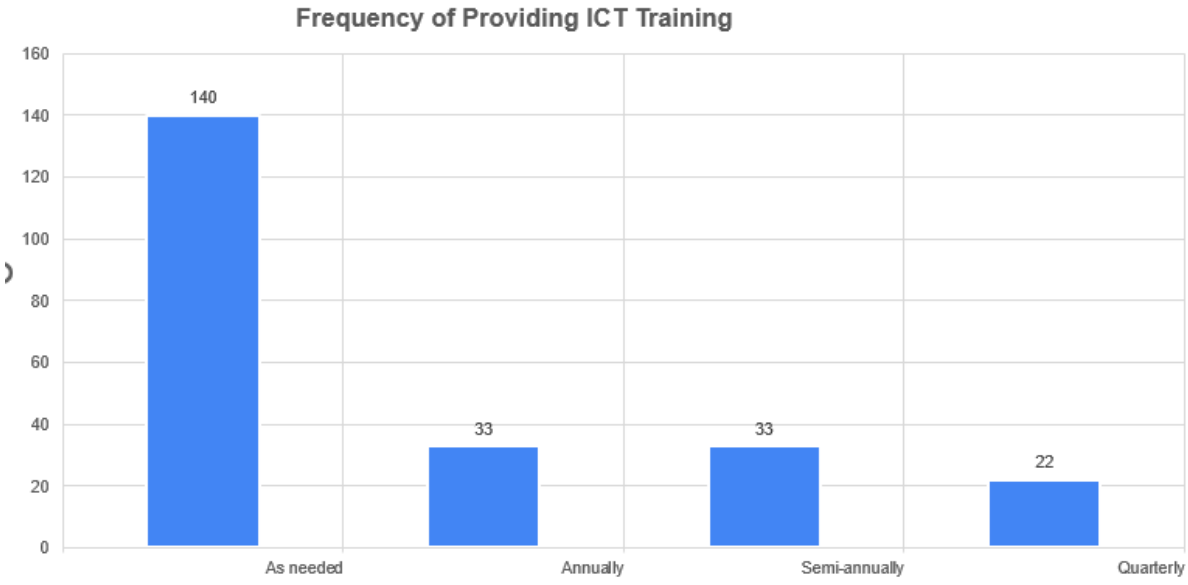

FIGURE 7: FREQUENCY OF PROVIDING ICT TRAINING

140 respondents indicated that ICT trainings are offered "As Needed". On the other hand, 33 of participants stated that trainings are conducted on a *"Annually"* basis. Moreover, 33% of the survey participants indicated that training sessions are organized biannually, emphasizing the consistent provision of ICT skills enhancement opportunities twice per year.

Lastly, 22 of the participants stated that training sessions occur on a "quarterly" basis, highlighting a more frequent training program aimed at keeping employees informed about the quickly evolving field of information and communication technology.

Final conclusion

On the integration of digital technology in businesses' activities, Poland ranks 24th among EU countries. 40% of Polish SMEs have at least a basic level of digital intensity, which is below the EU average of 55%. As regards ICT for environmental sustainability, 60% of Polish enterprises achieved medium/high intensity of green action through ICT, a value below the EU average of 66%. Polish enterprises are taking advantage of the digital opportunities and are engaging in online commerce, with 14% of SMEs selling online and 5% selling across borders to other EU countries: advanced technologies are slowly but steadily gaining popularity among Polish enterprises, with 19% of them using cloud solutions (EU: 34%) and 32% using electronic information sharing (EU: 38%). Nevertheless, only 18% of Polish enterprises actively use social media and 3% is integrating AI technologies into their operations. e-Invoices and Big Data are not yet widely used. This shows that more effort needs to be made to reach the 2030 Digital Decade target of at least 75% of enterprises taking up cloud services, Big Data and AI.

Poland faces persistent challenges in its digital economy and society, as highlighted by its low ranking in the Digital Economy and Society Index (DESI). The country lags behind the EU average in terms of human capital and digital skills, with low percentages of individuals possessing basic digital skills and content creation skills. The shortage of ICT specialists in the workforce and the low level of ICT graduates further hinder the integration of digital technology in businesses, particularly SMEs. Limited digital skills and a lack of investment in training hinder the country's ability to fully utilize the potential of the digital economy.

Although digital technologies are gaining popularity in Polish enterprises, there is a significant gap to be bridged to reach the Digital Decade targets for cloud, big data, and AI. The uptake of these technologies remains low, with Poland currently ranging between 3% and 19%, compared to the EU target of 75% by 2030. Efforts to promote capacity building and incentivize investment in digitalization are essential for Polish enterprises to achieve further digital transformation and increase digital intensity.

To address the digital skills gap and achieve the ambitious targets set out in the Digital Decade, Poland needs to focus on fostering a high-performing digital education ecosystem and enhancing digital skills and competences for the digital transformation. The government acknowledges the importance of

digitalization and is working on developing strategies and policies to support the digital transformation of the economy and society. Efforts are also underway to identify actions that can be implemented through European funding programs.

In terms of specific industry needs, the emerging skills required in the Polish labor market vary across sectors. In the healthcare industry, skills in data analytics, health informatics, telehealth, and AI are in demand. The food industry seeks professionals with expertise in supply chain digitization, quality assurance technologies, precision agriculture, and food tech innovation. Energy-intensive industries and renewable energy sectors require skills in industrial automation, energy management systems, renewable energy technologies, and energy storage solutions.

In the agri-food sector, skills in digital farming, sustainable packaging, e-commerce, and traceability systems are necessary. The financial industry requires professionals with fintech solutions, data analysis and risk assessment, cybersecurity, and regulatory compliance expertise. ICT companies seek skills in cloud computing, cybersecurity, software development, and data science and big data analytics.

It is important for professionals in these industries to continuously upskill themselves due to the rapid advancement of technology and evolving skills requirements in the digital era.

Overall, addressing the digital skills gap and fostering the digital transformation of the economy and society remain key priorities for Poland. By investing in digital education, promoting digital skills development, and providing support and incentives for businesses, Poland can accelerate its digital transformation and contribute to the achievement of the Digital Decade targets.

Coordinator

GrantXpert consulting

Partners

INNOVATION PARK JOIST

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CENTRO SVILUPPO CREATIVO DANILO DOLCI

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