

# PAITool

# SME DIGITISATION NEEDS REPORT

2024



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## INTRODUCTION

The main aim of the PAITool project is to develop and test new flexible opportunities for VET on Artificial Intelligence, which will support SME staff in adapting to and enacting digital transformation.

The motivation of PAITool is thus to strengthen the competitiveness of European SMEs, by facilitating the increased uptake and integration of AI systems and tools in business practices.

The SME Digitisation Needs survey carried out during the PAITool project is intended to assess the state of SMEs' readiness, resilience, and capacity to undertake digital transformation through incorporating AI in their business practices, to determine how the training content developed during the project can best address the knowledge gaps need to increase staff confidence in AI and digital competence relevant to modern labour market needs.

## BACKGROUND AND METHODOLOGY OF THE SURVEY

The following analysis is based on a survey conducted by the PAI Tool consortium between September 2023 and April 2024, distributed among small and medium-sized businesses.

The Digital Maturity Assessment methodology was used to collect the data.

The Digital Maturity Assessment (DMA) tool allows one to measure the current level of digitalisation within an organisation (SME or Public Sector organisation) and provide a structured pathway to digital transformation and maturity. The tool uses the following dimensions for assessment:

- Digital business strategy
- Digital readiness
- Human-centric digitalisation
- Data management
- Automation & Artificial Intelligence
- Green digitalisation

The data collection took the form of guided interviews with SME managers as well as surveys filled in by individual SMEs in Europe. The length of the interviews ranged from two to four hours, followed by electronic recording of the results.

The object of the PAI Tool project was to analyse the data, generalise the findings and draw conclusions about the status and needs of SMEs in the field of digitalisation.

In our survey, we use a subset of questions from the above methodology. In addition to general questions and digitization strategy, we focus on artificial intelligence and working with human resources.

The survey shows some imbalance between the two countries. In Slovakia, we have used data that SCDI has collected during its cooperation with small and medium-sized enterprises, as SCDI actively helps with their digitalization. Therefore, we were able to include up to 100 SMEs in the analysis.

In Malta, we were not able to obtain a sufficient number of respondents from SMEs. To compensate for this shortfall, we included two experts from public institutions dealing with the relationship between digitisation and human resource development, as well as an expert from a non-profit organisation with a similar background. This gave us a broader view of the situation in companies in Malta. We consider this expert perspective to be so qualified that it allowed us to make a faithful comparison of the situation in both countries.

## DIGITAL BUSINESS STRATEGY

Investments in Digitisation so far:

### Slovakia

The following digital solutions have the **highest strategic value** for small businesses:

- Delivery (outbound logistics, e-invoices, etc.)
- Administration and human resources
- Marketing, sales and customer service

This has also been reflected in the investments already made by more than 70% of the companies. This is probably related to the fact that these are agendas that concern all companies (e.g. payroll or the need to acquire new customers), or it is a gradual development in the supply chain, where the exchange of electronic documents (e.g. invoices) is becoming the de facto standard.

Approximately half of the businesses were also concerned with **digitising their operations and cyber security**. Given the growing number of cyberattacks, the latter area appears to be the main one underestimated from the point of view of companies.

All other areas were represented in a lower number of the companies. This does not mean that the company is not digitally up to date. Companies with different profiles, including the service sector, were the subject of the analysis. These companies do not purchase goods, so they may not have digitised logistics or do not do project business, so they do not need project management tools.

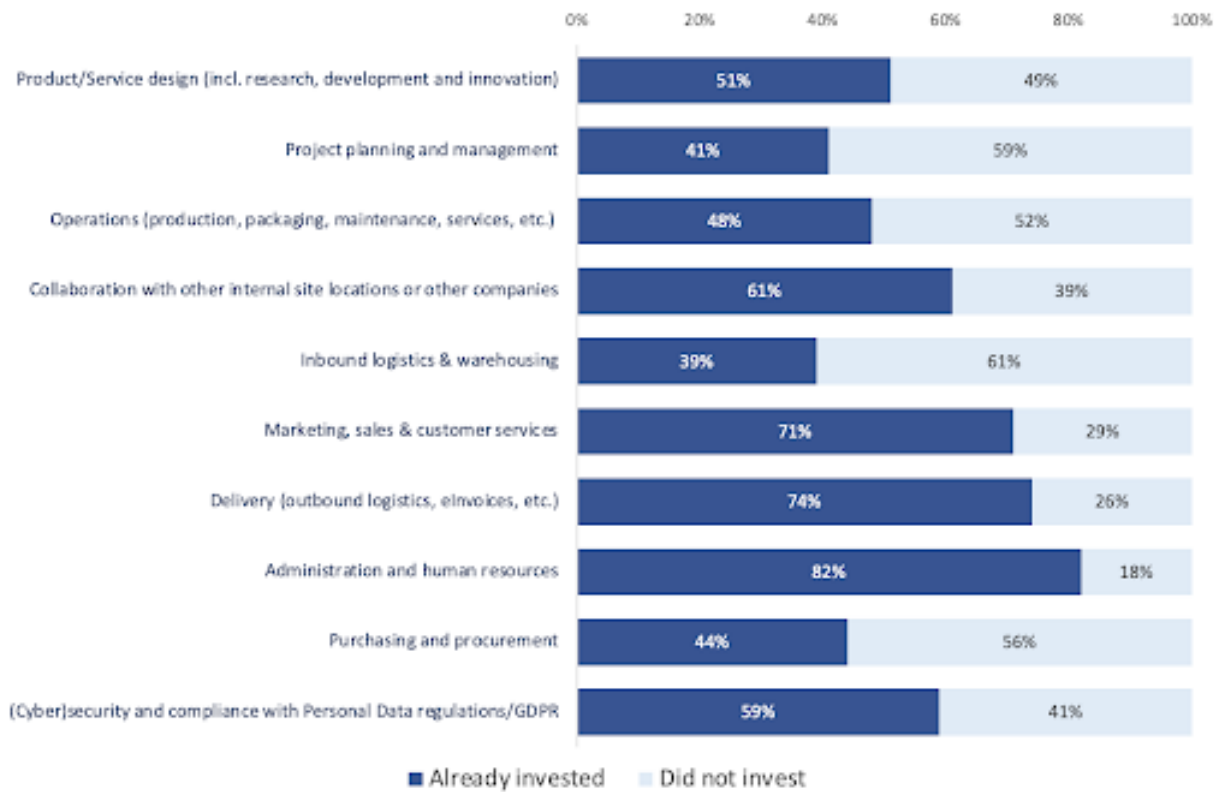


Figure 1. Slovakia Chart 1 - In which of the following business areas has your enterprise already invested in digitalisation?

## Malta

The following digital solutions have the highest strategic value for small businesses in Malta.

- Administration and human resources
- Marketing, sales and customer service

These findings are consistent with research carried out in Slovakia.

The differences are in other areas, which are more focused on the area of industrial production in Slovakia. This is highly likely to be related to the structure of the economy in Malta, which is significantly more service-oriented than in Slovakia. This could reflect what companies in Malta invested in.

The approach to cyber security is even less satisfactory than in Slovakia. It is obvious that education by the state and experts should go in this direction.

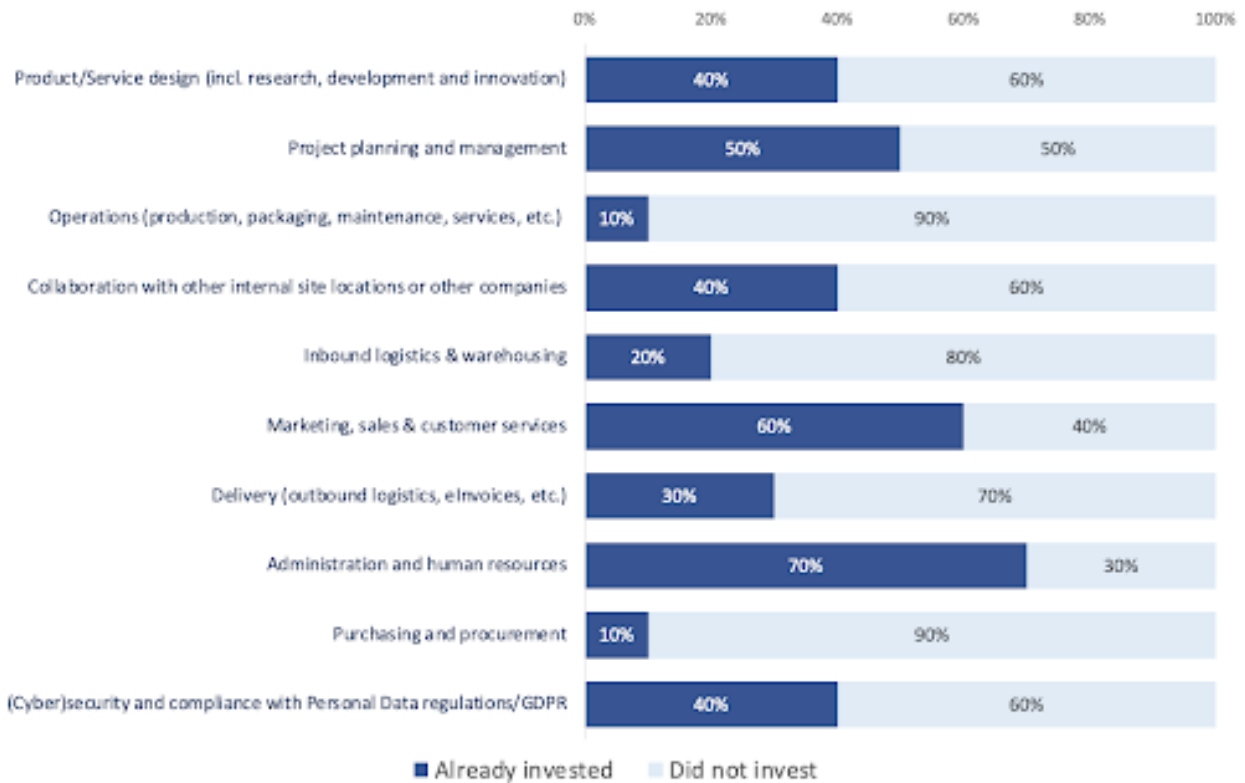


Figure 2. Malta Chart 1 - In which of the following business areas has your enterprise already invested in digitalisation?

## PLANNED INVESTMENTS IN DIGITISATION

### Slovakia

The planned investments provide a different picture. The main areas in which companies plan to invest are:

- Product/service design (including research, development and innovation)
- Project planning and management
- (Cyber)security and compliance with data privacy regulations/GDPR

In all three cases, it is about **improving their internal processes, streamlining their internal workings or increasing their resilience.**

Conversely, it appears from the survey that the digitisation of administrative processes is no longer a significant issue for most companies. This is most evident in the inbound logistics, procurement and human resource management systems, where only a small proportion of companies plan to invest.

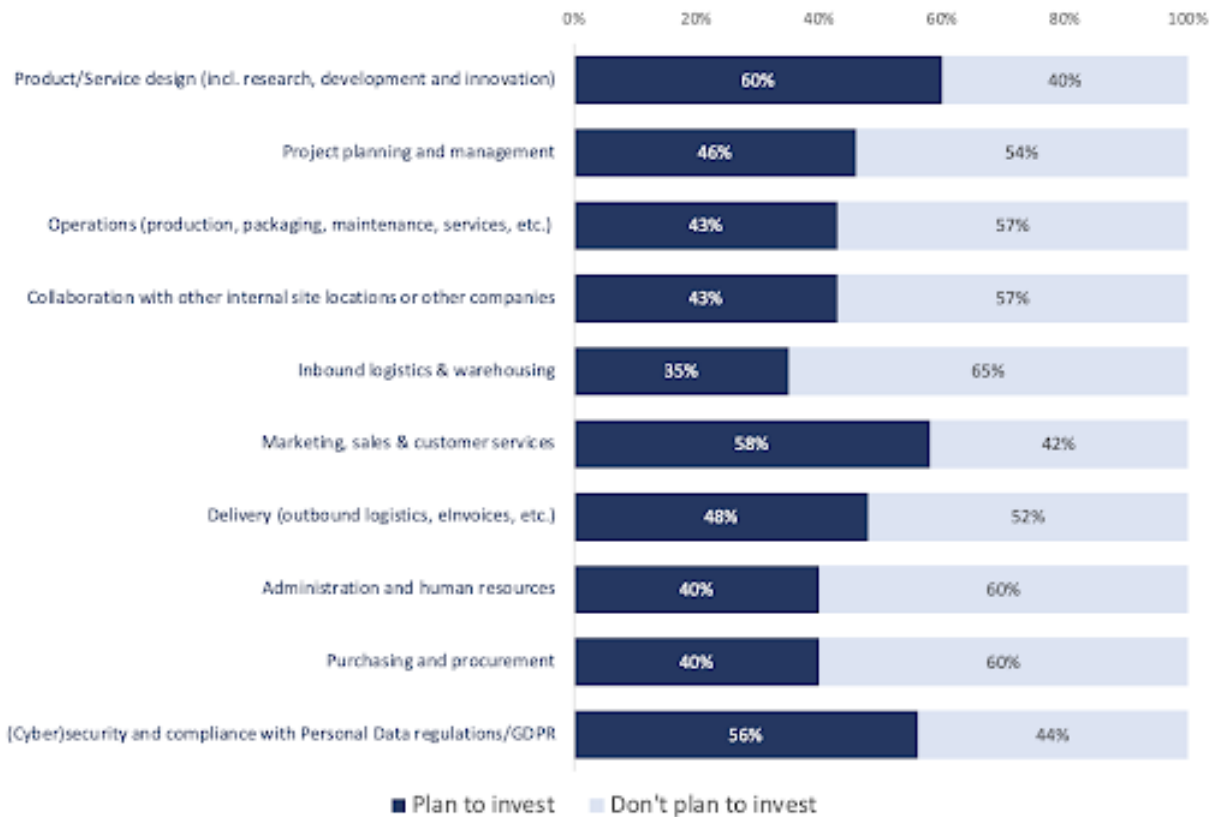


Figure 3. Slovakia Chart 2 - In which of the following business areas does your enterprise plan to invest in the future?

## Malta

The planned investments in digitisation show a fundamentally different picture in Malta than in Slovakia. Investment in administrative information systems is still the most important topic. Equally interesting is the high proportion of companies that feel this need.

Other major investment interests include:

- Project planning and management
- Marketing, sales & customer services

Here again, the different structure of the economy of the two countries is apparent.

Very positively, companies in Malta are planning to **increase their resilience to cyber threats.**



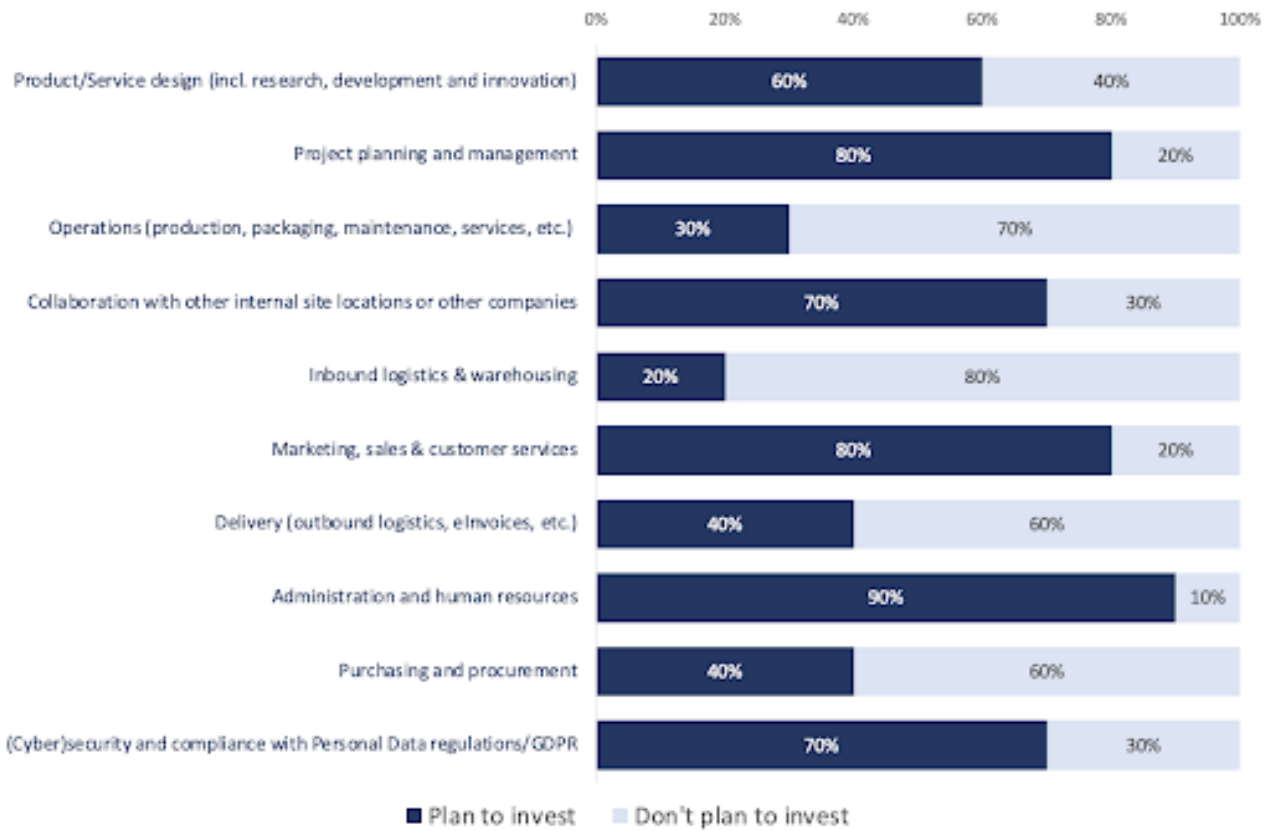


Figure 4. Malta Chart 2 - In which of the following business areas does your enterprise plan to invest in the future

## DIGITAL READINESS

### Advanced Digital Technologies

#### Slovakia

When assessing the **state of deployment of advanced technologies**, the situation doesn't look very positive.

The only advanced technology where nearly half of companies are either considering or already deploying advanced technologies is the **Internet of Things (IoT)**. The positioning of IoT as the most in-demand technology is logical, since all other top technologies need data for their deployment, and sensors plugged into IoT are a natural tool for collecting it. Thus, it is to be expected that after the widespread deployment of IoT sensors in manufacturing enterprises, the focus will start to turn to AI tools, simulations and digital twins.

The high interest in manufacturing execution systems (MES) is due to the fact that the use of computer numerically controlled (CNC) machines became standard in industrial manufacturing some time ago; the development of MES systems is happening hand-in-hand and in coordination with the manufacturers of these machines.

The lack of use of computer-aided design (CAD) and manufacturing (CAM), as well as additive manufacturing (3D printing) in SMEs, is an area for improvement and for the intensification of the education and marketing of specific solutions.

Blockchain technology is still at a stage where it has yet to deliver concrete results in the supply chains of large companies. When its obvious added value for SMEs is demonstrated, affordable solutions may emerge. If they become a commodity or an easily connectable service, they can be expected to become more widely used.

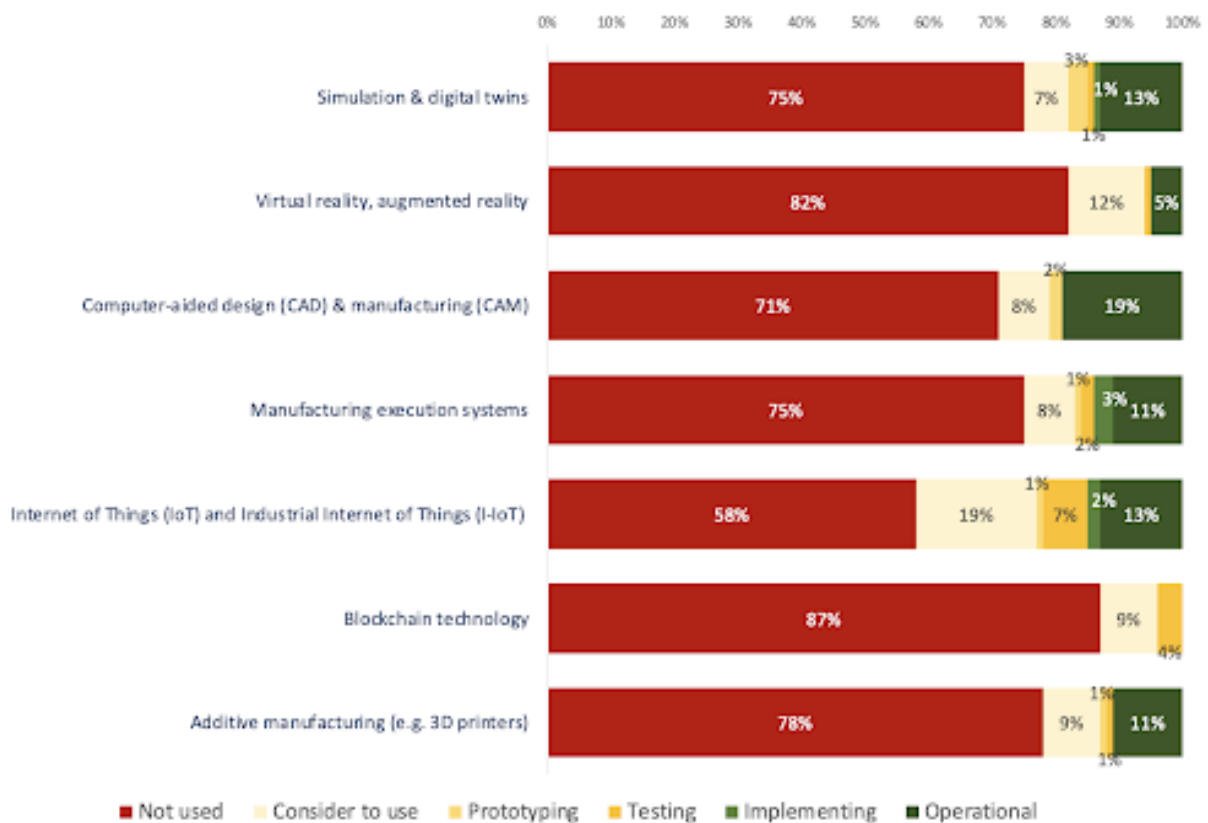


Figure 5. Slovakia Chart 3 - Which of the following advanced digital technologies are already used by your enterprise?

## Malta

In Malta, as in Slovakia, the **Internet of Things (IoT)** is the first and most desirable advanced technology that is already being implemented or appears to be in demand. This confirms the logic - if we want to manage something, we need to measure it first.

Malta has overtaken Slovakia in the proportion of **computer-aided design (CAD) and manufacturing (CAM) systems** deployed. This does not refute the claims of a less industry-focused digitalisation. Indeed, it may also be related to the use of these systems in the construction industry, or, for instance, on the public administration side for building permits, which in Slovakia is still a paper-based process today, unlike in Malta.

Conversely, the extremely low interest in **simulations** and **digital twins** fully corresponds to the lower representation of industrial production in the Maltese economy. This also applies to 3D printing, which achieved the same proportional representation as simulations in the survey.

The cautious approach to **blockchain technology** confirms that the value of this technology to SMEs has yet to be proven.

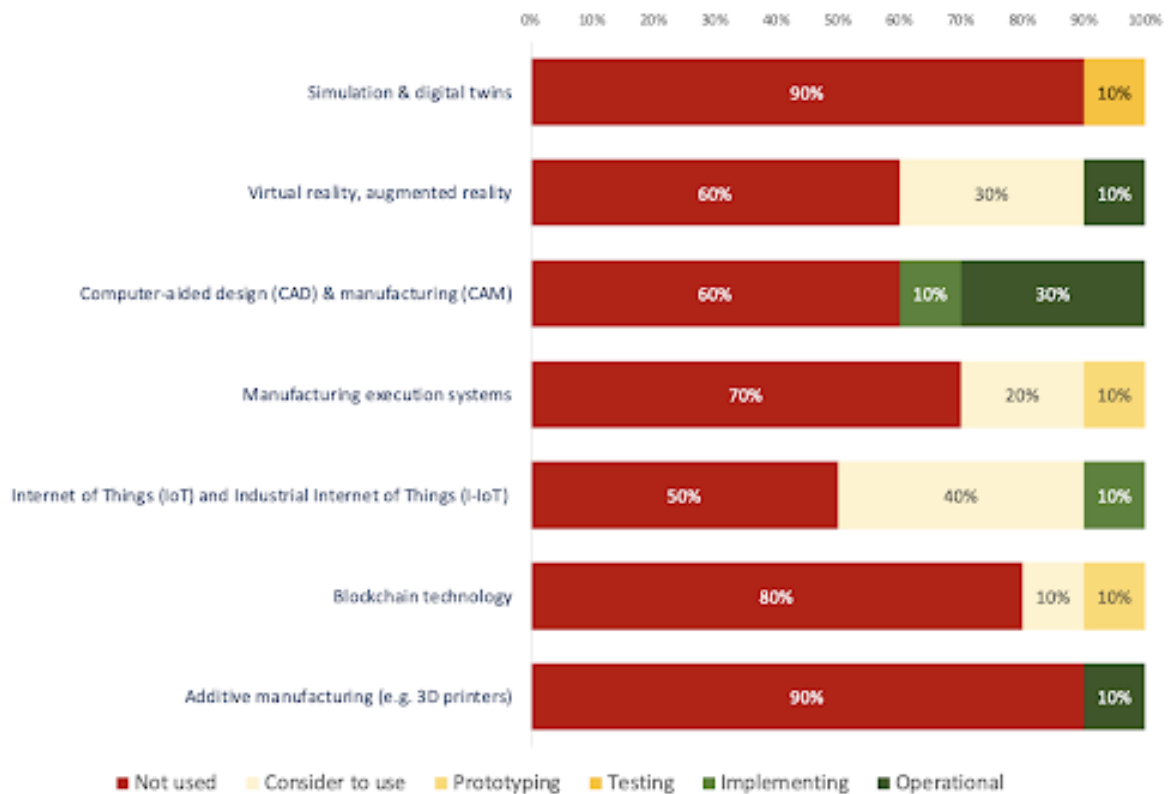


Figure 6. Malta Chart 3 - Which of the following advanced digital technologies are already used by your enterprise?

## HUMAN-CENTRIC DIGITALISATION

### Access to Staff Training

#### Slovakia

Employee training is predominantly done through **on-the-job training**, which, while highly motivational, can also lead to **uneven development of digital skills** without the right systemic and pedagogical approach.

On the positive side, employers are willing to pay third parties for employee training. However, in the context that learning-by-doing remains the main approach, it is important to ask whether the learning offer of professional organisations is actually matching the real needs of companies. The results from the survey challenge this.

An important finding from the survey is that **up to two thirds of companies do not assess the current state of digital skills of their workforce**. This logically leads to the further finding that companies do not have training plans for their workers. It is therefore evident that making ad hoc training a systematic process is a key task to improve the state of the workforce.

However, we consider the **extremely low use of subsidised programs (16%)** to be the greatest weakness of all the findings. Since other findings suggest that the need to educate workers is real and employers are even prepared to contribute financially, **the problem will be the availability of subsidised courses offered**. In addition, their **content, adequacy and quality** certainly need to be reconsidered. Moreover, there may also be an administrative burden associated with enrolling employees in such a course, which can disincentivise the employee or the employer from applying.

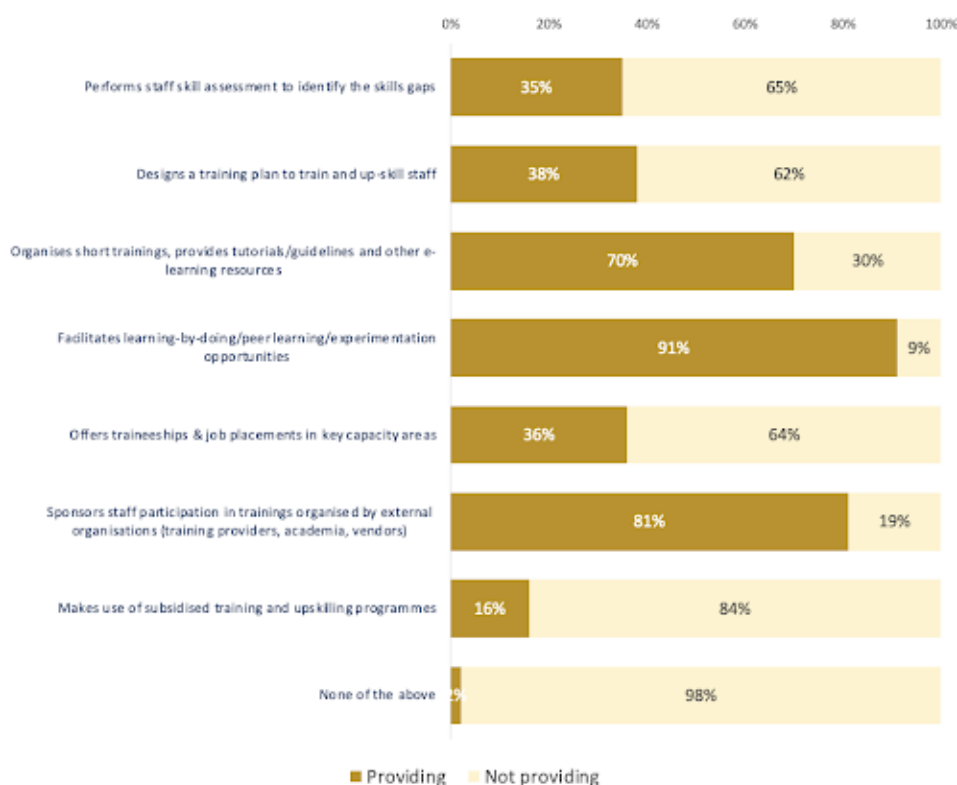


Figure 7. Slovakia Chart 4 - What does your enterprise do to re-skill and up-skill its staff for digitalisation?

## Malta

The situation in Malta is fundamentally different from the one in Slovakia.

Whereas in Slovakia the **financial burden of training workers** is passed on to employers, in Malta employers are exempted from this - to the extent that in our sample we found no employers who made such investments.

On the contrary, the **state's interest in lifelong training of workers** is clearly visible. The share of companies using these services is more than double that of Slovakia.

In doing so, companies in Malta take an interest in the skills and professional development of employees. Indeed, more than half of companies carry out **skills assessments** of their workers to identify where they need to improve. However, companies no longer prepare personal development plans for workers. This also indicates that these activities are institutionally outsourced.

In Malta, companies rely much less on on-the-job training, which in many cases can be a trial-and-error process. They also, to a somewhat lesser extent, **organise training and develop manuals and work procedures internally**.

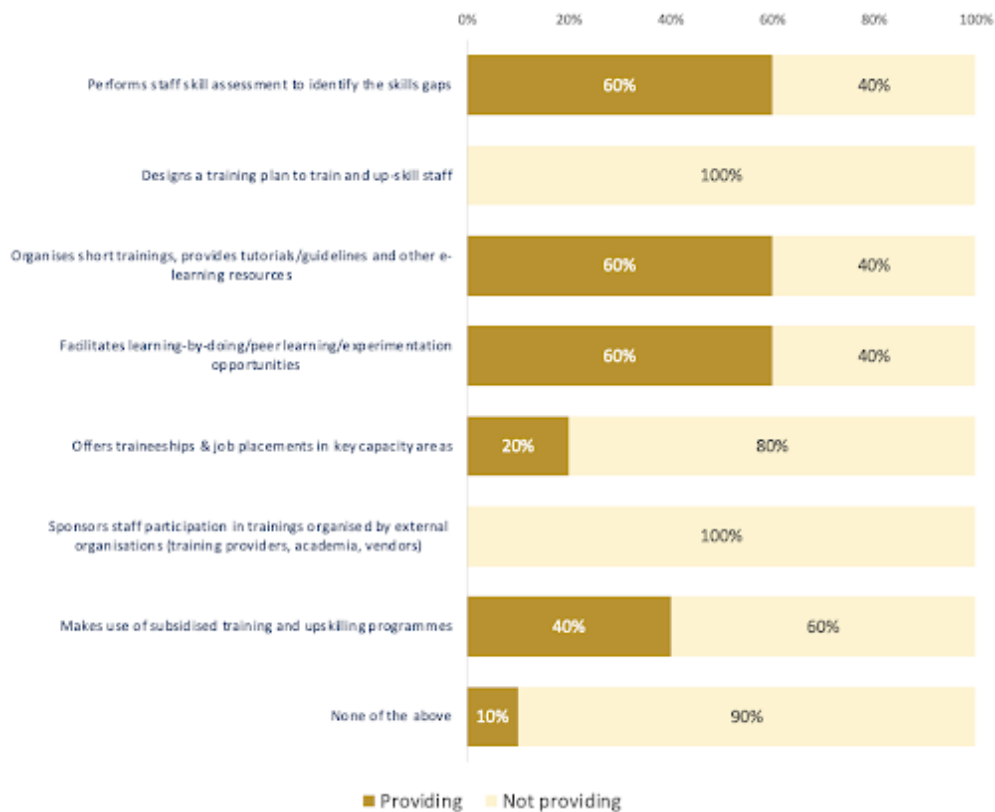


Figure 8. Malta Chart 4 - What does your enterprise do to re-skill and up-skill its staff for digitalisation?

## Adapting the workforce to the digital transformation

### Slovakia

A key phase of digital innovation projects tends to be the adaptation of the workforce to the new, digitalised environment. Roughly a bit more than half of the companies are aware of all the aspects that such a transformation entails. The other, smaller group of companies provide room for improvement. It is therefore evident that the place to start is with manager education, alongside education aimed at motivating workers.

The fact that the provision of digital support to employees dominates among the findings means that some workers are not achieving full autonomy in using digital tools. There may be several reasons or explanations for this. If highly specialised systems are used, then this is a common user support that is likely to be part of the life of companies for a long time to come. If it is support in the use of common office packages, then it is a training deficit that can be fixed.

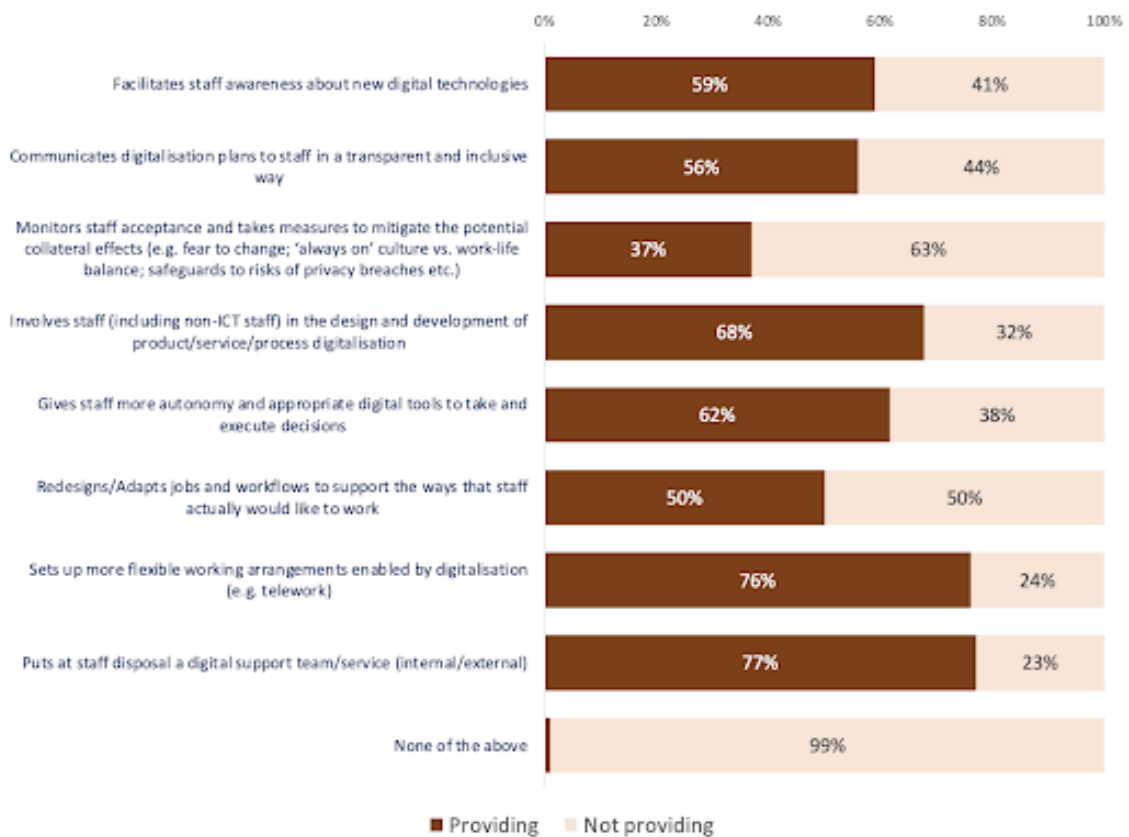


Figure 9. Slovakia Chart 5 - When adopting new digital solutions, how does your enterprise engage and empower its staff?

## Malta

The interest by management in **adapting the workforce to digital transformation** seems to be less visible in Malta than in Slovakia.

This may be related to the fact that the share of workers affected by digitalisation is lower in services than in the production industry. In addition, it is to be expected that office tools and common internet platforms are more widely used in the service sector, i.e. something that users are already familiar with from schools or households. The need for adaptation is thus lower.

This hypothesis is supported by the finding that none of the companies surveyed carry out an assessment of the **impacts and side effects on the workforce related to the digitisation of workflows.**

However, it is also suggested, in the context of the previous answers, that **sufficient digital training is already available** to the Maltese workforce in schools, followed by various forms of lifelong learning.

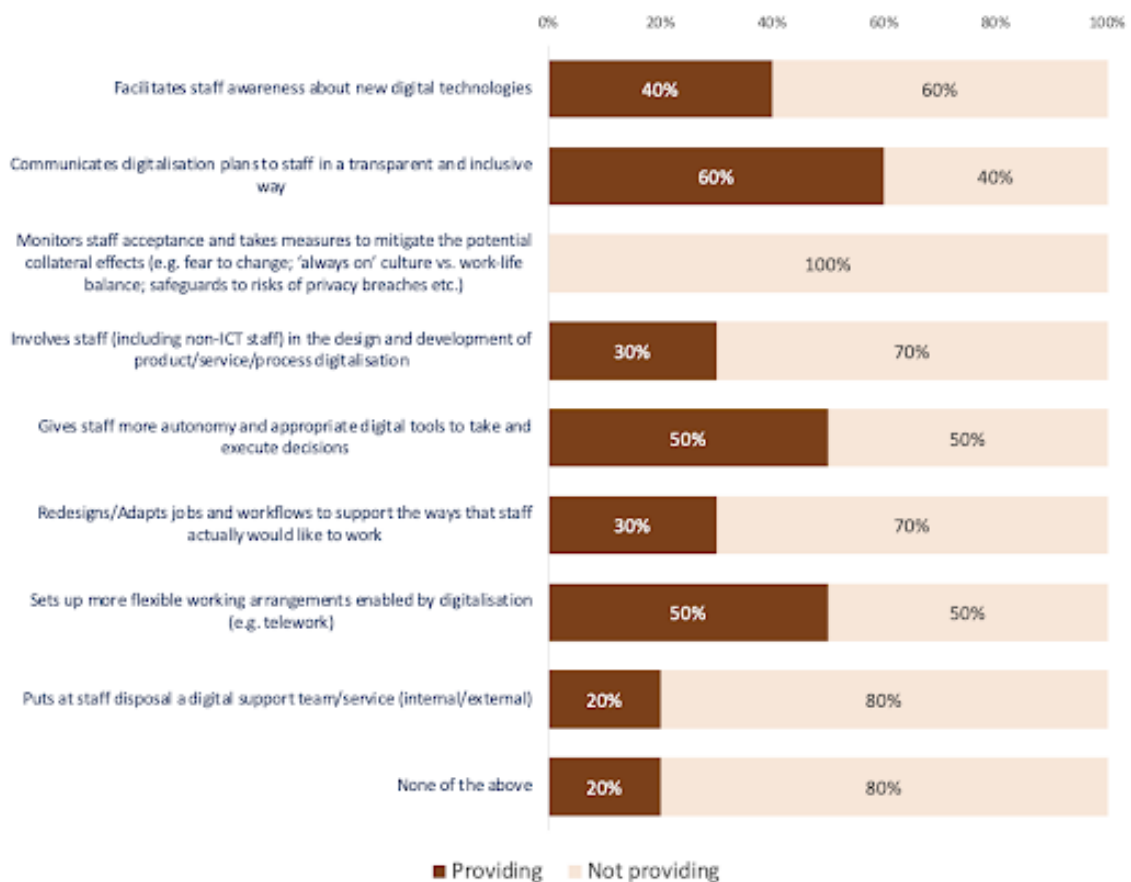


Figure 10. Malta Chart 5 - When adopting new digital solutions, how does your enterprise engage and empower its staff?

## Automation & Artificial Intelligence

### Slovakia

The deployment of advanced tools, including artificial intelligence, is not satisfactory.

Many small and medium sized companies have not yet considered any of the technologies surveyed. The considerations of deploying these technologies are not frequent enough to give a positive perspective in terms of companies' competitiveness.

Enterprise data analytics tools rank highest in the survey. One possible reason for this is that these tools can be easily purchased as add-ons to standard enterprise information systems. The considerations for their deployment that we see in one third of companies are therefore understandable.

The second most common category of AI solutions is in natural language processing. This highlights the dramatic impact of generative AI over the last year and a half. Big language models like Chat GPT have clearly changed managers' views on the possibilities of working with text.

The low interest in deploying robots is a surprise. This is probably related to the fact that mainly small enterprises and micro-businesses were approached. Robots are likely to be one of the key elements for the sustainability of manufacturing and processing enterprises in the future. It has to be said that these technologies are not cheap. Their returns are at odds with relatively cheap labour. Therefore, the motive for deploying these technologies will probably be labour shortages rather than the pursuit of savings.

Image and sound processing is closely intertwined with the business and processes of companies. Thus, such technologies do not make sense for every company.

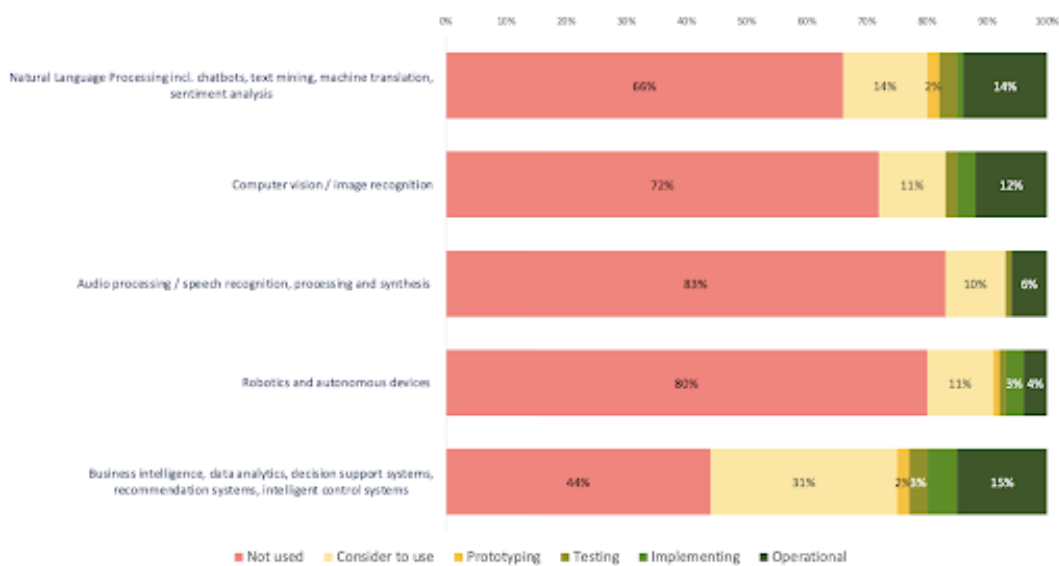


Figure 11. Slovakia Chart 6 - Which of the following technologies and business applications are your enterprise already using?



## Malta

The most and least used AI tools are identical in Slovakia and Malta.

The most popular are:

- business intelligence
- data analytics
- decision support systems
- recommendation systems
- intelligent control systems

On the other hand, in both countries the most difficult to promote is:

- Audio processing / speech recognition
- processing and synthesis

A slight surprise is the higher interest of Maltese companies in computer vision and image processing. It is not, however, in contradiction with the focus of the Maltese economy on the service sector.

Indeed, what is contradictory to the structure of the economy, is the greater scale of deployment of robots and autonomous devices in Malta.

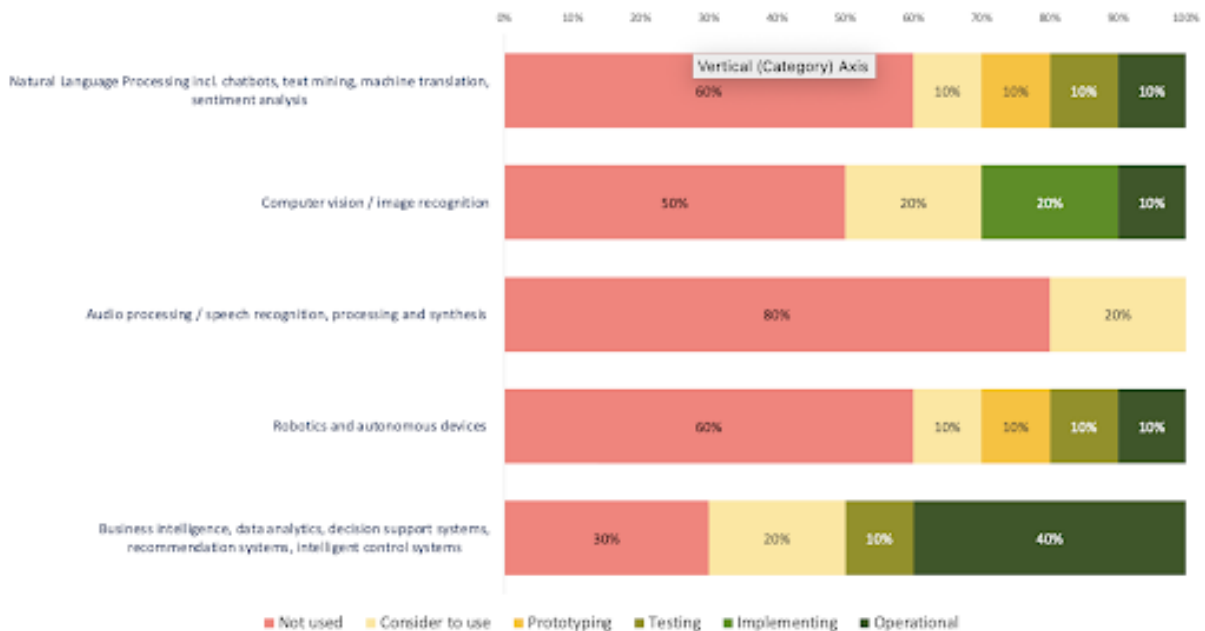


Figure 12. Malta Chart 6 - Which of the following technologies and business applications are your enterprise already using?

## CONCLUSION

In processing the surveys in both countries, we identified both similarities and differences. On the basis of the data and the differences identified, we were able to suggest measures that would be appropriate to put into practice in each country.

### Main similarities

The results of the SME needs surveys showed major similarities in the area of artificial intelligence, confirming that the development of AI is a truly global phenomenon that knows no borders. Individual technologies are maturing to the stage of usability regardless of current local developments. Frameworks, libraries, and pre-trained models are generally available and are affordable to developers and users alike.

### Main differences

One of the reasons for the differences between the survey results in Slovakia and Malta is the different economic structure. While there is **no major difference** between the countries in **basic digital technologies** such as connectivity, internet, websites, or administrative tools, on the contrary, when we talk about **tools that are directly addressed to the production process or to the service sector**, we see **different preferences and needs**. These differences are natural and should not be seen as a problem.

One difference worth mentioning concerns working with people who are fundamentally affected by digitalisation. Slovakia is clearly lagging behind in the area of public policies aimed at lifelong learning and state support for the development of digital skills.

### Recommendations

The surveys were conducted in an environment of companies that understand the importance of digitalization and know what it can bring them. This awareness needs to start to be built also in companies that do not yet have this awareness. We therefore recommend **intensive education among companies that have not yet reached even a fundamental level of digital skills or have not yet started to deploy advanced digital technologies**.

For these less digitised companies, we recommend **using examples to highlight the concept of development**, which is also evident from our survey. It is a trajectory that starts from data collection, which is the main role of the Internet of Things, proceeds to analytical tools, which may be based on artificial intelligence at some stage of development, and goes all the way to simulations and digital twins. This applies mainly to manufacturing companies, but also to other companies and institutions.

In both countries, but more so in Slovakia, there is a **need to strengthen awareness and education about cyber threats and data protection**. Awareness should also be accompanied by **public support**, as disruptions in companies due to cyber-attacks can also have macro-economic impacts. Information to companies should also include **personal data protection and education of staff at all levels where digital technologies are used**.

For Malta, we recommend **measures to better align digital transformation with workforce adaptation to digitalisation activities**. We are talking about greater involvement of workers in digitisation projects and providing support to workers, especially in the first weeks and months after the introduction of new digital tools.

This also applies to Slovakia. However, the fundamental message to the Slovak environment is the recommendation to concentrate considerably more on the **development of human resources**. There is a clear lack of support tools and training programmes guaranteed and financed from public resources. These are measures at the level of the state and educational institutions that are partners of the state or regional institutions. This is particularly relevant for small and medium-sized enterprises. While large companies have the resources and capacity to assess the level of digital skills of their workforce and align people development programmes with their business needs, small businesses will never be in this situation. The state must therefore step in, both in a methodological and executive role, in order to support SMEs in the development of human resources.

The PAITool project is an example of what such engagement and workforce training should be built on. That is to say, on high-quality and modern content, which is artificial intelligence in its various forms, on attractive formats such as eLearning, and on experts who can combine eLearning with qualified interpretation and their own experience.

# PAITool

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