

A Guide to Digital Competencies Essential for Implementing Digital Transformation in Micro and Small Businesses: Enhancing Market Competitiveness for Adult Workforce and Micro Enterprises



„Digital competences as a chance for a more secure tomorrow“

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Digital transformation has become an essential element for growth and maintaining competitiveness for micro and small enterprises. In the face of a rapidly changing market and increasing digitalization, even the smallest businesses must adapt to the digital reality to sustain their position. Digitalization allows for the optimization of daily operations, improvement of efficiency, and access to new markets and customers. However, digital transformation is not only about implementing new technologies; it also requires the development of digital skills among both employees and business owners. These digital competencies are crucial for fully harnessing the potential of modern tools and digital processes.

The guide we present here is intended to support the implementation of digital transformation within a company. Aimed primarily at owners of micro and small businesses, this guide seeks to enhance the competitiveness of these organizations by applying the solutions provided. By doing so, it also aims to foster the development of digital competencies among employees and adults in the micro and small enterprise sector.

This guide was prepared as part of the project “Digital Skills as a Pathway to a More Secure Future.” The project is being carried out in partnership between the Education, Health, and Development Foundation and M&M Profuture Training under the Erasmus+ program, KA210-VET - Small-Scale Partnerships in Vocational Education and Training. The initiative aims to create interactive training for business professionals, available in three languages.



Objective and Scope of the Guide

This guide has been prepared for micro and small businesses, as well as adults seeking to acquire or enhance their digital competencies to effectively support digital transformation in the workplace. The guide covers a broad range of topics, from basic computer skills and digital security to data analysis and advanced technologies that support process automation. The content is organized into logical chapters that gradually introduce more advanced aspects of digitalization. Each chapter includes both theoretical foundations and practical tips to help readers better understand and apply the presented topics.

Within this guide, you'll find detailed coverage of the following essential topics:

Basic Digital Competencies



Explanation of key concepts, discussion of essential computer skills, and office tools that form the foundation for work in a digital environment.

Digital Security



Principles of safe internet usage, personal data protection, and fundamental cybersecurity practices that are crucial for small businesses in safeguarding their assets and client data.

Digital Communication



Overview of online communication tools, such as email, messaging apps, and video conferencing platforms, as well as netiquette and principles for effective collaboration in virtual teams.

Working with Data



Basic principles of data management, analysis, and visualization, enabling better business decision-making.



Creating Digital Content



Introduction to creating and editing documents, multimedia presentations, and basic graphic design.

Digital Tools and Technologies



Examination of project management tools, content management systems, and automation tools that support digital transformation.

Digital Transformation in Micro and Small Businesses



Strategies and best practices for implementing digital transformation in small businesses, including success stories, as well as an analysis of the challenges and benefits of this process.

Enhancing Competitiveness in the Job Market



Importance of digital competencies for career development and planning skill advancement through certifications and training.

The information and practical tips in this guide aim to help entrepreneurs and employees leverage the opportunities offered by digitalization and increase their chances of success. Additionally, the guide concludes with a summary of key topics, as well as a list of useful tools, links, and educational resources to support further development.



The Importance of Digital Competencies in Digital Transformation

Digital competencies are a crucial component of development for any business, especially in today's rapidly changing market landscape. For micro and small enterprises that must operate flexibly and respond dynamically to changes, having the right digital skills is not only a competitive advantage but also a necessity.

Digital transformation is a comprehensive process that encompasses the implementation of new technologies, process automation, data digitization, and the integration of various tools to enhance business efficiency. However, implementing digital transformation is impossible without the appropriate digital competencies, which form the foundation for fully harnessing the potential of technology.

Why Are Digital Competencies Particularly Important in Micro and Small Enterprises?

1. **Limited Resources and the Need for Optimization**

Micro and small enterprises often have limited financial and human resources. Therefore, every decision and action must be carefully optimized. Digital competencies, such as proficiency in data analysis tools, online communication, and project management, enable entrepreneurs and their teams to manage time, tasks, and resources more effectively. For example, using financial management or sales monitoring applications allows for faster decision-making and better allocation of resources.

2. **Increased Flexibility and Rapid Adaptation to Change**

In today's digital world, changes occur swiftly – new technologies, shifting consumer trends, or regulatory changes can significantly impact business operations. Small companies with appropriate digital skills are better equipped to adapt quickly to new market conditions. For instance, the ability to use remote work and online communication systems enables a seamless transition to a hybrid or fully remote work model, increasing the business's flexibility and resilience in unexpected situations like economic crises or pandemics.

3. **Building a Competitive Advantage**

Digital transformation can become a source of competitive advantage for micro and small enterprises, which typically do not have the same resources as larger firms. By effectively implementing digital solutions, small businesses can stand out in the market by offering faster customer service, more personalized services, better customer relationship management (CRM), and more efficient order processing. Digital competencies enable entrepreneurs to better understand customer needs, anticipate trends, and introduce innovations, attracting new clients and enhancing customer loyalty.



4. **Operational Efficiency and Cost Reduction**

Small companies with basic and advanced digital skills can implement various technologies to automate daily tasks, such as accounting, marketing, inventory management, and data analysis. This approach significantly reduces operational costs and frees up human resources for more strategic activities. Proficiency in tools like CRM systems, e-commerce platforms, marketing automation software, or cloud computing provides businesses with opportunities for better work organization and faster, more efficient order processing and customer service.

5. **Enhancing Team Skills and Improving Work Quality**

Digital competencies among employees of micro and small businesses improve overall work quality and team efficiency. Digital skills enable employees to communicate effectively, even remotely, manage tasks efficiently, and better utilize tools for time management, reducing error risks and boosting productivity. Consequently, micro and small enterprises can compete with larger companies by making better use of talent and supporting team creativity and innovation.

6. **Better Data Management and Decision-Making**

For micro and small enterprises, effective data management can mean the difference between success and failure. Digital competencies allow entrepreneurs to collect, analyze, and interpret data, leading to better planning and more informed business decisions. For example, analyzing sales trends or customer preferences enables businesses to tailor their offerings to current market needs, thereby enhancing competitiveness.

7. **Strengthening Data Security and Protection Against Cyber Threats**

Today, even the smallest businesses are vulnerable to various cyber threats, such as phishing attacks, malware, or data theft. Micro and small enterprises, which often lack large budgets for advanced security measures, can protect themselves by having proper digital skills in cybersecurity. These skills allow for implementing essential protective measures, such as creating strong passwords, securing access to systems, and protecting customer data. Understanding basic digital security principles helps companies reduce the risk of cyberattacks and maintain operational stability.

8. **Supporting Long-Term Development Strategies**

Digital competencies are foundational for the long-term growth strategies of small firms. Knowledge of the latest technologies and the ability to apply them enable entrepreneurs to anticipate technological trends that will impact their industry in the future. This foresight facilitates more informed investment planning, the search for new revenue sources, and the development of innovative services. For example, implementing online sales in a previously brick-and-mortar business broadens the customer base and increases profits.



Possessing digital competencies not only meets the demands of the modern market but also offers a means to gain a competitive edge and build a stable market position. Micro and small firms that invest in developing their employees' digital skills become more flexible, innovative, and better adapted to changing economic conditions. In practice, this results in faster and more effective responses to customer needs, improved work organization, and enhanced customer satisfaction, all of which contribute to stable growth and allow these firms to compete equally with larger companies. Digital competencies, therefore, are the key to success in the digital transformation of small businesses.

Introduction to the Project "Digital Skills as a Path to a More Secure Future"

The project "Digital Skills as a Path to a More Secure Future" is an international partnership initiative designed to address the challenges of digital transformation for micro and small enterprises. Implemented within the framework of the Erasmus+ KA2 program, the project is a collaboration between the Foundation for Education, Health, and Development from Sucha Beskidzka (Poland) and M&M Profuture Training from Barcelona (Spain). Its primary goal is to enhance digital skills among adult employees and managerial staff in the micro and small business sector, responding to the growing demands of the job market and the need for business digitalization.

The project aims to align adults' digital skills with the demands of the modern job market and the increasing digitization of the economy. Its objectives are achieved through:

Developing a Digital Transformation Guide – a comprehensive document detailing the digital skills required for full adaptation to the demands of the modern market.

Creating Digital Skills Development Pathways – clear and defined educational pathways for micro and small business staff, adapted to both the Polish and Spanish markets.

An Interactive Course – a modern training program available in Polish, Spanish, and English, allowing participants to acquire the digital skills necessary to enhance competitiveness in the job market.

A Digital Skills Self-Assessment Tool – a practical tool that enables participants to assess their skill levels and identify areas for improvement.

The project addresses key social and economic needs, such as the low level of digital skills in Poland, which significantly limits entrepreneurs' ability to fully utilize digital tools. The need to improve digital competencies is especially crucial for micro and small businesses, which often lack adequate resources for training investments.

The Spanish partner, operating in a more digitally advanced market, will provide knowledge and experience exchange, ensuring that the project aligns with the professional development strategy and supports the digital transformation process.

The international character of the project brings added value, allowing participants to benefit from the Spanish partner's expertise and the implementation of best practices across



different cultural and economic contexts. The partners will collaborate on each stage of the project, jointly developing the guide and interactive course, ensuring high-quality materials adapted to the needs of both local and international participants.

The project is primarily aimed at:

Micro and small business management

- owners, directors, and managers looking to improve their digital skills to support their companies' digital transformation.

Professionals in development

- adult employees in the micro and small business sector who seek to enhance their qualifications and better understand digital technologies.

Job seekers

- unemployed individuals who can increase their employability by acquiring digital skills.

Through this approach, the project contributes to enhancing the professional competitiveness of adults and supports the development of skills aligned with the requirements of a digital economy.

The project has produced a Digital Transformation Guide for Micro and Small Businesses, which provides a detailed overview of key digital skills necessary for full adaptation to the requirements of the digital economy and for supporting the transformation process.

The project "Digital Skills as a Path to a More Secure Future" represents a crucial step toward strengthening the digital readiness of micro and small enterprises and adult job market participants in Poland and Spain, supporting them in achieving their professional and social development goals.





Digital Transformation in Micro and Small Enterprises

Digital transformation is the process of introducing modern digital technologies into various aspects of business operations, aimed at increasing their efficiency, competitiveness, and adaptation to a dynamically changing market. In the context of micro and small enterprises, digital transformation is a key element that enables sustainable development, optimization of business processes, and better alignment of offerings with customer needs.

Origins of Digital Transformation and Industry 4.0

The concept of digital transformation stems from the broader context of the Fourth Industrial Revolution, known as Industry 4.0. This concept is based on the automation and integration of production and business processes at an unprecedented level. It includes the use of advanced technologies such as artificial intelligence, robotics, 3D printing, blockchain, and the Internet of Things (IoT). Industry 4.0 brings significant changes to the way companies operate, impacting business models, employment structures, and the essential competencies of employees.

It is worth noting that Industry 4.0 is a natural continuation of previous industrial revolutions, which gradually introduced mechanization, electrification, and automation of production processes. Each of these revolutions brought with it social and economic changes that significantly shaped the labor market and the organizational structures of companies.

Introduction to Digital Transformation

Small and medium-sized enterprises (SMEs) are crucial to the universal economy as they represent about 90% of businesses and account for more than 50% of employment worldwide (World Bank, 2024). Digitalization brings SMEs the opportunity to overcome traditional resource constraints and seize new growth changes (Bouwman et al., 2019). And what does digitalization mean? By digitisation we mean the conversion of physical formats into digital environments, a process that can be found in both domestic and business environments.

Some of the benefits of digitisation are:

Faster and easier access to information.

- The information is available remotely what allows an easier and quicker access to the information after being digitised. This can also increase the staff`s productivity as they need less time to do the same tasks.

Freeing up space.

- As it isn't needed the physical storage of paper documents, empty space is created and can be used in another way or can even be a help to decrease the needed size of offices or premises.

Saving materials.

- When a company has documents digitised they save paper, which is positive from both an economic and an environmental point of view.

Having greater security.

- When the information is in the cloud or in external storage memories the physical risks that can happen in the event of misfortune or accidents.



Digitalisation is multi-faceted, and it involves the use and applications of a broad range of technologies, for different purposes, e.g. from enabling greater access to markets and end-users, to achieving greater integration of business processes, or to scaling up corporate IT capacity, etc.

To enhance your knowledge, please watch:



What now for the digitalisation of small- and medium-sized enterprises (SMEs)?

Digitalisation - Technologies	Enterprise resource planning (ERP)	increase back-office efficiency and strategic planning
	Radio Frequency Identification (RFID)	help enhance efficiency in production and logistics
	Customer Relationship Management (CRM)	used for managing a company's interactions with its customers, clients, prospects, employees and suppliers
	Cloud computing	refers to ICT services accessed over the Internet,
	Big data analytics	support efficiency gains in decision making and strategic planning, general administration, production, etc
	Social media	increase SME customer base, business visibility and outreach
	E-commerce	increase customer and supplier base, and reach markets beyond traditional boundaries, in regions or abroad.
	B2G applications	help cut the red tape and level the playing field in government-SME interactions
	Electronic invoicing	supports compliance-by-design approaches and helps reinforce the integration of accounting systems and tax rules
High-speed broadband	is a prerequisite for SME digital transformation.	



Although digitisation and digital transformation are not the same thing, they are closely related terms. Furthermore, if we want to make real the digital transformation a reality, it is crucial to have previously implemented a digitalisation process whose advantages we have already introduced.

To comprehend the importance of digital transformation in SMEs, we must start from the existing gap between digitised and non-digitised SMEs, that continues to widen. Companies that have undertaken the digital transformation process produce more, have higher revenues, are more profitable (between 15% and 25% by 2025 according to estimates by some studies) and can increase to new markets more quickly. (OECD, 2021)

Digital solutions as a technological evolution at the service of small and medium-sized enterprises can have more competitive profits compared to those who do not use the new technological tools.

Digital transformation represents a new, fourth industrial revolution that brings radical changes in business models and their performance (Lorenz et al., 2020). The fourth wave of industrialization termed Industry 4.0 is characterized by digitalization of manufacturing through the interconnection not only of different information and communication technologies (ICTs), but also between ICTs and production facilities, such as machines, products, devices, and online content in order to trigger actions in an autonomous way (Sarbu, 2021).

It is precisely this digital transformation of the business sphere that we are going to focus on in this section, specifically on how this digitisation helps SMEs. Digital transformation allows SMEs to modernize and optimize their business processes.

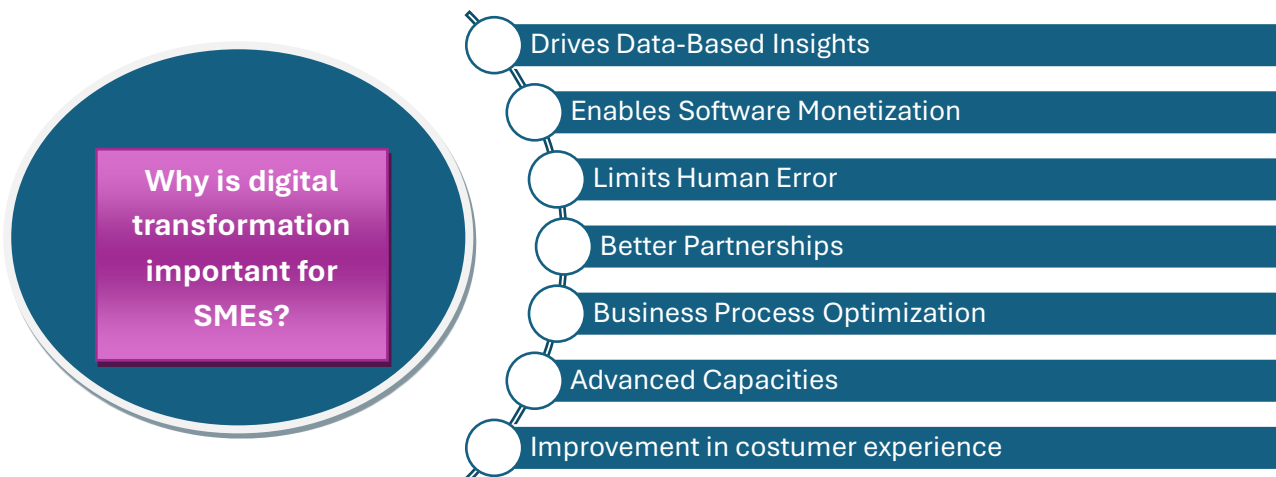
And what is considered as a Digital Transformation?

Digital transformation is a comprehensive process that involves adopting digital technologies and integrating them into various aspects of a business or organization to fundamentally change how it operates, delivers value to customers, and achieves its goals. It's about leveraging technology to enhance efficiency, improve customer experiences, innovate, and stay competitive in a rapidly evolving digital landscape.



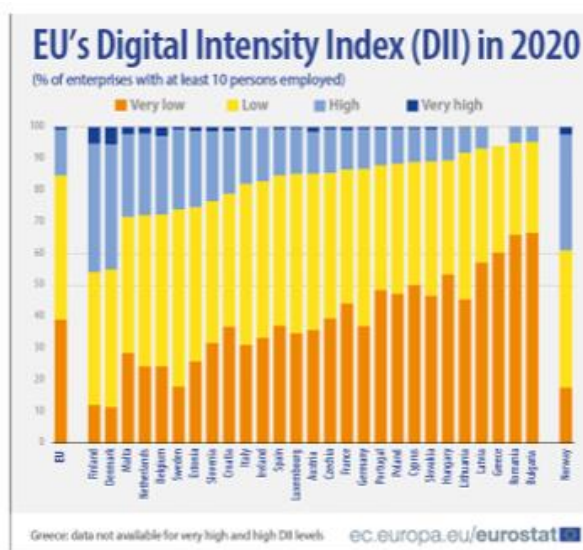
But, why digital transformation for SMEs is important? Which are the benefices?

Here are some indicators about the importance of digital transformation for SMEs to help you understand it better:



However, despite the numerous benefits, digital transformation is not without its challenges, especially for SMEs with limited resources.

According to one of the targets of the EU's vision for digital transformation, at least 90% of the EU's small and medium-sized enterprises (SMEs) should reach a basic level of digital intensity by 2030. In 2020, three out of five SMEs (60%) in the EU reached at least a basic level of digital intensity, against 89% of large enterprises. Almost half of the medium (47%) and small (46%) size enterprises showed a low level of digital intensity (Source Eurostat).



Source: Eurostat



Why does this happen?

The main reasons are:

1. Limited Budget

SMEs often have limited budgets, making it difficult to invest in new technologies. The cost of applying digital solutions, training workers and maintaining new systems can be unaffordable. However, it is crucial to consider digital transformation as an investment rather than a cost. The long-term positive results, such as amplified efficiency and access to new markets, often compensate the initial costs.

2. Lack of Digital Skills

Digital transformation requires a workforce with the necessary digital skills. Many SMEs struggle to find and retain employees with know-how in areas such as data analytics, cybersecurity, and digital marketing. When looking at the digital skills of the current workforce, only 65% have digital skills which are "above basic" (Eurostat 2024). To overcome this challenge, SMEs can finance training and develop plans to upskill their existing workforce. This contributes to refraining from the uptake of advanced digital technologies.

The reality shows that 71% of EU employees thought some fundamental level of digital skills was needed to perform their jobs and 74% of recruiters indicated that knowing how to use digital communication tools and video conferencing is also a crucial skill for job candidates to possess and in terms of digital skills. Partnering with external consultants or technology providers can also help fill the skills gap. The publication 'Digitalisation in Europe - 2024' reflects that in 2022 only 22% of European companies provided training to their employees to develop or improve their digital skills. Finland (40%), Sweden (34%), Denmark and Belgium (both 33%) stand out. In addition, the size of the companies also matters: the percentage rises to 70% in large companies, compared to 21% in SMEs.

3. Resistance to Change

Cultural resistance is a common block to digital transformation. Workforces may be unenthusiastic to integrate new technologies or modification creating new ways of working. In this sense, leadership has a vital role in breaking this internal resistance by fostering a culture of innovation and continuous learning. Using a clear communication about the benefits of digital transformation and including workers in the process can help to ease the transition.



4. Cybersecurity Concerns

As soon as SMEs integrate digital technologies, they develop a higher vulnerability to cyberattacks. The reason is that small businesses are often considered as easy targets by cybercriminals given that their lack of a strong cybersecurity measures. To decrease this risk, SMEs must prioritize cybersecurity by implementing best practices, such as using strong passwords, regularly updating software, and conducting security audits.

The reality shows that the EU cybersecurity landscape continues to be strongly impacted by geopolitical events, with cyberattacks on the rise: ENISA recorded more than 2 500 cyber incidents from July 2022 to June 2023, with 220 incidents specifically targeting two or more EU countries.

5. Integration Issues

Integrating new digital tools with existing systems can be challenging, particularly if the SME has old-fashioned or incompatible technologies. This can provoke to inefficiencies and disruptions in business operations. To avoid integration issues, SMEs should implement research and look for an expert advice during the procedure of selecting digital solutions that align with their existing infrastructure.



Digital Transformation Technologies

As we have said, digital transformation (DT) is the process of integrating technology into every facet of an organization. It's about using technology to improve operations, leading to faster processes, reduced waste and cost, improved decision-making, and better member or customer experiences.

While each company's selection might be different depending on their necessities and strategy, these technologies are expected to have a deep impact on most businesses, globally.



Mobile technology

Mobile devices increase the speed and frequency of interactions between companies and their customers. These interactions allow access to real-time data that is nearly impossible to replicate through any other means. They also allow marketers to collect valuable data to grow their existing customer base or develop new markets. Businesses are leveraging tools such as QR Code generators to create QR Codes that can provide a truly mobile-first experience.



Artificial Intelligence

AI refers to the simulation of human intelligence processes by machines. It automates complex decision-making tasks to mimic the human thought processes. Encompassing Machine Learning (ML), AI algorithms can learn, understand, analyse and act on new data based on rules to reach approximate or definite conclusions.



Augmented Reality

Simply explained, augmented reality (AR) is a virtual augmentation of the physical world by adding digital elements, sounds, and other sensory stimuli. When done properly, the user experience is seamless, opening a new realm for businesses across the board to explore. It has already been successfully implemented in Airline, Manufacturing and entertainment industries.





Big Data and Real-Time Analytics

Big data analytics is an imperative digital technology that decodes complex data to reveal important information such as customer patterns (including their behavior and interests), market trends, and unknown correlations.



Blockchain

Essentially, Blockchain is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and unalterable way. Originally devised for the digital currency, Bitcoin, the business community has found other potential uses for the technology. Insurance, Supply Chain, Energy and Ad-technology are a few industries where Blockchain applications are already being used.



Internet of Things (IoT)

The Internet of Things (IoT) consists of a large network of connected systems that can collect and share information without manual input. The technology links the sensors of the devices with a centralized IoT platform that extracts and stores data from them. These are then analyzed to share valuable information with the leaders.



Robotics

Machines with improved sensing, control and intelligence used to automate, augment, or assist human activities are growing in a broad range of services applications. These technologies help develop machines that be substitute for human beings or to replicate human actions. This is widely used to reduce human resource costs and increase efficiency. Smart robotics when combined with AI and IoT can drive powerful results in companies.





3D printing

3-D Printing process builds a three-dimensional object from a computer-aided design (CAD) model, usually by successively adding material layer by layer, which is why it is also called additive manufacturing. It is being used in manufacturing, medical, industry and socio-cultural sectors to become successful commercial technology.



Cloud Based
Technology

Cloud is an inevitable component in digital transformation that provides flexibility, scalability, and agility to organizations. Traditional storage services aren't adequate for handling large amounts of data cost-effectively and securely. As a result, more industries are shifting to the cloud over time. The technology stores all the data in the cloud, freeing organizations from the hassles of downloading heavy files, finding IT experts, or manually updating their programs.

The Importance of Digital Transformation for Micro and Small Enterprises

Digital transformation is one of the key priorities of the European Union, as it has a significant impact on economic development, society, and the EU's competitive position on the international stage. The implementation of modern digital technologies is becoming essential to meet the challenges of the global economy and to enable European companies, including Polish micro and small businesses, to compete effectively in the globalized market. The digitalization of business processes, data management, and communication forms the foundation of modern business models that the EU supports and promotes.

The European Union has been actively involved for years in efforts aimed at accelerating digitalization within its member states. One of the main goals is to build a Digital Single Market that will allow for the free flow of goods, services, and data across Europe. This, in turn, is expected to increase the efficiency of the digital economy and contribute to innovation and job growth. Digital transformation is seen not only as a path to technological development but also as a key element of the EU's economic and social policy.

For entrepreneurs operating within the European Union, digital transformation brings numerous benefits but also challenges. The EU offers a range of initiatives and support programs aimed at facilitating the shift to a digital model, particularly for micro and small enterprises, which often have limited resources compared to larger market players. It is



crucial for companies operating in EU countries to be aware of these opportunities and actively take advantage of them in order to thrive in a dynamically changing business environment.

In the context of EU strategy, digital transformation is closely linked to other political initiatives such as sustainable development and improving citizens' digital skills. The European Union recognizes that digitalization can contribute to achieving a more sustainable economy, where modern technologies help protect the environment, increase energy efficiency, and improve the quality of life for its citizens. Therefore, digital transformation is not only an economic priority but also a social one, aimed at enhancing the quality of life within the EU.

EU Initiatives in Digital Transformation

Digital Single Market



The EU aims to create a Digital Single Market by removing barriers to the free flow of goods, services, and digital data. This initiative seeks to harmonize regulations, promote e-commerce, and ensure fair competition in the digital sector.

Connectivity



The European Union prioritizes providing fast and reliable internet access to all citizens, including those in rural and remote areas. It supports investments in broadband infrastructure and the implementation of 5G networks, with the goal of bridging the digital divide.

Data-Driven Economy



The EU promotes the development of a data-driven economy by facilitating the free flow of non-personal data and fostering the growth of technologies such as artificial intelligence (AI) and the Internet of Things (IoT), while ensuring the protection of personal data.

Digital Skills and Education



EU initiatives focus on improving citizens' digital skills and promoting education in digital technologies to enable full participation in the digital society and strengthen the digital workforce.



Digital Innovation and Entrepreneurship



The EU supports the development of digital innovation by funding research, fostering innovation ecosystems, and promoting collaboration between academia, industry, and governments, aimed at stimulating entrepreneurship in the digital sector.

Digital Public Services



The EU aims to improve the quality of public services through digital technologies, developing e-administration, digital healthcare, smart cities, and other services designed to make citizens' lives easier.

Trust and Security



The European Union places great emphasis on building trust in digital technologies and ensuring cybersecurity. As part of this initiative, the EU is working on strengthening critical infrastructure, combating cyber threats, and protecting personal data in accordance with the General Data Protection Regulation (GDPR).¹

Strategies for Implementing Digital Transformation



Aby To smoothly transition into the topic of digital transformation implementation strategies, let's begin with a short case study presenting the transformation of a particular company. The following case study was prepared by Waldemar Foltynowicz and is titled: "Digital Transformation Case Study – How to Achieve Desired Outcomes?" It was published in

December 2023 on the Strefa PMI portal, managed by the Project Management Institute Poland -- <https://strefapmi.pl/strefa-praktyki/case-study-cyfrowej-transformacji/>

¹ Paweł Poszytek, Marcin Lis, Bartłomiej Jefmański, Jadwiga Fila, Mateusz Jeżowski, Jolanta Kotelska, Transformacja cyfrowa przedsiębiorstw w dobie Przemysłu 4.0, Akademia WSB, Dąbrowa Górnicza 2024, s. 8-14



Case Study of Implementing Digital Transformation

This case study tells the story of a transformation led by Anna, an experienced Marketing Director at a medium-sized company. She had long understood that digital transformation was an inevitable future for both her organization and the entire industry. She decided to take on the challenge of guiding the company she worked for through this difficult process.

Start with a Vision

The first step Anna took was to gather the leadership team and develop a clear vision for the transformation. It was stated as: "We want to become a modern organization that harnesses the potential of new technologies to better manage and respond to the changing needs of customers." Then, specific goals were set: increasing the company's visibility on social media, improving the analysis of marketing data, and adapting strategies to meet the evolving needs of customers. With this groundwork in place, they were ready to embark on the journey to the "transformational paradise."

The Beginnings

The biggest challenge Anna and her team faced was the organizational culture. Employees, accustomed to traditional methods of work, were apprehensive about the new technologies. As people, we tend to avoid stepping out of our comfort zones (and transformation is exactly that), so resistance from employees was completely natural. On one hand, they might feel threatened by the implementation of new technology, which could lead to higher employee turnover. On the other hand, transformations can indeed require tough decisions, such as restructuring, staff reductions, or changes in leadership. Anna decided to start by building trust and convincing employees of the value of the transformation. She introduced training and support for new tools, encouraging learning and experimentation. In addition to the "human" challenges, there were also technical issues, as integrating new systems with existing processes wasn't easy. Additionally, there was a temporary drop in efficiency as employees learned the new processes and technologies.

Changes, Changes, Changes

Anna understood that flexibility and the readiness to adjust plans to changing circumstances were essential. Some investments turned out to be less effective than initially anticipated. This was a valuable lesson in the wise management of resources. Another challenge was the cost. Digital transformation required significant investments, which put a strain on an already stretched budget. It was necessary to convince the Board that long-term benefits would outweigh short-term costs. Over the years, Anna and the transformation team overcame these difficulties step by step, and as time passed, the effects of the transformation became visible. Through data analysis, new marketing tools, and a flexible approach to customers, the company increased its online presence and significantly improved its sales figures.



Deficits

Certain areas require special attention during the transformation process. Based on data from Accenture², specific deficits were identified along with the necessary actions to address them. Here are the most important ones.

Deficit of Agreements and Priorities

The transformation process is a long-term effort that requires the right approach. It is necessary to specify the priorities of the transformation and incorporate them into the organization's strategic plans. An important factor is also appointing a suitable sponsor (at the board level or CEO) to oversee the transformation process. However, simply appointing a sponsor is not enough; it is also advisable to designate a person responsible for managing the entire transformation process, such as a Head of Transformation or a Transformation Manager³.

Deficit of Technological Architecture

When planning the target state of the transformation, we must remember where we are starting from and what the limitations are. It is essential to ensure that the organization has a thoroughly mapped technological architecture to understand what needs to be improved. This applies not only to the complexity of the systems but also to the underlying data. Bringing order to the data is crucial for effective transformation.

Deficit of Skills

Digital transformation is a relatively new field, and there is often a lack of appropriate competencies, especially in the area of management. Before we begin the process, we must ensure that we have properly implemented processes to support the transformation. Since these processes won't happen by themselves, they require people. Therefore, it is crucial to ensure that the organization has a sufficient number of employees who can effectively manage the transformation. Once we are confident that we have enough human resources, we should invest in developing technological skills necessary for implementing and adapting new technologies.

Deficit of Partnership and Understanding of Technology

The resistance mentioned at the beginning accompanies virtually every change. It is important to ensure that there are consistent goals in reward systems, which will serve as additional motivation for the team. The success of the transformation also depends on the implementation of change management within the organization. Together with the Coalition

² Accenture, *How to successfully scale digital innovation to drive growth*

³ <https://www.brightline.org/resources/the-chief-transformation-officer/>



of Change Ambassadors, this will help overcome resistance to change and persuade others of its value. We fear what we do not know. Therefore, it is worth minimizing the fear of the new by introducing training programs aimed at developing technological competencies within the organization.

Deficit of Measurement

A well-defined vision of the transformation is the cornerstone of its success because defining the target state is a prerequisite for monitoring progress. It is important to implement and use appropriate tools that enable the tracking of progress in the transformation. We should also ensure clearly defined responsibility for achieving results and active involvement from the sponsor, which will allow for better monitoring of the work.

Deficit of Culture

We must remember that the organizational culture, as a set of operational principles within the organization, must be reviewed and adapted during the transformation. One such effort is to strengthen elements that encourage innovation, which are supported by the development of technological competencies across all departments in the organization. During the transformation, we must be prepared to make difficult decisions and abandon established practices in favor of new solutions.

Lesson

Anna's story and the transformation carried out in her company ended in success, though there were several challenges typical of this process: a temporary decline in efficiency, increased operational costs, and higher employee turnover. The most important lesson Anna learned from this process was the readiness to continually learn, both from mistakes and successes. Digital transformation is a process that, in today's world, never truly ends. Thanks to persistence, commitment, and the ability to solve problems, Anna became a true hero, leading the transformation team through the turbulent waters of the digital revolution and achieving satisfying results.

Summary

Many more digital transformations can end with much better outcomes than they currently do. We already know the recipe for increasing the chances of success. I firmly believe that an awareness of the barriers we must face will allow us to be better prepared for transformation, and understanding its deficits will help us address them appropriately and take the necessary actions.



Areas of Digital Transformation in Micro, Small, and Medium-Sized Enterprises

In a study conducted by the Polish National Development Bank (Bank Gospodarstwa Krajowego), published in February 2024 as part of the report *Digitalization in the SME Sector – Opportunities and Threats*, nine types of digital technologies related to digital transformation in the SME sector were identified.⁴ These categories of tools include:

- The use of social media for company promotion.
- The use of cloud data processing services.
- The use of software facilitating internal collaboration within the company (e.g., MS Teams, WhatsApp, Slack, Yammer).
- The use of social media for employee recruitment.
- Electronic invoicing.
- The use of AI (i.e., intelligent machines or computer systems that operate or respond like humans).
- E-commerce via the company's own website or other sales portals.
- The use of software to monitor production or other company activities (e.g., ERP, CRM).
- The use and analysis of Big Data.

The report presents detailed data on the state of digital transformation implementation within the Polish SME sector. It shows that the process is gradual, and the level of digitalization varies depending on the size of the company. The study applied a digital transformation engagement index on a scale of 0-9, referring to the nine previously mentioned categories of digital tools. As a result, it was found that medium-sized enterprises are the most digitally advanced, implementing an average of 5.64 out of the 9 analyzed digital solutions. Small businesses implemented an average of 4.11, while micro-enterprises adopted only 1.82.

The most popular technologies include the use of social media for promotion, cloud data processing, and software facilitating internal collaboration, such as Microsoft Teams or Slack. Medium-sized companies significantly outpace smaller businesses in the use of advanced technologies such as artificial intelligence, ERP/CRM software, and Big Data analysis. Micro-enterprises are much less advanced in this regard, mainly adopting basic digital tools.

⁴ https://www.bgk.pl/files/public/Pliki/Ekspertyzy_i_badania/Raport_cyfryzacja_BGK.pdf



Main Barriers to Digitalization in the SME Sector

The implementation of digital transformation in SMEs in Poland faces several challenges and barriers. The BGK report indicates that one of the most significant problems is the lack of adequate digital skills within companies. As many as 51% of surveyed entrepreneurs believe that their companies have a skills deficit related to software development. This lack of key competencies negatively affects the pace and effectiveness of implementing new technological solutions.

Another important issue highlighted by 43% of entrepreneurs is the shortage of IT professionals in the labor market. The lack of access to specialized staff limits the ability to implement advanced digital tools, further hindering digital transformation. Additionally, 41% of companies point to problems with financing investments in digital technologies, which poses a significant barrier, especially for micro and small enterprises, which have limited resources to invest in modern technologies.

Differences in Digitalization Based on Company Size

Company size is one of the key factors influencing the level of digitalization in the SME sector. Medium-sized enterprises (employing between 50 and 250 people) are the leaders in digital transformation, with a large percentage of companies using cloud services (80%), social media for promotion (74%), and e-commerce (34%). These companies are also the most likely to implement advanced technologies such as artificial intelligence (35.6%) and Big Data analysis (38.7%).

Small businesses (with 10 to 49 employees) are less advanced but are also dynamically introducing new solutions. 66% of them use cloud services, 67% use social media for promotion, and 23.5% engage in e-commerce. Micro-enterprises (fewer than 10 employees) lag far behind, with only 38% of companies using cloud services and 49% using social media. It is worth noting that only 2.2% of micro-enterprises conduct e-commerce.

The Impact of Business Sector on the Use of Digital Tools

The type of business activity also plays a significant role in the use of digital tools by SMEs. In industries such as hospitality, gastronomy, education, and culture, companies more frequently use social media to promote their services, with usage rates reaching 63-71%. Cloud data processing services are also popular in these sectors, being used by more than half of the companies.

On the other hand, businesses in the professional, scientific, and technical sectors use advanced digital tools more often than other industries, such as recruitment through social media, e-commerce, and software for monitoring company activities. The retail sector is characterized by extensive use of internal communication tools and Big Data analysis. In the



transport and storage sectors, digital technologies are implemented less frequently, as is the case in the financial, insurance, and real estate industries.

The Relationship Between Digitalization and Company Size Within Various Sectors

Differences in digitalization are evident not only between companies of different sizes but also within individual business sectors. For example, among micro-enterprises, the most digitally advanced companies are in the professional, scientific, and technical sectors, as well as in hospitality and gastronomy. In small companies, financial, insurance, and construction firms dominate in terms of digital solutions adoption.

In medium-sized companies, the widest application of digital technologies is observed in the transport, storage, and hospitality sectors. This demonstrates that even within individual industries, the degree of digitalization largely depends on the size of the company—larger enterprises have more resources to implement advanced technologies, allowing them to adapt to the demands of the digital market more quickly and effectively.

The Importance of a Strategy Tailored to the Size and Sector of the Company

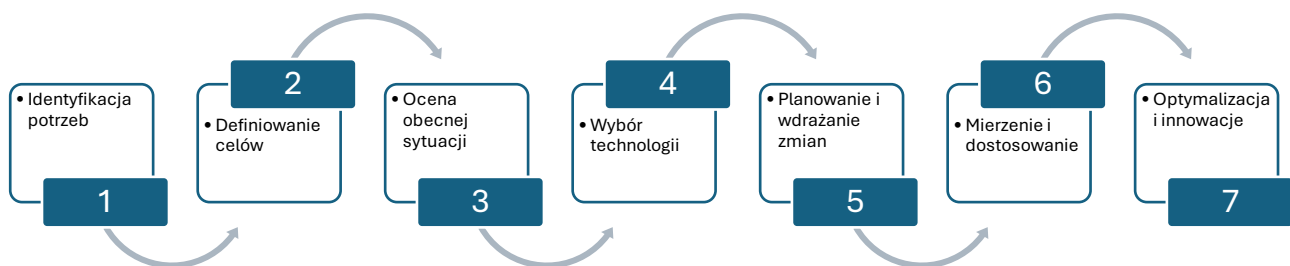
Based on the above analyses, it can be concluded that digitalization strategies should be tailored to both the size of the enterprise and the specifics of the industry. Implementing digital transformation requires an individualized approach that takes into account the specific needs and limitations of companies operating in different sectors. The best reference point for designing digitalization efforts for the SME sector should be companies that stand out with a high level of technological advancement in their respective industries and size segments.

Enterprises can benefit from the experiences of digitalization leaders, which will enable them to more effectively implement technologies that meet their specific needs and market conditions.



Digital Transformation and Innovation Strategy in Practice

Summing up the earlier considerations related to the analysis of the digital transformation situation in the SME sector, it is important to outline how to effectively build a digital transformation strategy within a company. One of Poland's consulting and training firms specializing in supporting the SME sector, the MTC Group, has created a short, practical guide on how to approach the creation of a digital transformation strategy.⁵



Source: Own elaboration based on Grupa MTC, <https://mtc.pl/blog/transformacja-cyfrowa/>

According to the above framework, seven basic stages related to the digital transformation process can be distinguished:

1. Identification of Areas for Transformation

This stage is crucial as it will influence the subsequent elements of the digital transformation process within the company. Proper identification of the areas within the company where digital technologies will be introduced will ensure measurable benefits. Investing in digitalization in areas where it is not needed can generate costs disproportionate to the benefits derived from implementing digital solutions. The identification of areas for transformation should be carried out at both the individual business process level and the entire organization.

2. Defining the Goals of Digital Transformation

The next stage of building the strategy is understanding what you truly want to achieve through digital transformation. The process of defining goals may include improving efficiency, increasing competitiveness, enhancing customer service quality, or

⁵ <https://mtc.pl/blog/transformacja-cyfrowa/>

creating new products or services. It is important to ensure that the goals are clear, measurable, and aligned with the overall objectives of the company.

3. Assessing the Current Situation

To properly carry out a company's digital transformation, it is necessary to focus on what needs to change, i.e., how the company currently operates. The assessment should cover areas such as technology, processes, employee skills, organizational culture, and organizational structure.

4. Choosing the Right Technologies

Based on the defined goals and the analysis of the company's situation, the technologies most suitable for the company should be selected. These technologies may include all nine groups described in the subsection *Areas of Digital Transformation for Micro, Small, and Medium-Sized Enterprises*.

5. Planning and Implementing Changes

At this stage, it is necessary to create an implementation plan for the technologies in the company. This stage includes creating a timeline, building a project team, training employees, and monitoring progress.

6. Measuring and Adjusting

After implementing the technologies, results should be systematically measured, and the strategy should be adjusted if necessary. Measuring progress and achievements in the digital transformation process is crucial for success. Monitoring selected indicators allows the company to assess whether it is moving in the right direction and achieving the set goals.

7. Optimization and Innovation

The final stage of the digital transformation process is the continuous improvement of the company and the implementation of innovations. Digital transformation is not a one-time process but a continuous effort aimed at improving and adapting to changing conditions. The current pace of changes and the development of digital technologies make this stage crucial for maintaining the positive results of the implemented digital transformation elements and, if necessary, for implementing additional solutions.

To enhance your knowledge, please watch:



[The difficulty of digital transformation & how to make it happen](#)



Examples of Successful Implementations

In addition to providing training and consulting services, MTC Group is eager to share its experiences in digital transformation within the SME sector, to which it belongs. Below are several examples of the successful implementation of specific technologies within the company. You can also find these examples of successful implementations on the group's website.⁶

CRM System Implementation

At a stage when MTC Group employed two salespeople, it became apparent that emails and Excel files were insufficient for effective customer service, so the decision was made to implement a CRM system (Client Relations Management System). The implementation of the CRM system optimized sales processes and customer relationship management. A very important aspect of this implementation was also the increase in conversion rates, which directly impacted the company's performance.

Contact Center System Implementation

The launch of the Contact Center system enhanced the efficiency of customer communication processes. Thanks to the system, a professional customer hotline was set up. The advantage of this solution lies primarily in the ability to manage calls with individual customers, record conversations, and use these recordings for training customer service staff and improving service quality. The Contact Center system was integrated with the CRM system, resulting in centralized information storage and improved customer service processes.

Microsoft 365 Environment Implementation

The implementation of the Microsoft 365 platform improved the digitalization and document workflow processes. The platform's integrated structure and its availability across multiple systems ensured that all team members could efficiently share documents. The collaboration tools within Microsoft 365 accelerated workflow and enabled real-time document editing.

ChatGPT Implementation

The implementation of ChatGPT into the toolset used by MTC Group significantly boosted the productivity of nearly all departments within the company. The company's owner uses it for a variety of strategic tasks, including market analysis, trend research, service development, strategy optimization, and decision support, as well as for day-to-day tasks. For employees,

⁶ <https://mtc.pl/blog/transformacja-cyfrowa/>



the tool provides assistance with everyday tasks, such as creating documents, responding to emails, generating ideas, and planning work.

Examples of international implementation

Digital transformation has taken the business world by storm in the last two decades. Many companies have used the power of digital technologies and grown exponentially in the last few years. Here are some digital transformation examples.

Coursera - Bringing education to everyone through digital transformation



From its very early stages, Coursera has trusted on cloud computing to offer its courses to people around the world. This has allowed the company to simply scale, providing trustworthy access to content in a cost-effective way. By putting education online, the company also gained access to vast amounts of data about what people wanted to learn.

Using AI and ML to analyze this data, the company has been able to advise more personalized recommendations, see what areas justify further investment, and generally improve the experience of its users.

By the end of 2021, 82 million learners, more than 5,800 courses, and over 300 specializations offered by more than 200 leading universities and companies. By the end of 2022, over 100 million students registered on their platform.

IKEA - Using advanced 3D and visual AI technology to transform online shopping



IKEA decided to invest heavily in AR technology to enable its customers to project digital 3D images of their furniture directly into their homes.

Implemented new technologies to improve the shopping experience, such as acquiring TaskRabbit for furniture assembly services and using Augmented Reality in their IKEA Place app for furniture selection.

IKEA also introduced an AI-powered Chatbot, ORI, for providing 24/7 customer service. The tool empowers customers to get answers to their queries, handle complaints, offering efficient customer service, significantly improving customer satisfaction. These steps helped IKEA significantly increase online sales. According to a Statista report, IKEA's e-commerce sales skyrocketed from \$1.085 bn in 2015 to \$12.966 in 2022.



Airbnb - Connecting homeowners with travelers for a better hospitality experience



The company understood that the Internet will play a vital role in its growth, and started to invest in technologies that would help it to contact with a wider audience. They made a user-friendly website and mobile application to be sure that even people without much technical know-how can use the platform efficiently.

By developing a more powerful website and app, Airbnb was able to collect data on how its clients used both and ultimately streamline those processes with better UX/UI. Airbnb also applied AI and ML successfully to offer personalized proposals to users based on their preferences, browsing history, and previous bookings.

Starbucks - Implementing AI to enhance customer experience



The company began investing in digital transformation during the economic slowdown of 2008. As the number of fast-food restaurants started growing, the growth stalled, and Starbucks understood the need for an urgent shift in strategy. In 2015, the restaurant chain disrupted the coffee market with its Mobile Order & Pay (MOP) feature. It allowed the customers to place orders in advance and pick them up at the store, thus bypassing long queues.

Moreover, the COVID-19 pandemic also worked as a catalyst in Starbucks' digital transformation journey. To meet the growing demand for contactless transactions, Starbucks introduced 'Starbucks Pickup', exclusive stores for customers ordering via mobile app and picking the order.



Nike - Enhancing customer experience through digital transformation



The company launched its online shopping app Nike+ in 2010 to permit customer access to Nike products online. This helped them create a strong data capture platform and improved customer experience. Nike obtained consumer data and used analytics to update its e-commerce strategy. The company also created SNKRS App in February 2015 which offers a complete range of men's and women's most premium.

The Nike+ app and the SNKRS app together led to a 60% growth in its online sales in 2020. Nike's digital transition started to pay off and they saw a 75% increase in digital sales in their Q4 2020 report, accounting for nearly 30% of total revenue.





In the era of digitalization, basic digital skills have become an essential part of everyday life and, more importantly, of professional life. Their significance is continuously growing. Not long ago, tasks such as transferring funds or handling administrative matters could only be managed by visiting the relevant office. Today, many of these tasks can be completed using technology.

Just as daily life is transforming through new digital solutions, so too are business operations and entities in the marketplace. Digital competencies play an increasingly vital role, not only in large corporations but also in micro, small, and medium-sized enterprises. Digital skills enable efficient data management, communication, and the effective execution of daily responsibilities.

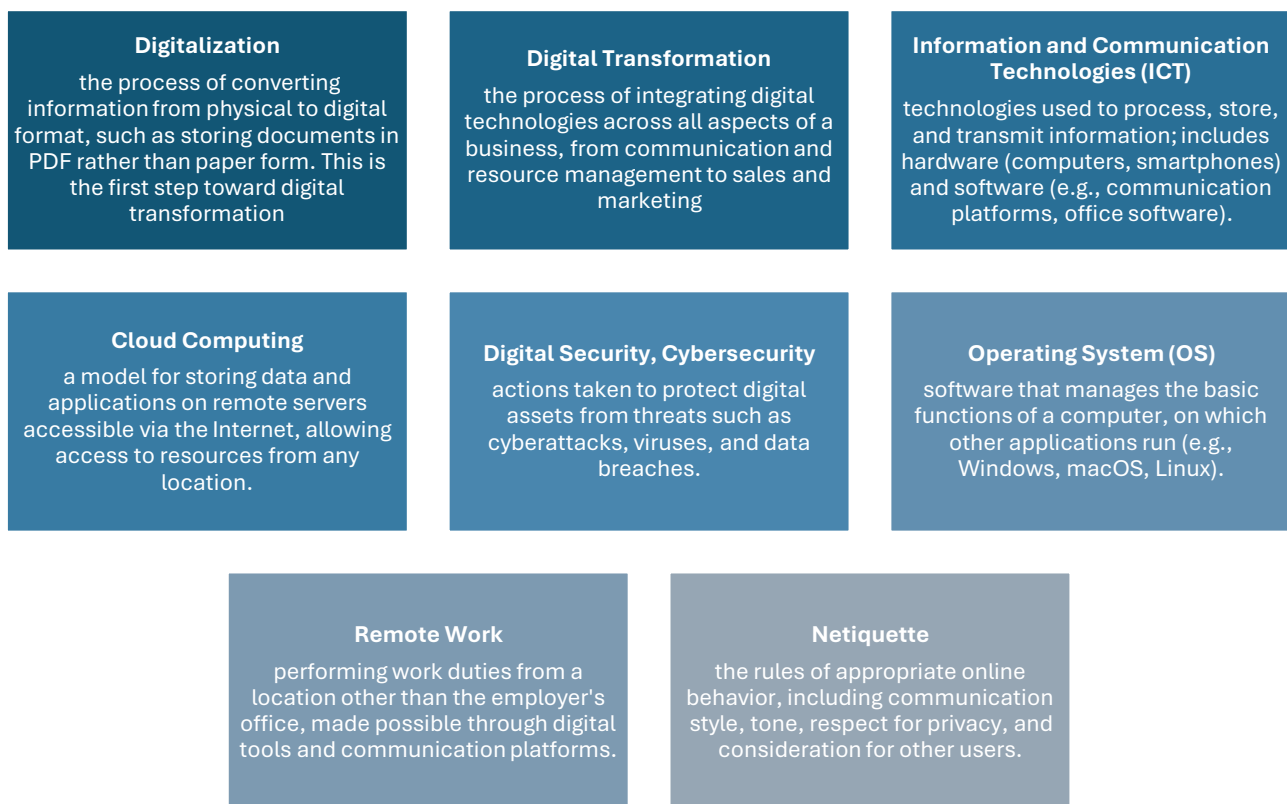
This chapter outlines key concepts and basic digital skills that form the foundation for further development in the digital world. It also includes an overview of essential office tools that support employees in organizing their work and efficiently processing information.

Definitions and Key Concepts

Digital competencies encompass the knowledge, skills, and attitudes that enable effective use of digital technologies across various contexts—work, education, communication, and entertainment. These competencies include not only the ability to use hardware and software but also the ability to evaluate, process, and manage digital information, along with an understanding of digital security and ethics principles.

The European Digital Competence Framework (DigComp) defines digital competence as "the ability to use digital technologies critically, effectively, and safely to learn, work, and participate in society." DigComp emphasizes that digital competence includes a range of aspects, from understanding digital security principles to problem-solving and creative use of technology.

Understanding fundamental digital concepts is a crucial element in any digital transformation strategy. This subsection discusses key terms related to digitalization that help build a broader understanding of digital processes and tools.



Understanding these terms is essential for any employee who wants to navigate the digital work environment efficiently. Digital competencies are now the foundation of effective functioning in both professional and everyday life. In the age of information and rapid



technological progress, they are key to time management, communication, decision-making, and cybersecurity. For employees and business owners, these skills enable full utilization of digital tools and solutions, thereby building their competitiveness in the market.

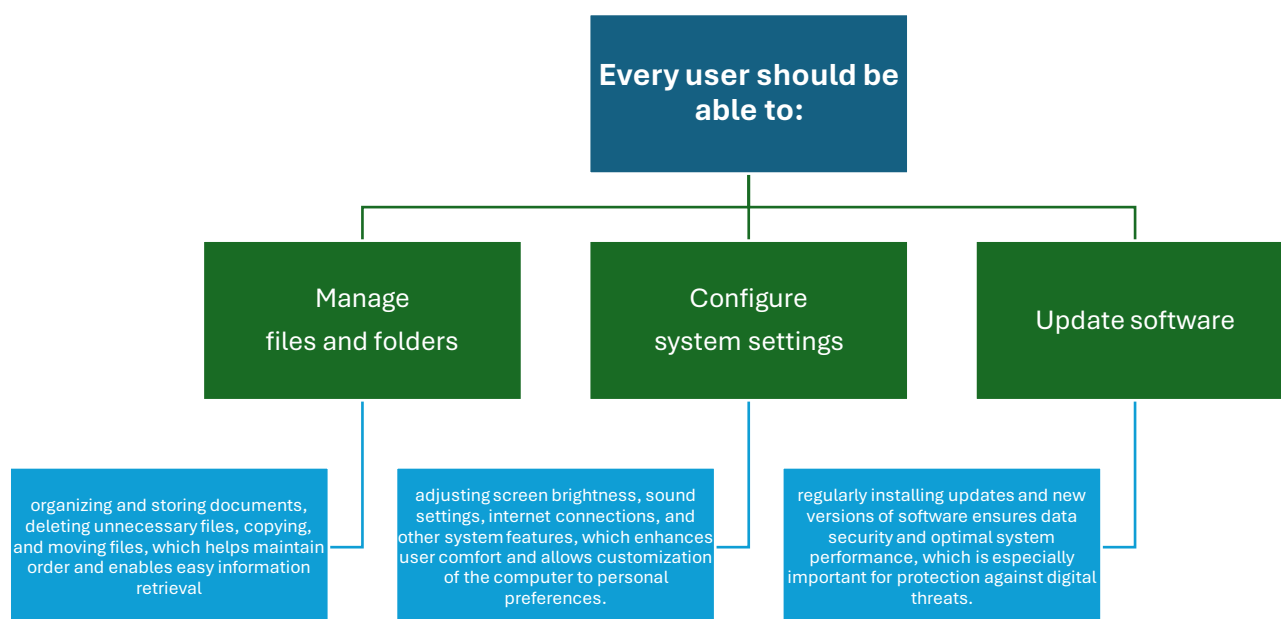
Developing digital competencies supports innovation, efficiency, and adaptability for individuals and businesses alike, making them more resilient to dynamic changes in the digital world.



Basic Computer Skills

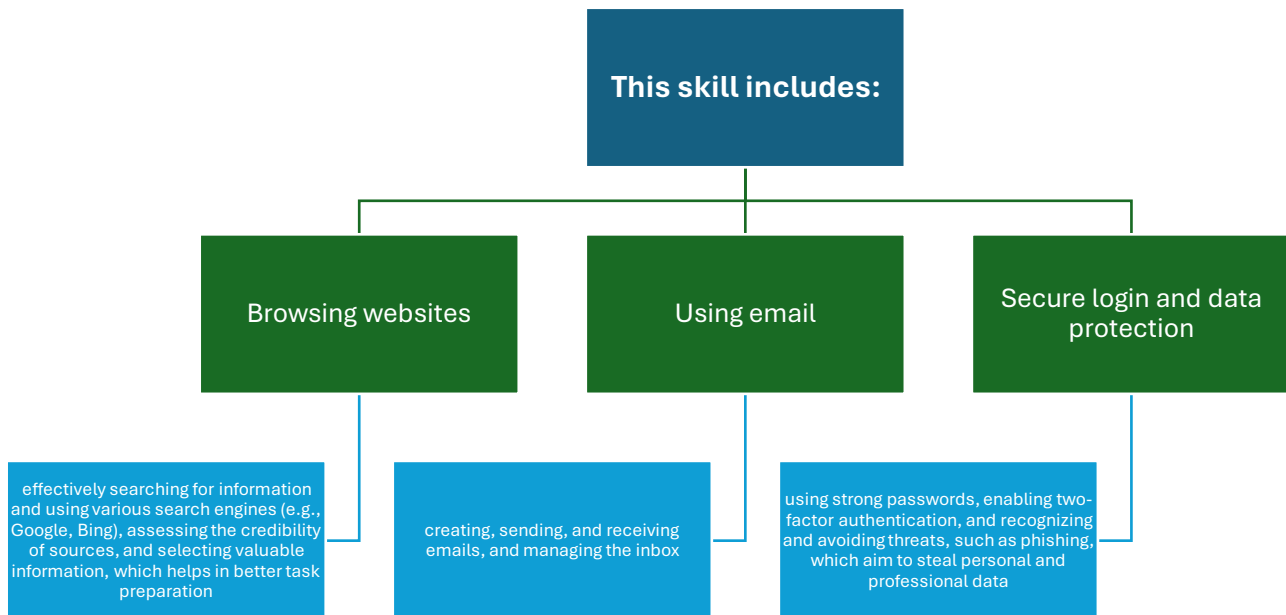
Basic computer skills form the foundation of digital competencies, which are essential for effective operation in a modern, digital enterprise. These skills include familiarity with operating systems, the ability to use the internet safely, and knowledge of peripheral devices, all of which enable efficient task completion, problem-solving, and prompt responses to immediate technical needs.

Familiarity with an operating system (such as Windows, macOS, or Linux) facilitates seamless work and reduces the need to involve technical support.



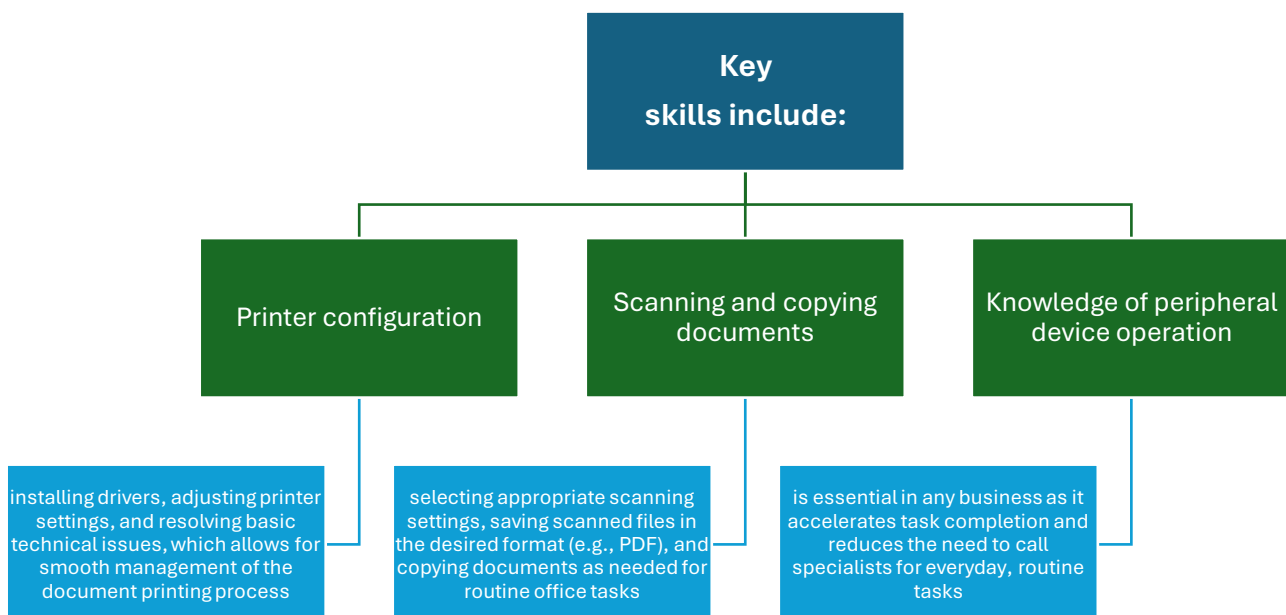
Basic knowledge of an operating system's functions increases user independence, enables quicker solutions to simple technical issues, and streamlines daily tasks.

The ability to use the internet safely and effectively is critical for most business tasks.



The internet is a daily work tool, and its conscious and secure use translates into increased efficiency and the protection of a company's resources. Proficiency in navigating this environment enables business activities to be conducted in a quick, efficient, and safe manner.

Computers often work in conjunction with peripheral devices such as printers, scanners, and copiers, and knowing how to operate these devices efficiently enables employees to complete tasks effectively without the need for additional technical support.

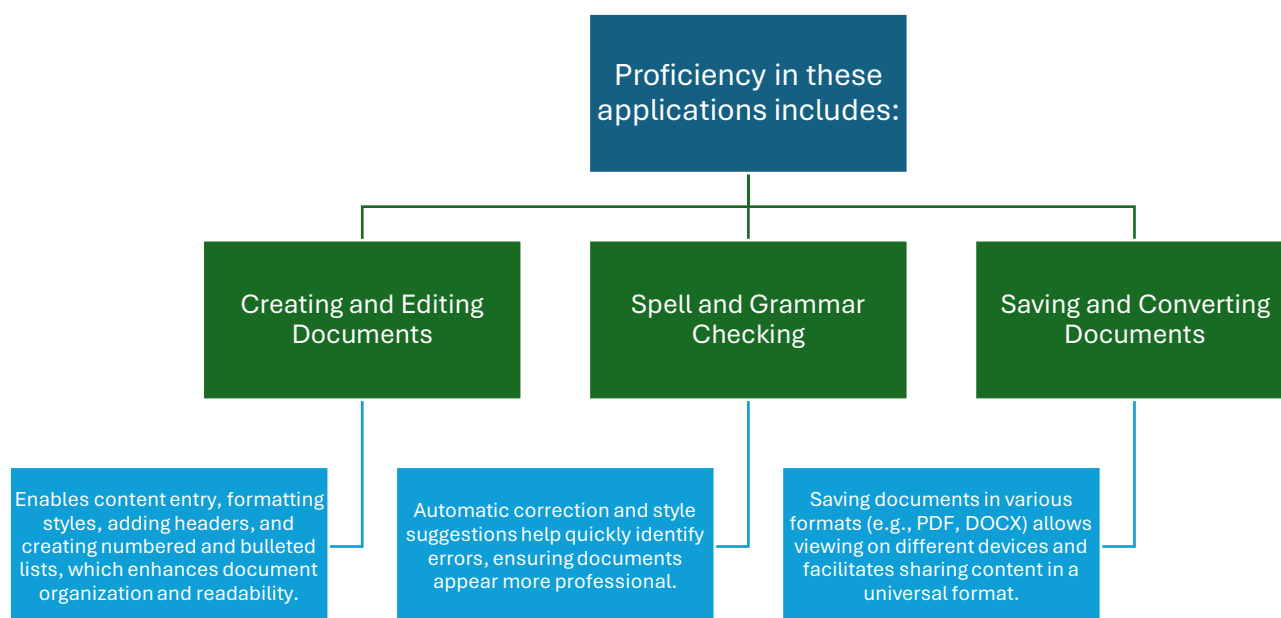


By acquiring these basic digital competencies, employees in micro and small enterprises become more independent and efficient, which positively impacts the overall productivity and quality of work within the company.

Basic Office Applications

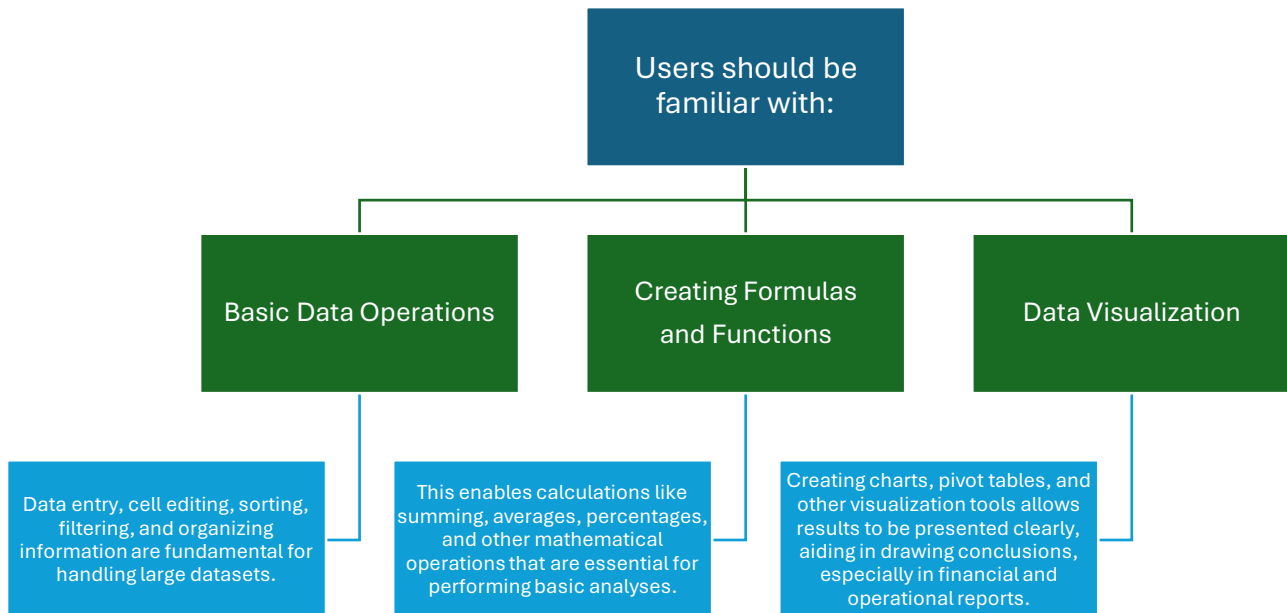
Basic office applications are essential components of a digital work environment that enable efficient organization and execution of daily tasks. Familiarity with key office programs—such as word processors, spreadsheets, presentation applications, and tools for time and project management—facilitates effective document management, data analysis, and professional information presentation.

Word processors like Microsoft Word, Google Docs, and LibreOffice Writer are foundational tools for creating business documents.



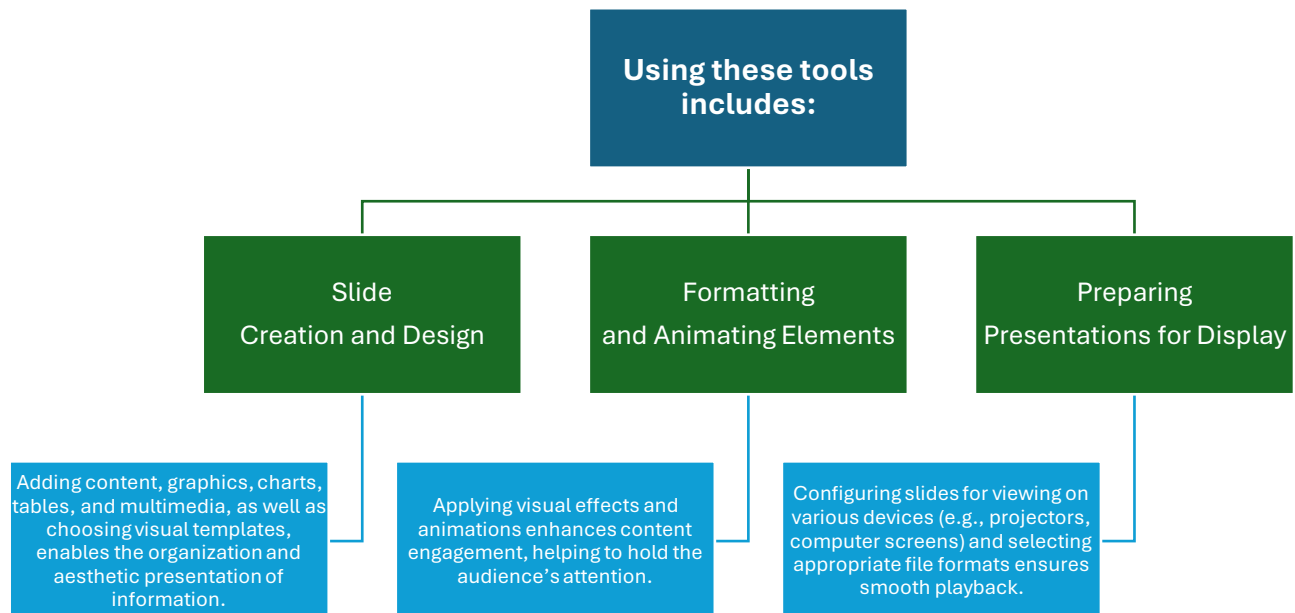
Text editors are essential for generating business correspondence, reports, analyses, manuals, and many other documents that support business operations.

Spreadsheets like Microsoft Excel, Google Sheets, and LibreOffice Calc are versatile tools for data processing and numerical analysis, which are crucial for managing finances and tracking performance.



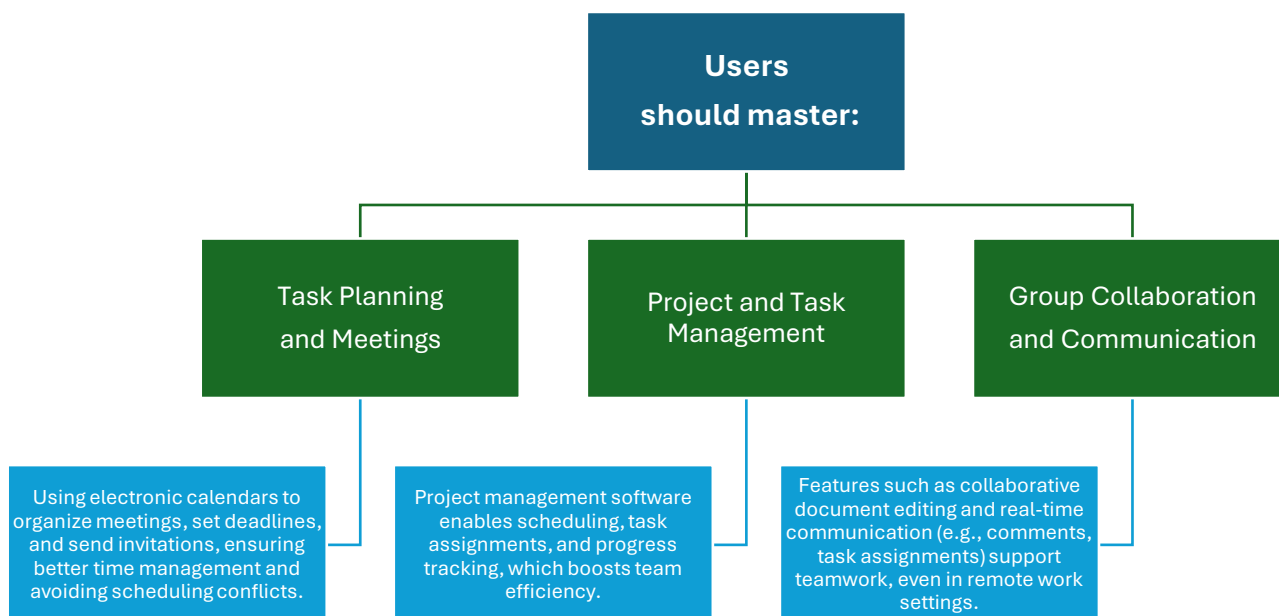
Spreadsheets support tasks such as budgeting, financial forecasting, and tracking operational results, making them invaluable assets for business activities.

Applications like Microsoft PowerPoint or Google Slides allow the creation of professional multimedia presentations, a crucial element of visual communication.



The ability to create visually appealing and clear presentations allows companies to effectively communicate ideas, present results, and convey key information.

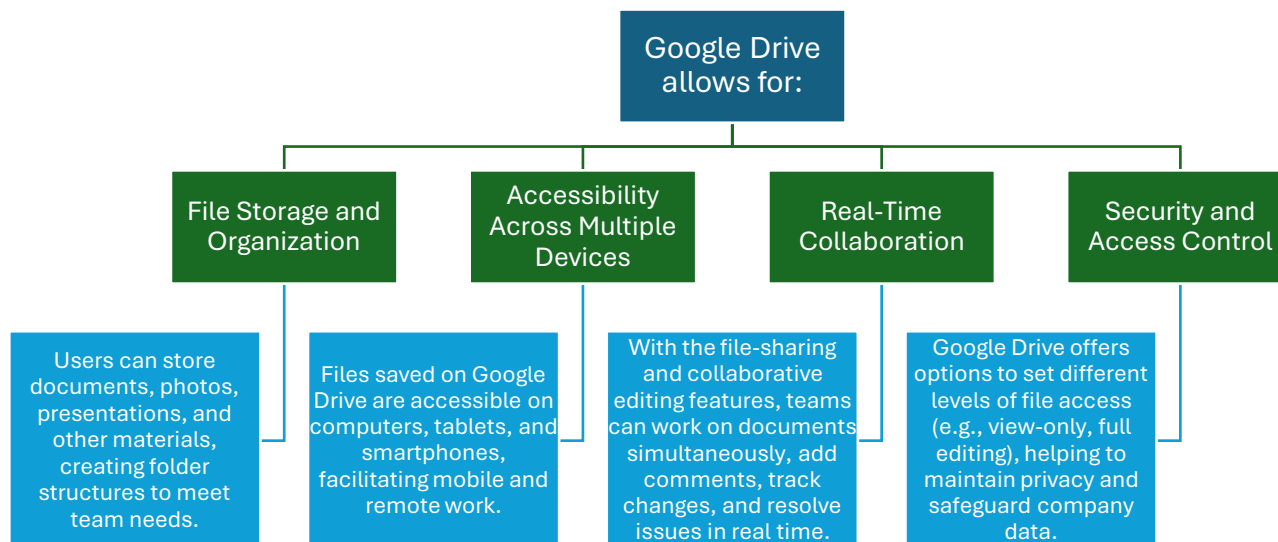
Modern businesses also use applications that facilitate task organization as well as time and project management. Programs such as Microsoft Outlook, Google Calendar, Trello, and Asana enable more effective planning and progress tracking.



The ability to use time and project management applications allows employees to better organize their work, improve communication, and enhance the company's productivity.

Today, many office applications are available in web-based versions, allowing access from any device with an Internet connection. Popular platforms like Google Workspace provide a full suite of office tools, including Google Docs (word processor), Google Sheets (spreadsheet), and Google Slides (presentation tool).

One of the key components of Google Workspace is Google Drive—a virtual space for document storage and file collaboration.



With cloud solutions like Google Drive, teamwork becomes more flexible and efficient. Employees can collaborate on documents without needing to send multiple file versions and without risking data loss—particularly useful in remote or distributed work environments. Virtual office tools provide convenience while streamlining business processes within the company.

A fundamental knowledge of office applications is essential for effective management of daily tasks in a company. The use of these tools not only supports individual productivity but also contributes to better team organization, greater transparency in operations, and more effective achievement of business goals.



In the age of widespread digitalization, online security has become an essential part of daily life for both individuals and businesses—particularly for micro and small enterprises, which are often more vulnerable to cyberattacks due to limited resources allocated to data and IT system protection. With smaller budgets and often lacking specialized IT support, such companies can become easy targets for cybercriminals who attempt to gain access to confidential data or disrupt business operations. Therefore, proper awareness and implementation of digital security practices are essential for protecting both company data and customers' private information.

Modern businesses, even those operating on a small scale, frequently rely on online solutions such as online banking, cloud computing, or document management applications. The rapidly increasing amount of information processed and stored online means that digital security has become critical not only for privacy protection but also as a safeguard against threats that could negatively impact a company's financial and operational stability.

In this chapter, we will discuss practical guidelines for secure Internet use, ways to protect personal data, and approaches to cybersecurity specifically for micro and small businesses. Following these guidelines will not only help reduce the risk of financial loss but also ensure business continuity, build customer trust, and meet increasingly stringent legal requirements regarding data protection.

Principles for Safe Internet Use

Ensuring safety while using the Internet involves managing the information shared online responsibly and securing devices and data. Micro and small businesses, which often store customer information, must exercise extra caution to avoid exposing their resources to cyber threats.

Below are key principles that, when followed, can significantly reduce the risk of cyberattacks.

Creating Strong and Unique Passwords

- Strong, complex passwords that include uppercase and lowercase letters, numbers, and special characters make it more difficult for unauthorized individuals to crack them. Each account should have a unique password, as reusing passwords can lead to situations where breaking one password gives attackers access to multiple accounts. Using password managers can be helpful for managing complex passwords without having to memorize them.

Avoiding Sharing Sensitive Information

- Sensitive data, such as credit card numbers, passwords, and personal information, should be protected and not shared publicly or on unverified sites. Businesses can protect themselves by following the principle of data minimization: only sharing information that is absolutely necessary for a specific purpose, such as making a purchase or registering.

Using Two-Factor Authentication

- Two-factor authentication (2FA) adds an extra layer of security. This process requires two independent authentication methods, such as a password and an SMS code, which makes it harder for unauthorized users to take over accounts even if they crack the initial password. Implementing 2FA is particularly recommended for businesses using email, cloud applications, or sales platforms.

Regular Software Updates

- Operating systems, browsers, and applications regularly release updates to improve security and fix potential vulnerabilities. Updated software helps protect devices from new threats that cybercriminals might exploit. Micro and small businesses can enable automatic updates to ensure maximum protection with minimal time commitment.

Avoiding Suspicious Attachments and Links

- Cybercriminals often use phishing attacks to steal information or infect devices with malware. Micro and small businesses are particularly vulnerable to these types of attacks, which may come through fake messages from suppliers or clients. Employees should be trained not to open attachments or links from unknown sources and to verify the authenticity of each sender.

Securing Wi-Fi Networks

- A secure Wi-Fi network is essential for protecting business data. Companies should use strong passwords and consider using a VPN (Virtual Private Network) to protect connections, especially if work is done remotely or from public places.

Raising Awareness of Digital Threats and Employee Training

- Training employees in digital security is a necessary step to reduce the risk of data leaks or device infections. In micro and small businesses, where employees often perform various roles, basic knowledge of digital threats and the ability to recognize phishing attempts can prevent many attacks.

Safe Internet use requires continuous monitoring and adherence to best practices that not only protect company data but also build trust among clients and business partners. Applying these principles in daily operations minimizes the risk associated with cyber threats and supports the stable growth of the business.



Personal Data Protection

Personal data protection is a key component of every modern business, especially in an era of widespread digitalization and data processing. In 2018, the GDPR (General Data Protection Regulation) came into effect across the European Union, establishing rules governing how companies collect, store, and process personal data. Its primary goal is to protect citizens' rights to privacy and ensure that their data is handled securely and responsibly.

GDPR mandates that businesses inform individuals about the purpose of processing their data and requires explicit consent for such processing. Users also have the right to access, correct, and, in specific cases, delete their data (the so-called "right to be forgotten"). Additionally, the regulations require companies to implement security systems that minimize the risk of unauthorized data access. In practice, this means that micro and small enterprises must adjust their practices to comply with these legal requirements, thereby avoiding the risk of hefty fines and loss of customer trust.

One of the foundational principles of GDPR is the "data minimization" principle, which requires organizations to limit the collection of data to only what is necessary for a specific, clearly defined purpose. For instance, if a company collects customer data to fulfill orders, it should not gather more information than is needed to complete that transaction. This approach helps reduce the amount of data processed, minimizes the risk of data breaches, and ensures that the company remains GDPR-compliant.

Another important aspect of data protection is the use of pseudonymization and data encryption, which can be particularly valuable for small businesses. Pseudonymization enables data to be stored in a way that prevents direct attribution to specific individuals, significantly enhancing privacy protection. Encryption, on the other hand, is a technique that protects information from unauthorized access, even if the data is intercepted. Using both methods is crucial, especially for businesses operating online, as it reduces the likelihood of privacy breaches.

Data deletion, once it is no longer needed, is another GDPR-driven requirement that warrants careful attention. Retaining personal data longer than necessary poses a risk of data leaks and can lead to regulatory non-compliance. Secure data deletion methods, such as overwriting or physically destroying storage media, are effective ways to eliminate the risk of unauthorized access to information. Companies that conduct regular reviews of their data collections are more aware of what information they hold and can effectively delete what is no longer required.

Employee education is also essential in the context of personal data protection. Regardless of the company's size, employees should be aware of data protection principles, as careless



handling can lead to breaches. Regular training and activities that raise staff awareness of personal data processing rules are vital for data protection in any business, especially in micro and small enterprises, where every team member plays a critical role.

In the event of a data breach, GDPR requires companies to develop and implement rapid response procedures to mitigate negative consequences for both the company and its clients. Businesses should have an action plan in place for such incidents, which may include notifying relevant supervisory authorities and the individuals affected. For small companies without extensive IT departments, creating incident response procedures can help effectively manage a crisis situation and prevent further losses.

Adhering to GDPR is not only a legal obligation but also an opportunity to build trust with customers who value a conscious and responsible approach to their data. Properly implementing personal data protection procedures and regularly monitoring them is an important step in building long-term relationships with clients and establishing a stable foundation for any business, regardless of its size.

Cybersecurity in Businesses

In the era of growing online threats, cybersecurity has become a crucial component of risk management in every organization, especially for micro and small businesses that often have limited resources. These businesses can be particularly vulnerable to attacks from cybercriminals, as they may lack both the funds for robust security measures and adequate knowledge about current threats. Thus, implementing effective cybersecurity strategies is not only necessary but also a critical factor in ensuring their survival and growth in the digital world.

First, companies should focus on developing security policies. These documents should clearly outline guidelines for data protection and procedures for incident response. Security policies should be tailored to the specific needs of the organization, and their implementation should be communicated to all employees so that everyone understands their responsibilities in protecting information.

Regular audits and penetration tests are other key actions that help identify potential vulnerabilities within IT systems. Audits should cover both technical and procedural aspects, helping to assess the effectiveness of existing security measures. Such activities are essential for the company to take corrective actions before an incident occurs.

Network segmentation is also an important strategy that limits access to various organizational resources. By separating resources of varying confidentiality levels, businesses can minimize the risk of threats spreading if they occur. This approach also facilitates access management and monitoring of user activities.



Data backups are a critical element of protection, yet they are often underestimated. Regular backups protect against data loss due to ransomware attacks, hardware failures, or other unforeseen events. Backups should be stored in a secure location and periodically tested to ensure that data can be easily restored if needed. For micro and small businesses, where data loss could be catastrophic, this aspect is especially important.

Protection against malware is a fundamental step in securing IT infrastructure. Installing antivirus software, firewalls, and intrusion detection systems (IDS) helps identify and eliminate threats. Regular updates to these systems are essential for their effectiveness and to guard against new types of malware that continually emerge.

Every business should also have an incident response plan in place. This plan should clearly define procedures to follow in the event of a security breach. Rapid response to an incident minimizes losses and enables system recovery. Proper employee training in security procedures and threat awareness is equally important, as employees are the first line of defense in the fight against cybercrime.

Businesses should also consider investing in cybersecurity insurance. This type of insurance can help cover costs associated with security incidents, which can be critical for small businesses operating on thin margins and struggling to recover financially after an attack.

In summary, cybersecurity is a vital aspect of any company's operations, especially for micro and small businesses. These organizations must be aware of potential threats and implement appropriate security measures. Today's market demands not only a commitment to security but also a responsible approach to data management, which translates into customer trust and organizational stability. Investing in cybersecurity is not an expense but a necessity, one that could determine the future of a business in the digital age.



Digital Communication

The modern business landscape requires micro and small enterprises to be flexible and able to adapt to rapidly changing market conditions. A key element of effective management in this context is efficient digital communication. Thanks to advancing technologies and online tools, businesses can not only exchange information quickly and conveniently but also build both internal and external relationships.

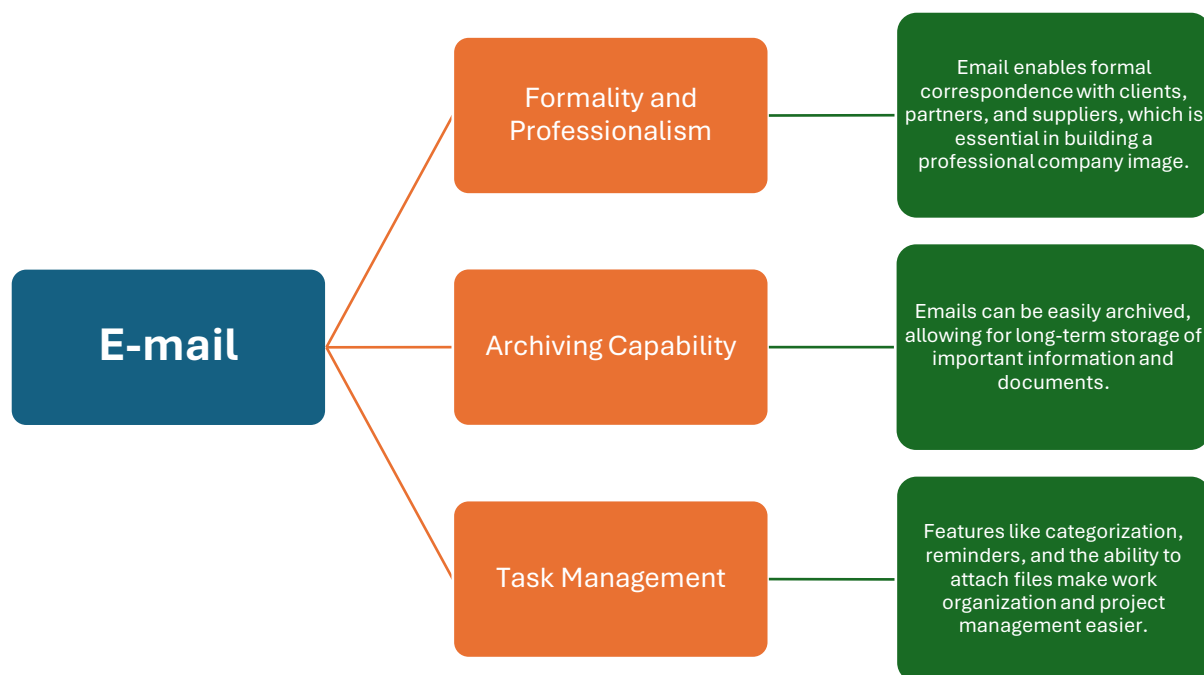
In this chapter, we will discuss the essential aspects of digital communication that can support the growth of micro and small enterprises. The first section will focus on online communication tools, such as email, messaging apps, and video conferencing platforms, which facilitate effective information management and team collaboration. The second section will examine the principles of netiquette and professional digital communication, which are essential for building a positive company image and maintaining good relationships with clients and partners. Finally, we will cover the challenges and strategies for managing virtual teams, which have become the norm in the era of remote work.

Understanding and implementing these elements of digital communication will not only enhance operational efficiency but also allow businesses to compete more effectively in the market, build stronger relationships with stakeholders, and provide a higher level of customer satisfaction.

Online Communication Tools (Email, Messengers, Video Conferencing)

In today's digital world, online communication tools play a crucial role in the daily operations of micro and small businesses. They enable quick information exchange, facilitate collaboration, and allow for effective team management regardless of team members' locations. Below are some of the most popular online communication tools, their functions, and applications.

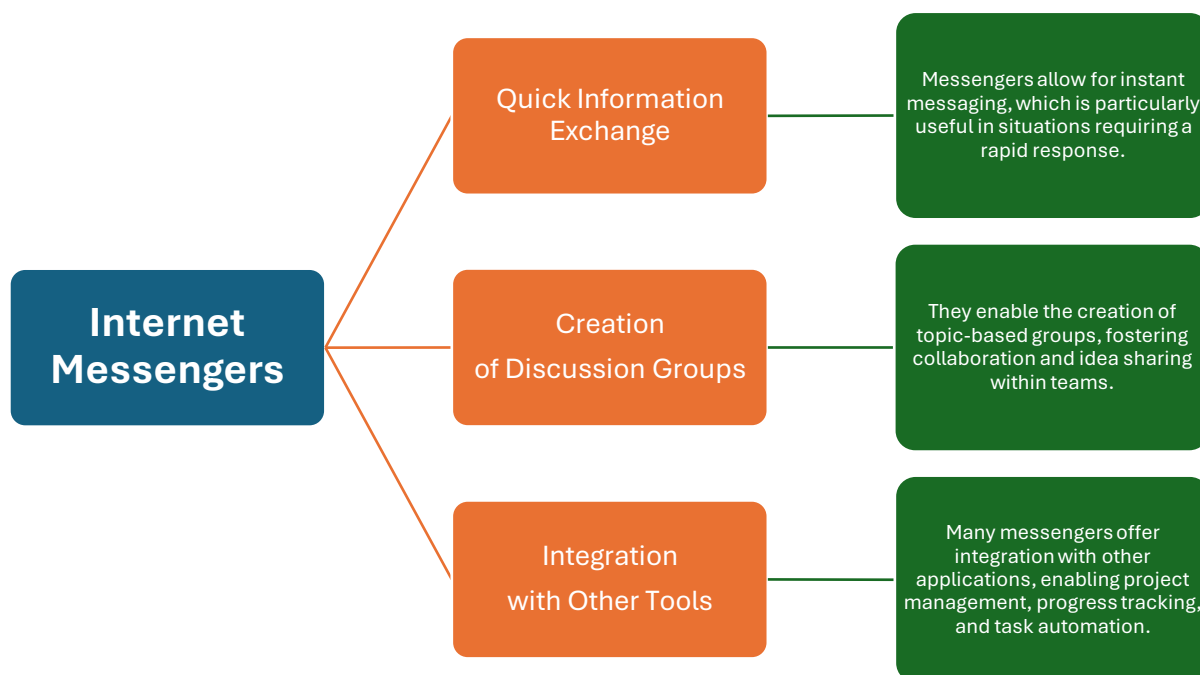
Email remains one of the most important communication tools in business. Its advantages include:



Practical uses of email:

- **Client Correspondence:** Sending offers, order confirmations, and product information.
- **Reporting and Updates:** Sending regular reports on project progress to the team or supervisors.
- **Scheduling Meetings:** Setting meeting times and sending reminders.

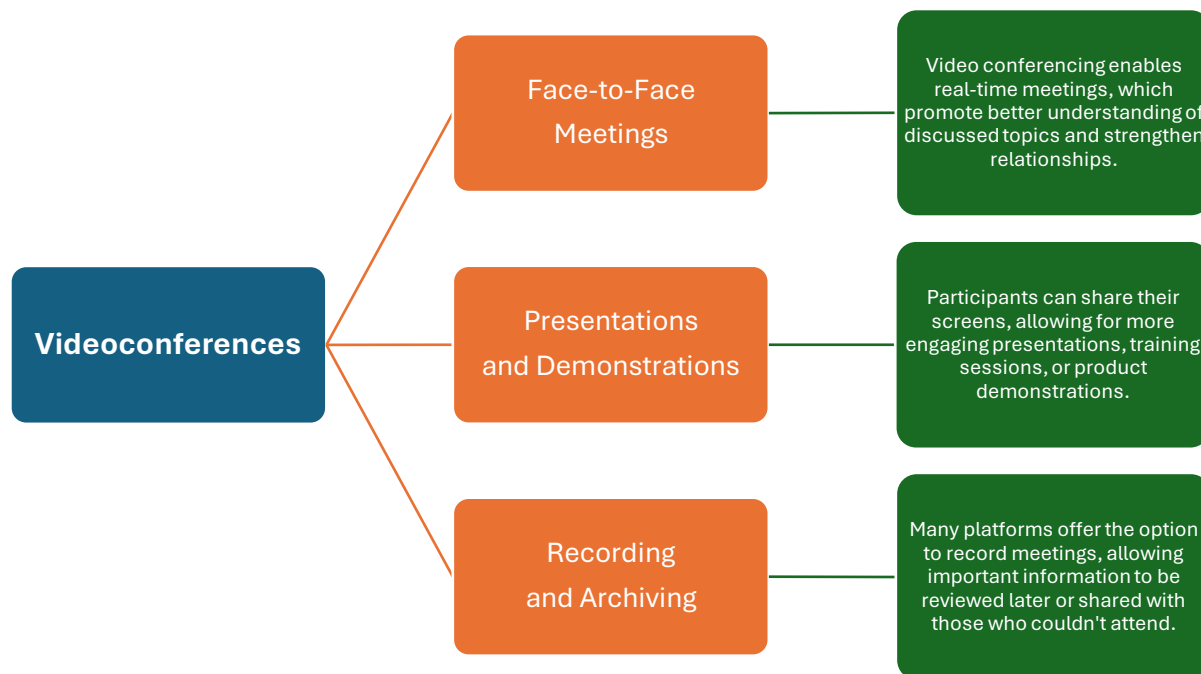
Internet Messengers, such as Slack, Microsoft Teams, or WhatsApp, offer more direct and interactive communication methods. Their features include:



Practical uses of messengers:

- **Daily Communication:** Using messengers for real-time information exchange and task coordination within the team.
- **Project Management:** Creating dedicated channels for projects where team members can share ideas, files, and feedback.
- **Quick Notifications:** Informing the team about urgent matters, schedule changes, or new tasks.

Video Conferencing has become an essential part of modern communication, especially in the context of remote work. Tools like Zoom, Google Meet, and Microsoft Teams allow for:



Practical uses of video conferencing:

- **Client Meetings:** Conducting product or service presentations, as well as discussing terms of cooperation in a more personal way.
- **Training and Workshops:** Organizing training sessions for employees or clients that allow real-time interaction.
- **Remote Team Meetings:** Regular meetings with dispersed teams to discuss progress, challenges, and future plans.

Utilizing online communication tools is essential for the efficient operation of micro and small businesses. With emails, messengers, and video conferencing, companies can easily coordinate teamwork, manage projects, and maintain relationships with clients and partners. Investing time in learning and implementing these tools can significantly enhance business efficiency and productivity.

Netiquette and Professional Digital Communication

In an era of widespread digitalization, mastering effective and professional online communication is essential for the success of micro and small enterprises. Adhering to proper netiquette—the set of norms and etiquette in online communication—helps build positive relationships with clients, business partners, and colleagues. Below, we outline key principles of netiquette and aspects of professional digital communication that are valuable for daily business interactions.

Netiquette includes a set of rules that should be observed in online communication. Key aspects to consider are:

Respect and Courtesy

Regardless of the communication medium, it's crucial to maintain respect for other conversation participants. Using polite expressions, avoiding offensive language, and maintaining a respectful tone are the foundation of positive interactions.

Clarity and Brevity

Online communication often lacks the context provided by face-to-face meetings, so it's important to make messages clear and concise. Avoiding jargon and complex terms that others might not understand can greatly ease communication.

Appropriate Use of Emojis and GIFs

Modern online communication often includes emojis and GIFs to enhance conversations. However, overuse or misuse can lead to misunderstandings. It's wise to use them sparingly and ensure they fit the context.

Responsibility for Content

Every message should be carefully considered before sending. Before pressing "send," check if the message is respectful, non-controversial, and appropriate. Misunderstandings or poorly phrased messages can lead to unnecessary conflicts.

Respect for Privacy

Remember that not all information should be shared publicly. Avoid sharing sensitive data online and respect the privacy of others.



Professional communication in the digital environment requires employees not only to understand netiquette but also to adjust their communication style according to different situations and audiences. Key elements of professional communication include:

Adapting Tone

Depending on the context, communication may be formal or informal. For interactions with clients and business partners, a more formal tone is recommended, whereas within the team, more informal language may be appropriate.

Timely Response

Quick responses in digital communication are important. Employees should aim to reply to inquiries and messages promptly to maintain workflow continuity and effective information exchange.

Email Writing Skills

Emails should be clear, contain an appropriate subject line, and include a signature with the sender's name. Using short paragraphs and bullet points can also make content easier to read and understand.

Online Conflict Management

In cases of misunderstandings or conflicts, it is essential to approach the situation with empathy and openness. Avoid addressing sensitive matters publicly; instead, handle them privately to prevent escalation.

Training and Development of Communication Skills

Investing in employee communication skills through training and workshops is crucial. This improves their understanding of netiquette and equips them to communicate effectively in various scenarios.

Implementing netiquette principles and professional digital communication practices in micro and small businesses is essential for building positive internal and external relationships. Effective communication not only enhances team dynamics but also shapes the company's image in the eyes of clients and partners. Investing time and effort in developing these skills enables businesses to fully leverage the potential of online communication.



Managing Virtual Teams

In the era of digitalization and globalization, managing virtual teams has become not only a norm but also a crucial component for the operation of micro and small enterprises. Remote work, which allows teams to collaborate from various locations, brings many benefits such as flexibility, cost savings, and access to global talent. However, managing distributed teams also presents challenges that require the use of appropriate strategies and tools. This section will explore the key aspects of effective virtual team management.

Building a strong virtual team culture is fundamental to successful collaboration. Key elements include:

Clear Values and Goals

- Shared values and clearly defined goals help unite the team. Regularly reminding team members of these goals and discussing them together fosters motivation and engagement.

Team Integration

- Organizing virtual team-building activities unrelated to work can help build relationships among team members. This can include watching a movie together, playing online games, or participating in other activities that encourage getting to know each other better.

Transparency

- Open and transparent communication is essential in virtual teams. Allowing team members to share their ideas, opinions, and feedback creates an atmosphere of trust and collaboration.

Effective management of virtual teams also relies on using appropriate tools that facilitate work organization. Popular tools include:

Project Management Platforms

- Tools like Trello, Asana, or Monday.com allow for planning, tracking progress, and assigning tasks to team members. These tools give everyone access to project status information.

Communication Tools

- Using communication platforms like Slack or Microsoft Teams enables quick information exchange, organization of topic-based chats, and video meetings. These tools facilitate ongoing communication and help build team spirit.

Real-Time Collaboration Tools

- Applications such as Google Workspace or Microsoft 365 allow teams to work on documents, spreadsheets, and presentations in real time, significantly increasing the efficiency of group work.



Managing the performance of virtual teams requires appropriate methods and tools to help assess progress and adjust strategies. Here are a few key aspects:

Defining Key Performance Indicators (KPIs)

- Setting measurable indicators to evaluate the effectiveness of team members allows for tracking progress and identifying areas for improvement. KPIs should be measurable, achievable, and aligned with organizational goals.

Regular Meetings and Feedback

- Organizing regular meetings provides an opportunity to discuss progress and challenges. Feedback, both positive and constructive, should be part of the team culture, fostering employee development and motivation.

Flexibility and Autonomy

- Allowing employees flexibility in task execution and space for independent decision-making can enhance their engagement and sense of responsibility for results. Trust in team members positively impacts the work environment.

Managing virtual teams in micro and small enterprises requires the right strategies, tools, and interpersonal skills. Core elements like building team culture, effective communication, and performance management significantly influence organizational success. As the working world becomes increasingly digital, the ability to manage virtual teams effectively will become an essential asset for businesses aiming to thrive in a dynamically changing business environment.





Working with Data

In this chapter, we will focus on the key aspects of data management that are essential for every micro and small enterprise. We'll start with the basics of data management, discussing the importance of proper information collection and storage. Then, we'll move on to data analysis and analytical tools, where we'll introduce data processing techniques and tools that support this process. Finally, we'll address data visualization, highlighting its role in effectively communicating analysis results. This chapter will provide practical knowledge to help improve data management and enable data-driven decision-making in every micro and small enterprise.



The Basics of Data Management

Data management is the process by which organizations collect, store, organize, secure, analyze, and share data to ensure its availability, consistency, quality, and security.

The goal of data management is to ensure that data is properly collected, stored, organized, secured, analyzed, and shared in a way that maximizes its value to the organization. The main objectives of data management include:

Supporting Decision-Making

Providing high-quality data that is accurate, consistent, and up-to-date to assist managers and decision-makers in making informed and strategic decisions.

Improving Operational Efficiency

Streamlining business processes through the automation and optimization of data management, which can lead to reduced costs and increased productivity.

Ensuring Regulatory Compliance

Maintaining compliance with legal and regulatory requirements regarding data protection, such as GDPR, to avoid penalties and safeguard data privacy.

Protecting Data

Securing data from unauthorized access, loss, or damage, which is crucial for protecting the company's reputation and maintaining customer trust.

Managing Data Quality

Maintaining high data quality by monitoring and improving its accuracy, completeness, consistency, and timeliness, leading to better analytical and operational outcomes.

Supporting Innovation

Enabling the organization to leverage advanced data analytics, such as big data and machine learning, to discover new opportunities, trends, and create innovative products or services.

Facilitating Collaboration and Knowledge Sharing

Ensuring easy access to data for different departments and employees within the organization, promoting better collaboration, knowledge sharing, and joint decision-making.

Ensuring Business Continuity

Protecting data by creating backups and planning for data recovery after failures, ensuring that business operations are not disrupted in the event of technical issues.

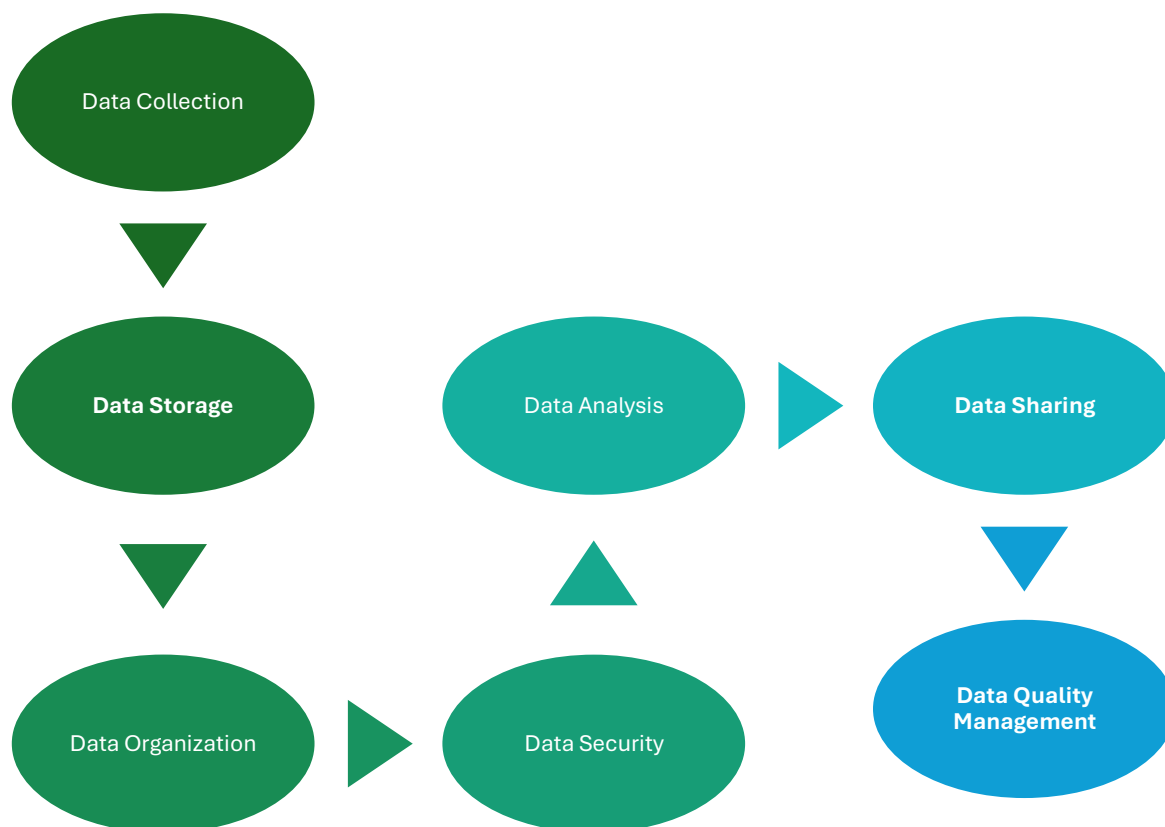
Increasing Competitiveness

Utilizing data as a key strategic asset that allows the company to better understand the market, customers, and competition, which can lead to gaining a competitive edge.

Achieving these objectives requires a well-planned and coordinated data management strategy that addresses both the technological and organizational aspects of managing this valuable resource.

The key elements of data management encompass all aspects related to the efficient and secure processing, storage, and sharing of data within an organization. The key elements of data management include:





- **Data Collection:** The process of acquiring data from various sources, such as transactional systems, databases, surveys, etc.
- **Data Storage:** Organizing and storing data in databases, data warehouses, or in the cloud, in a way that allows easy access and processing.
- **Data Organization:** Structuring data in a way that facilitates searching, analysis, and integration. This includes creating database schemas, indexing, and cataloging data.
- **Data Security:** Ensuring data security through access control, data encryption, backup creation, and compliance with data protection regulations.
- **Data Analysis:** Processing and analyzing data to derive valuable insights that can support decision-making. This includes statistical methods, machine learning, and Business Intelligence techniques.
- **Data Sharing:** Delivering data in an appropriate form to the people and systems that need it, which can be achieved through reports, for example.
- **Data Quality Management:** Monitoring and improving data quality to ensure it is accurate, consistent, complete, and up-to-date.

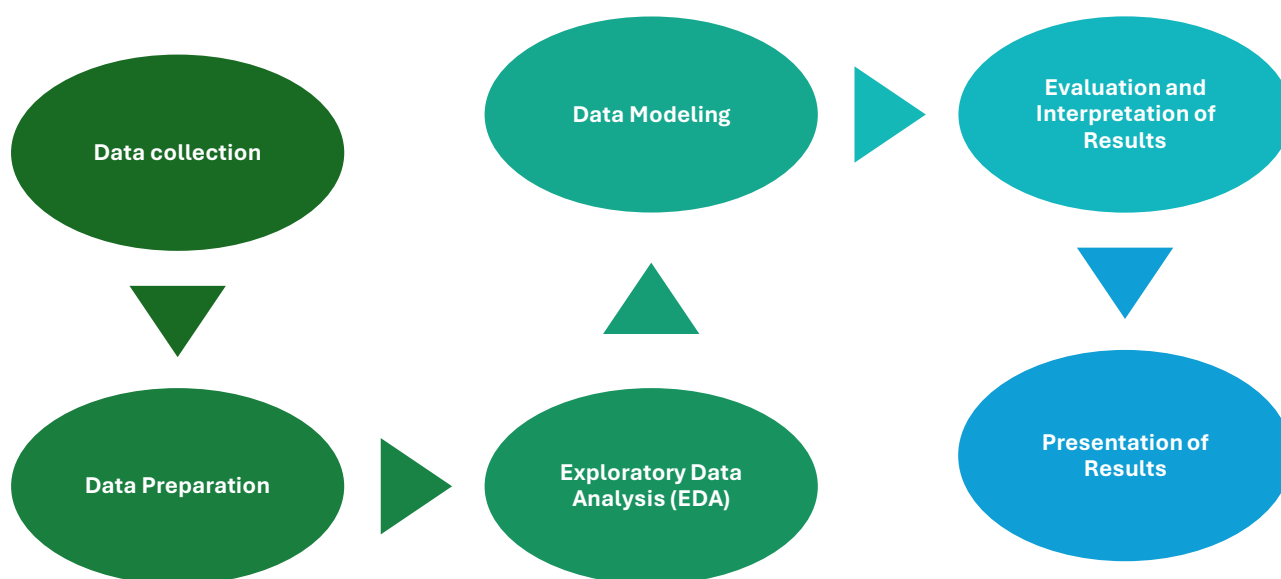
Data management is crucial for organizations, as data is often regarded as a valuable strategic asset that can contribute to a better understanding of the market, optimization of operations, and product innovation.

Analiza danych i narzędzia analityczne

Data analysis is the process of transforming raw data into useful information that can support decision-making in various fields such as business, science, medicine, or marketing.

The goal of data analysis is to uncover patterns, relationships, trends, and generate insights that can be useful in making strategic or operational decisions.

Data analysis is a process that involves several stages aimed at understanding, interpreting, and drawing conclusions from available data. The basic stages of data analysis include:



1. Data Collection

This process involves acquiring and gathering relevant data needed for analysis. Data can come from various sources such as databases, spreadsheets, the internet, e.g., social media data, surveys, etc.

2. Data Preparation

Often, data is incomplete, duplicated, or contains errors. The data preparation process includes cleaning the data (i.e., data cleaning), which involves removing or fixing missing, incorrect, or inconsistent data.

3. Exploratory Data Analysis (EDA)

EDA involves the initial examination of the data to understand its basic characteristics, such as the distribution of values, relationships between variables, etc. Data visualization is often used at this stage.

4. Data Modeling

This involves applying statistical techniques, machine learning algorithms, or mathematical models to analyze data and predict future events based on historical data.

5. Evaluation and Interpretation of Results

After creating models or obtaining analysis results, they must be evaluated for accuracy and usefulness.

6. Presentation of Results

The results of the analysis should be presented in a clear and understandable way, often using reports, dashboards, charts, or presentations that allow for quick understanding of the key insights.

Each of these stages is crucial for effective data analysis and leads to a better understanding of the problem, which ultimately helps in making better data-driven decisions.

Data analysis is a field that encompasses many concepts and terminology that are crucial for understanding the processes and methods used in this domain. Here are some basic concepts:

- Data – Raw information that can take various forms, such as numbers, text, images, or sounds. Data is the foundation of any analysis.
- Variable – An attribute or characteristic that can take on different values. Variables can be independent or dependent.
- Dataset – A collection of data used for analysis. A dataset consists of observations (entries, records) and variables.
- Sample – A subset of data selected from a larger population for analysis. Samples are used to make inferences about the entire population.
- Population – The total set of units of interest in a given analysis.



- Mean – The average value, calculated as the sum of all values divided by their number.
- Median – The middle value that divides a dataset into two equal parts. The median is particularly useful for data containing outliers, which are the lowest or highest numbers in a dataset that don't fit with the rest.
- Standard Deviation – A measure of the dispersion of values around the mean. It indicates how much individual values differ from the mean.
- Correlation – A measure of the strength and direction of the relationship between two variables. The correlation coefficient (e.g., Pearson's coefficient) ranges from -1 to 1.
- Preprocessing – The stage of preparing data for analysis, including cleaning data, filling in missing values, normalization, etc.
- Normalization – The process of scaling variables so that their values fall within a similar range. This is often necessary in machine learning algorithms.
- Data Visualization – The process of creating charts and other forms of graphical representation of data, which helps in its interpretation.
- Predictive Modeling – The process of building mathematical models that predict future values based on historical data.
- Machine Learning – A subfield of artificial intelligence that involves building predictive models based on data, without explicitly programming the rules.
- Clustering – A technique for grouping data into clusters where observations in the same cluster are more similar to each other than to observations in other clusters.

There are many analytical tools that assist with data analysis at various stages of the process. Here are some popular analytical tools that are widely used:



Spreadsheets	<ul style="list-style-type: none"> •Microsoft Excel, Google Sheets – basic tools for data analysis, offering functions such as pivot tables, charts, and formulas for statistical calculations
Databases	<ul style="list-style-type: none"> •SQL, NoSQL – tools for managing, storing, and retrieving data from large databases.
Data Visualization Tools	<ul style="list-style-type: none"> •Tableau, Power BI, Google Data Studio – these tools allow for the creation of interactive charts, dashboards, and reports
Programming Languages	<ul style="list-style-type: none"> •Python and R – these languages offer advanced tools for data analysis, statistical modeling, and machine learning.
Big Data Tools	<ul style="list-style-type: none"> •Apache Hadoop, Apache Spark, Kafka - tools necessary to proceed and analyse very big collections of data (Big Data)
Machine Learning and Artificial Intelligence Tools	<ul style="list-style-type: none"> •TensorFlow, Keras, Scikit-learn, PyTorch – libraries that enable building and training machine learning models.
Statistical Analysis Tools	<ul style="list-style-type: none"> •SPSS, SAS, Stata – tools for statistical data analysis, used in business, medical research, social studies, and economics.
Text Analysis Tools	<ul style="list-style-type: none"> •NLTK (Natural Language Toolkit), SpaCy, Gensim – tools for analyzing and processing natural language.

Each of these tools has its specific application, and the choice of the appropriate one depends on the type of data, the purpose of the analysis, and the skills of the analyst.

Data analysis is a rapidly developing and crucial field in today's world, where data plays a central role in making business, scientific, and social decisions.

Data analysis is used in many fields and industries, both in the public and private sectors. Data analysis is applied in education, for example, to monitor student progress; in medicine, for instance, in clinical trials or diagnostics; in transportation and logistics, such as optimizing product delivery routes; in energy, for example, for managing power grids; and even in public administration, for tasks like demographic data analysis or urban planning.

Data analysis is conducted by professionals in various positions, depending on their level of specialization, the industry, and the specific tasks they are responsible for. Positions where data analysis skills are key competencies include data analyst, data scientist, data engineer, and product analyst. However, data analysis skills may also be required in a wide range of other roles.



Data Visualization

Data visualization is a method of presenting data in a graphical form to facilitate analysis and interpretation. Through the use of appropriate charts, maps, or diagrams, data becomes more understandable and accessible.

Information presented in its raw form can be overwhelming and difficult to interpret. Data visualization helps in quickly and easily understanding the data. Simple diagrams or interactive charts allow for stronger engagement with the content. This is the result of creating connections that are not always obvious when looking at plain text or unprocessed facts and figures. Thanks to visualization, companies can use data to make more informed decisions.

The main advantages of this approach are:

Data Compactness

Well-designed charts and diagrams make the presented information more readable. As a result, the audience requires less time to analyze them. A good diagram will also be understandable to people who have never worked with specific data or large volumes of information.

Clarity

Charts should present key information. Properly filtered diagrams can simplify the understanding of very complex data and highlight areas that require deeper analysis.

Error Detection

Data visualization tools help to easily and quickly identify bottlenecks by detecting errors in processed information. Working with error-free data leads to greater accuracy in the presented information.

Better Analysis

The visualization of spatial data significantly facilitates the extraction of desired information. It can be used to create clear summaries and detailed analyses.

The starting point in the process of creating information visualizations is considering the basic principle of data classification. Each type of information requires a different visualization method. In general, apart from specialized formats, there are four main types of data:

- Numerical data: broadly understood numerical values.
- Text data: with the development of digital humanities and text mining algorithms, text particularly attracts the attention of infographic creators.
- Dates and timelines: sequences of events over time.
- Geographical coordinates: the use of geospatial data in statistical analysis.



The type of data determines the kind of visualization used to present it. For numerical data, charts and graphs such as bar, line, or pie charts are commonly used. For text data, the word cloud (a visual representation of word or tag sets) is commonly used. Data related to dates and time is visualized using timelines, categorizing sequences by years, months, or days. The visualization of geographical coordinates is based on classic maps. However, there are many other methods for presenting data. The most popular types of data visualizations include:

- Bar charts – great for comparing values across different categories. They can be vertical or horizontal.
- Line charts – ideal for showing changes in values over time or other continuous variables.
- Pie charts – used to represent the percentage share of different categories in a whole. However, they should be used cautiously, as they can become less readable with more categories.
- Histograms – show the distribution of data across intervals (bins), useful for analyzing data distribution and density.
- Scatter plots – used to illustrate relationships between two variables.
- Heat maps – represent data in the form of colors, helping to identify patterns and intensity in large datasets.
- Box plots – useful for analyzing data distribution, detecting outliers, and comparing distributions across different groups.
- Radar charts – good for comparing multiple variables at once in a polygonal form.
- Network diagrams – used to illustrate relationships and connections between objects.
- Tree diagrams – represent data in a tree structure, helping to analyze hierarchies and relationships between data.
- Neural networks – represent data as nodes and connections. This type of visualization facilitates the analysis of complex and interactive data.
- Dashboards – present multiple types of visualizations in one place, allowing for quick and comprehensive data review.
- Geographical maps – useful for presenting spatial data and locations.



The choice of the appropriate type of visualization depends on the kind of data you want to present and the purpose of the analysis. Proper visualizations help in better understanding the data, identifying hidden patterns, and making more informed decisions.

Data visualization is applied in various fields, from education to business. It is also an important skill required in business-related fields and certain roles. Visualization is used in sales, marketing, finance, and human resource management. It helps in analyzing market trends, identifying areas that need improvement or optimization, and enhances performance monitoring, reporting, and strategic decision-making. In practice, visualization is used in business in the following areas:

- Sales analysis – using line, bar, and pie charts to compare sales of different products or regional data, as well as tracking changes over time.
- Financial reports – in the form of charts and diagrams showing balance sheets, profit and loss statements, and cash flow. In these cases, visualization can help to more quickly and easily understand a company's financial situation.
- Trend analysis – tracking trends such as sales growth or decline, changes in customer preferences, or rising costs.
- Performance monitoring – visualizing employee performance and business processes helps companies identify areas that need improvement and optimization.
- Strategic planning – visualization helps companies better understand their business environment, including market trends, customer behavior, and competition. This significantly improves planning and strategic decision-making.
- Risk analysis – enabling companies to avoid financial losses or changes in market conditions. It can also help businesses identify and minimize risks and crisis situations.

Tasks related to data visualization can also be encountered in less advanced job positions or in other industries. Many positions now require digital skills, and one of them is the ability to create presentations, charts, or tables. Therefore, it is worth learning the basics of data visualization.





Creating Digital Content

In the digital age, the ability to create digital content is essential not only for individuals but also for micro and small businesses that want to compete effectively in the market. Well-crafted content allows businesses to reach customers, build their brand, and increase their online visibility.

In this chapter, we will examine three main aspects of digital content creation:

1. Creating and Editing Text Documents – We will discuss writing and formatting techniques that help produce clear and professional documents.
2. Creating Multimedia Presentations – We will explore how to prepare engaging presentations that effectively communicate key information.
3. Basic Graphic Design and Photo Editing – We will introduce essential tools and image editing techniques that enhance projects and capture the audience's attention.



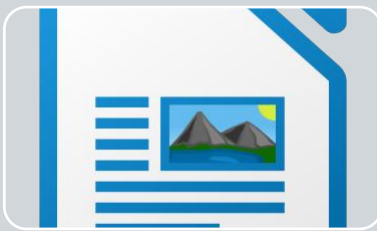
These skills are invaluable for business operations, enabling better communication with customers and enhancing the effectiveness of marketing efforts. In the following sections of this chapter, we will present practical tips to help you create valuable digital content.

Creating and Editing Text Documents

Creating and editing text documents are fundamental skills that can be applied in many areas of personal and professional life. These types of programs are used for efficiently writing and editing texts, as well as creating various kinds of documents, ranging from basic ones like short notes or resumes, to more complex ones like scientific articles, analyses, or reports. Word processors are widely used in office and administrative work but also appear in many other industries and job roles. In this chapter, we will present several key aspects of how such programs function.

There are many such programs available online and on the market. They can be divided into two main types: those that are downloaded onto a computer, such as the MS Office suite, or those that can be used remotely in a web browser, such as Google Docs.

The most popular tools for creating documents include:

		
<p>Microsoft Word</p> <p>A popular and widely used word processing program, offering a wide range of functions such as styles, tables, charts, and the ability to add images and multimedia elements.</p>	<p>Google Docs</p> <p>An online tool that enables the creation and editing of documents in collaboration mode. It allows multiple users to work simultaneously and easily share documents.</p>	<p>LibreOffice Writer</p> <p>A free, open-source program that serves as an alternative to Microsoft Word, offering many similar functions</p>

The choice of a tool for creating and editing documents depends on your needs. In a work environment, you will, of course, be asked to use the tool that is commonly used by the company or organization. If you are not familiar with it, you can ask for training or use free guides available, for example, on YouTube, created by experts.

The basic functions of such tools, regardless of the program, generally include:

- Text formatting, such as changing the font, size, color, and applying bold, italics, etc.
- Creating headers and footers, for example, adding information such as the document title, page number, or date.
- Inserting elements such as tables, images, charts, links, or footnotes, commonly used in academic articles.
- Designing, which includes adding watermarks, page colors, or borders.
- Layout, which involves adding margins, changing document size, adding columns, text indents, or adjusting line spacing.
- Spell and grammar check, built-in tools for error checking, such as proper punctuation, spelling, or grammar errors.

TIP! Before using the spell and grammar check function, make sure that the language of the entire document is correctly set, such as Polish or English. If there are sections in other languages within the document, mark them properly as well.

When writing a document, it is important to pay attention to its organization to give it a professional appearance. When formatting, consider applying the following elements:

- Headings and subheadings – Use heading styles to distinguish sections and subsections of the document.
- Table of contents – After applying headings or subheadings, generate an automatic table of contents, which helps the reader navigate long documents and find the sections they are interested in.
- Fonts and spacing – Use a consistent font and appropriate spacing between paragraphs.
- Lists and numbering – Use bullet points or numbered lists to make the structure of the document clearer.
- Page numbers – Include them to help readers navigate through longer documents.

Remember that when writing and organizing a document, you can also use templates available in your work environment. This will save time and ensure consistency when creating different types of documents. Many templates, such as resumes, cover letters, or notes, are available for free on the internet and can serve as inspiration for your own work. You can also create your own template by writing a basic document that already contains formatted

headers, footers, or sections. Later, you can modify and adapt this template to other content while retaining the established format.

An important topic in creating and editing text documents is collaborating with others on the document and sharing it further. To do this, you can use two popular functions:

- Comments, which allow adding remarks and suggestions to specific sections of the text.
- Track Changes, a feature that allows you to monitor document edits when working in a group.

These functions enable multiple people to work on the same text, allowing them to add their suggestions visible to the document's author or make changes themselves. Importantly, each time the author can see what changes have been made or need to be included in the document.

TIP! Collaborative work on a document is made easier by online tools like Google Docs, where several people can work on the same document simultaneously and make edits in real time.

Another important aspect of working with word processors is securing the documents. If you want to protect the document's content or prevent it from being edited, there are two main methods:

- Passwords – used to protect the document with a password to safeguard its content.
- File formats – various save options are available, such as PDF, to lock the document from being edited.

These tools also offer keyboard shortcuts, which are combinations of two or more keys providing an alternative way to perform tasks usually done with a mouse. Learning keyboard shortcuts can significantly speed up your work with documents. It's worth mastering them to save time.

Here are some useful shortcuts:

- Ctrl + C – copy
- Ctrl + V – paste
- Ctrl + Z – undo the last action
- Ctrl + S – save the document
- Ctrl + B – bold the text

Saving a text document is a basic operation that secures your work from data loss and allows you to reopen and edit it later. In desktop programs, you need to find the "Save As" option, choose the location where you want to save the file, give the file a name, select a file format, and click "Save." In online programs, like Google Docs, changes are saved automatically to your drive, so you don't need to manually save them. However, you can always download the file to your computer in any desired format.

TIP! Remember to save your documents properly and frequently save changes, especially for very important documents. At any moment, the program could, for example, shut down, and this will prevent you from losing your work. If the document is very important, it's a good idea to create a backup, for instance, by sending it to your email or copying it to an external storage device.

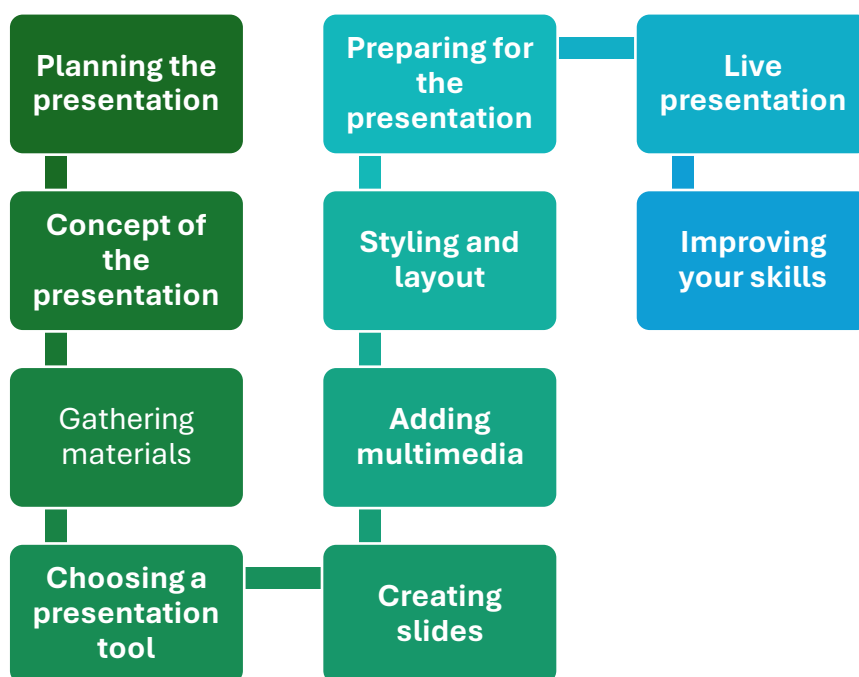


Creating Multimedia Presentations

Creating multimedia presentations is a process that allows for the effective delivery of information in an attractive visual form. In multimedia presentations, the content is important, but so is the format, such as using tables, graphics, or videos.

Presentations are used in education, for example, as a method of completing a subject in college, but also in the professional environment, for instance, to present the results of a team's work, a developed concept, or a project.

The process of creating a multimedia presentation is universal. Below, we describe how to create a presentation step by step:



1. Planning the presentation

- Purpose of the presentation – Think about what you want to achieve with your presentation: is it to convey knowledge, persuade someone, or present project results?
- Defining the audience – Consider who your audience is, what their expectations are, and what their level of knowledge is on the subject. This will help tailor the content and delivery to the specific audience.

2. Concept of the presentation

- Defining the main idea – The presentation should have one central idea or theme that runs through all the slides.



- Structure – Divide the presentation into three parts: introduction – presenting the topic, agenda, main part – elaborating on key points, and conclusion – summary, conclusions, thanks, and optionally a call to action.

3. Gathering materials

- Content – Prepare the text that will form the basis of your presentation.
- Visual materials – Find images, videos, charts that illustrate your points and make the presentation more engaging.

4. Choosing a presentation tool

- MS PowerPoint – The most popular tool with a wide range of features.
- Google Slides – A free online tool, ideal for team collaboration.
- Keynote – A tool for Mac users.
- Prezi – An online tool for dynamic, interactive presentations.

5. Creating slides

- Templates – Choose or create a template that matches the theme of your presentation.
- Grouping information – Use headings, subheadings, bullet points, and numbered lists to organize content.
- Graphics – Use images, tables, icons, and charts to reinforce your message. Graphics should be clearly visible and of good quality, as too small images may not be visible when displayed.
- Colors and contrasts – Choose colors that are pleasant to the eye and ensure the readability of the text, using contrasts, such as dark text on a light background.
- Fonts – Choose legible fonts, avoid using more than two types, and ensure the text is large enough.

6. Adding multimedia

- You can add short videos or sound effects to enrich your presentation.
- Use animations sparingly, for example, to introduce information gradually on a slide to emphasize important points without creating chaos.



7. Styling and layout

- Choose a cohesive color palette that is aesthetic and clearly visible.
- Use a maximum of two font types.
- Ensure text readability, for example, avoid using text that is too small.
- Balance text with images.
- Avoid large blocks of text.

8. Preparing for the presentation

- Practice the presentation several times to ensure you transition smoothly between slides and are familiar with the material. For example, rehearse it with a team member before presenting.
- Save the presentation in two formats, such as PDF, because not all formats are compatible with every computer.
- On the day of the presentation, make sure that all multimedia elements work properly on the equipment you will be using.
- If the presentation will be displayed on a large screen, check whether all elements are readable from every part of the room.
- Store the presentation on multiple devices, such as a USB drive or the cloud.

9. Live presentation

- Audience interaction – Try to engage with the audience, ask questions, and involve them in the presentation.
- Speaking pace – Speak clearly and not too fast, allowing time to think about the next sentences and giving the audience time to absorb the information.
- Responding to questions – Be prepared for questions from the audience. If you don't know the answer, don't be afraid to admit it and promise to provide the information later.

10. Improving your skills

- Analysis and feedback – After the presentation, gather feedback from participants to find out what could have been improved.



- Continuous improvement – Based on the feedback, work on enhancing your future presentations.

With this approach, you will create a presentation that is not only visually appealing but also effectively conveys the content you want to share with your audience.

Preparing a multimedia presentation, besides planning and concept development, is mainly about working with the tool. The most popular tool for creating presentations is PowerPoint from the Microsoft Office suite. Below, we present a guide to using this program:

1. Getting started with PowerPoint

- Launching the program: After installing Microsoft Office, find and open PowerPoint; once the program is open, you will see the start screen with options to create a new presentation or open an existing one.
- Choosing a template: PowerPoint offers a wide range of built-in templates; you can select a ready-made template or start from a blank presentation, where you create everything from scratch.

2. Creating a new presentation

- New presentation: Click on the "New" button and choose "Blank Presentation" or browse through the available templates.
- Customizing the template: If you choose a template, you can customize it by changing colors, fonts, and slide layouts in the "Design" tab.

3. Adding and organizing slides

- Adding a new slide: In the "Home" tab, click the "New Slide" button. You can choose different slide layouts such as "Title and Content," "Comparison," "Picture with Caption," etc.
- Changing the layout of an existing slide: Right-click on a slide in the left panel and select "Layout" to change its structure.
- Rearranging slides: In the left panel (thumbnail view), you can drag slides to reorder them.

4. Entering content

- Adding text: Click on the text box on the slide and enter your content. You can adjust the font, size, color, and text style in the "Home" tab.



- Inserting images: From your computer: Go to the "Insert" tab, click "Pictures," then select "This Device" to find the file. From online: Choose "Online Pictures" and search for the appropriate graphic.
- Adding shapes and icons: In the "Insert" tab, you can add various shapes, icons, and SmartArt elements to help visualize information.
- Inserting charts: To add a chart, go to "Insert" > "Chart" and choose the appropriate type (bar, line, pie, etc.).
- Adding multimedia: You can insert audio and video files by using the "Audio" and "Video" options in the "Insert" tab.

5. Designing and formatting

- Choosing a theme: In the "Design" tab, you will find various themes that change the overall look of the presentation, including color schemes.
- Customizing the background: Click on "Format Background" in the "Design" tab to change the color, fill, or add an image as the background.
- Styles and effects: After selecting an object (e.g., an image), you can customize its style, border, shadow, and other effects in the "Format" tab.

6. Animations and transitions

- Adding slide transitions: Go to the "Transitions" tab and select an effect to apply when moving between slides. You can adjust the duration and add sounds.
- Animating objects: In the "Animations" tab, select an object on the slide and assign it an animation effect (e.g., entrance, exit, emphasis).
- Animation pane: Click on the "Animation Pane" to manage the order and details of animations for individual objects.

7. Adding notes for the presenter

- Entering notes: Below each slide, there is a "Notes" section where you can enter additional information visible only to you during the presentation.
- Presenter view: During a slideshow, you can use the presenter view, which displays the current slide, your notes, the next slide, and a timer.

8. Preparing for the presentation



- Spell and grammar check: In the "Review" tab, use the "Spelling" and "Grammar" options to ensure there are no errors in the presentation.
- Slideshow: Go to the "Slideshow" tab and choose "From Beginning" or "From Current Slide" to review the presentation.
- Recording a slideshow: You can record a narration and slide transition timings by clicking "Record Slideshow."

9. Saving and sharing

- Saving the presentation: Click "File" > "Save" or "Save As" and choose the location and file format (e.g., .pptx for an editable presentation or .pdf).
- Exporting: In the "Export" option, you can save the presentation as a video, PDF file, or other formats.
- Sharing: If you're using OneDrive or SharePoint, you can share the presentation with others for viewing or editing.

Creating a presentation in PowerPoint is not only a technical skill but also an artistic one. By combining the right tools and best practices, you can create a presentation that is both informative and engaging for your audience. Remember, the key is to tailor the content to your audience and clearly convey the main message.

Other programs used for creating presentations follow a similar workflow and have similar features. If you have never created a multimedia presentation before, it's worth choosing one of these programs and learning it through training or by using free educational materials available online. Once you master one program, using others will be much easier.



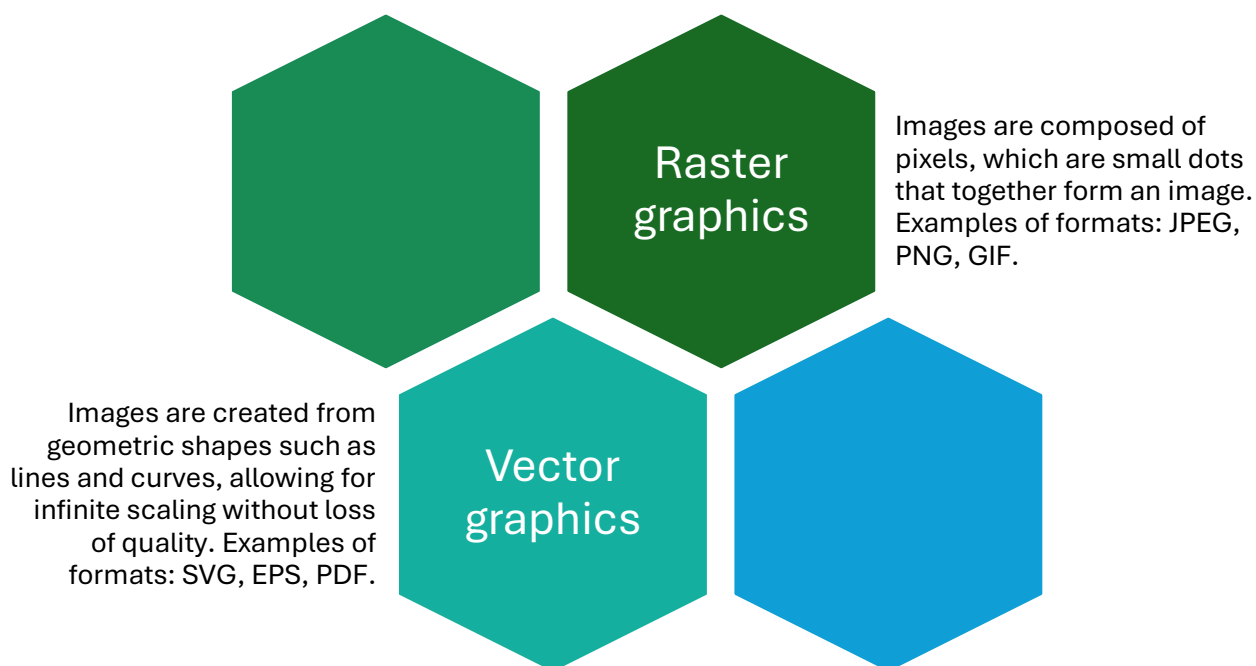
Basics of Computer Graphics and Photo Editing

The basics of computer graphics and photo editing are key skills that can be useful both in professional work and private projects.

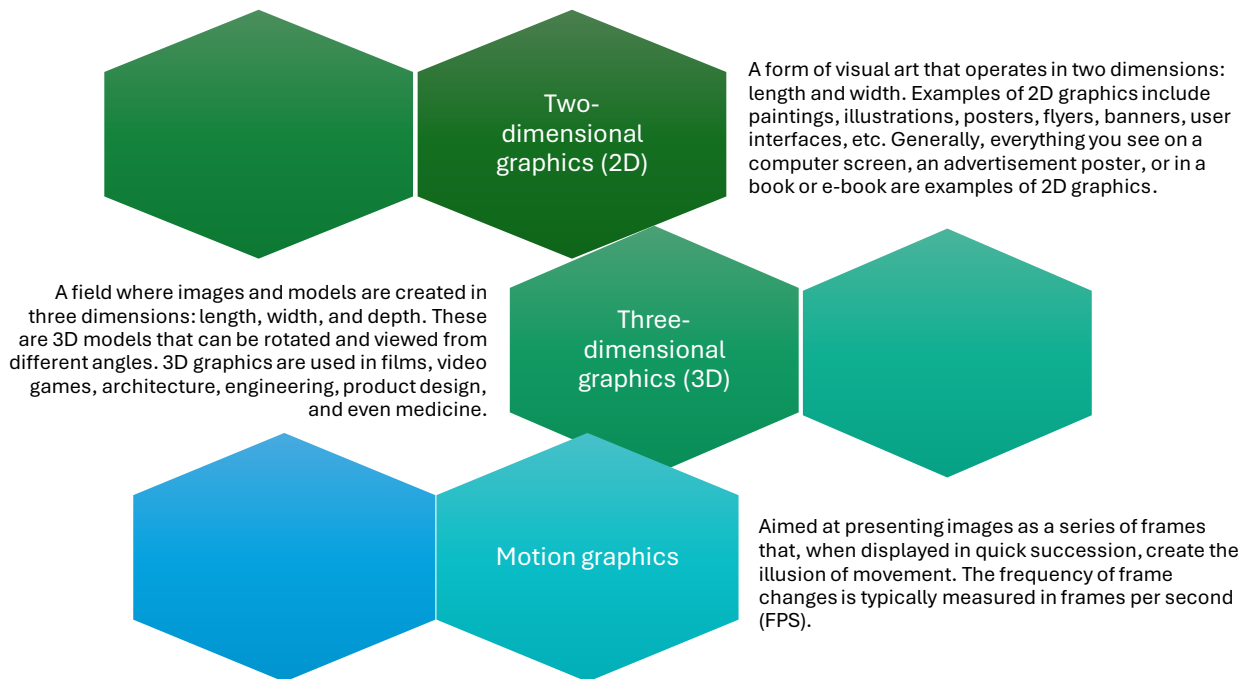
Computer graphics is a field focused on creating and manipulating images using computers. It encompasses various techniques, such as rasterization, vectorization, rendering, and many others. Computer graphics form the foundation of modern games, animations, simulations, and visualizations.

The origins of computer graphics date back to the 1950s, but due to the high costs of computers and graphic devices, computer graphics remained a niche specialization until the 1980s. Practical applications were mostly accessible to research centers, large companies, and government institutions. It wasn't until the 1990s, when personal computers became widespread, that computer graphics became a common phenomenon. Many programs dedicated to computer graphics, such as Gimp, were developed, and computer graphics also gained the status of an artistic discipline.

Based on data representation, computer graphics can be divided into:



A second classification of computer graphics is based on the nature of the data, dividing them into:



Basic terms used in computer graphics include:

- Resolution: the number of pixels per unit length (e.g., DPI – dots per inch); higher resolution means better image quality but larger file size.
- Color depth: the amount of color information per pixel; the greater the color depth, the more colors can be displayed.

Graphic design is based on a set of principles that help create aesthetic, functional, and visually consistent works. The most important principles of graphic design are:

- Composition: the arrangement of elements in the image in such a way as to attract attention and remain readable. It's important to apply the rule of thirds, symmetry, or dynamic balance.
- Color: choosing the right colors is crucial. Understanding color theory, such as the color wheel, complementary colors, and color harmony, can help create cohesive designs.
- Typography: the choice of font, text size, line spacing, and letter spacing has a huge impact on readability and the aesthetic quality of the design.
- Contrast: contrast between different design elements (e.g., light text on a dark background) is essential to ensure readability and visual interest.

- **Consistency:** all elements of the design should create a visually cohesive image; using the same colors, font styles, and graphic elements throughout the project is key.

Photo Editing is the process of modifying and enhancing photos using specialized software. The goal of photo editing can be to improve image quality, remove unwanted elements, add artistic effects, correct colors, resize or adjust the proportions of the image, and prepare the photo for print or online publication.

The basic tasks in photo editing include:

- **Cropping:** trimming the image to focus on the main subject and remove unnecessary elements; cropping also allows adjusting the image proportions to the desired format.
- **Resizing:** adjusting the size of the image; it's important to maintain proportions to avoid distortions.
- **Color correction:** improving the photo's color balance by adjusting brightness, contrast, saturation, and white balance; these tools help to even out colors and give the image the desired look.
- **Retouching:** removing imperfections such as spots, wrinkles, or unwanted objects; tools like "cloning" and "healing brush" are commonly used in retouching.
- **Layers:** allow working on different parts of the image independently; this enables making changes without affecting the rest of the image.
- **Filters and effects:** automatic or manual modifications that give the image a specific look, such as sepia, black and white, blur, sharpness.
- **Masks:** enable selective editing of the image without altering the original photo; masks are particularly useful for creating complex compositions.
- **Text and shapes:** adding text and simple shapes (circles, rectangles, lines) to images.



There are many computer graphics and photo editing tools widely used by both professionals and amateurs. Some of the most popular ones include:



Learning the basics of computer graphics and photo editing opens up many possibilities for creating visual projects and is also a skill that provides career opportunities. One such profession related to this field is a **graphic designer**.

A graphic designer is a profession that requires significant creativity. Most graphic materials are created for marketing purposes (primarily animations, static graphics for social media, etc.), but also for video games, websites, product designs, textbooks, books, and much more. Being a graphic designer also requires knowledge of advanced tools (e.g., graphic tablets) and programs — Blender, Adobe Suite, Figma, Canva, to name just a few examples.

On the other hand, photo editing can be performed in several professions. People working in photo editing are involved in transforming, enhancing, and improving photos using advanced graphic tools. Among the professions that may perform this task are:

- Photo retoucher: specializes in precise and detailed retouching of photos, removing imperfections, enhancing details, and giving the photos their final appearance. They may find employment in photography companies, graphic studios, advertising agencies, publishing houses, or work as freelancers.
- Graphic designer: involved in photo editing has a broader range of responsibilities, including visual design and photo retouching. They may work in advertising agencies, graphic companies, or media.

- **Photographer:** often edits their own photos to achieve the desired artistic or commercial effect.
- **Post-production specialist:** works mainly in the film and advertising industry, dealing with advanced photo and video editing.





Tools and Digital Technologies

In the dynamically changing business environment, digital transformation is a key element that allows micro and small enterprises (MSEs) to increase their competitiveness. To improve operational efficiency and adapt to changing market needs, the use of modern tools and digital technologies has become almost mandatory. Implementing appropriate technological solutions, such as project management tools, content management systems (CMS), and business process automation tools, enables MSEs to optimize workflows, reduce costs, and better manage resources.

In this chapter of the guide, you will learn about the three mentioned groups of tools. Project management tools are invaluable for companies that want to effectively plan, monitor, and manage their activities. With solutions like Trello, Asana, or Jira, businesses can efficiently organize tasks, collaborate within teams, and track project progress in real-time. These tools not only improve work organization but also enhance internal communication, resulting in greater productivity and operational efficiency.

Content management systems (CMS), such as WordPress, Joomla, or Drupal, form the foundation of any modern company's digital presence. They allow businesses to easily create, manage, and publish content on their websites without the need for advanced technical

knowledge. CMS systems provide the ability to quickly update websites, which is essential for building customer relationships and keeping information about products and services up to date. Implementing these tools not only simplifies content management but also improves the company's search engine ranking, increasing their visibility online and expanding their potential to attract new customers.

The last group covered in this chapter is business process automation tools. These solutions can revolutionize the operations of micro and small enterprises. Automating routine tasks, such as invoicing, lead tracking, or inventory management, saves time and reduces costs. Tools like Zapier, Make, or Microsoft Power Automate enable the integration of various applications and systems, allowing for the automation of processes and the elimination of manual, repetitive actions. The introduction of automation allows businesses to focus on key areas such as product development or customer service, ultimately increasing their competitiveness in the market.

Project Management Tools

Effective project management is a key element of success for any company, including micro and small enterprises (MSEs). The introduction of digital tools not only enables better planning and organization of work but also streamlines team communication and improves control over the progress of ongoing tasks. Project management tools such as Trello, Asana, or Jira form the foundation for companies looking to execute projects in a more organized and automated manner.

Project management software encompasses many different functions, such as:

- Task management – creating, assigning, and tracking tasks for team members.
- Progress tracking – visualizing the status of work, for example, using Gantt charts, Kanban boards, or other visual tools.
- Resource management – allocating resources and monitoring their availability.
- Team communication – tools for collaboration and communication, such as chats, video conferences, or comment systems.
- Scheduling – planning deadlines and setting priorities for different stages of a project.
- Integrations – the ability to integrate with other tools (e.g., CRM systems, email platforms, document management tools).

Example Project Management Tools and Their Capabilities

One of the more popular project management tools is **Trello**, a tool based on the Kanban method, which visually represents work progress through cards and lists. Thanks to its simplicity, Trello allows teams to create tasks and assign them to specific individuals, making it particularly useful for projects that require regular tracking of activities. This tool works well



for smaller teams that need a flexible and intuitive system for managing daily tasks.⁷ Detailed information about Trello can be found on the website: <https://trello.com/>

Another advanced solution is **Asana**, which combines task management capabilities with more complex features such as scheduling and milestone tracking. Asana allows for the creation of task and subtask hierarchies, making it easier to manage more complex projects. Additionally, the tool offers integration with other applications, enabling the automation of certain processes within the company.⁸ Detailed information about Asana can be found on the website: <https://asana.com/>

For companies using more complex project management methodologies, such as Agile or Scrum, **Jira** may be the ideal choice. This tool, originally designed for development teams, offers advanced features for tracking progress, managing bugs, and organizing sprints. With support for Agile methodologies, Jira allows teams to closely monitor project progress and quickly respond to changes, which is crucial in a dynamic business environment.⁹ Detailed information about Jira can be found on the website: <https://www.atlassian.com/software/jira>

Other popular project management programs include:

- Monday.com – a tool with a very intuitive interface that allows project, task, and workflow management. It offers various ways to visualize data, such as Gantt charts and calendars. Monday.com stands out for its high flexibility, making it ideal for both small and large teams. Detailed information can be found on the website: <https://monday.com/>
- Wrike – an advanced project management tool that offers extensive collaboration, resource management, and progress monitoring capabilities. It is ideal for larger projects that require many people to work on different tasks. Detailed information can be found on the website: <https://www.wrike.com/>
- ClickUp – a tool that combines task management, time tracking, documentation, and collaboration in one place. ClickUp offers flexible visual tools (lists, Kanban boards, calendars), making it suitable for teams across various industries. Detailed information can be found on the website: <https://clickup.com/>

All these tools aim to improve team efficiency, facilitate communication, and increase transparency in project management. For micro and small enterprises, which often have to

⁷ Trello Blog. "Organizing Your Projects with Trello". Dostępne online: <https://blog.trello.com/>

⁸ Asana Guide. "How to Use Asana for Task Management". Dostępne online: <https://asana.com/guide>

⁹ Atlassian Jira Documentation. "Jira Software Documentation". Dostępne online: <https://confluence.atlassian.com/jira>



operate with limited resources, the introduction of such tools can significantly boost productivity and allow for more efficient task and time management.

What to consider when selecting software

When choosing software for your company, it's important to consider several factors, including:

- User interface – Is it intuitive and easy to use?
- Integrations – Does the tool integrate with other systems you use, such as email or file management tools?
- Progress tracking – Does the tool offer the right options for visualizing progress, such as Gantt charts or Kanban boards?
- Scalability – Is the tool flexible enough to handle a growing number of projects or team members?
- Cost – What pricing options are available, and are they suitable for the size of your team? Some of the previously mentioned tools are free when used by small teams.

To demonstrate how project management software impacts a company's efficiency, let's look at a short case study of the M Booth company. This case study was developed based on official materials from Monday.com. You can find the full version on the website:

<https://monday.com/customers/mbooth>

Case Study: M Booth – Automation and Project Management Optimization with monday.com

M Booth is a global, award-winning agency specializing in digital communication. The agency operates in 32 countries, serving clients from various sectors – from corporate and consumer to food and lifestyle. Initially, M Booth was a PR agency, but in recent years, it has focused on expanding its digital and creative services. The team, which started with two graphic designers, has grown into a 30-person creative department, including filmmakers, photographers, animators, copywriters, project managers, and art directors.

Ryan Quick, Director of Project Management, and Kyle McEwen, Project Manager, are responsible for coordinating activities between the creative department and the other departments of the agency.

When Ryan joined M Booth, his team used Basecamp for project management. As the team grew and the number of projects increased, managing individual tasks became increasingly complex. "I had to copy all the tasks from Basecamp and paste them into a spreadsheet to get a full picture of the work that needed to be distributed within the team. It was the most tedious process you can imagine," says Ryan Quick. Kyle adds, "There were so many errors



because if I updated the spreadsheet but forgot to update Basecamp, everything would go out of sync. This happened constantly."

Ryan and Kyle started looking for an alternative to manage projects faster and more efficiently. After testing several platforms, such as Trello and Asana, they heard from one of the coordinators about monday.com. They were immediately drawn to the tool's visual and customizable structure.

"One of the first things I noticed was the visual and flexible format of the interface. Kyle prepared a presentation for the company's decision-makers, explaining why we should implement monday.com. They immediately understood what we saw in the platform and gave us the green light," recalls Ryan.

The creative team at M Booth receives between 400 and 500 orders of varying sizes each month from over 30 digital strategists across the agency. "We have around 20 clients from Google, and Basecamp was so segmented that we couldn't see all the requests from these clients in one place," says Kyle.

Kyle created a central process for gathering all requests in one place, making it easy to track tasks, assign the appropriate designers, and monitor progress from the submission of the order to its completion.

Kyle developed a points system to assess the effort required for each task. He now uses this system on a dashboard to better visualize the workload of the creative team and monitor the agency's resources.

"We can handle about 270 points of work per week. When someone asks if we have time for a new task, I can easily check without going into details, which helps us avoid burnout among designers. We also use this data to justify the need for hiring additional designers," explains Kyle.

Kyle highlights that, before implementing monday.com, a lot of time was spent manually notifying the strategy team about task completion. "We sent dozens of messages weekly to inform the team that something was completed. It was a huge amount of work, making us feel more like secretaries than project managers," says Kyle. Now, with automations in monday.com, they can focus on managing projects that require their skills and expertise.

Thanks to the time-tracking feature in monday.com, project managers at M Booth can now more accurately predict project costs. "We're getting better at estimating project time and costs because we can look at data from similar tasks and then prepare accurate estimates based on that," says Kyle.



With the implementation of monday.com, M Booth's creative team has gained more time to develop their talents, and project management has become much smoother.¹⁰

Content Management Systems (CMS)

The introduction of Content Management Systems (CMS) plays a crucial role in the digital presence of micro and small enterprises (MSEs). CMS platforms enable business owners to create and manage content on websites without needing advanced technical or programming skills. Through CMS, companies can regularly update their websites, publish content, and engage customers, which is essential for building a strong online presence and enhancing competitiveness.

The key features of CMS include:

1. Ease of use – Thanks to intuitive interfaces, CMS platforms allow users to edit content similarly to a word processor, without the need to write code.
2. Multi-user management – CMS allows assigning different roles to users, such as author, editor, administrator, each with different levels of access.
3. Templates and themes – Most CMS platforms offer pre-designed templates that can be customized to fit your needs.
4. Extensions and plugins – The ability to add additional features (e.g., photo galleries, contact forms, e-commerce) through plugins or modules.
5. SEO-friendly – Built-in or additional tools make it easier to optimize websites for search engines (SEO).
6. Multi-language support – CMS often offers support for multiple language versions of the same website.

Like any system, CMS has its advantages and disadvantages. Let's start with the pros:

- Ease of content updates – Users can regularly update the website without needing a developer's help.
- Scalability – Websites can be expanded with additional features as needed.
- Real-time content management – Changes can be made quickly without downtime.

On the other hand, some of the key cons of CMS to be aware of include:

- Security – The popularity of some CMS platforms, such as WordPress, makes them targets for cyberattacks, so regular updates are crucial.
- Performance – Too many plugins or modules can slow down the website.

¹⁰ Case study: *How M Booth increased deliverables by 49% after adopting monday.com* - <https://monday.com/customers/mbooth>



- Customization costs – While many CMS platforms are free, more advanced features, plugins, themes, or technical support often come with a price.

The Most Popular CMS Systems

One of the most popular solutions on the market is **WordPress**, which is an excellent choice for companies looking to quickly and efficiently launch their website. WordPress is an open-source platform that offers a wide selection of design templates and plugins, allowing the expansion of website functionality. Thanks to its ease of use and extensive ecosystem of add-ons, WordPress is ideal for both simple blogs and complex e-commerce websites.¹¹

Another popular content management system is **Joomla**, which offers greater flexibility in managing more complex websites. Joomla works particularly well for news sites, social networking portals, or e-learning platforms. Its modular structure allows businesses to add and modify features based on growing business needs, making it an ideal solution for companies that foresee the expansion of their digital platform in the future.¹²

For businesses that require more control over every aspect of their site, as well as advanced customization features, **Drupal** is an excellent solution. Like WordPress and Joomla, Drupal is an open-source platform, but it stands out with its greater flexibility and ability to be customized to meet specific business needs. With its advanced architecture, Drupal is the perfect choice for larger projects and companies that need extensive content management capabilities and integration with external systems.¹³

Content management systems offer many benefits for micro and small businesses, such as time savings, ease of content management, and the ability to expand the website without needing to engage developers. The choice of the right CMS depends on the specific needs of the company, but all these solutions help increase content management efficiency and allow for more dynamic adaptation to market demands.

Case Study: Implementation of an E-commerce Platform for Dumping Manufacturer StickiBusiness by Hauerpower Agency

Below is a case study that briefly illustrates the process of creating a professional website aimed at business customers. Through this story, you will have the opportunity to get acquainted with the website development process and the challenges faced by both sides—the company commissioning the website and the company responsible for its execution. You

¹¹ WordPress Codex. "Getting Started with WordPress". Dostępne online: <https://codex.wordpress.org/>

¹² Joomla Documentation. "How to Use Joomla for Content Management". Dostępne online: https://docs.joomla.org/Main_Page

¹³ Drupal User Guide. "Managing Your Website with Drupal". Dostępne online: - https://www.drupal.org/docs/user_guide/en/index.html



can view the result of these efforts here: <https://stickybusiness.pl>. To learn the full story, visit the page on which this case study is based: <https://www.hauerpower.com/ecommerce-tworzenie-sklepow/sklep-internetowy-dla-producenta-pierozkow-azjatyckich-stickibusiness>

StickiBusiness, an Asian dumpling manufacturer, approached **Hauerpower** with the need to revolutionize the online purchase process for their products. The main goal of the project was to create an intuitive e-commerce platform that would meet the expectations of business-to-business (B2B) clients. The platform not only needed to allow easy placement of wholesale orders but also provide marketing automation tools and integration with external accounting systems via API. Additionally, generating sales reports and analyzing results were crucial for supporting StickiBusiness's business objectives.

The project began with a detailed analysis of the client's needs and the segmentation of B2B customers. Hauerpower conducted Kick-Off workshops to consolidate knowledge about StickiBusiness's business goals and analyze the competition. The objective was to design a platform that would not only attract new customers but also efficiently convert them into wholesale orders. During the design process, understanding customer segments and tailoring the UX (User Experience) to their needs through end-user testing was crucial. This allowed for the refinement of the offer and the purchasing journey.

A project team was assembled to carry out the work, closely collaborating with the sales and business departments of StickiBusiness. During weekly meetings, new versions of mockups and solution proposals for the e-commerce platform were developed. Thanks to the early involvement of client-side specialists, the UX design process was significantly accelerated, enabling the quick development of effective solutions for B2B clients.

When designing the User Interface (UI), the priority was to create a premium brand image that was also modern and lightweight. Hauerpower ensured visual consistency across all subpages, the purchasing process, and communication with clients (e.g., email notifications, order history). Japanese Kanji characters were incorporated into the design to emphasize the brand's authenticity, and professional marketing photos of the products and their production process were taken for the platform.

After the design phase was completed, the Hauerpower team proceeded to implement the platform on both the front-end and back-end. A flexible platform friendly to the B2B sector was created, with the ability to integrate with external management systems. After the implementation, technical testing and SEO optimization were conducted to improve the site's visibility. As part of the project, an educational blog was also created to help clients better understand StickiBusiness's offerings and products, while positively impacting the website's visibility on search engines such as Google and Bing.



Business Process Automation Tools

Business process automation is one of the key steps that micro, small, and medium-sized enterprises (SMEs) can take to increase their operational efficiency and reduce costs. Automation involves using technology to perform routine, repetitive tasks, which eliminates errors resulting from manual data processing and accelerates task and operation completion. Automation covers a wide range of processes—from sales and inventory management to customer service and financial operations.

Automation in Practice – Examples

Sales automation allows companies to better manage customer inquiries and requests. With modern tools, customer inquiries can be automatically captured and then converted into contracts, tracking each stage of the sales process. A crucial element of this process is recording the communication history, such as phone call recordings and email threads, providing full insight into customer interactions and facilitating further customer service and the development of business relationships. CRM systems play a key role in this area.

CRM (Customer Relationship Management) systems support managing customer relationships by automating tasks related to customer service, sales, and marketing. One popular CRM tool ideal for the micro and small business sector is HubSpot CRM. This tool offers a wide range of features that enable the automation of sales and marketing processes while being easy to use.¹⁴

With CRM systems like **HubSpot CRM**, companies can efficiently capture inquiries and automatically assign them to the appropriate stages of the sales process. In HubSpot CRM, status sequences allow the conversion of inquiries into contracts, as well as the full recording of communication history with the customer, including phone call recordings, emails, and meeting notes. Automating these processes eliminates errors and reduces the time needed to track customer interactions.

HubSpot CRM also enables the automation of marketing and customer service processes. The tool allows the creation of automated email campaigns that automatically respond to customer actions (e.g., clicking a link in an email or visiting the website). In customer service, CRM allows scheduling meetings, sending automatic reminders, and generating reports, which significantly improves communication and enhances the quality of service.

Another important feature of the CRM system is the ability to integrate with other tools, such as accounting or e-commerce systems. HubSpot CRM can be integrated with invoicing

¹⁴ HubSpot Blog. "What is CRM? A Marketer's Guide to CRM Software". Dostępne online: <https://blog.hubspot.com/marketing/what-is-crm>.



systems, sales platforms, or analytics tools, allowing for better data management, sales process automation, and monitoring key performance indicators (KPIs).¹⁵

Another set of processes that can be automated is inventory management. Automation in this area allows for efficient tracking and control of stock levels. Businesses can easily log goods for orders, assign serial numbers to products, transfer products between warehouses, and monitor stock levels in real-time. This allows for the optimization of warehouse management processes, preventing overstocking or stock shortages.

Automation of financial processes plays a key role in simplifying the financial management of a business. These tools enable payroll calculations, cash flow management, invoice processing, and sales tax calculations. As a result, businesses can achieve more effective control over their finances while reducing errors that may occur during manual financial data processing.

Automation of employee management allows for better planning and monitoring of their work. Tools allow for scheduling, time tracking, monitoring key performance indicators (KPIs), and assigning individual tasks. Additionally, companies can automate commission calculations, enabling more effective employee motivation and performance tracking. Automating these processes allows businesses to manage human resources more flexibly and increase work efficiency.

Selected Tools for Business Process Automation

After discussing various automation possibilities, let's move on to some specific tools. Zapier, Integromat (now known as Make), and Microsoft Power Automate enable the automation of a wide range of processes, from transferring information between applications to managing schedules, tasks, and customer relationships.

One of the most commonly used automation tools is **Zapier**, which allows users to connect various applications and tools to create automatic workflows. For instance, users can automatically transfer data between email, spreadsheets, and CRM tools, eliminating the need for manual data entry. Zapier is highly effective for companies looking to automate processes such as order handling, sending email messages, or managing customer data.¹⁶

Another example is Integromat (Make), which offers more advanced automation features. It enables the automatic connection of multiple applications and the execution of complex workflows. This tool is particularly beneficial for businesses that need to manage multiple

¹⁵ HubSpot CRM Guide. "The Ultimate Guide to Getting Started with HubSpot CRM". Dostępne online: <https://www.hubspot.com/products/crm>

¹⁶ Zapier Blog. "Automate Your Work with Zapier". Dostępne online: <https://zapier.com/blog/>



systems simultaneously, such as online stores, accounting systems, and order management tools.¹⁷

On the other hand, **Microsoft Power Automate** allows companies using the Microsoft ecosystem to automate internal processes, such as document management, workflows, and communication between applications, including Microsoft 365, Teams, and SharePoint. For micro, small, and medium enterprises (MSMEs), this tool is especially useful for integrating internal processes, facilitating more efficient time and resource management.¹⁸

With these tools, businesses can automate many everyday tasks, such as order processing, inventory management, invoicing, and marketing. This not only reduces costs but also enhances customer service quality and speeds up the execution of business processes.

¹⁷ Integromat Help. "Advanced Automations with Make". Dostępne online: <https://www.make.com/en/help>

¹⁸ Microsoft Power Automate Documentation. "Automate Workflows with Microsoft Power Automate". Dostępne online: <https://docs.microsoft.com/en-us/power-automate/>





Enhancing Competitiveness in the Job Market

In today's dynamically changing professional environment, micro and small enterprises face constant challenges related to maintaining competitiveness. Digital skills have become a key element in this competition, not only enhancing employee efficiency but also opening new opportunities for career growth and innovation within companies. In the face of the digital transformation of many economic sectors, the ability to effectively use digital tools has become essential.

This chapter consists of three sub-sections that detail the importance of digital competencies for career development, strategies for planning their growth, and the available certifications and training in this field.

The first part will highlight how digital competencies influence career paths, emphasizing their crucial role in adapting to the evolving job market. We will then focus on the process of planning the development of these skills, which is important for anyone looking to strengthen their position in the workforce. Finally, we will present available certifications and training programs that can help enhance digital skills, thereby increasing the competitiveness of both individual employees and entire companies.

We encourage you to delve into these topics, which form the foundation not only for personal development but also for building a strong, innovative, and competitive company in the era of digitalization.

The Importance of Digital Competencies for Career Development

Digital competencies play a crucial role in career development in today's world, where technology permeates almost every aspect of professional life. Many professions and job roles require varying levels of digital proficiency, ranging from basic skills, such as using MS Office programs, to intermediate skills like creating graphics for social media, and even advanced expertise related to programming or cybersecurity. Of course, there are jobs where knowledge of digital tools is not explicitly required, such as physical labor. However, with economic development and changes in the job market, this situation is also likely to evolve.

Digital competencies encompass a set of skills, knowledge, and attitudes that enable effective, safe, and critical use of information and communication technologies (ICT) across different aspects of life – both professional and private. These competencies cover a wide range of technology-related activities, from basic skills in operating digital devices to more advanced skills involving programming, data analysis, or information management.

The main areas of digital competencies include:

1. Basic Technology Operation:

- The ability to use computers, smartphones, tablets, and other digital devices.
- Familiarity with basic programs and applications, such as word processors, spreadsheets, web browsers, etc.

2. Digital Communication:

- The ability to use various forms of online communication, such as email, messengers, social media, and video conferencing.
- The capability to communicate effectively and responsibly in a digital environment.

3. Information Management:

- The ability to search for, evaluate, select, and manage information on the Internet.
- Understanding issues related to copyright, data protection, and online privacy.

4. Digital Security:

- Knowledge of basic online safety principles, such as creating strong passwords, protecting personal data, and recognizing online threats (e.g., phishing, malware).



- The ability to manage the security of one's devices and online accounts.

5. Creating Digital Content:

- The ability to create and edit various types of digital content, such as texts, images, videos, and multimedia presentations.
- Familiarity with basic content design principles and tools for creating content.

6. Solving Digital Problems:

- The ability to diagnose and solve technology-related problems.
- The capacity to learn new tools and technologies to address specific challenges.

7. Critical and Innovative Thinking:

- The ability to critically evaluate digital information and content, recognize fake news, and understand its impact on society.
- Creative use of digital tools to develop new solutions and products.

Digital competencies are increasingly important in today's technology-driven society. They affect not only work productivity and efficiency but also the ability to participate in social and cultural life. Developing these competencies is crucial for both individual careers and overall competitiveness in the job market.

Among the reasons why digital competencies are so essential, the following can be highlighted:

1. Adapting to the Changing Job Market

The job market is rapidly evolving due to technological advancements. Digital skills allow individuals to adapt to new requirements and opportunities that emerge as various sectors undergo digital transformation.

2. Increased Productivity

Familiarity with digital tools such as project management software, spreadsheets, data analysis tools, and communication platforms enables employees to perform daily tasks more efficiently. This, in turn, leads to higher productivity and work efficiency.

3. Expanded Career Development Opportunities



Many industries, including marketing, IT, finance, and media, require advanced digital skills. Possessing these competencies opens doors to more advanced positions and facilitates career growth in specialized fields.

4. Competitiveness in the Job Market

Employers increasingly expect candidates to possess advanced digital skills. Individuals lacking these competencies may struggle to compete for attractive job opportunities.

5. Remote Work and Flexible Employment Options

The COVID-19 pandemic accelerated the trend toward remote work, which requires digital proficiency. Familiarity with technology enables flexible work arrangements and access to job opportunities across various regions worldwide.

6. Creativity and Innovation

Digital skills allow individuals to leverage new technologies to create innovative solutions and products. In many industries, the ability to creatively use digital tools is essential for introducing new ideas and projects.

7. Security and Data Protection

Understanding digital security principles is essential for protecting personal and corporate data from cyber threats. Competence in this area is increasingly valued, especially in light of growing cybersecurity risks.

8. Lifelong Learning

Technology evolves very quickly, requiring employees to continually learn and update their skills. Digital competencies are crucial for effective self-education and access to new knowledge and online courses.

Improving digital competencies requires a systematic approach that includes learning, practice, and continuous knowledge updating. Here are a few steps to help develop these skills:

1. Identify Areas for Improvement

- Self-assessment: Identify your strengths and weaknesses in digital skills to determine where you might improve.
- Consulting with supervisors or colleagues: Find out which digital skills are essential in your role and which ones may need enhancement.

2. Using Online Courses



- E-learning platforms: Take advantage of platforms like Coursera, Udemy, edX, LinkedIn Learning, or Khan Academy, which offer a wide range of courses covering various aspects of digital skills, from basic computer literacy to advanced programming.
- Certificates: Completing courses from reputable platforms can result in certificates that add value to your professional profile.

3. Practice and Experiment

- Daily use of technology: Regularly use digital tools in your daily tasks. Practice is key to reinforcing skills.
- Experimenting with new tools: Try out new apps, programs, or technologies to broaden your horizons and learn something new.

4. Participate in Training and Workshops

- Company training: Many companies offer digital skills training. Participating can be an excellent opportunity to learn new skills.
- Local workshops: In-person workshops on various tech topics, such as programming, web design, or cybersecurity, are often available.

5. Joining Communities and Discussion Groups

- Online forums and social media groups: Join tech-related discussion groups on platforms like Reddit, Facebook, or LinkedIn. These communities allow for the exchange of experiences and knowledge with other users.
- Meetups and conferences: Attending industry events helps you learn about new trends and make connections with people who can help you develop your skills.

6. Reading and Following Tech News

- Tech blogs and news sites: Regularly reading blogs, articles, and websites like TechCrunch, Wired, or The Verge keeps you up to date with technology developments.
- Manuals and books: Invest time in reading books on areas of interest, such as programming, data analysis, or UX/UI design.

7. Learning from Others

- Mentorship: Find a mentor with advanced digital skills who can support your learning.



- Following experts: Follow tech industry figures on social media who share their knowledge and experiences.

8. Develop Critical and Creative Thinking

- Problem-solving: Set yourself challenges that require creative thinking in technology, such as creating a simple website.
- Hackathons: Participate in events promoting creative problem-solving in technology.

9. Enhance Digital Security

- Cybersecurity training: Learn about online security principles and keep your knowledge updated regularly.
- Applying principles in practice: Put what you've learned into action, for example, by managing passwords, using antivirus software, and recognizing online threats.

By taking these steps, you will systematically improve your digital skills and prepare yourself for the challenges of rapidly advancing technology in every aspect of professional and personal life.

In summary, digital skills are not only essential for many modern professions but also form a foundation for further career development. Investing in these skills is worthwhile to remain competitive in the job market and to open up new career opportunities.

Planning Digital Skills Development

Planning digital skills development is a structured process aimed at identifying how to enhance technology-related skills and digital tools to better adapt to professional and personal demands. This involves several key steps and actions that contribute to achieving specific goals in digital competencies.

The motivation to develop digital skills can stem from various factors, reflecting the growing importance of technology across professional and personal spheres. It can be driven by personal needs, such as an older adult wishing to stay connected with family members and purchasing a smartphone, or by external factors, like an employer requiring proficiency in a new software program. Broader reasons that motivate people to enhance their digital skills include:

- Changing job market: An increasing demand for technology-related skills and greater competitiveness for those with digital competencies.



- **Technological advancement:** The need to improve skills to keep up with evolving technologies and new digital tools.
- **Career growth:** Expanding digital skills opens up new career opportunities.
- **Increased efficiency and productivity:** Familiarity with modern digital tools leads to better organization and work productivity.
- **Digital security:** Knowledge of security principles is essential to protect personal and company data.
- **Personal development:** For some, building digital skills is part of a self-improvement plan and a source of personal satisfaction.
- **Adaptation to changing conditions:** Digital skills facilitate better integration into remote work environments.
- **Educational requirements:** Incorporation of technology-related subjects in educational curricula.

Planning the development of digital skills is a vital step in building one's career and adapting to the rapidly evolving technological landscape. Here is a detailed plan to help you progress in developing these skills:

1. Step 1 – Assess Your Current Competency Level

- **Self-Assessment:** Identify your level of digital competency by using available online tools or tests to determine your strengths and areas for improvement.
- **Feedback from Others:** Ask supervisors, colleagues, or mentors for feedback on your digital skills.

2. Step 2 – Set Goals for Digital Skills Development

- **Set Goals:** Define SMART goals (Specific, Measurable, Achievable, Realistic, and Time-bound) for digital skill development. Goals could include earning a certification in digital project management or mastering a new software program.
- **Prioritize:** Determine which skills are most important to you, considering your career ambitions and market demands.

3. Step 3 – Create an Action Plan

- **Break It Down:** Divide your goals into smaller, manageable steps.



- **Resources and Materials:** Gather necessary resources, such as books, online courses, and software.
- **Learning Schedule:** Set a realistic schedule that allows you to work consistently on skill development, such as dedicating specific hours per week for study and setting time frames.

4. Step 4 – Develop Your Skills

- **Courses and Training:** Enroll in online courses, in-person training, or webinars that align with your goals.
- **Practice:** Regularly apply newly acquired skills by working on small projects to put theory into practice.
- **Join Projects:** Engage in work projects that require the use of new tools or technologies.

5. Step 5 – Track Your Progress

- **Regular Reviews:** Periodically assess your progress, for example, monthly, to see if you are meeting milestones and adjust your plan if necessary.
- **Adjust Goals:** If you find certain goals too ambitious or too easy, modify them to make them more realistic and motivating.

6. Step 6 – Earn Certifications and Document Achievements

- **Certifications:** Completing courses and earning certificates can be valuable for your career.
- **Document Achievements:** Record your progress, certifications, and completed projects in a portfolio, or update your resume and LinkedIn profile with new skills.

7. Step 7 – Continuous Improvement

- **Knowledge Updates:** Technology evolves quickly, so it's essential to keep your skills up to date. Participate in supplementary courses, read tech blogs, and watch webinars.
- **Lifelong Learning:** Remember, digital skill development is an ongoing process; regularly expand your knowledge and skills to keep up with technological changes.

8. Step 8 – Apply Skills in Practice



- **Project Implementation:** Use acquired skills in professional or personal projects to deepen your knowledge and gain experience.

9. Step 9 – Evaluation and Reflection

- **Assess Results:** After a set period, evaluate whether you have met your goals, reflecting on what went well and what could be improved.
- **Set New Goals:** After achieving initial goals, plan the next steps to continue your educational journey.

Following this plan, and more importantly, putting it into practice, will enable you to systematically develop your digital skills. Remember to tailor it to your specific needs and habits to achieve desired results. Improving your skills will lead to greater career efficiency, better career prospects, and increased confidence in using new technologies.

Certificates and Training in Digital Technologies

Certificates and training in digital technologies are essential tools for professional and personal development, especially in the context of rapid technological change. They are effective ways to enhance digital competencies, acquire new skills, and stay up-to-date with a dynamic tech environment. Choosing the right certifications and training programs depends on individual career goals, areas of interest, and level of expertise.

In today's job market, there is an increasing need for employees to advance their digital skills. Many companies offer various training and courses to help employees, for instance, in learning new skills. In the workplace, there are three primary paths for acquiring digital competencies:

- **In-house training and courses** – Training sessions conducted at the workplace by internal trainers or hired experts. These are tailored to develop skills that meet the company's needs and the software tools used within the organization.
- **External training programs** – When there are fewer employees or a lack of trainers within the organization, employees may be sent to external training sessions aligned with current needs. External training can also be a good option for individual employees when large group training is unnecessary.
- **Self-directed learning** – Companies also rely on employees taking initiative in their own learning, as lifelong learning becomes essential in a digitalized world. This approach is less formalized, and companies allow employees to take responsibility for their skill development.



In today's world, it's important not only to rely on company-provided resources but also to invest in self-improvement and actively seek ways to enhance your skills.

Various companies and institutions offer digital skills training and courses. It is important, however, to check the credibility of the training provider and, if possible, gather insights from others who have completed the course to ensure that you choose widely recognized programs.

Below is an overview of popular and reputable certifications and types of training that can help in building digital skills:

Programming Certificates

- Python:
 - Python Institute: Offers PCEP (Certified Entry-Level Python Programmer) and PCAP (Certified Associate in Python Programming) certifications.
 - Coursera: "Python for Everybody" specialization from the University of Michigan, which provides certification.
- JavaScript:
 - freeCodeCamp: Certification from the "JavaScript Algorithms and Data Structures" course.
 - W3Schools: Certification from the "JavaScript" course".
- Java:
 - Oracle: Provides Oracle Certified Associate (OCA) and Oracle Certified Professional (OCP) certifications in Java.

Project Management Certificates

- Project Management Professional (PMP):
 - Project Management Institute (PMI): PMP is one of the most recognized certifications in project management, covering a broad range of skills.
- Certified ScrumMaster (CSM):
 - Scrum Alliance: Certification in project management using Scrum methodology, popular for technology-related projects.
- PRINCE2:



- Axelos: PRINCE2 Foundation and PRINCE2 Practitioner certifications, which focus on project and process management.

Certificates in Data Analysis and Data Science

- Google Data Analytics Professional Certificate:
 - Coursera: Offered by Google, this certificate covers data analysis fundamentals and the use of tools like Excel and SQL.
- Microsoft Certified: Data Analyst Associate:
 - Microsoft: Focused on Power BI and data analysis.
- Certified Data Scientist:
 - DataCamp: Certifications covering various aspects of data analysis and data science.

Certificates in Cybersecurity

- Certified Information Systems Security Professional (CISSP):
 - (ISC)²: A certification in information security that covers a broad range of data protection topics.
- Certified Ethical Hacker (CEH):
 - EC-Council: A certification for professionals in ethical hacking and security testing.
- CompTIA Security+:
 - CompTIA: A foundational certification in computer security, suitable for beginners in the field.

Certificates in Cloud Computing

- AWS Certified Solutions Architect:
 - Amazon Web Services (AWS): Certifications at both Associate and Professional levels for designing AWS cloud solutions.
- Microsoft Certified: Azure Fundamentals:
 - Microsoft: An entry-level certification for the Azure platform, ideal for those starting with Microsoft's cloud services.
- Google Cloud Professional Data Engineer:



- Google Cloud: A certification focusing on designing and implementing solutions on the Google Cloud platform.

Certificates in Database Management

- Microsoft Certified: Azure Database Administrator Associate:
 - Microsoft: Focuses on database management in the Azure environment.
- Oracle Certified Professional (OCP):
 - Oracle: A certification in Oracle database management, covering advanced administrative skills.

Certificates in UX/UI and Design

- Certified UX Designer:
 - Interaction Design Foundation: A certification in user experience design.
- Google UX Design Certificate:
 - Coursera: Offered by Google, focusing on UX/UI design and associated tools.

Online Training and Courses

- Coursera: A platform offering a wide range of technology courses and specializations, from basic to advanced levels, often in collaboration with top universities and organizations.
- Udemy: A platform with a rich selection of courses on various technology topics, from programming to project management.
- edX: A platform providing courses and certifications in technology, often in partnership with prestigious universities.
- LinkedIn Learning: Offers courses related to technology, project management, data analysis, and many other fields.

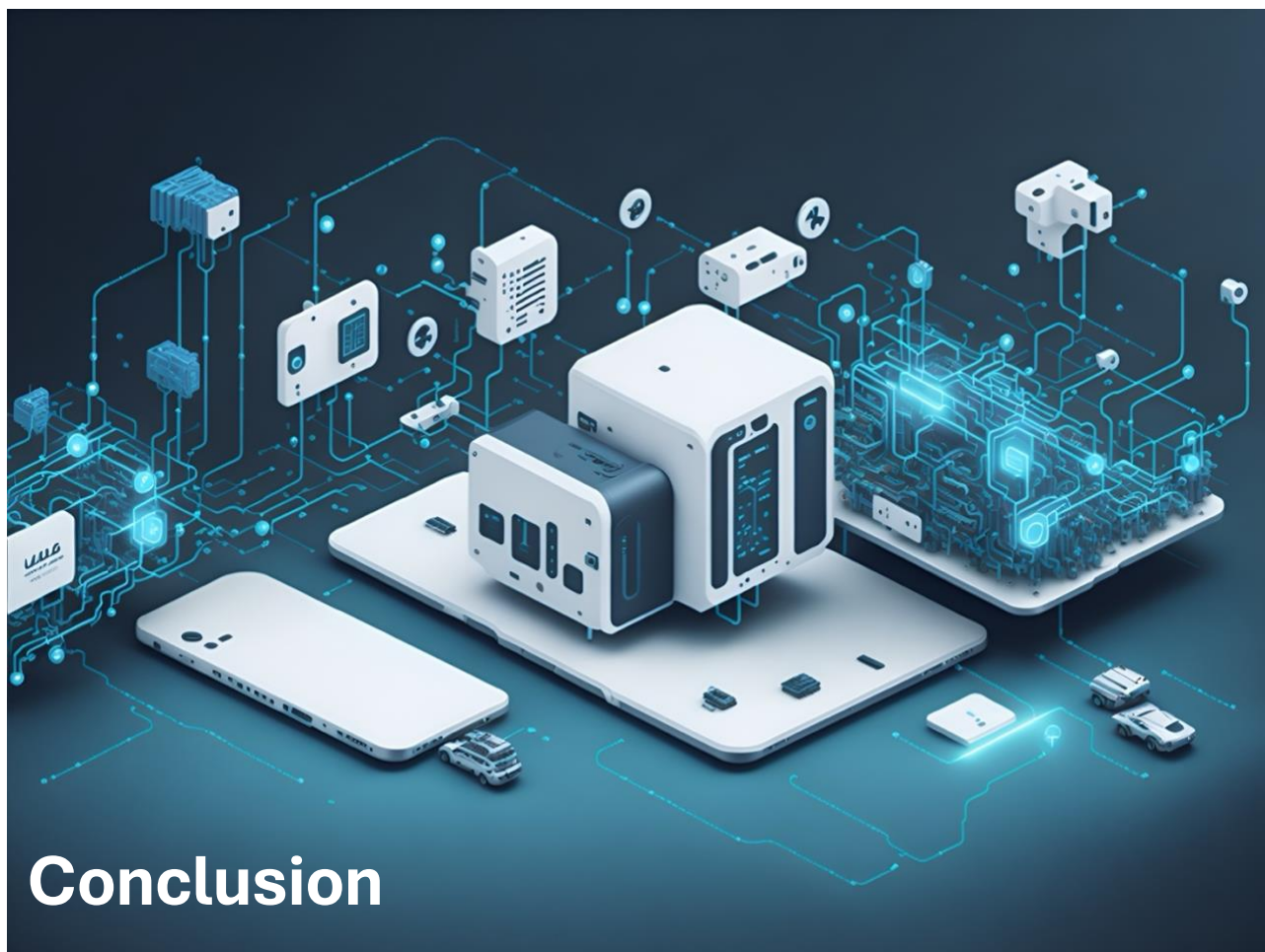
Educational Programs and Bootcamps

- General Assembly: Provides intensive bootcamps in programming, data analysis, UX/UI, and digital marketing.
- Le Wagon: Coding bootcamps focused on learning programming skills and building web applications.



It's essential to note that in addition to certifications, practical knowledge is equally valuable. Practical skills can be acquired through hands-on courses, hackathons, tech internships, and participation in industry projects. This experience is crucial for developing applicable skills in the tech industry.

Participation in hackathons is particularly valuable and appreciated experience. Hackathons are events aimed at programmers, where software developers, along with graphic designers, interface creators, and project managers, are tasked with solving a specific design-related problem. Hackathons are usually held over a short period, often spanning a day or a weekend. The challenge to be addressed is announced at the start of the competition, and only the work completed during the event is considered for evaluation. Online competitions and hackathons are increasingly used by major companies. Hackathons provide programmers with a chance to be recognized, while companies and organizations can identify potential new employees or contractors.



Digital transformation in micro and small enterprises is not only a challenge but also an opportunity for growth and increased competitiveness in the market. Throughout this guide, we have covered essential digital competencies that form the foundation for success in the digital world. From basic computer skills and digital security to data management and modern digital tools, each of these skills is crucial for the effective implementation of digital transformation.

In the following chapters, we presented practical advice and best practices to assist business owners in adapting to dynamic market changes. Effectively implementing these skills also requires continuous steps in developing digital competencies, which will lead to greater flexibility and innovation within businesses.

In this chapter, we will summarize the key points, present further steps for developing digital competencies, and provide a resource base with additional educational materials.

Summary of Key Points

Digital transformation in micro and small enterprises is a crucial factor for enhancing competitiveness and operational efficiency. The following summary outlines the essential points discussed in this guide, which can help entrepreneurs effectively implement digital solutions.

1. Importance of Digital Competencies

- **Foundation of Competitiveness:** Digital competencies are essential for the survival and growth of micro and small businesses in the digital era.
- **Flexibility and Adaptability:** The ability to quickly adapt to changing market conditions and leverage new technologies is key.

2. Key Areas of Digital Competencies

- **Computer Skills:** Knowledge of basic office tools and the ability to work with web-based applications.
- **Digital Security:** Principles of personal data protection and cybersecurity that protect the business from threats.
- **Digital Communication:** Effective use of online communication tools to support team collaboration.
- **Data Management:** Skills in data analysis and visualization, enabling better business decision-making.
- **Digital Content Creation:** Competencies in creating and editing visual materials and marketing content.
- **Project Management:** Use of tools for planning, monitoring, and executing projects.

3. Implementing Digital Transformation

- **Identifying Needs:** Conduct a competency needs analysis within the company to determine areas requiring support.
- **Education and Training:** Participate in courses and workshops to enhance the digital skills of employees and owners.
- **Application of Digital Tools:** Select appropriate tools for managing projects, finances, marketing, and communication.

4. Best Practices in Digital Transformation



- **Team Involvement:** Engage employees in the transformation process to boost motivation and commitment.
- **Learning Culture:** Promote an environment that encourages continuous development and improvement of digital skills.
- **Monitoring Progress:** Regularly evaluate and document progress in digital competencies to allow ongoing adjustments in strategies.

5. Benefits of Digital Transformation

- **Increased Operational Efficiency:** Automation of processes and optimized resource management lead to greater efficiency.
- **New Market Opportunities:** Digitalization enables access to new customers and the introduction of innovative products and services.
- **Data Security:** Implementing digital security principles contributes to better protection of sensitive information.

In summary, developing digital competencies and achieving effective digital transformation in micro and small businesses are essential for success in a rapidly changing market environment. Implementing the recommended practices and principles will allow entrepreneurs to make better use of available tools and increase their competitiveness in the marketplace.

Next Steps in Developing Digital Competencies

Modern micro and small enterprises face the necessity of developing digital competencies both for their employees and for the organization as a whole. Here are key steps that can aid in this process:

1. Analysis of Competency Needs

The first step in developing digital competencies is understanding which skills are essential for the company's growth. This can be achieved by:

- **Conducting a Competency Audit:** Identifying employees' current skills and areas where there are gaps.
- **Defining Business Goals:** Determining the objectives the company aims to achieve, which helps clarify the digital skills needed to reach these goals.

2. Developing a Growth Strategy



Based on the needs analysis, it's beneficial to create a strategy outlining the steps required to enhance digital competencies. Key elements include:

- **Setting Priorities:** Choosing key focus areas such as e-commerce, digital marketing, or data management.
- **Action Plan:** Creating a schedule for training, workshops, and other learning activities to be completed within set timeframes.

3. Selecting Appropriate Learning Methods

A variety of teaching methods allows for tailoring the educational process to employees' diverse learning styles. Options include:

- **In-person and Online Training:** Offering courses that can be conducted in traditional settings or online, depending on employee preferences.
- **Webinars and e-Learning Courses:** Flexible learning forms that can be adjusted to personal schedules.
- **Mentoring and Coaching:** Support from more experienced employees or experts in specific fields.

4. Building a Culture of Innovation and Learning

An essential step is to create a culture that promotes innovation and continuous learning within the organization. This can be achieved by:

- **Encouraging Experimentation:** Employees should feel motivated to try implementing new technologies and approaches.
- **Organizing Regular Meetings:** Introducing recurring meetings where employees can share experiences and new skills.

5. Investing in Technology

Investing in new technologies is crucial for developing digital competencies. It is worth:

- **Exploring New Tools:** Reviewing available software and technologies that could support the development of employees' digital skills.
- **Investing in Hardware and Software:** Providing employees with access to the latest technologies that will aid them in their daily tasks.

6. Monitoring and Evaluating Progress



To assess the effectiveness of the actions taken, it's essential to systematically monitor progress. This can be done by:

- **Regular Competency Assessments:** Organizing periodic tests and evaluations to track skill development progress.
- **Employee Feedback:** Gathering employee opinions on the effectiveness of training and its impact on their daily work.

Developing digital competencies in micro and small enterprises is a process that requires systematic actions and well-thought-out strategies. Identifying needs, creating an action plan, and choosing the appropriate learning methods are crucial. Establishing a culture of innovation, investing in technology, and monitoring progress will enable effective enhancement of digital skills, ultimately contributing to increased competitiveness in the market over time.

Sources and Additional Educational Materials

Developing digital skills in micro and small enterprises requires not only diligence but also access to appropriate educational resources. Here is an overview of valuable sources and materials that can support this process:

1. E-learning Platforms

Today, numerous platforms offer courses and training in digital skills. Here are a few:

- **Coursera:** Offers courses in information technology, digital marketing, and data analysis, conducted by reputable universities and institutions.
- **edX:** A platform that provides access to online courses in various fields, including digital skills, taught by universities.
- **Udemy:** A service with a wide range of courses on specific skills, such as programming, project management, or the use of digital tools.

2. Books and Publications

Professional literature is an excellent source of knowledge.

3. Webinars and Conferences

Attending webinars and conferences can bring many benefits, such as access to the latest information and trends:

- **Webinars offered by industry organizations:** These often organize free webinars on digital skills.



- Tech conferences: Participating in industry events allows for the exchange of experiences and networking with other entrepreneurs.

4. Government Resources and Non-Governmental Organizations

Many organizations provide support for developing digital skills:

- EU funds: Programs like the European Social Fund can support training for employees of micro and small enterprises.
- Local business support centers: These often offer free or low-cost training and advisory services.

5. Support Groups and Social Networks

Belonging to industry groups or social networks can support skill development:

- LinkedIn: A platform that not only enables networking but also offers discussion groups focused on digital skill development.
- Facebook: There are groups dedicated to digital topics where members can share experiences and ideas.

6. Tools for Learning and Practice

Using practical learning tools can significantly speed up skill development:

- Simulations and educational games: These tools can aid learning by applying skills in practical scenarios.
- Mobile apps: Numerous apps provide interactive ways to learn digital skills, such as programming languages or project management platforms.

Access to the right sources and educational materials is crucial for developing digital skills in micro and small enterprises. Utilizing e-learning platforms, professional literature, attending webinars, leveraging government resources, joining support groups, and using practical educational tools are strategies that can significantly enhance the digital skill development of employees. By supporting employees in their education, micro and small enterprises can become more competitive and innovative in the market.



Appendices

Sample Tools and Software with a List of Useful Links and Online Resources

Basic Computer Skills

Operating Systems

- **Windows:** <https://www.microsoft.com/pl-pl/windows?r=1>
- **MacOS:** <https://www.komputronik.pl/informacje/jak-dziala-system-macos-poradnik-dla-poczatkujacych/>
- **Linux:** <https://www.komputronik.pl/informacje/jaki-linux-najlepsze-dystrybucje-linuxa/>

Search Engines

- **Google:** <https://www.google.pl/>
- **Bing:** <https://www.bing.com/>
- **Yahoo:** <https://www.yahoo.com>

Email Services

- **Gmail:** <https://workspace.google.com/intl/pl/gmail/>
- **Outlook:** <https://www.microsoft.com/pl-pl/microsoft-365/outlook/email-and-calendar-software-microsoft-outlook>
- **ProtonMail:** <https://proton.me/pl/mail>
- **Onet Mail:** <https://konto.onet.pl/>
- **WP.pl Mail:** <https://poczta.wp.pl/login/login.html>
- **Interia Mail:** <https://poczta.interia.pl/logowanie/>
- **O2.pl Mail:** <https://poczta.o2.pl/login/login.html>

Basic Office Applications

Text Editors

- **Google Docs:** <https://workspace.google.com/products/docs/>,
<https://www.google.com/docs/about/>
- **LibreOffice Writer:** <https://pl.libreoffice.org/poznaj/writer>
- **Microsoft Word:** <https://www.microsoft.com/pl-pl/microsoft-365/word>

Spreadsheets

- **Microsoft Excel:** <https://www.microsoft.com/pl-pl/microsoft-365/excel>



- **Google Sheets:** <https://workspace.google.com/products/sheets/>
- **LibreOffice Calc:** <https://pl.libreoffice.org/poznaj/calc/>

Creating Multimedia Presentations

- **Microsoft PowerPoint:** <https://www.microsoft.com/pl-pl/microsoft-365/powerpoint>
- **Google Slides:** <https://workspace.google.com/products/slides/>

Task Organization, Time, and Project Management

- **Microsoft Outlook:** <https://www.microsoft.com/pl-pl/microsoft-365/outlook/email-and-calendar-software-microsoft-outlook>
- **Google Calendar:** <https://calendar.google.com/>
- **Trello:** <https://trello.com/pl>
- **Asana:** <https://asana.com/pl>

Online Versions of Office Applications

- **Google Workspace:** <https://workspace.google.com/>
- **Google Docs (Text Editor):** <https://docs.google.com/document/u/0/>
- **Google Sheets (Spreadsheets):**
<https://workspace.google.com/products/sheets/>
- **Google Slides:** <https://workspace.google.com/products/slides/>
- **Google Drive:** <https://workspace.google.com/intl/pl/products/drive/>

Internet Safety Guidelines

- **Information Source 1:** <https://kwestiabezpieczenstwa.pl/>
- **Information Source 2:** <https://www.saferinternet.pl/>
- **Report Fraudulent Emails or Texts:** <https://incydent.cert.pl/#!/lang=pl>

Personal Data Protection

- **Personal Data Protection Act:**
<https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180001000>
- **Office of Personal Data Protection:** <https://uodo.gov.pl/>

Online Communication Tools

Instant Messaging

- **Slack:** <https://slack.com/>
- **Microsoft Teams:** <https://www.microsoft.com/pl-pl/microsoft-teams/log-in>
- **WhatsApp:** https://www.whatsapp.com/?lang=pl_PL



Videoconferencing Tools

- **Zoom:** <https://www.zoom.com/pl>
- **Google Meet:** <https://workspace.google.com/products/meet/>
- **Microsoft Teams:** <https://www.microsoft.com/pl-pl/microsoft-teams/log-in>

Virtual Team Management

Project Management

- **Trello:** <https://trello.com/pl>
- **Asana:** <https://asana.com/pl>
- **Monday.com:** <https://monday.com/lang/pl>

Messaging

- **Slack:** <https://slack.com/>
- **Microsoft Teams:** <https://www.microsoft.com/pl-pl/microsoft-teams/log-in>

Real-Time Collaboration Tools

- **Google Workspace:** <https://workspace.google.com/business>
- **Microsoft 365:** <https://www.office.com/>

Data Analysis and Analytical Tools

Spreadsheets

- **Microsoft Excel:** <https://www.microsoft.com/pl-pl/microsoft-365/excel>
- **Google Sheets:** <https://workspace.google.com/products/sheets/>

Data Visualization

- **Google Data Studio:** <https://lookerstudio.google.com/overview>
- **Excel:** <https://www.microsoft.com/pl-pl/microsoft-365/excel>
- **Power BI:** <https://powerbi.pl/microsoft-power-bi>
- **Tableau:** <https://www.tableau.com/>

Content Creation and Editing

Document Editors

- **Microsoft Office Suite:** <https://www.microsoft.com/pl-pl/microsoft-365>
- **Microsoft Word:** <https://www.microsoft.com/pl-pl/microsoft-365/word>
- **Google Docs:** <https://docs.google.com/document/u/0/>
- **LibreOffice Writer:** <https://pl.libreoffice.org/poznaj/writer/>

Creating Multimedia Presentations



- **Microsoft PowerPoint:** <https://www.microsoft.com/pl-pl/microsoft-365/powerpoint>
- **Google Slides:** <https://workspace.google.com/products/slides/>
- **Canva:** <https://www.canva.com/>
- **Prezi:** <https://prezi.com/>
- **Visme:** <https://www.visme.co/>
- **LibreOffice Impress:** <https://pl.libreoffice.org/poznaj/impress/>

Fundamentals of Graphic Design and Photo Editing

- **Adobe Photoshop:** <https://www.adobe.com/pl>
- **GIMP (GNU Image Manipulation Program):** <https://www.gimp.org/>
- **CorelDRAW:** <https://www.coreldraw.com/pl/>
- **Adobe Illustrator:** <https://www.adobe.com/pl/products/illustrator>
- **Inkscape:** <https://inkscape.org/>
- **Blender:** <https://www.blender.org/>
- **Figma:** <https://www.figma.com/>
- **Canva:** https://www.canva.com/pl_pl/



Survey Analysis Report - SPAIN

Introduction

The DigiSecureSMS project is a European research consortium of 2 organisations from 2 countries (Poland and Spain) co-funded by the European Union's Erasmus+ programme.

DigiSecureSMS aims to develop digital skills among micro and medium-sized enterprises by developing an e-learning platform with training that represents cutting-edge knowledge in the fields of digital skills to meet the needs of micro and medium-sized enterprises.

The report aims to **understand the current level of digital skills, training needs, and preferences regarding training formats and content**. Present the results of the survey on training needs regarding digital competences in micro and small enterprises

Methodology

We have used a **quantitative data analysis process** to analyse and interpret our numerical data. It has helped us make sense of information by identifying patterns, trends, and relationships between variables through mathematical calculations and statistical tests. Moreover, we made a **sampling method analysis data** that is numbers-based – or data that can be easily “converted” into numbers without losing any meaning. This supposed to measure differences between our groups and to assess relationships between our variables and involves the division of a population into smaller subgroups known as strata.

In response to the research questions, we controlled for variables relating to the demographic characteristics of the sample (gender), company details (type, sector and position) and socioeconomic status (educational level) **re-codified into a categorical variable for a better analysis**.

On the other hand, in the area of digital skills we measure the digital skills level (rate and knowledge), training needs (learner profile) and training preferences (formats and content).

The Survey does not focus so much on an objective measurement of digital skills, but rather on an observation of the perception of our population regarding their digital skills. To do this, we analyse the self-perception of digital skills from a broad and comprehensive perspective and digital self-confidence.

The gender distribution among participants **was 38,5% male and 61,5 % female**, with no non-binary participants.

The survey was conducted online by Google Form **between June and July 2024** on a random sample of **39 valid questionnaires** using a quantitative research method. The intersection of the results identified current digital needs areas.



Survey Results

Section 1: General Information

The distribution of the sample by region (Spain) reflects distribution micro and small enterprises density and characteristics. The overwhelming majority of small and medium-sized enterprises are micro. Companies employing between 1 and 5 workers account for 33.17 % of the total, 7.89 % have between 6 and 49 workers, and 1.01 % employ 50 or more. (Eures, 2023). **In accordance with the analyzed statistical data the distribution is micro (1-5 people) the 69,20% and small (6 until 49 people) the 30,80% (Annex 1).**

The **industry distribution** indicates that the **professional, scientific and technical activities and education** (7 answers) and Commerce (6 answers) are the most frequent ones and being other services (4 answers), the second ones mentioned. 3 responders are from Information and communications industry, Hospitality, Construction, Real estate activities, financial activities and insurance and Manufacturing industry have 2 answers and transport and storage and Health activities and social services only 1 answer. (Annex 1).

About the **department distribution** of respondents, they were split different ones (Annex 1) being the most frequents: **sales (6 answers), management (5 answers), direction and training (4 answers)**. We have administration (3 answers), design (2 answers) and different departments have 1 answer: Interior design, Store manager, Fundraising, Financial, Insurance, Human Resources, Accounting, Consulting, Logistics, Engineering, CEO Office, Technician, Operating room, Maintenance and Technology, **Moreover, the most common positions among respondents are CEO, 12 responders (Annex 1), followed by manager, 6 responders, being the average length of employment in the company 11 years and 8 months**

Finally, the educational attainment among the respondents varied, **with 2,60% having primary level, 12,80% with secondary education, 33,30% have a bachelor's degree, 12,80% holding a degree, 20,50% possessing a master's degree and 18 % others (Other – Doctorate 2,60% and 15,40% Other - Higher Degree)** (Annex 1).

Section 2: Current Level of Digital Competence

The first State of the Digital Economy and Society Index (DESI), published in September 2023, makes a balance of the EU's progress towards successful digital transformation for people, businesses and the environment. Spain ranks 7th out of 27 EU Member States in the 2022 edition of the Digital Economy and Society Index (European Commission, 2022)

When comparing the self-Assessment of Digital Skills of our individuals in the Spain, we see that (Annex 2) one responder indicated no having skills, 5 have basic skills, 21 selected an intermediate level and only 12 remarked having an advanced level.



Continuing from the approach of the relationship between the self-Assessment of Digital Skills and frequency of use, the second point of the section was to analyze the frequency of Using Digital Tools. Having a positive self-Assessment of Digital Skills about digital tools means more effective use but, if you use them more this means that you have better skills? Practice is the key to developing digital skills. If you want to improve your programming skills, for example, you should spend time programming. If you want to improve your digital marketing skills, you must implement strategies in a real campaign and analyze their results. Constant practice will help you better understand the concepts and acquire practical experience. In our case, **our participants showed a high level in the frequency of using digital tools (daily - 37 answers – 94,9% and several times a week – 2 answers – 5,6%)** (Annex 2).

Section 3: Assessment of Digital Competences

In 2023, 66.2% of the Spanish population had at least a basic level of digital skills, above the EU average of 55.6% (DESI, 2021) but still far from the objective set by Digital Europe to be reached by 2030, with 80% of the population with basic digital skills. Moreover, almost half of the Spanish population lack basic digital skills and 8% of the Spanish population have never used the internet. Also, 35% of the workforce have insufficient digital skills (DESI, 2021). Moreover, actually 46% of Spanish companies have problems to find the digital profiles they need and look for (CEDEFOP, 2023). And what is the reality of our responders?

At this section (Annex 3) we analysed different digital knowledges and their distribution of skills level. Starting with the **Basic Office Application**, 10 of the responders indicated having an advanced level of skills, 20 have an intermediate and 9 basic level. Furthermore, 16 of the answers designated an advanced on **digital communication**, 19 selected an intermediate level and 4 a basic level. **On data analysis**, 16 headlined a basic and intermediate level, only 6 with an advanced level and 1 with no skills.

About the specialized competences as **digital security**, the most frequent answer was intermediate, 14 answers, followed by 11 – basic, 6 advanced and 8 with no skills and about the **Content Management Systems (CMS)** a big number, 17 answers, don't have skills, 14 indicated 14 basic skills and 4 of the responders selected intermediate or advanced skills.

Creating Digital Content has been another knowledge analyzed. In this sense, 13 participants have an advanced level, followed by 13 with an intermediate level, 11 with basic one and 3 with no skills. Another aspect asked was the knowledge of **Project Management Tools** being the most selected level was the intermediate, 14 answers, 10 had basic level, 8 no skills and the least indicated, 7 answers, was advanced one. The **Business Process Automation** is the one with the highest level of no skills, 23 answers, 9 with basic and 7 with intermediate level. Finally, **Generative artificial intelligence** (a new demanded digital



knowledge) was inquired obtained a high level of no skills (17 answers), 14 basic level and 8 with intermediate level.

Section 4: Training Needs

After knowing the gaps about digital skills and knowledge it is time of knowing the most demanded training needs and the training specifications selected by responders.

Starting with the **areas for Digital Competence Development (Annex 4)**, the most commonly selected areas were Artificial Intelligence (12 times selected), Creating digital content (9 times selected), Data analysis (5 times selected) and Digital security (4 times selected).

And, which type of training our participants prefer?

We see that in 2023, 30% of EU internet users aged 16 to 74 reported that they had done an online course or used online learning material in the three months prior to the survey. This is a 2-percentage point (pp) increase compared with 2022 (28%). (Eurostat, 2023). In our case, **the distribution of preferences** training formats shows us that the most preferred are Online courses in e-learning format (33,30%) and Practical workshops (25,60%), followed by Classroom training and Live online training (15,40%) and Webinars (10,30%) (Annex 4), what shows us a relationship between the preferred training format of our responders and the increase of online EU users.

Another aspect analyzed in this section was the characteristics of the training (Annex 4) starting with **the Duration of the Training**. The Short sessions (1-2 hours – 25 answers) was the preferred, 12 responders selected the Medium sessions (3-4 hours) and only 1 indicated Long sessions (full day) or Multi-day training. About the **Preferred Training Frequency**, the distribution of answers shows that Once a week (18 responders) is the preferred one, Several times a week (15 responders) is the second one selection, only 4 responders selected one a month and 2 daily. Finally, 20 participants didn't select either “individual” or “group training” and indicated no preferences about this aspect. 7 choose Individual and 12 group training.

Section 5: Specialized Training Needs

Along this section we will go on deep on the **specialized training needs and the specific interest in each of them** (Annex 5).

The **46,20%** of responders are interested in **Digital Marketing being the Social media marketing** the most chosen theme (10 times selected). The SEO (search engine optimization - 9 times selected) and creating online advertising campaigns (7 times selected). Web analytics (Google Analytics) was indicated 6 times, Email marketing 5 times and SEM (search engine marketing) 4.



About the **E-commerce** the **28,20%** indicated his interest in it, 7 of them in E-commerce marketing and 6 indicated Creating and managing an online store or Online sales strategy. E-commerce platforms (Shopify, WooCommerce, etc.) was indicated by 4 responders, Online payments and transaction security by 2 and Logistics and order management by 1.

The 33,30% of participants showed his interest in **IT Management**, choosing 6 times the topic on IT security or IT project management and 3 times IT infrastructure management, Operating systems administration (Windows, Linux) or Virtualization and cloud computing and DevOps and IT process automation was indicated 1 time.

On Data Analysis 46,20% of responders answered with a yes being the preferred topics Advanced data analysis in Excel (12 times selected), Machine Learning and artificial intelligence (9 times selected) and Analytical tools (Power BI, Tableau) (6 times chosen). Big Data and large dataset processing technologies and Data visualization were indicated 5 times and Programming in R or Python for data analysis 2 times.

The Creating Digital Content interest 53,80% of participants, of which 9 of them choose Creating multimedia presentations or Photo and video editing as the favorite ones, followed by Copywriting and creating marketing content (7 times indicated), Creating and editing text documents or Web design (HTML, CSS) with 5 selections and Basics of computer graphics 4 times.

The **41,00% of responders** indicated an interest in **Business Process Automation**, Business process management (BPM) and Microsoft Power Automate were selected 8 times, Creating scripts to automate tasks 7 times and Robotic process automation (RPA) 3 times.

76,90% showed an interest in **Artificial Intelligence Tools and Content Creation** in which 11 times AI Business Applications was chosen, AI apps was 9 times indicated, GenAI for design: text prompts and visual communication and AI to boost productivity 7 times and GenAI for text: ChatGPT and Prompt Engineering 5 times.

4. Conclusions and Recommendations

The skills gap can delay individual professional opportunities. Furthermore, employees who have a lack of the necessary digital skills to move up the career may find themselves stuck in their current roles or the ones who are looking for a new laboral opportunity can be stumped for the lack of the needed digital skills. In order for companies to reach an optimal level of digital maturity, it is not enough to simply incorporate technologies, but employees need to know how to make good use of them, which is why the acquisition of digital skills is essential.

Acquiring or improving digital skills can enhance workforce employability and career prospects. In an increasingly technology-driven job market, having strong digital



competencies can set individuals apart from their peers and open doors to new opportunities.

Despite of the 66.2% of the population has basic or advanced skills the 46% of Spanish companies have problems to find the digital profiles they need and look for (CEDEFOP, 2023). When comparing the self-Assessment of Digital Skills of our individuals in the Spain, we see that **one responder indicated no having skills, 5 have basic skills, 21 selected an intermediate level and only 12 remarked having an advanced level.**

Summarizing the **Assessment of Digital Competences**, we see that although responders indicated an **intermediate level** in 6 of 9 of the digital knowledge (**Basic Office Application digital communication, data analysis, digital security, Creating Digital Content and Project Management**) there are also a considerable number of participants who expressed a basic level in this knowledge (Basic Office Application- 9 answers- digital communication – 4 answers, data analysis – 16 answers, digital security – 11 answers, Creating Digital Content – 11 answers, Project Management Tools – 10 answers). On the other hand, the responders also indicated **don't have skills about Content Management Systems (CMS), Business Process Automation and Generative artificial intelligence.**

Although all these gaps indicate the need of training and programs to increase workers professional competitiveness, the reality in Spain is that although 9.6% of companies with 10 or more employees use Artificial Intelligence, 18.6% use Business Intelligence and 31.7% purchase Cloud Computing services, 31.7% of companies made sales through electronic commerce in 2022, increasing the volume of business generated by 20.3% compared to 2021, only 20% of Spanish companies invest in digital training for their employees, and, in the case of SMEs, this percentage drops to 4% (Idescat, 2023). Digital skills in SMEs are fundamental to continue to grow and evolve their business.

Looking at our results, we see that training can be one of the solutions that could help address the digital gaps in Spain (only 7 of responders have received a comprehensive and sufficient training – Annex 6).

Possible specific actions what can be done to eliminate the digital gaps and break the possible resistance to use them can be:

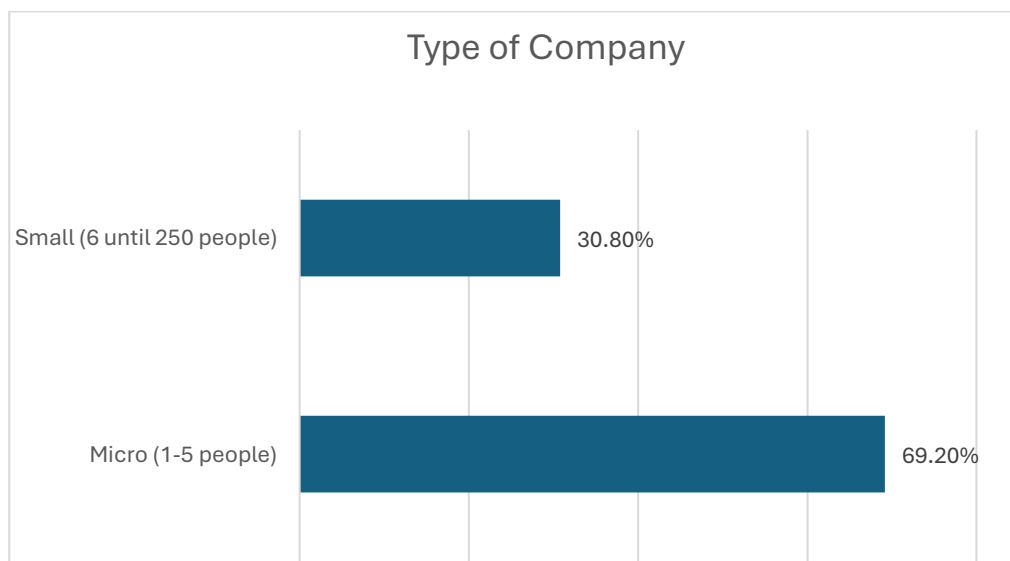
- Create easy and impactful training programs / courses
- Link digital transformation to professional growth
- Train workers with the right tools
- Understand the reasons for “their resistance”
- Continuously monitor the progress of training programs and adjust them as necessary based on participants feedback and results achieved.



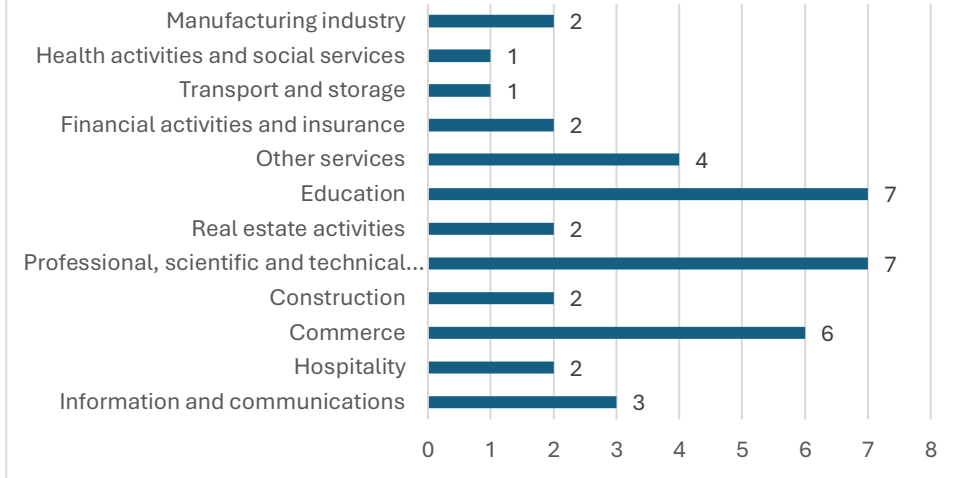
- Identify where the “gaps” in the digital competence of each employee are, appropriate measures can be put in place: implementation of a self-diagnosis.
- To increase the motivation of employees and the experience of this process, for example, by gamifying the self-diagnosis application or trainings.

Based on the results obtained, it is clear that the use of technology helps and offers tools that make it possible to identify the level of digital maturity (of companies and workers) and serve as a basis for the definition of training plans and specific actions that help to increase and improve their skills, becoming a primary objective for SMEs. If SMEs want to move forward with their digitalisation process in order to be ready for the demands of the market, staff belonging to these SMEs must have sufficient digital skills. Digital transformation plans must go together with a suitable change-management strategy that ensures adequate support, because they suppose a cultural change in the mode of working, making decisions and relating. It is not enough for companies to capitalize in technological tools, but it is also needed to invest in continuous training so that staff know how to use them. To do this, it is necessary to conduct a prior in-depth analysis of the company’s talent needs so as to focus the resources.

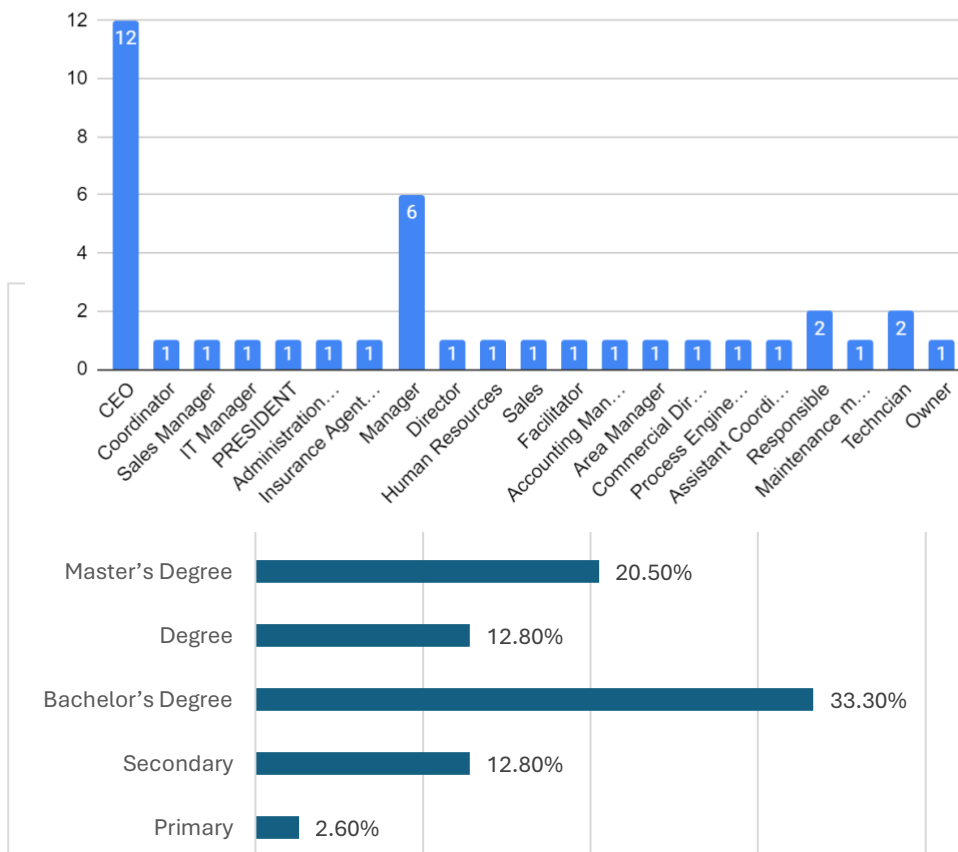
Annex 1 - Section 1: General Information



Industry Distribution

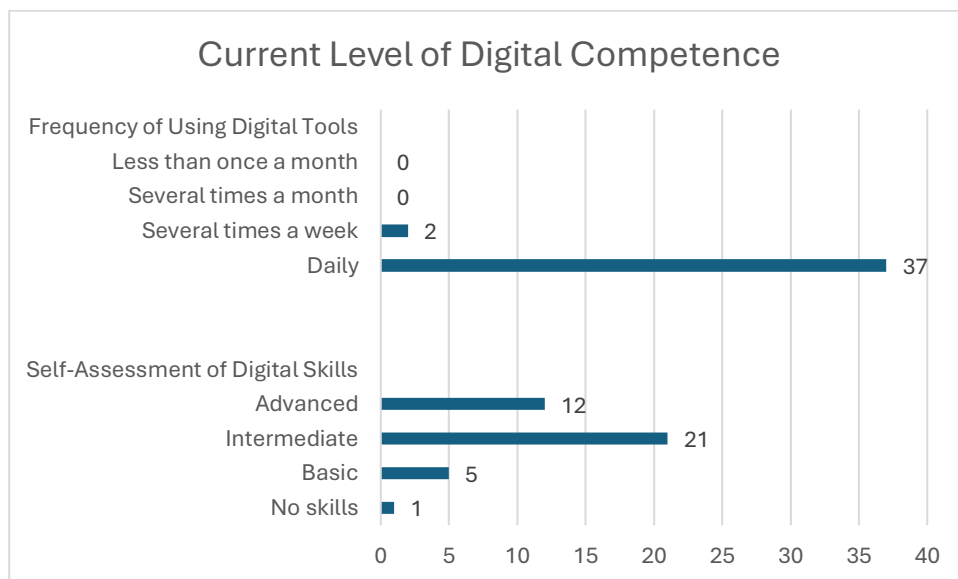


Position of the person completing the survey



Department	
Direction	4
Administration	3
Sales	6
Management	5
Interior design	1
Store manager	1
Fundraising	1
Financial	1
Insurance	1
Human Resources	1
Training	4
Accounting	1
Consulting	1
Logistics	1
Engineering	1
CEO Office	1
Technician	1
Operating room	1
Maintenance	1
Design	2
Technology	1

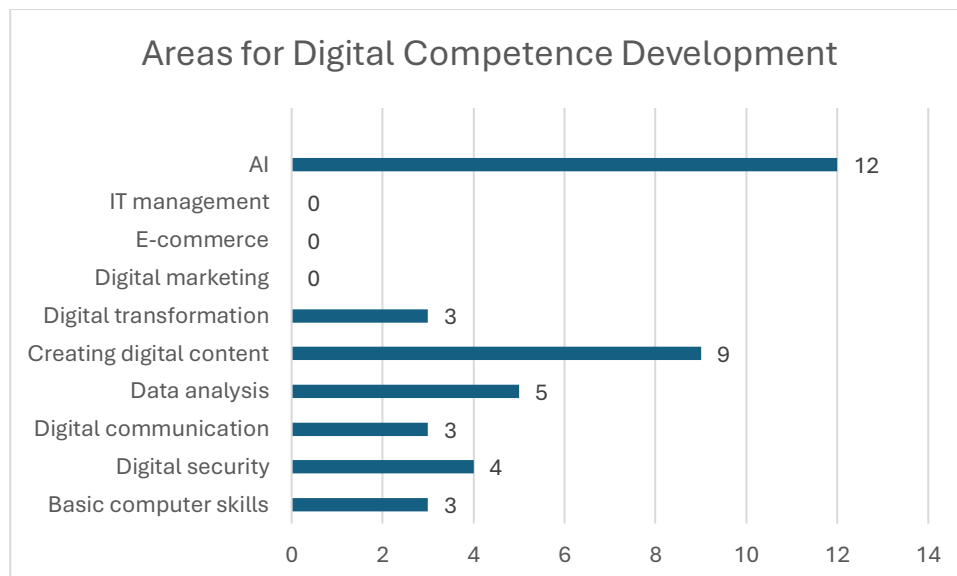
Annex 2 - Section 2: Current Level of Digital Competence



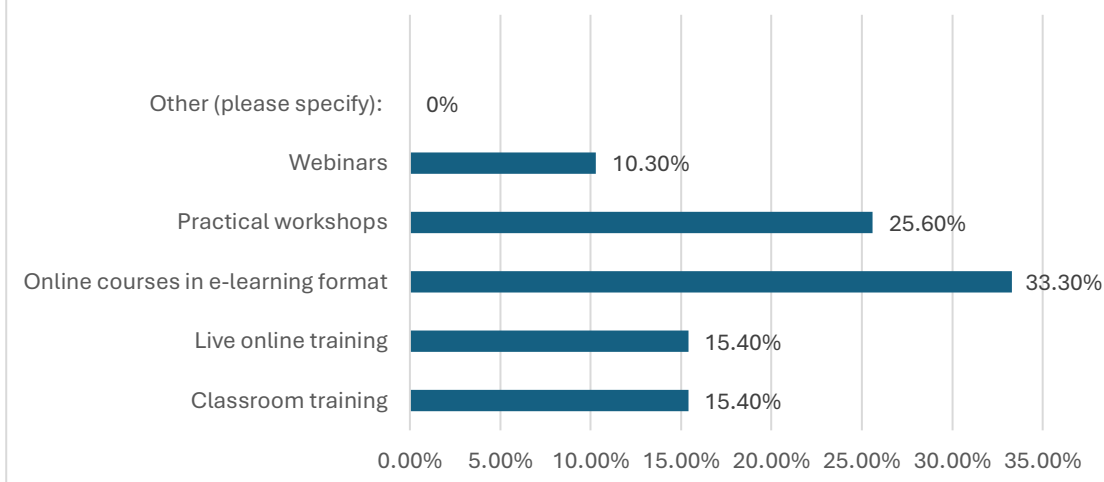
Annex 3 - Section 3: Assessment of Digital Competences

	Basic Office Applications	Digital Security	Digital Communication	Data Analysis	Creating Digital Content	Project Management Tools	Content Management Systems (CMS)	Business Process Automation	Generative artificial intelligence
No skills	0	8	0	1	3	8	17	23	17
Basic	9	11	4	16	11	10	14	9	14
Intermediate	20	14	19	16	12	14	4	7	8
Advanced	10	6	16	6	13	7	4	0	0

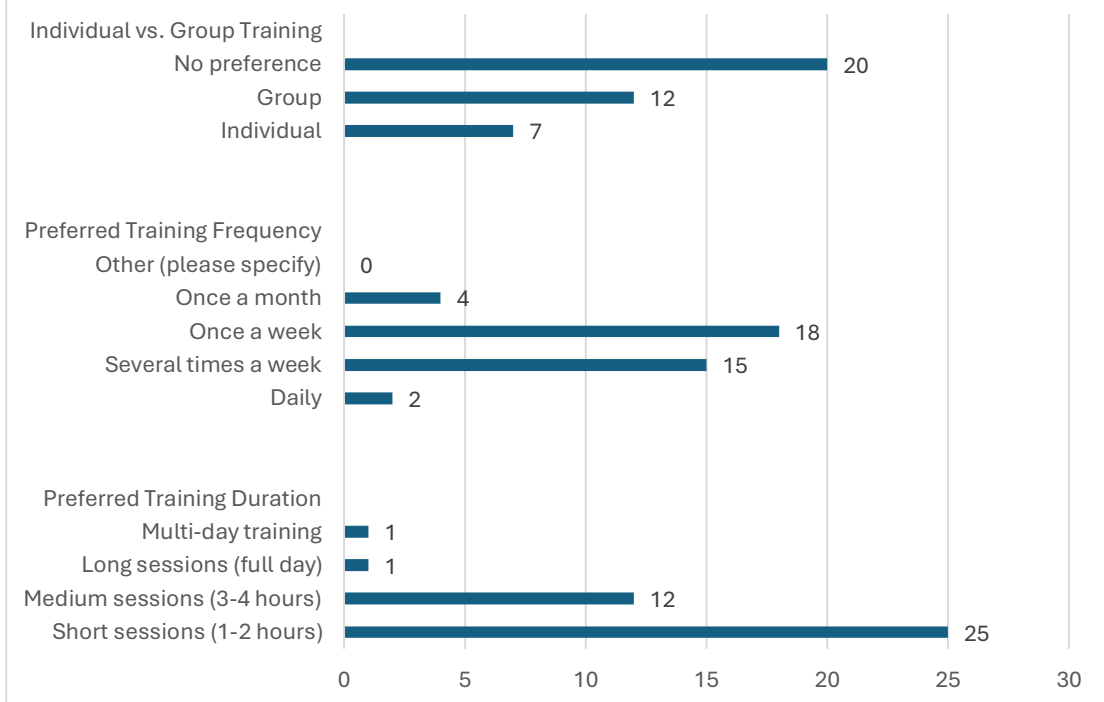
Annex 4 - Section 4: Training Needs



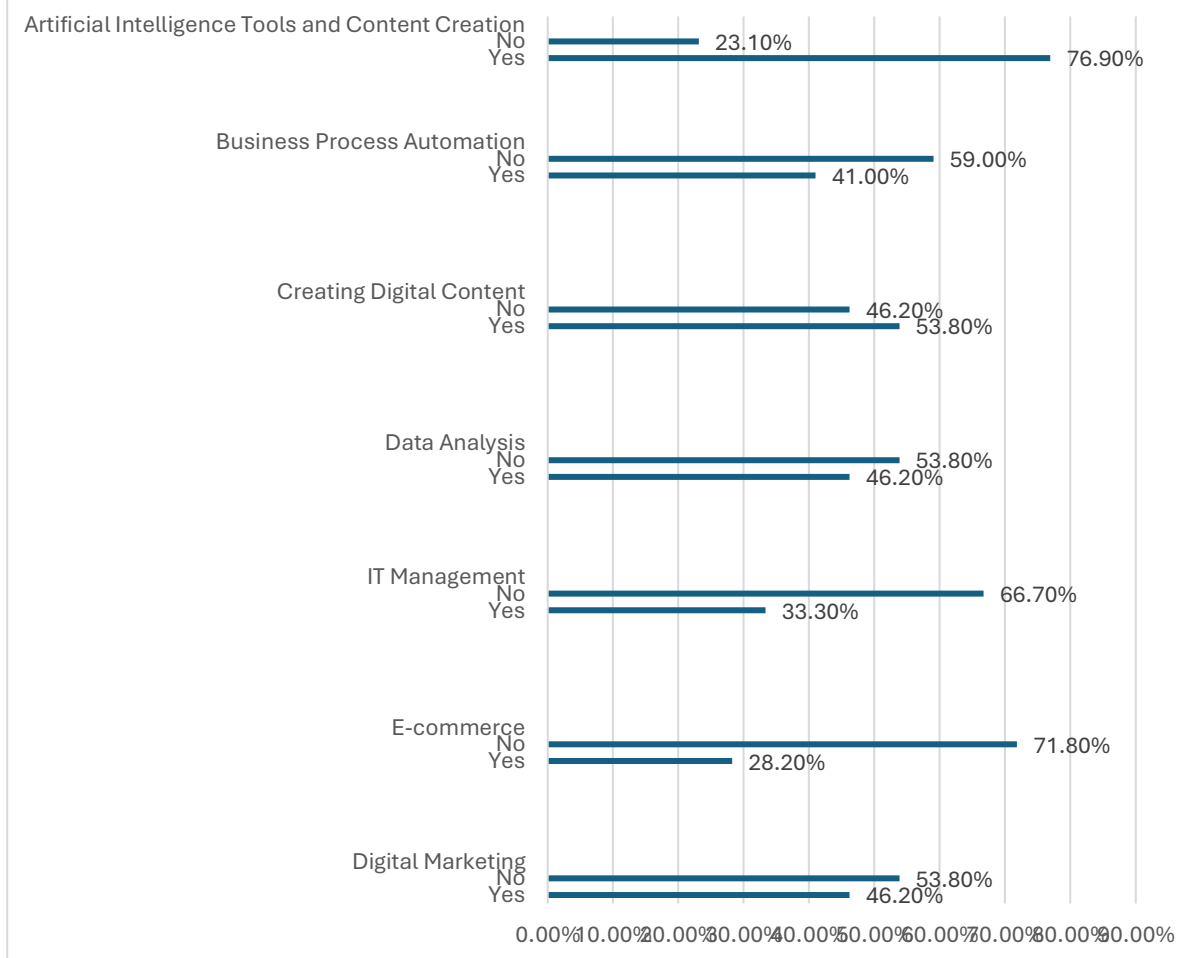
Preferred Training Formats



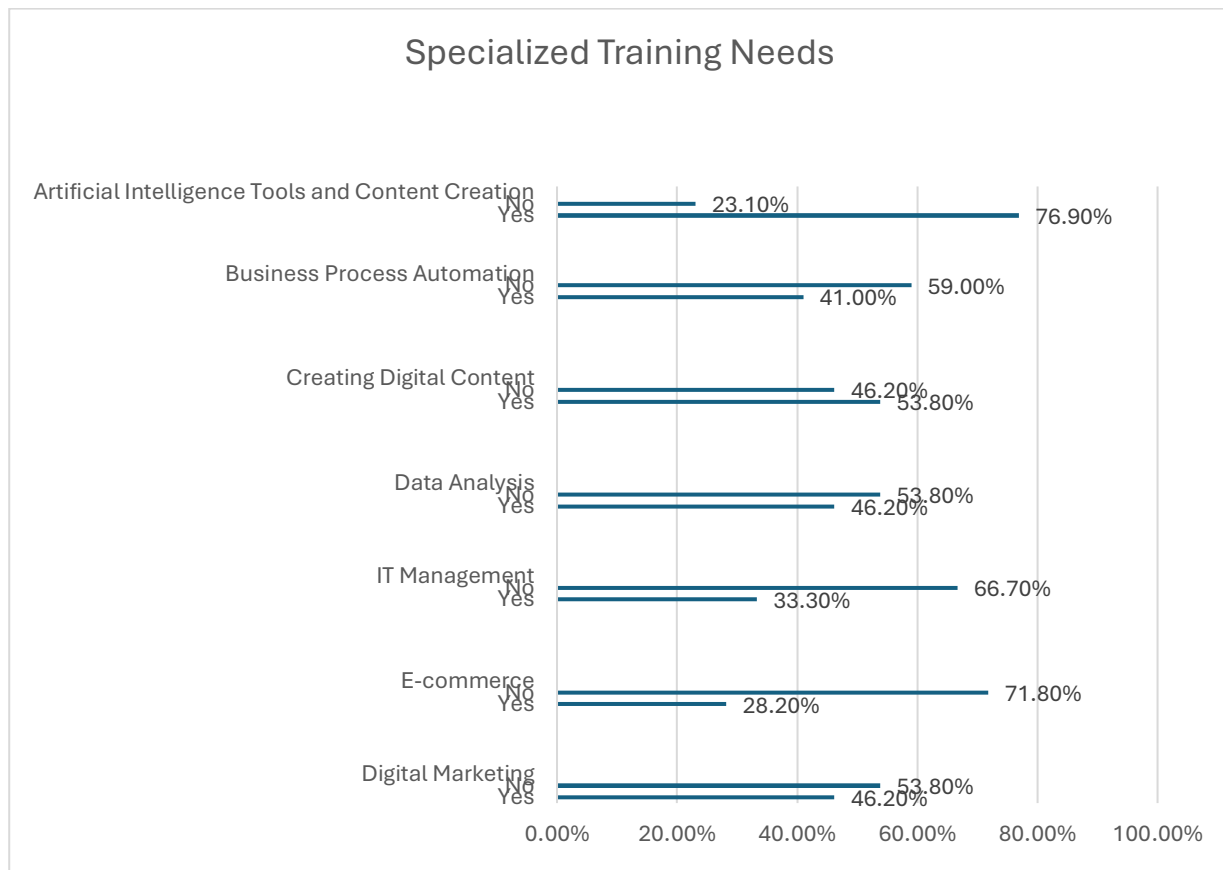
Training Characteristics



Specialized Training Needs

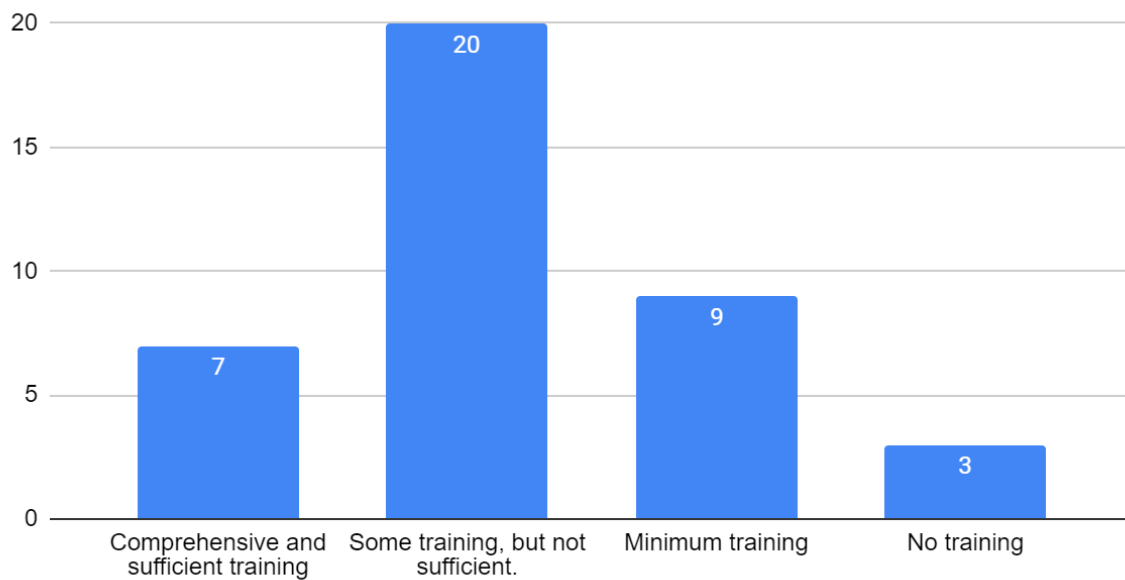


Annex 5- Section 5: Specialized Training Needs



Annex 6 – Training received

Have you received any training to understand or use digital tools?



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Survey Analysis Report - POLAND

Introduction

The project "Digital competences as a chance for a more secure tomorrow" implemented by the Education, Health, Development Foundation in cooperation with the Spanish organization M&M Profuture Training, aims to support the digital transformation of micro and small enterprises (MiM) through the development of digital competences of their management and employees. The project is co-funded by the Erasmus+ programme (KA210-VET) and its activities include the development of an interactive course, a digital competence guide, self-assessment tools, and final workshops and conferences.

The aim of this report is to analyse the results of surveys conducted among Polish MiM entrepreneurs. The survey aimed to assess the level of digital competence, identify training needs and preferences for the format and scope of future training. These results will be the basis for the development of tailored educational materials and tools that will support Polish entrepreneurs in increasing their competitiveness on the digital market.

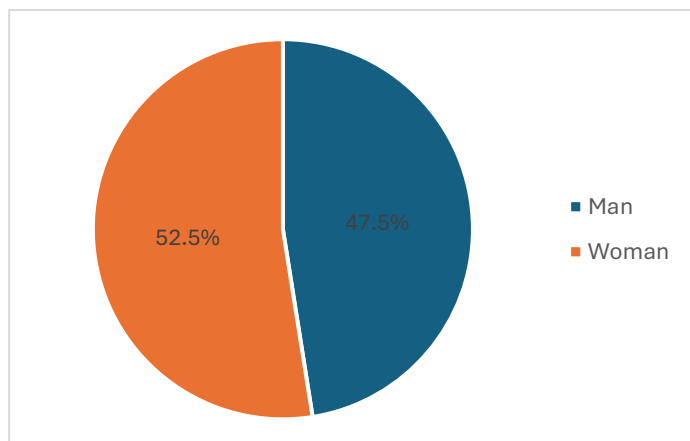
Methodology

The survey consisted of six sections:

- Background information on respondents (type of company, sector, job title, seniority, level of education, gender).
- Self-assessment of the current level of digital competence.
- A detailed self-assessment of skills in different digital areas (e.g. office applications, digital communication, digital security).
- Training needs (areas of development, preferred forms, duration and frequency of training, individual vs. group classes).
- Specialized training needs (e.g., digital marketing, e-commerce, IT management, data analytics, digital content creation, business process automation, use of artificial intelligence).
- Additional comments from the participants.

The survey was conducted on a random sample of 40 companies, which included representatives of MiM. 47.5% of the sample were men and 52.5% were women. No non-binary participants were enrolled.





Drawing 1 Gender of respondents - own elaboration based on the survey

The survey was conducted online using Google Forms, between June and July 2024. A quantitative method of data analysis was adopted, which made it possible to transform responses into numerical data, statistical analysis, and identify trends and relationships between variables.

During the analysis of the results, demographic variables (e.g. gender), details about companies (type, sector, position) and socio-economic status (level of education) were controlled. Digital competences were assessed in terms of their level (e.g. basic, advanced), training needs, and preferences for training formats and content.

The approach used made it possible to identify areas requiring support in the field of digital competences and to create the basis for the preparation of appropriately tailored training materials and development strategies for MiM.

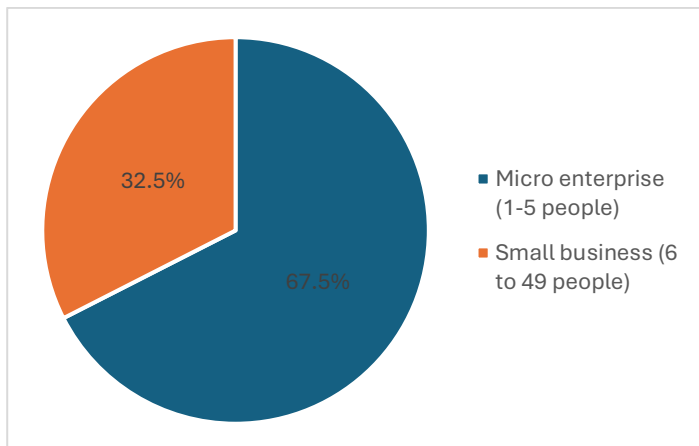
Survey results

Section 1: general information

The SME sector (micro, small and medium-sized enterprises) accounts for the overwhelming majority of enterprises in Poland – 99.8%. Among them, the largest group (97.2%; 2.3 million) are micro-enterprises. The share of small companies in the structure of Polish enterprises is 2.1% (48.7 thousand), medium-sized companies – 0.6% (14.6 thousand), and large companies – only 0.2% (3.8 thousand).¹⁹

¹⁹ State of the SME Sector Report 2023 -

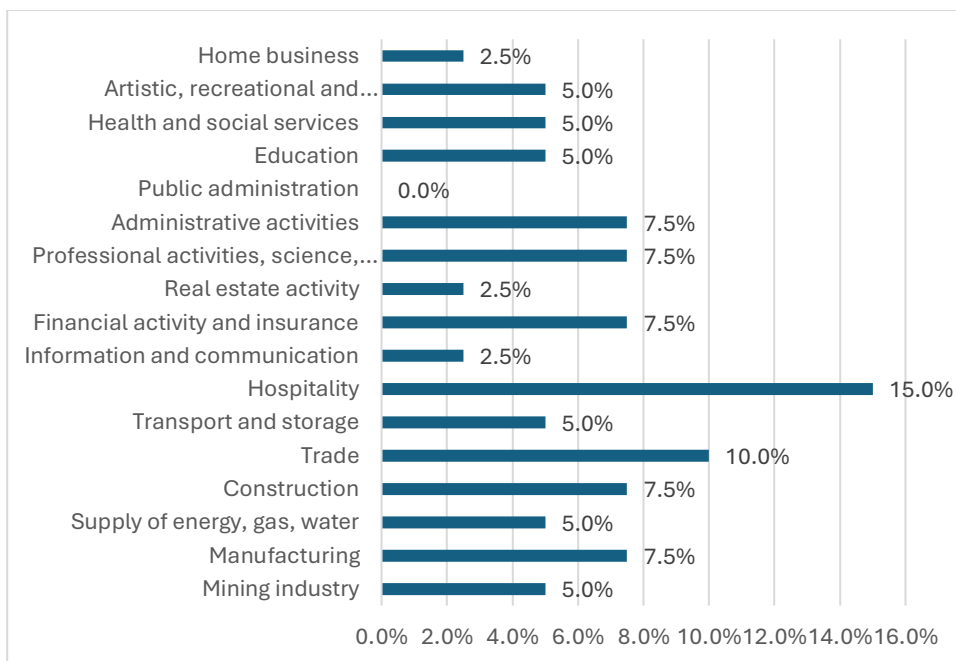
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Drawing 2 Type of company - own work based on survey results

According to the analysed statistical data, the distribution is as follows: micro-enterprises (1-5 people) account for 67.5% and small enterprises (6-49 people) for 32.5%.

The survey identified **40 participants** representing the following industries.



Drawing 3 Industries of the companies participating in the survey - own elaboration based on survey results

Hospitality: (15%)

Trade: (10%)

Professional, scientific and technical activities: (7.5%)

Financial and insurance activities: (7.5%)

Manufacturing: (7.5%)

Construction: (7.5%)

Administrative activities: (7.5%)

Transport and storage: (5%)

Mining Industry: (5%)

Energy, gas, water supply: (5%)

Education: (5%)

Health and social services: (5%)

Arts, recreation and entertainment activities (5%)

Real Estate Activities: (2.5%)

Information and communication: (2.5%)

Home Business: (2.5%)

Hospitality (15%): Represents the largest group, suggesting a large representation of the travel industry and accommodation-related services in the survey.

Trade (10%): Retail as an important industry indicates the importance of this activity in the local economy.

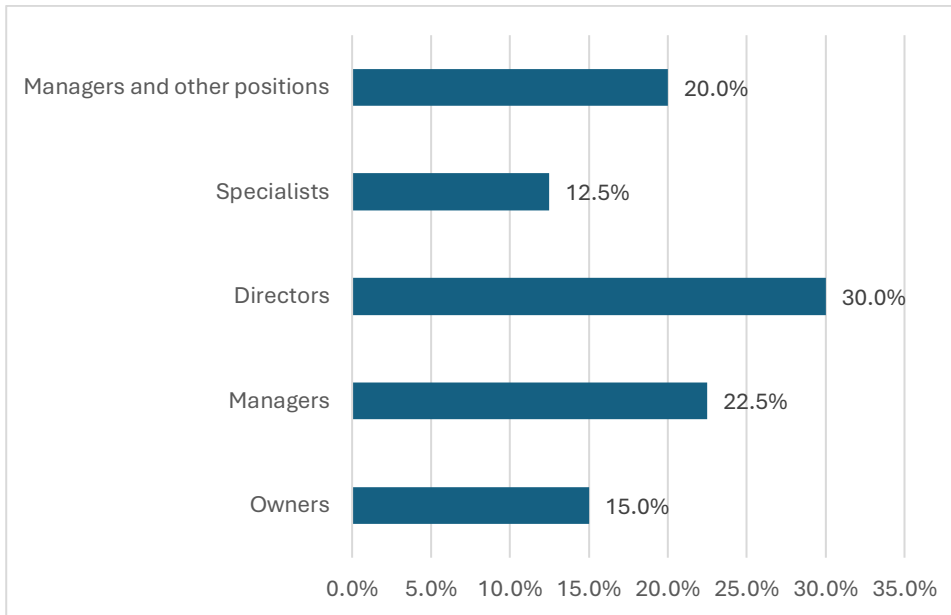
Industries such as **professional, scientific and technical activities, financial and insurance activities, manufacturing, construction** and **administrative activities** (7.5% each) show a diversity of respondents from industries requiring specialized competences.

Industries such as **transport and storage, mining, energy, gas and water supply, education, health and social services, arts** (5% each) represent diversity but their share is moderate.

Industries such as **real estate, information and communication, and domestic operations** indicate a limited presence of these sectors in the surveyed group.

The survey covers a wide range of industries, which demonstrates the versatility of the respondent group.

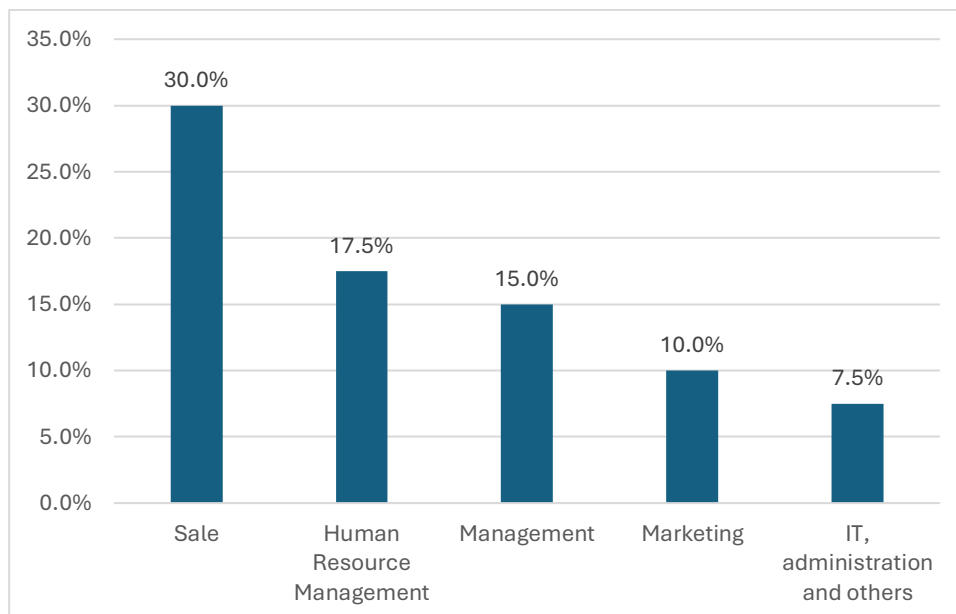




Drawing 4 Positions of people completing the survey - own elaboration based on survey results

Respondents represented a wide range of positions:

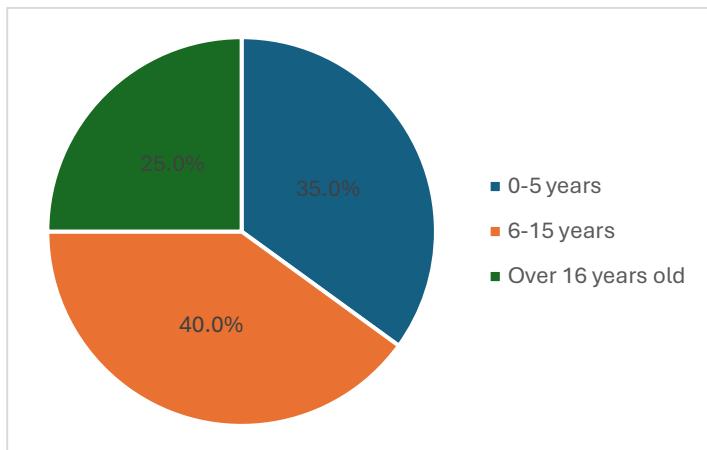
- **Owners:** (15%). This group includes individuals with full control over their businesses.
- **Managers:** 22.5%). These are mid-level people who manage departments or projects.
- **Directors:** (30%). They constitute the largest group, which indicates their significant role in the surveyed group of organizations.
- **Specialists:** (12.5%). They show a significant presence of specialists responsible for specific tasks and implementation of strategies.
- **Managers and other positions:** (20%). This group contains a variety of positions, including consultants and operations managers.



Drawing 5 Represented departments of companies - own work based on survey results

The division into departments indicates that functions related to operational management and sales dominated:

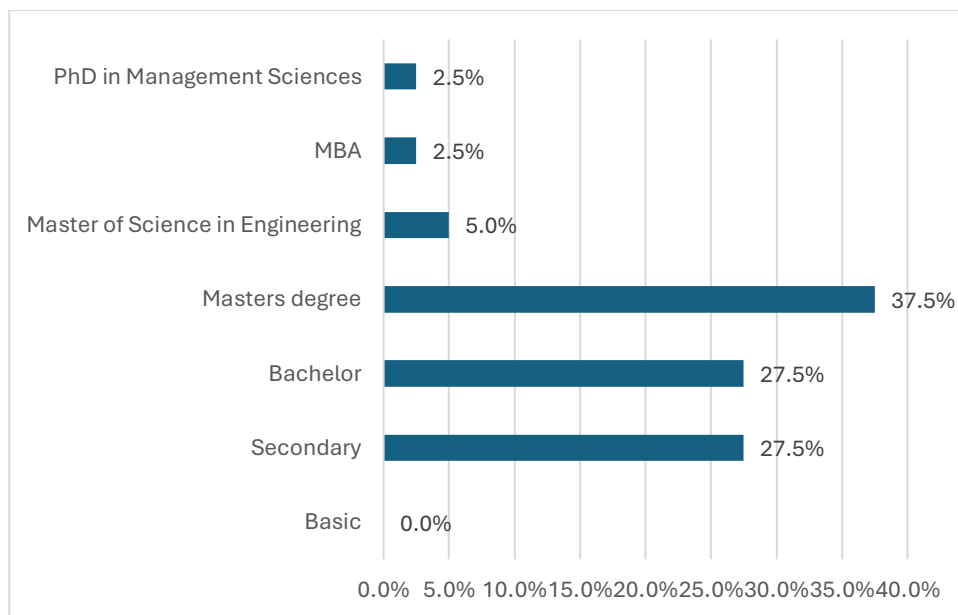
- **Sales:** (30%) – indicates that the sales sector is key in the operations of the surveyed companies.
- **HR (Human Resource Management):** (17.5%) – the presence of HR people emphasizes the importance of human capital management.
- **Management:** (15%) – includes functions related to the overall management of the company or projects.
- **Marketing:** (10%) – proves the importance of promotional and communication activities in the structure of the organization.
- **IT, administration and others:** (7.5%) – these are departments supporting other operational functions.



Drawing 6 Seniority in the respondents' company - own elaboration based on survey results

The seniority data show a well-balanced composition of respondents in terms of experience:

- **0-5 years:** 35% of respondents – includes new hires and new hires who can bring a fresh perspective to the company.
- **6-15 years old:** 40% – they are the largest group, which indicates the stability of employment in companies.
- **16+ years old:** 25% – this group indicates the presence of employees with extensive experience and seniority.



Drawing 7 The level of education of the respondents - own elaboration based on the results of the surveys

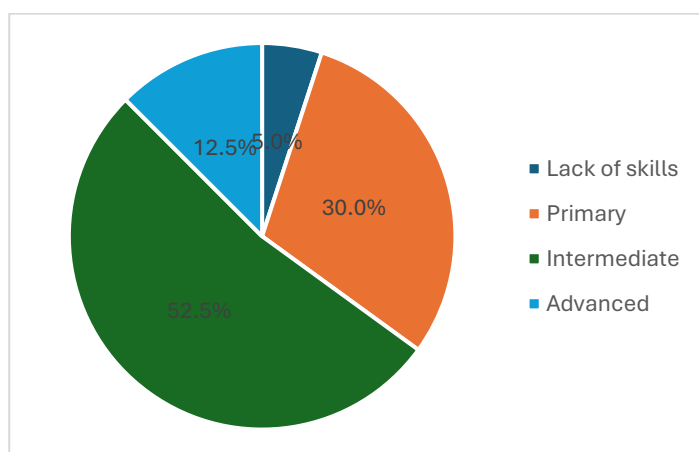
Analysis of the level of education of respondents

1. Master's degree: 37.5%
2. Average: 27.5%
3. Bachelor's degree: 27.5%
4. Master of Science in Engineering: 5%
5. MBA and PhD in Management: 2.5% each
6. Primary: No respondents with primary education were recorded.

Section 2: current level of digital competence

Based on the information published in the country report on the Digital Decade in Poland in 2024: Poland faces major challenges in the development of digital competences in society and the adoption of advanced technologies by enterprises. The 2023 indicators show that the proportion of people with at least basic digital skills is 44.3%, which is well below the EU average (55.6%). To meet the EU's target of 80% by 2030, Poland would need to increase its growth rate more than fivefold. The shortage of basic competences limits citizens' access to modern digital services and weakens their competitiveness in the labour market.

Similar problems affect enterprises – only 3.7% of Polish companies use artificial intelligence (EU average: 8%), and 19.3% use data analysis (EU average: 33.2%). The low level of use of modern technologies inhibits their development and ability to participate in digital transformation. While the cloud is increasingly being used, other advanced technologies remain underutilized.²⁰



Drawing 8 Self-assessment of digital skills - own elaboration based on survey results

²⁰ <https://digital-strategy.ec.europa.eu/pl/factpages/poland-2024-digital-decade-country-report>



Based on the results of the survey, respondents self-assessed their level of digital skills, which allows them to understand their competences and potential areas for support. Here is the analysis:

1. Lack of skills (5%):

- This group is the least numerous, indicating a relatively low percentage of people completely deprived of digital skills.
- Although this is a small group, their presence suggests the need to implement basic educational programs that will enable them to acquire key digital competences necessary in everyday life and work.

2. Basic Level (30%):

- This group represents a significant proportion of respondents and points to people who have limited proficiency in using digital technologies.
- These are people who can perform basic activities, such as using a computer, using the Internet or basic applications, but lack advanced skills.

3. Intermediate Level (52.5%):

- The largest group of respondents rate their skills as intermediate, which means that they have a solid foundation in digital literacy.
- These are people who are able to use more advanced tools and applications, but still have room for development, especially in the field of modern technologies, such as data analysis, the use of the cloud or artificial intelligence tools.
- This group has the potential to move to an advanced level with the right support and development opportunities.

4. Advanced level (12.5% - 5 respondents):

- A small proportion of respondents rate their skills as advanced, which means that they are the most proficient in digital technologies.
- They are technology leaders, people who use advanced tools in their professional work or have in-depth knowledge of technology.

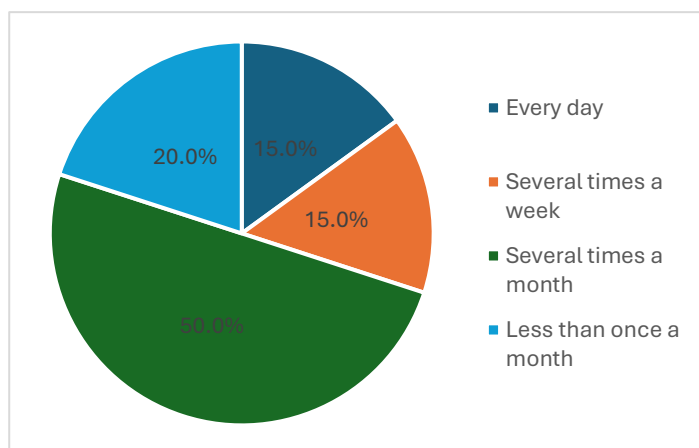
General conclusions:

- **Skills balance:** The majority of respondents (52.5%) report an intermediate level of skill, which demonstrates their ability to use digital technologies effectively, but also shows the need for further development.



- **Discrepancies:** Despite the dominance of the intermediate level, as many as 35% of respondents (entry-level and lack of skills) indicate limited digital competences that require support in the form of training.

Taken together, the survey results show a significant diversity in digital skill levels among respondents, which requires a comprehensive approach to support and competence development in this group.



Drawing 9 Frequency of use of digital tools at work among the surveyed respondents - own study based on survey results

Based on the collected answers to the question about the frequency of using digital tools at work, an analysis was carried out that shows the diversity in the respondents' approach to their use. Here are the detailed results:

1. "Several times a month" – 50%

- The most frequently chosen answer indicates that half of the respondents use digital tools moderately, mainly several times a month.
- Such a result may indicate that digital tools have a supporting function, but are not a key element of the daily work duties of the majority of respondents.

2. "Less than once a month" – 20%

- One in five respondents uses digital tools occasionally, less than once a month.
- This result may indicate a group of people whose professional duties are more manual or do not require the use of digital technologies.

3. "Daily" – 15%

- Only 15% of respondents use digital tools on a daily basis, suggesting that only a small group make intensive use of technology in their work.



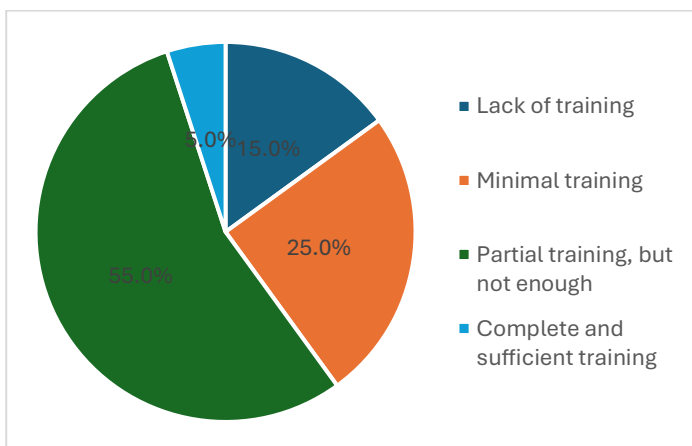
- This may be related to professions that require daily work with a computer, software or other digital tools.

4. "Several times a week" – 15%

- The same number of respondents (15%) use digital tools several times a week, putting this group on a par with everyday users.
- This could mean people who need digital technology for regular, but not everyday, tasks.

Applications:

- **Moderate use dominance:** Half of the respondents use digital tools only a few times a month, which may be due to the type of work they work or the low digitalisation of certain sectors.
- **Occasional users:** A significant group (20%) use digital tools infrequently, indicating the need for education or digitization of work processes in these cases.
- **Heavy users:** Only 30% (15% daily and 15% several times a week) use digital tools extensively, suggesting that digital technologies are not yet a key tool in the work of the majority of respondents.



Drawing 10 Information about the received trainings among the respondents - own elaboration based on the results of the surveys

Based on the collected answers, access to training in the use of digital tools among respondents was analyzed. The results show that most of the participants had contact with some form of training, although in most cases it was insufficient.

1. Partial training, but not enough – 55%



- More than half of respondents indicated that they had received partial training, but it did not meet their needs or prepare them fully to use digital tools.
- This result highlights a problem with the quality or scope of training offered, which can negatively affect the effectiveness of working with technologies.

2. Minimum training – 25%

- A quarter of respondents declare that they have received minimal training in the use of digital tools.
- While this is a better result than no form of education at all, such training is most likely limited to the basics and does not develop advanced skills.

3. Lack of training – 15%

- A significant proportion of survey participants admitted that they had not had access to any training related to the use of digital tools.
- This result points to the challenge of reaching a group of employees who do not have the opportunity to develop their digital competences, which may limit their productivity and ability to adapt to the digital work environment.

4. Full and sufficient training – 5%

- Only a small number of respondents (5%) indicated that they had received full and sufficient training.

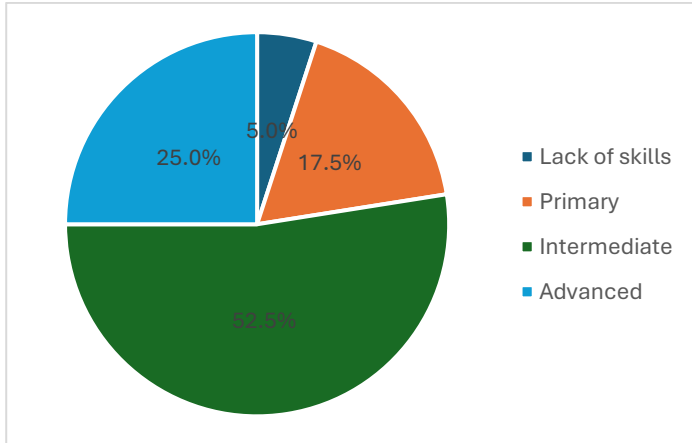
Section 3 - assessment of digital competences

Digital competences are the foundation of today's information society, enabling citizens to use technology effectively in their daily lives, education and work. The European Union, recognising the key importance of these skills, has developed a number of strategic documents aimed at developing and disseminating them.

According to **the Digital Economy and Society Index (DESI) 2023**, Poland ranks **24th** among the 27 countries of the European Union in terms of human capital in the context of the digital society.²¹

²¹ Digital Decade Country Report 2023 – Poland,





Drawing 11 Assessment of skills in the field of basic office applications - own elaboration based on the results of surveys

Based on the collected responses, the respondents' level of skills in using basic office applications, such as Word, Excel and PowerPoint, was analyzed. The results show a significant variation in competence levels, ranging from lack of skills to advanced.

1. Intermediate – 52.5%

- More than half of the respondents rated their skills as intermediate.
- This group of people has sufficient knowledge of office tools, which allows them to effectively perform tasks such as creating and editing documents, simple spreadsheets, and presentations.
- This result suggests that the majority of respondents have a solid foundation in using the tools, but may still need support with more advanced features.

2. Advanced – 25%

- A quarter of respondents rated their skills as advanced.
- This group represents people who are able to effectively use the advanced features of office applications, such as data analysis in Excel, advanced formatting in Word, or dynamic presentations in PowerPoint.
- This result shows that a significant proportion of respondents are highly proficient in using office tools, making them valuable users of office technology.

3. Basic – 17.5%

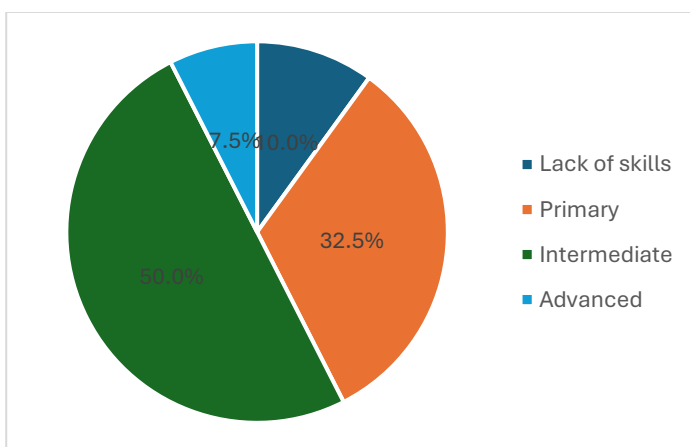
- About 17.5% of respondents assess their skills at the basic level.



- This group probably has basic knowledge of how to use office applications, such as creating simple documents, spreadsheets or basic presentations.
- These individuals may need support and training to increase their efficiency when working with office tools.

4. Lack of skills – 5%

- The smallest group, only 5% of respondents, indicated a lack of skills in using office applications.
- This group requires basic training to enable them to use the necessary functions of office tools in their daily work.



Drawing 12 Respondents' digital security skills - own elaboration based on survey results

Based on the responses collected, the respondents' level of digital security skills was analysed. The results indicate a diverse level of competence in the area of data protection and digital threat recognition.

1. Intermediate – 50%

- Half of the respondents rated their skills as intermediate.
- This group is likely to be able to recognize basic threats and know the basic principles of data protection, such as creating strong passwords or avoiding suspicious links.
- This result shows that most people have a solid foundation, however, there is still room for development towards more advanced digital security practices.

2. Basic – 32.5%

- More than a third of respondents rated their skills as basic.



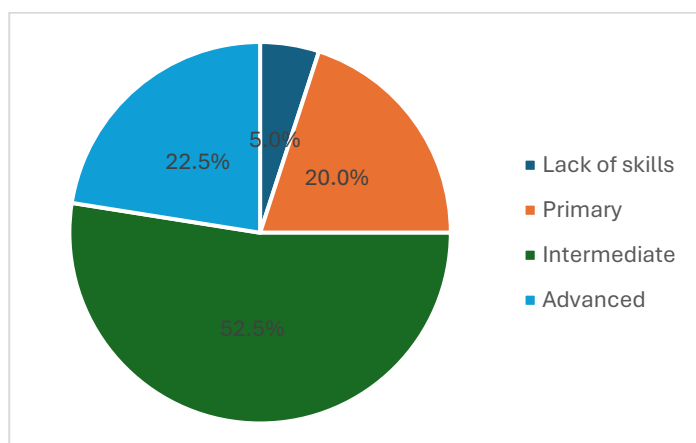
- These individuals likely only have a general understanding of digital security and may struggle to recognize more subtle threats, such as advanced phishing attacks or social manipulation.
- This result suggests that this group needs basic training in data protection and threat intelligence.

3. Lack of skills – 10%

- 10% of respondents admitted that they do not have any digital security skills.
- This situation poses a significant risk, both for these people and for the organizations they work for, as they may be more vulnerable to cyberattacks and data protection errors.

4. Advanced – 7.5%

- The smallest group of respondents rated their skills as advanced.
- This group is likely to have extensive knowledge and experience in advanced data protection techniques such as encryption, risk analysis, and the use of security tools.



Drawing 13 Respondents' skills in digital communication - own elaboration based on survey results

An analysis of digital communication skills (email, instant messaging, videoconferencing) was carried out.

1. Intermediate – 52.5%

- Half of the respondents rated their digital communication skills as intermediate.
- This group probably freely uses popular tools such as e-mail, instant messaging or basic video conferencing functions.



- This result indicates a solid level of competence, although there is room for further development in the more advanced use of digital tools.

2. Advanced – 22.5%

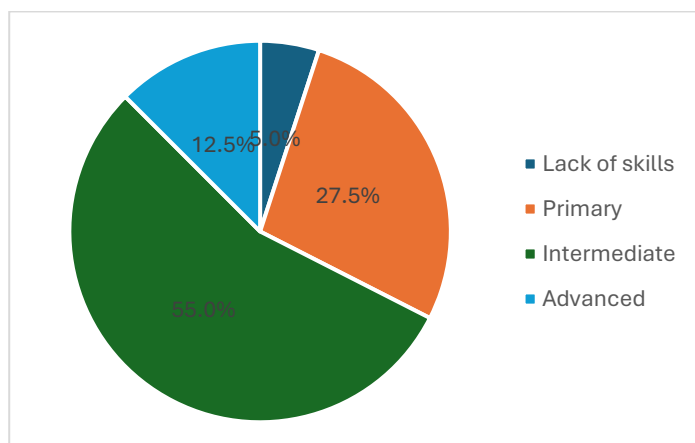
- More than a quarter of respondents have advanced digital communication skills.
- These people can effectively use the advanced features of instant messaging and video conferencing tools, such as organizing online meetings or managing teams in a digital environment.
- This result suggests that a significant proportion of respondents are well prepared to work in a digital environment.

3. Basic – 20%

- A significant group of respondents declare a basic level of skills, which means limited use of digital communication tools.
- This may be due to a lack of experience or the need for support in learning how to use more advanced functions.

4. Lack of skills – 5%

- A small number of respondents admitted a lack of digital communication skills.
- This group requires basic training to be able to use basic communication tools effectively in the digital environment.



Drawing 14 Respondents' skills in data analysis - own development based on survey results

Data Analysis Skills Analysis (Excel, Analytical Tools)

1. Intermediate – 55%

- More than half of the respondents rated their data analysis skills as intermediate.



- This group is probably familiar with basic Excel functions such as formulas, pivot tables, and charts, and can also use simple analytical tools.
- This score indicates solid competencies that can be developed towards more advanced data analysis tools and techniques.

2. Basic – 27.5%

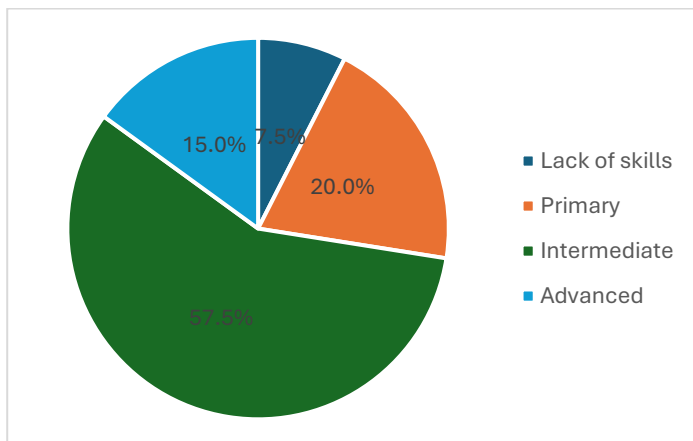
- A significant group of respondents assess their skills at the basic level.
- These people may be familiar with the basic functions of data analysis programs, such as data entry or simple calculations in Excel, but they are not proficient in more advanced functions, such as data analysis or visualization.

3. Advanced – 12.5%

- A small group of respondents have advanced data analysis skills.
- These people are likely to be able to use advanced Excel features (e.g., Power Query, VBA) or specialized tools such as Python, R, or Tableau for advanced data analysis.

4. Lack of skills – 5%

- A small group of respondents indicated a lack of skills in data analysis.
- These individuals require basic training to be able to effectively use data analysis tools in their daily tasks.



Drawing 15 Respondents' skills in digital content creation - own elaboration based on survey results

The respondents' skills in the field of creating digital content (documents, presentations, computer graphics) were analyzed.

1. Intermediate – 57.5%



- The vast majority of respondents rated their skills as intermediate.
- This group is likely to be able to create and edit documents, presentations, and basic graphic designs.
- This score indicates a solid level of skill, but there is room for growth with more advanced techniques and tools.

2. Basic – 20%

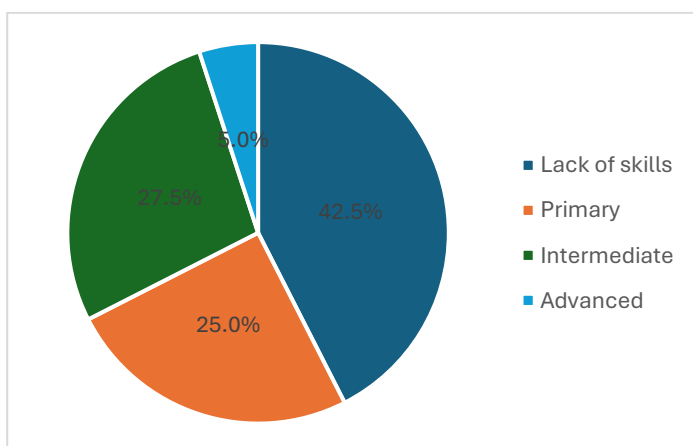
- A significant proportion of respondents rated their skills as basic.
- These people may be familiar with the basic functions of office programs, but they have difficulty with more advanced features, such as advanced formatting, animations in presentations, or basic computer graphics.

3. Advanced – 15%

- A small group of respondents rated their skills as advanced.
- This group is most likely to use advanced tools and features, such as media editing, graphic design, or the use of advanced features in programs such as Adobe Photoshop, Illustrator, or other professional tools.

4. Lack of skills – 7.5%

- The smallest group indicated a lack of skills in digital content creation.
- This group requires basic training to be able to get started with content creation tools.



Drawing 16 Respondents' skills in the use of project management tools - own elaboration based on survey results

Analysis of skills in the use of project management tools (e.g. Trello, Dropbox, Drive, Asana)

1. Lack of skills – 42.5%



The largest group of respondents indicated a lack of skills in using project management tools. This result shows that almost half of the respondents have no experience with popular tools supporting the organization of teamwork and task management.

2. Basic – 25%

About a quarter of respondents rated their skills as basic.

These people are likely to be able to perform simple operations such as creating tasks, using basic functions, or sharing files, but they are not taking full advantage of these tools.

3. Intermediate – 27.5%

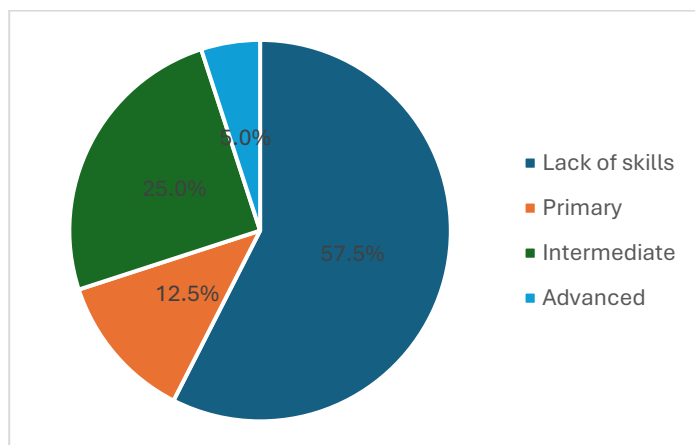
Intermediate users are able to take advantage of the more advanced features of project management tools, such as tracking the progress of tasks, using schedules, and integrating with other applications.

This group of users has the potential to become more advanced users.

4. Advanced – 5%

Only a small group of respondents rated their skills as advanced.

In their opinion, these people are able to take full advantage of tools such as process automation, creating advanced reports or integration with many tools supporting teams.



Drawing 17 Respondents' skills in the use of content management systems - own elaboration based on survey results

Analysis of skills in the use of CMS systems (e.g. WordPress, Joomla, Drupal)

1. Lack of skills – 57.5%

- The largest group of respondents indicated a lack of skills in using CMS systems.



- This result indicates that most respondents had no experience with content management with tools such as WordPress or Joomla.

2. Basic – 12.5%

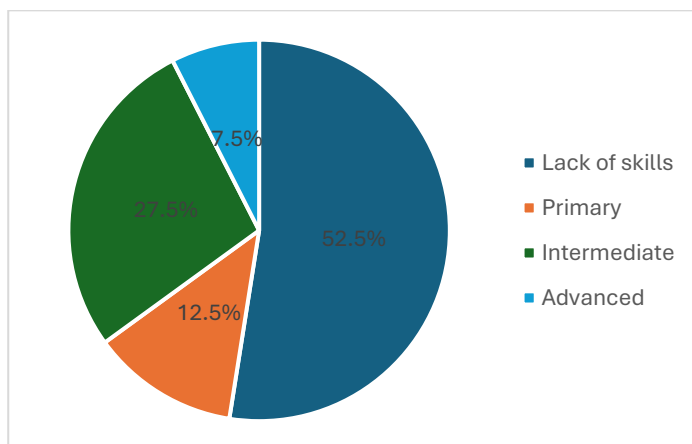
- About one-fifth of respondents have basic skills in using CMSs.
- These people are likely to be able to perform simple operations such as editing pages, publishing posts, or basic media management.

3. Intermediate – 25%

- A group of intermediate users benefit from the more advanced features of CMS, such as plugin configuration, SEO optimization, or creating more complex page layouts.
- This group has the potential to grow towards more advanced use of CMS.

4. Advanced – 5%

- A small group of respondents rated their skills as advanced.
- These people are able to fully manage CMSs, from creating and personalizing themes to integrating with external services and solving technical problems.



Drawing 18 Respondents' skills in the field of business process automation - own elaboration based on survey results

Analysis of skills in the field of business process automation

- **Lack of skills: 52.5%**
The largest group of respondents indicated a lack of skills in the field of business process automation, which suggests limited knowledge of these tools among the respondents.



- **Intermediate: 27.5%**

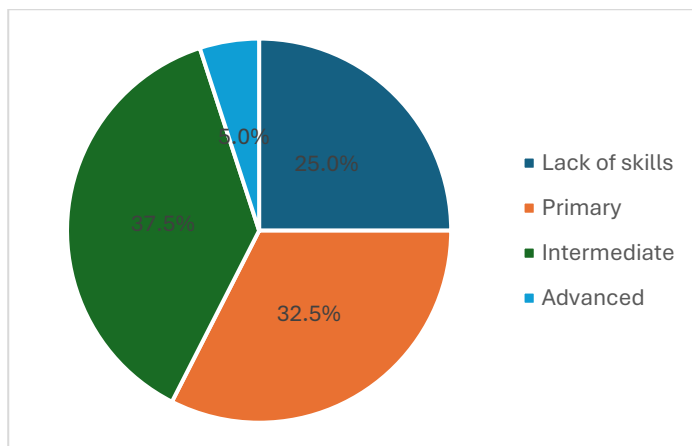
A significant proportion of respondents have the skills to use more advanced automation features, such as creating workflows and integrating with other applications.

- **Basic level: 12.5%**

Basic level people can perform simple operations, such as using pre-built templates or setting up simple workflows.

- **Advanced level: 7.5%**

A small group of users report advanced skills, which include designing complex workflows and using analytics.



Drawing 19 Respondents' skills in the use of generative artificial intelligence - own elaboration based on survey results

Skills analysis in the use of generative artificial intelligence (AI)

1. Basic level – 32.5%

- The largest group of respondents rated their skills as basic.
- This means that these people are able to use generative AI to a limited extent, using ready-made features of tools such as ChatGPT, MidJourney, or DALL-E.
- They probably use AI mainly for basic tasks, e.g. generating simple content or graphics.

2. Intermediate level – 37.5%

- A significant proportion of respondents have more advanced knowledge of generative AI tools.



- These people can take advantage of advanced features such as customizing models to specific needs, using personalization features, or integrating AI with other applications.
- This result indicates increasing AI adoption among respondents, which is a positive trend.

3. Lack of skills – 25%

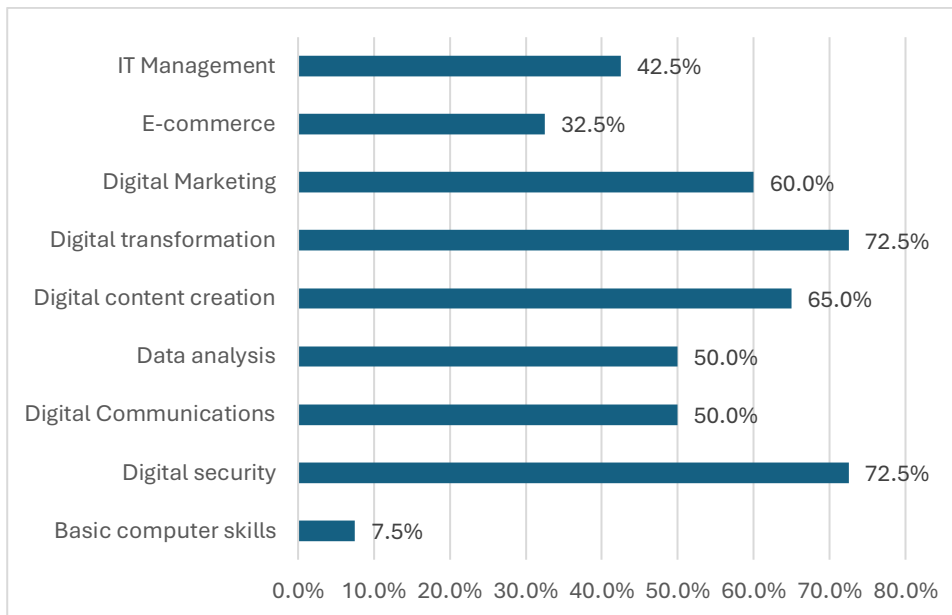
- A significant proportion of respondents do not have any skills in the use of generative AI.
- This may be due to a lack of knowledge, access to tools, or the need for such technologies in everyday work or life.

4. Advanced Level – 5%

- A small group of respondents rated their skills as advanced.
- These individuals are likely capable of creating their own AI models, adapting them to specific needs, or implementing them into complex business and technology processes.

Section 4 – training needs for digital tools

Once the digital skills and knowledge gaps have been identified, it is crucial to understand what training is most desired by users and what specific training needs were indicated by respondents. This section focuses on the analysis of training preferences in order to better adapt educational programs to the real expectations and requirements of users in terms of digital tools.



Drawing 20 Respondents' preferences for digital competence development - own elaboration based on survey results

The respondents' preferences for the development of digital competences were analysed and the results were presented in percentage terms:

- **Digital security:** 72.5% The most frequently indicated area of development, highlighting the growing importance of data protection and security in the digital world.
- **Digital transformation:** 72.5% A very popular choice, indicating the need for skills related to the adaptation of technology in the work environment.
- **Digital content creation:** 65% A key area for those involved in creating and managing content in digital format.
- **Digital Marketing:** 60% Essential skills in today's job market, especially in the context of e-commerce and online promotion.
- **Digital Communication:** 42.5% An important area for effective collaboration and team management in a digital environment.
- **Data Analytics:** 40% An increasingly valued skill that supports data-driven decision-making.
- **E-commerce:** 32.5% The popularity of this area is underlined by the growing interest in e-commerce and its tools.
- **IT Management:** 30% Skills in this area are relevant for those involved in information technology and digital infrastructure.

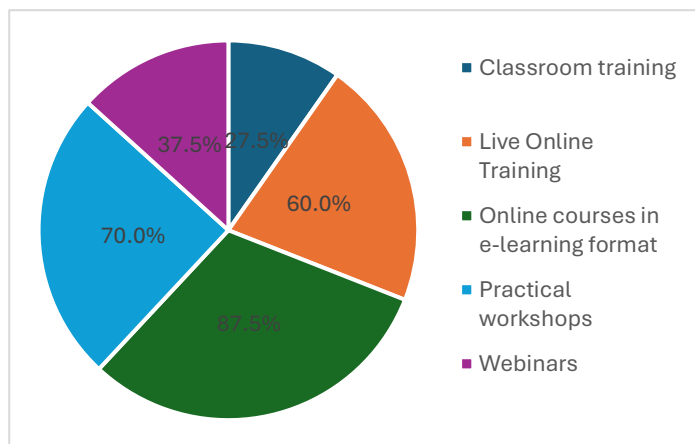


- **Basic computer skills:** 15% Less popular, but indicating a need for basic training for less tech-savvy people.

Applications

- **Dominant areas:** Digital security, digital transformation and digital content creation are the key directions of development indicated by respondents.
- **Importance of Data and Marketing:** Data analytics and digital marketing also play a vital role in training preferences.
- **Diversity of needs:** The answers indicate a wide spectrum of digital competences that should be taken into account in the planning of training programs.

These percentages allow you to better understand respondents' priorities and align future learning activities with their expectations.



Drawing 21 Analysis of preferences in terms of training forms – own elaboration based on survey results

Analysis of preferences in terms of training forms

Based on the results of the survey on the preferred forms of training:

1. Online courses in e-learning format:

- The most popular form of training, indicated by **87.5% of respondents**
- The high popularity may be due to the convenience and flexibility that online courses offer.

2. Practical workshops:

- The second most frequently chosen solution, indicated by **70% of respondents**



- This type of training is very popular due to the possibility of practical use of the acquired knowledge.

3. Live Online Training:

- Chosen by **60% of respondents**
- This form allows interaction with the host in real time, which increases its attractiveness.

4. Webinars:

- Indicated by **37.5% of respondents**
- This form is valued for the opportunity to participate in short, thematic online meetings.

5. Classroom training:

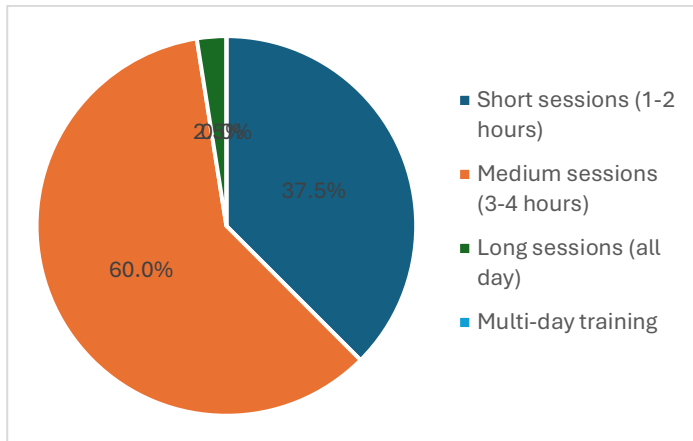
- Chosen by **27.5% of respondents**
- The least frequently chosen form, which may be due to the preference for remote learning and greater flexibility of online methods.

Applications

- Respondents prefer flexible learning formats such as online courses and hands-on workshops.
- Classroom training is the least popular, which may indicate a shift in preference towards digital methods of education.
- Webinars are an interesting addition, especially for those looking for quick access to knowledge in a short form.

These results highlight the importance of modern training methods and the need for accessible and practical forms of learning.





Drawing 22 Analysis of training duration preferences - own elaboration based on the questionnaire

Analysis of training duration preferences

Based on the graph showing the participants' preferences in terms of the duration of training:

1. Medium sessions (3-4 hours): 60%

- The largest group of respondents prefers training of medium duration.
- This length of the session allows for a deeper discussion of the topic while not overburdening the participants.

2. Short sessions (1-2 hours): 37.5%

- The second most popular option is short sessions.
- This result indicates a need for concise and effective knowledge transfer.

3. Long sessions (full day) and multi-day training: 2.5%

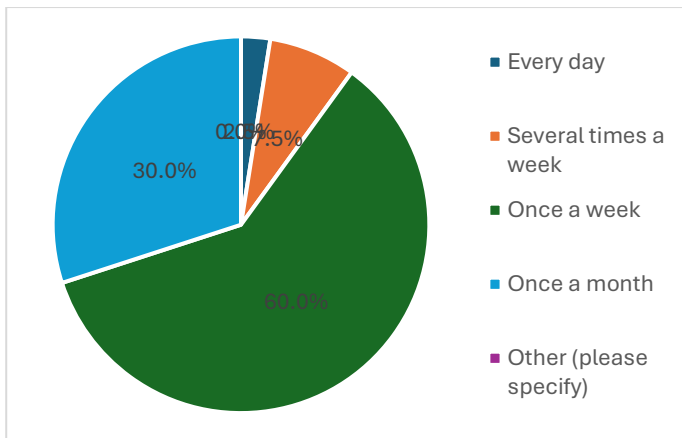
- A small number of people chose training courses lasting more than one day or a full day.
- This may be due to the difficulty of engaging participants in longer training sessions on a continuous basis.

Applications

- **Popularity of medium and short sessions:** Most participants prefer training sessions of up to 4 hours. Limited time can be due to a busy schedule and the need for efficiency.



- **Avoiding longer training:** Longer forms of training are of minimal interest, suggesting the need to adapt training programs to shorter time blocks.



Drawing 23 Analysis of training frequency preferences - own elaboration based on the questionnaire

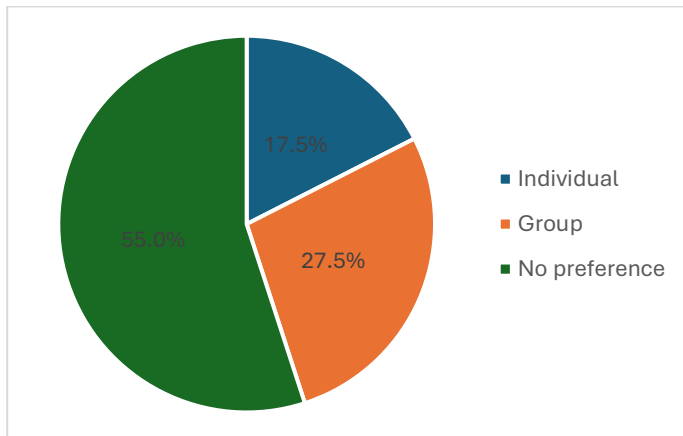
Analysis of training frequency preferences

Based on the chart illustrating the respondents' preferences regarding the frequency of training:

- 1. Once a week: 60%**
 - The most frequently chosen frequency of training, which indicates a preference for regular, but not too frequent meetings.
 - This approach allows for effective acquisition of knowledge without excessive burden.
- 2. Once a month: 30%**
 - The second most frequently indicated option, suggesting the need for less frequent, but more intense or comprehensive sessions.
- 3. Several times a week: 7.5%**
 - A less popular option, but it may be preferred by people with a lot of time dedicated to professional development.
- 4. Daily: 2.5%**
 - A very small number of people prefer daily training, which may be due to limited time availability or the need to balance learning and responsibilities.

Applications

- **Dominance of weekly training:** Most respondents prefer weekly frequency, indicating the ideal balance between regularity and availability.
- **Significant number of people choosing monthly training:** Indicates the need for more condensed sessions that do not require frequent participation.
- **Limited need for daily and intensive training:** The very low popularity of these options indicates that most participants prefer a more balanced approach to education.



Drawing 24 Analysis of preferences regarding the form of training (individual vs group) - own elaboration based on the questionnaire

Analysis of preferences regarding the form of training (individual vs group)

Based on the chart illustrating the respondents' preferences regarding the form of training:

1. No preference: 55%

- More than half of the respondents do not have specific preferences regarding the form of training.
- This means flexibility in choosing between individual and group training, depending on the content and form of the course.

2. Group training: 27.5%

- A significant number of people prefer group training.
- This form is often chosen because of the possibility of interaction, exchange of experiences and teamwork.

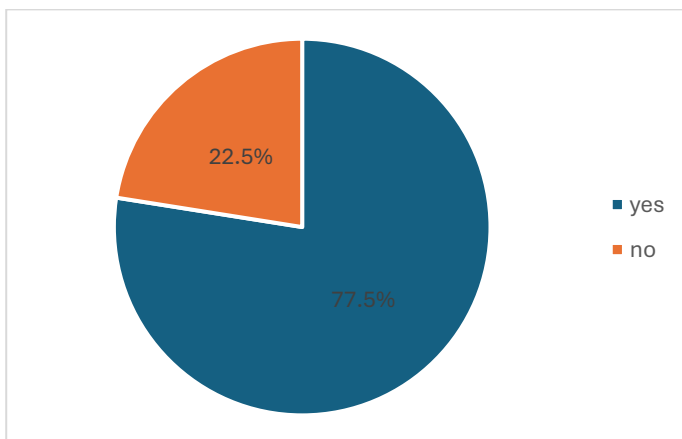
3. Individual training: 17.5%

- A smaller group of people prefers individual training.
- This form can be chosen by people who appreciate adjusting the pace of learning and content to their individual needs.

Applications

- **Flexibility of preference:** The majority of respondents (55%) are open to different forms of training, which gives them the opportunity to adapt formats depending on the program.
- **The importance of group training:** A significant proportion of participants prefer to interact and collaborate with others, which indicates the value of group training in the context of collaborative problem solving.
- **The role of one-to-one training:** Although less popular, one-to-one training is relevant for people with specific learning needs.

Section 5 – specialised training needs for digital tools



Drawing 25 Digital Marketing Training Interest Analysis - own elaboration based on the questionnaire

Digital Marketing Training Interest Analysis

Based on the chart showing the respondents' responses:

1. Yes: 77.5%

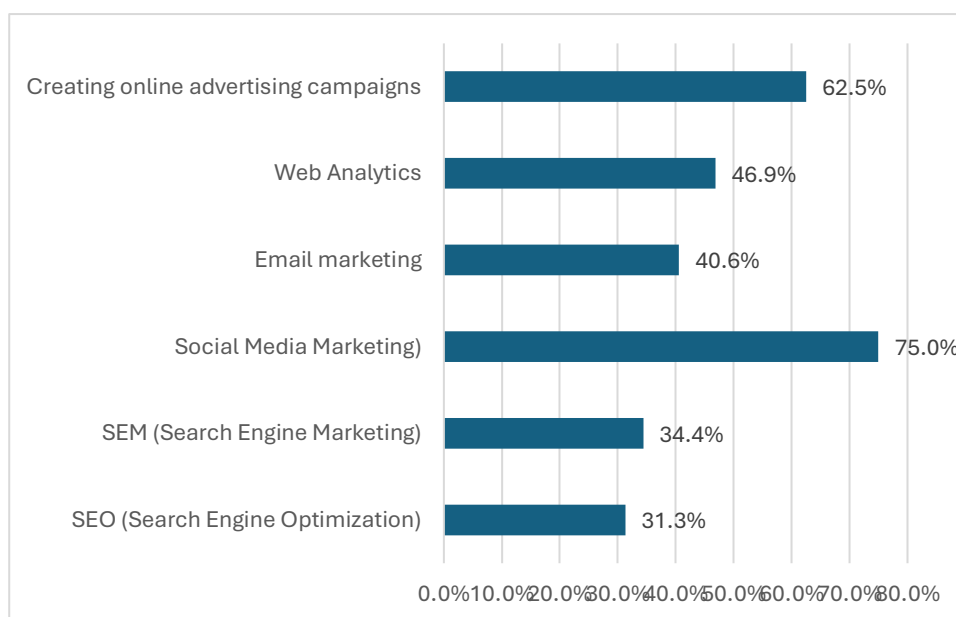
- The vast majority of respondents show interest in digital marketing training.
- The high interest in this topic may be due to the growing importance of marketing tools and strategies in the digital environment.

2. No: 22.5%

- A minority of respondents are not interested in training in this area.
- It is possible that these people are either not involved in marketing or already have sufficient knowledge in this field.

Applications

- Strong interest in the topic: A score of 77.5% indicates a high demand for digital marketing-related training.
- Need for hands-on training: Due to the popularity of the topic, it makes sense to offer programs that include both basic and advanced digital marketing techniques.



Drawing 26 Analyzing interest in digital marketing topics - own elaboration based on the questionnaire

Analyzing interest in digital marketing topics

Based on the chart presented, respondents indicated their interests in various topics in the area of digital marketing. The results are as follows:

1. Social Media Marketing: 75%

- The most popular topic that indicates a high demand for skills related to social media platforms such as Facebook, Instagram, or LinkedIn.
- He emphasizes the importance of social media strategies in promotion and brand building.

2. Creating online advertising campaigns: 62.5%

- Great interest in the subject of advertising campaigns, indicating the need for knowledge about tools such as Google Ads or Facebook Ads.
- This result highlights the importance of practical skills in creating effective campaigns.

3. Web Analytics (Google Analytics): 46.9%

- The interest in data analytics shows the need to better understand online user behavior and optimize marketing efforts based on data.

4. Email marketing: 40.6%

- It indicates an interest in skills in creating effective mailing campaigns and managing customer databases.

5. SEM (Search Engine Marketing): 34.4%

- The interest in search engine marketing (SEM) reflects the need to know about paid search ads such as Google Ads.

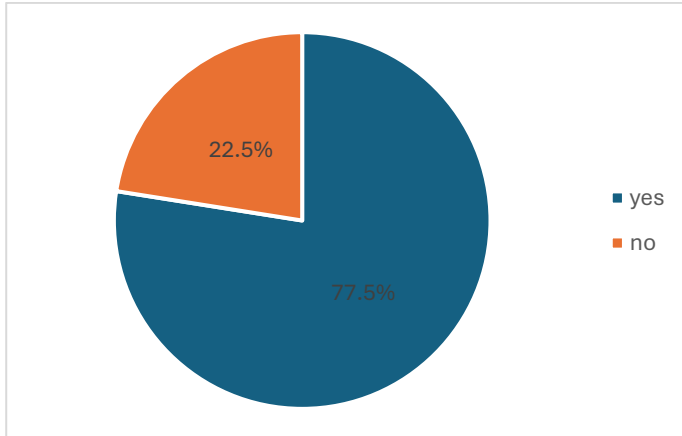
6. SEO (search engine optimization): 31.3%

- The smallest number of responses, but still relevant, indicates the need for knowledge in the field of content optimization for search engines.

Applications

- **Top interest:** Social media marketing and the creation of online advertising campaigns are key areas of interest for respondents.
- **Demand for data analytics:** A significant number of people indicated an interest in web analytics, demonstrating the growing importance of data-driven decision-making.
- **Less interest in SEO and SEMs:** Although less popular, these topics still remain relevant to a portion of respondents.





Drawing 27 E-commerce Training Interest Analysis - own elaboration based on the questionnaire

E-commerce Training Interest Analysis

Based on the chart showing the respondents' responses:

1. Yes: 77.5%

- The majority of respondents expressed interest in e-commerce training.
- This result indicates a growing need to acquire skills in online commerce, which is constantly growing in popularity.

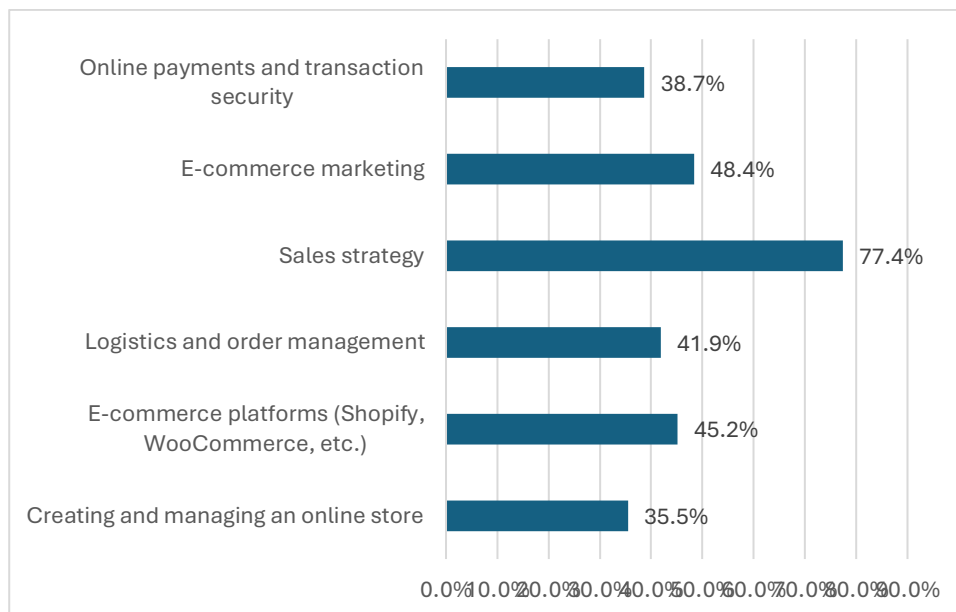
2. No: 22.5%

- A small proportion of respondents are not interested in training in this area.
- This may be due to the lack of need to use e-commerce in their work or because they already have sufficient competences.

Applications

- **High interest in e-commerce:** The result of 77.5% suggests that e-commerce is one of the key areas of development, especially in the context of the growing importance of online sales.
- **Need for hands-on training:** Respondents expect programs that provide knowledge on how to run, optimize, and market online stores.





Drawing 28 Analysis of interest in e-commerce topics - own elaboration based on the questionnaire

Analysis of interest in e-commerce topics

Based on the chart showing the respondents' preferences for topics in e-commerce, the results are as follows:

1. Online sales strategy: 77.4%

- The most frequently chosen topic, which indicates a high demand for knowledge about sales strategies.
- Respondents show interest in effective strategy planning and implementation in an online environment.

2. Ecommerce Marketing: 48.4%

- Marketing in the context of e-commerce is also a very popular topic.
- This result highlights the importance of the ability to promote products and services in digital channels.

3. Ecommerce platforms (Shopify, WooCommerce, etc.): 45.2%

- Significant interest in tools for creating and managing online stores, which suggests the need for practical knowledge of popular platforms.

4. Logistics and order management: 41.9%

- Logistics and order processing are key aspects that interest the respondents, especially in the context of effective management of sales processes.

5. Online payments and transaction security: 38.7%

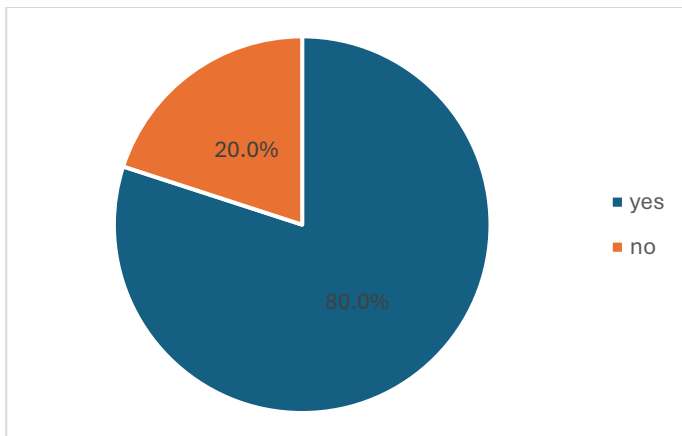
- Respondents are also interested in topics related to security and payment systems, which is crucial for building customer trust.

6. Creating and managing an online store: 35.5%

- A less popular topic, but still important for people starting their e-commerce business.

Applications

- **Top Interest:** Online sales strategy and e-commerce marketing are key areas of focus, indicating the need for planning and promotion skills.
- **Growing need for practical knowledge:** E-commerce platforms and order management are essential topics that require hands-on training.
- **The importance of security:** Online payments and transaction security highlight the need for expertise in data protection and building customer trust.



Drawing 29 Interest Analysis in IT Management Training - own elaboration based on the questionnaire

Interest Analysis in IT Management Training

Based on the chart showing the respondents' responses:

1. Yes: 80%

- The vast majority of respondents show interest in IT management training.
- The high level of interest suggests that the subject of IT infrastructure and technology project management is important to many participants.

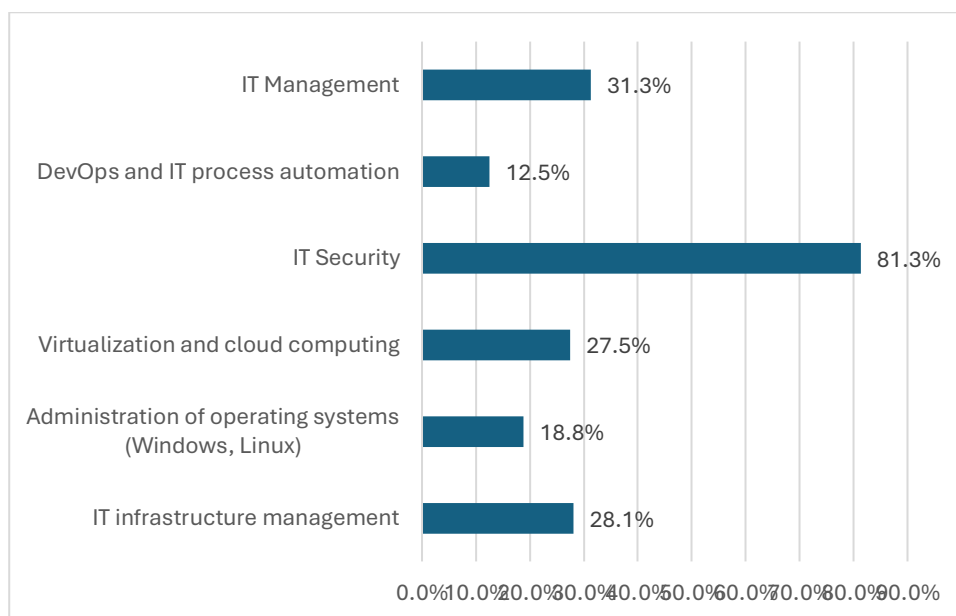


2. No: 20%

- A smaller group of respondents is not interested in this topic.
- This may be due to the lack of need for IT management in their work or because they already have sufficient competences.

Applications

- **Interest in IT training:** 80% of respondents indicate the need for development in IT management, which may reflect the growing importance of technology in organizations.
- **Focus on practical aspects:** The high level of interest suggests the need for practical courses related to IT tools and processes.



Drawing 30 Analysis of interest in topics in the field of IT management - own elaboration based on the questionnaire

Analysis of interest in topics in the field of IT management

Based on the chart showing respondents' preferences for topics in IT management, the results are as follows:

1. IT Security: 81.3%

- The most popular topic among respondents.
- highlights the growing demand for skills related to data protection, system security and prevention against cyber threats.



2. Virtualization and cloud computing: 37.5%

- A significant number of respondents indicated an interest in cloud technologies.
- This result reflects the needs of a modern approach to IT infrastructure management.

3. IT Project Management: 31.3%

- IT project management is crucial for the effective implementation of new technologies in organizations.
- Respondents show interest in methodologies and tools supporting the organization and implementation of IT projects.

4. IT Infrastructure Management: 28.1%

- This topic points to the need for IT asset management skills, including servers, networks, and devices.

5. Operating Systems Administration (Windows, Linux): 18.8%

- Interest in this topic may stem from the need for basic knowledge of configuring and managing operating systems.

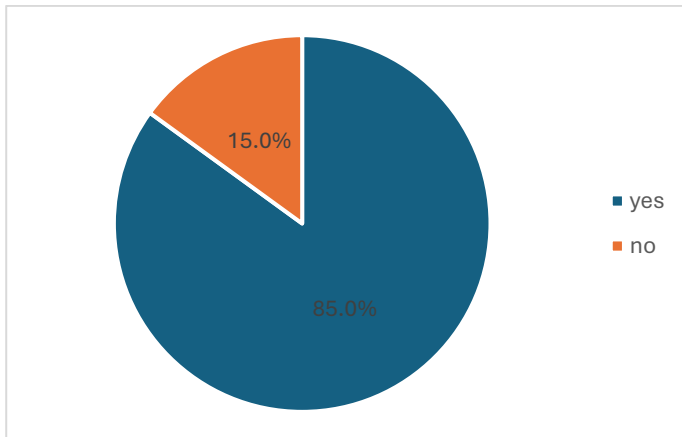
6. DevOps and IT process automation: 12.5%

- The least popular topic, but important for people involved in the automation and integration of IT processes.

Applications

- **IT security as a priority:** The greatest interest indicates the need to develop skills related to infrastructure and data protection.
- **The importance of cloud technologies and IT projects:** Virtualization, cloud computing and project management are important areas for the development of modern IT systems.
- **Niche for DevOps:** Although less popular, DevOps and automation can be crucial for more advanced IT professionals.





Drawing 31 Analyzing interest in advanced data analytics training - own elaboration based on the questionnaire

Analyzing interest in advanced data analytics training

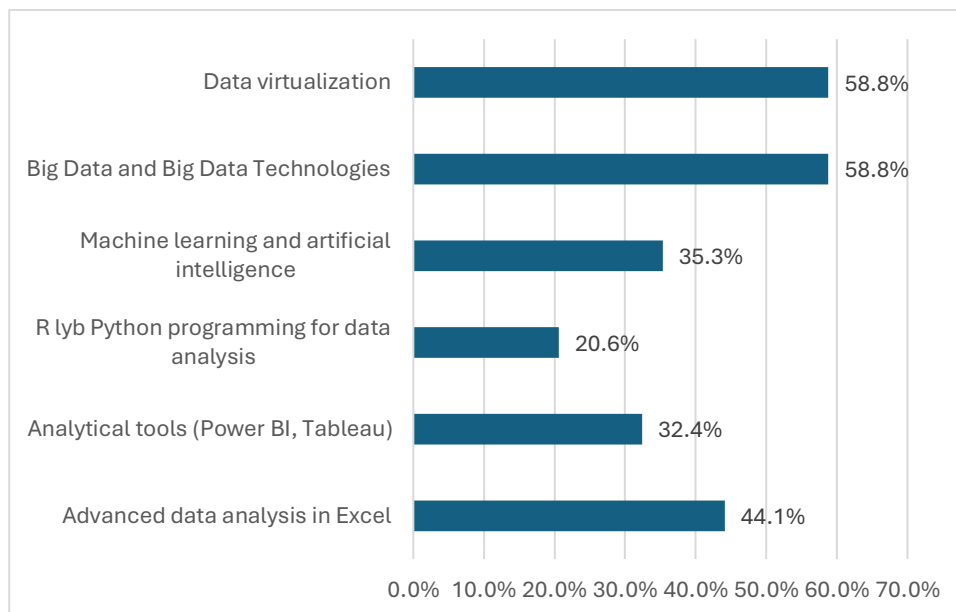
Based on the chart showing the respondents' responses:

1. Yes: 85%

- The vast majority of respondents expressed interest in training in advanced data analysis.
- This result indicates a growing demand for data analytics skills, which are crucial for data-driven decision-making.

2. No: 15%

- A small group of respondents do not show interest in this topic.
- This may be due to the lack of need to use data analysis in their work or to have sufficient competences.



Drawing 32 Analyzing interest in topics in advanced data analytics - own elaboration based on the questionnaire

Analyzing interest in topics in advanced data analytics

Based on a chart showing respondents' preferences for topics related to advanced data analytics:

1. Big Data and Big Data Technologies: 58.8%

- One of the two most frequently chosen topics, which emphasizes the importance of large data sets and tools for their processing in modern organizations.

2. Data visualization: 58.8%

- An equally popular topic, indicating the need to transform data into clear and attractive visualizations that support decision-making.

3. Advanced Data Analysis in Excel: 44.1%

- A popular choice, which indicates the importance of Excel as an essential tool in data analysis.

4. Machine Learning and Artificial Intelligence: 35.3%

- Significant interest in more advanced technologies such as machine learning and AI, suggesting a growing need in this field.

5. Analytical tools (Power BI, Tableau): 32.4%

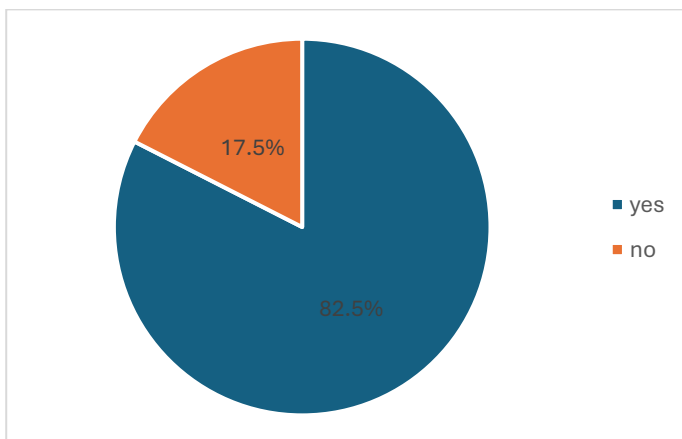
- Respondents point to the need to be able to use advanced analytical tools for data visualization and analysis.

6. R or Python programming for data analysis: 20.6%

- A less popular topic, but important for specialists who want to develop their programming skills.

Applications

- **Priority areas:** Big Data, data visualization and advanced data analysis in Excel are the key training topics, indicating the practical needs of respondents.
- **Growing interest in AI and ML:** The significant interest in machine learning and AI shows the trend towards advanced analytics technologies.
- **Analytical tools and programming:** The demand for Power BI, Tableau and programming languages (Python, R) indicates the need for a practical approach to training.



Drawing 33 Interest Analysis for Digital Content Creation Training - own elaboration based on the questionnaire

Interest Analysis for Digital Content Creation Training

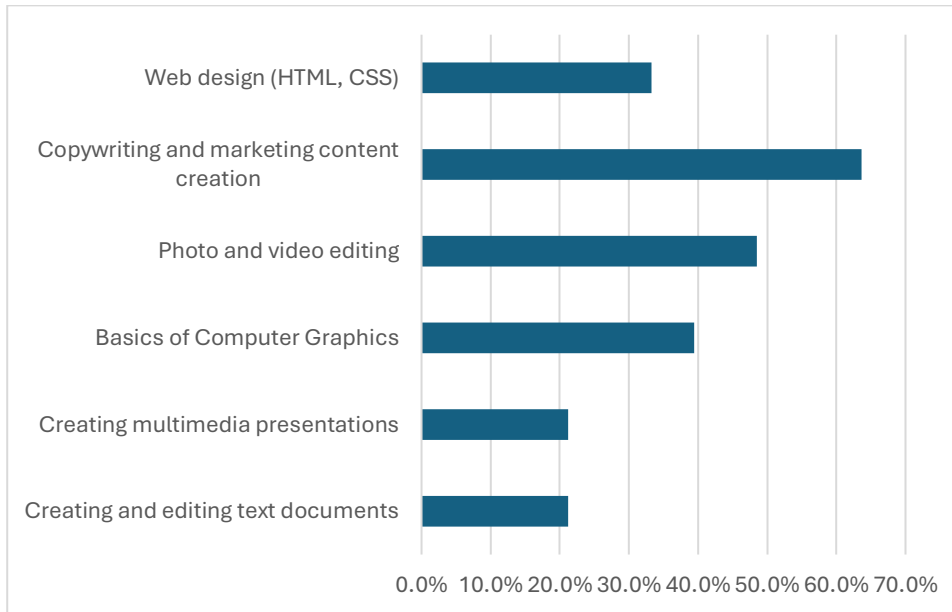
Based on the chart showing the respondents' responses:

1. Yes: 82.5%

- The vast majority of respondents expressed interest in digital content creation training.
- The high level of interest indicates a growing need to develop skills related to content creation, which are crucial in marketing, social media and digital communication.

2. No: 17.5%

- A minority of respondents do not show interest in this topic.
- This may be due to the lack of need to create digital content in their work or to having sufficient competences.



Drawing 34 Analyzing interest in topics in digital content creation - own elaboration based on the questionnaire

Analyzing interest in topics in digital content creation

Based on a chart showing respondents' preferences for topics in the area of digital content creation:

1. Copywriting and marketing content creation: 63.6%

- The most frequently chosen topic, which indicates a high interest in skills related to writing and creating promotional content.
- This result reflects the growing demand for effective marketing content in digital media.

2. Photo and video editing: 48.5%

- Respondents show a significant interest in multimedia editing skills, highlighting the importance of visually appealing content in digital communication.

3. Computer Graphics Fundamentals: 39.4%

- The popularity of this topic indicates the need to understand the basics of graphic design among people who want to develop visual skills.



4. Web Design (HTML, CSS): 33.3%

- This topic indicates an interest in creating and managing simple websites, which is important in the context of building a web presence.

5. Creating and editing text documents: 21.2%

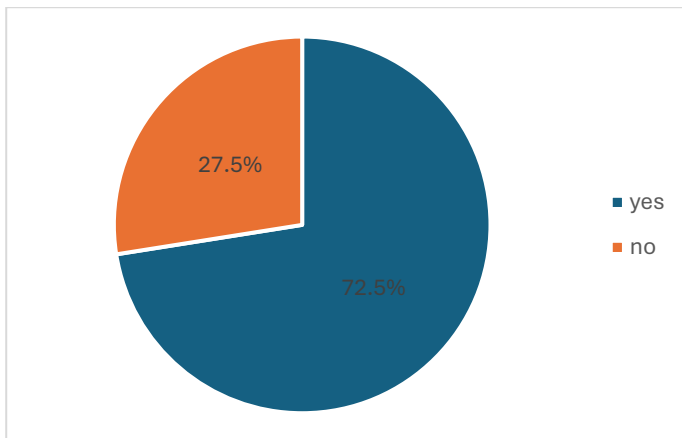
- A less popular topic, but still important for people who want to improve their skills in creating professional documents.

6. Creating multimedia presentations: 21.2%

- A topic with a similar level of interest as text documents, especially for people involved in visual communication.

Applications

- **Interest in marketing and multimedia content:** Copywriting and photo and video editing are key areas to focus on when planning training.
- **Fundamentals of Computer Graphics as a Foundation:** The results point to the need to develop visual skills as a support for digital content.
- **Technical aspects of content creation:** Designing websites in HTML and CSS is popular, which may be due to the need to build independence in managing websites.



Drawing 35 Analysis of interest in training in business process automation - own elaboration based on the questionnaire

Analysis of interest in training in business process automation

Based on the chart showing the respondents' responses:

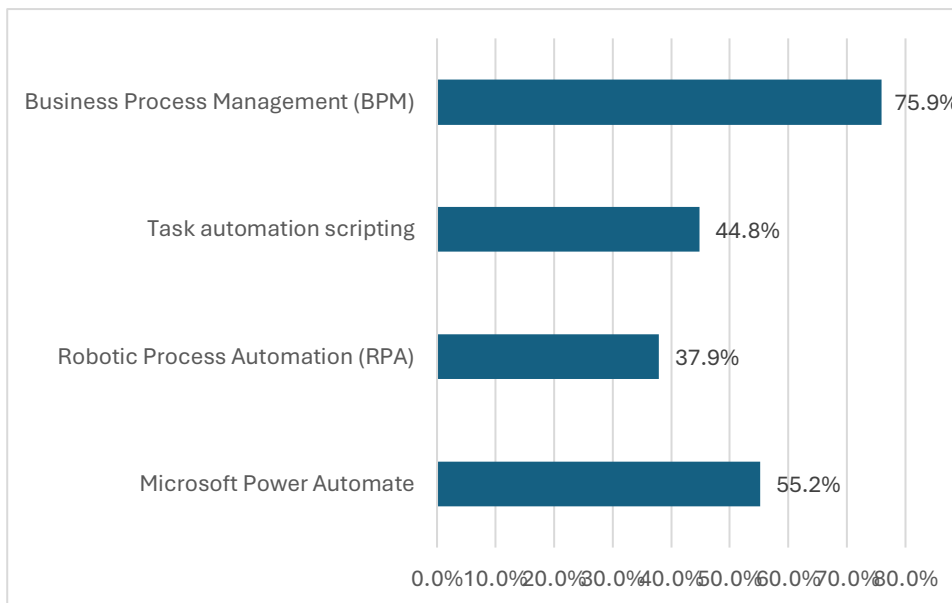
1. Yes: 72.5%



- The majority of respondents expressed interest in training in the field of business process automation.
- This result indicates a growing demand for skills related to automation, which can increase operational efficiency in organizations.

2. No: 27.5%

- Some respondents are not interested in this topic.
- This may be due to the lack of need for automation in their daily work or because they have sufficient competence in this area.



Drawing 36 Analysis of interest in topics in the field of business process automation - own elaboration based on the questionnaire

Analysis of interest in topics in the field of business process automation

Based on a chart showing respondents' preferences for topics related to business process automation:

1. Business Process Management (BPM): 75.9%

- The most frequently chosen topic, indicating a great interest in managing business processes as a whole.
- Respondents want to develop skills in designing, optimizing, and monitoring processes in organizations.

2. Microsoft Power Automate: 55.2%

- The popularity of this tool indicates the need for practical training on its use in process automation.

3. Scripting to automate tasks: 44.8%

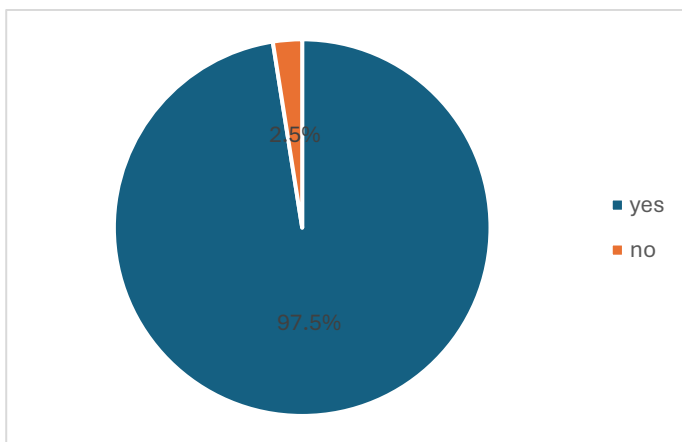
- The considerable interest indicates the need to develop technical skills related to writing scripts in various programming languages.

4. Robotic Process Automation (RPA): 37.9%

- A smaller number of responses, but still relevant, indicates an interest in RPA technologies that automate repetitive tasks.

Applications

- **Business process management as a priority:** Respondents show great interest in a comprehensive approach to process optimization.
- **Importance of automation tools:** The popularity of Microsoft Power Automate and scripts for automation indicates the need for practical knowledge and technical skills.
- **The growing role of RPA:** Robotic automation technology is gaining in importance, especially in the context of streamlining day-to-day operations.



Drawing 37 Interest Analysis for AI Content Creation Training and Tools - own elaboration based on the questionnaire

Interest Analysis for AI Content Creation Training and Tools

Based on the chart showing the respondents' responses:

1. Yes: 97.5%

- The vast majority of respondents expressed interest in training in content creation using AI tools.



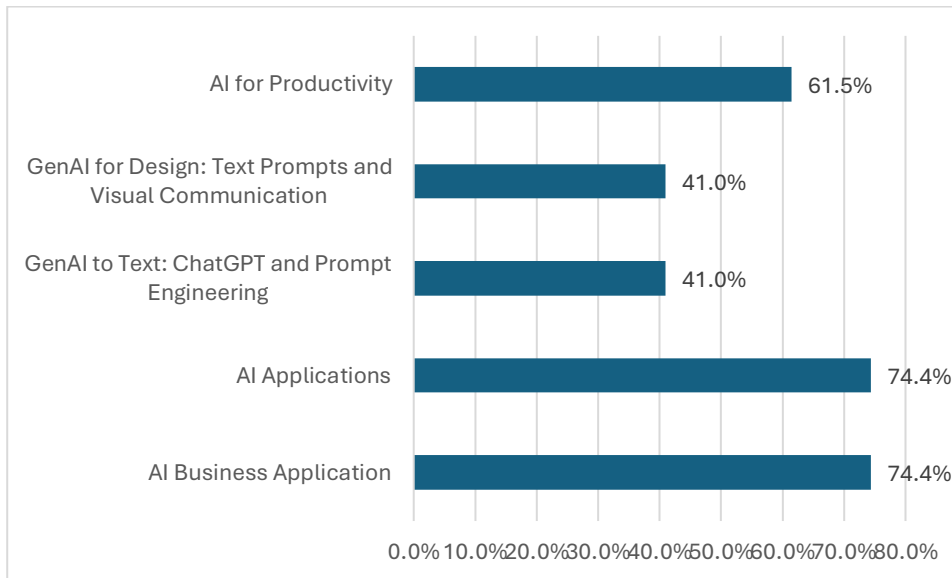
- The high level of interest indicates the importance of this technology in modern content creation processes.

2. No: 2.5%

- Only one person is not interested in training in this area.
- This may be due to the lack of need to use AI in their daily work or other training priorities.

Applications

- **Huge interest in AI technology:** 97.5% of respondents indicate that content creation using artificial intelligence is a key area of development.
- **The importance of AI in digital content:** The result highlights the growing role of AI tools in marketing, media, and communications.



Drawing 38 Analyzing interest in topics in content creation and AI tools - own elaboration based on the questionnaire

Analyzing interest in topics in content creation and AI tools

Based on a chart showing respondents' preferences for AI-related topics:

1. AI Business Applications: 74.4%

- The most frequently chosen topic, which indicates a great interest in the applications of AI in business processes.



- This result highlights the importance of AI tools in optimizing and automating tasks in organizations.

2. AI Applications: 74.4%

- The equal interest in general AI applications suggests that participants want to explore the wide range of possibilities for using this technology in different areas.

3. AI Productivity Boosters: 61.5%

- Considerable interest indicates the need to develop skills related to AI tools that help improve work efficiency.

4. GenAI for text: ChatGPT and prompt engineering: 41%

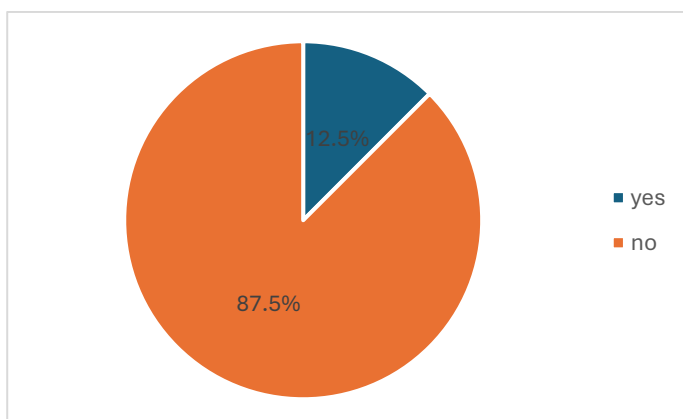
- Respondents showed interest in creating textual content with the help of AI tools like ChatGPT and prompt optimization techniques.

5. GenAI for Design: Text Prompts and Visual Communication: 41%

- An equal number of people are interested in the use of AI in design and visual communication, highlighting the importance of creative applications of AI.

Applications

- **Business use of AI as a priority:** The greatest focus is on the use of AI in business and general applications, highlighting respondents' hands-on approaches.
- **AI for productivity:** The results point to the need for training that shows how AI can make everyday tasks easier and work more efficient.
- **Creative applications of AI:** The significant interest in creating text and visual content with the help of AI highlights the growing role of tools to support innovation.



Drawing 39 An analysis of interest in other specialised training in digital competences - own elaboration based on the questionnaire

An analysis of interest in other specialised training in digital competences

1. No: 87.5%

- The majority of respondents are not interested in additional specialised training in digital competences.
- The result may suggest that the training topics already available fully meet their needs, or that they are not aware of the potential benefits of more niche training.

2. Yes: 12.5%

- A small group of respondents expressed interest in other specialist trainings.
- Topics indicated include:
 - **Chat bots:** A demand for knowledge on how to design and implement bots for communication.
 - **Chats on websites:** You need skills in the integration and management of chat systems on websites.

Applications

- **Little interest in additional topics:** 87.5% of respondents do not see the need to participate in additional, specialized training, which may suggest the niche nature of these areas.
- **Demand for digital communication training:** Chatbot and chat topics on websites indicate an interest in modern customer service and online communication solutions.

Analysis of responses to comments and suggestions on digital competence training

Based on the respondents' responses, the following comments and suggestions were identified:

1. Practical nature of training

- **Quotes:** "They are supposed to be practical", "I am asking for a lot of practical knowledge that I can use in my work and management."
- Respondents emphasize the need for a practical approach to training, which provides useful tools and knowledge that is easy to implement in everyday work.

2. Adaptation to the 50+ age group

- **Quote:** "Adaptation of training to 50+."



- There is a need to adapt the materials, pace and form of teaching to older people, who may have different needs and experiences in the field of digital competences.

Applications

- **Need for hands-on training:** Most comments point to the need for courses of a practical nature that allow you to directly apply the skills you have learned at work.
- **Support for people 50+:** Respondents point to the need to adapt training to older people, which requires taking into account their specific needs and challenges.

Recommendations

The analysis provides a lot of important information on the level of digital competence, training preferences and development needs of respondents. Here are the key takeaways:

1. Level of digital competence

Intermediate level dominates

- The majority of respondents (52.5%) rate their digital skills as intermediate, indicating that they are familiar with basic digital tools such as office applications (e.g. Word, Excel) or basic digital communication tools (email, video conferencing).
- **Challenge:** Although the intermediate level means knowledge of the basic functions of digital tools, it does not necessarily translate into the ability to use advanced functions such as data analysis in Excel, process automation, or the use of advanced project management tools (e.g., Asana, Trello).
- **Need for further development:** Intermediate-level individuals are ideal candidates for advanced training that will allow them to better use modern technology at work and advance their careers.

A group with a basic level of skills and lack of competence

- Basic level (30%) and lack of skills (5%) together comprise 35% of respondents. This group requires special support in the form of introductory training, which will enable them to build the foundations of digital competences.
- **Characteristics of the basic group:**
 - Knowledge of the basic functions of digital tools (e.g. searching for information on the Internet, creating simple text documents).
 - Often there is a lack of knowledge about the effective use of data management tools, digital communication or the basics of network security.



- High level of uncertainty in the use of new technologies.
- Characteristics of the group with a lack of skills:
 - Respondents to this group most often had no previous contact with digital tools in the workplace or education.
 - There is a risk of digital exclusion, which may hinder professional development and integration into the modern labour market.

Lessons from the dominance of intermediate and elementary levels

- Diversification of training needs: The results show that training programmes should be tailored to two main groups:
 1. Core group and lack of skills: Introductory training that covers basic office applications, internet use, data management, and the basics of digital security.
 2. Intermediate group: Developmental trainings that cover advanced features of digital tools (e.g. Excel, Power BI, Tableau), business process automation and more advanced data analysis topics.
- Potential for growth: People with an intermediate level already have a foundation that can be expanded with more advanced skills, allowing them to increase their professional value and open up to new opportunities at work.

Risks associated with the lack of an advanced level of competence

- Only 12.5% of respondents rated their skills as advanced. This means that many organizations may lack people capable of taking on digital transformation leadership roles or experts responsible for implementing advanced technologies.
- Consequences for companies:
 - Organizations may face difficulties in successfully implementing new technologies.
 - A lack of advanced competencies in the team can result in delays in the digital transformation process.

Recommendations for training programs

1. Adjusting the level of training:
 - Basic group and lack of skills: Introduction of basic courses with intuitive materials and simple exercises.



- Intermediate: Provide advanced training that develops knowledge of analytical tools, automation processes, and more complex topics.
2. Practical approach: Training should be focused on the practical use of the acquired skills in everyday work to increase their effectiveness.

In conclusion, the diversity in the level of digital competence among respondents highlights the need for flexible and tailored training programmes that allow for progressive upskilling and preparation of employees for an increasingly digital work environment.

2. Preferences regarding the form of training

- Respondents prefer **online training (both e-learning and in-person)** and **hands-on workshops**, highlighting the importance of flexible and accessible learning.
- **Short training sessions (1-4 hours)** are the most frequently chosen option, indicating the need to adapt training to the intensive schedules of participants.

3. Areas of digital development

The analysis showed diverse development needs in the area of digital competences, indicating key areas where respondents see the need to develop their skills. Each of these areas plays an important role in building competitiveness in the modern labor market and adapting to the requirements of digital transformation.

Digital security

- **Meaning:** Digital security is one of the most critical areas, as the rise of cyberattacks and data breaches poses a real threat to organizations.
- **Demand:** Respondents indicated the need for training in data protection, network threat recognition, and implementation of security strategies in companies.
- **Selected training topics:**
 - Manage sensitive data.
 - Anti-phishing and anti-ransomware.
 - Implementation of security policies in the digital environment.
- **Potential impact:** Developing competencies in this area will allow employees to more effectively protect organizations from digital threats, which will increase customer stability and trust.

Data analysis



- **Meaning:** In the age of Big Data, the ability to analyze data is becoming a key element of business decision-making. Data is the fuel of digital transformation, and its proper processing allows you to gain a competitive advantage.
- **Demand:** Interest in analytical tools such as Excel, Power BI, Tableau, and Big Data technologies indicates the need to develop analytical skills.
- **Selected training topics:**
 - Basics of data analysis and statistics.
 - Advanced analytics in Excel and BI tools.
 - Data visualization and presentation of results.
- **Potential impact:** Employees with analytical skills will be able to better interpret data, which will affect more accurate decision-making in organizations.

Digital content creation

- **Importance:** The dynamic development of digital marketing and visual communication makes the ability to create digital content extremely important for building the company's image and attracting customers.
- **In-demand:** Graphic design, copywriting, photo and video editing, and web development are all skills that are increasingly in demand.
- **Selected training topics:**
 - Graphic design with tools such as Canva, Photoshop, Illustrator.
 - Copywriting and creating marketing content.
 - Create and edit media, including promotional videos.
 - Basics of web development (HTML, CSS).
- **Potential impact:** Employees with developed digital content creation skills can increase the effectiveness of marketing campaigns and better engage customers.

IT management and digital transformation

- **Meaning:** IT management and digital transformation are crucial for the strategic development of an organization, allowing for better use of technology to achieve business goals.
- **Demand:** Respondents indicate the need for training on IT infrastructure, management systems and the implementation of a digital transformation strategy.



- **Selected training topics:**
 - Virtualization and cloud computing.
 - IT security in infrastructure management.
 - Digital transformation strategies in SMEs.
- **Potential impact:** Implementing modern IT tools and taking a strategic approach to digital transformation can increase operational efficiency and enable organizations to adapt faster to market changes.

Business process automation

- **Meaning:** Process automation can increase operational efficiency, reduce errors, and save time, which is crucial in a fast-paced business environment.
- **Demand:** Growing interest in tools such as Microsoft Power Automate, RPA (Robotic Process Automation), and BPM (Business Process Management) indicates the need for training in this area.
- **Selected training topics:**
 - Create simple task automation scripts.
 - The use of RPA to automate office processes.
 - Business Process Management (BPM).
- **Potential impact:** By automating processes, companies can improve productivity and reduce operating costs, which will affect their competitiveness.

Summary and recommendations

The identified areas of digital development indicate a broad need for comprehensive training that addresses both basic and advanced topics. **The key steps are:**

1. **To develop differentiated training programs** that respond to the needs of participants with different levels of advancement.
2. **To incorporate hands-on activities and workshops** allowing participants to apply new skills directly.
3. **Adapting the content of training to the specifics of the market and the needs of individual industries**, e.g. SMEs or the e-commerce sector.



By implementing appropriate training programs, organizations will be able not only to increase the level of digital competence, but also to increase their efficiency and competitiveness on the market.

4. Skills gaps

- A lack of competence was identified in areas such as:
 - **Content management systems (CMS)**, e.g. WordPress.
 - **Generative artificial intelligence (AI)** – although respondents are interested in training in this field.
 - **Business process automation** – many people show a lack of knowledge of tools such as RPA or BPM.

5. Support for older workers

- Respondents indicated the need to adapt training programs to older people (50+), which would take into account a slower pace of learning and more intuitive content.

Strategic conclusions

- **Digital transformation requires the support of employees:** Technology alone is not enough – the key is the competence that allows you to use it effectively.
- **Need to adapt training:** Organizations need to create training programs that address the diverse needs and skill levels of employees.
- **Investments in skills development:** Training is an important element of building the competitiveness of companies, especially in the face of dynamically changing technologies.

These conclusions are the basis for the development of specific recommendations and actions that will allow for the development of digital competences in a way that responds to the needs of both individuals and organizations.

The analysis of digital competences in Poland (project activity) is in line with the conclusions of numerous reports, which point to significant gaps in areas such as content management systems (CMS), generative artificial intelligence (AI) and business process automation. The key findings in these reports clearly highlight the need to intensify education and training in these areas.

Compliance of the analysis with the reports:



1. European Commission report: "State of the Digital Decade"

- **Main findings:** Poland should increase its efforts in the area of digital education and the development of ICT specialists' competences. The analysis confirms the need for high-tech training and to improve basic digital skills.

2. KPMG and ACCA report: "A modern CFO in a transforming company"

- **Main findings:** The challenge in Poland is the adaptation of solutions in the field of artificial intelligence and risk management. The results of the analysis show a similar competence gap in AI, pointing to the need for more advanced training in this field.

3. Report of the Ministry of Digital Affairs: "Generative AI in business"

- **Main findings:** The report highlights the potential of generative AI in digital transformation, while also pointing to a lack of knowledge about its applications in companies. The analysis highlights this lack while showing the respondents' interest in training in this area.

4. EY report: "How Polish companies implement AI"

- **Main findings:** Polish companies adopt AI more slowly than global competitors. The results of the analysis confirm that the low level of advanced digital competences, especially in the area of AI, limits the opportunities for technological development in Polish organizations.

5. NASK report: "Report on the state of the Digital Decade 2023 – Poland"

- **Main findings:** Key challenges include the development of digital competences and the digitalisation of enterprises. The analysis shows that training in digital transformation and business process automation is a priority for respondents.

6. KPMG report: "Artificial intelligence in companies in Poland – potential to be used"

- **Key findings:** AI adoption is growing, but deployments remain low. The analysis indicates a gap in AI competences, while highlighting the growing interest in development in this area.

The analysis and the aforementioned reports confirm that there are serious challenges related to the development of digital competences in Poland. Skills gaps in areas such as CMS, AI, and business process automation can limit an organization's ability to successfully execute digital transformation. Intensive training programmes and educational support are recommended to meet these challenges and bring Poland closer to the level of a technologically advanced society.



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