

Business Digitalisation toolbox

Smart Industrial Remoting: remote working in non-digitalised industries – Pilot Project



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www.ppmi.lt

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Executive summary (1/2)

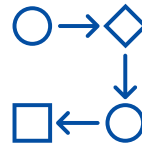
Objective



The toolbox offers **practical advice on business digitalisation** with a particular focus on SMEs and companies of low digital maturity.

The toolbox has been developed building on the outputs of the Smart Industrial Remoting [study](#). It thus focuses **on five industries**: agrifood, automotive, construction, textile and retail. Yet, the advice contained in the toolbox is relevant for companies operating across various industries.

Approach



The toolbox builds on the findings from **earlier stages of the Smart Industrial Remoting study**. In particular, the Best Practice Collection and Digitalisation pilots reports.

The study team conducted additional desk research and a literature review to put together the digitalisation pathway and identify pertinent resources for each industry of focus.

Results



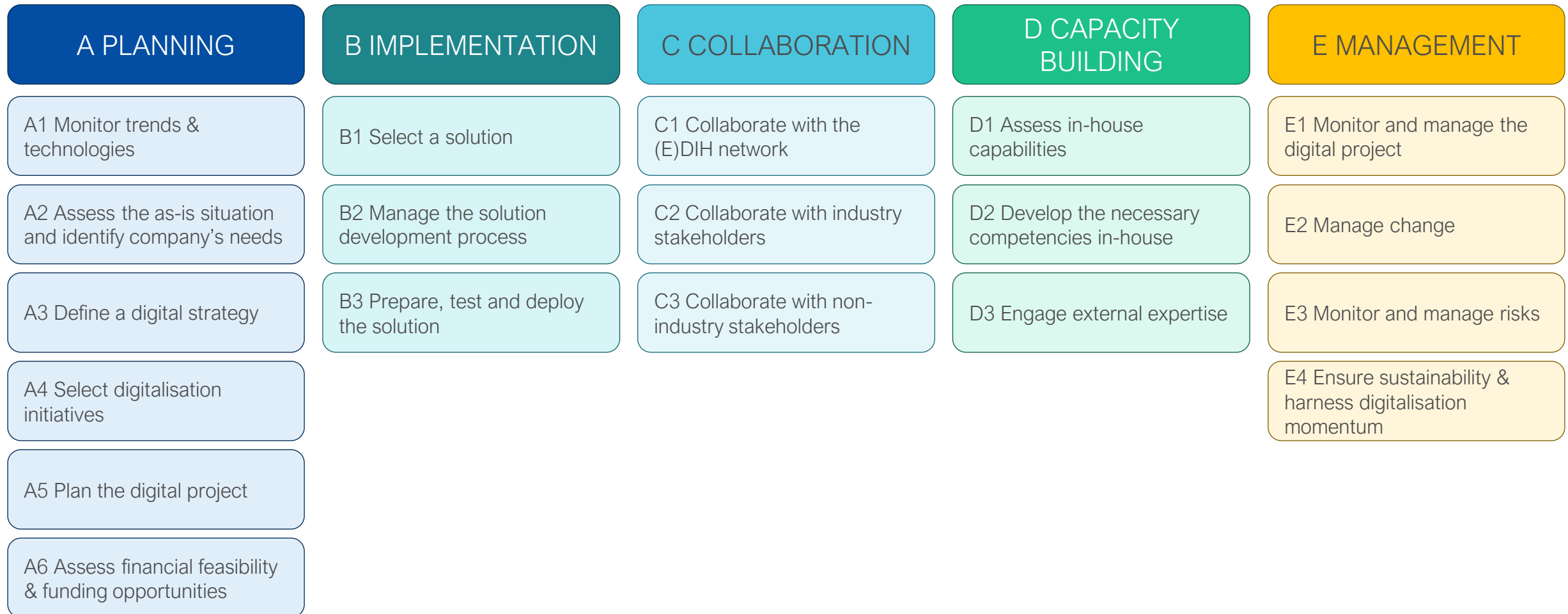
The Toolbox is structured around a **digitalisation pathway**. It contains five processes linked to business digitalisation: planning, implementation, collaboration, capacity building and management. The processes are broken down into further steps.

Each step contains an overview of its importance for business digitalisation, actions, tips, resources to further reading and practical examples illustrating how other companies have implemented the step.

Executive summary (2/2)

The toolbox is structured around a **digitalisation pathway** containing **five digitalisation processes**: planning, implementation, collaboration, capacity building and management.

Each process is broken down into **specific steps** that contribute to successful digitalisation. In each step, readers will find an overview of its importance, practical tips and actions, resources for further reading and illustrative examples from five industries in the scope of the study.





1. Introduction

1.1. Smart Industrial Remoting study objectives

1.2. About the toolbox

1.1. Smart Industrial Remoting study objectives (1/2)

Recognising the digitalisation challenges faced by SMEs and less digitally mature companies, in 2022 the European Commission launched a study on 'Smart Industrial Remoting: remote work in non-digitalised industries'.

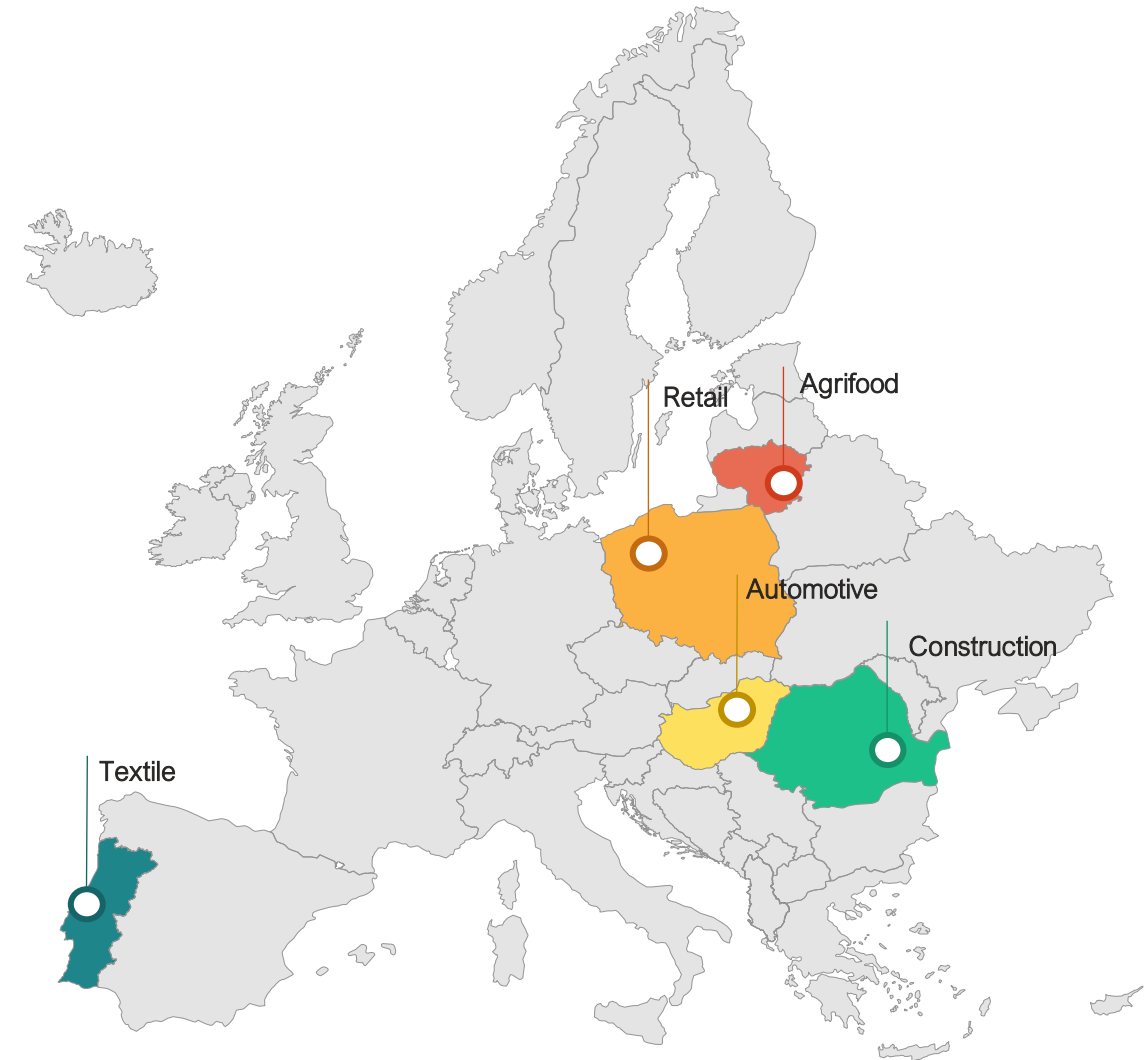
The study aimed to deliver **user-friendly** and **targeted advice** on **digitalisation** for five country-industry pairings:

- Automotive industry in Hungary
- Retail industry in Poland
- Textile industry in Portugal
- Agrifood industry in Lithuania
- Construction industry in Romania

This publication presents the main findings of the study stemming from gap analysis, problem identification, best practice collection and piloting carried out during the study.

You can find more information about the study and discover other study-related publications [here](#).

The study was implemented by PPMi in collaboration with industry experts and five Digital Innovation Hubs (DIHs) operating in the chosen countries: AgriFood Lithuania, dih4.eu in Poland, Innomine in Hungary, Citeve in Portugal and FIT EDIH in Romania.



1.1. Smart Industrial Remoting study objectives (2/2)

The study was organised into six different steps. This report presents the main findings of Step 5 – Toolbox development. It is the final output of the study. More details on the study and associated deliverables are available [here](#).



1. Gap analysis

- As-is state of digitalisation
- Factors influencing digitalisation
- [Gap Analysis workshop](#)
- [Gap analysis report](#)



2. Problem identification

- 2-3 problems per country-industry pairing
- 1-3 company examples per country-industry pairing
- [Problem identification report](#)



3. Best practices identification

- 42 company case studies in 5 industries
- 8 cross-cutting best practice principles
- [Best practices workshop](#)
- [Best practice collection report](#)



4. Company digitalisation pilots

- Support for 5 digital interventions in companies
- Analysis of lessons learned and 27 horizontal takeaways
- [Digitalisation pilots workshop](#)
- [Digitalisation pilots report](#)



5. Toolbox development

- Digitalisation toolbox with best practices and recommendations



6. Dissemination & promotion

A series of workshops to gather stakeholder feedback and raise awareness about our findings

1.2. About the toolbox



Objective

To offer practical advice on business digitalisation for SMEs and companies of low digital maturity.



Focus

The toolbox has been developed building on the outputs of the Smart Industrial Remoting study. It thus has a focus on five industries: agrifood industry, automotive industry, construction industry, retail and textile industry. Nevertheless, the advice contained in the toolbox is relevant for companies operating across various industries.



Target audience

The toolbox contains practical recommendations for companies operating in the five industries in the scope of the study, as well as companies in other industries, (E)DIHs and other ecosystem players.



Structure

The toolbox contains a common cross-industry digitalisation pathway consisting of five main digitalisation processes. Each process contains practical advice and resources for company digitalisation. Each process also contains industry-specific elements (company examples, guidance and resources) throughout its sub-sections.

The digitalisation toolbox has been developed with SMEs and companies of low digital maturity in mind. Yet, companies of all sizes and maturity will find resources and advice relevant to them as well.



2. Digitalisation pathway

2.1. [Pathway overview](#)

2.2. [Process A: Planning](#)

2.3. [Process B: Implementation](#)

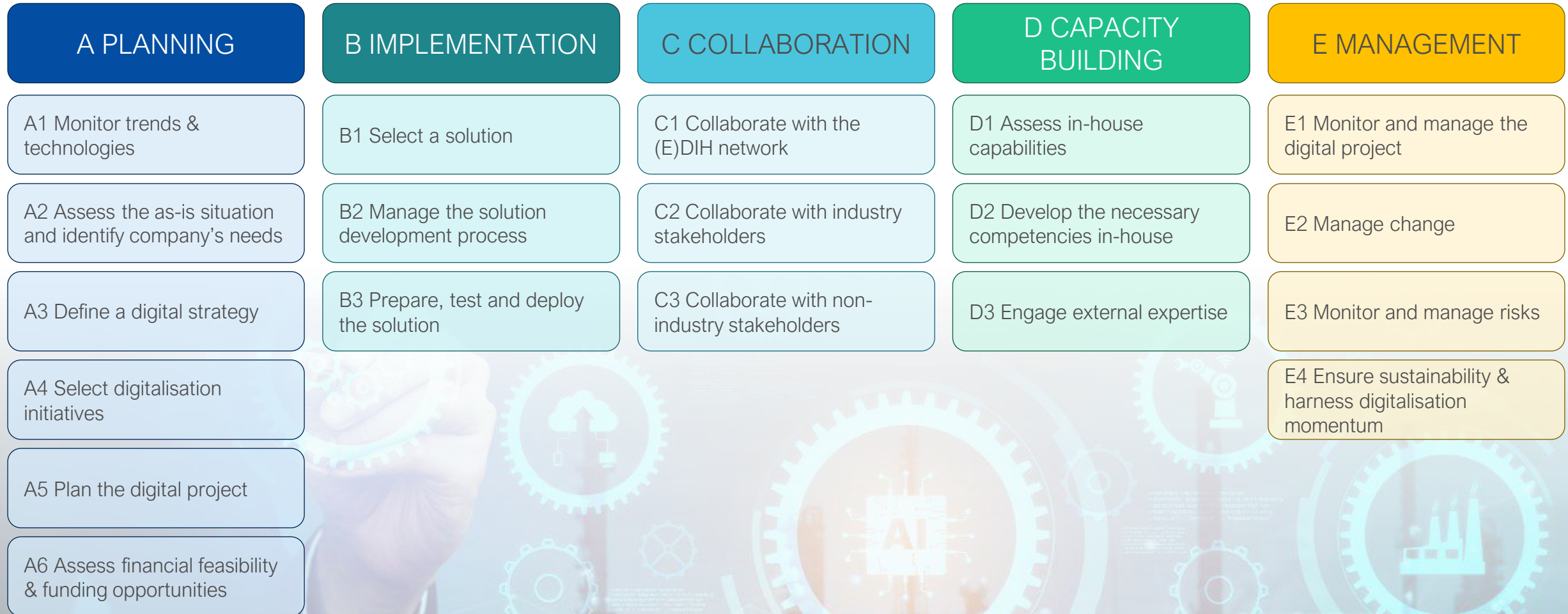
2.4. [Process C: Collaboration](#)

2.5. [Process D: Capacity building](#)

2.6. [Process E: Management](#)

2.1. Digitalisation pathway overview (1/3)

For each **digital transformation process** identified in the study, we outline **several key steps** that contribute to the success of digitalisation. These steps are derived from a synthesis of findings from all preceding stages of the study, including gap analysis, problem identification, best practice collection and piloting. **Click on a step** to be led to the corresponding chapter of the toolbox.



2.1. Digitalisation pathway overview (2/3)

Each step of the toolbox contains **several common elements**. Each step begins with an overview of **its importance** in the context of business digitalisation and presents the main goals associated with the step. Each chapter also includes a list of **actions and associated objectives**. Finally, readers will find tips on how the step can be implemented more efficiently.

Consult the images below for a **guide on navigating** and reading the toolbox.

Follow the buttons to **jump** to the process that is most relevant for you.

Each step begins with an overview of its importance for companies, especially SMEs.

In addition to the overview of the step, you will find a list of actions and associated objectives.

Step D2: Develop the necessary competences

Why is this important?

Ensuring sufficient human resources, as well as employees' know-how and ability to use new technologies, is crucial for successful digitalisation. **Reskilling and upskilling** are among the main organisational determinants influencing the adoption of technologies among SMEs. Furthermore, internal capacity building is a **more effective strategy for long-term digitalisation** than reliance on external expertise. Nevertheless, the development of in-house skills remains challenging for SMEs, which often only plan and invest in employee training when there is a direct business need.

The successful implementation of technology requires **both technical knowledge and more general skills** such as creativity, problem-solving and active learning. Hybrid skills are becoming increasingly important, especially for SMEs, whose employees often fulfil roles in both digitalisation and the core business at once.

There are several ways in which companies can secure adequate skills. One of the most effective is **structured employee training**, which can be provided internally or by EDIHs, clusters or other external providers. Alternatively, SMEs may opt for **more informal and cost-effective methods such as learning-by-doing or online courses**. While enterprise-wide workforce planning and talent development practices have proved to be effective, it may be sufficient for SMEs to **check-in regularly with employees** and reflect on their future skill development.

Goals

- Enable the transformation of business models and the use of new technologies in enterprises
- Keep employees engaged, competent and able to tackle challenges and contribute to organisational stability.
- Increase resilience and adaptability towards the changing environment.

Highlighted resources

Type	Highlighted resources
Database	Digital skills and jobs platform training : a comprehensive collection of courses for developing digital skills.
E-learning	Digital SkillUp courses : a catalogue of online courses in various technologies and in digitalisation management.
Framework	European e-Competence Framework : a common European competence framework for IT professionals.
Framework	Digital Competence Framework : a common European competence framework for European citizens (user-level skills).

Only 18% of EU SMEs provide ICT training to employees

According to Eurostat, 66% of large enterprises in the EU provided their employees with training to develop or upgrade their ICT skills in 2020, compared with only 18% of SMEs.

For a list of references, see [here](#).

Key actions and objectives

Action	Objective
C3.1 Attend events organised by local academic institutions and innovation agencies, or reach out to them directly	To identify academic institutions whose expertise or research programmes are relevant, and explore opportunities for partnerships, co-funding and piloting or testing solutions.
C3.2 Look for co-financing opportunities	To mitigate the financial burden and reduce the risks associated with digitalisation.
C3.3 Engage with experts in the field, ICT clusters, associations and academics	To interpret technological trends and their practical application, to make a better-informed choice of solution and provider, and to develop a long-term understanding of industry-specific trends.
C3.4 Reach out to universities that are involved in R&D projects	To participate in piloting and test-before-invest opportunities, to take advantage of existing networks for <u>joint collaboration</u> such as clusters, innovation alliances, etc.

Tips

- Regularly monitor the available opportunities, open calls and initiatives launched by public authorities.
- Allow sufficient time for application processing when interacting with public authorities and applying to state support mechanisms.
- Consider the geographical proximity of potential partners in order to ensure that frequent meetings can be arranged.
- Consider hiring assistants or interns from partner universities for the duration of the project to address skill gaps and ensure streamlined coordination.
- Make sure all parties are informed about each other's constraints in terms of time and financial resources.
- Offer the technological challenges you encounter as problem-solving exercises for university students or the organisers of hackathons.

For a list of references, see [here](#).

Each step lists goals relevant for businesses pursuing digitalisation.

Consult practical resources for further tips and know-how.

The toolbox also includes practical tips on implementing the step more efficiently.

2.1. Digitalisation pathway overview (3/3)

Where relevant, some steps include recommendations for five industries in the scope of the study as well as the supporting ecosystem. Furthermore, each step of the pathway contains practical examples of how the step was implemented by industrial companies.

Consult the images below for a **guide on navigating** and reading the toolbox.

Some steps contain industry-specific recommendations, as well as recommendations specific to the supporting ecosystem. These are easily identifiable by colour: **yellow** for the automotive industry; **orange** for retail; **teal** for the textile industry; **green** for the construction industry; **red** for agrifood; **blue** for supporting ecosystem; **light blue** for general industry recommendations.

Each step contains practical examples from case studies.

For steps without industry-specific recommendations, you will still find colour-coded practical examples of how the step was implemented by companies from different industries.

Recommendations for companies in the automotive industry

The automotive industry is characterised by a **highly specialised value chain**. As such, digitalisation initiatives often trickle down the value chain from larger players to smaller ones. Nevertheless, certain technologies are highly pertinent to smaller companies.

Digital technologies are transforming the **manufacturing process** in the automotive industry. Innovations range from the adoption of interconnected, data-driven sensors across the factory floor to advanced robotics that are able to complete certain tasks. The use of solutions driven by artificial intelligence (AI) and the **internet of things (IoT)** makes **production more efficient** and helps to **detect production errors more quickly**. More advanced data analytics can also help companies to predict potential errors and failures in the production process.

Virtual reality and augmented reality (VR/AR) technologies are also transforming the design process and customer relationships. Virtual tools can help to both design new vehicles and allow potential customers to experience their potential.

SMEs can benefit from the **latest developments in technology by cooperating with clusters and EDIHs operating within the automotive industry**. These can provide expert support for the adoption of more complex technologies such as robotics and AI.

Type	Highlighted resources
Network building	The Enterprise Europe Network helps businesses to innovate and grow on an international scale. It offers many services for SMEs through its local contact points. Find the nearest contact point in your country here .
Monitoring the latest trends	The British Standards Institute develops regular reports on the latest trends in the automotive industry.
Deep dive	The 'Advanced technologies for industry – sectoral watch: technological trends in the automotive industry' report contains a detail breakdown of the technologies most pertinent to the automotive industry.

For a list of references, see [here](#).

Practical examples

Matro Gépgyártó Kft. in Hungary – analysing competitors' solutions and opting to retrofit!

When faced with difficulties in finding the right supplier, the Hungarian automotive company **Matro Gépgyártó Kft.** needed to broaden its network. It scanned the market, analysing what data collection systems were being used by its competitors. To explore how its potential choice of the system operated in practice, company representatives attended a trade fair in Germany before making their final decision. The solution ultimately chosen by Matro Gépgyártó Kft. was a cost-effective one: rather than buying completely new equipment, the company decided to retrofit its existing machines with data collection terminals.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).

Henry Partners in Poland – opting for off-the-shelf software to avoid vendor lock-in

Henry Partners is a Polish company that operates four e-commerce shops selling various products, from sporting goods to health and safety products, and cosmetics accessories. When automating its store order processing to increase efficiency, Henry Partners made a firm decision that no custom software development should be undertaken. Every tool had to be commercial, off-the-shelf, and sufficiently easy for the owner to configure and control. This strategy helped Henry Partners to become more flexible with regard to switching between software development companies, and thus avoid becoming too dependant on any one of them.

Learn more about Henry Partners and other digitalisation case studies [here](#).

Unifardas in Portugal – overcoming difficulties in communication with a provider through the help of a consultant

Portuguese textile company **Unifardas** decided to implement a parametric data solution for defining order requirements and calculating the final price. Given that no suitable turn-key solution had been developed for the textile industry, Unifardas partnered with a software provider that had previously implemented similar solutions in another industry. Together, they developed custom software for Unifardas. However, communicating with the provider was not an easy task. The two sides often had different expectations and lacked clarity regarding various aspects of the project. Eventually, an external consultant became a bridge between Unifardas and the digital partner, and a common ground was found.

Learn more about Unifardas and other digitalisation pilots conducted as part of this study [here](#).

A textile company in Portugal – relying on an in-house IT team in digitalisation

A textile company in Portugal established an internal IT team to manage most of the development and implementation of new digital tools. As a result, it has managed to minimise its dependence on third-party providers. In cases where the company has chosen to outsource, finding the right tools and partners has proved time-consuming and challenging. According to company representatives, external providers often lack knowledge of processes and business specifics in the textile industry.

Learn more about this and other digitalisation case studies [here](#).

Consult practical resources for further tips and know-how.

Each step contains a link to a list of references used for its development.

If you want to explore a case study further, follow the link in the description.



2.2. Process A: Planning

2.2. Process A: Planning

The first process covers both company- and initiative-level digitalisation planning. It encompasses assessing the as-is situation, defining a way forward (a 'digital strategy'), and selecting and planning the implementation of priority projects.

This process is broken down into six distinct steps. You can follow the links below to jump to the specific step.



Step A1: Monitor trends and opportunities

Why is this important?

To maintain their competitiveness and keep track of the latest developments in their industry, companies are encouraged to **monitor the market regularly**. Studies suggest that gathering information across different contexts and markets is a prerequisite for digital innovation in SMEs. Lack of knowledge about digitalisation opportunities slows down the adoption of digital technologies. SMEs, in particular, tend to have less access to thought leadership, research and academia.

Companies can acquire knowledge in multiple ways, by relying on both **internal and external resources**. Relevant information can be obtained from trade fairs, best practice repositories, newsletters on the latest market trends, and through memberships of various clusters and associations.

Even so, some smaller companies may find it difficult to build the necessary technical knowledge required to monitor relevant markets. To help ensure this, SMEs can **collaborate with the wider business ecosystem** and make use of support mechanisms such as the EDIH network.

Reviews from specialist websites and social media are among the primary sources of information used by the leaders of SMEs to make technology-related decisions.

According to a Microsoft [study](#), 27% of SMEs look for technology-related information on specialist websites; 26% do so using social media; while 25% seek it from the technology provider's website. Industry analysts, discussion forums and internal forums were consulted by 24% of SMEs surveyed when making technology-related decisions.




Goals



- Monitor the latest technology developments that are pertinent to your business.
- Keep informed about the latest innovations that will make your business more competitive.
- Identify opportunities to collaborate in implementing the latest technologies.

Key actions and objectives

Action	Objective
A1.1. Choose an approach to technology monitoring	To find the most efficient way of keeping on top of developments in your industry. Allocate responsibility for monitoring to a person within the company or outsource it to a supporting entity within the industry (a cluster, association or (E)DIH).
A1.2. Harness the opportunities offered by your local ecosystem	To identify a particular technology that would suit the company's needs. This can be achieved by participating in industry events, trade fairs and info sessions organised by (E)DIHs and other organisations.
A1.3. Seek expert advice	To take a professional approach to monitoring the market and identifying technologies that work best for your company. External experts and consultants can point your company to relevant ecosystem events, service providers and funding opportunities.
A1.4. Consult the latest publications on industry digitalisation	To gain a strategic view of where the industry is going next, and a deeper understanding of what is happening within the industry – not just locally, but on a global scale.

Tips

-  Harness quick wins for knowledge building – subscribe to various newsletters that cover industry digitalisation and innovation.
-  Collaborate with (E)DIHs within your ecosystem to receive updates on which technologies are the most relevant for your company.
-  Find out which EDIH is closest to you by exploring the [EDIH online catalogue](#).

-  Join industrial clusters and associations. They often present digitalisation best practices and organise match-making events.
-  Be open-minded – listen to your peers and colleagues. Sometimes digitalisation ideas may come from unexpected places.



Good practices for hubs and the supporting ecosystem

The supporting ecosystem plays an important role in **facilitating knowledge transfer** about technology trends to SMEs. (E)DIHs, industry associations, clusters and universities are all well-informed about the latest developments in the technology landscape. In particular, these stakeholders are aware of which service providers are operating in a given region or municipality. Communication about pertinent trends is normally part of the mission of the supporting ecosystem.

When communicating with SMEs and companies of low digital maturity, players in the supporting ecosystem should be mindful that **some SMEs may be less familiar with the latest digital innovations**. It is thus important to establish a **common language** with companies. Complex concepts are best explained in terms that SMEs can relate to, with a focus **on productivity and efficiency gains**. Showcasing [best practices](#) that illustrate how similar technologies have been implemented in other companies is also a useful way to demonstrate the potential of a particular digital solution for SMEs.

Hubs, in particular, can play an important role in **interpreting the latest technological trends** for SMEs. Through [Digital Maturity Assessments](#) (DMA), they can identify which of the latest technology developments may be most pertinent for a given company, taking into account its digital maturity and needs.

Step A1: Monitor trends and opportunities

Practical example: South Transdanubia Mechanical Engineering Cluster in Hungary – providing vocational training and promoting business cooperation.

South Transdanubia Mechanical Engineering Cluster currently has 40 companies as members, representing four counties and employing approximately 5,000 workers. The cluster advises its members on which technologies to implement, and also connects them with vocational training providers. A representative of the cluster highlighted that the step of deciding which technology to implement is a crucial one for SMEs. As such, expert advice and guidance are especially important. Recently, the cluster has been advising its automotive members about integrating robotics and AI into their operations.

Learn more about the cluster and other digitalisation case studies [here](#).

Type	Highlighted resources
Best practice repository	Examples of best practices illustrating how companies have successfully adopted digital technology are available in the Best Practice Collection report .
Product watch reports	The European Commission regularly publishes product watch reports focusing on the latest technological developments in various industries.
Knowledge hub	The EDIH Knowledge Hub offers various ‘hands-on’ guides on technology implementation support for SMEs.



Recommendations for companies in the automotive industry

The automotive industry is characterised by a **highly specialised value chain**. As such, digitalisation initiatives often trickle down the value chain from larger players to smaller ones. Nevertheless, certain technologies are highly pertinent to smaller companies.

Digital technologies are transforming the **manufacturing process** in the automotive industry. Innovations range from the adoption of interconnected, data-driven sensors across the factory floor to advanced robotics that are able to complete certain tasks. The use of solutions driven by artificial intelligence (AI) and the internet of things (IoT) makes **production more efficient** and helps to **detect production errors more quickly**. More advanced data analytics can also help companies to predict potential errors and failures in the production process.

Virtual reality and augmented reality (VR/AR) technologies are also transforming the design process and customer relationships in the industry. Virtual tools can help to both design new vehicles and allow customers to experience their potential.

SMEs can benefit from the **latest developments in technology by cooperating with clusters and (E)DIHs operating within the automotive industry**. These can provide expert support for the adoption of more complex technologies such as robotics and AI.

Practical example: Matro Gépgyártó Kft. in Hungary – scanning the market and attending a trade fair to select a solution

Matro Gépgyártó Kft. participated in the [digitalisation pilot](#) conducted as part of this study. The company specialises in manufacturing products for the automotive industry. To improve the collection of data in its manufacturing processes, the company decided to install data collection terminals. To identify the most appropriate solution, the company scanned the market and analysed what data collection systems were already being used by similar companies in the industry. Before making a final decision, company representatives attended a trade fair in Germany to see how these solutions work in practice.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
Network building	The Enterprise Europe Network helps businesses to innovate and grow on an international scale. It offers many services for SMEs through its local contact points. Find the nearest contact point in your country here .
Monitoring the latest trends	The British Standards Institute develops regular reports on the latest trends in the automotive industry.
Deep dive	The 'Advanced technologies for industry – sectoral watch: technological trends in the automotive industry' report contains a detailed breakdown of the technologies most pertinent to the automotive industry.



Recommendations for retail companies

Several technologies are driving innovation in the retail sector. These are primarily aimed at improving the **consumer experience** and **optimising processes**. Innovators in the retail industry employ online apps; AI and machine learning; big data and data analytics; AR/VR; as well as blockchain and other distributed ledger technologies.

Retailers are using technologies such as AI-based data analytics and cloud services to **digitalise their supply chains**. Advanced enterprise resource planning (ERP) systems are increasingly being used to interconnect supply chains, as well as to analyse real-time data to inform decisions and optimise end-to-end supply chain planning. Companies are also using automation to monitor in-store purchases and automate the re-ordering of products.

Furthermore, smart and connected devices are helping companies to introduce **remote monitoring and operations in retail warehouses**. Digital technologies are also transforming customer relationships. Many stores now provide online apps for both staff and customers where they can seamlessly check the availability of products. Furthermore, AR/VR technologies are also being used to transform customers' experiences in physical stores. These technologies enable customers to try clothes on using virtual 'mirrors', and to customise their purchases with the click of a button.

SMEs can greatly benefit from the introduction of **e-commerce sales systems**, which integrate their warehouse, online and physical stores with the help of an ERP system, and deploy apps for a smooth customer experience.

Practical example: MST Frieling in Germany – introducing an ERP system during the COVID-19 pandemic

MST Frieling is a family-owned shop, operating since 2007. The company mostly sells travel luggage, hats, bags and fashion jewellery. In response to the COVID-19 pandemic, it implemented a cloud-based ERP system. The company participated in a support programme provided by the state of North Rhine-Westphalia. A representative of MST Frieling cited the company's **exploration of online digitalisation opportunities** as having been helpful in developing a convincing and sustainable concept for its participation in the programme. One of the store's owners, Herr Frieling, also cited his previous experience and IT know-how as being useful. This knowledge helped the company to save time when applying for funding under the support programme, as it was already aware of potential solutions that could be implemented.

Learn more about the MST Frieling and other digitalisation case studies [here](#).

Type	Highlighted resources
Network building	The Enterprise Europe Network helps businesses to innovate and grow on an international scale. It offers many services for SMEs through its local contact points .
Digitalisation opportunity overview	A breakdown of the main opportunities that digitalisation offers to retail companies, as well as various approaches that companies can take towards digitalisation, is available here .
Retail industry digital plan	The government of Singapore has developed a detailed digital plan for SMEs in the retail industry.



Recommendations for companies in the textile industry

Several technologies are driving digital transformation in the textile industry. These include 3D printing, AI, AR/VR, big data and IoT. For example, the use of AR/VR as well as 3D technologies is enabling **remote design processes** in the industry. 3D technologies are used for body scanning via mobile applications. These provide body measurements and can be integrated with 2D computer-aided drafting (CAD) systems for pattern engineering.

Digital technologies are also transforming production processes in the textile industry. The use of IoT and AI-enabled devices allow **production errors to be detected**, reducing downtime. The adoption of data-powered ERP systems helps to interconnect the journey of the product from order, through design, to production. Furthermore, the use of AI can also help to ensure production quality. Not only does this technology allow for a faster inspection of the fabric's quality, it also enables businesses to readily match original design colours to those in a finished textile product.

Recently introduced **legal requirements** in relation to product traceability are also likely to **speed up digitalisation** in the industry. Compliance with these laws requires the seamless exchange of data along the supply chain, which is likely to increase the pace of digitalisation.

Practical example: Katty Fashion in Romania – technologies for the circular economy

Katty Fashion is a manufacturing company in the textile/fashion industry, with 40 employees. The company produces a wide range of women's outerwear and specialises in short production runs and customised clothing. The company has chosen to develop the technical skills in-house to assess, apply and compare new technologies to support its digitalisation process. In addition, Katty Fashion has also received technical support under the DigitaliseSME initiative to conduct a needs assessment that included exploring digitalisation opportunities and potential business directions for the company.

Learn more about Katty Fashion and other digitalisation case studies [here](#).

Type	Highlighted resources
Network building	The Enterprise Europe Network helps businesses to innovate and grow on an international scale. It offers many services for SMEs through its local contact points .
Knowledge sharing on the future of textiles	The European Technology Platform for the Future of Textiles and Clothing (Textile ETP) brings together experts and leading companies in the textile ecosystem.
Deep dive	The 'Advanced technologies for industry – sectoral watch: technological trends in the textile industry' report contains a detailed breakdown of the technologies most pertinent to the textile industry.



Recommendations for companies in the agrifood industry

Despite being one of the least digitalised industries in Europe, agrifood has **great potential for digitalisation**. Technologies such as AI, IoT (including sensors and drones), robotics, cloud computing and data-driven analytics are transforming the sector. These technologies are helping to improve operational efficiency, optimise input use (water, fertilisers, pesticides, etc.), and enhance product quality, safety and security.

Drones, sensors and robots are transforming production processes in the industry. Drones can help in **crop scouting and spraying**. IoT-enabled machines and robots enable the automation of production tasks such as **remote monitoring, harvesting, packing and logistics**. In terms of operations, data-driven solutions enable farms to better plan and forecast their crop yields, leading to increased efficiency and savings.

Not all the solutions listed above may be immediately applicable to SMEs. Nevertheless, small farms stand to benefit greatly from digitalisation. The **centralisation of farm data management through an ERP** system can support small farms in monitoring and planning crop yields, as well as simplifying their administrative processes.

Practical example: 50 Acres of Work & Joy in Lithuania – working with a Digital Innovation Hub to learn about innovation

50 Acres of Work & Joy is a micro-farm based in Lithuania. It participated in a [digitalisation pilot](#) conducted as part of this study. The farm had a low level of digital maturity and limited knowledge about the potential of digital technologies. The farm thus relied on the expertise and services provided by a supporting EDIH to understand which digital solutions would best suit its business and improve its competitiveness. The hub worked closely with the farm owner to explain the nuances of various technologies, as well as future avenues for further digitalisation after the pilot.

Learn more about 50 Acres of Work & Joy and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
Network building	The Enterprise Europe Network helps businesses to innovate and grow on an international scale. It offers many services for SMEs through its local contact points .
Deep dive	Advanced technologies for industry – sectoral watch: technological trends in the agrifood industry report contains a detail breakdown of the most pertinent technologies for the agrifood industry.
Interactive database of digitalisation tools	Gnomee is the DESIRA knowledge base of potential digital game changers in rural areas. It contains over 700 digital tools that support digitalisation in rural areas, with a focus on agrifood.

E: MANAGEMENT

D: CAPACITY BUILDING

C: COLLABORATION

B: IMPLEMENTATION

A: PLANNING



Recommendations for companies in the construction industry

Construction lags behind other European industries in the uptake of digital technologies. As [findings of our study highlight](#), some companies in the construction industry are still in the process of adopting ‘industry 3.0’-type technologies. As such, companies in the construction industry stand to benefit greatly from digitalisation.

In particular, the adoption of **building information modelling (BIM)** technology can be seen as a stepping stone for companies to gain momentum towards digitalisation. BIM is a technology used to create and manage information about a construction project throughout its entire life cycle – allowing seamless collaboration between teams, both within and between companies. BIM is also a prerequisite for the adoption of more advanced technologies relating to construction management.

In relation to more advanced digital technologies, construction companies are increasingly **implementing 3D scanning technologies to create ‘digital twins’** of their ongoing construction process. The use of VR is also transforming customer relationships within the industry. In terms of post-construction maintenance, IoT- and AI-enabled management systems allow the more efficient monitoring and management of buildings. These systems also contribute to reducing the environmental impact of the construction industry.

Practical example: UNITH2B in Romania – regular scanning of market trends and identification of collaboration opportunities

UNITH2B is an architecture and engineering company based in Romania, which began operating in 2013. The company participated in the [digitalisation pilot](#) conducted as part of this study. UNITH2B sees itself as a constant innovator and is always on the lookout for new opportunities to improve its processes. It was thanks to the company’s monitoring of digitalisation opportunities that it identified the open call launched by FIT EDIH, inviting companies to participate in the digitalisation pilot. Recognising the opportunity to further streamline its use of BIM technology, the company applied to the open call. Although UNITH2B has not designated a specific person to be responsible for monitoring trends, its managing partner stated that senior employees see this as part of their role.

Learn more about UnitH2B and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
Network building	The Enterprise Europe Network helps businesses to innovate and grow on an international scale. It offers many services for SMEs through its local contact points .
Digitalisation handbook	The European Commission has produced an interactive handbook with tools supporting the digitalisation of SMEs in the construction sector.
Digitalisation good practices	The European Commission maintains a repository of good practice examples illustrating how companies in the construction sector have adopted digital technologies.

Step A2: Assess the 'as-is' situation, and identify needs

Why is this important?

Prior to digitalising, it is important for companies to understand **how technologies can transform their business**. Many digital solutions exist in the market, and decisions regarding which one(s) to adopt must be driven by a company's needs. Evidence suggests that understanding a company's level of digitalisation and its needs facilitates the successful adoption of digital technologies. Choosing a technology that matches a company's profile helps to ensure it will be implemented successfully in the long run.

For companies with lower levels of digital maturity, an assessment of digitalisation needs is useful for **identifying the starting point for digital transformation**. In doing so, companies should analyse their business processes, customer profiles and the broader market (see [Step A1](#) on monitoring trends and technologies) to see what starting point is best suited to them.

An assessment of the as-is situation also helps companies to identify **potential digitalisation gaps**. A needs assessment may help company management to identify inefficiencies in their processes, as well as to detect potential interoperability issues in cases where legacy systems are in use, and to see what type of digital transformation would bring the greatest value.

When performing a needs assessment, companies can choose from **several different approaches**. Various resources exist to support companies in this process, including digitalisation frameworks, maturity models and readiness assessments. Companies can also seek support from (E)DIHs in conducting their digital maturity assessment. This can also be useful in helping companies to understand where they stand in comparison to their peers in the market.

Understanding one's digital maturity

According to a [survey](#) conducted as part of the study, 43% of companies that responded assessed their level of maturity as higher than average, with 35% of respondents reporting their maturity as 'average' and 22% 'below average'.

Type	Highlighted resources
DMA tool	You can access the DMA tool used by the EDIH Network here . Locate a hub near you for full access to the hub's services.
Digital maturity self-assessment	The SME Digital Maturity Recommender was developed within the framework of the Diginno initiative. Managers of SMEs can assess their company's digital maturity across 10 business dimensions.

Step A2: Assess the 'as is' situation, and identify needs

While the adoption of digital technologies is relevant to most business areas, the digitalisation of **certain processes is more relevant in particular industries**. The findings of the Smart Industrial Remoting study reveal that companies select which processes they wish to digitalise on the basis of their business model, industry and needs.

A company digitalisation [survey](#) conducted as part of this study points to the technologies most relevant for SMEs across the five analysed industries. The data suggests that the adoption of technologies can be relevant to any area of business, however, the highest priorities may be industry-specific.

 Textile	<ol style="list-style-type: none">1. Inbound logistics and warehousing2. Purchasing and procurement3. Product or service design and engineering/ project planning and management	 Construction	<ol style="list-style-type: none">1. Product or service design and engineering2. Purchasing and procurement3. Inbound logistics and warehousing/ project planning and management
 Automotive	<ol style="list-style-type: none">1. Operations2. Inbound logistics and warehousing3. Product or service design and engineering/ project planning and management	 Retail	<ol style="list-style-type: none">1. Purchasing and procurement2. Marketing, sales & customer services3. Inbound logistics and warehousing
 Agrifood	<ol style="list-style-type: none">1. Product or service design and engineering2. Project planning and management3. Operations	 Combined results	<ol style="list-style-type: none">1. Purchasing and procurement2. Inbound logistics and warehousing3. Product or service design and engineering

Goals

- See where your business stands in comparison to other companies in the market.
- Understand how digitalisation can help to transform your business.
- Identify the business processes to which digital technologies can bring the most value.

Key actions and objectives

Action	Objective
A2.1. Analyse your company processes	To understand your current business model and uncover inefficiencies in current processes, as well as potential areas for digitalisation.
A2.2. Consult company management and employees	To gather ideas for change and identify areas for improvement across the company; to gain insights into those areas with the greatest potential for transformation.
A2.3. Find an assessment framework that best suits your company	To tailor the assessment approach according to the industry, digital maturity and company size; to find a suitable approach to assess the company's needs.
A2.4. Start planning the next steps	To develop a long-term and purpose-driven approach to digitalisation.

Tips

- ✓ Engage your employees in the process – they will have the best view of the process areas that need improvement.
- ✓ Understand what you want to achieve from digitalisation – efficiency, competitiveness, improved customer service, etc.
- ✓ Do not rush when completing your maturity assessment – consult with colleagues to see if you share the same understanding of your company's current performance. Where necessary, seek external guidance to obtain an expert view.
- ✓ Repeat the needs assessments as you continue to digitalise, in order to track progress and identify new areas for digitalisation.

Practical examples

E: MANAGEMENT

D: CAPACITY BUILDING

C: COLLABORATION

B: IMPLEMENTATION

A: PLANNING



Eckerle Automotive Bóly Kft. in Hungary – introducing a digital access control system

Eckerle Automotive Bóly Kft., a German-owned automotive company from Hungary, introduced a digital access control system. The company conducted a loss analysis in order to identify which areas could benefit from digitalisation. According to the company, this was an important step in identifying inefficiencies in its processes. The results of the analysis helped to convince the company management that it was worth embarking on the implementation of new technologies, due to the potential efficiency gains this could lead to.

Learn more about Eckerle Automotive Bóly Kft. and other digitalisation case studies [here](#).



Matro Gépgyártó Kft. in Hungary – use of EDIH digital maturity assessment

Matro Gépgyártó Kft., a company that specialises in manufacturing products for the automotive industry, participated in the [digitalisation pilot](#) conducted as part of this study. As part of the digitalisation pilot, the company – in collaboration with the supporting Innomine hub – conducted a DMA. In the view of a company representative, the DMA results *'highlighted the fact that we need to deal with the digital transformation of the business much more consciously and in a more focused way. It was also useful and inspiring to see which issues are examined within the topic of digital transformation.'* The company representative also highlighted that the DMA was useful in prioritising the most urgent issues within the company.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



LEVIATAN SRL in Romania – a needs assessment for continuous digitalisation

LEVIATAN SRL, a Romanian SME operating within the construction sector, provides integrated architecture and civil engineering services. Prior to embarking on its digitalisation journey, the company brought its employees together to perform a needs assessment. Together, the company mapped its current and future processes to identify an efficient course of action. This step helped employees to recognise gaps in existing processes. As a result, the company digitalised its internal and external communication channels by implementing collaborative technologies, including ERP, an intranet and CRM.

'It was important in our case that we had a group of champions or early adopters with a change mindset that were part of process mapping, process change and experimenting.'

Cătălin Podaru, General Manager, Leviatan speaking at the [Best Practices workshop](#) organised as part of the study

Learn more about LEVIATAN SRL and other digitalisation case studies [here](#).

Practical examples



Unifardas in Portugal – a needs assessment that identified necessary improvements in the garment customisation process

Unifardas, established in 1996, is a company operating in the professional clothing sector in Portugal. Its product line includes a wide range of uniforms, garments and professional clothing that are highly customised according to customers' needs. Prior to participating in the [digitalisation pilot](#) organised as part of this study, the company performed a quality analysis to identify digitalisation opportunities. The quality analysis revealed that nearly 85% of non-conformities in orders of customised garments resulted from miscommunication, either within the company or with its customers. The quality analysis thus helped the company to pinpoint the process that required streamlining with the help of digitalisation.

'We receive many requests from customers such as custom colours or fabrics of the products. This was very time-consuming and most of the orders resulted in errors. We realised we need a digital platform where our customers and sales associates can select all required product characteristics and create technical files.'

Rui Araújo, Chief Operating Officer, Unifardas.

Learn more about Unifardas and other digitalisation pilots conducted as part of this study [here](#).



Saasil in Germany – a needs assessment to identify avenues for digitalisation

Saasil is a retail shop that sells lamps for living spaces, object lighting and equipment, as well as home accessories. In 2020, the company owner decided to further accelerate the growth of the business. After assessing the company's needs and financial capabilities, Saasil introduced a digital ERP system, a point-of-sale (POS) system, and a digital product catalogue. A representative of the shop stated that during its 20 years of operations, the shop had undertaken the process of needs assessment at various times in order to accelerate its transformation.

Learn more about Saasil and other digitalisation case studies [here](#).



Step A3: Define a digitalisation strategy

Why is this important?

Evidence shows that **long-term strategic planning is crucial for digitalisation**, including to guide investment decisions, align initiatives with business objectives, foster buy-in and to ensure perseverance even when the benefits digitalisation are not obvious in the short term. Having a strategic roadmap for digitalisation in place can improve the odds of a digital transformation being successful.

However, **SMEs face specific challenges** in long-term strategic planning for digitalisation. First, SMEs often digitalise reactively and focus on tactical over long-term strategic benefits. Second, frequent adjustments to strategy may be needed due to changing circumstances. Third, limited time and financial resources can hinder the development of a strategy.

It is therefore important to balance **long-term planning against the need to remain flexible** in the face of changing business realities. SMEs in particular may benefit from embracing **iteration and flexibility**. For example, companies can choose to test and re-calibrate strategies throughout their digital transformations. SMEs can also consider short and simplified formats for their strategies such as mind maps rather than detailed reports. Moreover, to create their digitalisation strategies, companies can seek external support from third parties including the EDIH network.

Goals

- Create a shared vision of how digitalisation can transform your business.
- Define a new digital business model.
- Identify gaps between the as-is state and the desired future state.

A majority of SMEs see technology as 'important' or 'very important' for achieving their company's objectives

In a [survey](#) of approximately 3,000 SMEs in 10 high and middle-income markets worldwide, more than 75% of respondents recognised technology as 'important' or 'very important' to achieving their objectives, while 16% described it as essential for their business. According to SMEs, the top three business objectives that technology could help them to achieve were: increased operational efficiency, improved sales and marketing, and improved customer retention.

Type	Highlighted resources
e-Learning	Digital transformation tool courses, including From a current state analysis to a new digital strategy ; SWOT analysis ; PESTLE analysis ; Business Model Canvas .
Article	Find out how to map out your digital transformation in an article by Harvard Business Review.
Taxonomy	A comprehensive taxonomy of 24 digital transformation KPIs helping to assess the digitalisation journey and the value created by it.

Key actions and objectives

Action	Objective
A3.1 Analyse your market	To identify the key developments and critical success factors for pioneers and market leaders in your industry.
A3.2 Analyse customers and their needs	To gain insights into customer preferences and expectations.
A3.3 Perform a SWOT analysis	To identify the company's strengths, weaknesses, opportunities and threats in order to assess its internal capabilities and external market conditions.
A3.4 Set strategic objectives and define the desired future business model	To define a vision for a business model that aligns with the company's strategic objectives, and addresses market demands and trends.
A3.5 Identify gaps	To identify gaps between the as-is state and the desired future business model, as well as the changes to current operations or offerings required in order to bridge these gaps.
A3.6 Define key performance indicators (KPIs)	To set up a system for measuring success through specific, measurable, achievable, realistic and time-bound (SMART) KPIs that align with the strategic objectives for digitalisation.

Tips



Gather insights from your employees and customers.



Make your digital strategy a 'living document' that is adapted when necessary.



Consider your competition, market and technology trends.



Keep it flexible – a strategy is the management's shared vision of its objectives for digitalisation; it does not need to be a long document.



Engage the entire management team in the development process.

Practical examples



Norteña de Aplicaciones y Obras in Spain – involving the whole team in strategy development

Norteña de Aplicaciones y Obras is a company located in Aranda de Duero that provides specialised services in roof waterproofing. When defining its digital strategy, Norteña made sure to involve its entire team in the process. The company considers that having its whole team aligned with the strategy is a crucial success factor in digitalisation. As a result of its digitalisation, the company has reduced the time required to complete paperwork and control budget costs, while significantly increasing its turnover.

Learn more about the Norteña de Aplicaciones y and other digitalisation case studies [here](#).



Matro Gépgyártó Kft. in Hungary – considering a digitalisation strategy after a pilot

Matro Gépgyártó Kft. participated in the [digitalisation pilot](#) conducted as part of this study. The company specialises in manufacturing products for the automotive industry. A representative of Matro Gépgyártó Kft.'s stated that digitalisation is key to the company achieving its business objectives and maintaining its competitiveness. This is why Matro Gépgyártó Kft. places great emphasis on continuous development, learning about and applying new digital technologies as they emerge.

While the company did not possess a digitalisation strategy prior to the pilot, it is now considering developing a medium- to long-term digitalisation plan. The results of the digitalisation pilot, where the company implemented 50 data collection terminals on its machinery, will be helpful in determining which digital innovations the company needs in the future.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



Unifardas in Portugal – a 10-year digital transformation strategy

Unifardas, founded in 1996, is a company operating in the professional clothing sector in Portugal. It was among the five companies selected to participate in the [pilots](#) conducted during this study.

Recognising the growing demand for personalisation in the textile industry, in 2020 Unifardas developed a long-term digitalisation strategy in collaboration with an external consultant. This strategy encompassed objectives spanning three, five and 10 years, outlining the company's vision for the future.

Building upon the strategic objectives defined, Unifardas proceeded to identify and prioritise a series of projects aimed at achieving its digitalisation goals. To ensure a smooth transition, Unifardas collaborated with an external consultant to organise a 30-hour digitalisation training programme for its employees.

‘Strategic plans help us to move towards a joint goal. 10-year plan is primarily a guideline. You need to be mentally prepared for plan adjustments but also potential failures in implementation of some of its parts. That is why you should start with the smaller steps.’

Rui Araújo, Chief Operating Officer, Unifardas.

Learn more about Unifardas and other digitalisation pilots conducted as part of this study [here](#).

Step A4: Select digitalisation initiatives

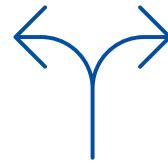
Why is this important?

SMEs often pursue digitalisation in response to direct business needs rather than as part of a long-term plan. The key to successful digitalisation lies in carefully **selecting the right initiatives that align with a company's strategic objectives**. This involves developing a list of digitalisation projects, prioritising them, and determining which ones to implement.

Company case studies show that digitalisation efforts often begin with isolated *ad hoc* projects. This is because companies typically view smaller projects as less risky than large-scale transformations.

In particular, smaller companies may **struggle to undertake multiple digitalisation projects at once** due to their risk aversion towards capital or job losses. Over time, however, digitalisation efforts can become better managed, integrated and interconnected across the entire company.

Nevertheless, some aversion to undertaking digitalisation projects can be overcome through **iteration and 'quick win' initiatives**. Quick wins refer to initiatives with a high likelihood of success that can be implemented simply and within a short timeframe.

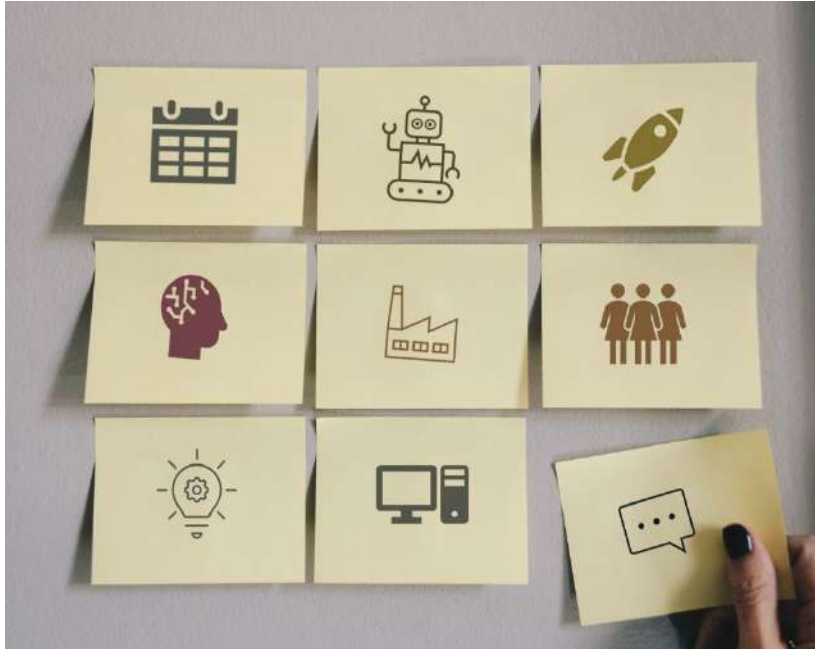


Support for roadmapping is one of the key ways an EDIH can support companies in their digitalisation journeys

When asked to identify what types of support are most important for companies, participants in the [EDIH Network Summit 2023](#) ranked 'defining a digitalisation roadmap' highest, at 39% (N=119). This was followed by 'accessing financing' at 22% of respondents, and 'assessing digital maturity and digitalisation needs' at 21%.

Type	Highlighted resources
e-Learning	Digital transformation tool course on prioritising digitalisation initiatives helps to select the projects and steps to start with.
Article	Article ' Discovery-Driven Digital Transformation ' by Harvard Business Review discusses the incremental and selective approach to digital transformation.
Industry-specific digitalisation plans	Industry-specific digitalisation plans developed by the SMEs Go Digital programme in Singapore cover almost 20 different sectors.

Step A4: Select digitalisation initiatives



For companies with little or no prior experience in digitalisation, starting with **quick win opportunities allows them to demonstrate early success to stakeholders and gain buy-in for further digital transformation.** In addition, employees can familiarise themselves with new systems and working methods prior to the introduction of further technologies.

Large-scale transformations can also be **broken down into smaller iterative test-and-learn cycles.** This approach involves defining incremental steps that, when combined, lead to significant changes. By initially **testing a digital solution on a small scale**, businesses can assess its viability and determine if any recalibration is necessary. For SMEs in particular, pilots can help to **identify problems or weaknesses at a relatively low cost.**

To identify which types of projects represent quick wins, it is crucial to **identify, analyse and prioritise potential initiatives based on their strategic importance and ease of implementation.** Strategic importance will show how each initiative can contribute towards the company's strategic objectives, e.g. in terms of business growth, profitability development opportunities. Ease of implementation can be determined based on the company's readiness, the time and resources needed, the complexity of the initiative (process, system and technology) and the associated risks.

Goals

- Identify the initiatives with the highest added value for your business.
- Create a roadmap for achieving your company's strategic objectives.
- Harness quick wins and iteration to overcome risk aversion.

Key actions and objectives

Action	Objective
A4.1 Create a list of initiatives based on your digitalisation strategy	To develop a comprehensive longlist of initiatives based on the company's digitalisation strategy.
A4.2 Analyse initiatives	To determine the dependencies and synergies between initiatives, as well as the feasibility of breaking down initiatives into smaller projects or pilots.
A4.3 Define criteria for prioritising initiatives	To establish criteria for prioritising initiatives according to their strategic importance and ease of implementation.
A4.4 Prioritise and select initiatives	To select a shortlist of initiatives for implementation, including potential quick win opportunities.
A4.5 Create a high-level plan or roadmap	To define a high-level plan or roadmap for implementing the initiatives selected that includes an indicative timeline.

Tips



Start with quick win opportunities.



Recalibrate your digitalisation roadmap as you go.



Identify dependencies and synergies.



Consider strategic importance and ease of implementation when prioritising initiatives.



Break down larger transformations into iterative test-and-learn cycles.

Practical examples



Novia Blanca in Poland – piloting a sales processing solution

Novia Blanca, one of the biggest retailers of wedding jewellery in Poland, decided to explore a digital solution to improve the efficiency of its sales processing. Prior to implementing a full-scale solution, the company chose to conduct a pilot. While the pilot was found to reduce the time needed for simple processing tasks, the company's overall overheads increased due to the cost of stock splitting. As a result, the company decided to return to its previous operating model. The example of Novia Blanca shows that piloting can help not only to identify useful digital solutions but also to determine if a solution does not fit the company's needs.

Learn more about Novia Blanca and other digitalisation case studies [here](#).



Marelli in Italy – creating a proof of concept for efficiency monitoring

Marelli is a century-old Italian developer and manufacturer of components for the automotive industry. Before implementing a full-scale solution for monitoring the efficiency of its manufacturing of lighting components and suspension systems, the company created a proof of concept. This looked at key production assets such as the engines powering the welding robots and an injection moulding machine. An industrial internet of things (IIoT) laboratory platform collected and processed data from sensors and programmable logic controllers on these assets.

Learn more about Marelli and other digitalisation case studies [here](#).



Unifardas in Portugal – selecting a set of projects based on a 10-year digital transformation plan

Unifardas, established in 1996, is a company operating in the professional clothing sector in Portugal. It was one of the five companies that participated in the [pilots](#) conducted during this study.

In 2020, the company developed its 10-year digital transformation strategy, identifying and prioritising a range of projects that would contribute to the achievement of its overarching objectives. Unifardas opted to begin the implementation process slowly by starting with those projects that were smaller and easier to implement.

Learn more about Unifardas and other digitalisation pilots conducted as part of this study [here](#).



Practical examples



Van Den Borne Aardappelen in the Netherlands – test trials prior to company-wide implementation

Van Den Borne Aardappelen is a family farm consisting of roughly 550 hectares of land devoted primarily to potato crops, but also to maize, wheat and sugar beet. Thanks to innovative spirit, it has now evolved into one of the most digitally advanced farms in the Netherlands, gaining recognition in the industry for its innovative practices. The company attributes its success to its approach of running initial test trials and use cases before scaling up. After testing various initiatives, the company picks the most successful trials for implementation across the company.

Learn more about the Van Den Borne Aardappelen and other digitalisation case studies [here](#).



LEVIATAN SRL in Romania – pursuing full-scale transformation after digitalising communications

LEVIATAN SRL, a Romanian SME operating in the construction sector, provides integrated architecture and civil engineering services. During the first stages of its digital transformation, LEVIATAN SRL began by digitalising its internal and external communications.

To identify further digitalisation needs, the company ran a working session with the management team to map company processes, identify issues that occur regularly, and formulate potential courses of action. Following LEVIATAN's initial digital transformation, the company decided to digitalise its entire operations.

As a result, the company leadership chose to establish a new IT company with the sole objective of developing digital solutions for its sister architecture company. Innovation, experimentation and the upscaling of various digital solutions have helped the company become a digital leader in the Romanian construction industry.

'We had an agile approach to transformation with a broad mind map of objectives. Step by step, we identified the company's needs, mapped the business processes and found tools for implementing the changes. We implemented changes one by one as employees were adapting to them'

Cătălin Podaru, General Manager, Leviatan speaking at the [Best Practices workshop](#) organised as part of the study

Learn more about LEVIATAN SRL and other digitalisation case studies [here](#).

Step A5: Plan the digitalisation project

Why is this important?

After selecting a set of digitalisation initiatives and creating a high-level roadmap for their implementation, the next step is **initiative-level planning**.

This involves outlining **specific activities, timelines and deliverables, as well as allocating resources, for each individual digitalisation project**.

For large companies and complex transformations, it is important to have detailed plans in place. However, SMEs often take a more flexible approach, adopting digital technologies quickly based on external factors or immediate business needs.

The level of detail in a digitalisation plan therefore **depends on the complexity and scope of each initiative**.



According to EDIH Network Summit participants, it is highly important for least digitalised companies to get the planning of digital initiatives right

When asked which digitalisation process was the most important for the least digitally mature companies to get right, the participants of [the EDIH Network Summit 2023](#) ranked 'planning' first at 45% (N=103). This was followed by 'all of the above' at 20% of respondents, and 'management' at 17%.

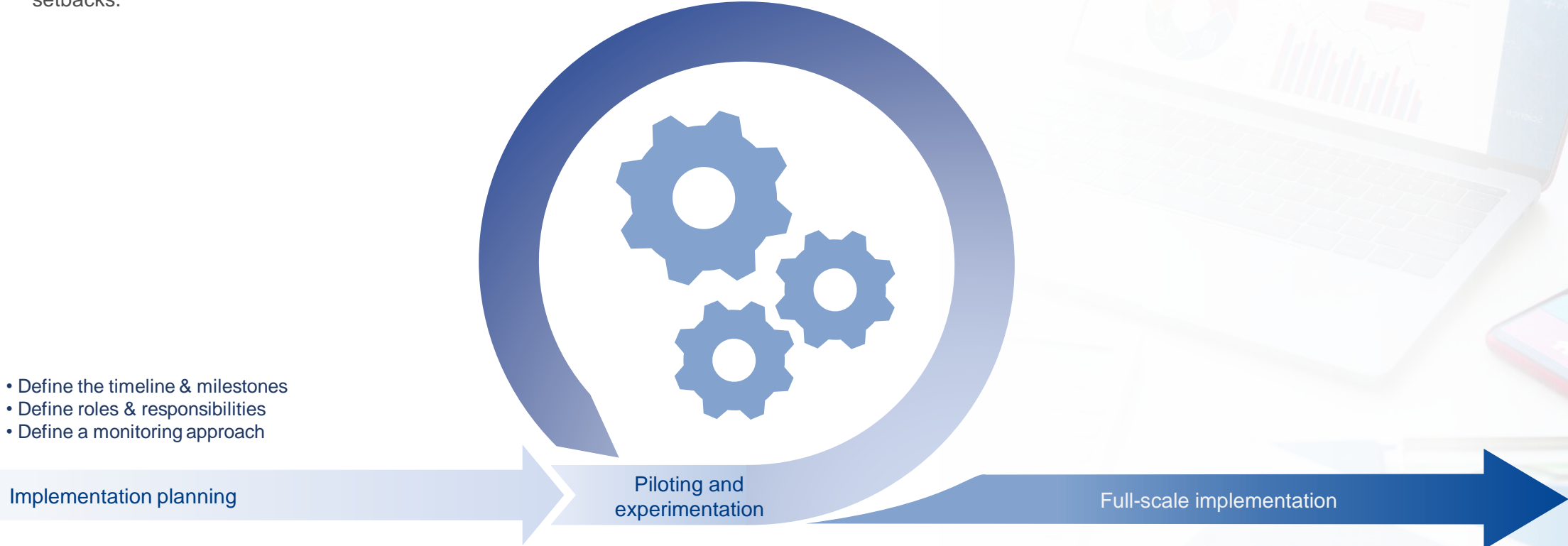
Type	Highlighted resources
'How-to' guide	The guide ' How to plan a project ' by Prince2 lists the most important aspects of project planning and accompanying documents to be developed for it.
Blog post	Description of software development planning approaches or lifecycles with their advantages and disadvantages, including waterfall, V-shaped, EPM, SDM, iterative and incremental, and agile.
Article	Flipping the odds of digital transformation success by BCG describes six factors that help increase the odds of successful digital transformation.

The implementation process is influenced by market conditions, organisational factors and the outcomes of previous transformation steps. It is recommended to take an **iterative approach to planning**, as illustrated in the figure below, which allows continuous evaluation and adjustments as needed.

The ability to adapt plans as you go along helps in addressing challenges and maintaining commitment, even in the face of setbacks.

Goals

- Establish clear expectations and responsibilities.
- Foster the continuous evaluation and re-calibration of digitalisation plans.
- Establish a framework for identifying deviations and risks as well as measuring success.



- Define the timeline & milestones
- Define roles & responsibilities
- Define a monitoring approach

Key actions and objectives

Action	Objective
A5.1 Define the timeline and milestones	To identify key tasks and milestones and set clear expectations for the team. This action should take into account the availability of resources, the complexity of initiatives, and potential risks.
A5.2 Define roles and responsibilities	To establish clarity and responsibility within the team. Roles should be assigned according to team members' skills, expertise, availability and individual strengths and preferences.
A5.3 Define a monitoring approach	To set up a model to track progress, identify risks or success factors and make informed decisions in order to keep the project on track.

Tips



Consider the typical lifecycle of similar projects in your industry.



Adapt your plan as you go.



Do not underestimate the effort needed for the pre-deployment stage.



Communicate the plan to everyone involved.



Activities that might disrupt operations the most should be scheduled for quieter periods.

Practical examples



Matro Gépgyártó Kft in Hungary – initial planning and weekly status meetings

Matro Gépgyártó Kft., which specialises in manufacturing products for the automotive industry, participated in the [digitalisation pilot](#) conducted as part of this study. According to the company's representative, thorough planning of digitalisation projects is crucial, as it yields financial and time-related benefits. By carefully considering potential risks to the project during the planning stage, the company maintained its focus and mitigated challenges during implementation. In addition, regular weekly status meetings were conducted to monitor progress, resulting in the successful implementation of the digitalisation pilot.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



Surfoteka in Poland – agile planning that is adapted to the SME's needs

Surfoteka is a retail store specialising in the sale and maintenance of sports gear. It was one of the companies that participated in the [digitalisation pilot](#) conducted as part of this study.

To streamline its operations, the company decided to implement a sales channels integration system. The hub that supported the company attributes the success of its pilot to meticulous planning and the early identification of needs and opportunities, with a particular emphasis on addressing capacity constraints and Surfoteka's unique requirements. The hub also highlighted the significance of adopting an agile approach when working with SMEs, to allow flexibility during implementation.

Learn more about Surfoteka and other digitalisation pilots conducted as part of this study [here](#).



HATA in Portugal – piloting a fabric inspection solution

HATA, a young company producing sustainable circular-knit fabrics, decided to improve its quality management processes by introducing a computer vision-based solution for fabric inspection. It partnered with Smartex, a start-up using computer vision and AI for advanced textile solutions, to launch a pilot at HATA's industrial facilities. The two companies collaborated to test and fine-tune the solution in an industrial setting. Eventually, a fully working product was developed, and both companies benefitted from the collaboration.

Learn more about HATA and other digitalisation case studies [here](#).



Practical examples



50 Acres of Work & Joy – implementing a new tool during the off season

50 Acres of Work & Joy is a small zero-waste family farm located in Lithuania. The farm participated in the [digitalisation pilot](#) conducted as part of this study.

The planning process required by the pilot was a new experience for the farm. The initial implementation plan underestimated the farmer's learning curve for the AgroSmart system. However, the company emphasised the significance of conducting the project during the off-season, as this allowed the farmer to dedicate ample time to familiarise themselves with the new tool. Commencing the project during spring, summer, or autumn would have made such learning more challenging.

Learn more about 50 Acres of Work & Joy and other digitalisation pilots conducted as part of this study [here](#).



LEVIATAN SRL in Romania – agile and incremental digitalisation planning

LEVIATAN SRL, a construction company from Romania, approached digitalisation incrementally, breaking it down into three continuous phases.

The company began by aligning its internal and external communications by digitalising and integrating all of its communication processes into a single platform. To ensure the rest of the company was supportive of its digitalisation plans, the management team invested time in developing instruction manuals and templates for the company's processes, deliverables and documents. The company also incorporated the agile methodology into its daily work. Company management reported that the introduction of agile decision-making processes resulted in reduced coordination times and more transparent work processes.

Learn more about LEVIATAN SRL and other digitalisation case studies [here](#).



Step A6: Assess financial feasibility and funding opportunities

Why is this important?

Financial feasibility can be a significant barrier for companies pursuing digitalisation. A **lack of financial** resources was seen as the **main obstacle** to digitalisation by 43% of respondents to a survey conducted as part of this study. Thus, prior to adopting digital technologies, companies should ensure that the **anticipated interventions are financially feasible**. Assessing the company's financial capabilities will also help it to decide on the most appropriate approach to digitalisation (see [Process B](#)).

Companies can employ **different approaches** to estimate the financial feasibility of an intervention. First, they can explore the existing solutions in the market to **estimate and compare the costs** of different digitalisation options. In addition to comparing the costs of various solutions, companies are encouraged to estimate the total cost of ownership (TCO). TCO includes both the costs associated with implementing new technology, and the long-term costs of maintaining the solution.

Second, companies can also estimate the **total return on investment (ROI)** resulting from digitalisation. Smaller companies should be aware that ROI does not capture all benefits associated with digital solutions, such as improved customer relationships. Lastly, SMEs can take a more pragmatic approach to ensuring the feasibility of the digital intervention. Based on their resource constraints, SMEs can adopt the **ALARA principle** – namely, keeping the costs of implementing the solution 'as low as reasonably achievable'.

Companies can also pursue various approaches to **drive down the costs of digitalisation**. For example, they can consider making use of low-cost components or simpler and adopting more accessible solutions. Such so-called 'frugal' innovation can help companies to keep down project costs.

Financing is a key consideration for companies looking to digitalise

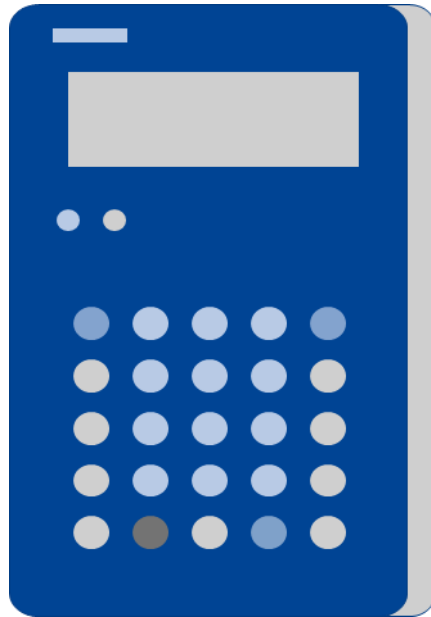
Lack of financial resources was identified as the main barrier to digitalisation among the companies [surveyed](#) during an earlier phase of this study, cited by a total of 43% of survey respondents.

Type	Highlighted resources
Overview of funding opportunities	A guide developed by the European Commission, providing an overview of funding opportunities for SMEs.
Overview of funding opportunities	The DigitalSME alliance provides a regularly updated list of funding opportunities available to SMEs.
TCO guide	More information about calculating the TCO of your digitalisation project is available in this guide .

Step A6: Assess financial feasibility and funding opportunities

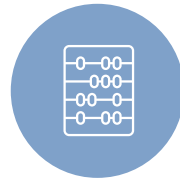
Finally, companies can seek funding opportunities to implement more complex projects. Several funding programmes targeted at digitalisation exist at both European and national levels. As outlined in [Process C](#), companies can seek external support to help fund their initiatives.

A summary of approaches companies can take to assess the financial feasibility of a digitalisation initiative is presented below.



ALARA / no explicit cost calculation

works through a company seeking either the most affordable solution or the best option within a predefined budget. It can be especially relevant when digitalisation is seen as a necessity rather than an investment but can lead to the underestimation of long-term costs and benefits.



Total cost of ownership

aims to determine long-term costs by assessing the human resource and financial costs associated with the adoption, implementation and institutionalisation of an initiative.



Return on investment

needs to incorporate metrics that are closely linked to the specific improvements that are expected from digitalisation. May fail to capture indirect costs and benefits, such as value to customers.


Goals


- Assess your company's financial capability in order to understand which approach to digitalisation is feasible.
- Understand what value digitalisation will bring to the company in the long run.
- Identify potential funding opportunities to kick-start digitalisation.


Key actions and objectives

Action	Objective
A6.1. Estimate the overall costs associated with the digitalisation initiative you have foreseen	To understand your company's financial capabilities before selecting a solution.
A6.2. Consider alternative options to drive down the costs of digitalisation	To reduce costs and associated risks of a digital intervention, companies can investigate open-source or simple, shoe-string solutions. Harnessing the potential of 'quick wins' in digitalisation helps to accelerate companies' digital transformation journey while keeping initial costs low.
A6.3. Analyse any non-quantifiable benefits that digitalisation might bring to the company	To showcase the long-term added value resulting from digitalisation, beyond ROI. This is also useful for demonstrating the benefits of digitalisation to decision-makers within the company, in situations where they may show resistance.
A6.4. Explore existing opportunities for testing, piloting and funding	To reduce the risks associated with digitalisation. External funding or 'test-before-invest' opportunities can help SMEs to understand which technologies are most feasible for their business, and reduce the risks associated with productivity losses.

Tips

- 

SMEs can take a more pragmatic approach to estimating costs, as digitalisation is usually driven by a broader need to remain competitive in the market.
- 

Companies can strive for 'quick wins' to maintain their productivity and ensure a quick return on investment.
- 

To keep down the costs of digitalisation, companies can keep an eye out for open calls to pilot digital solutions or 'test before invest' opportunities.

Practical examples



Katty fashion in Romania – external funding to pursue digitalisation

Katty Fashion is a manufacturing company in the textile/fashion industry, with 40 employees. The company produces a wide range of women's outerwear and specialises in short production runs and customised clothing. Katty Fashion's decision to undertake digital transformation was based on a desire to improve its overall efficiency, increase service diversification, gain a competitive advantage and consolidate customer loyalty. The company conducted a feasibility study to assess whether the planned adoption of digital solutions was possible, given the company's financial and human resources. To successfully implement the digitalisation projects foreseen, Katty Fashion applied for external financial and technical support. It also sought external guidance, expertise and consulting to streamline its production.

Learn more about Katty Fashion and other digitalisation case studies [here](#).



Henry Partners in Poland – keeping digitalisation costs as low as reasonably achievable

Henry Partners is a company operating four e-commerce shops that sell various products, from sporting goods to health and safety products and cosmetics accessories. Prior to automating order processing for its stores, the company's owner was looking for a way to reduce the amount of time spent on repetitive, sales-related activities, as well as to integrate changes across the e-commerce platforms used by the company. The company's choice of solution was guided by the ALARA principle, i.e. keeping costs as 'as low as reasonably achievable'. The company was well aware of its budget constraints and decided to expand its use of the Prestashop platform.

Learn more about Henry Partners and other digitalisation case studies [here](#).



Van Den Borne Aardappelen in the Netherlands – financial support for smart farming

Van Den Borne Aardappelen is a family farm consisting of roughly 550 hectares of land, devoted primarily to potato crops, but also growing maize, wheat and sugar beet. The company decided to implement precision agriculture to increase the volume and quality of crop yields. Securing funding was an important factor in adopting digital technologies at the farm. To help finance its ambitions for digital transformation, the company received public financial support from local, regional and national programmes for SME innovation and rural economic development. The farm has also participated in a long list of publicly supported research and development (R&D) and innovation projects co-funded by the Dutch government and the agricultural industry.

Learn more about Van Den Borne Aardappelen and other digitalisation case studies [here](#).





2.3. Process B: Implementation

2.3. Process B: Implementation

This process covers the main steps associated with solution implementation. It begins by outlining tips for selecting a solution to be implemented. It then describes the main actions associated with solution implementation and collaboration with external service providers. Finally, it highlights important aspects related to the deployment, testing and implementation of digital solutions.

Overall, the process is divided into three main steps. You can follow the links below to jump to the specific step.



Step B1: Select a solution

Why is this important?

It is often challenging for SMEs to navigate the wide range of digital solutions on the market – in particular when taking into account their resource and time constraints. Research suggests that the difficulty of **comparing solutions** and **choosing the right one** is the second-biggest challenge after the financial burden of digitalisation. And yet, selecting a suitable, feasible and long-term solution is critical for successful digitalisation.

When selecting a solution, companies need to take into account:

- The company's **needs**, and recent **trends** in the sector (see Steps [A1](#) and [A2](#))
- Interoperability and the **compatibility** of the new solution with any digital systems already in place
- The **reliability and security** of the solution: a [study](#) by Microsoft suggests that for 40% of SMEs, this factor is of the utmost importance
- The **complexity** of implementation, and the company's **capacity** to deliver it
- Potential **reskilling** needs and employee onboarding

Evidence suggests that SMEs with a low level of digital maturity find it easier to begin their digitalisation journeys with **simpler and low-cost** solutions. These solutions are more affordable, unobtrusive and easier to adopt. They can be implemented through the following means:

- Using **non-industrial solutions**: low-cost devices or software developed for non-industrial applications but applicable to an industrial setting
- Using **off-the-shelf** or **open-source** technologies
- Involving **trainees, apprentices and students** in the development of solutions
- **Sharing the costs** of digital tools, infrastructure and maintenance with other companies
- Making use of **public programmes** to support business digitalisation

Simple solutions tend to yield **visible results** more quickly than more complex ones and motivate companies to pursue further digitalisation. Beginning with simple solutions helps to get employees on board with digitalisation and avoids substantial employee **reskilling** or **disturbance** to business operations. Lastly, due to the lower initial investment required, the **perceived risk** of digitalisation can be also reduced.

SMEs often choose to **outsource** digital solutions rather than producing them in-house. This is one of the most common ways to compensate for low in-house capacity and skillsets in SMEs. When outsourcing the development of digital solutions, it is best to choose a provider that offers a selection of comprehensive and mutually compatible solutions that are constantly being upgraded and developed.

Moreover, if no industry-specific solution is available on the market, companies can consider **collaborating** with academic or research institutions to tailor existing products to their needs, or to develop a tailor-made product from scratch.



Prioritising simple solutions over advanced ones

It is more common for SMEs to prioritise adopting technologies such as electronic invoicing or software for collaborative work. More advanced solutions like AI and big data are relevant to only 20% of small and 32% of medium-sized businesses, according to the [European SME Survey](#) from 2019.

Goals

- Select a digital technology that aligns with the company's needs and capabilities.
- Gradually increase the company's digital maturity, and transition to advanced technologies.
- Secure buy-in by management as well as the motivation of employees to keep up with the intervention.
- Ensure the accessibility and affordability of the digital intervention.

Key actions and objectives

Action	Objective
B1.1. Regularly research solution providers that are present in your market	To explore use cases and learn from the experiences of similar companies to see if a suitable digital solution already exists, or to pursue options to develop one.
B1.2. Start with a simple, low-cost solution	To reduce the initial costs of technology adoption and increase buy-in among staff and management before company-wide implementation and scaling up.
B1.3. Make use of external expertise	To define an approach for the implementation of digital technologies with the help of suggestions from members of the value chain, clients or external contractors.
B1.4. Choose simpler interventions	To achieve quick and tangible results; to demonstrate the real value and benefits of digitalisation and maintain staff motivation.

Tips



Consider low-cost solutions: open-source technologies, older software or retrofitting old machines rather than purchasing new solutions.



Consider solutions that have been developed for non-industrial applications but are potentially applicable to an industrial setting (e.g. sensors, Wi-Fi cameras or game controllers).



Involve digitally skilled trainees, apprentices and students in the process of developing a solution.



Seek the support of hubs or external consultants to select adequate solutions that suit the company's digital needs.



Participate in trade fairs and other industry events to explore what digital solutions are on the market and how they are applied.



Cooperate with the wider ecosystem to share the costs of digital tools, infrastructure, maintenance and support.



Good practices for hubs and the supporting ecosystem

Selecting a digital solution is a crucial step that determines the success of a company's digitalisation journey. Hubs and other players in the ecosystem can support companies in **identifying and assessing** what solutions are available on the market, **comparing** their relevance and cost-effectiveness, and making the **final choice**. To do this effectively, the supporting ecosystem must be well-informed regarding the latest market developments.

Hubs can also **facilitate** mutually beneficial cooperation between solution providers and small enterprises. SMEs can serve as a testing ground for new or non-industrial solutions, as well as for solutions that have previously not been implemented within a given industry. Such **matchmaking** can be also coordinated by hubs and policymakers.

Governments at various levels can establish **funding programmes** to promote the use of low-cost, off-the-shelf solutions that can bring tangible quick wins for SMEs and companies with a low level of digital maturity. Once successfully implemented, such **good practices** can be further promoted within the ecosystem to incentivise other companies to kick-start digitalisation. In addition, companies could benefit from a repository of accessible solutions being maintained by various ecosystem actors, including hubs.

Step B1: Select a solution

Practical example: local Enterprise Office in Ireland – online voucher schemes to support SMEs

In **Ireland**, the Local Enterprise Offices, which operate under the National Digital Strategy, have launched a system for trading online vouchers. The vouchers, worth EUR 2,500, can be spent by small businesses on subscriptions to low-cost e-commerce solutions such as online retail platforms. The main goal of this scheme is to help SMEs in the retail sector quickly establish an online presence.

Read more about the scheme [here](#).

Type	Highlighted resources
Solutions catalogue and matchmaking	Digital Solutions Catalogue and Matchmaking Platform developed by the European Digital SME Alliance.
E-catalogue	Product Watch : a catalogue of reports listing novel industrial products, enabled by advanced technologies, and their providers.
E-catalogue	A catalogue of open-source software developed by the European Horizon programme OPEN DEI.
E-catalogue	More than 50 verified tools that can be used for SME digitalisation, gathered by researchers within the Smart SME project.



Recommendations for companies in the automotive industry

Because the automotive industry mostly focuses on manufacturing, the implementation of new solutions tends to require fairly substantial upfront investments. It is therefore especially important to conduct **cost-benefit assessments** prior to selecting solutions (see [Step A6](#)). Companies can also look at other businesses within their industry to analyse a number of potential solutions at once.

The automotive industry is characterised by strict quality standards and guidelines, due to the potential of high risks to human life from vehicles. This means that every new solution requires numerous rounds of **testing** and safety verification. It may therefore be mutually beneficial for small automotive companies to **partner with digital solution developers** to provide a testing ground that could later help them to overcome high barriers to entry. Companies can also benefit from partnering and carrying out **joint projects** with universities, clusters or science parks, to bring down the costs of adoption.

Likewise, high verification costs associated with the automotive industry incentivise software developers to pursue **interoperability** and adopt standardised hardware-software interfaces. Some solution providers have joined industry-wide initiatives to set such standards, such as the [Automotive Open System Architecture](#) (AUTOSAR). For SMEs in the automotive industry, establishing ties with such associations can help to ensure the selection of an interoperable solution and avoid vendor lock-in. Another low-cost option might be the gradual **retrofitting** of older machinery with modern sensors, which is much cheaper than having to replace every piece of equipment.

Practical example: MW.FEP in Italy – prioritising an interoperable and flexible digital solution

Italian company **MW.FEP** provides tailor-made solutions to the electronics industry, including automotive companies. The company's main need was to identify a software solution that would allow it to quickly manage the introduction of new products. This would allow the company to switch easily from one production line to another without having to readjust the program each time. Thus, the company's main need was to find a solution that would unlock interoperability between production lines. The chosen product is also 'machine-agnostic', meaning that it can be fine-tuned no matter which machinery is adopted. This choice allows MW.FEP to save costs by avoiding machine downtime and minimising the amount of work required before production starts.

Learn more about MW-FEP and other digitalisation case studies [here](#).

Type	Highlighted resources
Guide	Guide with recommendations for managing and securing open-source software in the automotive industry.
Article	Article discussing how open-source technologies accelerate software development in the automotive industry and the most popular solutions.
E-catalogue	Product Watch : a catalogue of reports listing novel industrial products, enabled by advanced technologies, and their providers.
E-catalogue	More than 50 verified tools that can be used for SME digitalisation, gathered by researchers.



Recommendations for retail companies

Several trends are driving the growth of digitalisation opportunities in the retail sector. These include the growing share of sales being made over the internet; the development of omnichannel shopping; hyper-personalisation; and IoT-driven smart stores. Having **customer expectations** at the core of their decision-making, retail SMEs typically prioritise solutions that will improve customer experience, the precision of order processing, quality of service, and individualisation. In addition, when selecting a digital solution, retail companies also need to consider the security of customer data.

Another factor to consider is **interoperability** between sales channels, touchpoints and payment systems, which is not only important for the customer experience but can also facilitate SMEs' potential for omnichannel, cross-border trading. A good starting point for most retail SMEs is to set up an **ERP system**. This relatively cheap and simple solution can help to drive the efficiency and accuracy of sales processes.

Lastly, selecting a solution for retail should be not just about 'digital first', but also '**human first**' principles. In this regard, sales data can inform decisions about the most suitable and cost-effective digital intervention. Asking questions about which sales channels are most efficient, which are the most popular products, and considering seasonal preferences can help retail businesses to navigate the wide range of digital products available. Where there is a lack of in-house expertise, skills or the time resources needed to perform such a preliminary analysis, companies can seek **external assistance** from public authorities, (E)DIHs or consultancies.

Practical example: Unikalne Kosmetyki/YEYE Natural in Poland – engaging an external contractor to help choose a solution

Unikalne Kosmetyki/YEYE Natural is a Polish company operating in the cosmetics retail segment, which also produces self-care home spa products. Recently, the company decided to integrate its business-to-consumer and business-to-business sales channels. According to company representatives, choosing the right technology solution was challenging, due to the lack of an objective comparison between the various products available. To address this, the company hired an external contractor to select and implement the solution. As a result, Unikalne Kosmetyki/YEYE Natural chose to implement Baselinker to integrate its various sales channels.

Learn more about Unikalne Kosmetyki/YEYE Natural and other digitalisation case studies [here](#).

Type	Highlighted resources
Guide	'Smarter Retail' Trendbook discusses the latest digitalisation trends and action areas in the industry.
Article	Ultimate Guide to Retail Software Solutions overviews various aspects and types of retail software.
Article	Find out about open-source solutions for retail in the article 'Open-source e-commerce: The next wave of value for the enterprise' .
E-catalogue	More than 50 verified tools that can be used for SME digitalisation, gathered by researchers.



Recommendations for companies in the textile industry

While the latest developments in 3D printing and scanning offer great potential for the textile industry, companies at the start of their digitalisation journey can derive great benefits from **simpler solutions**. Sometimes, a company's first step can even be to upgrade its product catalogue with the help of higher-quality photos or the use of virtual showroom platforms. Tablets and smartphones can also offer effective digitalisation solutions. They can be installed on manufacturing machines to enable the manual entry of production data, employees' working hours or stock management. Such simple solutions can provide a real-time overview of operations and be used to monitor KPIs.

Another way to reduce the costs of digitalisation is to establish **partnerships** with providers that are looking for opportunities to test out their technologies. This can help textile SMEs to obtain a digital solution that is **tailored** to their products and specific needs – which may be especially relevant to businesses operating within a narrow niche. In any case, the degree of **customisation** possible is an important factor to consider when choosing a solution.

To identify potentially suitable solutions, SMEs can join textile **clusters** and attend industry-specific **events** and trade fairs, where they can meet solution providers and obtain an offer. Participating in collaborative R&D projects can also accelerate and simplify the search for a provider and solution.

Practical example: OVF Studio in the UK – implementing no-cost, open-source 2D pattern software

OVF Studio, a textile company from the UK, aimed to implement 3D body scanning technology. It first explored the commercial solutions available, but could not afford them, due to constraints in terms of time, human resources and finances. Thus, the company opted instead for an open-source 2D pattern software application. This was available at no cost, was easier to utilise, and had a thriving support community.

Learn more about OVF Studio and other digitalisation case studies [here](#).

Type	Highlighted resources
Report	A CBI report summarises 8 tips for digitalisation in the apparel sector and the benefits of various solutions.
Article	Find out how open source is changing fashion in the article ' Make Fashion Open '.
Leaflet	GIZ provides a brief overview of digital solutions and challenges in the textile and garment sector.
E-catalogue	More than 50 verified tools that can be used for SME digitalisation, gathered by researchers.



Recommendations for companies in the agrifood industry

In the agrifood sector, it typically takes an entire planting and harvesting cycle to see whether a particular choice of solution is appropriate. Adopting a **long-term perspective** is therefore especially important. It is essential to ensure the selection of a solution is based on prior analysis and the comparison of alternatives. Moreover, if a solution is outsourced, it is crucial to ensure a long-term partnership with **continuous support**. To make sure the solution is well-suited and cost-effective, agrifood SMEs can run test trials before scaling it up.

Companies can also consult with and seek external guidance from **agritech experts** and academics. Furthermore, an entire social movement of **'open-source agriculture'** is emerging, with farmer communities mobilising and engaging in technology development in a bottom-up fashion. Thus, it is also worth keeping an eye on open-source solutions for agrifood.

Lastly, **renting software** as a service can help agrifood SMEs to avoid huge upfront costs by paying only monthly or annual fees for the use of online cloud-based technologies – for example, for value chain management. Consulting (E)DIHs can be helpful to get recommendations for such services.

Practical example: Van Den Borne in the Netherlands – obtaining funding and guidance to test pre-selected solutions

Van Den Borne, a family farm from the Netherlands, aimed to increase the efficiency and quality of its crop yields. To do this, the owners needed to invest significant time and financial resources into researching available precision farming technologies and testing their use cases. Opportunities to obtain financing and guidance from various public programmes were very helpful in enabling the farm to mitigate the risks associated with initial investments and test trials of pre-selected solutions. Following test trials, the most successful solutions were upscaled company-wide, and these experiences have been replicated on other farms. Furthermore, the farm collaborated with educational institutions and other companies to keep in the loop with regard to technological trends in the sector.

Learn more about Van Den Borne and other digitalisation case studies [here](#).

Type	Highlighted resources
Database	Gnomee is a knowledge base of potential digital game changers in rural areas developed by DESIRA.
E-catalogue	Product Watch : a catalogue of reports listing novel industrial products, enabled by advanced technologies, and their providers.
E-catalogue	Discover the 'Products and services' section on the Agrifood cooperation platform to browse available solutions.
E-catalogue	More than 50 verified tools that can be used for SME digitalisation, gathered by researchers.



Recommendations for companies in the construction industry

The fact that the construction industry often focuses on unique, customised objects rather than the mass manufacture of identical products influences the choice of digital solutions in the sector. This means that digital solutions need to be **flexible** enough to be tailored to the company's individual needs. If a solution is appropriate but costly, it may be launched as a **pilot** before being scaled up across an entire company and all of its other contracts.

While BIM is considered the main driving technology in construction, its adoption requires substantial human and financial resources, as well as an in-depth skillset – something that represents a significant challenge for SMEs. The '**shoestring**' approach advocates for the use of **affordable** solutions such as embedding low-cost technologies into standard building blocks through the adoption of modular design and reusable constructions. This approach encompasses various methods from compiling a library of typical errors along with corrective instructions to unified change management and issue reporting.

Hubs can also help SMEs stay up to date with relevant **industry events** or establish **partnerships with experts** in the field – for example, BIM associations or cluster organisations. Hubs can even facilitate **site visits** to other companies within the ecosystem and knowledge exchange sessions between companies.

Practical example: LEVIATAN SRL in Romania – incremental digitalisation starting with an ERP system

LEVIATAN SRL, a construction company from Romania, approached digitalisation incrementally, breaking it down into three contiguous phases. The company began by aligning its internal and external communications through digitalisation and the integration of all of its communication processes into a single platform. During the early phase, the company tested several solutions to see if they were viable and easy to implement. Initially, LEVIATAN adopted several different enterprise resource planning (ERP) technologies. However, Microsoft Teams was later chosen as a simpler and more efficient solution. This also allowed the more gradual onboarding of employees and the overcoming of cautiousness about the adoption of a new system. Later, having secured buy-in from the company's staff, the company could proceed with more advanced technological solutions.

Learn more about LEVIATAN SRL and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
E-catalogue	Use this catalogue to explore open-source construction management software.
Handbook	Interactive Handbook for construction SMEs overviews relevant technologies from drones to IoT.
E-catalogue	More than 50 verified tools that can be used for SME digitalisation, gathered by researchers.
Article	Find out about low-cost digital solution areas for construction SMEs in an article by the UK scholars.

Step B2: Manage the solution development process

Why is this important?

Irrespective of which approach is used to adopt the chosen solution, the process of implementation should reflect the company's **needs**, strategic **goals** and available **resources**. Data suggests that it is not common for smaller companies to rely on their in-house capacity to develop digital solutions. **In-house development** can help to guarantee that the company's requirements are met, as well as build more long-term capacity for digitalisation. At the same time, SMEs need to ensure they have sufficient human resources, time and knowledge to pursue this approach. Before a company invests in developing a solution internally, it must first make sure this is a strategically sound and cost-effective option.

Outsourcing can be a cost-efficient option for some SMEs and help to address gaps in knowledge and skills. However, when the development of a solution is outsourced externally, it is important to manage this process successfully and to maintain a continuous relationship with the service provider. When managing such relationships and communicating with solution providers, several aspects should be considered. First, it is important to establish a **common understanding** at the inception of the collaboration. While it is common for providers to focus on technical aspects when discussing a solution, SMEs need to pay attention to their own needs as well as to various financial business-related aspects.

Thus, it is important to allocate adequate time to clarify the implementation process from different angles. Achieving a mutual understanding and adequately **managing expectations** from the outset will benefit both sides throughout implementation. Open and streamlined communication helps to avoid misunderstandings and conflicts.

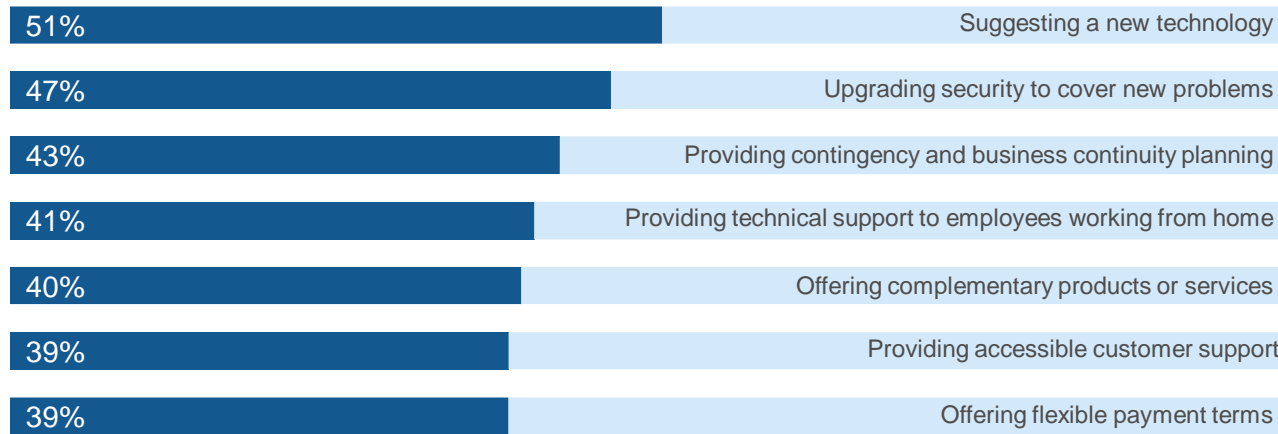
Once an effective model for collaboration has been found, it must be sustained. The **mode of interaction** between SMEs and providers depends on the complexity and duration of the intervention – it can vary from a 'hands-off' approach to a close partnership involving extensive technical support. The figure on the next page illustrates how SMEs rate the importance of the various services that technology partners can provide. Furthermore, companies need to ensure that they dedicate adequate **human resources** to managing vendor relationships – especially in the case of complex and lengthy projects. The more stakeholders are involved in the project – for example, hubs or associations, in addition to providers – the more complex communication will become, and the more crucial it is to manage it well.

Smaller companies typically outsource ICT-related functions more often

SMEs are more likely than large businesses to rely solely on external suppliers to perform ICT functions: around 48% of small and 33% of medium-sized enterprises do so, compared with only 11% of larger companies.

At the same time, it is equally uncommon for large companies and SMEs to only rely on internal employees to perform ICT functions: only around 14% of companies overall do so.

The figure below presents the results of a study conducted by Microsoft. SMEs were asked how important various services provided by a technology partner are for them.



Source: Microsoft (2022). Microsoft small and medium business (SMB) voice and attitudes to technology study. Available [here](#).

While working with solution providers offers many benefits, companies should be aware of potential **vendor lock-in**. Long-term reliance on service providers can lead to increasing costs, decreasing flexibility and limitations on the range of technology that can be selected. Evidence suggests that SMEs need to build on their B2B relationships and contribute to the development of their ecosystem by becoming more **self-sustaining** and expanding their network to avoid dependency on a specific external provider.

Goals




- Find a common language and establish a good rapport between the technology provider and the company outsourcing the project.
- Ensure that the needs and goals of the SME are met throughout the project, and its capabilities are taken into account.
- Address gaps in internal skills and knowledge.




Type	Highlighted resources
Articles	To find out more about managing relations with external suppliers, consult the articles ' How to Build an Effective Vendor Management Process ' and ' Essential Guide to Vendor Management '.
Article	A Guide to the Different Types of Managed Services discusses ways in which organisations can rely on external partners for IT service provision.
Guide	Risk Considerations for Managed Service Provider Customers : a framework that SMEs outsourcing some level of IT support can use to better mitigate against third-party risk.
Guides	The Outsourcing Handbook and the Next Generation Vendor Management Guide take a broad cross-industry view of various aspects of outsourcing.

Key actions and objectives

Action	Objective
B2.1 Assess opportunities for, and the costs of, in-house development compared with outsourcing the solution	To select the most cost-beneficial way to develop a digital solution for the company, and to strike a balance between a standardised 'off-the-shelf' solution and a fully customised one, in order to avoid vendor lock-in.
B2.2. Agree on a common plan and collaboration model between the solution provider and the SME	To identify and manage the risks associated with solution development and outsourcing: delays, unforeseen cost increases, data security and unmet or unrealistic expectations regarding quality of service or implementation results.
B2.3. Appoint a person or a team responsible for the digital intervention, both from the SME's side and that of the solution provider	To ensure a direct channel of communication and the clear division of responsibilities.
B2.4. Seek the assistance of intermediaries between the company and the provider	To facilitate mutual understanding of both the technological and the business aspects of the digital intervention.
B2.5. Ask the potential solution provider to familiarise itself with the client company, its needs and operations	To enable the better adjustment and customisation of a standard digital solution.

Tips

-  Ask hubs, clusters or even personal contacts with relevant knowledge and experience to become 'interpreters', enabling you to understand the technical language used by providers.
-  Use the ecosystem to gather feedback regarding commonly used external providers.
-  Access technical advice through support communities and the forums of technology providers or open-source solutions.

-  Build long-term and comprehensive partnerships with a few external partners, as this can prove more effective than working with numerous partners on an *ad hoc* basis.
-  Use the manuals, instructions and tools provided by digital solution providers to learn and upskill.
-  When outsourcing the solution, ensure that the company's in-house team learns about the chosen technology, and that knowledge transfer takes place throughout the intervention.

Practical examples

E: MANAGEMENT

D: CAPACITY
BUILDING

C: COLLABORATION

B: IMPLEMENTATION

A: PLANNING

**Matro Gépgyártó Kft in Hungary – analysing competitors' solutions and opting to retrofit**

When faced with difficulties in finding the right supplier, the Hungarian automotive company **Matro Gépgyártó Kft.** needed to broaden its network. It scanned the market, analysing what data collection systems were being used by its competitors. To explore how its potential choice of the system operated in practice, company representatives attended a trade fair in Germany before making their final decision. The solution ultimately chosen by Matro Gépgyártó Kft. was a cost-effective one: rather than buying completely new equipment, the company decided to retrofit its existing machines with data collection terminals.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).

**Henry Partners in Poland – opting for off-the-shelf software to avoid vendor lock-in**

Henry Partners is a Polish company that operates four e-commerce shops selling various products, from sporting goods to health and safety products, and cosmetics accessories. When automating its store order processing to increase efficiency, Henry Partners made a firm decision that no custom software development should be undertaken. Every tool had to be commercial, off-the-shelf, and sufficiently easy for the owner to configure and control. This strategy helped Henry Partners to become more flexible with regard to switching between software development companies, and thus avoid becoming too dependent on any one of them.

Learn more about Henry Partners and other digitalisation case studies [here](#).

**Unifardas in Portugal – overcoming difficulties in communication with a provider through the help of a consultant**

Portuguese textile company **Unifardas** decided to implement a parametric data solution for defining order requirements and calculating the final price. Given that no suitable turn-key solution had been developed for the textile industry, Unifardas partnered with a software provider that had previously implemented similar solutions in another industry. Together, they developed custom software for Unifardas. However, communicating with the provider was not an easy task. The two sides often had different expectations and lacked clarity regarding various aspects of the project. Eventually, an external consultant became a bridge between Unifardas and the digital partner, and a common ground was found.

Learn more about Unifardas and other digitalisation pilots conducted as part of this study [here](#).

**A textile company in Portugal – relying on an in-house IT team in digitalisation**

A textile company in Portugal established an internal IT team to manage most of the development and implementation of new digital tools. As a result, it has managed to minimise its dependence on third-party providers. In cases where the company has chosen to outsource, finding the right tools and partners has proved time-consuming and challenging. According to company representatives, external providers often lack knowledge of processes and business specifics in the textile industry.

Learn more about this and other digitalisation case studies [here](#).

Step B3: Prepare, test and deploy the solution

Why is this important?

After planning the digitalisation project and choosing an appropriate solution, the next step is implementation. This includes the adjustment of business processes, securing the necessary infrastructure, ensuring technological compatibility, testing the solution, systematically deploying it, and monitoring it to verify it is operating as intended. **Poorly executed implementation can result in issues such as lack of system interoperability, suboptimal performance, difficulties in modifying the solution, and significant disruptions to business processes.**

Preparing to deploy the solution involves several actions. First, companies should **adapt their existing business processes** to ensure they are compatible with the new digital solution, thus minimising disruptions. Next, it is essential to **integrate the legacy infrastructure with the new solution**, including hardware, software, networks and physical devices, to ensure system interoperability and to verify capabilities. **Preparing and integrating the data** necessary for the successful operation of the solution is also crucial. In addition, preparation should include **clear templates and guidelines** for the implementation of the technology to ensure easy hand-over and to manage risks.

Before deploying the solution, it is beneficial to **test** it to ensure it performs according to expectations. Testing allows the safety, usability and reliability of the solution to be checked. Taking a **systematic approach to the deployment and maintenance of the solution** helps to ensure its smooth operation and the efficient detection of problems. **For SMEs, simplicity is crucial** – therefore, it is important to ensure the operation and maintenance of the solution is swift, cost-effective and does not require high expertise.

Almost half of the SMEs seek external expertise in technology implementation

According to a [Microsoft study](#), the internal IT staff of SMEs primarily focus on managing and maintaining their existing systems. As a result, they may struggle to implement new technologies and processes. To help overcome this obstacle, 45% of SMEs partner with external firms for the implementation of new technologies.

Step B3: Prepare, test and deploy the solution

Continuously monitoring the implementation of the solution enables troubleshooting and quality assessment. This not only serves as a basis for adjusting the solution but also revising the company's digitalisation strategy and allocating resources effectively. Lastly, it is beneficial to **document each implementation step** clearly, to ensure the transparency of the process and enable easier collaboration.

Preparing for the deployment of a solution can be a **complex and lengthy process**. Thus, it is important that SMEs do not underestimate the amount of time needed for this step. Furthermore, **SMEs should account for productivity losses during the initial stages of implementation and** allocate sufficient resources to enable them to persevere through this phase.

For those SMEs that lack the skills or resources internally to implement and maintain their chosen solution, **external expertise can prove helpful**. Such expertise can be obtained from service providers, academia or (E)DIHs.

Type	Highlighted resources
Network	European network of living labs : an exhaustive map of living labs for testing digital technologies before they are implemented.
Guidelines	Digital projects – all you need to know : a detailed roadmap for running digital projects, including the implementation phase.
Guidelines	Digital transformation for SMEs – the ultimate guide : guidelines for SMEs on the implementation of digital technologies, including the preparation and deployment of the solution.

Goals

- Enable effective implementation of digital solutions.
- Ensure the quality and smooth operation of the technologies implemented.
- Prevent technological failures and disruptions to business.

Key actions and objectives

Action	Objective
B3.1. Align technology implementation and business processes	To ensure compatibility between the new technology and business processes, prepare for the effective adoption and use of the new technology and prevent significant disruptions.
B3.2. Prepare and integrate the technology infrastructure	To ensure effective operation, system interoperability, verification of the system's capacities and prevent technology failures and disruptions.
B3.3. Map and prepare data	To successfully integrate and operate new solutions, companies should dedicate sufficient time to map, prepare and integrate required data for solution deployment.
B3.4. Test the solution	To ensure that it meets expectations and requirements in terms of performance, safety, reliability and compatibility. Testing also helps to identify potential vulnerabilities and allows them to be mitigated.
B3.5. Deploy and maintain the solution	To simplify and expedite the deployment and maintenance of the solution. Engaging in continuous maintenance and debugging will counter disruptions and maintain optimal functionality of the solution.
B3.6. Verify the solution and assure quality	To ensure regular feedback on the solution operation in order to identify areas that require adjustment or recalibration, adapt business strategy, if necessary, and optimise resource allocation
B3.7. Document the implementation process	To promote transparency, facilitate effective team collaboration, enable efficient troubleshooting, and simplify future modifications to the solution, all implementation stages should be clearly documented.

Tips



Consider the benefits and drawbacks of attempting to build on existing legacy systems versus building new solutions from scratch.



Test the solution on a small scale before implementing it company-wide – look for 'test-before-invest' opportunities within your ecosystem.



Prepare manuals and guidelines for technology implementation – this will help with knowledge transfer in the long run.



Secure the necessary expertise for implementation by engaging with solution providers, (E)DIHs or academia.

Practical examples



Matro Gépgyártó Kft. in Hungary – solving technology compatibility issues

Matro Gépgyártó Kft. is a Hungarian company specialising in manufacturing products for diverse types of vehicles. The company participated in the [digitalisation pilot](#) conducted as part of this study. To digitalise data collection in its production process, the company decided to install data collection terminals on 50 CNC machines, and to integrate these into the production monitoring system.

One of the major issues faced by the company was incompatibilities between various existing machines and the new data collection system, which required different installation methods for each machine type.

To address this issue, the company involved the machine manufacturers. The manufacturers provided consultations to the company's internal maintenance team, enabling them to install the system successfully. According to the company management, involving the machine manufacturers earlier would have significantly sped up the process and saved company resources.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



Unifardas in Portugal – extensive preparation and testing prior to solution implementation

Unifardas is a Portuguese textile company that participated in the [digitalisation pilot](#) conducted as part of this study. The company introduced a custom-made, web-based solution for parametric data capture to support customised ordering. They entrusted the implementation, configuration and integration of the solution to a software company.

During its preparation phase for the implementation of the solution, the company encountered two main technical challenges. First, it lacked data regarding production times and unit costs, which were required for modelling the parametric solution. This issue was solved through a systematic study to quantify selected products' operating times and production costs.

Second, Unifardas spent more time than anticipated in developing new procedures to measure the product requirements. Even so, leveraging its significant prior experience proved instrumental in successfully completing this task.

After completing the necessary preparations, Unifardas successfully developed and tested a prototype based on a selected product, prior to implementing the solution.

Learn more about Unifardas and other digitalisation pilots conducted as part of this study [here](#).

Practical examples



Unikalne Kosmetyki/YEYE Natural in Poland – relying on external expertise for technology implementation

Unikalne Kosmetyki/YEYE Natural is a company that sells cosmetics and manufactures self-care products. The company decided to integrate its multiple e-commerce channels by working with an external solution provider.

Before deploying the solution, the company conducted a comprehensive mapping of its sales channels and stocks and assessed the scope of work required for the implementation. Because it lacked sufficient in-house resources for software development or integration, the company relied on solution provider to provide an integration prototype. The provider tested the prototype for two weeks. As no errors were identified, the solution was launched successfully. Ultimately, the company owner recognised the crucial role of skilled personnel and external expertise in evaluating, adopting and adjusting digital solutions, without which successful implementation would not have been possible.

Learn more about the Unikalne Kosmetyki/YEYE Natural and other digitalisation case studies [here](#).



Tomato greenhouse in Lithuania – testing and deploying a solution by engaging academia and solution providers

The **tomato greenhouse** studied in Lithuania is a member of the Lithuanian Greenhouse Association and occupies four hectares of land. It decided to implement a system for automatically identifying disease pathogens based on deep vision and AI technologies. To accomplish this, it collaborated with a solution provider and with academia.

The greenhouse faced several challenges during the implementation phase. First, the company faced resources constraints in mapping all the in-house data required for the system. In addition, it lacked the expertise needed to comprehend the working principles of digital solutions and their deployment. Lastly, the company struggled to provide suitable conditions for the testing and installation process without disrupting its production. However, these issues were successfully overcome through collaboration with academia and technology developers, who provided expertise and infrastructure for the testing and deployment of digital technologies.

Learn more about this and other digitalisation case studies [here](#).



BUGARU TRANS SRL in Romania – addressing challenges in the digitalisation of internal databases

BUGARU TRANS SRL is a Romanian construction company providing services such as civil construction, renovation, sewage and construction site management. To solve issues with data and process management, the company decided to automate its management of internal processes, specifically focusing on the exchange of documentation between the company and its clients.

The main challenge encountered during the implementation process was the digitalisation of the company's internal databases. The company's data was previously stored in the basic .xls format, which posed difficulties in terms of automation. Overcoming this challenge required significant resources on the part of the company, in particularly to secure sufficient digital skills. However, through dedicated efforts, the company successfully implemented the solution.

Learn more about BUGARU TRANS SRL and other digitalisation case studies [here](#).



2.4. Process C: Collaboration

2.4. Process C: Collaboration

Collaboration is a horizontal process applicable throughout the entire company's digitalisation journey. This process encompasses collaboration with (E)DIHs, industrial stakeholders, such as other companies in the value chain and clusters, and non-industry stakeholders.

In the toolbox, the process is broken down into three distinct steps. You can follow the links below to jump to the specific step.



Step C1: Collaborate with the (European) Digital Innovation Hub network

Why is this important?

Cooperation with (E)DIHs can be instrumental for SMEs looking for external support. (E)DIHs can provide **technical expertise**, help companies to address **skill gaps**, facilitate access to **test-before-invest** opportunities, and mitigate **risk aversion** and the potential **loss of productivity** associated with implementing digital solutions. More than 200 EDIHs currently operate in 30 countries across Europe. Companies can easily find hubs that are situated close to their local ecosystem, providing services in the local language.

To begin with, hubs can benefit SMEs by reviewing and assessing their operations and processes. They can also offer to conduct a digital maturity assessment (DMA) of a company to identify its digitalisation needs and gaps. Based on the DMA results, companies can receive more tailored assistance with developing digitalisation **roadmaps**. (E)DIHs can help companies to co-create change management plans, as well as assist with implementation and tracking throughout the digitalisation process. Hubs can also help companies to access **external funding** for digitalisation projects.

Through coordination with hubs, SMEs can expand their **networks** in order to match themselves up with external providers and developers and obtain technical support. By accessing test-before-invest facilities, SMEs can both drive down the costs of project implementation and explore the features and limitations of a chosen solution in a testbed environment. (E)DIHs can also guide SMEs towards relevant **resources and training**. They help to develop necessary skills and in-house expertise. Some hubs also provide industry- or technology-specific advice and facilitate knowledge exchange.



The extensive EDIH network covers a variety of services

The EDIH network currently includes more than 200 members in 30 countries and covers more than 2,300 beneficiaries. The technologies most often covered by funding include AI, cybersecurity and high-performance computing.

Goals




- Identify the company's potential for digitalisation through a DMA and the mapping of needs.
- Gain access to various types of training, upskilling and knowledge exchange.
- Obtain support in accessing external funding.
- Receive technical support in finding solution providers, testing facilities and support services.

Key actions and objectives

Action	Objective
C1.1 For hubs and SMEs: aim to establish a relationship from the very beginning and allocate sufficient time during the preparatory stages of the project	To make sure no important step in the digitalisation project is missed out, and proper communication between the company and the hub is established from the very start.
C1.2 For hubs and SMEs: seek the assistance of a hub in mediating third-party relationships when needed	To enable matchmaking between SMEs and pertinent technology providers and experts; to find common ground and shared language between all project stakeholders, and to manage their expectations accordingly.
C1.3 For hubs: explore the company's needs and select a technology that best fits them	To start by suggesting a technology rather than a specific provider; to meet the company's needs, avoid vendor lock-in and ensure further flexibility.
C1.4 For hubs: establish a single point of contact for companies	To ensure that the company constantly has a way to reach out to a (E)DIH representative.

Tips

For SMEs

-  Systemically monitor the hubs established in your area and the services they provide.
-  Attend events and engage in networking to learn more about (E)DIHs and establish collaboration.
-  Involve several employees in the meetings with the hub and ensure continuous knowledge exchange and transfer

For hubs

-  Appoint SME ambassadors who promote successful cases of collaboration and openly share experiences with non-digitalised businesses, one-on-one.
-  Help companies to adapt plans and roadmaps to changing circumstances and externalities.
-  Motivate SMEs to focus on making their first small steps and prioritising 'quick wins'.
-  Make sure the hub does not duplicate the role of the technology provider and ensure that they complement each other.



Good practices for hubs and the supporting ecosystem

Hubs can connect and partner with non-digitalised SMEs using local and regional networks. To reach out to new SMEs, hubs can use the ‘**snowballing**’ technique. When establishing relationships with companies, hubs can emphasise business benefits, showing how digitalisation can help companies to maintain their competitiveness and address operational bottlenecks. Hubs can also monitor and gather data on the **expectations** of companies in order to see which services are in demand, and how these needs can be addressed.

Trust, the setting of joint objectives and effective communication lay the foundation for successful collaboration between hubs and SMEs. To explain the clear benefits of digitalisation, hubs can **showcase good practices** from other companies. Illustrative examples of companies that have previously benefitted from their services tend to be especially impactful.

Evidence suggests that to ensure better cooperation, hubs need to **tailor** their services as far as possible towards the specific company or technology being implemented. A company’s level of digital maturity, its needs and the specifics of its industry are important to consider when designing support services. These factors provide a better overview of the company’s state of play, as well as help to clarify gaps and provide a benchmark in comparison to other companies. In addition to success stories, hubs can also emphasise **common mistakes** that SMEs should avoid when digitalising.

Lastly, **collaboration between hubs** can be highly effective in offering more tailored services to companies. For example, regional hubs can cooperate to map their services by industry or the types of technology provided, exchange contacts and knowledge about relevant support mechanisms, or keep a shared catalogue of solutions and their providers. This would allow them to offer a single package for SMEs based in their region.

Practical example: WALHUB in Belgium – collaborating with other EDIHs in the region and arranging site visits

WALHUB is based in the Belgian region of Wallonia. It focuses on the manufacturing ecosystem and technologies such as IoT, AI and high-performance computing. The hub decided to deepen its collaboration with other EDIHs in order to create opportunities together with neighbouring ecosystems. This collaboration strategy provided greater access to infrastructure, technology experts, services, best-practice use cases, clients and funding. One visible result stems from a bilateral collaboration with EDIH Rheinland from Aachen in Germany. At a WALHUB kick-off event, EDIH Rheinland was able to pitch one unique idea that was not yet present in Wallonia and offer valuable hands-on experience to businesses. As a result, Walloon SMEs were offered an opportunity to attend a demonstration factory in Aachen for an on-site ‘inspiration’ visit.

Learn more about WALHUB and find other hub collaboration stories [here](#).

Type	Highlighted resources
Resource database	Knowledge Hub of the EDIH Network compiles a range of practical resources for all EDIH Network members.
Brochure	SMEunited brochure gathers best practices on assisting SMEs with the digital transformation.
Event catalogue	Follow the European Commission’s page to keep track of workshops on EDIHs.
Handbook	Digital Innovation Hubs as policy instruments to boost digitalisation of SMEs is a practical handbook & good practices for regional and national policymakers and (E)DIH managers.



Recommendations for companies

Several ways exist for SMEs to gain the greatest value from collaborations with (E)DIHs. To begin with, SMEs can get assistance from hubs in identifying and formulating their **needs** as precisely as possible. With the help of hubs, SMEs can conduct a **proper analysis** of the processes and resources available in-house. With regard to this, it is important for companies to be open and realistic with hubs about their capacity to implement digitalisation projects. This will enable (E)DIHs to identify only those solutions that are truly relevant, and to choose those that are the best possible fit. Companies can also make use of hubs' extensive networks in order to **find partners, vendors or experts** in various fields. Hubs can also initiate **site visits** for companies to see the deployment of a certain solution in practice.

The findings of this study show that cooperation is most productive when it is tailored to a company's needs. Thus, SMEs are advised to dedicate time to explaining the **specifics of their business and processes**, to ensure these are taken into account.

It is also in a company's interest to **engage** several of its employees in coordination activities with a hub if resources allow. This can prevent significant disruptions in the event that the main contact person becomes unavailable. To provide continuity, SMEs also need to ensure the constant **exchange of knowledge** throughout the project, and the effective handover of project results.

Practical example: 50 Acres of Work & Joy from Lithuania – using assistance from a hub in finding and communicating with a provider

50 Acres of Work & Joy is a small family farm in Lithuania, which participated in the digitalisation [pilot](#) conducted as part of this study. Due to its limited financial and human resources, the farm benefitted substantially from the hub's help when digitalising. Agrifood Lithuania DIH assisted the company in mapping its digitalisation needs and identifying a suitable solution – a package of farm management software. The service provider was chosen from the hub's network, and the hub was available to provide clarification if any misunderstanding arose or additional guidance was needed. It helped the farm to install the software and understand its benefits, as well as to network and share its knowledge with other players in the ecosystem. After the pilot, the service provider continued to support the farm in maintaining the system and adapting its functions based on the farm's needs.

Learn more about 50 Acres of Work & Joy and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
E-catalogue	Smart Specialisation Platform presents a catalogue of (E)DIHs across Europe.
Webinar	Watch this webinar to find out how (E)DIHs serve the needs of SMEs.
E-catalogue	Discover services the EUHubs4Data members can offer.
E-catalogue	Explore the examples of hub services offered to SMEs.

Step C2: Collaborate with industry stakeholders

Why is this important?

For SMEs undertaking digitalisation, it is essential to interact and collaborate with other industry stakeholders in the ecosystem. Even cooperating with competitors can help to drive digitalisation and improve cost efficiency.

By joining **industrial clusters** and existing **business ecosystems**, SMEs can exchange valuable experience, knowledge and insights on various aspects of digitalisation such as support mechanisms or common mistakes. Collaboration with companies **up and down the value chain** – for example, as cooperatives – helps in finding experts, innovative solutions and partners interested in joint projects. For example, cost sharing and common purchases of digital tools, infrastructure and maintenance can help reduce costs and risks. Experience sharing can help pinpoint relevant solutions and approaches for digitalisation, avoid common pitfalls and adopt best practices. Clusters can also facilitate **investments** in R&D and help SMEs to find funding.

In some cases, a solution provider or project partner can also be found outside of the given industry – especially if the overall digitalisation level of the industry is low. Thus, participation in broader **innovation networks** is also important. For example, collaborating with **start-ups** looking to test solutions is a cost-effective way to implement digital solutions. In addition, an increasing number of **digital platforms** facilitate B2B collaboration with regard to tendering and manufacturing. Digital platforms are especially important for SMEs, as these usually do not require substantial financial resources or skills.

Participating in digitalisation projects and events as effective ways to enlarge SMEs networks

Among the means companies and hubs can use to build their networks, participants in the [workshop](#) ‘Unlocking the business potential of digitalisation: lessons from five industrial SMEs’ ranked participating in projects and attending or organising events and trade shows as the most effective.

Goals

- Expand the company’s network of tech and industry experts.
- Pool together expertise and share skills with other companies.
- Share risks, responsibilities and workload.
- Find ways to share the financial burden through joint purchases or co-funding.

Type	Highlighted resources
Platform	Business Creation platform by EIT Manufacturing brings together startups, SMEs and corporates to foster joint commercial activities.
Platform	European Cluster Collaboration Platform is an online hub for industrial cluster stakeholders.
Guide	Guide to SME Collaboration lists core issues to be considered when collaborating with other companies.

Key actions and objectives

Action	Objective
C2.1 Attend events within the value chain	To learn about good and bad practices from other companies, build partnerships and exchange lessons learned.
C2.2 Join industrial clusters	To gain access to training providers, find opportunities for the joint purchasing of software and equipment, and learn about the latest developments in the industry and the application of digital technologies.
C2.3 Join online business platforms	To expand your network by including other companies in the value chain and beyond; to find partners for digitalisation projects and exchange best practices and lessons learned; to manage communication in an easy and convenient way using online tools.
C2.4 Establish clear and open communication with other companies	To identify common goals and interests, find common ground and agree on a timeline, ownership and organisational details when engaging in a joint project.

Tips



Tendering for a project with another company may increase the likelihood of the application being successful and may be worthwhile financially.



Making site visits to other companies within the ecosystem can be useful to see the application of digital solutions in practice.



Build trust and transparency in order to drive a culture of collaboration in relationships with partners.



At the earliest possible stage, formally establish specific arrangements for collaboration with other companies.



Recommendations for companies in the automotive industry

For SMEs in the automotive industry, successful digitalisation is heavily reliant on collaboration with other industry stakeholders. This is because the industry is characterised by a highly specialised supply chain.

Automotive SMEs, being part of extensive supply chains, **interact regularly** with other companies within their network. The growing complexity of automotive production and the rapid digitalisation of the sector further facilitate collaboration among industry partners. This can enable valuable **knowledge exchange** and **technology diffusion**.

In the automotive sector, collaboration via **digital industrial platforms** has emerged as a crucial driver of digitalisation. These platforms enhance collaboration between SMEs, enabling them to broaden their market reach, access specialised services, streamline business processes, simplify supply chain management, and achieve cost savings. Such platforms are especially relevant to those SMEs that find it harder to access the necessary digital infrastructure, compared with large automotive companies at the top of value chains.

Industry clusters and sectoral organisations also play an important role in supporting the digitalisation of automotive SMEs. These organisations provide valuable assistance in informing SMEs about technology trends and changing sectoral needs; facilitating technology diffusion; identifying funding opportunities; offering training programmes; and facilitating partnerships with experts and potential collaborators. Automotive SMEs can also explore collaborations with technology start-ups to test innovative manufacturing solutions.

Step C2: Collaborate with industry stakeholders

Practical example: South Transdanubia Mechanical Engineering Cluster in Hungary – supporting companies to develop skills, cut costs, access markets and adopt technologies

South Transdanubia Mechanical Engineering Cluster in Hungary brings together 40 member companies from four countries, five of which operate within the automotive industry.

The primary focus of the cluster is to support companies in enhancing their capabilities through collaboration with vocational training providers. Furthermore, the cluster takes charge of coordinating joint purchases, marketing strategies, enhancing market presence and benchmarking activities. Lastly, the cluster plays a significant role in assisting companies with the adoption of various technologies such as robotics and AI. It conducts thorough analyses of technology applications, offers guidance in selecting and implementing them, and actively promotes their utilisation.

Collaborating within a cluster in this way helps SMEs to adopt technologies more effectively, as well as to upgrade skills, expand market access and cut technology-related costs.

Learn more about the cluster and other digitalisation case studies [here](#).

Type	Highlighted resources
Network	European Automotive Cluster Network : leading network of clusters in the fields of automotive, transport and mobility.
E-catalogue	Discover a catalogue of latest events in the automotive industry.
E-catalogue	Explore trade shows in the automotive industry.



Recommendations for retail companies

Building up connections with other players in the ecosystem can help retail SMEs to bring down the costs of digital transformation and to share skills and knowledge. Various retailers' **associations**, **clusters** and **chambers of commerce** at regional, national and international levels can help companies to engage in joint purchasing, keep track of sectoral events and fairs, and gain an overview of the latest trends and best practices. For example, the association [Ecommerce Europe](#) regularly informs online merchants about new legislation and developments that affect the e-commerce sector. Keeping track of the activities of **consumer organisations** or reaching out directly to them can also help SMEs to understand what goods and services are in demand, and which solutions can address them.

Digital platforms are also relevant for SMEs in the retail sector. Such platforms bring retailers together in one place, allowing easier access to potential consumers and B2B partners. They also provide a cost-effective way to seek partnerships and cooperation, as participation in online platforms usually does not require advanced digital skills or large investments. By establishing partnerships with companies that are similar, or are along the same value chain, SMEs can cut costs by **sharing investment** in an e-commerce tool and, for example, jointly purchasing training.

Practical example: Novia Blanca in Poland – partnering with a company in the value chain to split online and offline sales

Polish retail company **Novia Blanca** aimed to boost sales in its offline store and thus needed to separate its warehouse operations from its physical retailing. The most efficient solution was to find a partner in the value chain that could take care of all the shop's e-commerce activities. When choosing a partner, the company applied several criteria: a swift response in delivering goods to the store from the warehouse; cost of shipping; the ability to handle premium packaging material; as well as billing and returns processing. Having spent two months thoroughly researching and analysing potential collaboration schemes, Novia Blanca chose an external provider and launched and implemented a pilot.

However, the splitting of stock resulted in the opposite of the intended effect and actually increased operational overheads. The company, therefore, returned to its previous operating model. However, partnering with a company from the value chain has enabled the company to learn valuable lessons from it.

Learn more about Novia Blanca and other digitalisation case studies [here](#).

Type	Highlighted resources
Association	Independent Retail Europe unites retailers and associations.
E-catalogue	Explore the list of members of EuroCommerce : national associations, companies and affiliated national, European or international sub-sector associations in retail and wholesale.
E-catalogue	Discover e-commerce events in Europe.



Recommendations for companies in the textile industry

To foster their digitalisation efforts, textile companies can participate in sectoral **clusters and associations**. For example, the [European Technology Platform for the Future of Textiles and Clothing](#) facilitates networking across Europe and collaborations for mutual benefit. It hosts online courses and masterclasses, as well as helps textile producers to connect to experts and innovators. Such associations can also be used by SMEs to connect with players from beyond their industry and engage in **cross-sectoral cooperation** – for example, with companies from the automotive or mining industries. In addition, cooperating with companies within the value chain – for instance, fabric producers – can help to **reduce the financial costs** required for an initial investment.

Cooperation with **startups and R&D players** can also be a low-cost way for textile SMEs to digitalise by offering their facilities as a testing ground for relevant technologies. Even though textiles are perceived as a traditional industry, it provides a great deal of opportunity to experiment with innovative solutions.

Type	Highlighted resources
Platform	European Technology Platform for the Future of Textiles and Clothing : the largest European open expert network of professionals involved in textile and clothing-related research and innovation.
E-catalogue	Explore the list of members of the European Apparel and Textile Confederation .
E-catalogue	Discover textile trade fairs & exhibitions .

Practical example: HATA in Portugal – the benefits of cooperating with startups

HATA, a textile company based in Portugal, introduced a quality inspection system to check fabrics using the aid of computer vision. To achieve this, it cooperated with Smartex, a start-up that focuses on advanced solutions for quality inspection using computer vision and AI, which was looking for partners to test its products. As a result, Smartex launched its pilot at HATA's industrial facilities. After testing and fine-tuning, the solution was fully developed and ready to be replicated.

Learn more about HATA and other digitalisation case studies [here](#).

Practical example: Protex Group in Norway – collaborating with an ICT cluster and a university on smart workwear

Protex Group is a manufacturer of work clothing for Scandinavian markets. The company decided to increase its profitability by upgrading an existing product – workwear for workers in the marine industry who are located in harsh conditions. To implement the necessary digital technologies, Protex Group collaborated with ESTRONICS, a smart electronics cluster from Estonia, as well as Tallinn University of Technology. Thanks to the expertise and testbed facilities available via the cluster, the company designed a prototype work suit for extreme environments that had smart features embedded.

Learn more about Protex Group and other digitalisation case studies [here](#).



Recommendations for companies in the agrifood industry

SMEs operating in the agrifood industry, especially small farms, can benefit greatly from joining forces to cooperate with each other and purchase **solutions or consultancy services** together as cooperatives. Some technologies such as drones can be **used jointly** by multiple agrifood businesses located in close proximity to one another, or can be **rented jointly** on a seasonal basis, thus reducing the costs necessary to purchase them. Expensive software or farm management systems can also be shared between multiple farms.

Another reason why joining an association that deals with the digitalisation of the agrifood sector is highly important for SMEs is that such bodies can explain the benefits of applying technologies in the industry and showcase good practices. Membership in an association or cluster can also be an opportunity to receive **funding for testing** digital solutions or scaling them up. For instance, [AgriTech Hub](#), a venture capital fund from Poland, supports ICT development in agrifood by sponsoring and commercialising R&D projects. Such organisations can act as **intermediaries and matchmakers** between SMEs and innovators. Another example is [ICT-AGRI-FOOD](#) Fund, which supports and sponsors digital transformation in the agrifood sector. One of the advantages for SMEs of partnering with such organisations and funds is that they can make use of data from across the entire food chain when developing solutions and algorithms for their clients. Clusters and farmers' associations can also provide **training, field trips** and **knowledge exchange** for farmers.

Practical example: Agricultural farms in Lithuania – cooperation to adopt an interoperable data management system

Six agricultural farms in Lithuania, which had been already equipped with modern machinery, joined forces to increase the efficiency of their production and enhance compatibility between their software and data structures. The farmers sought expertise from a solution provider, Art21, and from Vilnius Gediminas Technical University. Together, they applied for public funding from the [Lithuanian Rural Network](#). This funding enabled the farms to adopt an intelligent agricultural machinery information system, which integrates databases that store data from intelligent machinery. During the integration and adaptation of this digital solution, the farmers received an explanation of how to use the tool that had been developed, how to load the available data correctly and understand the results and the possibilities afforded by the system.

Learn more about this collaboration and other digitalisation case studies [here](#).

Type	Highlighted resources
E-catalogue	Agrifood cooperation platform lists various organisations and industry players.
Association	Agri-Food Chain Coalition : a joint initiative of 12 leading industry associations from across the agrifood chain.
Association	Copa and Cogeca : the united voice of farmers and their cooperatives in the European Union.
E-catalogue	Discover trade shows in agriculture and food processing.
E-catalogue	SmartAgriHubs : see the list of upcoming events.



Recommendations for companies in the construction industry

Collaborating with other stakeholders in the industry can help to facilitate the digitalisation of construction SMEs.

In the construction industry, multiple actors are involved in the same construction projects. Collaboration between these parties is essential to facilitate the successful adoption and use of digital technology, as well as maximising the value derived from innovative digital processes. Efficient collaboration on shared projects relies on the **consistent use of technologies** across the value chain. It also involves the collection, analysis, integration and leveraging by various actors of **data from diverse sources** such as GIS, construction equipment, weather data, drones and mobile devices.

However, **digital gaps** between companies can pose challenges to collaboration in projects. Some partner SMEs with lower levels of digitalisation may resist the adoption of new technologies. To overcome this, partners can be **reassured** through the exchange of knowledge, showcasing the benefits of digital technologies and providing proper incentives for their adoption.

Given the high level of complexity in the technologies used in the construction sector, **knowledge transfer** between different stakeholders in the industry is crucial. SMEs can participate actively in existing **innovation networks or clusters** to adopt new technologies, identify potential partners, expand their market outreach and reduce the costs associated with digitalisation. Importantly, such collaboration can enable access to **specialised training** on advanced technologies such as BIM (building information modelling).

Practical example: UNITH2B in Romania – improving the use of technology through collaboration with a professional association

UNITH2B, a Romanian SME in the construction sector, sought to enhance the integration of BIM technology into its daily operations. Through the [digitalisation pilot](#) organised as part of this study, UNITH2B worked with a local BIMTech association. The association offered expert-driven support through coaching sessions, providing a comprehensive overview of BIM technology and its practical applications. The association also shared informative documentation and other relevant materials with UNITH2B.

As a result of this support, UNITH2B gained a deeper understanding of BIM collaboration processes and became acquainted with new collaborative software tools. In addition, the company successfully implemented new BIM use cases and enhanced its key BIM model development procedures. Reflecting on its collaboration with the association, UNITH2B recognised it as a crucial factor in optimising the company's use of BIM technology.

Learn more about UNITH2B and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
Associations	Confederation of International Contractors' Associations represents the construction industry worldwide.
Association	European Builders Association represents construction SMEs & craftsmen in Europe.
Association	European Construction Industry Federation promotes cooperation and best-practice exchanges.
E-catalogue	Discover trade shows in building and construction.

Step C3: Collaborate with non-industry stakeholders

Why is this important?

In addition to (E)DIHs and industry stakeholders, companies can establish links with other stakeholders in their ecosystem: academic and research institutions, public authorities and others. These stakeholders can support SMEs in accessing testing facilities, addressing knowledge gaps and mitigating the financial burdens associated with digitalisation.

National and regional authorities across Europe have launched a number of initiatives that aim to offer **mentoring-type support** to companies. For example, some initiatives match SMEs with authorised consultancy firms or independent IT consultants, and partially or fully cover service costs. Some public authorities issue **vouchers** for consultations with vendors or for trial launches of software. Likewise, companies can contact **European networks** providing guidance, such as the [Enterprise Europe Network](#) (EEN), which offers tailored advice to SMEs and operates in more than 600 locations across Europe.

Cooperating with **academic and research** institutions enables SMEs to benefit in several ways. Universities and universities can **jointly seek public funding** for collaborative digitalisation projects or solution testing. Companies may also access valuable **non-monetary resources** available within academia, such as:

- Cutting-edge scientific knowledge
- Problem-solving advice
- New products and technologies

Cooperating with these institutions can help companies to address skill shortages, gain access to piloting facilities, and obtain expert advice. Such collaborations can take multiple forms: R&D partnerships, joint research projects or the commercialisation of R&D results. However, an important aspect of cooperating with non-industry stakeholders is the **streamlining of communication**. Since the strategic goals and specifics of companies' business processes are often very different from those of academia, SMEs need to highlight their business needs while also ensuring the project is mutually attractive and beneficial for both parties.

Type	Highlighted resources
E-catalogue	Find your local contact point and get in touch with a representative of the Enterprise Europe Network .
E-catalogue	Explore the latest open digital funding and tender opportunities from the European Cluster Collaboration Platform.
Report	Find out more about university-SME collaboration in the report ' Towards coalition excellence ' prepared within the Horizon Europe Programme.
Toolkit	A Horizon Europe Engagement Toolkit elaborates on various aspects of collaboration between universities and SMEs.
Reports	Country reports , prepared within a study managed by the European Commission, list initiatives and strategies launched by the EU Member States to support industry digitalisation.



Support from governments and external experts enables digitalisation

A survey conducted for the 2021 [Annual Report on SMEs](#) showed that 72% of SMEs consulted believed that better access to public support schemes would be useful in enabling them to digitalise. [Research](#) also indicates that SMEs which receive support from external experts are more likely to succeed in implementing industry 4.0 projects.

Goals

- Access educational materials, manuals and guidelines; learn about technological aspects of digital solutions.
- Engage experts in problem-solving and risk management.
- Gain access to facilities for testing and piloting.
- Cooperate in joint efforts to access public funding and government support.

Key actions and objectives

Action	Objective
C3.1. Attend events organised by local academic institutions and innovation agencies, or reach out to them directly	To identify academic institutions whose expertise or research programmes are relevant, and explore opportunities for partnerships, co-funding and piloting or testing solutions.
C3.2 Look for co-financing opportunities	To mitigate the financial burden and reduce the risks associated with digitalisation.
C3.3 Engage with experts in the field, ICT clusters, associations and academics	To interpret technological trends and their practical application; to make a better-informed choice of solution and provider, and to develop a long-term understanding of industry-specific trends.
C3.4 Reach out to universities that are involved in R&D projects	To participate in piloting and test-before-invest opportunities; to take advantage of existing networks for collaboration such as clusters, innovation alliances, etc.

Tips



Regularly monitor the available opportunities, open calls and initiatives launched by public authorities.



Consider the geographical proximity of potential partners in order to ensure that frequent meetings can be arranged.



Make sure all parties are informed about each other's constraints in terms of time and financial resources.



Allow sufficient time for application processing when interacting with public authorities and applying to state support mechanisms.



Consider hiring assistants or interns from partner universities for the duration of the project to address skill gaps and ensure streamlined coordination.



Offer the technological challenges you encounter as problem-solving exercises for university students or the organisers of hackathons.

Practical examples



Saasil in Germany – regional support that helped in implementing an ERP system and integrating sales channels

Saasil is a retail company that sells lamps, object lighting and home accessories. In addition to its physical store, the company sells via its own e-shop, as well as on eBay and Amazon. The owner of the business decided to implement an ERP system that would interconnect its various sales channels. To implement this, Saasil applied for external financial support from the state of North Rhine-Westphalia through the Economic Development Agency of the city of Wuppertal. Thanks to this funding, Saasil managed to install a new cash register and complete the integration of its sales channels in less than two months. In addition to this, a project management agency provided Saasil with expertise on its social media presence, product photos and expanding to other selling platforms.

Learn more about Saasil and other digitalisation case studies [here](#).



NRDA Studio in the UK – consultants from a university helped to introduce 3D body scanning

UK textile company **NRDA Studio** applied for Creative Industries Funding, provided by the national innovation agency Innovate UK. As a result of its project, NRDA partnered with the Apparel Design Engineering Collective at the University of Manchester. Experts from the university were hired as consultants to share their knowledge and help in developing a concept demonstration for pattern digitalisation and parametrisation via a 3D body-scanning app. This process took approximately six months and directly involved three people, at a cost of £10,000.

Learn more about NRDA Studio and other digitalisation case studies [here](#).



De Trog in Belgium – making use of regional support mechanisms and collaboration with universities

De Trog is a bio-label bakery from Belgium. It initiated the process of digital transformation to scale up its production and improve the quality and efficiency of its processes. Although it mostly relied on its own funding, De Trog benefitted from various support mechanisms and from collaboration with training centres. The bakery received advice and guidance at various stages of its transformation process. De Trog collaborated with the Flanders Agency for Innovation and Entrepreneurship and the Innovation Centre for the West-Flanders region. It also partnered with academic institutions including the University of Ghent, and the Embedded and AI Vision Engineering (EAVISE) Research Group at KU Leuven.

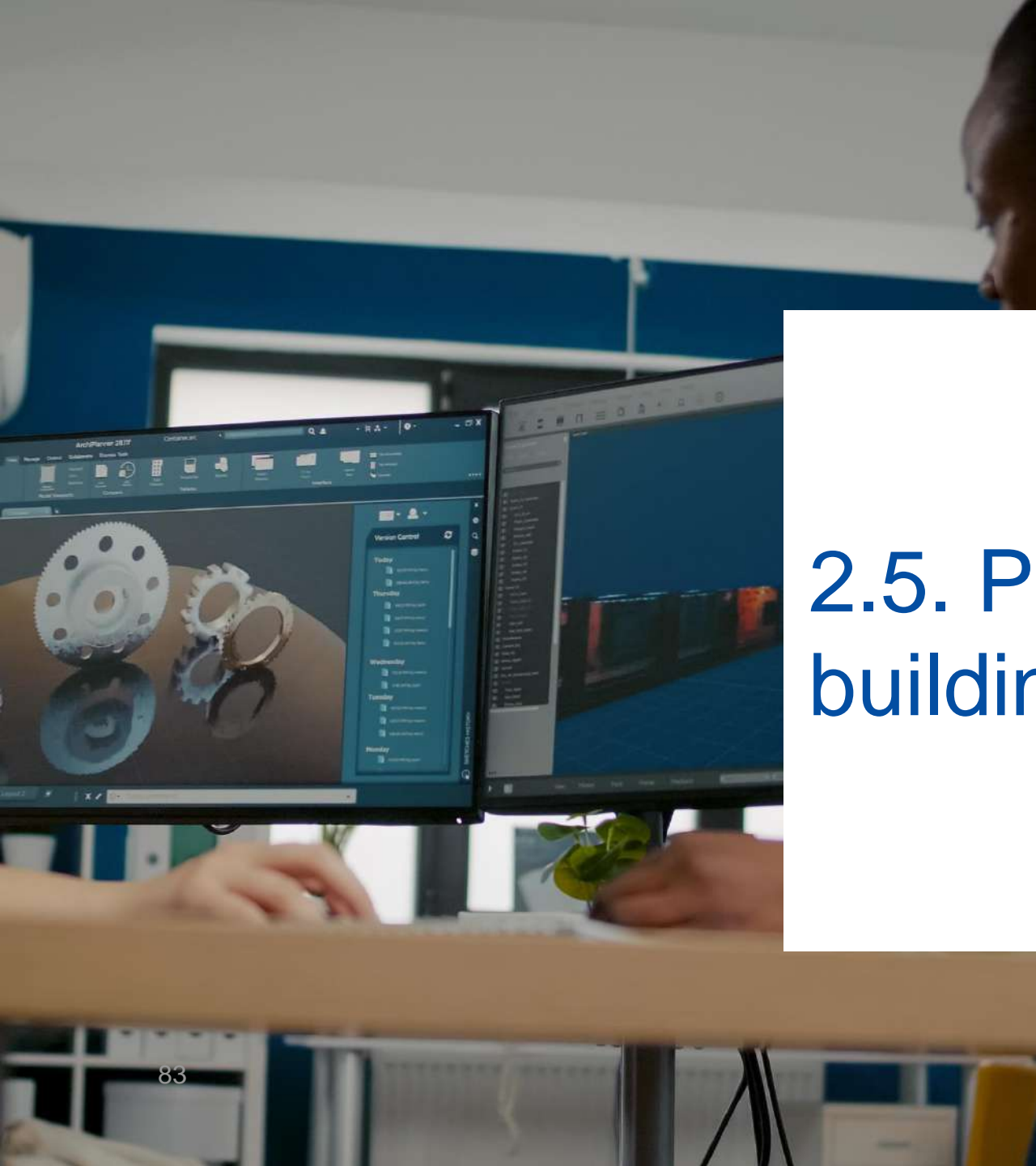
Learn more about De Trog and other digitalisation case studies [here](#).



Fiber Network WUG in Germany – cooperative-built internet infrastructure

Fiber Network WUG is an example of a cooperative formed to speed up broadband internet connections in a rural area. The cooperative built a high-speed internet network that was connected to the pre-existing local heating network. When installing the heating network, the company performed a cost-benefit analysis and compared various implementation options. In deciding between the installation of copper or fibre optic lines for communication between control modules, the cooperative opted for the latter. The use of fibre optic lines allowed the town to obtain high-speed internet and use a pre-existing network to lay the cables, thus avoiding the need to dig deeper or outsource the work.

Learn more about this collaboration and other digitalisation case studies [here](#).



2.5. Process D: Capacity building

2.5. Process D: Capacity building

Capacity building is a horizontal process that focuses on ensuring the company has the right skills and capabilities to pursue digitalisation. First, companies are encouraged to assess their in-house capabilities to identify which capacity-building options are most suitable for them. Secondly, companies can develop the necessary competencies in-house. Finally, companies can consider engaging external expertise for capacity building.

The process is divided into three steps. You can follow the links below to jump to the specific step.



Step D1: Assess in-house capabilities

Why is this important?

Ensuring sufficient human resources and skills is essential for successful digitalisation. [The problem identification analysis](#) conducted for this study reveals that a shortage of human resources and a lack of adequate skills are among the main barriers to the digitalisation of SMEs.

Adopting digital technologies and integrating them into a company's business processes requires **a mix of digital and hybrid skills** relating to the development and operation of digital technologies, and the strategic planning and management of digitalisation initiatives.

SMEs lack the skills and human resources needed for digitalisation more often than large companies. They are also less likely to have a dedicated person or department responsible for digitalisation, with employees often fulfilling multiple job roles at once.

SMEs can secure the necessary digitalisation skills in four main ways: **relying on existing in-house capabilities; upskilling or reskilling their employees; hiring new staff; or seeking external expertise**. Which approach is chosen depends on a company's needs, the resources it has available, the timeframe for digitalisation, and its broader digitalisation plan.

Gaps in digital capability are seen as the main obstacle to adopting digital technologies in SMEs.

According to a survey conducted for the [Problem identification report](#), lack of human resources, knowledge about digital technologies and skills for their implementation were identified as three out of the four primary obstacles to the adoption of digital technologies

Goals

- Understand the mismatch between the skills available and the skills needed.
- Choose an optimal capacity building strategy.
- Ensure the company has the necessary skills for the digital transformation.

Type	Highlighted resources
Framework	ESCO : an exhaustive classification of European skills, competences and occupations.
Assessment	DigComp : an online testing tool for evaluating digital competencies.
Framework	e-CF explorer : an interactive e-competence framework for various ICT professional roles.
Report	The Future of Jobs Report 2023 : an exhaustive forecast of the changing skill requirements over the next five years.

Key actions and objectives

Action	Objective
D1.1. Proactively monitor emerging skills and job roles in the sector	To stay informed about the future directions of skills in the sector in order to anticipate skills mismatches and plan future capacity building.
D1.2. Assess capacity needs in the company	To systematically assess capacity needs in order to help identify the critical skills and roles needed for the digitisation process.
D1.3. Map the skills available in-house	To assess the company's in-house skills and compare these with its needs in order to identify the main skill gaps and establish capacity-building priorities.
D1.4. Evaluate various capacity-building options	To estimate the costs and benefits of various options for capacity building, depending on the company's needs, its available resources, the timeframe and the broader digitalisation plan. This will help the company to choose the optimal capacity building solution.

Tips



Track skills forecasts to anticipate emerging job roles and skills within the sector.



Use existing digital competence frameworks such as [DigComp](#) and [e-CF](#) to identify the capabilities required and evaluate the existing competences within the company.



Attend seminars and conferences to keep up to date with trends in the sector.



Leverage the expertise of (E)DIHs and support programmes to plan capacity building.



When assessing competence needs, break down job roles into small tasks and skills.



To optimise the use of resources, the same employees can be assigned dual roles, handling both digitalisation and core business functions.

Practical examples



Matro Gépgyártó Kft. in Hungary – securing capacities through support from a hub and the solution provider

Matro Gépgyártó Kft. is a Hungarian company specialising in the manufacture of products for diverse types of vehicles. It participated in the [digitalisation pilot](#) conducted as part of this study. To digitalise the collection of data during its production process, the company installed data collection terminals on 50 CNC machines.

During the implementation of the technology, the company adopted a mix of capacity-building strategies. First, the supporting DIH helped the company's management to understand the significance of data management and the integration of machinery and software into a unified system. Second, the software provider assisted the management team in comprehending the functionality of the new data collection system and supporting the training of employees in its use. Lastly, the company trained its internal technical experts, equipping them with the skills necessary to operate the new data collection system.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



Katty Fashion in Romania – assessing in-house skills and planning capacity building with help from a support programme

Katty Fashion is a manufacturing SME in the textile/ fashion industry in Romania. The company produces a wide range of women's outerwear and specialises in short production runs and customised clothing. To remain competitive, the company underwent a comprehensive digital transformation and introduced several technologies such as a proprietary AI-powered analytics platform, 3D technology for virtual prototyping and cloud-based product lifecycle management software.

To evaluate the in-house capabilities needed for the digital transformation, Katty Fashion partnered with the DigitalSME programme. The programme provided technical support to assess the company's current skill levels to identify the skills needed to implement the chosen technologies, and to develop capacity-building strategies. The company subsequently chose to develop skills in-house to assess, apply and compare new technologies. It also received support from another programme, which facilitated training to enable Katty Fashion's team to effectively implement the technologies.

Learn more about Katty Fashion and other digitalisation case studies [here](#).



De Trog in Belgium – solving skills gaps through upskilling, consultations and outsourcing

De Trog is a Belgian bio-label bakery that combines traditional breadmaking with advanced technologies. The company automated its production processes using technologies such as AR, robotics and big data. One of the major obstacles it encountered was a lack of the necessary skills within the organisation.

To overcome these skill gaps, the company decided to employ three different approaches. First, it introduced a quiz app aimed to 'gamify' upskilling training for employees. This training ensured that employees remained informed about safety and quality protocols, as well as the changes associated with digitalisation. Second, the company consulted with external partners, including public and private institutions and competence centres, to gain valuable knowledge and expertise. Lastly, De Trog also opted to outsource the digital solutions in order to maintain its focus on its core business process of production.

Learn more about De Trog and other digitalisation case studies [here](#).

Step D2: Develop the necessary competencies in-house

Why is this important?

Ensuring sufficient human resources, as well as employees' know-how and ability to use new technologies, is crucial for successful digitalisation. **Reskilling and upskilling** are among the main organisational determinants influencing the adoption of technologies among SMEs. Furthermore, internal capacity building is a **more effective strategy for long-term digitalisation** than reliance on external expertise. Nevertheless, the development of in-house skills remains challenging for SMEs, which often only plan and invest in employee training when there is a direct business need.

The successful implementation of technology requires **both technical knowledge and more general skills** such as creativity, problem-solving and active learning. Hybrid skills are becoming increasingly important, especially for SMEs, whose employees often fulfil roles in both digitalisation and the core business at once.

There are several ways in which companies can secure adequate skills. One of the most effective is **structured employee training**, which can be provided internally or by (E)DIHs, clusters or other external providers. Alternatively, SMEs may opt for **more informal and cost-effective methods such as learning-by-doing or online courses**. While enterprise-wide workforce planning and talent development practices have proved to be effective, it may be sufficient for SMEs to **regularly check in with employees** and reflect on their future skill development.

Only 18% of EU SMEs provide ICT training to employees

According to [Eurostat](#), 68% of large enterprises in the EU provided their employees with training to develop or upgrade their ICT skills in 2020, compared with **only 18%** of SMEs.

Goals




- Enable the transformation of business models and the use of new technologies in your company.
- Keep employees engaged, competent and able to tackle challenges and contribute to organisational stability.
- Increase resilience and adaptability towards the changing environment.




Type	Highlighted resources
Database	Digital skills and jobs platform training : a comprehensive collection of courses for developing digital skills.
E-learning	Digital SkillUp courses : a catalogue of online courses in various technologies and in digitalisation management.
Guide	A Digital Skills and Jobs Platform guide for SMEs on learning pathways for building a digital team.

Key actions and objectives

Action	Objective
D2.1. Map all skills needs and existing skill gaps, making use of existing frameworks	To identify the necessary skills by employee roles and to compare them with the existing skillsets in order to provide a basis for developing a training plan that focuses on critical skills.
D2.2. Develop a training plan according to the company’s needs and revise it regularly	To develop and revise a detailed medium- and long-term training plan that will enable the implementation of structured and focused training for employees.
D2.3. Develop the required training courses and/or identify learn-by-doing opportunities	To meet training needs, companies can choose between developing training or opting to train employees through learn-by-doing opportunities. Their choice will depend on the resources available, as well as the complexity of the new initiatives and the and time pressures surrounding their introduction.
D2.4. Carry out training, knowledge transfer and exchange (especially when engaging external expertise to digitalise)	To enable the development of the necessary competencies in the employees by carrying out training and knowledge exchanges.
D2.5. Obtain feedback on training, and assess employee competences post-training and the effectiveness of the training given	To evaluate the effectiveness of training and identifying remaining skills needs and gaps, feedback should be obtained, and employee competencies should be assessed.

Tips

-  Begin by assessing skills needs and existing skills gaps.
-  Begin by building a minimum viable digital team (MVDT). More information about this concept is available [here](#).
-  Invest in training that has an immediate business application.

-  Learn-by-doing: build the necessary skills gradually during implementation.
-  Appoint ‘upskilling ambassadors’ among the company’s employees.
-  Assess the effectiveness of training and use the conclusions of this assessment to plan further upskilling and re-skilling activities.



Good practices for hubs and the supporting ecosystem

(E)DIHs and the supporting ecosystem can ensure that SMEs get the most out of digital technologies by engaging in the following practices:

- Staying up to date with current and **emerging job roles, skills** and relevant **skills frameworks** for particular sectors, in order to provide tailored services that address companies' needs.
- Supporting SME training activities with **funding through grants, tax incentives or levies**.
- **Increasing awareness** among SMEs of the importance of upgrading workforce competencies, and motivating companies to take action.
- **Facilitating knowledge exchange** between SMEs and other actors in the ecosystem, primarily VET providers and educational institutions.
- **Expanding the supply of relevant training** and facilitating the matching of training with the **industry demands** of SMEs.
- Developing separate training programmes for **high- and low-skilled** workers, tailored to the needs of SMEs.
- Collaborating with training providers to improve the training offer. This includes organising **train-the-trainers** programmes and supporting **apprenticeship/‘training on the job’** schemes during which future employees learning specific skills within the company environment.
- Stimulating the use of **modular training** that addresses the particular skill gaps faced by SMEs.
- Developing **digital transformation plans** for specific companies, including agendas for the development of digital skills.

Step D2: Develop the necessary competencies in-house

Practical example: Advanced Manufacturing DIH in Lithuania – providing digital transformation courses for SMEs

The **Lithuanian Advanced Manufacturing DIH** supports over 250 SMEs in the manufacturing sector in the use of digital technologies. The hub provides a range of [certified courses](#) that combine the theory and practice of digital transformation, including:

- ‘Digitalisation and Industry 4.0’: a comprehensive training course on the concepts, challenges and solutions involved in the digitalisation of industry. This course consists of lectures and interactive workshops for company staff at different levels and in various roles.
- ‘Engineering-technological’: hands-on training in various areas such as injection moulding. In this course, trainees are expected to pass both theoretical exams and practical tests in the factory setting to get a certificate.

Learn more about this and other (E)DIH collaboration case studies [here](#).

Type	Highlighted resources
Catalogue	Digital industry training atlas : a map of training providers in various areas of technology around Europe.
Handbook	Digital skills: new professions, new educational methods, new jobs : a handbook for designing upskilling programs for SMEs, with blueprints for the development of skills in various technologies.
Learning pathway	Digital SkillUp Learning pathways : a brief digital transformation guide for SMEs.
Report	Digital innovation hubs as policy instruments to boost digitalisation of SMEs : a report on the role of hubs in SME digitalisation.



Recommendations for companies in the automotive industry

Technological trends in the automotive sector, such as **robotisation and automation, big data analytics, and AI, are changing the demand for job roles and skills**. To develop upskilling and re-skilling strategies, SMEs need to anticipate these trends in collaboration with other actors such as training providers, (E)DIHs and employee representatives.

As a result of automation, repetitive and routine jobs in administration and production are becoming redundant, while **demand for high-skilled technical roles and managers is increasing**. The top emerging skills include advanced digital skills and technical skills relating to the manufacturing process, as well as problem-solving, self-management and social skills.

To address evolving skill needs, companies in the automotive sector must **provide training** to their employees, primarily through internal training departments, on-the-job training/coaching and employer-sponsored apprenticeships. Notably, investment in training is significantly lower among SMEs at the lower end of automotive value chains.

Top 10 reskilling priorities (WEF)*

1. Leadership and social influence
2. Analytical thinking
3. Technological literacy
4. Curiosity and lifelong learning
5. AI and big data
6. Motivation and self-awareness
7. Creative thinking
8. Resource management and operations
9. Service orientation and customer service
10. Empathy and active listening

Top emerging roles (WEF)*

1. AI and machine learning specialists
2. Mechanical engineers
3. Controllers and technicians
4. Industrial and production engineers
5. General and operations managers

*WEF projections for automotive and aerospace industries

Step D2: Develop the necessary competencies in-house

Practical example: Eckerle Automotive Bóly Kft. in Hungary: learning-by-doing during the implementation of a digital access control system

Eckerle Automotive Bóly Kft. is an automotive company from Hungary that recently introduced a digital access control system. One of the main challenges the company faced in this process was a lack of digital expertise. The company did not have a dedicated employee who could manage the implementation process. Furthermore, the company also experienced some resistance towards digitalisation among its employees, which could be attributed to their limited knowledge and experience of digitalisation. However, employees gained the necessary experience through the implementation process itself. This reduced resistance and enabled the company to continue its digitalisation journey.

Learn more about Eckerle Automotive and other digitalisation case studies [here](#).

Type	Highlighted resources
E-learning	ASA learning platform : short online training courses for employees in automotive sector.
Job role descriptions	DRIVES job role descriptions : emerging job roles in the automotive sector, with relevant skills, materials, exercises, exams and certificates.
Report	Automotive industry at the crossroads : a report on evolving skills and job roles in the automotive sector.



Recommendations for retail companies

Digital technology is dramatically changing skills needs in the retail sector. According to research by [McKinsey & Company](#), **more than half of job tasks in retail can be automated**, necessitating a comprehensive workforce upskilling

While automation is making both **repetitive manual and administrative tasks redundant**, the **development of new skills** is required to operate digital technologies and respond to evolving customer demands. On the one hand, workers will need to develop **digital skills** to navigate online sales channels and operate technologies such as big data, AI, logistics software and robots. On the other hand, they will also need to enhance **customer-oriented skills** such as communication and interpersonal skills, in-depth product knowledge, people management and problem-solving.

Although SMEs employ the majority of the retail workforce, they invest little in training due to resource constraints. Significant investment is needed in the use of **training programmes facilitated by training providers, digital training tools and certification programmes**, in addition to the prevalent trends of on-the-job training and informal learning.

Top 10 reskilling priorities (WEF)

1. Analytical thinking
2. Leadership and social influence
3. Service orientation and customer service
4. AI and big data
5. Motivation and self-awareness
6. Technological literacy
7. Creative thinking
8. Design and user experience
9. Resilience, flexibility and agility
10. Curiosity and lifelong learning

Emerging job roles (WEF)

1. Business intelligence analysts
2. Business development professionals
3. Managing directors and executive professionals
4. General and operations manager
5. Business services and administration managers

*WEF projections for retail and wholesale of consumer goods

Step D2: Develop the necessary competencies in-house

Practical example: Surfoteka in Poland – developing skills through support from a hub and learning by doing

Surfoteka is a retail company from Poland that specialises in the sale of sports gear, which participated in the [digitalisation pilot](#) conducted as part of this study. To streamline its operations, the company decided to implement a system to integrate its sales channel. However, neither the employees nor the owner possessed sufficient digital skills to operate the software effectively. Due to its limited resources, paid training was not a viable option for the company

To address this challenge, Surfoteka relied on support from a DIH. The DIH provided coaching to the company owner to help them learn how to use the new software. The company also designated specific employees to operate the technology, whose training primarily follows a learning-by-doing approach and relies on manuals provided by the software providers. If necessary, the company may explore paid training options in the future.

Learn more about Surfoteka and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
Report	Transforming the EU retail and wholesale sectors : a report on recent technological trends in the retail sector and the changing skill landscape.
Curriculum	Digital skills training blueprints for SME employees : training course curriculum for digital sales, marketing and cybersecurity.
Guide	Closing the skills gap in retail with people analytics : a short guide to the use of people analytics for capacity building in the retail sector.



Recommendations for companies in the textile industry

The textile industry is undergoing a fundamental transformation towards sustainable and digitalised business models. This shift is accompanied by the adoption of technologies such as advanced robotics, laser cutting, 3D printing, sensors, IoT, AR/VR and AI. However, one of the main challenges to this transformation is the need for the **rapid development of new digital skills**, in the face of an ageing and largely unskilled or semi-skilled workforce.

In addition to the **growing need for ICT and other technical skills**, there has also been a rise in demand for **social and managerial skills** due to changing customer expectations and the increasing complexity of global supply chains. Conversely, due to automation, the demand for manual workers as well as administrative roles such as accounting and data entry, is shrinking.

To provide the wide range of skills needed for digital transformation, textile companies are prioritising **on-the-job training and coaching**, as well as **internal training** and **employer-sponsored apprenticeships**.

Top 10 reskilling priorities (WEF)*	Emerging job roles (WEF)*
1. Analytical thinking	1. Business development professionals
2. Creative thinking	2. Sales representatives
3. Resilience, flexibility and agility	3. Managing directors and chief executives
4. AI and big data	4. General and operations managers
5. Curiosity and lifelong learning	5. Assembly and factory workers
6. Leadership and social influence	
7. Motivation and self-awareness	
8. Talent management	
9. Empathy and active listening	
10. Design and user experience	

*WEF projections for consumer goods manufacturing industries

Practical example: Confetil in Portugal – upskilling through training investments

Confetil is a Portuguese textile company specialising in the production of circular-knit ready-made garments. In response to customer demands, the company introduced 3D computer-aided design (CAD) software for garment design. This innovative technology enabled Confetil to create virtual samples and engage in discussions with customers during the sampling phase, resulting in shorter proposal, revision and approval cycles.

One of the main challenges faced during the implementation of the 3D CAD software was a lack of the necessary skills among employees, who were accustomed to using the more prevalent 2D CAD systems. To address this skills gap, Confetil made significant investments in upskilling their design and modelling team through training in 3D CAD tools. This training proved to be effective, and the company is now successfully using the new technology.

Learn more about Confetil and other digitalisation case studies [here](#).

Type	Highlighted resources
E-learning	ICT-TEX courses : a series of online courses on the digitalisation of the textile sector.
E-learning	Skills4Smart TCLF MOOC : online training courses for textile/clothing/leather/footwear in various European languages (registration required).
Database	Skills4Smart TCLF VET database : an extensive EU-wide list of VET providers for employee upskilling in the textile sector.



Recommendations for companies in the agrifood industry

The agrifood sector is undergoing a digital and green transformation, driven by the adoption of technologies such as precision farming, robotisation, AI and big data. This transformation has created **new job roles and demands for specific skills**. However, the sector currently faces a **shortage of skilled labour** due to several factors including an ageing workforce, heavy reliance on temporary migrant labour, and inadequate training opportunities.

To benefit fully from digitalisation, workers in the sector need to **constantly upgrade their technical and digital skills** while also developing problem-solving abilities, operational expertise and effective teamwork.

The most common form of skills development in the sector – particularly among smaller and family-owned farms – is **informal, on-the-job learning**. This approach needs to be complemented by **upskilling through formal education, instructor-led trainings, apprenticeships, online courses or technical guidance from farm advisors**.

Top 10 reskilling priorities (WEF)*

1. Environmental stewardship
2. Resource management and operations
3. Analytical thinking
4. Creative thinking
5. Leadership and social influence
6. Resilience, flexibility and agility
7. Technological literacy
8. Dependability and attention to detail
9. Quality control
10. Service orientation and customer service

Emerging job roles (WEF)*

1. Agricultural equipment operators
2. Graders and sorters of agricultural products
3. Business development professionals
4. Farmworkers and labourers
5. Nursery and greenhouse workers

*WEF projections for agriculture and forestry industries

Step D2: Develop the necessary competencies in-house

Practical example: De Trog in Belgium – making training more accessible through gamification

De Trog is a Belgian bio-label bakery producing organic bread, which uses a number of digital technologies including robotic applications, big data and AR. Staff upskilling was one of the main challenges encountered during the company's digital transformation process, as employees previously had a low level of digital skills.

To address these skill gaps, De Trog introduced a gamified training approach by using an app called 'BattleBakery'. Using this app, employees could challenge each other to quizzes focusing on areas such as packaging or warehousing. These interactive games ensured that the workers have been brought up to date with safety and quality protocols in production, while also ensuring they keep informed about upcoming changes associated with digitalisation. This innovative approach has helped the company to improve its employees' skills, as well as securing buy-in for digitalisation.

Learn more about De Trog and other digitalisation case studies [here](#).

Type	Highlighted resources
E-Learning	Sparkle e-learning platform : online technical and managerial courses for sustainable precision agriculture.
E-Learning	Erasmus+ MOOCs Agri-smart sustainability and digital skills for the agricultural sector : a series of 64 online courses (registration required).
Database	FairShare inventory of training modules : an extensive database of online and offline agrifood training.



Recommendations for companies in the construction industry

Despite its limited digitalisation, the construction industry is embracing technologies such as BIM, 3D printing and scanning, AI, GIS and AR/VR. However, the further adoption of digital technologies is hampered by a **shortage of skilled workers** caused by an ageing workforce, reliance on migrant labour and education gaps.

To overcome this challenge, construction companies must prioritise the **upskilling of their workforce**, including architects, engineers, technicians and construction workers. Depending on their respective roles, these workers need to acquire skills such as programming, data analysis, the use of BIM software and workflow management software, 3D modelling, the use of mobile devices, drone operation and sensor installation. Administrative roles such as accounting and data entry are projected to decrease.

The methods used to upskill workers can include **certified training programmes such as instructor-led courses, online courses or self-paced tutorials**, but also more **informal internal and on-the-job training**.

Top 10 reskilling priorities (WEF)*

1. AI and big data
2. Analytical thinking
3. Creative thinking
4. Leadership and social influence
5. Design and user experience
6. Programming
7. Resilience, flexibility and agility
8. Technological literacy
9. Curiosity and lifelong learning
10. Networks and cybersecurity

Emerging job roles (WEF)*

1. Business development professionals
2. Architects and surveyors
3. Civil engineers
4. Assembly and factory workers
5. Construction labourers

*WEF projections for infrastructure industries

Step D2: Develop the necessary competencies in-house

Practical example: UNITH2B in Romania – upskilling employees through iterative internal training

UNITH2B is a Romanian construction company that participated in the [digitalisation pilot](#) conducted as part of this study. It specialises in architectural and interior design, urbanism and construction project management. The company made the decision to enhance its efficiency and use of BIM technology. To achieve this, it was necessary to upskill the company's existing workforce.

Given the company size, UNITH2B entrusted an architect with the responsibility for the uptake of BIM in addition to core business functions. The company also chose to focus on internal skills development rather than relying on external suppliers. The internal training procedures implemented by UNITH2B were iterative and aimed to address the company's immediate upskilling needs.

Learn more about UnitH2B and other digitalisation pilots conducted as part of this study [here](#).

Type	Highlighted resources
E-learning	Construction blueprint – online training courses : a series of free online courses on digitalisation, energy efficiency and the circular economy in the construction sector.
Report	Construction blueprint – study on occupational profiles and qualifications : national reports.
Curricula	Construction blueprint – VET curricula on energy efficiency, circular economy and digitalisation : training curricula for construction workers.

Step D3: Engage external expertise

Why is this important?

The successful digital transformation of companies depends on having access to the necessary expertise. However, **SMEs often lack human resources with adequate technical and managerial knowledge**. Securing the necessary skills in-house can be challenging due to the high cost and inaccessibility of training, as well as the rapid evolution of digital technologies. In addition, some skills may be very specific or may only be required temporarily, making long-term investments less viable. In such cases, **seeking external expertise may be the most effective option for capacity building**.

External experts can be engaged to address skills gaps within a company. They can assist with the development of **solutions, consultations, overseeing** digitalisation processes, technology **maintenance**, or specific **technical tasks**. Various actors provide such services, including **service provider companies, consultants, (E)DIHs, public programmes, academia, or other companies** in the value chain.

Engaging external experts not only helps to bridge internal skill gaps and solve immediate business problems, but it may also enable **the transfer of knowledge to employees and foster the internal development of expertise** in the long run.



Less than one-fifth of SMEs employ ICT specialists

In 2022, most large companies in the EU (78%) employed ICT specialists, compared with only 19% of SMEs, according to [Eurostat](#).



Step D3: Engage external expertise

The **outsourcing of business processes**, especially ICT functions, is a prevalent strategy for ensuring sufficient capacity for digital transformation. It can lead to significant cost-savings, access to diverse skills, as well as specialised expertise. Outsourcing work can also give companies significant flexibility by providing on-demand expertise for short-term tasks, particularly when hiring independent contractors. SMEs can decide which functions to outsource and when they can rely on internal expertise, depending on their digitalisation strategy, needs and resources.

SMEs can also tap into the **supporting ecosystem for technical advice and expertise in bridging digitalisation knowledge gaps**. (E)DIHs can provide mentoring-type support or connect companies with experts in their networks. SMEs can also approach universities and research institutions for expert advice. Lastly, SMEs can secure expertise by collaborating and sharing experiences with companies in the value chain or relevant technology start-ups and also connect with pertinent experts through clusters and associations. For more detailed information on collaboration with various stakeholders, see [Process C](#).

Type	Highlighted resources
Guide	Five ways to unlock win-win value from the IT-services sourcing relationships : best practices for the effective outsourcing of IT services.
Article	Global business-services sourcing comes of age : an article about the effective use of outsourcing.
Book	Information systems outsourcing : a comprehensive overview of opportunities and challenges in the outsourcing of information systems.

Goals

- Ensure the necessary capacities for the implementation of digital technologies.
- Maintain agility in the short run.
- Cut costs, access specific expertise and achieve greater flexibility.
- Secure knowledge transfer from external experts to company staff.

Key actions and objectives

Action	Objective
D3.1. Identify the skill gaps to be compensated using external expertise	To explore existing skills gaps in order to better target critical areas in which external expertise can be engaged effectively.
D3.2. Evaluate the effectiveness of seeking external expertise	To help make an informed decision on its feasibility and scope by estimating the costs and benefits of engaging external expertise in comparison to other capacity-building options. This also helps in determining which functions should be carried out in-house, and which should be outsourced.
D3.3. Find and engage adequate expertise based on company's needs and resources	To ensure that project requirements and skill gaps are addressed by engaging adequate expertise. External expertise could include short-term consultations or the longer-term outsourcing of company functions, as well as the procurement of specific or general skills, depending on the company's needs.
D3.4. Establish effective communication with external experts	To ensure more effective technology implementation and leveraging the skills brought by external partners by establishing smooth communication and clear expectations. In relation to the outsourcing of company functions, this may also include fostering long-term cooperation and the establishment of a formal governance structure.
D3.5. Manage knowledge transfer between external experts and staff	To secure knowledge spillover in order to facilitate implementation of digital technology and ensure the sustainability of the digitalisation initiatives in the long run.

Tips



Appoint a person or a team with both technical and business knowledge to coordinate external service providers.



Make use of (E)DIHs and their networks to access external expertise.



Although outsourcing can cut costs, it also requires comprehensive risk management (see [Step E3](#) for more advice on this).



Offshore outsourcing requires extensive governance and high levels of cultural awareness in communication.



In the case of smaller tasks that demand greater flexibility, consider hiring freelance contractors via digital platforms.

Practical examples



Matro Gépgyártó Kft. in Hungary – relying on external expertise from solution providers

Matro Gépgyártó Kft. is a Hungarian automotive company specialising in manufacturing parts for a wide range of vehicles. As part of the [digitalisation pilot](#) conducted for this study, the company decided to install data collection terminals on 50 of its factory machines, and to integrate these with its production monitoring system. To successfully implement this technology, Matro Gépgyártó Kft. sought external expertise from two solution providers.

Initially, the company encountered compatibility issues when installing the data collection terminals on different machines. Due to an internal lack of the skills necessary to solve this problem, the company relied on support from the machine manufacturers, who possessed necessary expertise. The software provider also played a crucial role in the implementation process by assisting the management team in understanding the communication between various machines and the data collection process. It also provided support in training employees on to the effective use of the new data collection system.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



50 Acres of Work & Joy in Lithuania – implementing farm management software through extensive external consultations

50 Acres of Work & Joy is a small, zero-waste family farm located in Lithuania, which participated in the [digitalisation pilot](#) conducted as part of this study. With the support of a hub and a service provider, the farm introduced farm management software to optimise its business functions. The main problem encountered during the process was a lack of digital skills, which resulted in the farm facing difficulties in making effective use of the software and in inputting data.

To address this issue, the owner of the farm worked closely with the DIH and the technology provider. The support that was provided involved frequent close consultations, during which the software provider provided step-by-step instructions on using the software. The DIH also played a key role in motivating the farmer to input data into the software regularly. Such assistance proved crucial to the successful uptake of the technology and helped the farm owner to improve their digital skills.

Learn more about 50 Acres of Work & Joy and other digitalisation pilots conducted as part of this study [here](#).

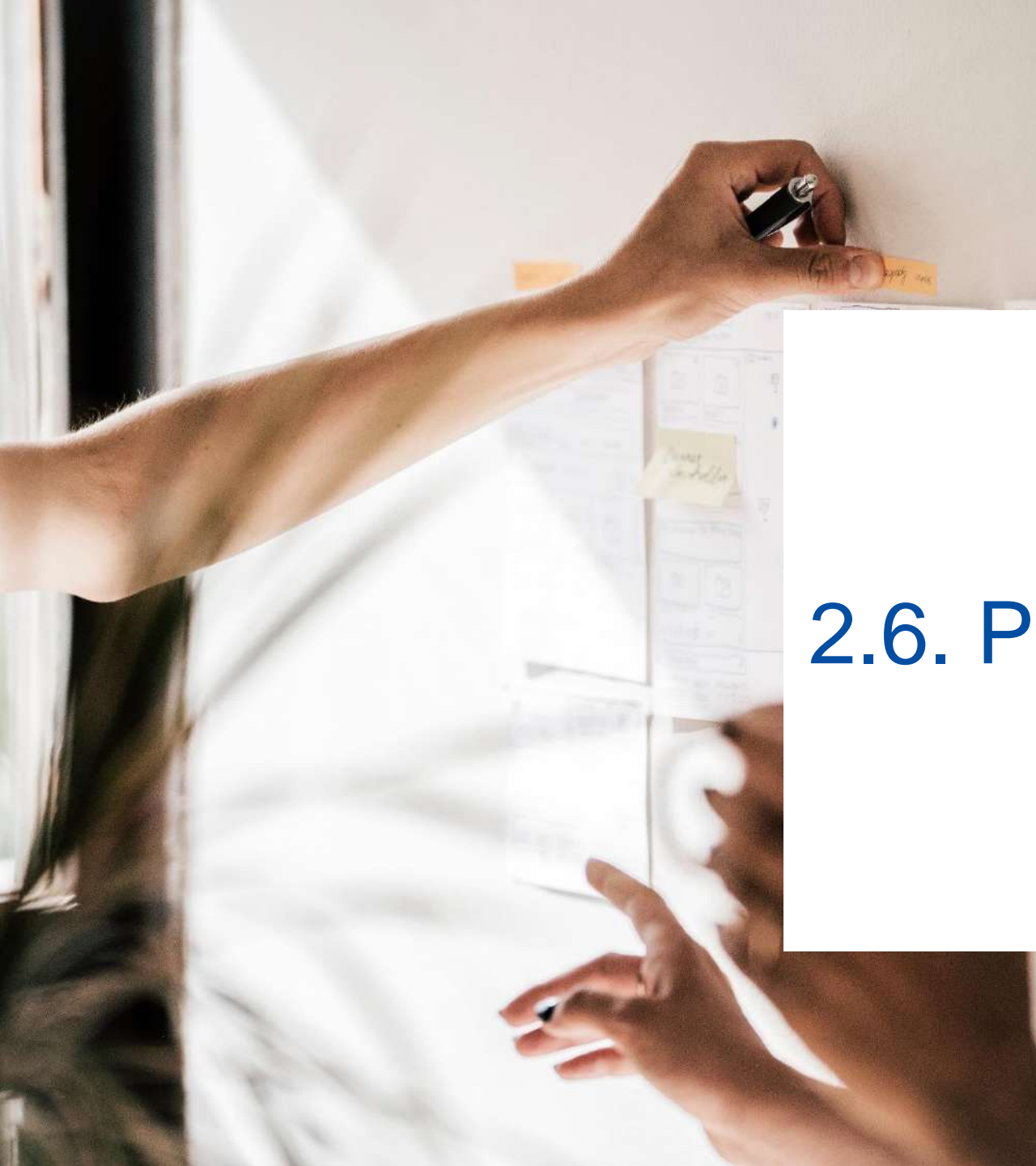


Aqualand Ltd in the UK – compensating for a lack of internal know-how through outsourcing

Aqualand Ltd is a UK-based company specialising in the design and manufacture of various types of dry suits. The company introduced a stitching technology that delivers precise, made-to-measure, and consistent outputs.

However, the company faced a lack of the in-house know-how required to develop this solution. To overcome this challenge, it decided to seek external expertise and outsource the development of the solution. The chosen solution provider provided the pattern and cutting software, as well as the cutting equipment. Notably, the technical team from the outsourcing company played a crucial role in supporting Aqualand Ltd throughout the technology adoption process, ensuring the effective transfer of knowledge to the company's staff.

Learn more about Aqualand Ltd and other digitalisation case studies [here](#).

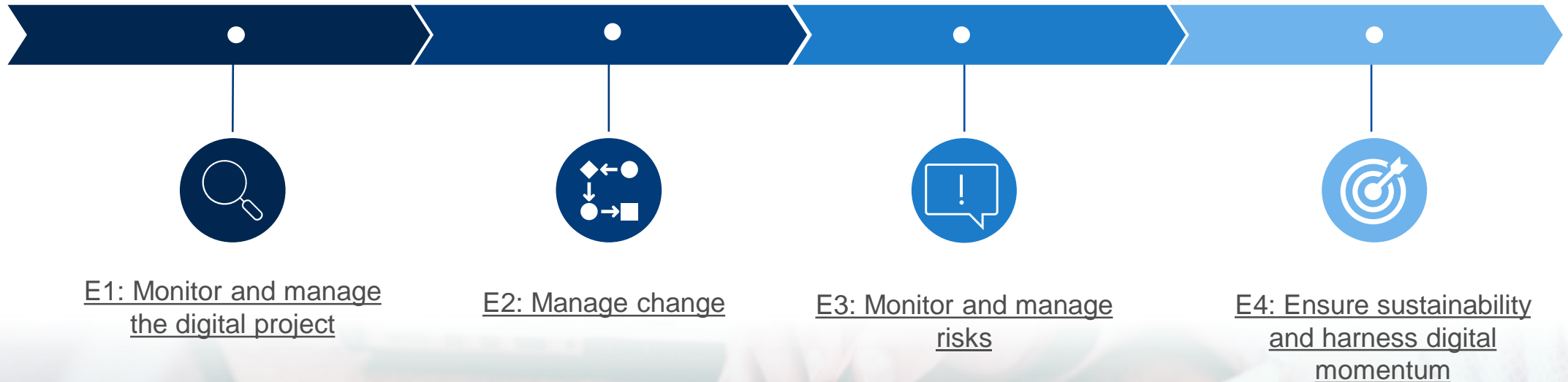


2.6. Process E: Management

2.6. Process E: Management

The final process is applicable across the entire digital transformation life-cycle. Management involves several aspects, such as monitoring and managing the digital project, change and risk management. Furthermore, to ensure the long-term success of a digital initiative, companies are encouraged to dedicate efforts to ensuring sustainability and harnessing digitalisation momentum.

This process has four distinct steps. You can follow the links below to jump to the specific step.



Step E1: Monitor and manage the digital project

Why is this important?

Effective project management is a crucial factor in successful digitalisation. It facilitates the efficient implementation and operation of digital technologies by ensuring the **optimal allocation of resources, effective collaboration between stakeholders, the mitigation of risks and adaptation to new circumstances**. Poor project management can result in significant disruptions and inefficiencies, which may be particularly detrimental to SMEs with limited resources.

Project management involves establishing clear project goals, monitoring their progress, and ensuring their achievement. It can also entail the recalibration of initial plans, as well as mitigating challenges and striking a balance between the project's quality and the optimal use of resources such as time, skills and money. The effective execution of these steps is particularly relevant in the case of digital projects, due to their great complexity.

Unlike larger companies, **SMEs typically do not require extensive project management procedures** due to their dynamic nature, smaller size and the proximity between management and employees. Moreover, SMEs often have employees managing digital projects alongside regular day-to-day responsibilities. As a result, SMEs require **simple, quick and flexible approaches to project management**. Such approaches involve dynamic and iterative adaptation to unpredictable changes by redistributing resources and adjusting digitalisation strategies and project operations. However, in highly structured projects with well-defined objectives and requirements, more traditional linear project management can be advisable.

Agile management is key to the successful implementation of digital technologies

An [OECD study of 25 industries](#) showed that up-to-date management practices are among the top three most important capabilities for the implementation of digital technologies. [Research](#) also indicates that the role of agile leadership is especially important for the successful digitalisation of SMEs.

Goals







- Ensure the optimal allocation of resources for the effective adoption of digital technologies.
- Ensure that digitalisation projects run smoothly.
- Monitor progress to in order to adapt effectively to novel circumstances.

Type	Highlighted resources
E-Learning	Digital transformation tool – project management : online course on the foundations of project management for digitalisation initiatives.
Guideline	Best 10 project management tools of 2023 : a catalogue of handpicked project management tools for SMEs, with guidelines for their selection and use.
Article	Why SMBs need to get project management right from the start : an article about the purpose of project management for SMEs.

Key actions and objectives

Action	Objective
E1.1. Monitor progress	To detect risks and deviations from the plan it is crucial to set KPIs that are tailored to the implementation approach and review progress against established milestones.
E1.2. Proactively respond to emerging issues	To ensure flexibility and avoid significant setbacks, it is necessary to adapt to changing market conditions, novel organisational realities and unexpected project flows.
E1.3. Manage quality assurance and control processes.	To ensure the quality of a digital project and to establish control processes in order to ensure that the solution functions optimally and according to expectations.
E1.4. Define and adjust project timeline	To ensure the timely completion of tasks it is crucial to determine the time necessary for each task and milestone and establish corresponding delivery dates.
E1.5. Manage resources	To ensure the availability of the resources necessary for the project completion, changes in costs should be monitored, future expenses analysed, and the budgeting process adapted.
E1.6. Manage the team	To ensure sufficient expertise, it is important to effectively distribute roles and responsibilities and enable the proper flow of information within the team.

Tips

-  Break the project down into small and practical tasks and milestones.
-  Explore [different project management frameworks](#).
-  Make use of existing [project management tools and software](#).
-  Set clearly defined SMART (specific, measurable, attainable, relevant and time-bound) KPIs to measure progress.
-  Take into consideration possible productivity losses during the early stages of implementation.
-  If you lack managerial expertise, consider hiring external experts to oversee digitalisation projects.

Practical examples



Katty Fashion in Romania – incorporating agile practices and continuous progress monitoring into the company workflow

Katty Fashion is a textile/ fashion manufacturing company that produces a wide range of women's outerwear. To remain competitive, the company undertook a comprehensive digital transformation and introduced several advanced digital technologies. The company received support from an advisor who helped it to define digitalisation strategies and manage projects.

To transition to an innovative and sustainable business model, the company implemented agile practices and adopted co-creation methods involving the team and external partners. The digital transformation process was incremental. This allowed the company to work on subsequent steps in its transformation while simultaneously introducing new technologies. As key success factors, Katty Fashion cites its continuous progress monitoring and the studying, testing and incorporation of proposed technology solutions into its workflow.

Learn more about Katty Fashion and other digitalisation case studies [here](#).



Karl Wolf GmbH & Co in Germany – adopting a project management tool for collaboration with stakeholders

Karl Wolf GmbH & Co is a medium-sized construction company specialising in construction, reconstruction, maintenance and project development. Due to fact that the company collaborates extensively with various stakeholders and coordinates multiple projects, regular information exchange is necessary. To streamline the company's communications and reduce its reliance on phone calls, emails and face-to-face meetings, it decided to implement a central project management platform.

The company opted for an agile project management tool – Kanban board – and chose to implement it using Microsoft Teams. This visual tool offers a comprehensive overview of projects and allows all stakeholders to input data and collaborate effectively. When selecting the solution, the key considerations included cost, data conformity and IT security, ensuring that the chosen tool was approved by other stakeholders. To make effective use of the tool, all stakeholders underwent brief training.

Learn more about Karl Wolf GmbH & Co and other digitalisation case studies [here](#).



Żabka in Poland – using agile methodology to collaborate with a service provider

Żabka is a retail franchise network in the Polish market. The company's ongoing transformation is based on its objective to get as close as possible to its customers through the development of a convenience ecosystem. This entails the launching of autonomous self-checkout shops and the use of AI to analyse sales.

To digitalise its business processes, Żabka chose to partner with [summ-it](#), a company specialising in system integration and professional data management. Together, they were able to employ an agile methodology to implement a solution that was fully aligned with the retailer's needs.

Learn more about Żabka and other digitalisation case studies [here](#).

Step E2: Manage change

Why is this important?

Employee resistance and limited adaptation to the implementation of new technologies are major barriers to successful digitalisation. Employees may not embrace technological changes due to limited awareness, resistance to change and risk aversion. They may worry about being replaced by technology or facing reduced human interactions and negative impacts on their well-being. The failure of employees to adapt to change can lead to discouragement, stress, the loss of valued employees, diminished quality of work and a drop in productivity.

To address these challenges and ensure successful adaptation to change, **company management needs to actively prepare, equip and support individuals** throughout the process. This involves gaining an understanding of how employees experience change, developing a clear change plan, ensuring effective communication, fostering a supportive organisational culture and providing appropriate training and feedback. Due to resource and time constraints, SMEs should take advantage of their flexibility and lack of layers of hierarchy to **manage change through close communication with employees instead of through formalised procedures.**

By embracing effective change management strategies, organisations can **increase the likelihood of successful technology adoption.** This approach promotes employee engagement and facilitates their adaptation to change, optimises resource utilisation, minimises disruptions and risks, and ensures the sustainability of digitalisation initiatives.

Moreover, **customers may also sometimes be resistant to new technologies.** In such cases, companies should actively engage with their customers to understand their needs and expectations and help them to realise the value of novel technologies in improving products and services.

Effective change management can lead to a 2.6x increase in the likelihood of digital transformation being successful

[Research by EY and the University of Oxford](#) shows that companies with an above-average adoption of key change management drivers showed a likelihood of success of 73%, in contrast with just 28% for those with below-average adoption.

Goals







- Empower employees to adopt the new behaviours needed for their changed job requirements.
- Foster the sustainability of digitalisation initiatives by actively engaging with and motivating employees.
- Cultivate a positive and cohesive work environment.

Type	Highlighted resources
E-Learning	Digital transformation tool - Change management : A short online course on foundations of change management.
Report	How do you harness the power of people to double transformation success : evidence-based report on strategies for successful change management.

Key actions and objectives

Action	Objective
E2.1. Assess the impact of the intervention on the organisational structure and individuals	To map the potential impact of the intervention, which can help develop an informed change management strategy and subsequent intervention.
E2.2. Define a case for change: clearly articulate the necessity of technology adoption and its potential benefits	To formulate why the change is needed and the value it will bring to employees. This will help to ensure consistent communication. In turn, it will allow to foster employee understanding and acceptance of the intervention.
E2.3. Communicate and actively engage employees in the digitalisation process	To help understand the attitudes of employees towards new technology and support them in embracing and adapting to changes.
E2.4. Provide support to employees in adopting new behaviours	To support employees in adopting new behaviours and adapt to the evolving work requirements.
E2.5. Monitor and demonstrate the progress of the intervention	To demonstrate progress and motivate employees to sustain and integrate new behaviours. This will help to ensure the sustainability of digitalisation.

Tips

-  Identify 'change ambassadors' who will promote digitalisation inside the company.
-  Provide employees with programmes, training, tools and templates to adapt to changes.
-  Give employees a say in the change process.
-  Break down long-term change vision into manageable short-term goals.
-  Continually share and celebrate the digitalisation successes.
-  Create new incentives for employees to adopt changes.

Practical examples



Matro Gépgyárto Kft. in Hungary – enhancing transparency regarding performance evaluations

Matro Gépgyárto Kft. introduced a data collection system to monitor the production process. Workers were initially reluctant to accept the new technology due to concerns about increased workload and heightened company control over their work.

To address the concerns, company management promoted open dialogue in the organisation. They organised interactive information exchange sessions and regular meetings with employees to actively involve them in providing inputs for the design of the solution. Most significantly, the management used the new production monitoring system to transparently evaluate employees and create new incentives. As a result, employees saw the benefits and supported the adoption of the new technology.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



LEVIATAN SRL in Romania – uncovering operational inefficiencies increasing motivation for improvement

LEVIATAN SRL is an SME in the construction industry in Romania that provides architecture and civil engineering services.

To identify its digitalisation needs, the company ran a working session with the company's management team. This session aimed to map company processes and identify recurring issues and potential courses of action.

The session proved 'eye-opening' for employees. It uncovered multiple inefficiencies within the company's day-to-day operations and increased the team's motivation to improve the way it worked.

Involving early adopters with a change mindset into process mapping, process change and experimentation was important in facilitating buy-in. To ensure the rest of the company supported the company's digitalisation plans, the management team invested time in developing instruction manuals and templates covering company processes, deliverables and documents.

Learn more about LEVIATAN SRL and other digitalisation case studies [here](#).

Practical examples



Unifardas in Portugal – management introducing employee-initiated technology

Textile company **Unifardas** participated in a [digitalisation pilot](#) as a part of this study. It introduced a web-based solution for parametric data capture to support customised ordering. This solution was adopted on the basis of an employee initiative. The employees wanted a technology that would simplify their work and make it more efficient by improving customer management.

To ensure the smooth adoption of the technology, the management supported the employees throughout the process. They encouraged open communication within the company, supported upskilling and reskilling, and managed employees' expectations. They also organised regular meetings and internal training for employees and facilitated communication across company units. Despite having a lower level of digital skills, the employees understood the necessity for change and were ready to develop new skills.

In the future, the company also plans to support customers in adopting the new technology for customised ordering by providing them with training on its use. Furthermore, it aims to assess customer satisfaction and engagement with the new service.

Learn more about Unifardas and other digitalisation pilots conducted as part of this study [here](#).



Surfoteka in Poland – informal discussion replace formal change management

Surfoteka is a small retail company that sells and maintains sports gear, which participated in the [digitalisation pilot](#). The company implemented a centralised, cloud-based system to integrate its sales channels.

Due to the small number of employees in the company, no formalised change management process was in place. Instead, the manager engaged in informal discussions with employees to explain the benefits of the new technology. The main arguments for digitalisation included the streamlining of day-to-day operations when interacting with customers, recovering from a recent warehouse fire, and remaining competitive in the market. As a result, the employees recognised the necessity for digitalisation and embraced the new technology.

Learn more about Surfoteka and other digitalisation pilots conducted as part of this study [here](#).



Step E3: Monitor and manage risks

Why is this important?

Digital transformation is subject to a **distinctive set of risks**, driven by the rapid digitalisation observed across various industries in recent years. Companies embarking on this journey must address the development of new business models, strategies, leadership, and a digital-friendly culture. In general, digital transformations can be even more complex to implement than traditional organisational changes. For example, one critical consideration is relates to **digital resiliency**, which is important to for dealing with technology dependencies. In addition, digital marketing has important implications for brand value, reputation and consumer data privacy.

The risks associated with digitalisation encompass **various dimensions**, including traditional ones such as strategic and operational risks, as well as dimensions specific to digital transformation such as information security, regulatory compliance, the risk of data leakage, and privacy. For example, during the digitalisation pilots carried out for this study, the selected SMEs identified risks spanning the operational, technological, strategic and financial domains, as well as those related to external shocks and third parties.

Due to resource constraints and their limited ability to take on risks, SMEs can usually only carry out a limited number of digitalisation projects. The cost of failure in any single project can be prohibitive. Therefore, for those SMEs which take on digitalisation initiatives, the **effective management and monitoring of risks is especially important**. The benefits of risk management include early awareness, improved and proactive planning and response, as well the minimisation of negative impacts when risks are realised.

Goals

- Foster risk awareness and digital resiliency in your organisation.
- Develop targeted strategies to mitigate the risks associated with digitalisation.

Companies use different strategies to manage risks linked with the adoption of emerging technologies

According to the 2022 [European Risk Manager Survey](#), the top ways in which companies deal with risks arising from emerging technologies are:






- Identifying and assessing risks prior to the adoption of new technologies by the business – 35%.
- Identifying and assessing the emerging technologies used by the business – 32%.
- No specific action – 30%.

Type	Highlighted resources
E-Learning	A digital transformation tool course on risk management .
Project outputs	BePrepared! project outputs , including a motivational video, company risk stories and good practices for SMEs to manage supply chain risks.
Resource database	The SecureSME tool includes various resources, including a self-assessment, reports and instructions.

Key actions and objectives

Action	Objective
E3.1. Identify risks	To understand the internal and external environment and improve awareness of potential risks. Risk identification should be a continuous process.
E3.2. Analyse risks	To prioritise a list of risks based on their probability and potential impact, thereby allowing the team to efficiently allocate their efforts in terms of monitoring and mitigation. For this purpose, companies can use a sensitivity (likelihood-impact) matrix to assign an overall score to each risk.
E3.3. Define measures	To define a set of measures to help minimise the digitalisation project's exposure to risk and assign responsibility for them to relevant parties. These may include measures to: (1) avoid the risk; (2) mitigate or reduce the risk, (3) transfer the risk; or (4) accept the risk.
E3.4. Implementation and monitoring	To carry out mitigation measures, as well as continuous monitoring and assessment of risks, based on any newly emerging information.

Tips

-  Consider risks when choosing which digitalisation initiatives to implement.
-  Make risk identification and analysis a continuous process.
-  Consider both internal and external risks.
-  Be proactive in addressing emerging risks.
-  Allocate efforts at risk mitigation according to the severity and likelihood of risks.

Practical examples



Surfoteka in Poland – monitoring risks during a digitalisation pilot

Surfoteka is a small retail company that sells and maintains sports gear, which participated in the [digitalisation pilot](#) of this study. The company implemented a centralised, cloud-based system to integrate its sales channels.

Surfoteka noted that, prior to the digitalisation pilot, it usually only considered internal risks. Understanding how its competitors use digital technologies was thus an eye-opening experience for the company. It resulted in the company's management deciding to pursue digitalisation, despite initial reluctance. Throughout the pilot, Surfoteka developed a risk register for monitoring risks associated with the pilot, working together with the hub that supported its digitalisation.

Below is a practical example of key risks identified during the Surfoteka pilot.

Risk	Impact	Likelihood	Overall	Description
[Financial] Lack of financing for hardware	M	H	M	Likelihood increased as Surfoteka encountered the lack of financing. The hub provided budgetary support for the software, while the company covered the hardware.
[Technological] Implementation failure	H	L	L	Surfoteka turned out to have fewer systems in place than initially claimed, which makes the implementation easier.
[Operational] Delays in the project	M	M	M	Constant interactions between the hub and the company acted as a way to keep the pilot on track.
[External shocks] Previously unknown aftermath of a fire at Surfoteka's premises	H	H	H	The risk was mitigated by ensuring an agile implementation approach that would allow the company to adapt to unexpected changes.

Learn more about Surfoteka and other digitalisation pilots conducted as part of this study [here](#).

Practical examples



Producer of measuring equipment in Austria – training in risk management

One of the companies studied in the [BePrepared! project](#) is a **medium-sized company in Austria that produces measuring equipment** with a wide range of applications, especially in the automotive industry. The company has approximately 100 employees and is highly digitalised.

In terms of risk management, the company provides mandatory training for its employees, which includes topics such as data security and corruption of data. The company also provides specific instructions to employees on how to react in the event of a cyber-attack.

Learn more about the case of the measuring equipment producer [here](#).



A producer of baked goods in Estonia – harnessing operational agility in risk management

One of the companies studied in the [BePrepared! project](#) is a **micro-enterprise in Estonia** that employs nine employees. Established in 2011, the company produces baked goods for hotels, restaurants, cafes and consumers.

The company receives orders via e-mail, its website, and the Wolt delivery platform, and has a fully digitalised supply chain. Within the company, risk management is carried out by the owner. The company considers itself able to adjust its operations and react quickly in the event that any new risks emerge.

Learn more about the case of the baked goods producer [here](#).



UNITH2B in Romania – risk assessment prior to the implementation of new solutions

UNITH2B is an architecture and engineering company based in Romania that has operated since 2013 and participated in the [digitalisation pilot](#) conducted as part of this study. Whenever the company implements new digital solutions, it defines KPIs and performs risk assessments. In particular, it assesses the risk of unintended effects on other areas of the business in relation to digitalisation.

Learn more about UNITH2B and other digitalisation pilots conducted as part of this study [here](#).



Fashion brand in Germany – code of conduct and risk prevention plans

One of the companies studied in the [BePrepared! project](#) is a **medium-sized fashion brand** founded in 2006, which designs textiles, bags and other products.

The company's approach to risk management is integrated into its code of conduct, as well as into risk prevention plans at the unit level. One such plan specifically targets risks associated with IT failures. Adopting this approach to risk management has helped the company to reduce production delays and out-of-stock situations and ensure the high quality of its products.

Read more about the case of this German fashion brand [here](#).

Step E4: Ensure sustainability & harness digitalisation momentum

Why is this important?

Ensuring the long-term sustainability of a digitalisation initiative is key to **reaping the full benefits** associated with implementing the technology concerned. To achieve success in digitalisation, it is not enough for companies to simply install the necessary software. Successfully implementing a new technology requires the formation of new habits and communication methods, the development of new competencies, the remapping of company processes, and continuous maintenance and improvement. Some smaller companies may require continuous support to ensure that the new technology is fully integrated into the company's processes.

The successful implementation of a single solution **should not mark the end of the digitalisation process**. The experience and lessons learned gained from a digital project can be harnessed to look for additional digitalisation opportunities. However, research shows that even when SMEs successfully adopt basic digital technologies, more sophisticated solutions or solutions that require scale in order to be effective can still pose a challenge. Therefore, both SMEs and supporting players in the ecosystem have an important role to play in ensuring that companies **maintain momentum for further digitalisation**. When collaborating with companies to identify digitalisation opportunities, it is useful to take a long-term perspective to ensure the companies continue to look for new digitalisation opportunities after taking their initial steps. Some companies also stress that early success in digitalisation acts as a catalyst to pursue further innovations by demonstrating the business benefits of implementing new technologies.

Successful digitalisation serves as an inspiration to continue

Speaking at the [EDIH Network Annual Summit](#), Anca Sandu, Managing Partner at [UNITH2B](#), stressed that companies succeed at digitalisation when they have a 'stay hungry, stay foolish' mindset. In the case of UNITH2B, successful digital initiatives motivated the company to pursue further innovation and strive for excellence.

Goals




- Integrating the new technology into company processes.
- Maintaining and regularly updating the technology.
- Scouting new opportunities for digitalisation by considering long-term needs.



Type	Highlighted resources
Report	The OECD Report on SME Digitalisation to Build Back Better contains various insights about continuous SME digitalisation.
Resources	The European Digital SME Alliance contains various resources for the facilitation of SME digitalisation.

Key actions and objectives

Action	Objective
E4.1. Get the entire company on board with the use of the new technology	To ensure that all company employees are equipped with knowledge to harness the new solution to its full potential by dedicating sufficient time to the implementation phase; to make reskilling a part of the process of technology implementation; to form new habits and processes across the company with regard to the new solution.
E4.2. Create incentives and a supportive environment for the use of new technologies	To revise company processes to include the use of new technologies in its daily activities; to onboard employees in a more engaging way by running Q&A sessions with employees and creating user-friendly manuals.
E4.3. Assign digitalisation ambassadors	To identify active users of the solution within the company and encourage them to communicate about its use and benefits.
E4.4. Maintain digitalisation momentum	To harness positive spill-overs from digitalisation and gather ideas about future avenues for technology adoption.

Tips

-  Guide employees through a full cycle of using the implemented solution to ensure they are familiar with all of its functions.
-  Modify processes and procedures to include new digital technologies.
-  Showcase the practical benefits of the implemented solution early on in the implementation phase.

-  Prepare and revise resources such as user manuals that can support the use of the technologies, to ensure seamless knowledge transfer.
-  Harness lessons learned to develop ideas for future improvements – digitalisation is a journey, not an end goal.

Practical examples



LEVIATAN SRL in Romania – three phases of digitalisation

LEVIATAN SRL, an SME operating in the construction sector in Romania, provides integrated architecture and civil engineering services. The company has been on a continuous digitalisation journey since 2008, when the company first began to digitalise its internal processes through the introduction of an ERP system, and later undertook a whole-organisation digital transformation. The company's management later adopted agile internal procedures as their main way of working. Over time, the company has also introduced BIM software into its daily work. The company management stresses that digitalisation is a continuous process that helps the company to improve its ways of working and remain competitive in the construction market.

Learn more about LEVIATAN SRL and other digitalisation case studies [here](#).



Matro Gépgyártó Kft. in Hungary – successful pilot leads to further innovation

Matro Gépgyártó Kft., a company specialising in the manufacture of products for the automotive industry, was one of the participants in the [digitalisation pilot](#) conducted as part of this study. As part of the digitalisation pilot, the company decided to retrofit 50 of its factory machines with data collection terminals. The data collection terminals that were installed proved to be a highly cost-effective solution. Company representatives estimate that the investment will pay off in just one year. Thanks to the success of the digitalisation pilot, the company plans to extend automated data collection to additional production devices, and is considering expanding the application of IoT technology in the future.

Learn more about Matro Gépgyártó Kft. and other digitalisation pilots conducted as part of this study [here](#).



50 Acres of Work & Joy and Agrifood Lithuania – continuous support for long-term digitalisation

50 Acres of Work & Joy is a zero-waste organic farm founded in 2022. Rather than discarding left-over fruits, vegetables and herbs, the farm creates unique products using its own and locally sourced ingredients that would otherwise go to waste. The farm participated in [the digitalisation pilot](#) conducted as part of this study. With the support of the DIH AgriFood Lithuania and solution provider Art21, the farm implemented a type of farm management software called AgroSmart. The service provider worked closely with the farm to input the necessary data into the system and to guide the farm owner through the implementation process. Given that the cyclical nature of agriculture, the farm will receive support from the software provider until November 2023. This will help to ensure that the farm owner is familiar with the use of the software throughout all of the seasonal stages– planning, planting and harvesting.

Furthermore, after implementing the AgroSmart solution, the company plans to pursue further digitalisation initiatives and has signed up for another programme run by the AgriFood Lithuania hub.

Learn more about 50 Acres of Work & Joy and other digitalisation pilots conducted as part of this study [here](#).

Practical examples



Unifardas in Portugal – continuous digitalisation

Established in 1996, **Unifardas** is a company operating in the professional clothing sector in Portugal that participated in the digitalisation pilot organised as part of this study. The company's product line includes a wide range of uniforms, garments, and professional clothing that is highly customised according to the customer's needs.

As part of the digitalisation pilot, Unifardas introduced a web-based solution for parametric data capture. The solution supports customised ordering and helps to streamline the garment production process. At the time of reporting, implementation of the digital intervention was still ongoing.

Unifardas management stresses that the pilot is one of the first steps in a long-term digitalisation plan. The company plans to develop a cloud-based approach to its business and has already established an internal platform, [hisi.pt](#). Unifardas plans to increasingly use this common platform to track the product ordering and production process.

Learn more about Unifardas and other digitalisation case studies [here](#).



Surfoteka and DIH4EU in Poland – continuous identification of company's needs

Surfoteka is a retail store specialising in the sales and maintenance of sports gear and was one of the companies that participated in the [digitalisation pilot](#) conducted as part of this study. During the pilot, the supporting hub DIH4EU worked closely with the company to identify its needs and select a solution that best fitted the company's processes. The hub thus assisted the company in implementing the digital solution [Fakturownia](#). The hub continued to provide expert advice to the company the software was successfully installed, to ensure that the owner of the Surfoteka shop is familiar with all of its features.

Learn more about Surfoteka and other digitalisation pilots conducted as part of this study [here](#).





3. Further reading

Explore previous study publications & outputs

Publications

Gap Analysis report



Problem Identification report



Best Practice Collection report



Digitalisation pilots report



See the study page [here](#).

Insights

- Kudzmanaitė, Gabaliņa & Yevdokymova (2023). Unlocking the potential of technology: best practice principles for SME digitalisation. PPMI. Available [here](#).
- Kudzmanaitė, Gabaliņa & Yevdokymova (2022). Accelerating European industry digitalisation: challenges ahead. Available [here](#).

Workshop takeaways:

- [European industry digitalisation – the challenges ahead](#), 28 June 2022
- [European Industry Digitalisation: making best practice a reality](#), 10 November 2022
- [Unlocking the business potential of digitalisation: lessons from five industrial SMEs](#), 26 April 2023
- [Presentation at the EDIH Network Summit](#), 1 June 2023

Explore the EDIH Network



Digital Transformation Accelerator

Explore the website dedicated to the EDIH network



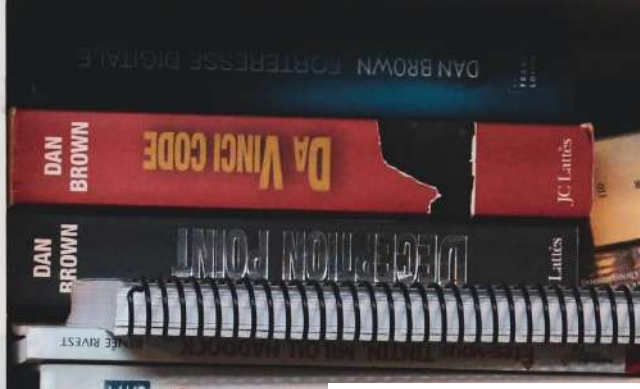
EDIH network: information for SMEs

Learn about how the EDIH Network can support SMEs



EDIH Catalogue

The catalogue contains information on the network of EDIHs that can support your digitalisation journey



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5. Annexes








5.1 Study methodology

Selection of industries

This study aimed to analyse digitalisation gaps in **five selected ecosystems**:

- Which have a low level of digitalisation
- Which are characterised by a high degree of relevance to the economy of the industry in question
- Which were hard-hit by the COVID-19 pandemic

Analysed industries and their definitions

 <p>Automotive industry</p>	Companies and organisations involved in the design, development, manufacturing, marketing, and selling of motor vehicles, including vehicle manufacturers, upstream suppliers and downstream importers, and distributors.
 <p>Retail industry</p>	Sellers of goods and services to consumers, online sellers, including relevant wholesale and online platforms, and players participating in other usual operations associated with trade (sorting, packing, storage, etc.).
 <p>Textile industry</p>	Companies involved in the transformation of natural, man-made and artificial fibres into yarns and fabrics, production of yarns, bed linens, industrial filters, technical textiles, carpets, and clothing; also, the production of footwear and leather.
 <p>Agrifood industry</p>	Operators in the food supply chain (farmers, food industry, food retail and wholesale, and food service) and their suppliers of goods and services (seeds, pesticides, fertiliser, machinery, packaging, repair, transport, and logistics).
 <p>Construction industry</p>	Contractors for building and infrastructure projects, construction product manufacturers, engineering, and architectural services, as well as a range of other economic activities (e.g., rental and leasing of machinery and equipment, employment agencies). In this study, the analysis of the construction industry builds on the NACE classification, whereby the construction sector is seen as composed of a) construction of buildings for residential and non-residential purposes, b) civil engineering sub-sector and c) specialised construction activities, incl. demolitions and plumbing and finishings.

Selection of countries

For each industry, we selected one country by considering the following criteria:

- The importance of the industry within the country
- Geographical diversity
- Existence of a DIH that specialises in the relevant industry
- Country and the industry DII score

The following **country-industry pairings were selected**:

- Automotive industry in Hungary
- Retail industry in Poland
- Textile industry in Portugal
- Agrifood industry in Lithuania
- Construction industry in Romania

Read more about the selection of country-industry pairings [here](#).








Selection of pilots

Companies were chosen after a two-month selection process, based on 3 criteria:

- Relevance of the selected companies to digitalisation problems identified during the study
- Relevance of interventions to SMEs and companies of average and below average digital maturity
- Company's availability to participate

Selected pilots

		Digital maturity*
	1. Automotive industry, Hungary	Matro Gépgyártó KFT Data collection terminals 40%
	2. Retail industry, Poland	Surfoteka Sales channel integration 8%
	3. Textile industry, Portugal	Unifardas On-demand production 54%
	4. Agrifood industry, Lithuania	50 Acres of Work and Joy AgroSmart technology 16%
	5. Construction industry, Romania	UNITH2B BIM systems integration 50%

* experiment inception phase EDIH DMA score.

Data collection methods by project phase

Throughout the study, the team employed several data collection methods. Detailed methodologies for each phase are included in the corresponding publications.

Data collection method	Gap analysis	Problem identification	Best practice collection	Digitalisation pilots	Digitalisation toolbox
Desk research, including literature review, analysis of relevant national and European policies, strategies and regulations, identification of tools, best practices and resources to support SME digitalisation.	✓	✓	✓		✓
Analysis of international indicators and national-level statistics on the state of play of industry digitalisation, as well as enabling factors.	✓	✓			
Semi-structured interviews with stakeholders (SMEs, business associations, clusters of SMEs, chambers of commerce, policy makers and/or academics).	✓	✓	✓	✓	
Online survey targeting companies in the five country-industry pairings. The total sample of responses included in data analysis was 350.		✓			
Support for and observation of five digitalisation pilots in companies, lasting approximately 6 months to collect lessons learned.				✓	
Experience sharing session between hubs involved in the pilots				✓	✓
Public workshops and dissemination activities.	✓		✓	✓	✓



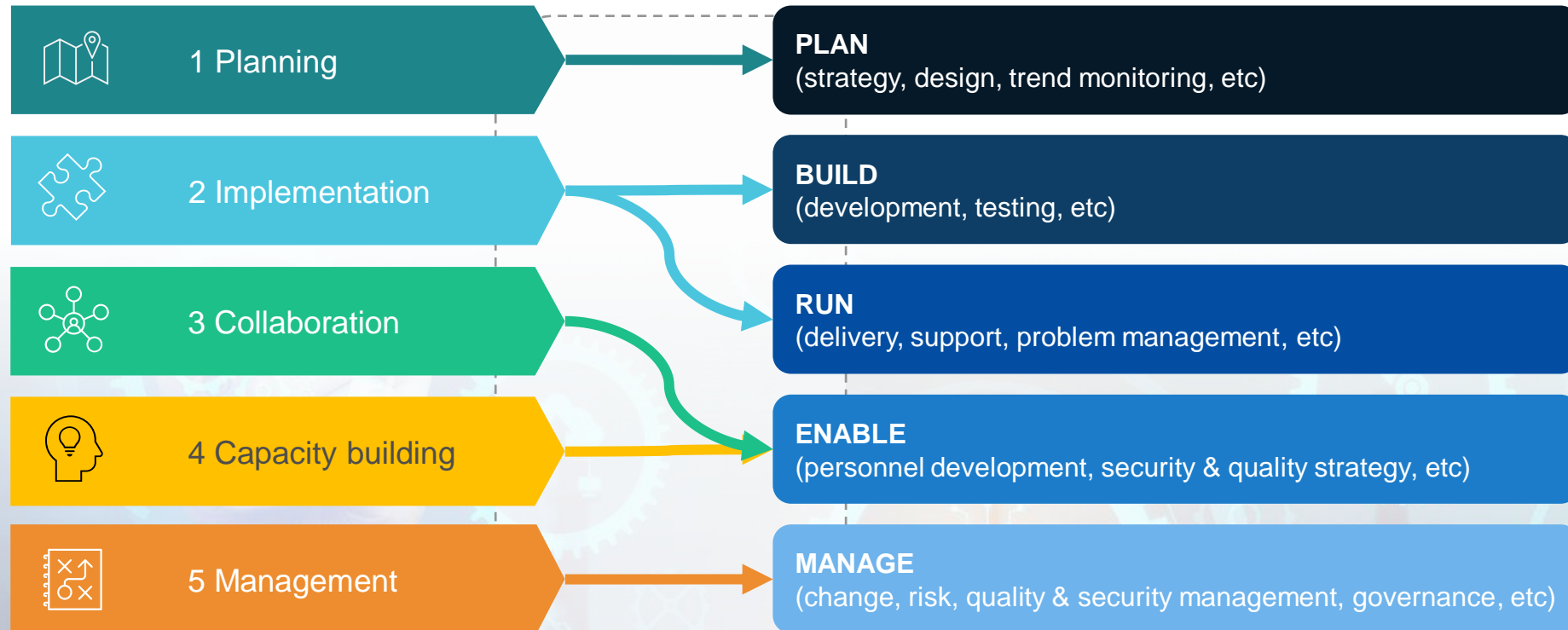
5.2 Digital transformation processes

Digital transformation processes

The toolbox is organised around five digital transformation processes, derived from the findings of preceding stages of the study, primarily, lessons learned from digitalisation pilots. A one-to-one comparison cannot be made between the e-CF (ICT processes) and the classification of takeaways in this study (DX processes). Nonetheless, we have provided an indicative mapping on how the two process frameworks relate.

DX processes based on bottom-up lessons-learned analysis

European e-Competence framework
Dimension 1: IT macro processes



Alignment



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