



Digitalisation pilots report

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

The study is implemented by PPMI

www.ppmi.lt

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EUROPEAN COMMISSION

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Executive summary (1/3)

Objective



This report aims to shed light on the **results** and **lessons learned** from five digitalisation pilots implemented by SMEs.

The findings of this exercise will serve as a key input for preparing a **Digitalisation toolbox** containing practical advice for companies and Digital Innovation Hubs.

Approach

5

companies were selected for the pilots: Matro Gépgyártó Kft. (automotive, HU), Surfoteka (retail, PL), Unifardas (textile, PT), 50 Acres of Work & Joy (agrifood, LT), UNITH2B (construction, RO).

6 months

digitalisation pilots were implemented in companies with the support of the study team and five Digital Innovation hubs (DIHs): AgriFood Lithuania, dih4.eu in Poland, Innomine in Hungary, Citeve in Portugal and FIT EDIH in Romania.

AgriFood
Lithuania

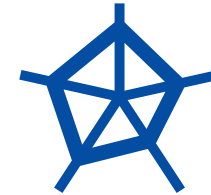


citeve
TEXTILE TECHNOLOGY

dih4.eu

FIT | DIGITAL INNOVATION HUB

Results








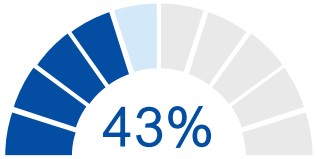
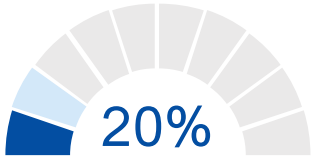
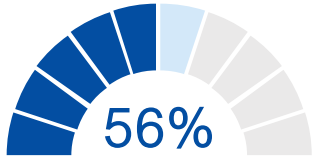
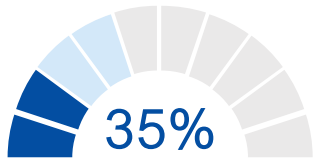
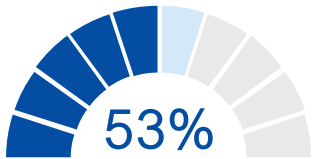
All five companies successfully improved their **Digital Maturity Assessment (DMA) scores** during the pilot phase.



27

horizontal **takeaways** were identified based on lessons learned from the digitalisation pilots covering planning (7 takeaways), implementation (5), collaboration (4), capacity building (4) and management (7).

Executive summary (2/3)

Summary by case study

	 Matro Gépgyártó Kft.	 Surfoteka	 Unifardas	 50 Acres of Work & Joy	 UNITH2B
	An automotive industry company from Hungary	A retail company from Poland	A textile industry company from Portugal	A zero-waste farm from Lithuania	A construction company from Romania
INTERVENTION	Intervention: installing data collection terminals on 50 manufacturing machines	Intervention: introduction of a centralised, cloud-based system for integrating sales channels	Intervention: a web-based solution for parametric data capture to support the definition of order requirements and the calculation of the final price	Intervention: implementation of a quantity and quality management system AgroSmart	Intervention: streamlining the use of BIM functions by integrating them with management approaches
DMA SCORES*	 <p>43%</p> <p>(+3pp)</p>	 <p>20%</p> <p>(+12pp)</p>	 <p>56%</p> <p>(+2pp)</p>	 <p>35%</p> <p>(+19pp)</p>	 <p>53%</p> <p>(+3pp)</p>

 Inception DMA score
  DMA score improvement after the 6 month pilot

* Note that the DMA scores are company-level and not intervention specific, which means that they may capture improvements in company's overall digital maturity during the observation period, not just improvements that can be attributed to the pilots. Companies may have implemented other initiatives in parallel that could have resulted in improved digital maturity scores.

Executive summary (3/3)

Summary of horizontal takeaways by digital intervention process

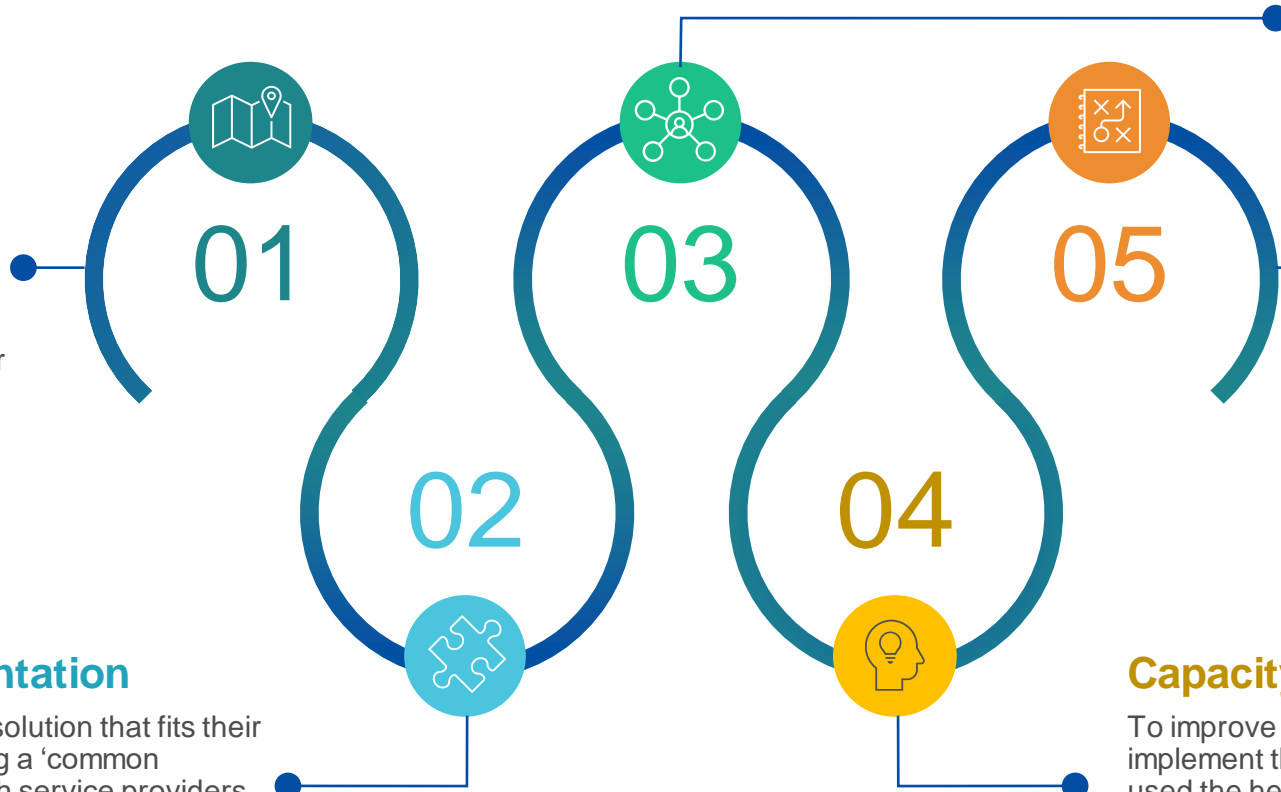
Planning

The selected companies and hubs saw room for improvement in both long-term and intervention-specific planning.

Studying the experiences of other similar companies was particularly important for accurately planning digitalisation projects.

Implementation

Identifying a solution that fits their needs, finding a 'common language' with service providers and overcoming initial productivity losses during the implementation were common issues for the selected SMEs.



Cooperation

Some SMEs faced barriers in engaging the wider ecosystem due to risk aversion, limited technical expertise and lack of streamlined support services. Here, hubs could help with networking and providing tailored services that fit SME needs.

Management

In all pilots, the owners and managers of companies were the drivers of digitalisation initiatives.

Intervention management, ensuring sustainability and harnessing potential positive spillovers were highlighted as important aspects to consider.

Capacity building

To improve their capacity to implement the pilots, companies used the help of external partners and consulted available resources. Yet, navigating the wide range of tools and resources available was a challenge to some.



1. Digitalisation pilot approach

Smart Industrial Remoting study objectives (1/2)

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

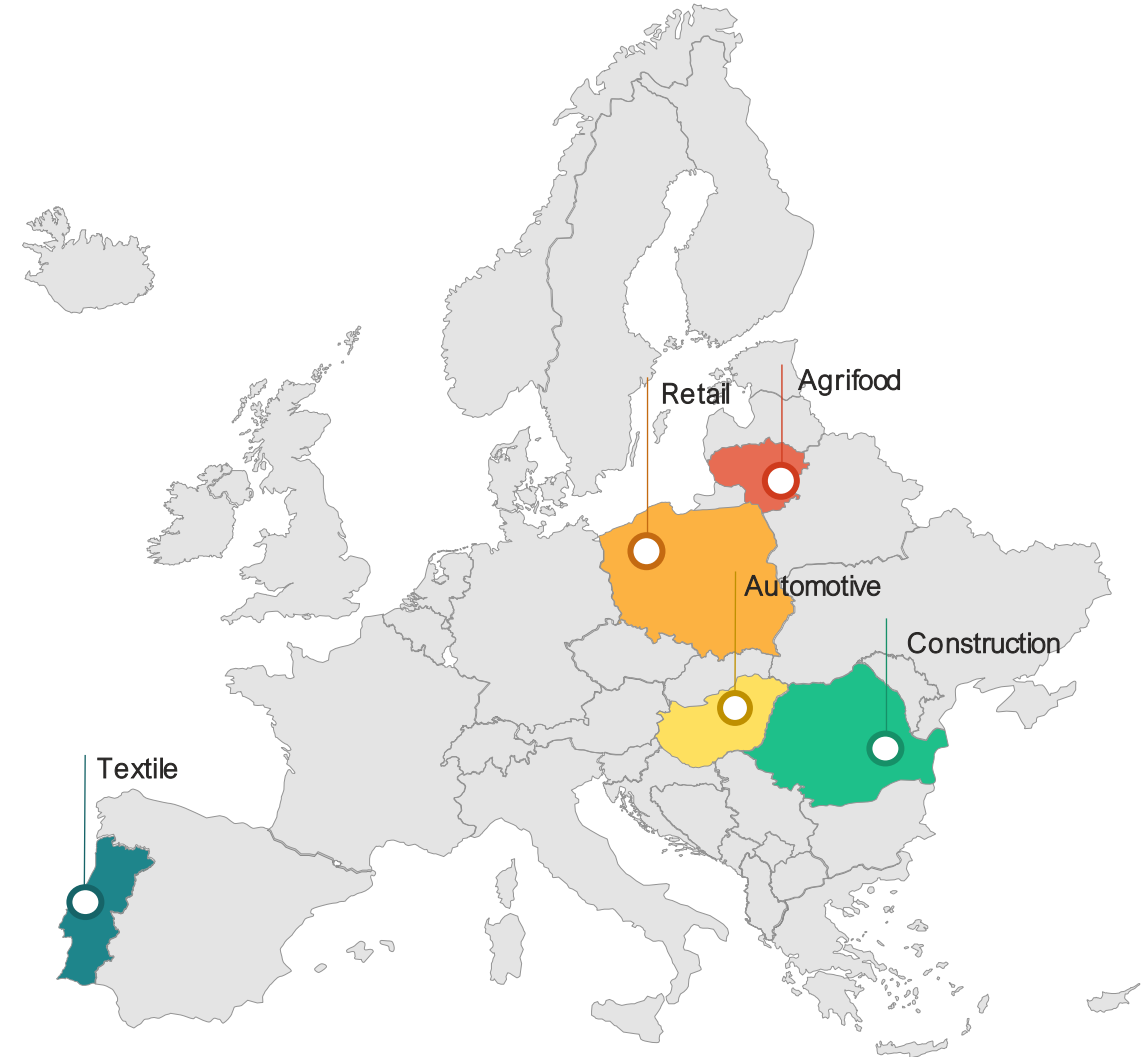
The study aims to deliver **user-friendly** and **targeted advice** on **digitalisation** for five country-industry pairings:

- 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 five digitalisation pilots implemented in the selected country-industry pairings. The pilots were implemented over a six-month period. They provide valuable lessons learned on company digitalisation and collaboration between companies and Digital Innovation Hubs (DIHs) participating in the study.

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

The study is implemented by PPMi in collaboration with industry experts and five DIHs operating in the chosen countries: AgriFood Lithuania, diH4.eu in Poland, Innomine in Hungary, Citeve in Portugal and FIT EDIH in Romania.



Smart Industrial Remoting study objectives (2/2)

The study is organised into six different steps. This report presents the main findings of Step 4 – Company digitalisation pilots. 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



2. Problem identification

- 2-3 problems per country-i industry pairing
- 1-3 company examples per country-i industry pairing



3. Best practices identification

- 42 company case studies in 5 industries
- 8 cross-cutting best practice principles
- Best Practices workshop



4. Company digitalisation pilots

- Support for 5 digital interventions in companies
- Analysis of lessons learned and 27 horizontal takeaways



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

Digitalisation pilots' objectives



Goal of the task

Testing and implementing digitalisation good practices in the selected country-industry pairings.



Requirements

The digital interventions were implemented by local companies in collaboration with DIHs participating in the study and stakeholders providing support to local businesses. One company per country-industry pairing was selected.



Duration

The process lasted between September 2022 and March 2023, with digital interventions kick-starting in November 2022.



Expected results

We gathered lessons learned on the realities of digital technology implementation in different environments and on the collaboration between companies and hubs.

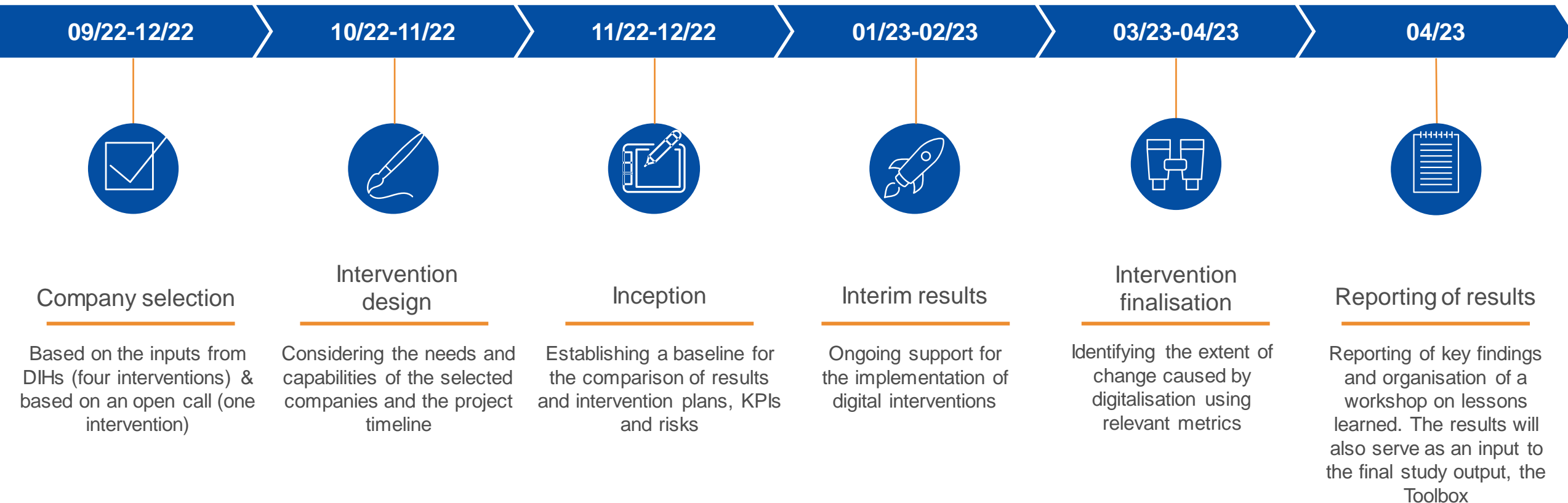
The five digitalisation pilots aim to draw lessons learned about digitalisation and collaboration between SMEs and (E)DIHs from five digital interventions at companies.

Throughout the report, we use following terms when describing our findings:

- **Digitalisation pilots** refer to the six months digital interventions carried out by the selected companies in collaboration with the study team and the hubs.
- **Case studies** refer to the outputs of the digitalisation pilots and the gathered insights and lessons learned for each industry.






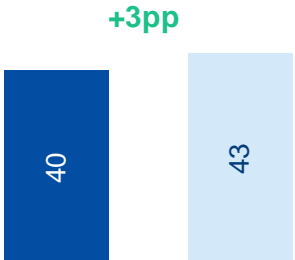
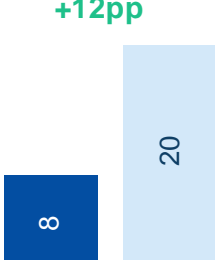
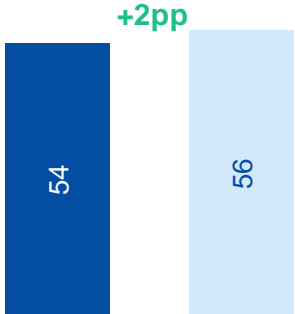
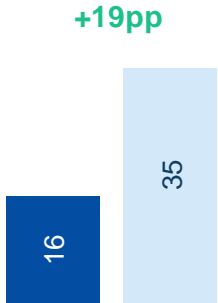
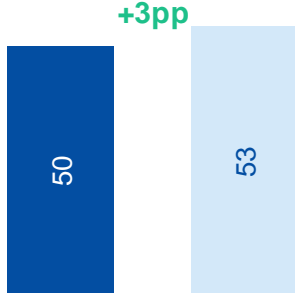
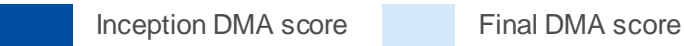
A step-by-step overview of the approach

- The digitalisation pilots followed a six-step process, beginning with company selection and confirmation of the digital intervention with the company and the hub.
- Throughout the six-month period, DIHs worked closely with the companies to address any arising challenges and potential skill gaps.
- Data from companies was collected at three points: inception, interim and final stages.



For more detailed information on the methodology, see [Annex 1](#).

Selected case studies

	 Matro Gépgyártó Kft	 Surfoteka	 Unifardas	 50 Acres of Work & Joy	 UNITH2B
PROFILE	<ul style="list-style-type: none"> Country: Hungary Size: 250 employees Area of operations: parts for passenger cars, light commercial and agricultural vehicles and trucks, air cooling systems 	<ul style="list-style-type: none"> Country: Poland Size: 6 employees Area of operations: sales and service of sports gear and apparel: windsurfing, kitesurfing, surfing, SUP, skiing and snowboarding 	<ul style="list-style-type: none"> Country: Portugal Size: 20 employees Area of operations: highly customised production of uniforms, garments and professional clothing 	<ul style="list-style-type: none"> Country: Lithuania Size: 2 employees Area of operations: a zero-waste farm growing and selling different types of vegetables, spices and berries; food production 	<ul style="list-style-type: none"> Country: Romania Size: 13 employees Area of operations: architectural design, interior design, urbanism and project management
INTERVENTION	Intervention: installing data collection terminals on 50 machines and integrating them with an ERP system	Intervention: introduction of a centralised, cloud-based system for integrating sales channels	Intervention: a web-based solution for parametric data capture to support the definition of order requirements and the calculation of the final price	Intervention: implementation of a quantity and quality management system AgroSmart. This is the first time the system was piloted on a small farm	Intervention: streamlining the use of BIM functions in the organisation by integrating them with management approaches
DMA SCORES*					
					

* Note that the DMA scores are company-level and not intervention specific, which means that they may capture improvements in company's overall digital maturity during the observation period, not just improvements that can be attributed to the pilots. Companies may have implemented other initiatives in parallel that could have resulted in improved digital maturity scores.



2. Results by case study

Results by case study: structure

The results by case study are structured as follows:

- 1 Case for a digital intervention**
 - Company profile and description
 - Business case for a digital intervention
- 2 Intervention plan**
 - Intervention design and timeline
 - Smart Industrial Remoting study role in supporting the intervention
 - Objective and KPIs
- 3 Intervention results**
 - Achieved results
 - Main lessons learned

- 4 DMA comparison**
 - Comparison of inception and final scores
 - Expected vs actual changes by dimension
- 5 DMA breakdown**
 - DMA breakdown by dimensions and sub-dimensions

Results by case study: overview



Matro Gépgyártó Kft.

- ✓ 50 data collection systems successfully installed
- ✓ Improved troubleshooting, faster response to disruptions and greater flexibility of production
- ✓ Shorter production times, increased capacity utilisation and reduced unit cost
- ✓ 3pp improvement in the DMA score



Surfoteka

- ✓ All databases integrated
- ✓ Order processing and customer communication streamlined across sales channels
- ✓ Order errors significantly reduced
- ✓ Around 30% operational efficiency boost
- ✓ 12pp improvement in the DMA score



Unifardas

- ✓ Operation times and production costs quantified
- ✓ Partnership with a software house established
- ✓ A parametric model built for one of the products
- ✓ A trial version of an order platform launched
- ✓ 2pp improvement in the DMA score



50 Acres of Work & Joy

- ✓ Several manual tasks digitalised
- ✓ Digitalisation of procurement and planning processes
- ✓ Owner motivated to continue with digitalisation
- ✓ 19pp improvement in the DMA score (scores improved in all DMA dimensions)



UNITH2B

- ✓ Novel BIM collaborative method learned
- ✓ 12 new BIM-related software tools explored
- ✓ 8 new BIM use cases implemented
- ✓ 1 improved procedure for BIM model development
- ✓ 3pp improvement in the DMA score

Key achievements

Highlighted lessons learned

- Proper planning and preparation are vital for successful technology implementation
- Retrofitting can be a cost-effective option compared to purchasing new equipment
- Quick wins can lead to positive spillovers for future digitalisation initiatives

- An accurate assessment of the as-is state is an important preparatory step
- Hubs and SMEs need to be flexible and ready for adjusting the plan midway
- Hubs need to be proactive and provide tailored support that takes SME capacity constraints into consideration

- Finding a suitable service provider can be challenging and sometimes a custom-made solution may be necessary
- Managing employee expectations is critical for securing buy-in
- Lack of IT 'know-how' can make communication with service providers challenging

- Implementation of new technologies can be time-consuming in the beginning
- Tangible results will only be observable after a full production cycle
- Less digitally mature companies may need extensive support to develop new habits

- The impacts of technology implementation may not be immediately apparent for companies with longer project cycles
- Collaboration within the ecosystem is crucial for motivating companies to innovate

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Pages 22 to 27

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Pages 34 to 39

Pages 40 to 45



2.1 Matro Gépgyártó Kft. Data collection terminals





Matro Gépgyártó Kft.: case for a digital intervention



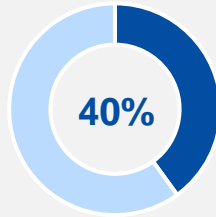
Company profile

Country: Hungary

Industry: automotive

Size: 250 employees

Area of operations: produces parts for passenger cars, light commercial and agricultural vehicles and trucks, air conditioning and cooling systems



DMA score at the beginning of the pilot



Matro Gépgyártó Kft. factory



Company perspective: the case for a digital intervention

About Matro Gépgyártó Kft.

Matro Gépgyártó Kft. is a Hungarian family-owned business employing around 250 people. The company predominantly specialises in manufacturing products for the automotive industry. It produces parts for passenger cars, light commercial vehicles, agricultural vehicles and trucks. Its products include parts built into engine management systems and truck brake systems, passenger car bodywork elements and recently introduced air conditioning and cooling systems.

Why was a digital intervention needed?

Matro Gépgyártó Kft. was experiencing issues with manually recorded data from its computer numerical control (CNC) machines. The data was not sufficiently accurate and reliable, and the data collection process was slow. This negatively impacted production monitoring and decision-making.

The company's management decided to digitalise the data collection process to address this issue and to receive real-time feedback on its manufacturing operations. They expected that this change would improve the monitoring and analysis of gathered data, as well as troubleshooting and timely intervention in case of disruptions. Furthermore, the company expected that the gathered data could be used to redesign its production processes to improve efficiency. Matro Gépgyártó Kft. hoped to reduce the scrap rate, minimise production time and costs, and give employees more control over the entire process. Ultimately, this would increase efficiency and improve customer service, thus helping the company maintain its market competitiveness.

'Annual production cost savings of 0.5% already mean that the project investment will pay off in a 1-year period.'

Attila Nagy, Economic manager, Matro Gépgyártó Kft.





Matro Gépgyártó Kft.: intervention plan



Company perspective: the intervention plan

What digital intervention was chosen?

To improve data collection in manufacturing, the company decided to install data collection terminals on 50 CNC lathe machines and integrate them with the production monitoring system. This approach was cheaper than buying new machines with built-in data collection capabilities.

How did the Smart Industrial Remoting study help the company?

The Innomine DIH provided hands-on support for the intervention. The support consisted of planning and organising the implementation process, identifying and addressing risks, as well as consulting on the solution's implementation. In addition to this, the hub also supported the company in networking and knowledge sharing, increasing its visibility and identifying funding opportunities.

What was the pilot timeline?

In the months allocated to the intervention, the company planned to determine what data would be monitored, programme and place the terminals, and perform the first round of data collection and evaluation.

Activities	NOV'22	DEC'22	JAN'23	FEB'23	MAR'23
Determination of data that will be monitored					
Terminal programming					
Terminal placement, network construction, server development and installation					
Data collection and evaluation					



Desired results

Objective: 50 installed data collection terminals that are integrated with the production monitoring system

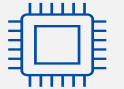
50

programmed terminals



50

installed and working terminals



500

production cycles from which data is collected



DMA

Improved scores in digital business strategy (M2.1), digital readiness (M2.2) and automation & AI (M2.5)





Matro Gépgyártó Kft.: intervention results



A newly installed data collection terminal

Achieved results

50/50

programmed terminals

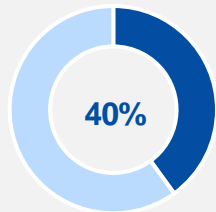
50/50

installed and working terminals

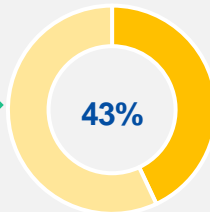
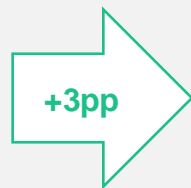
500/500

production cycles from which data is collected

DMA score



Inception score



Final score



Company perspective: results

What was achieved during the digitalisation pilot?

Matro Gépgyártó Kft. has successfully installed data collection terminals that provide real-time production process feedback. The enhanced production monitoring led to a more streamlined troubleshooting process and greater flexibility for redesigning workflows while speeding up the employees' response to disruptions. As a result, the company achieved shorter production times, increased capacity utilisation and reduced unit cost. This has led to increased efficiency at the factory.

The company also started connecting the production monitoring system with the Enterprise Resource Planning (ERP) software. This will enable the integration of production data with other business processes and facilitate production planning.

What were the main lessons learned from the pilot?

The main lesson was that proper planning and preparation are vital for successful technology implementation. While management initially saw the preparation phase as time-consuming, they later realised they should have spent more time mapping the different machines in the factory to the software to be installed. Specifically, the company faced compatibility issues while installing data collection terminals on different machines and systems.

Furthermore, retrofitting can be a cost-effective option compared to purchasing new equipment. According to the company's projections, this investment will pay off in only one year. Still, when buying new machinery in the future, the company will consider purchasing ones already capable of data collection.

Finally, the positive results of the intervention motivated Matro Gépgyártó Kft. to expand its digitalisation efforts. After seeing the benefits of the implemented data analytics system, the management was encouraged to extend data collection to other devices and explore IoT technology implementation.

'Once you start a digital transformation project and you see the results, you get more and more ideas to carry on.'

Attila Nagy, Economic manager, Matro Gépgyártó Kft.

The new system collects the following data:
cycle time; maintenance time; tool change time; changeover time; machine downtime; reason for machine's stopping; # of completed pieces; # scrap pieces.

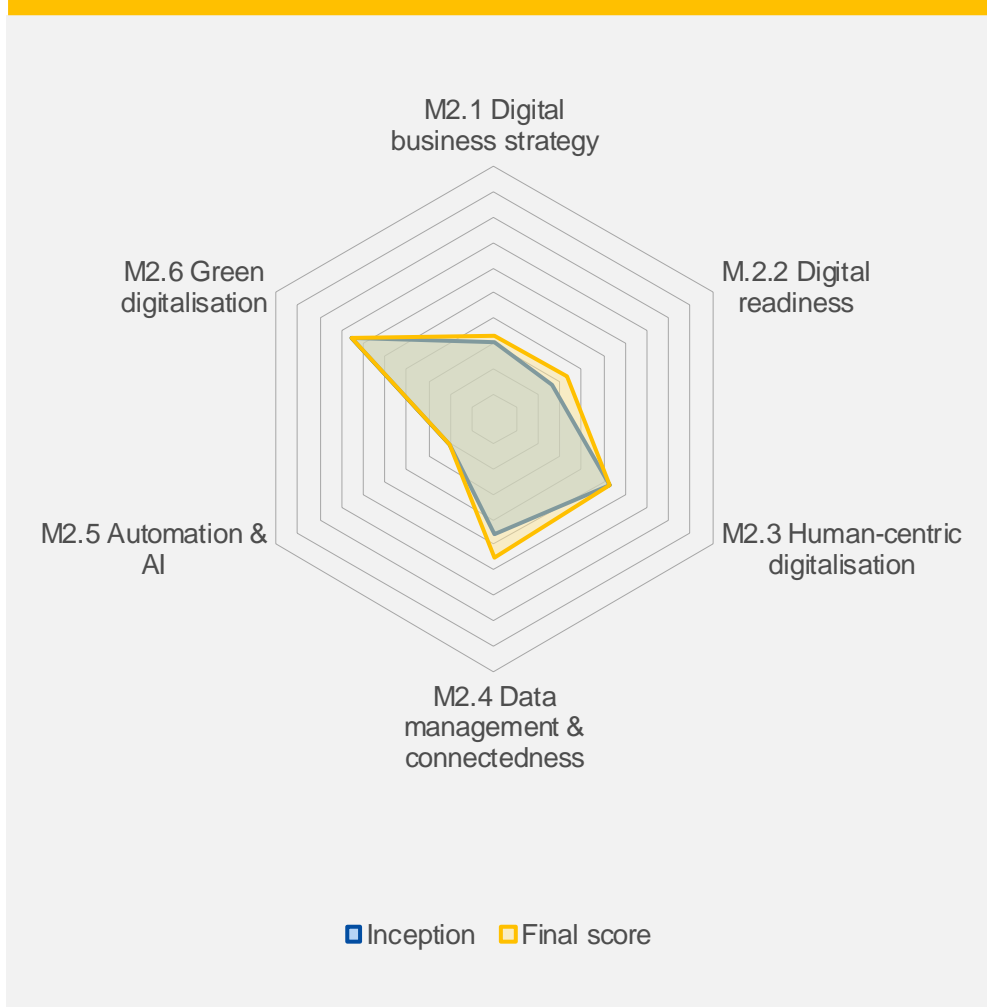




Matro Gépgyártó Kft.: DMA comparison

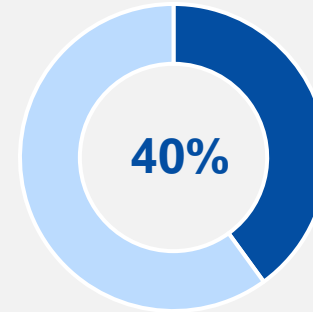


Inception and final scores by dimension



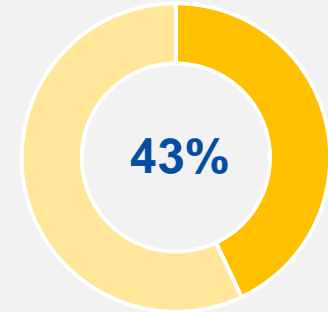
Total score

During the period of the digital intervention, the DMA score improved by 3pp.



Inception score

+3pp



Final score



Expected vs actual changes by dimension

Dimension	Expected	Actual
M2.1 Digital business strategy	↑	↑
M2.2 Digital readiness	↑	↑
M2.3 Human-centric digitalisation	—	—
M2.4 Data management & connectedness	—	↑
M2.5 Automation & AI	↑	—
M2.6 Green digitalisation	—	—



Matro Gépgyártó Kft.: DMA breakdown



Highlights

- In the digital business strategy dimension (M2.1), the company began analysing digitalisation risks, such as the potential effects of digitalisation on other business areas.
- When it comes to the digital readiness dimension (M2.2), the company started implementing I-IoT as a part of the digitalisation pilot.
- During the pilot, the company also improved its data management and connectedness score (M2.4) as it began to regularly monitor and assess cyber threats. This improvement was not directly related to the digitalisation pilot implemented.

Dimension / sub-dimension	Inception result	Final result
M2.1 Digital business strategy	30.00%	33.33%
M2.1.1ai Already invested in technologies	30.00%	30.00%
M2.1.1pi Planning to invest in technologies	30.00%	30.00%
M2.1.2 Preparedness for digitalisation	30.00%	40.00%
M2.2 Digital readiness	27.14%	32.86%
M2.2.1 Technologies used	40.00%	40.00%
M2.2.2 Advanced technologies used	14.29%	25.71%
M2.3 Human-centric digitalisation	52.78%	52.78%
M2.3.1 Re-skilling and upskilling	55.56%	55.56%
M2.3.2 Staff engagement & empowerment	50.00%	50.00%

Dimension / sub-dimension	Inception result	Final result
M2.4 Data management & connectedness	46.43%	54.76%
M2.4.1 Data management	42.86%	42.86%
M2.4.2 Securing data	50.00%	66.67%
M2.5 Automation & AI	20.00%	20.00%
M2.5.1 Automation & AI technologies used	20.00%	20.00%
M2.6 Green digitalisation	65.00%	65.00%
M2.6.1 Use of digital for sustainability	50.00%	50.00%
M2.6.2 Environmental considerations	80.00%	80.00%

TOTAL

40%

43%



2.2 Surfoteka

Sales channel integration





Surfoteka: case for a digital intervention



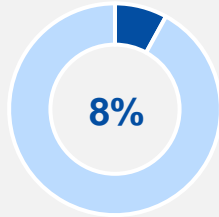
Company profile

Country: Poland

Industry: retail

Size: 6 employees

Area of operations: sales and maintenance of sports gear: windsurfing, kitesurfing, surfing, SUP, skiing & snowboarding gear and apparel



DMA score at the beginning of the pilot



Company perspective: the case for a digital intervention

About Surfoteka

Surfoteka specialises in the sales and maintenance of sports gear. It currently has six employees and operates mainly in Northern Poland. In summer, it focuses on water sports like windsurfing, kitesurfing, surfing and SUP, selling gear, accessories and apparel. During winter, they sell and repair skiing and snowboarding gear and apparel.

Why was a digital intervention needed?

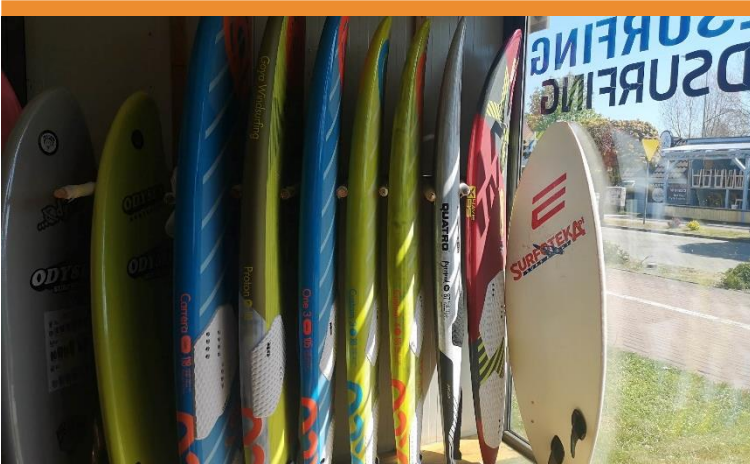
The main motivation for Surfoteka to pursue digitalisation was its lack of sales channel integration. The stocks were managed differently across multiple selling platforms and physical locations. The manager had to manually edit the available assortment shown on the web store, which often led to customers ordering goods that were not in stock.

Surfoteka faced a pressing need to automate its billing, invoicing and shipping of orders to avoid such issues. The company aimed to boost efficiency and improve profitability by streamlining sales processes. More specifically, it aimed to eliminate incorrect orders and reduce the time needed to process orders, check item availability, and stock the shop.

The company hoped that by improving customer experience, it could maintain competitiveness against bigger sports goods retailers. This became especially vital after a fire took place on Surfoteka's main site just before the pilot was launched. Having discussed it with the hub, the company's owners came to the conclusion that digitalisation was a 'must-have' to recover from the accident.

'It is very hard to see the value of tools yet. It is, however, even harder to see our future without these tools. Everything that we hear during the study and see our competitors do makes us believe that this project is the only way to remain competitive.'

Roman Budzinski, Founder, Surfoteka



Surfoteka's main site





Surfoteka: intervention plan



Company perspective: the intervention plan

What digital intervention was chosen?

The intervention began with an audit of Surfoteka's digital maturity and the definition of a digital transformation plan. Afterwards, the most pressing needs were identified and operational processes were mapped. Then, Surfoteka installed and configured [Fakturownia](#), an e-commerce software.

How did the Smart Industrial Remoting study help the company?

The hub, dih4.eu, initiated the intervention and played a key role in convincing Surfoteka's management of the potential benefits of digitalisation. Given the lack of relevant skills at Surfoteka, the hub also helped the company to define its needs and objectives and choose a cost-effective digital solution. Throughout the pilot, the company received assistance from dih4eu with mapping IT infrastructure and processes as well as implementing and configuring the digital tool.

What was the pilot timeline?

In the months allocated to the intervention, the company planned to map its processes, install invoicing software, configure it with the warehouse, the web and social media shops, and run it.

Activities	NOV'22	DEC'22	JAN'23	FEB'23	MAR'23
Development of a long-term transformation plan, including funding opportunity analysis					
Fakturownia requirements gathering, adoption planning, framework configuration					
Fakturownia warehouse creation and configuration					
Allegro, Webshop and (optional) OLX integration					
Social media shops integration, Fakturownia configuration, physical channel integration & automation					

* Single source of truth



Desired results

Objective: the adoption of a solution to integrate sales channels and establishment of SSoT* for documents

100%

of databases remaining after the fire integrated (3)



0

incorrect orders taken (baseline: 50/year)



5

of orders taken from new sales channels per month



DMA



Improved scores in digital business strategy (M2.1), digital readiness (M2.2), human-centric digitalisation (M2.3), data management & connectedness (M2.4) and automation & AI (M2.5)





Surfoteka: intervention results

<input type="checkbox"/>	3558		Deska Surfingowa LIB TECH Nude Bowl	10 szt.	24 godziny	2 559,00 zł 3 299,00 zł	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	3557		Deska Surfingowa LIB TECH SURF 2020 Pickup Stick	10 szt.	24 godziny	3 199,00 zł 3 559,00 zł	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	3556		Deska Surfingowa LIB TECH 2020 Lost Quiver Killer	10 szt.	24 godziny	3 079,00 zł 3 439,00 zł	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	3436		DESKA SURFINGOWA REV0 HCS YELLOW	7 szt.	24 godziny	999,00 zł 1 299,00 zł	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	3435		DESKA SURFINGOWA REV0 6'0 Standard	10 szt.	24 godziny	719,99 zł	<input type="checkbox"/>	
<input type="checkbox"/>	2718		Deska Surfingowa KT Traveler 2020/21	10 szt.	24 godziny	3 100,00 zł	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	2717		Deska Surfingowa KT Plate Lunch 2020/21	9 szt.	10 dni	3 490,00 zł	<input checked="" type="checkbox"/>	

A screenshot of Surfoteka's warehouse on Fakturownia

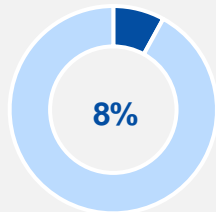
Achieved results

100%
databases
integrated

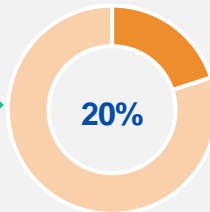
0
incorrect orders
taken

6/5
orders from new
sales channels (as
of 4 April 2023)

DMA score



Inception score



Final score



Company perspective: results

What was achieved during the digitalisation pilot?

Purchase orders are now handled uniformly as sales processes were re-created, codified and streamlined. Communication with customers is now standardised regardless of the channel used to order goods. Surfoteka boosted its operational efficiency by around 30% as a result of reduced order processing time. Moreover, the company managed to eliminate losses and ordering errors. The digitalisation pilot made Surfoteka better prepared to start a new season and onboard new employees.

What were the main lessons learned from the pilot?

One of the main lessons learned concerns the importance of the preparatory stage. Companies are advised to double-check the availability of necessary data and backups prior to deploying a digital solution. This was not done in Surfoteka's case, leading to unexpected changes in the pilot plan.

At the same time, flexibility is equally important. Companies do not need to spend time specifying project aspects that are not essential for its implementation. This leaves room for potential experimentation and agility. Considering the rapidly developing digital ecosystem, SMEs should be ready to switch to another solution if a better one appears on the market. In turn, hubs can play an important role in identifying a technology partner that fits the company's needs.

From a hub's perspective, streamlined communication, flexibility and proactiveness are vital. As a result of the fire, Surfoteka had limited financial and human resource capacity during the pilot. The hub had to provide highly tailored and streamlined support that took the company's constraints into consideration.

***'We see that digitalisation is worth investing in, but we need to carefully manage our budget...
Actually, we feel that we need external experts and support to continue digitalisation.'***

Roman Budzinski, Founder, Surfoteka

At the early stage of the pilot, Surfoteka experienced a fire on its physical site. It led to heavy financial losses and understaffing. Moreover, one of the data servers was destroyed. Previous analysis and digitalisation plans became irrelevant. Yet, starting the integration process completely from scratch turned out to be an advantage in Surfoteka's case.

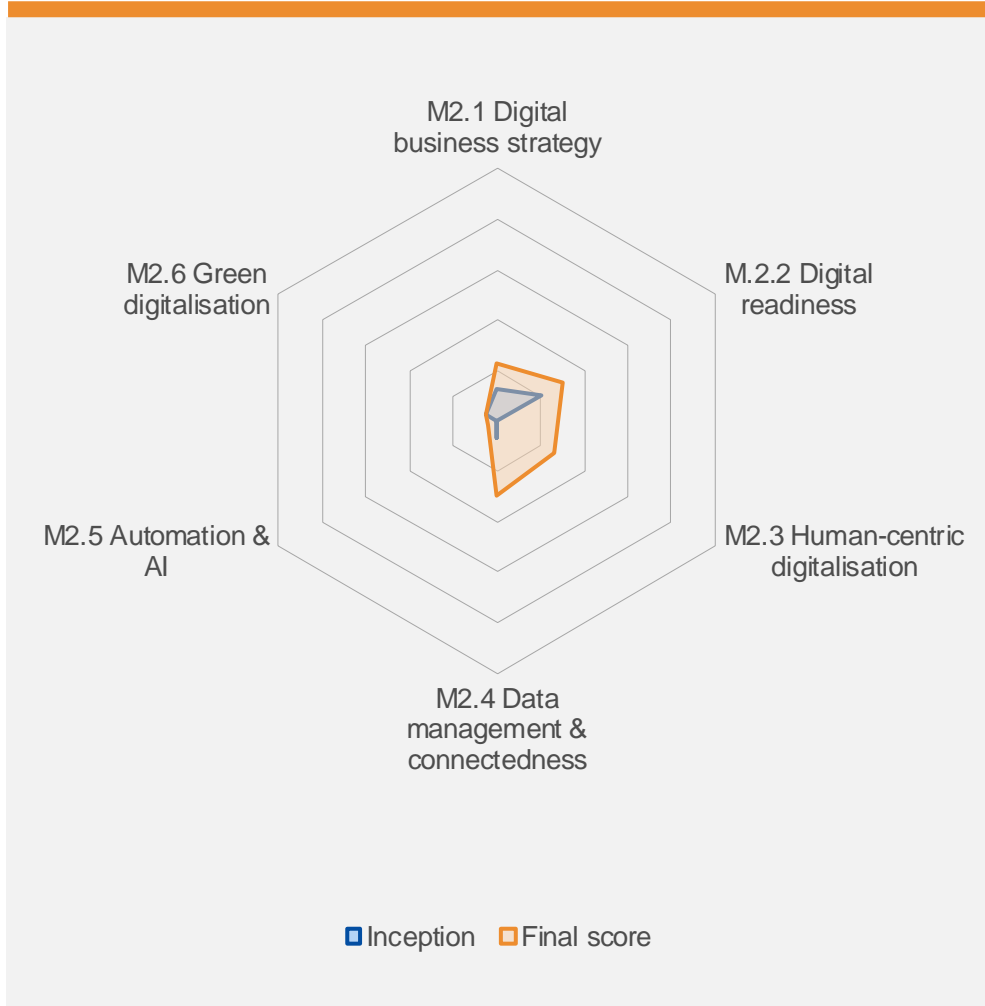




Surfoteka: DMA comparison

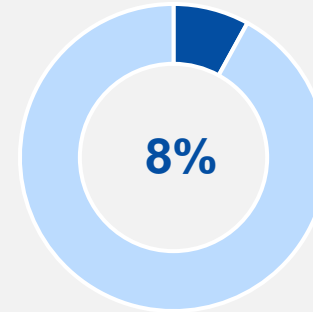


Inception and final scores by dimension



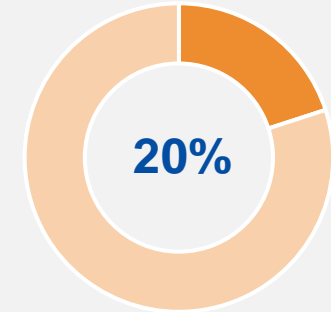
Total score

During the period of the digital intervention, the DMA score improved by 12pp.



Inception score

+12pp



Final score



Expected vs actual changes by dimension

Dimension	Expected	Actual
M2.1 Digital business strategy	↑	↑
M2.2 Digital readiness	↑	↑
M2.3 Human-centric digitalisation	↑	↑
M2.4 Data management & connectedness	↑	↑
M2.5 Automation & AI	↑	↑
M2.6 Green digitalisation	▬	▬



Surfoteka: DMA breakdown



Highlights

- By identifying its digitalisation needs and investing in a customer management service, Surfoteka improved its score in the digital business strategy dimension (M2.1).
- In the digital readiness dimension (M2.2), the company improved its connectivity infrastructure and means of client communication.
- By giving its staff more autonomy, reskilling and upskilling for the use of digital tools, Surfoteka progressed in the human-centric digitalisation dimension (M2.3).
- Proper data integration and security measures improved the company's score in the data management and connectedness dimension (M2.4).
- Surfoteka is also considering using more automation and AI technologies (M2.5) in the near future.

Dimension / sub-dimension	Inception result	Final result
M2.1 Digital business strategy	13.33%	23.33%
M2.1.1ai Already invested in technologies	10.00%	20.00%
M2.1.1pi Planning to invest in technologies	10.00%	10.00%
M2.1.2 Preparedness for digitalisation	20.00%	40.00%
M2.2.Digital readiness	20.00%	30.00%
M2.2.1 Technologies used	40.00%	60.00%
M2.2.2 Advanced technologies used	0.00%	0.00%
M2.3 Human-centric digitalisation	0.00%	26.11%
M2.3.1 Re-skilling and upskilling	0.00%	22.22%
M2.3.2 Staff engagement & empowerment	0.00%	30.00%

Dimension / sub-dimension	Inception result	Final result
M2.4 Data management & connectedness	7.14%	29.76%
M2.4.1 Data management	14.29%	42.86%
M2.4.2 Securing data	0.00%	16.67%
M2.5 Automation & AI	0.00%	4.00%
M2.5.1 Automation & AI technologies used	0.00%	4.00%
M2.6 Green digitalisation	5.00%	5.00%
M2.6.1 Use of digital for sustainability	10.00%	10.00%
M2.6.2 Environmental considerations	0.00%	0.00%





2.3 Unifardas ***On-demand production***





Unifardas: case for a digital intervention



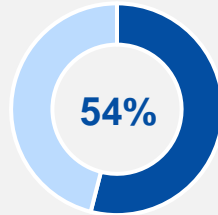
Company profile

Country: Portugal

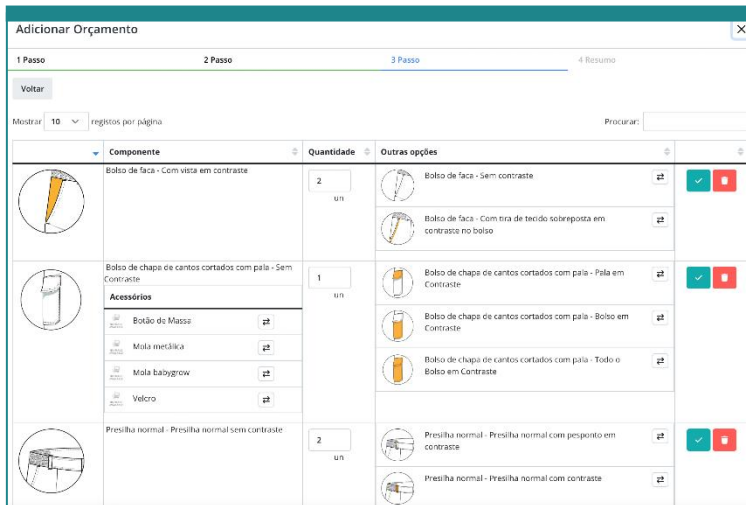
Industry: textile

Size: 20 employees

Area of operations: highly customised production and sales of uniforms, garments, personal protective equipment (PPE) and professional clothing



DMA score at the beginning of the pilot



A screenshot of the newly launched order processing platform hisi.pt



Company perspective: the case for a digital intervention

About Unifardas

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, PPE, and professional clothing that is highly customised according to the customer's needs. Recently, Unifardas has shifted its business strategy towards international expansion and is now actively seeking to grow its presence in countries such as Spain, France, Switzerland and Angola. To facilitate this expansion and support its overall growth strategy, the company adopted a 10-year digital transformation plan in 2020.

Why was a digital intervention needed?

Manufacturing ultra-personalised garments is a complex task that requires not only understanding the customers' needs but also providing quotes, selecting raw materials and creating a technical sheet for the product. Even minor modifications to a standard product can be time-consuming, unsustainable, and prone to errors. Furthermore, the textile industry is experiencing increasing consumer demand for personalisation. In turn, many SMEs need to implement on-demand unitary production to remain competitive. However, doing so effectively requires automation of processes and data flows.

Quality analysis performed by Unifardas revealed that nearly 75% of non-conformities in orders resulted from miscommunication between the different departments or between the company and its customers. To address this issue, Unifardas decided to empower its clients by implementing a tool that simplifies the ordering process and automatically generates all the necessary information about the product. The company hoped to reduce time loss, raw material waste and customer dissatisfaction.

'We want our customers to oversee the customer-supplier relationship, promoting a collaborative purchasing experience.'

Rui Araújo, Chief Operating Officer, Unifardas





Unifardas: intervention plan



Company perspective: the intervention plan

What digital intervention was chosen?

Unifardas decided to implement a digital tool to speed up the definition of product requirements during the ordering process and to reduce the likelihood of miscommunication. To achieve this, the company outsourced the implementation, configuration, and integration of a parametric web-based solution to a small software company. The objective of the intervention was to simplify the requirement definition and quotation process and to automatically generate a bill of materials for each product. Unifardas planned to develop and test a prototype for its two best-selling products as part of the pilot.

How did the Smart Industrial Remoting study help the company?

Citeve worked with Unifardas to carry out the DMA and define the pilot KPIs and risks. The hub also presented case studies of other companies that introduced similar tools to Unifardas.

What was the pilot timeline?

The implementation of the entire project was planned to take approximately 1 year. In the time allocated to the pilot, the company planned to define the project scenario and roadmap, configure, implement and test a prototype of the tool.

Activities	NOV'22	DEC'22	JAN'23	FEB'23	MAR'23
As-is and to-be scenario assessment					
Roadmap definition					
Define Your Process/Product (DYP) tool 1st release implementation*					
Beta user training*					
DYP tool beta testing*					

* The company was experiencing delays with DYP first release implementation, beta training and testing. Thus, the implementation continued in April, and afterwards, the assessment of the first release of DYP was to be done.



Desired results

Objective: a working prototype of a customer self-customisation solution covering two major products

2

parametric models (prototypes) built



2

products for which beta tests of parametric models are completed



100%

adherence to the initial timeline



DMA

Improved scores in all 6 dimensions

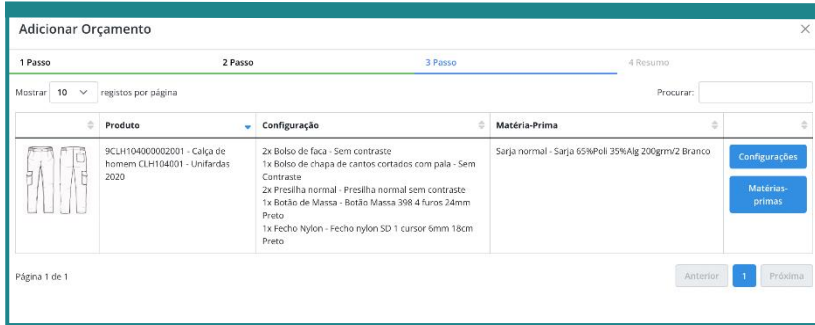




Unifardas: intervention results



Company perspective: results



A screenshot of the newly launched order processing platform hisi.pt

What was achieved during the digitalisation pilot?

Despite some delays, Unifardas achieved most of its milestones. During the piloting period, the company quantified operation times, production costs and components for the clothing models that were part of the prototype. These data will serve as a foundation for future projects aiming to digitalise sizing and order processing. Unifardas launched a trial version of a customised parametric solution. Due to delays, beta user training and DYP release assessment were planned to be concluded after the end of the pilot phase in April-May 2023.

Unifardas found that there was no suitable parametric solution for the textile industry on the market. The company had to opt for a custom-made solution from a provider that had previously implemented parametric solutions in another industry.



What were the main lessons learned from the pilot?

First, the company found it challenging to find a suitable digital solution. Therefore, Unifardas opted for a custom-made solution from a provider that had previously implemented parametric solutions in another industry. The company also faced issues in identifying the best cloud server to use for their solution.

Second, the company noted that communicating with service providers can be challenging in the early stages of an intervention due to both sides speaking 'different languages'. In this case, having someone within a company with previous IT experience or seeking external expertise can be useful. Unifardas also suggested that SMEs can ask service providers to familiarise themselves with the company's business model early in the intervention to facilitate collaboration.

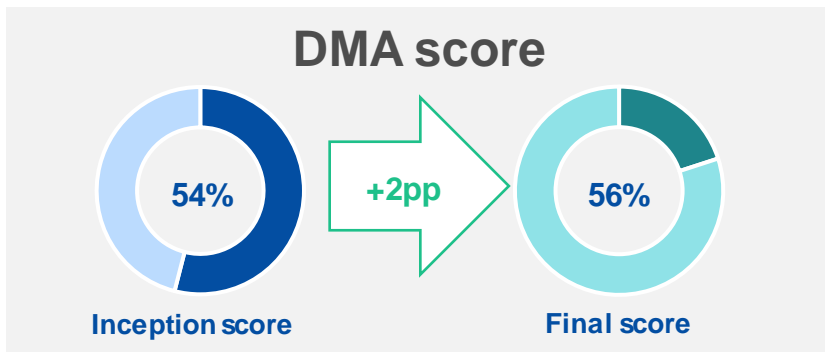
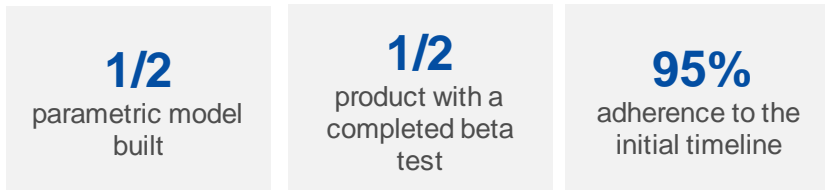
Third, communication was also important within Unifardas. Management's openness with the staff about the ongoing intervention proved essential for engaging the employees, collecting feedback and managing expectations regarding the upcoming changes.

'You need to establish a common ground with your service provider. Otherwise, frustration starts to build up because what is clear for one part is not always clear for the other.'

Rui Araújo, Chief Operating Officer, Unifardas



Achieved results

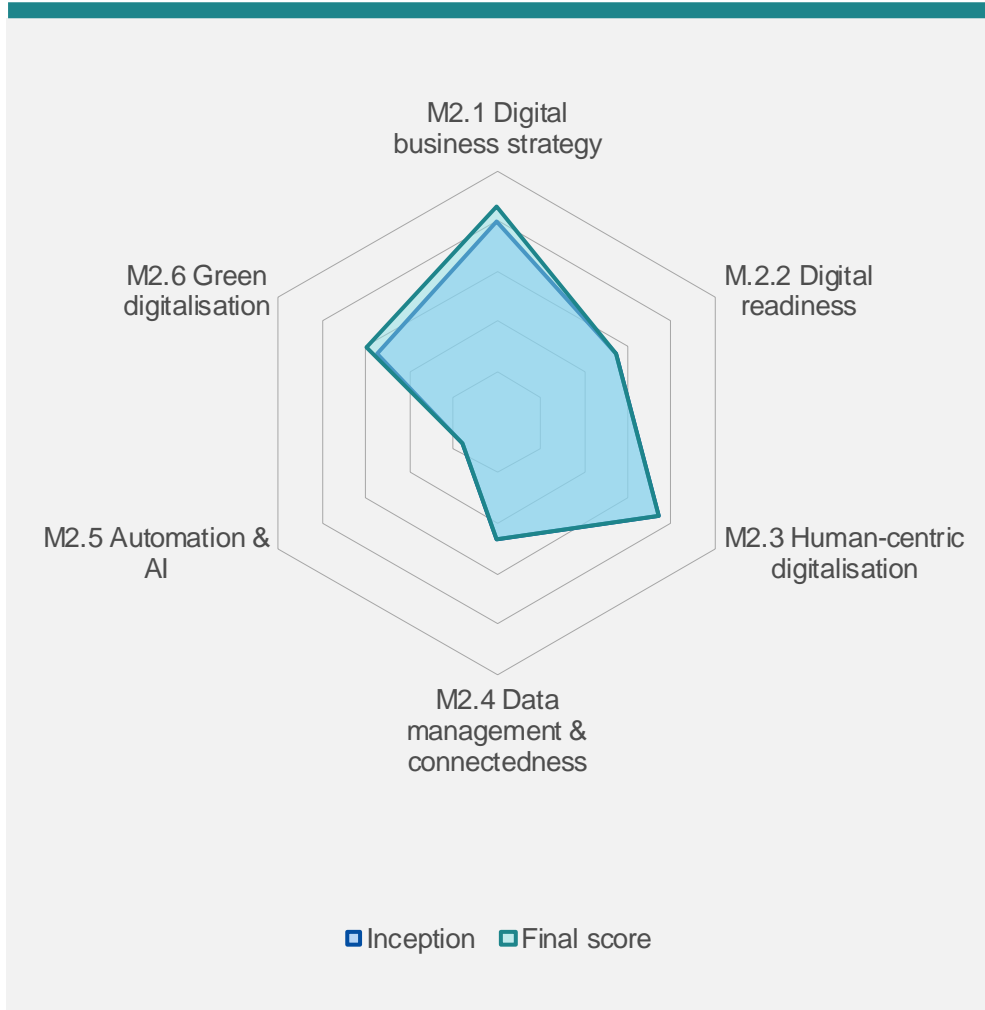




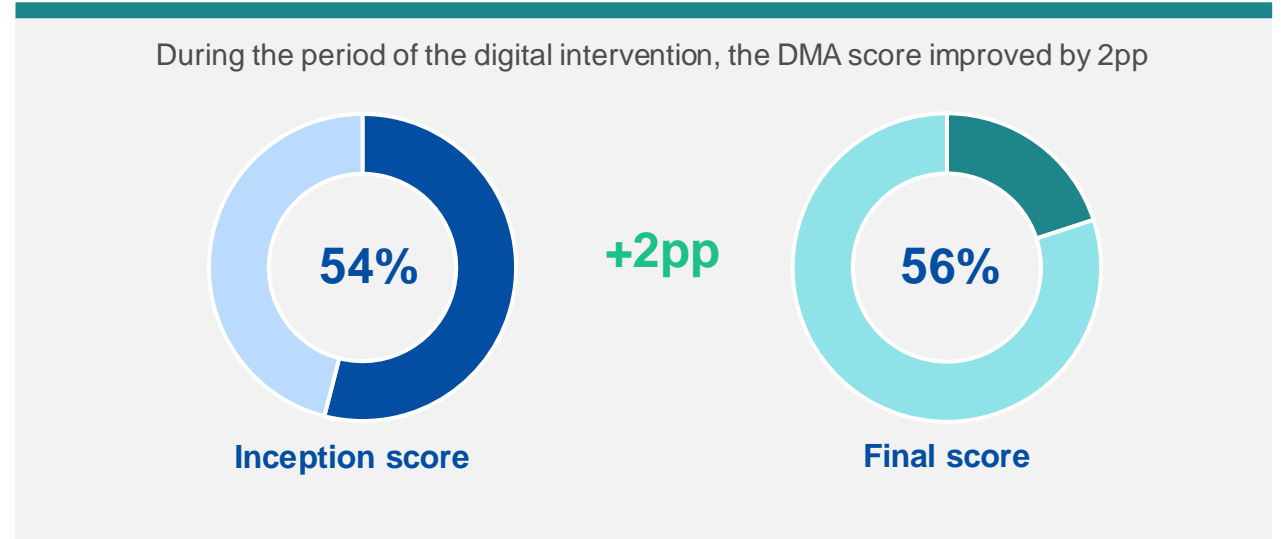
Unifardas: DMA comparison



Inception and final scores by dimension



Total score



Expected vs actual changes by dimension

Dimension	Expected	Actual
M2.1 Digital business strategy	↑	↑
M2.2 Digital readiness	↑	▬
M2.3 Human-centric digitalisation	↑	▬
M2.4 Data management & connectedness	↑	▬
M2.5 Automation & AI	↑	▬
M2.6 Green digitalisation	↑	↑



Unifardas: DMA breakdown



Highlights

- This pilot was only a small part of the Unifardas long-term digitalisation strategy, which makes it difficult to distinguish between improvements linked directly to the pilot versus other initiatives.
- The intention of Unifardas to continue investing in cybersecurity, inbound logistics and collaboration with other companies in the value chain boosted its score in the digital business strategy dimension (M2.1).
- The company's partial implementation of an environmental management system improved its score in the green digitalisation dimension (M2.6).
- Despite initial expectations to improve the scores in other dimensions, the scores remained on the same level throughout the pilot.

Dimension / sub-dimension	Inception result	Final result
M2.1 Digital business strategy	80.00%	86.67%
M2.1.1ai Already invested in technologies	70.00%	70.00%
M2.1.1pi Planning to invest in technologies	80.00%	100.00%
M2.1.2 Preparedness for digitalisation	90.00%	90.00%
M2.2. Digital readiness	55.00%	55.00%
M2.2.1 Technologies used	70.00%	70.00%
M2.2.2 Advanced technologies used	40.00%	40.00%
M2.3 Human-centric digitalisation	73.89%	73.89%
M2.3.1 Re-skilling and upskilling	77.78%	77.78%
M2.3.2 Staff engagement & empowerment	70.00%	70.00%

Dimension / sub-dimension	Inception result	Final result
M2.4 Data management & connectedness	46.43%	46.43%
M2.4.1 Data management	42.86%	42.86%
M2.4.2 Securing data	50.00%	50.00%
M2.5 Automation & AI	16.00%	16.00%
M2.5.1 Automation & AI technologies used	16.00%	16.00%
M2.6 Green digitalisation	55.00%	60.00%
M2.6.1 Use of digital for sustainability	50.00%	50.00%
M2.6.2 Environmental considerations	60.00%	70.00%

TOTAL	54%	56%
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2.4 50 Acres of Work & Joy

AgroSmart technology





50 Acres of Work & Joy: case for a digital intervention



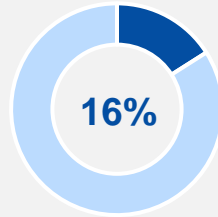
Company profile

Country: Lithuania

Industry: agrifood

Size: 2 employees

Area of operations: a zero-waste farm growing and selling more than 50 different types of vegetables, spices and berries, food production



DMA score at the beginning of the pilot



Company perspective: the case for a digital intervention

About 50 Acres of Work & Joy

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 their own and locally sourced ingredients that would otherwise go to waste. The farm has two main lines of products: seasonal offerings such as jams, sauces, salads, dried vegetables and berries, and spices made from left-over products; as well as more than 50 different kinds of fresh vegetables, berries and spices that are delivered on demand to its customers.

Why was a digital intervention needed?

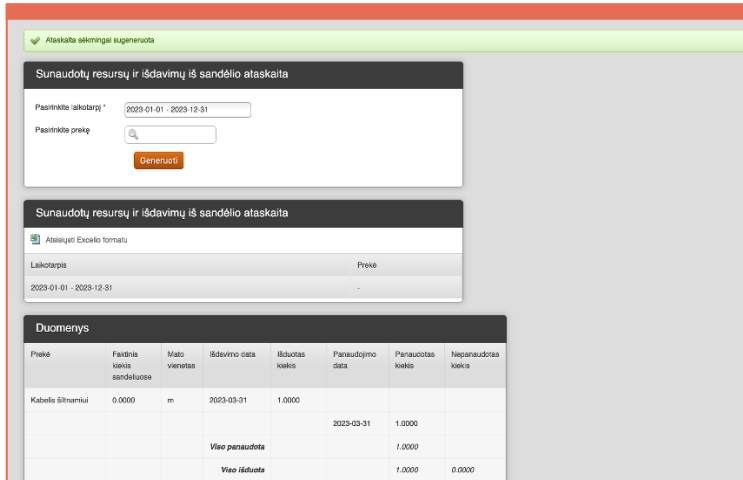
The main challenge faced by the farm was the low level of business process digitalisation. Crop monitoring, accounting, regulatory reporting, product storage and recipe writing were performed manually. This approach was time-consuming, inefficient and insufficient to support production planning.

To improve the efficiency of the farm, the owner decided to digitalise some of their planning and managing operations that were previously done manually. The owner expected that digitalisation would save time spent on administrative tasks, optimise resource utilisation and enable more effective decision-making based on data analytics.

As a small family farm, it lacked the financial resources and know-how to kick-start digitalisation. The support from the hub and the service provider was thus crucial in mapping the farm's digitalisation needs and supporting technology implementation.

'Without the support from the hub and the technology provider, implementing the tool would have been nearly impossible.'

Eglė Valuckaitė-Stašauskienė, farm owner, 50 Acres of Work & Joy



A screenshot from the implemented AgroSmart software





50 Acres of Work & Joy: intervention plan



Company perspective: the intervention plan

What digital intervention was chosen?

Following consultations with the AgriFood Lithuania hub, the company decided to implement the [AgroSmart](#) farm management software. This software supports the creation of a farm map, production forecasting, agrochemical planning, managing operations and accounting. The company received extensive support from the hub and the service provider to implement the software. In particular, the software provider helped the farmer to use the software and upload data. The solution is implemented on a small farm for the first time, and this has given the hub and the service provider valuable insights in working with smaller and less digitally mature companies.

How did the Smart Industrial Remoting study help the company?

The hub mediated the technical consultations with the service provider and helped the farm to integrate the technology into its daily operations and understand its benefits. The hub is also helping the farm with networking and knowledge sharing with other actors in the ecosystem. The service provider, a part of the hub's partner network, installed the software solution, provided frequent technical consultations to the farmer and tailored the system to the farm's needs.

What was the pilot timeline?

The complete project will last one full year in order to match the entire agricultural production cycle and ensure that the farmer is well acquainted with the technology.* In the first six months allocated to the pilot part of the project, the hub planned to assess the farm's needs, train the farmer on the software use and implement the solution. After the pilot, they will continue to support the company with system maintenance and iterative adaptation of its functions based on the farmers' needs.

Activities	NOV'22	DEC'22	JAN'23	FEB'23	MAR'23
Analysis of the company needs					
Technical feasibility and infrastructure assessment					
Deployment methodology and deployment of the solution					
Development and improvement of the new model, preparing an integration report and user manual					



Desired results

Objective: implementation of quantity and quality management system AgroSmart

25%

Increase in efficiency of farm production management



20%

reduced workload



20%

more left-over ingredients utilised



↑ DMA

Improved scores in all 6 dimensions



* The hub and the service provider will provide system maintenance and support to the farmer as well as continue with iterative improvement of the technology until November 2023.



50 Acres of Work & Joy: intervention results



Company perspective: results

Data / Laikas	Prekė	Tipas	Numėris	Sandėrys	Pagal dokumentą	Veiksmai
2023-04-18 11:55	Sėklos / Pomidorų sėklos	Nuostyba	1	Uko sąsėtis	1	
2023-03-01 23:59	Kita / Kabelis šiltnamiui	Įsigyvio	3	Uko sąsėtis		
2023-02-14 09:25	Kita / Prekia daiku	Pašildymo	4	Uko sąsėtis	00173855	
2023-02-01 09:20	Sėklos / Pomidorų sėklos	Pašildymo	3	Uko sąsėtis		
2023-01-00 09:20	Kita / Prekia daiku	Pašildymo	2	Uko sąsėtis	1100002739	
2023-01-20 23:59	Kita / Kanceliarines prekes	Įsigyvio	4	Uko sąsėtis		
2023-01-02 12:35	Kita / Prekia daiku	Abejimo	3	Uko sąsėtis	00441572	

A screenshot from the implemented AgroSmart software

What was achieved during the digitalisation pilot?

The intervention demonstrated to the farmer the potential of digitalising the processes that were previously done manually. The intervention has the potential to contribute to further waste reduction by integrating the farm's suppliers into the software and optimising production planning, but this was not yet achieved. Further benefits of the system are yet to be seen, as the harvest and sales data will be uploaded once the harvest season begins.

Although the system implementation took more time than expected, it significantly improved the owner's digital skills and motivated them to continue with digital transformation efforts. The pilot also helped the farm significantly improve its digital maturity in all DMA dimensions.

What were the main lessons learned from the pilot?

Implementing digital technologies can be time-consuming in the initial phases. The farmer needed more time than expected to learn how to operate the new technology and upload data to the software, which was burdensome for them. To ensure that the farm would persevere with the pilot, the hub continuously encouraged them by explaining the long-term benefits of the technology.

It takes time for digital interventions to yield results. In agriculture, data needs to be collected in different seasons throughout the yearly production cycle to be useful for forecasting and optimising production processes.

To change their old routines, companies undergoing digital transformation need to receive tailored support long enough for new habits to be formed. The farm owner found the support of the hub and the service provider more valuable than the technical details shared in the user manual.

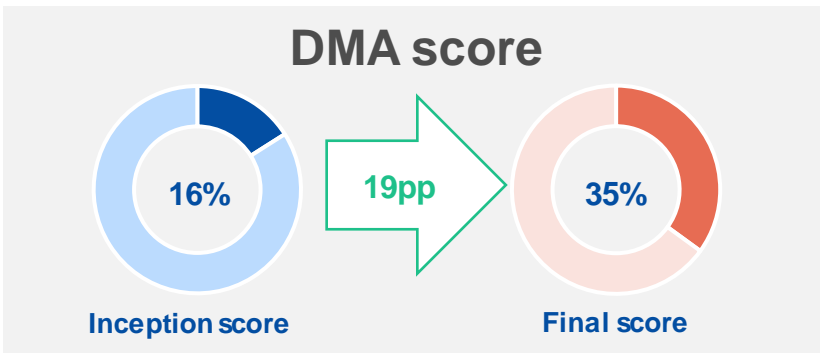
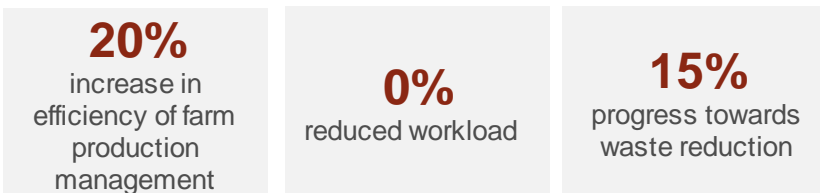
'Understanding and learning how to use data takes time and patience, and it is not easy.'

Eglė Valuckaitė-Stašauskienė, farm owner, 50 Acres of Work & Joy

Initially, the farmer felt discouraged by how much time was needed to deploy the solution. The continuous encouragement from the hub motivated them to pursue their digitalisation efforts. The farmer is now actively learning new use cases of the app, exploring other digital solutions, enhancing the online sales channel, participating in programmes implemented by the hub and advocating for digitalisation in the local ecosystem.



Achieved results*



* The intervention is set to continue until November 2023, and it will be possible to assess the fulfilment of KPIs when the software is fully used. The workload was not reduced because the farmer spent significant time inputting the data and learning how to use the system. The reduced workload benefits are expected to be seen during the harvest and post-harvest periods.

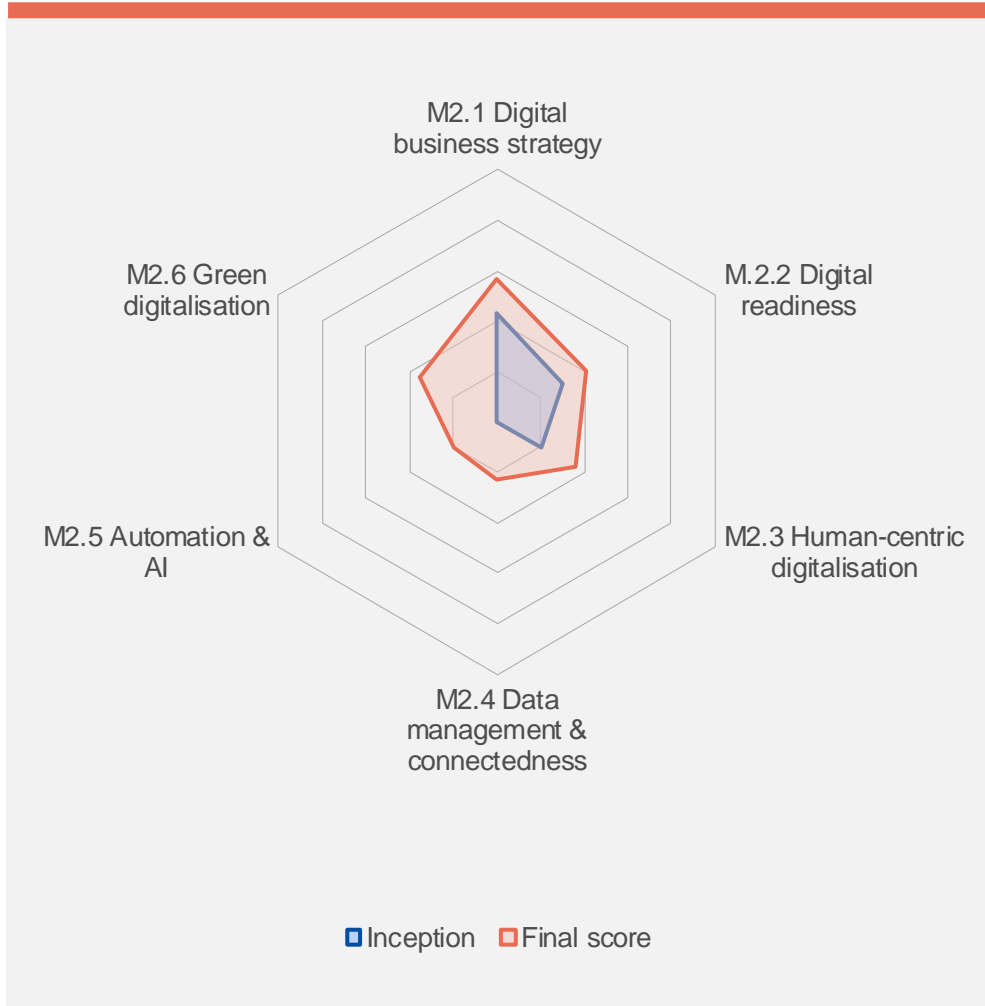




50 Acres of Work & Joy: DMA comparison

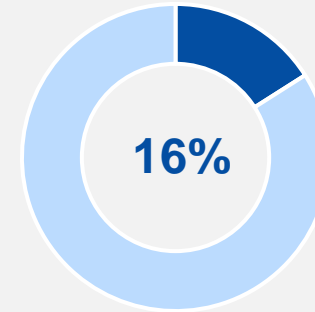


Inception and final scores by dimension



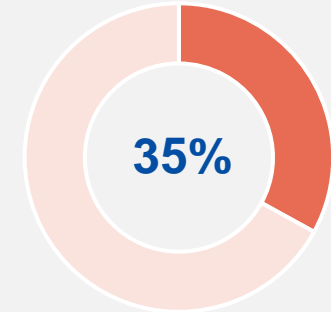
Total score

During the period of the digital intervention, the DMA score improved by 19pp.



Inception score

+19pp



Final score



Expected vs actual changes by dimension

Dimension	Expected	Actual
M2.1 Digital business strategy	↑	↑
M2.2 Digital readiness	↑	↑
M2.3 Human-centric digitalisation	↑	↑
M2.4 Data management & connectedness	↑	↑
M2.5 Automation & AI	↑	↑
M2.6 Green digitalisation	↑	↑



50 Acres of Work & Joy: DMA breakdown

Highlights

- The farm improved its score in the digital business strategy dimension (M2.1) by investing in several business areas and building capacities for further digitalisation.
- In the digital readiness dimension (M2.2) the farm introduced connectivity infrastructure and information management systems.
- The farmer underwent training and engaged in learning-by-doing, thus increasing its score in human-centric digitalisation (M2.3).
- The farm started to store data digitally, which increased its data management and connectedness (M2.4) score.
- As a direct result of the intervention, the farm improved the score on automation and AI (M2.5) dimension by implementing a data analytics system.
- When it comes to green digitalisation (M2.6), the farm further developed its zero-waste business model and procurement method and also began promoting environment-friendly consumer behaviour through its social media channels.

Dimension / sub-dimension	Inception result	Final result
M2.1 Digital business strategy	43.33%	56.67%
M2.1.1ai Already invested in technologies	10.00%	60.00%
M2.1.1pi Planning to invest in technologies*	100.00%	50.00%
M2.1.2 Preparedness for digitalisation	20.00%	60.00%
M2.2. Digital readiness	30.00%	41.43%
M2.2.1 Technologies used	60.00%	80.00%
M2.2.2 Advanced technologies used	0.00%	2.86%
M2.3 Human-centric digitalisation	20.00%	36.11%
M2.3.1 Re-skilling and upskilling	0.00%	22.22%
M2.3.2 Staff engagement & empowerment	40.00%	50.00%

Dimension / sub-dimension	Inception result	Final result
M2.4 Data management & connectedness	0.00%	22.62%
M2.4.1 Data management	0.00%	28.57%
M2.4.2 Securing data	0.00%	16.67%
M2.5 Automation & AI	0.00%	20.00%
M2.5.1 Automation & AI technologies used	0.00%	20.00%
M2.6 Green digitalisation**	0.00%	35.00%
M2.6.1 Use of digital for sustainability	0.00%	30.00%
M2.6.2 Environmental considerations	0.00%	40.00%

TOTAL	16%	35%
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* The score on M2.1.1pi decreased between the two assessments because in the meantime the company invested in technologies it planned to invest in in the inception phase

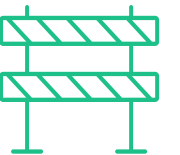
** The score on M2.6 dimension was significantly increased as the farm started further developing its zero-waste business model, integrating suppliers of left-over ingredients into AgroSmart software and disseminating zero-waste ideas to consumers through increased online presence.

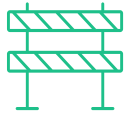




2.5 UNITH2B

BIM system integration



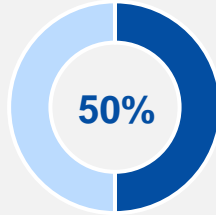


UNITH2B: case for a digital intervention



Company profile

Country: Romania
Industry: construction
Size: 13 employees
Area of operations:
 construction sector activities including architectural design, interior design, urbanism and project management



DMA score at the beginning of the pilot



Company perspective: the case for a digital intervention

About UNITH2B

UNITH2B is a Bucharest-based construction company that started operating in 2013. It specialises in managing construction projects and designing the construction, interior, and urban spaces for both public and private clients. Most of the company's employees are architects. The company collaborates with engineering and building companies in the value chain to execute its projects. UNITH2B can be considered one of the early adopters of BIM technology in the Romanian construction sector.*

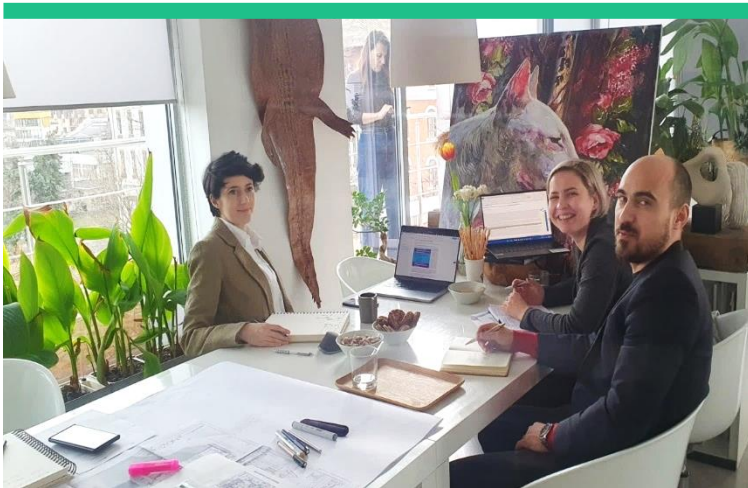
Why was a digital intervention needed?

The company sees itself as a dynamic innovator. Its employees strive to keep up-to-date with new technologies in order to stay competitive in the market. In line with that, the company's management wanted to expand the use of BIM technology in its daily operations. UNITH2B wanted to improve internal and external collaboration in BIM processes and make its use of BIM functions more efficient. In addition, the management wanted an external perspective to better understand how their use of BIM compares to the rest of the industry.

UNITH2B's management expected that the pilot would help them learn more about enhancing and standardising their internal collaboration flow, engaging other collaborators from the value chain in BIM procedures, and improving the efficiency of BIM function utilisation. They hoped to increase efficiency and productivity, exchange experience with advanced technology users, and better understand products and services that can be developed using BIM.

'More flexible and entrepreneurial companies have a competitive advantage in the market. Very soon, new technologies will be mandatory, and less innovative companies will find it hard to catch up.'

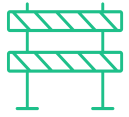
Anca Sandu, managing partner, UNITH2B



Meeting between UNITH2B, FIT EDIH and the BIMTech Association

* For more information about the use of BIM in the Romanian construction sector, see the [Gap Analysis Report](#).





UNITH2B: intervention plan



Company perspective: the intervention plan

What digital intervention was chosen?

The company decided to increase its knowledge and use of BIM technology through collaboration with FIT EDIH and assistance from the local BIM association BIMTech. This included learning about BIM collaboration processes and new collaborative software tools, introducing new BIM use cases and improving key BIM model development procedures.

How did the Smart Industrial Remoting study help the company?

FIT EDIH organised an open call to identify companies that could participate in the pilot.* Once the pilot company was selected, the hub supported the intervention in partnership with the BIMTech association. The support included an introductory workshop to assess the company's needs and digital maturity and three coaching sessions with follow-up homework exercises that provided personalised technical and business guidance. The hub also supported the company through increased visibility, networking, and knowledge sharing.

What was the pilot timeline?

After the hub selected the company through the open call, it developed an intervention programme, organised a workshop with the company and provided coaching sessions. The company also plans to engage in further dissemination activities.

Activities	NOV'22	DEC'22	JAN'23	FEB'23	MAR'23
Open call results					
Pilot programme development					
Introduction workshop					
Personalised service delivery					
Dissemination of the pilot process and goals					

* For more information about the open call, see [Annex 2](#).



Desired results

Objective: optimise the use of BIM technology through improved collaboration and implementation of new use cases

1

new method for improving BIM collaborative processes learnt



3

new BIM use cases implemented



1

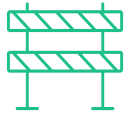
improved procedure for BIM model development



DMA

Improved scores in digital business strategy (M2.1), digital readiness (M2.2) and data management and connectedness (M2.4)





UNITH2B: intervention results



Company perspective: results

10	Cost analysis / Estimation (CA)	Used/ considered in current project	Useful for quantity estimation, pre-defined in real time as the structure is being decided. Greatly helps in implementation as it allows for very quick re-calculation of building costs.
11	Total Cost of Ownership/ Service Life	Not used	Not relevant in current construction projects.
28	Perform procurement (PP)	Used/ considered in current project	Due to the remote collaboration approach proposed with the construction teams and the numerous types of construction teams which will be needed to finalize the project, UNITH2B plans to take over the procurement of all building materials needed for the project, during which they could use this function. This allows also for real-time monitoring of supplier negotiation outcomes.
29	Code Validation (CV)	Not used	More relevant for applying urbanism regulation and other norms for larger construction projects – not relevant for current UNITH2B projects.
30	Construction System Design (CSD)	Used/ considered in current project	Will be used for CLT system construction and for the Digital Construction project of designing construction parts (ex. walls) to be integrated on site.
31	Phase Planning (PP)	Used/ considered in current project	Due to the nature of the current project, the overall construction project will be split in phases depending on the processes and house building phases and their logical sequence and this use case will be used in current project.
32	Digital Fabrication (DF)	Used/ considered in current project	The designers send the general volumes to intermediaries who then cut the parts. This use case helps with the verification procedures of the CLT.
36	Owner Approval (OA)	Used/ considered in current project	Is used due to integration of the VR goggles feedback loop into the process.
38	Laser Scanning (LS)	Used/ considered in current project	Has been used in the design planning phase of the project, as well as in other projects, but UNITH2B was not very pleased with the results as they contained obvious errors. Discussions took place between the BIMTech and UNITH2B about how this could be improved.
39	Commissioning (COM)	Used/ considered in current project	Implies verification of the actually built project versus the BIM design model in real time (through periodic updates). Will be used for the current project due to the collaborative nature of the work between the UNITH2B architects and the on-site construction teams.
41	As Constructed Modeling (ACM)	Not used	Not relevant for the current stage of the project.
43	Space Management and Tracking (SMT)	Not used	Not relevant for the current stage of the project.
50	Way finding (WF)	Not used	Not relevant for the current stage of the project.

BIM use cases explored and implemented by UNITH2B



Achieved results



DMA score



What was achieved during the digitalisation pilot?

UNITH2B achieved its KPIs in terms of learning a new BIM collaborative method, becoming familiar with 12 new BIM-related software tools and improving a procedure for BIM model development. In addition, the company learned about 13 new BIM use cases and has begun implementing 8 of them in a new project, exceeding the initial expectations. The new project is fully BIM-supported. UNITH2B is remotely co-designing a residential house with a local architecture firm.

Furthermore, the management learned more about the market and intensified its collaboration within the ecosystem. This will help them reshape their digital strategy and develop the company in new directions.

What were the main lessons learned from the pilot?

Firstly, it is important to recognise that the impact of technology implementation may not be immediately apparent, especially in companies with longer project cycles. Companies that maintain a patient and persistent attitude without getting discouraged by the initial lack of visible impact achieve the desired digitalisation results.

Secondly, collaboration in utilising new technologies within the ecosystem is crucial not only for learning and networking but also for motivating companies to innovate. By engaging with different actors working with the BIM technology, the UNITH2B management was encouraged to strengthen its innovation efforts.

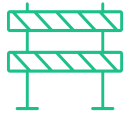
The DMA did not capture all the nuanced gains that the company made in improving its BIM use. The hub representative shared that the DMA was less practical for UNITH2B at this stage, as the technology was already adopted, and the company focused on expanding and optimising its use.

'Usually, nothing works from the first try and people get discouraged by the learning curve. But if you put enough effort and commit, the change is possible and visible in the end.'

Anca Sandu, Managing partner, UNITH2B

The company already started implementing the following BIM use cases: cost estimation, procurement of building materials, construction system design, planning of construction phases, integration of VR technology, digital fabrication, laser scanning, and verification of built projects.

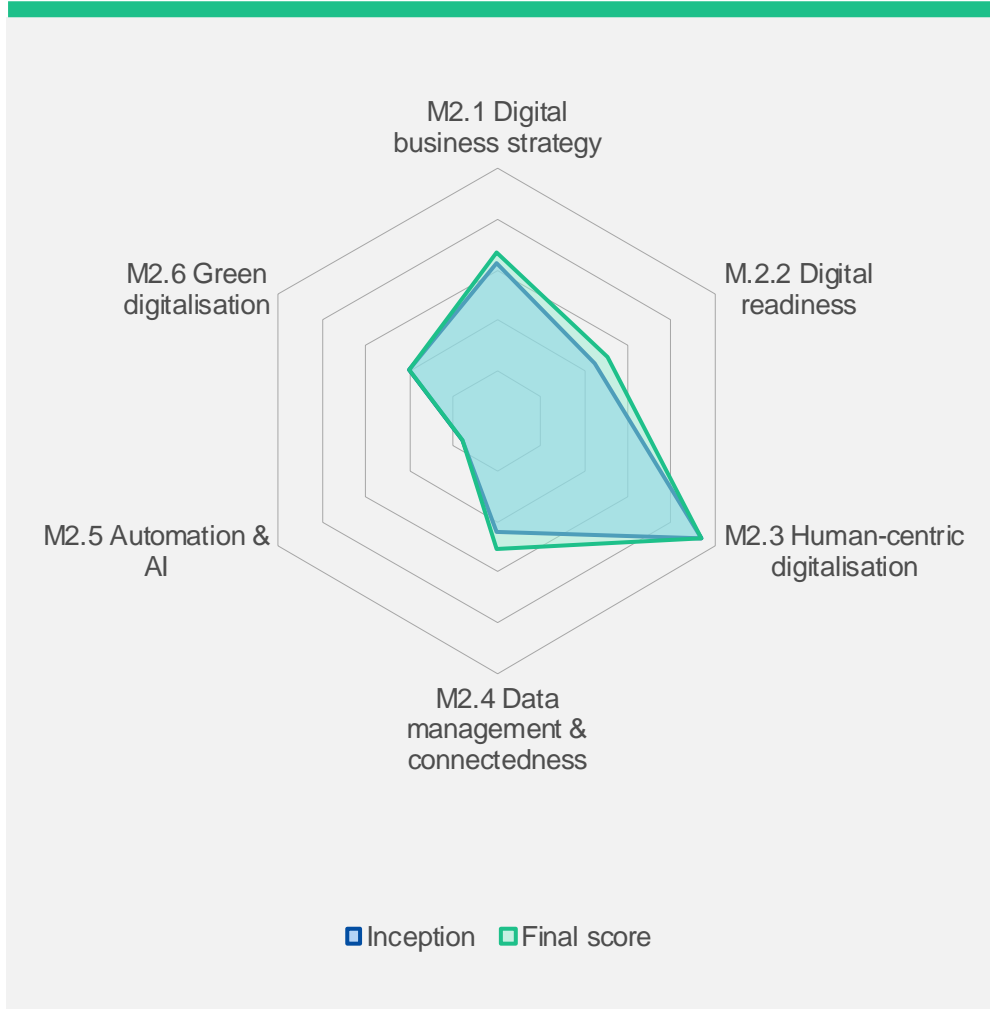




UNITH2B: DMA comparison

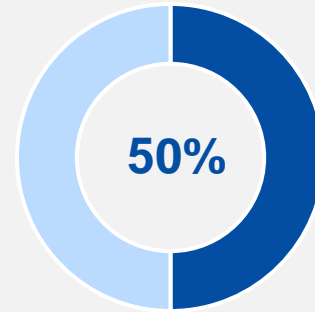


Inception and final scores by dimension



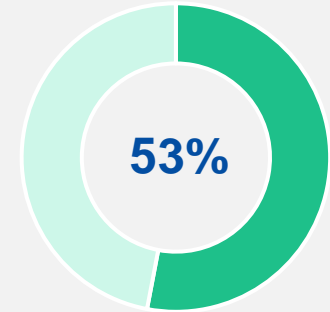
Total score

During the period of the digital intervention, the DMA score improved by 3pp.



Inception score

+3pp

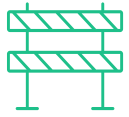


Final score



Expected vs actual changes by dimension

Dimension	Expected	Actual
M2.1 Digital business strategy	↑	↑
M2.2 Digital readiness	—	↑
M2.3 Human-centric digitalisation	↑	—
M2.4 Data management & connectedness	↑	↑
M2.5 Automation & AI	—	—
M2.6 Green digitalisation	—	—



UNITH2B: DMA breakdown

Highlights

- The company improved its score in the data management and connectedness dimension (M2.4) by integrating data that is distributed among different systems.
- When it comes to the digital readiness dimension (M2.2) UNITH2B started implementing a virtual reality technology as part of BIM use case expansion. The company also began using e-marketing promotions. The latter was not directly related to the digitalisation pilot intervention.
- In the digital business strategy dimension (M2.1), the company digitalised marketing, sales and customer services. This improvement was not directly related to the digital intervention.
- The manager stated that the DMA increase between the measurements does not fully capture their significant progress in the utilisation of BIM technology. This is because the DMA is not designed to capture finer improvements in already implemented technologies.

Dimension / sub-dimension	Inception result	Final result
M2.1 Digital business strategy	63.33%	66.67%
M2.1.1ai Already invested in technologies	50.00%	60.00%
M2.1.1pi Planning to invest in technologies	70.00%	70.00%
M2.1.2 Preparedness for digitalisation	70.00%	70.00%
M2.2. Digital readiness	45.00%	51.43%
M2.2.1 Technologies used	50.00%	60.00%
M2.2.2 Advanced technologies used	40.00%	42.86%
M2.3 Human-centric digitalisation	94.44%	94.44%
M2.3.1 Re-skilling and upskilling	88.89%	88.89%
M2.3.2 Staff engagement & empowerment	100.00%	100.00%

Dimension / sub-dimension	Inception result	Final result
M2.4 Data management & connectedness	44.05%	51.19%
M2.4.1 Data management	71.43%	85.71%
M2.4.2 Securing data	16.67%	16.67%
M2.5 Automation & AI	16.00%	16.00%
M2.5.1 Automation & AI technologies used	16.00%	16.00%
M2.6 Green digitalisation	40.00%	40.00%
M2.6.1 Use of digital for sustainability	40.00%	40.00%
M2.6.2 Environmental considerations	40.00%	40.00%





3. Horizontal takeaways



Summary of horizontal takeaways

After analysing the case study-specific lessons learned, we have developed **27 horizontal takeaways** (our approach is explained on [page 69](#)). They build on the horizontal takeaways already identified in the Interim Experiments report, synthesising them with the information gathered during the pilot finalisation phase. The takeaways are organised by the digital transformation (DX) process.



1 Planning

- A. Digitalisation was seen as a necessity to remain competitive
- B. Some selected companies used experiences from other companies to choose which technologies to implement
- C. Case studies showed the importance of an as-is assessment and needs identification
- D. The DMA was useful for assessing progress and pinpointing gaps
- E. Only one of the companies had a long-term digitalisation strategy
- F. SMEs should carefully consider the as-is situation during intervention planning
- G. SMEs approached cost-benefit assessments pragmatically



2 Implementation

- A. Available solutions can be costly, unsuitable for companies' needs or difficult to implement
- B. Some companies struggled to reach mutual understanding with their technology supplier
- C. Companies under-estimated the efforts required to set the stage for implementation
- D. Despite initial productivity losses, companies persevered with digitalisation efforts
- E. Despite difficulties in quantifying benefits, most companies experienced an operational improvement



3 Collaboration

- A. Companies would benefit from support with financing, networking and technical expertise
- B. Building a wide network and showing the business benefits of digitalisation can help hubs reach out to SMEs
- C. Hubs needed to tailor and streamline their support services
- D. SMEs faced barriers to collaborating with the wider ecosystem



4 Capacity building

- A. External partners helped to overcome skills and capacity challenges
- B. Companies used trainings, online resources, workshops and consultations to upskill staff
- C. Navigating the range of existing tools and resources proved challenging for SMEs
- D. Hybrid skills and transferability of information relevant for digitalisation projects were important



5 Management

- A. In all pilots, managers and owners had a central role in driving digitalisation efforts
- B. External factors influenced the digital interventions
- C. Effective change management was crucial for securing employee buy-in
- D. Project management skills and culture were important for ensuring positive outcomes
- E. Risk management and KPI monitoring were challenging for some companies
- F. Ensuring long-term sustainability was key to unlocking digitalisation benefits
- G. Digital initiatives were associated with positive spillovers and digitalisation momentum



Horizontal takeaways: planning (1/3)

1A Digitalisation was seen as a necessity to remain competitive

In the majority of pilots, companies indicated that they were motivated to digitalise to avoid falling behind their competitors. Depending on the company, digitalisation was either proactive or reactive. Unifardas, UNITH2B, Matro Gépgyártó Kft. mentioned proactively monitoring technology trends in the industry. Meanwhile, Surfoteka and 50 Acres of Work & Joy, the two companies with the lowest digital maturity, adopted the technologies based on the recommendations from the hubs supporting their pilots.

EXAMPLES:

- UNITH2B** considered digitalisation to be a continuous process needed for the company to become more competitive. UNITH2B continuously evaluated the digital technologies available on the market.
- Surfoteka** noted that without the DIH's support, it may not have pursued digitalisation, thus risking falling behind its competition. The hub played a key role in incentivising the company to integrate its sales channels.
- Unifardas** emphasised that the increasing customer demand for personalisation drives companies in the textile industry to increasingly adopt digital technologies. Unifardas regularly monitored technology trends in its industry.

1B Some selected companies used experiences from other companies to choose which technologies to implement

Most companies kept track of market trends in their ecosystem in some form. Furthermore, several of the pilots used experiences from similar companies to select a solution that would suit their needs. One way companies found out about digital solutions on the market and how to apply them was by participating in trade fairs and other industry events. As a representative of one of the hubs pointed out, SMEs get inspired by examples of similar companies rather *'than examples from the Silicon Valley'*. Such exchange of good practices and experiences among companies could also be facilitated by hubs, as highlighted by both the internal experience exchange session and the [public workshop](#) organised as part of the study.

EXAMPLES:

- Matro Gépgyártó Kft.** 'scanned' the market and analysed what data collection systems were being used by its competitors. To see the pre-selected system operating in practice, company representatives attended a trade fair in Germany before making the final decision.
- Unifardas**, sharing its experience, stressed the importance of attending industry-specific trade fairs and building awareness of recent developments. It also participates in an R&D project studying the development of algorithms used in the textile industry.

1C Case studies showed the importance of an as-is assessment and needs identification

An assessment of the as-is digitalisation level and identification of needs proved to be vital for all five companies. At the same time, one of the hubs pointed out that following a sequential process of planning and evaluating needs can be challenging for SMEs, especially when facing time constraints. For micro-enterprises, such as 50 Acres of Work & Joy and Surfoteka, the assistance of hubs can be especially valuable. Besides, the more knowledgeable a hub is about the industry, the more precise identification of needs can be.

EXAMPLES:

- Matro Gépgyártó Kft.** tailored the solution implementation to its needs and priorities, which were identified at the very start. The DMA also helped the company see its weakest areas and focus on their improvement.
- Surfoteka's** lesson is about ensuring the presence of all the necessary data and backups prior to solution deployment. Inaccurate assessment of resources in place led to the need to make adjustments to the project mid-way.
- In **UNITH2B** case, identifying the digital needs and setting intervention objectives was essential for guiding the collaboration process with the hub and identifying potential future digital transformations.



1 Planning



2 Implementation



3 Collaboration



4 Capacity building



5 Management



Horizontal takeaways: planning (2/3)

1D The DMA was useful for assessing progress and pinpointing gaps

According to the hubs and companies, the DMA questionnaire was easy to fill out. The DMA was useful for understanding where a company is, monitoring its progress and finding gaps. The studied companies also highlighted they would be interested in benchmarking their DMA scores against other similar companies. However, several considerations should be kept in mind:

- The DMA is an organisation-wide assessment suited for monitoring overall progress, rather than individual interventions.
- It is more likely to capture the adoption of new technologies than improvements in already implemented ones. Less digitalised companies are likely to see larger improvements than highly mature companies.
- It is most useful for companies that have started their digitalisation journeys, instead of companies of very high or very low digital maturity.
- It is industry agnostic and may miss some nuances that are highly sector-specific (e.g. BIM in construction).

EXAMPLE:

Representative of **Matro Gépgyártó Kft.** stated: *'the result highlighted the fact that we need to deal with the digital transformation of the business much more consciously and in a more focused way'*.

1E Only one of the companies had a long-term digitalisation strategy

Based on conclusions from an internal experience exchange session with hubs, strategy is frequently the weakest point in a company's DMA. This aligns with the case studies (only Unifardas, the most digitally mature company in the sample, has a long-term digitalisation strategy) and findings from the [Best Practice Collection report](#). SMEs often pursue digitalisation as a response to a direct business need instead of as part of a long-term plan. The hubs also noted that supporting SMEs in this area is important.

EXAMPLES:

Matro Gépgyártó Kft. highlighted that it is considering developing a medium- to long-term digitalisation plan. The results of this digitalisation pilot will be important for determining the digital innovations needed in the future.

Unifardas developed a 10-year digitalisation strategy in 2020 with the help of an external consultant. After developing the strategy, Unifardas defined and prioritised a set of projects to help achieve its digitalisation objectives.

UNITH2B does not have a digitalisation strategy but stated that digitalisation is ingrained in its working culture, and the company is always on the lookout for new innovations.

1F SMEs should carefully consider the as-is situation during intervention planning

While most pilots successfully realised their initial digitalisation plans, hubs and companies emphasised several aspects that could be improved, including:

- Implementation planning needs to be based on an accurate understanding of the as-is situation. Needs and possibilities should be assessed at an early stage.
- Resource availability and the time needed for different stages, especially the pre-deployment stage, need to be carefully considered.
- KPI definition and risk analysis should be a part of the planning phase.
- The typical lifecycle of a project in the industry should be taken into account when planning interventions and support from the hubs.
- A company's staff should be kept up-to-date on the plans throughout implementation.
- Companies and hubs need to maintain flexibility to adjust plans if needed during implementation.

EXAMPLE:

After developing its digital strategy, **Unifardas** prioritised a set of projects based on available resources and skills. During the intervention, the company experienced some delays, in part due to underestimating the time needed for finding a solution that would fit its needs.



1 Planning



2 Implementation



3 Collaboration



4 Capacity building



5 Management



Horizontal takeaways: planning (3/3)

1G SMEs approached cost-benefit assessments pragmatically

As noted by the hubs and companies in several pilots and the internal experience exchange session, calculating the gains and losses of implementing new tools can be difficult.

Most companies did not conduct detailed cost-benefit analyses at the inception phase of the pilots. Pilot participants shared that SMEs do not always need to formulate their needs in terms of expected gains or losses. Rather, they approach digitalisation as a necessity.

Cost-effectiveness was primarily pertinent when companies were selecting external suppliers and solutions to implement, as in the case of the textile industry.

Matro Gépgyártó Kft. was the only company to calculate the expected benefits of improved accuracy of their data collection terminals in terms of how fast the intervention could bring a return on investment.

EXAMPLES:

Matro Gépgyártó Kft. estimated that an annual efficiency improvement of 0.5% in their data collection terminals' accuracy would allow the implementation to pay-off within one year.

Unifardas shared that they do not usually conduct an extensive cost-benefit analysis. Nevertheless, cost-effectiveness plays an important role in decision-making. For example, the company considered the intervention's costs when selecting a service provider.



1 Planning



2 Implementation



3 Collaboration



4 Capacity building



5 Management



European Commission

Horizontal takeaways: implementation (1/2)

2A Available solutions can be costly, unsuitable for companies' needs or difficult to implement

The case studies revealed that finding a suitable solution on the market can be challenging for SMEs. This can be due to cost, lack of tailored solutions on the market or difficulty of implementation. External funding, assessing the cost-effectiveness of available solutions and choosing low-cost options, such as retrofitting or using older software, can help SMEs reduce costs. Further, companies may need external support to identify their digital needs and select adequate solutions. This support can be provided by hubs or external consultants. In addition, most companies used the experience of other SMEs to guide their decision in some way.

EXAMPLES:

- Matro Gépgyártó Kft.** chose a supplier that had experience with similar companies and opted for retrofitting the existing machines instead of buying new ones, as it was more cost-effective.
- Unifardas** experienced problems finding software tailored to their business needs due to the lack of parametric solutions for the textile industry on the market.
- Without the hub's support, it would have been difficult for **50 Acres of Work & Joy** to pursue the intervention. It is often not enough for SMEs to purchase the software. Successful implementation requires extensive training and capacity building.

2B Some companies struggled to reach mutual understanding with their technology provider

Cooperation with technology providers may sometimes result in miscommunication. First, providers often offer standardised solutions to all customers, without adapting them to a particular company's needs. Therefore, companies should be upfront with service providers, asking them to familiarise themselves with the company's business before the solution implementation. Second, there is often a discrepancy between the 'technical language' of the technology providers and the 'business language' of the company's management. To ensure mutual understanding and facilitate cooperation, the companies may need an intermediary that can understand both sides. This could be either staff with technical knowledge or external experts, for example, from DIHs.

EXAMPLE:

- Unifardas** encountered some initial communication issues with the technology provider. The provider was offering the implementation of a standardised solution which did not fully fit the company's unique business model. With the help of the hub, Unifardas successfully communicated the specifications of the solution they needed to the technology provider.

2C Companies under-estimated the efforts required to set the stage for implementation

The case studies revealed that most companies underestimated the effort required to prepare for the implementation of a new digital solution. This included data standardisation, uploading data to the new system or taking stock of an existing inventory. According to the hubs, the pre-deployment phase often takes longer than expected because companies do not accurately estimate the amount of 'homework' necessary on their behalf. Often, the work required during this phase is also closely linked to loss of productivity, as companies need to take additional steps to implement the solution. One potential way to mitigate this is to plan the implementation during a 'low season' for the company, e.g. winter for agrifood or prior to a high-sales season for retail.

EXAMPLES:

- At the beginning of implementation **Unifardas** realised that it was missing data linked to garment production (e.g. production time, cost per unit). They spent some time compiling the data into a single database, which can be easily reused in the future.
- 50 Acres of Work & Joy** underestimated how long the upload of the data into the system would take. This is because the farm-related data was scattered across several spreadsheets and physical paper forms.



1 Planning



2 Implementation



3 Collaboration



4 Capacity building



5 Management

Horizontal takeaways: implementation (2/2)

2D Despite initial productivity losses, companies persevered with digitalisation efforts

As observed during the digitalisation pilots, the implementation of digital solutions was associated with productivity losses in the short run. In particular, both Surfoteka and 50 Acres of Work & Joy stated that they were incurring more losses than benefits during the implementation phase. This was primarily linked to the time companies spent on organising and inputting data into the new systems. Yet, both companies strongly believed that the interventions will be valuable in the long run. In agrifood's case – once the harvest season begins, and in retail's case – once they enter a high-demand period for surfing gear. Despite the associated productivity losses, all companies were confident in the long-term positive results of digitalisation. UNITH2B stressed that despite the challenges encountered, it is usually the most time-consuming innovations that help companies reap the biggest rewards.

EXAMPLE:

The supporting hub shared that during the implementation phase, the farmer at **50 Acres of Work & Joy** experienced more productivity losses than expected. The service provider underestimated the time it would take for the farm owner to upload all the necessary data into the software. Yet, the full benefits of the software are expected to be seen only when the harvest season begins.

2E Despite difficulties in quantifying benefits, most companies experienced an operational improvement

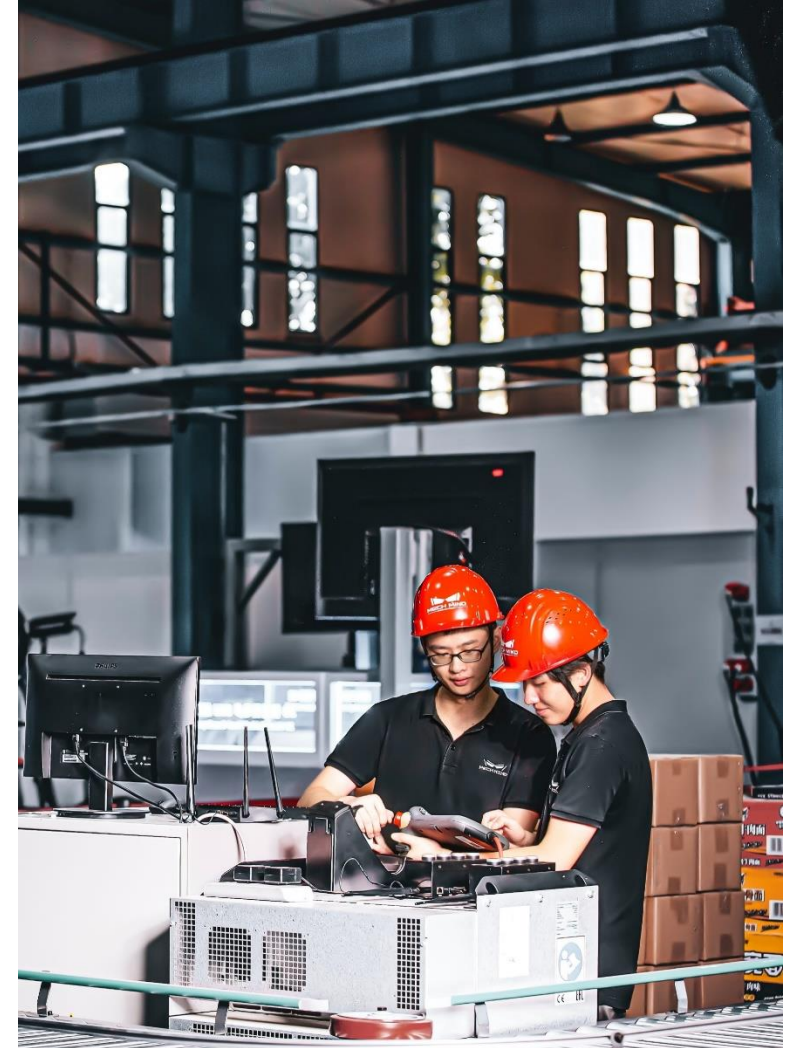
Similarly to costs, the expected benefits of digitalisation tend to be difficult to quantify for SMEs. Most companies participating in the digitalisation pilots were motivated to implement digital technologies because they would improve a specific process or operational efficiency rather than lead to an easily quantifiable benefit. Nevertheless, all five companies saw an improvement in their DMA scores during the pilots. The largest improvements were observed for the two least digitalised companies – Surfoteka and 50 Acres of Work & Joy.

However, in agrifood, the implemented solution's full benefits will only be visible during the harvest season. Similarly, for textile, the implemented solution is a pilot and further benefits are expected once the innovation is rolled out across the company.

EXAMPLES:

Matro Gépgyártó Kft. successfully installed 50 data collection terminals during the digitalisation pilot. As a result, the company management estimates that the investment will pay off within one year.

UNITH2B did not experience tangible benefits during the pilot. Nevertheless, the company believes the intervention will bring value in the long run as it learned new ways of implementing BIM and is already testing them in one project.



1 Planning



2 Implementation



3 Collaboration



4 Capacity building



5 Management



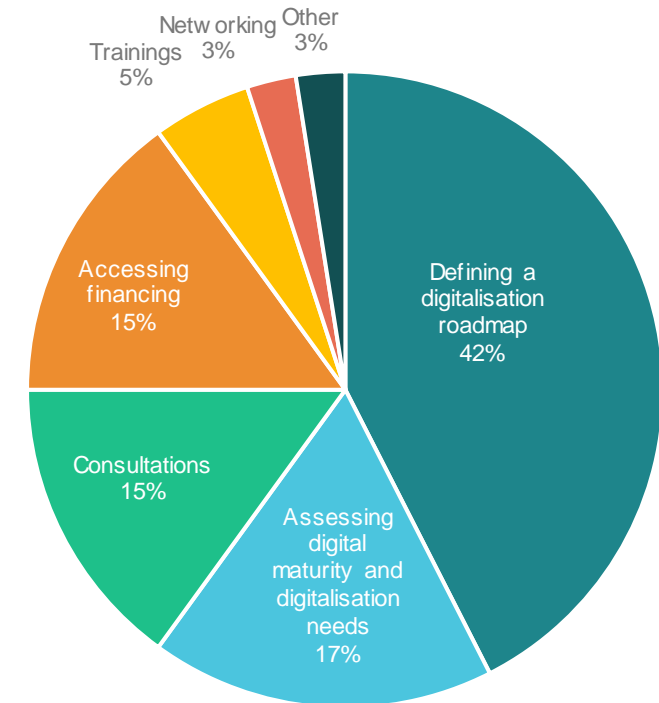
Horizontal takeaways: collaboration (1/2)

3A Companies would benefit from support with financing, networking and technical expertise

Conclusions from case studies, the internal experience exchange session and the [public workshop 'Unlocking the business potential of digitalisation: lessons from five industrial SMEs'](#) revealed several ways how support for digitalisation could be better adapted to fit SMEs' needs:

- The services that companies most wanted to receive in the construction open-call were: help in developing a financing plan for digitalisation; clarifying services and products that can be developed using BIM; mapping and creating a plan for competence development; experience sharing with more advanced technology users.
- While larger companies often have enough resources to run several digitalisation projects at the same time and only expect some to yield positive results, SMEs often do not have the capacity to do the same. Therefore, co-financing can help companies overcome hesitation and risk aversion. Even relatively low-cost options can present a challenge for financially constrained SMEs. Hubs can thus support companies in identifying relevant funding opportunities.
- Participants of the experience exchange session and public workshop noted that hubs need to be involved from the beginning of interventions to support companies with needs identification, financial planning and strategy definition.
- Hubs can help SMEs by providing technical expertise, connecting companies to external experts and service providers, and promoting cooperation with the wider ecosystem. Furthermore, they can help companies navigate all the resources and tools (e.g. digital maturity assessments, e-learnings) available to support digitalisation.
- Support organisations can also help SMEs interpret how technology trends relate to their day-to-day operations and identify which solutions on the market best fit their needs.
- Hubs can also help companies communicate and network between themselves to share experiences and use best practice examples to demonstrate the benefits of technology adoption.
- Companies can benefit from support in designing metrics for monitoring and assessing the results of digitalisation projects. This is especially important to identify issues and their root causes, course-correct if needed and extract important lessons learned.
- Some companies also highlighted that prior to providing support, the recipients' skills and capacities should be assessed to correctly address their needs and ensure the sustainability of digital interventions.

Workshop participants' responses to 'In your opinion, what support from (E)DIHs is the most important?'



Source: compiled by the study team based on a poll of participants conducted during the workshop 'Unlocking the business potential of digitalisation: lessons from five industrial SMEs'; N = 40.



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Horizontal takeaways: collaboration (2/2)

3B Building a wide network and showing the business benefits of digitalisation can help hubs reach out to SMEs

Reaching out to SMEs that are not already engaged in hubs' activities can be challenging. In an experience exchange session held as part of this study, hubs emphasised the importance of expanding their networks by utilising synergies with related projects, 'snowballing' – asking people to suggest companies that may be interested in the hubs' activities and establishing themselves as a trusted partner that possesses both technological and industry-specific business expertise. Experience exchange session and [public workshop](#) participants suggested that companies are more likely to be convinced of the need to digitalise when the advantages are explained in business terms or by using successful examples of similar companies. Furthermore, hubs should show how digitalisation will help SMEs address their operations' bottlenecks and maintain market competitiveness.

EXAMPLES:

- In the automotive industry, **Matro Gépgyártó Kft.** had a relationship with the hub for approximately four or five years before being chosen to participate in the study.
- In the **construction industry**, the hub organised an open-call procedure to identify companies that would be interested in taking part in the pilot.
- In a **poll conducted during the public workshop** on 'what can hubs and companies do to expand their network?', respondents selected the following options: 3% - build a reputation and wait for companies to reach out; 8% - snowball; 11% - attend or organise events; 10% - participate in projects; 68% - all of the above (N=38).

3C Hubs needed to tailor and streamline their support services

Based on the collected lessons learned, hubs should be mindful of the capacity constraints that companies, especially SMEs, face. Factors such as company digital maturity, needs and industry specifics are important to consider when designing support services. The hubs involved in the study also emphasised the importance of trust and effective communication. It can be achieved by:

- Setting joint objectives, establishing trust and determining clear project owners from both sides.
- Establishing familiarity with the company's business and as-is state based on accurate information.
- Demonstrating the business value of digitalisation and services provided.
- Ensuring that the digitalisation plan and support services are adaptable to possible changes in the company's plans or external environment.
- Communicating clearly and using business language instead of ICT or technical terms.
- Ensuring knowledge transfer throughout the intervention and effective handover of the project results.

EXAMPLE:

- Due to a past fire at its premises, **Surfoteka** had limited capacity to engage in the digitalisation project. In response, the hub provided tailored support, where the company's involvement was minimal during the initial stages of the implementation.

3D SMEs faced barriers to collaborating with the wider ecosystem

In an internal experience exchange session, hubs highlighted several barriers SMEs face when collaborating with the wider ecosystem. These included limited technical expertise, the capacity to take risks and launch pilots, and financial and human resource constraints. For the use of BIM in the construction sector, the overall digitalisation level of the industry also presented an obstacle. Despite this, most pilot companies successfully collaborated with third parties, including industry clusters, other companies in the sector or value chain and external consultants.

EXAMPLES:

- Matro Gépgyártó Kft.** collaborated with its machinery providers as well as exchanged experiences with other companies as part of the National Entrepreneur Mentoring Program.
- 50 Acres of Work & Joy** now takes part in high-level conferences, workshops and new projects to advocate for digital technologies.
- Unifardas** has collaborated with an external consultant to define its digitalisation strategy. The company is also part of the Portuguese textile cluster.
- The **UNITH2B's** intervention is aimed at improving remote collaboration and is highly impacted by how widely other construction companies use BIM.



1 Planning



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4 Capacity building



5 Management



Horizontal takeaways: capacity building (1/2)

4A External partners helped to overcome skills and capacity challenges

All of the studied companies sought external expertise in some form to support their digitalisation pilots. All pilots were supported by the DIHs involved in the study. Companies also engaged service providers and machinery manufacturers (in the case of Matro Gépgyártó Kft.). Most companies stated that they would not have been able to implement the chosen interventions without external support due to a lack of skills or capacity.

EXAMPLES:

- **Surfoteka** received support during the planning and implementation phases from the hub. The hub then helped to train staff on how to use the solution. Surfoteka also used pre-existing resources from service providers to develop their skills.
- **Matro Gépgyártó Kft.** stated that they could not have installed the terminals independently. They were able to implement the solution with the help of machinery manufacturers and an external service provider.
- **50 Acres of Work & Joy** received consultations from the service provider and the hub. According to the company, implementing the AgroSmart solution without this support would have been nearly impossible.

4B Companies used trainings, online resources, workshops and consultations to upskill staff

Companies involved in the study used several different methods for upskilling their staff and management, including formal trainings, workshops, consultations and online resources. Upskilling exercises served various purposes, including change management, equipping staff to use the systems and improving competencies related to managing the transformations.

EXAMPLES:

- **Surfoteka** used online resources from service providers and consultations from the hub to upskill. The company plans to reassess the need for additional training after implementation.
- **Matro Gépgyártó Kft.** stated that it had the necessary system integration experience before the intervention. Nevertheless, the company still provided its employees with a training on using the system.
- When **Unifardas** developed its 10-year digitalisation strategy, the company, together with an external consultant, organised a 30-hour digitalisation training for its employees.
- **50 Acres of Work & Joy** had access to various resources – manuals, papers and methodologies – as well as consultations and workshops. These helped the farm owner to develop the necessary skills and knowledge to use the AgroSmart system.

4C Navigating the range of existing tools and resources proved challenging for SMEs

The use of already existing external resources was not common in the five pilots. Only two of the five hubs highlighted using external sources to acquire the necessary knowledge to use the chosen solution. Participants of the internal experience exchange session and the [public workshop](#) agreed that navigating the wide range of available tools, guidelines and best practices can be challenging for SMEs, and that a common database of resources could be useful. Furthermore, while standardisation has advantages, several industry and business-specific aspects may require tailored resources. Here, hubs could also play an important role, helping businesses choose tools and frameworks that fit their needs.

EXAMPLES:

- **50 Acres of Work & Joy** used the help of the hub and relied on consultations with the service provider to fill in the existing knowledge gaps.
- **Surfoteka** had a blended approach to using external sources. It relied on the team members' knowledge and associates with relevant experience as well as tutorials from the service providers. Before purchasing additional training, the company wants to see how big the learning curve will be after the pilot launch.



1 Planning



2 Implementation



3 Collaboration



4 Capacity building



5 Management

Horizontal takeaways: capacity building (2/2)

4D Hybrid skills and transferability of information relevant for digitalisation projects were important

It is often unrealistic for SMEs to have dedicated staff responsible for digitalisation. In the pilots, digital interventions were mostly driven by the company owners or managers. As discussed in the [Best Practice Collection report](#), hybrid digital and business competencies are highly important for SMEs.

The pilot companies also highlighted the continuity risks associated with only having one person responsible for a digitalisation project. It is therefore important to ensure that the information and skills associated with a project can be transferred to someone else in case the initially responsible employee becomes unavailable.

EXAMPLES:

- **50 Acres of Work & Joy** highlighted that only one person in the company knows how to input data in the AgroSmart system, which presents a risk to long-term sustainability.
- The representative from **Unifardas** also emphasised that there is a risk that the responsibility over a digitalisation project would need to be reassigned if the original manager left the company.
- In the case of **UNITH2B**, having a person solely responsible for managing BIM was unrealistic. Instead, an architect currently acts as the BIM manager. The company may consider establishing a dedicated role for BIM in the future.



1 Planning



2 Implementation



3 Collaboration



4 Capacity building



5 Management



Horizontal takeaways: management (1/3)

5A In all pilots managers and owners had a central role in driving digitalisation efforts

In line with the findings of the [Best Practices Collection report](#), companies' owners and top management played an important role in driving digitalisation initiatives in all of the selected pilots. This was also re-emphasised in the internal experience exchange session and the [public workshop](#), where the participants noted that company management commitment is key in ensuring successful digitalisation.

EXAMPLES:

- In the case of **Matro Gépgyártó Kft.**, both top and mid-management play an important role in promoting digitalisation in the company. The intervention was first suggested in a management meeting.
- At **UNITH2B**, the management team is leading the introduction of most digital initiatives in the company, including participation in the study. The management was actively involved in all of the sessions provided by the hub as part of the pilot.
- The digital transformation leader at **Unifardas** is supported and empowered by the company's top management.
- Surfoteka** and **50 Acres of Work & Joy** are both small companies, where the digitalisation pilot was managed by the owners and supported by a hub.

5B External factors influenced the digital interventions

During the study, companies and hubs mentioned several external factors that either influenced the pilots or could influence other digitalisation initiatives in the future. These included the effects of the COVID-19 pandemic, inflation and the broader digitalisation level of the industry, as well as *force majeure* events, such as the fire at Surfoteka's premises. Furthermore, several companies noted that changes in their industries (e.g. the trend towards personalisation in the textile industry) were driving companies towards digitalising.

EXAMPLES:

- Before the intervention, **Surfoteka** experienced a fire in its premises, which damaged one of its servers and caused the company to experience capacity and financial constraints.
- Unifardas** started developing its digital solutions during the COVID-19 crisis. The company notes that some future digital interventions could be postponed due to the effects of high inflation, such as high production costs and lowered demand.
- The **UNITH2B** pilot highlighted that the use of BIM is highly impacted by the overall digitalisation level of the construction sector in Romania. As a collaboration tool, BIM requires other construction teams to be able to use the technology.

5C Effective change management was crucial for securing employee buy-in

All five companies noted the importance of managing expectations and attitudes. In most pilots, employees showed some initial reluctance or scepticism towards the intervention. In response, managers took proactive steps to inform them of the upcoming changes, which played an important role in securing buy-in and overcoming risk aversion. It was also important to keep employees involved and updated throughout the pilots. The companies generally perceived openness to employees' suggestions and opinions as a ground rule. Unifardas, Matro Gépgyártó Kft. and UNITH2B benefited from engaging employees in brainstorming and selecting the right solution. Other examples of change management methods included trainings, regular progress meetings, informal discussions and the possibility of reporting problems when using the solution.

EXAMPLES:

- Employees of **Matro Gépgyártó Kft.** started to see the benefit of data collection terminals when processes became much more transparent, giving them an opportunity for self-checking.
- Unifardas** motivated its employees by showing how the digital pilot helped eliminate tedious tasks and focus on value-adding ones. Managers also regularly communicated the risks of falling behind digital innovations in the industry to the employees.



1 Planning



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4 Capacity building



5 Management



Horizontal takeaways: management (2/3)

5D Project management skills and culture were important for ensuring positive outcomes

During the pilots, some companies noted that they conducted project management through informal discussions, while others set up more structured mechanisms. According to the conclusions from the internal experience exchange session, during digital interventions companies and hubs often do not sufficiently focus on building project management capabilities. Helping companies develop their project management skills and culture is a key way hubs can help improve the outcomes of digitalisation projects. Furthermore, the session also highlighted the need to analyse any identified risks or failures to determine their root causes and extract valuable lessons learned.

EXAMPLES:

According to a representative of **Matro Géppgyártó Kft.**, the company held weekly status meetings during implementation where the owner/CEO was informed about the progress. Moreover, monthly reviews were conducted by the DIH.

UNITH2B has an iterative approach to improving its BIM working templates. The management collects a long list of improvement suggestions from the team and periodically discusses the templates in meetings. As a result, the agreed-upon changes are made. Employees were also encouraged to share suggestions for the pilot itself.

5E Risk management and KPI monitoring were challenging for some companies

According to panelists in the [public workshop](#), smaller companies tend to be risk averse due to limited capacity to take on several digitalisation projects. Therefore, managing risks is especially important. The pilots showed that larger and more digitally mature companies were more familiar with KPI definition and risk management processes. The smaller and less digitally mature participants were less used to the monitoring mechanisms implemented as part of this study. However, most companies noted that these exercises were useful in the context of the pilots. According to the experience exchange session, this is where hubs can play an important role by helping SMEs define relevant metrics and identify key risks.

EXAMPLES:

Surfoteka noted that, prior to the digitalisation pilot, it usually considered only internal risks. Understanding how its competitors use digital technologies was an eye-opening experience for the company. It resulted in management deciding to pursue digitalisation despite initial reluctance.

UNITH2B defines KPIs and performs risk assessments when implementing new solutions. However, it also noted that KPI definition was challenging due to the difficulty of defining measurable improvements.

5F Ensuring long-term sustainability was key to unlocking digitalisation benefits

Both companies and hubs stressed that sustainability is essential for reaping the full benefits of digital interventions.

Some of the hubs noted that it is not enough for service providers or hubs themselves to install the software – new habits should be formed within the companies for an intervention to be sustainable. In the case of agrifood, the farmer will need to constantly upload and refresh data into the system. The service provider plans to support the farmer until the end of the planting season, by which the farmer will be able to fully grasp all aspects of the system. Another important element of sustainability is the understanding of long-term needs. When working with companies, hubs are encouraged to consider companies' needs in the long run, not just in terms of a single digital intervention.

EXAMPLES:

To ensure the continued use of the AgroSmart system at **50 Acres of Work & Joy**, the service provider and the hub will provide continuous support to the company until November 2023 (one year in total).

Surfoteka will continue receiving support and training from the hub during the sale season. This will ensure that the company has tested and is familiar with all the software features.



1 Planning



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5 Management



Horizontal takeaways: management (3/3)

5G Digital initiatives were associated with positive spillovers and digitalisation momentum

At the end of the digitalisation pilots, most companies revealed that they are motivated to pursue further digitalisation opportunities.

In the more digitally-mature companies like UNITH2B and Unifardas, the pilot was part of a broader digitalisation effort and was seen as a 'small part of the puzzle' in the broader journey toward digital transformation.

By contrast, less digitally mature companies, like Surfoteka and 50 Acres of Work & Joy, were inspired by the pilot itself to pursue further digitalisation opportunities. Close collaboration with the hubs allowed those companies to better understand how digital technologies can help to transform their business.

EXAMPLES:

According to a representative of **Matro Gépgyártó Kft.**, the company is planning to extend automated data collection to additional production devices and is considering expanding the application of IoT technology in the future.

The owner of **50 Acres of Work & Joy** has become a strong advocate of digitalisation. Thanks to the pilot, they have signed up for another programme run by the AgriFood Lithuania hub and have participated in one conference talking about their experience with digitalisation.



1 Planning



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4. Annex



4.1 Annex 1: Methodology

Pilot timeline

The pilots were implemented between September 2022 and March 2023, with digital interventions kick-starting in November 2022. The key milestones of this phase are presented below.

	09/22	10/22	11/22	12/22	01/23	02/23	03/23	04/23
Company selection*	Preliminary selection shared with the Commission	Pilots in agrifood, automotive, textile and retail selected	Construction open call	Construction open call; pilot selected				
Intervention design and inception		Data collection template approved by the Commission	Data collection	Inception results shared with the Commission				
Interim results					Data collection	Data collection; interim report shared with the Commission		
Finalisation and reporting							Data collection	Validation workshops; final report shared with the Commission

*In four industries (retail, automotive, agrifood, textile), the companies were selected by DIHs and presented to the European Commission in a meeting on 28 September 2022. In the construction industry, the selection process was organised through an open call procedure that concluded in December 2022 (see Annex 2).

Summary of data collection by phase

Several data collection mechanisms were implemented during the piloting phase. These included collecting initial descriptions of the foreseen interventions, the DMA, a data collection in a template filled by the hubs, interviews, and workshops.

Phase	Digital intervention description	EDIH DMA	Data collection template			Interviews	Workshops*
			Rationale and company characteristics	Planning, KPIs and risks	Lessons learned		
Company selection	✓						
Intervention design and inception		✓	✓	✓	✓		
Interim results				✓	✓	✓	
Finalisation and reporting		✓		✓	✓	✓	✓

* Two workshops: one internal experience sharing session with hubs and one public to disseminate and validate pilot results.



Company selection

The selected candidates for pilots in each country-industry pairing are the result of a two-month selection process. The five participating companies were selected based on the following criteria:

Relevance of the selected companies

- The company selection began at the onset of Task 2 of the study, which aimed to identify digitalisation problems faced by companies operating in each of the five industries.
- The selected companies exhibited one or more problems identified as characteristic of the industry they represent.

Relevance of chosen interventions

- The digital interventions proposed for each pilot capture the needs of the companies operating in each of the five industries.
- The proposed pilots are especially pertinent for less digitally mature and smaller players in the industry.

Company availability to participate

- The selection of pilot candidates was determined by their availability and willingness to implement a digital intervention for the purposes of the study.



Intervention design

Following company selection, the pilot design and plans were defined, considering the needs and capabilities of the selected companies and the project timeline. The pilot design consisted of four elements:



Intervention plan

Key actions and milestones



Hub & PPMI support

Types of support and touchpoints



Objectives

Company expectations and KPIs



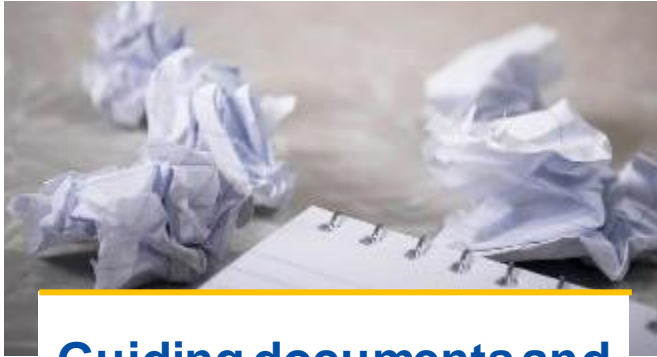
Timeline

Deadlines for key actions and deliverables



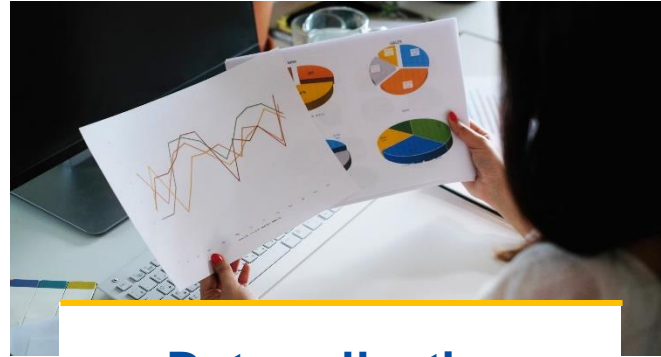
Inception

During the inception phase, the study team prepared several guiding documents for the hubs and companies, collected information on the pilots, and prepared an inception results summary.



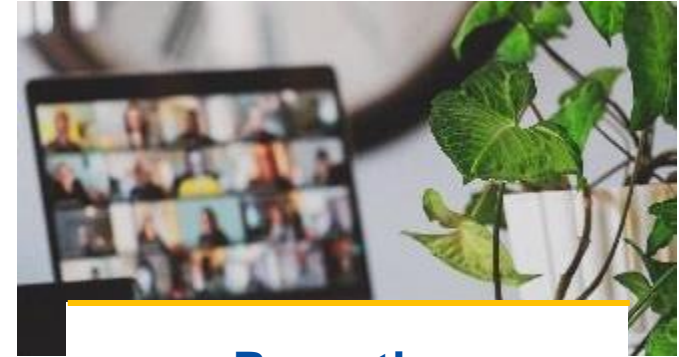
Guiding documents and templates

- Summary of key information on pilot implementation
- Data collection template (Annex 5)
- DMA questionnaire*
- Interview questionnaire (Annex 4)



Data collection

- Inception DMA
- Company characteristics and intervention rationale
- Planning, KPIs and risks
- Lessons learned



Reporting

- Inception results summary (company dashboards)
- Presentation to the Commission on 14 December 2022

* The EDIH DMA questionnaire was used. The DMA online tool was not launched when the pilot phase began, so the DMA questionnaire was prepared in an Excel format. Note that the DMA scores are company-level and not intervention specific, which means that they may capture improvements in company digital maturity overall during the observation period, not just improvements that can be attributed to the pilots. Companies may have implemented other initiatives in parallel that could have resulted in improved digital maturity scores.



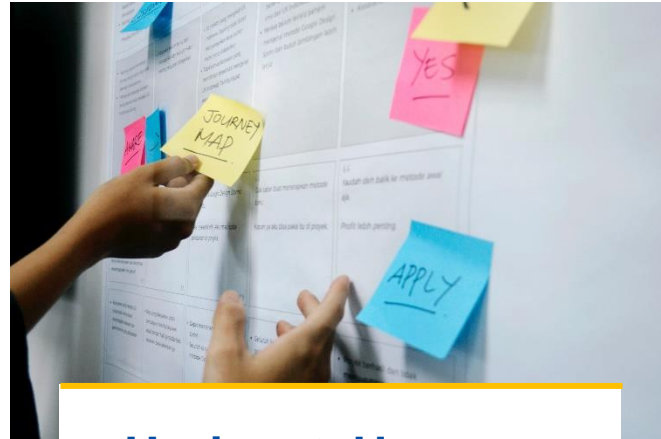
Interim results

During the interim phase, the study team collected data on digital intervention status and lessons learned. The lessons learned were synthesised in 15 horizontal takeaways and an Interim Experiments report was prepared and presented to the Commission.



Data collection

- Planning, KPIs and risks
- Lessons learned
- Company interviews



Horizontal lessons learned

- Development of a lessons-learned database
- Synthesis of collected lessons-learned into 15 horizontal takeaways



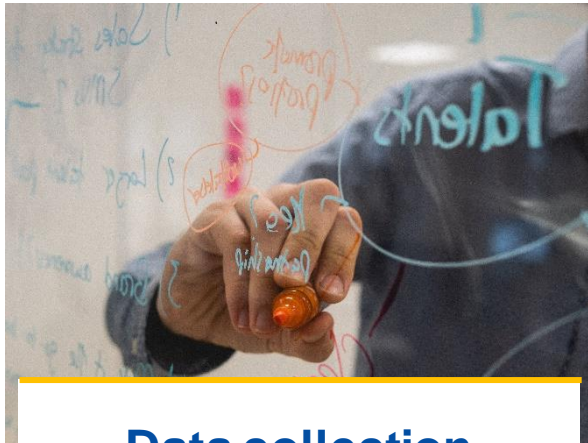
Reporting

- Interim report (company dashboards and horizontal lessons learned)
- Presentation to the Commission on 27 February 2023 (2nd interim meeting)



Intervention finalisation (1/4)

During the finalisation phase, the study team collected data on digital intervention results and lessons learned. The lessons learned were synthesised in 27 horizontal takeaways. Two workshops were organised to validate the findings: an internal experience sharing session with the hubs and a public workshop to disseminate and validate findings. The results of the piloting phase are summarised in this report.



Data collection

- Final DMA
- Realised milestones, KPIs and risks
- Quantitative and qualitative results
- Lessons learned
- Company interviews



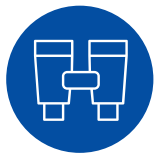
Lessons learned and results

- Comparison of results to the initial plan
- Synthesis of collected lessons learned into horizontal takeaways



Workshops

- Internal experience sharing session with the hubs to validate lessons learned on 11 April 2023 (see the agenda in Annex 6)
- Public workshop to disseminate and validate case study findings on 26 April 2023. See page [70](#) and [71](#) for more information.



Intervention finalisation (2/4)

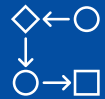
The bottom-up approach for **collecting lessons learned** and **developing horizontal takeaways** from the case studies consisted of three main steps. The study team used several information sources to compile horizontal takeaways, including data collection templates, interviews and workshops.



Step 1

Collecting lessons learned

Throughout the pilot phase, a long-list of more than a 100 lessons learned was compiled in a database from various sources. The source, pilot phase and industry were recorded for each identified lesson learned. At this stage, the recorded lessons learned were not synthesised yet.



Step 2

Classification of lessons learned

Each lesson learned was assigned its target group (companies by industry; hubs or policy makers), relevant best practice principles (as described in the [Best Practice Collection report](#)) and relevant DX process.



Step 3

Development of horizontal takeaways

The lessons-learned were then classified and synthesised into horizontal takeaways using a bottom-up approach.

The relationship between the identified DX processes and the macro ICT processes described in the [European e-Competence framework](#) (e-CF) are included in Annex 3.

Information sources

- The DMA
- Data collection template (see Annex 5)
- Company interviews (see Annex 4)
- Informal discussions and e-mail exchanges
- Internal experience exchange session with the hubs (see Annex 6)
- Workshop 'Unlocking the business potential of digitalisation: lessons from five industrial SMEs' (public)

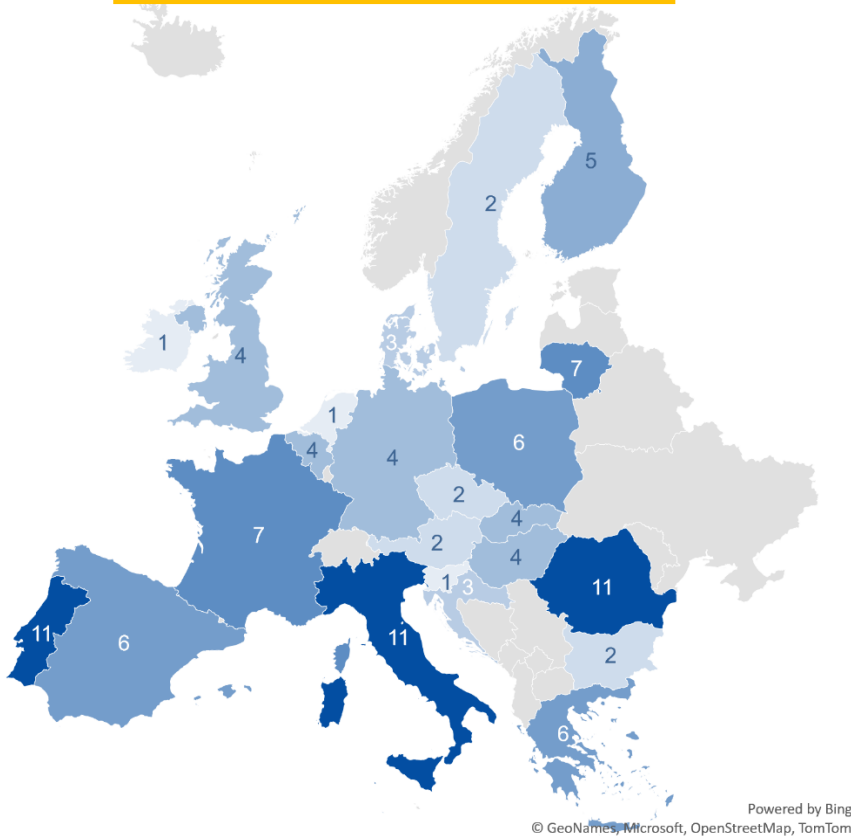




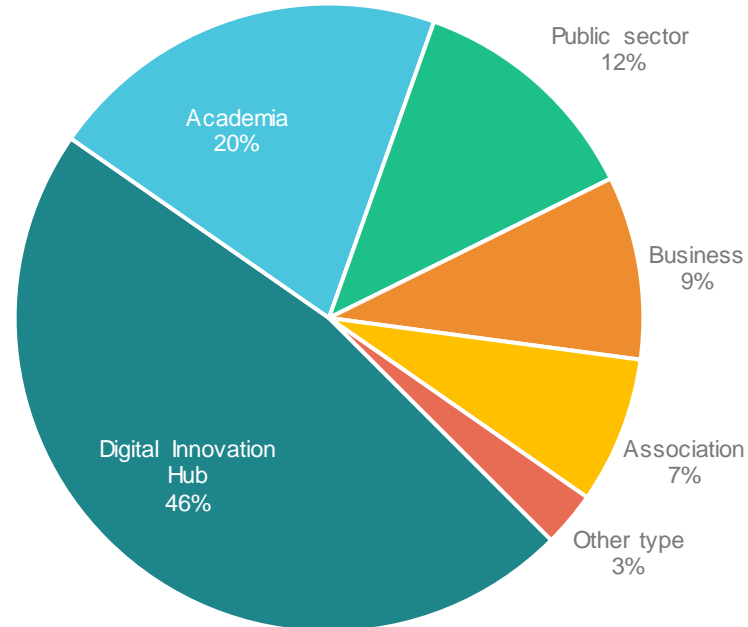
Intervention finalisation (3/4)

After preparing the draft Digitalisation pilots report, the study team held a workshop ‘Unlocking the business potential of digitalisation: lessons from five industrial SMEs’ to disseminate and validate its findings. This workshop was attended by 108 participants from 23 countries. See the next page for a summary of the main takeaways based on participant inputs. The workshop recording, presentations and detailed takeaways are available on the [PPMI website](#).

Participants by country



Participants by type



Agenda

9:30 - 9:40	Welcome & scene setting
9:40 - 10:00	Presentation of five digitalisation experiments
10:00 - 10:30	Hub and SME collaboration: recipe for successful digitalisation
10:30 - 11:15	Interactive session: Share your experiences: overcoming digitalisation barriers
11:15 - 11:30	Break
11:30 - 11:50	SME digitalisation: from theory to practice: main outcomes and lessons learned from the five pilots
11:50 - 12:25	Panel discussion: SME digitalisation journeys
12:25 - 12:30	Closing remarks and next steps

N=107; event organisers excluded. One participant indicated their country of origin as 'N/A'.

N=108; event organisers excluded.



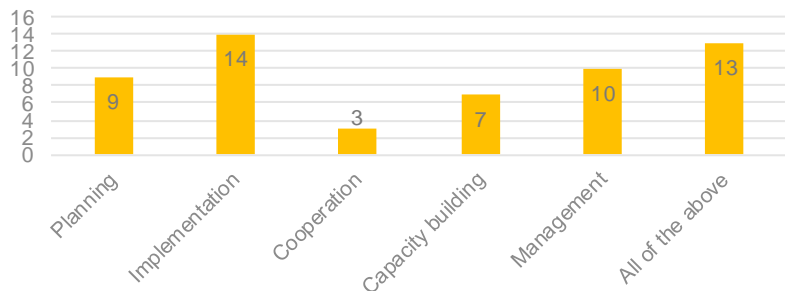


Intervention finalisation (4/4)

The workshop 'Unlocking the business potential of digitalisation: lessons from five industrial SMEs' consisted of several presentations, an interactive session and a panel discussion. A summary of key takeaways from the interactive session and the panel are presented below. The workshop recording, presentations and detailed takeaways are available on the [PPMI website](#).

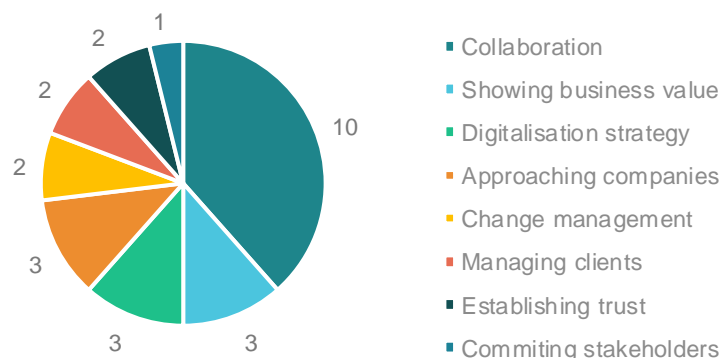
Answers to poll questions*

Participants' responses to 'Which of these digital transformation processes is the most challenging?'



Source: compiled by the research team. N = 41

Participants' responses to 'Based on today's workshop, what will you do differently or keep in mind?'



Source: compiled by the research team. N = 26

Common themes from the interactive session**

Participants identified several ways in which hubs can support SMEs with digitalisation:

- Facilitating communication:** hubs can help SMEs identify relevant technology providers, mediate communication between parties and help companies avoid vendor lock-in situations.
- Sharing best practices:** knowledge-sharing between hubs and companies is vital in showcasing the benefits of digitalisation and (E)DIH services to SMEs. By sharing both good and bad practices, businesses can learn from one another's experiences.
- Providing value-adding services:** companies want services that fit their specific business needs. By demonstrating how digital technologies can address these needs and bottlenecks, hubs can provide more value-added services to SMEs.
- Collaborating within the (E)DIH network:** hubs can take advantage of the broader (E)DIH network to improve their services. Local hubs can act as one-stop shops for SMEs, connecting them to a network of hubs locally and internationally.

Main themes from the panel discussion

- Reaching out to SMEs:** to successfully reach out to SMEs, hubs can collaborate with the wider ecosystem, including associations, and show companies good practice examples of how digitalisation can bring benefits to their business.
- Building trust:** the panellists highlighted a need to build trust between hubs and companies through consistency, competence and communication.
- Tailoring (E)DIH services:** because SMEs are very heterogenous, hubs may need to tailor their approach to different companies. This can potentially be done through clustering companies based on their needs and digital maturity.
- Ensuring sustainability:** panellists emphasised that, in an ideal scenario, successful collaboration between a hub and a company would result in a long-term partnership. In such a case, the hub can cooperate with an SME throughout different stages of its digitalisation journey. Furthermore, constant progress monitoring and change management are core pillars for ensuring that digitalisation momentum is harnessed.





Reporting of results

Findings from the pilots serve as inputs for three main deliverables – this report, the Experiments’ workshop and the Digitalisation toolbox.

D10 Final Experiments report

Describes the methodology, results by digitalisation pilot and horizontal findings.



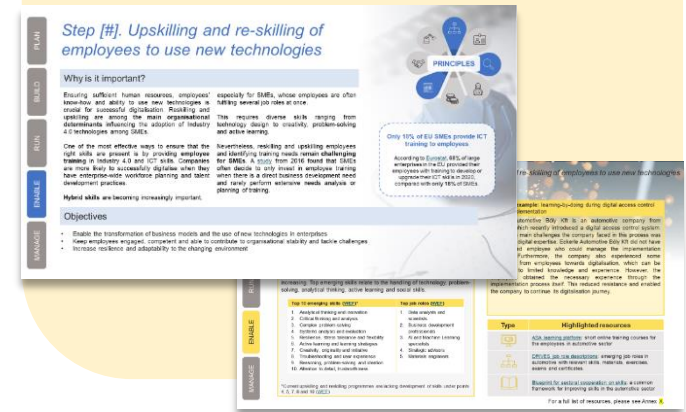
Experiments’ workshop and workshop report

The workshop is aimed at validating and disseminating findings. The report summarises the key takeaways of the workshop.



Digitalisation toolbox

Will contain practical advice on industry digitalisation, with a focus on the five industries included in the study.



A white ceramic mug filled with dark coffee sits on a white surface. To its left is a spiral-bound notebook with a black wire binding. A white pencil lies on the surface in the lower-left corner. The background is a plain, light-colored wall.

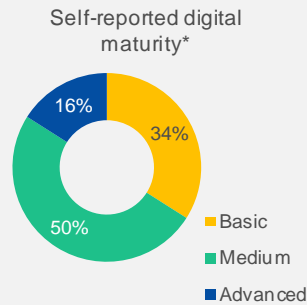
4.2 Annex 2: Construction open call summary

Open call overview



Applicant profile

Country: Romania
Industry: construction
of applications: 14
Size: micro and small enterprises
Area of operations: architectural sub-sector
BIM licence: 57%



Open call process

- A company selection questionnaire was developed
- The call was launched in October and received 14 applications
- 3 companies selected + 1 back-up option



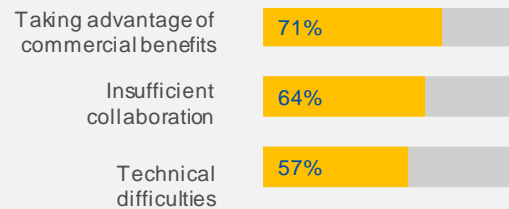
Company selection criteria

- Company size
- The complexity of challenges and types of problems faced
- Required services and their match with the pilot support team, potential impact
- Companies with a BIM license were selected to ensure the most added-value from the pilot could be achieved within 6 months



Main challenges

Main challenges, % of all applicants



Companies without a BIM licence:

- Not taking sufficient advantage of the commercial benefits of the technologies
- Technical difficulties in executing certain operations

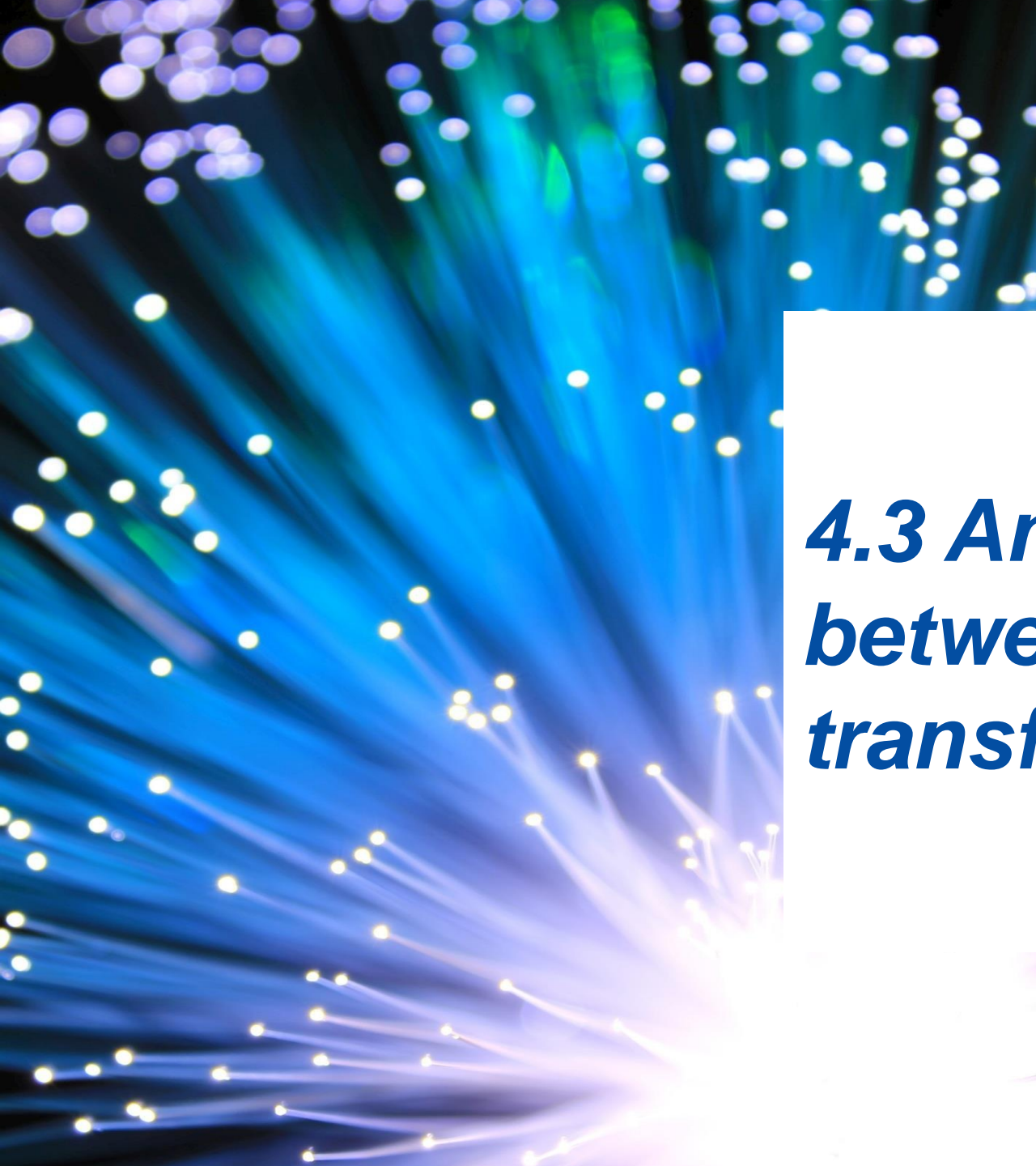
Companies with a BIM licence:

- Not taking sufficient advantage of the commercial benefits of the technologies
- Inefficient internal and external collaboration



Open call timeline

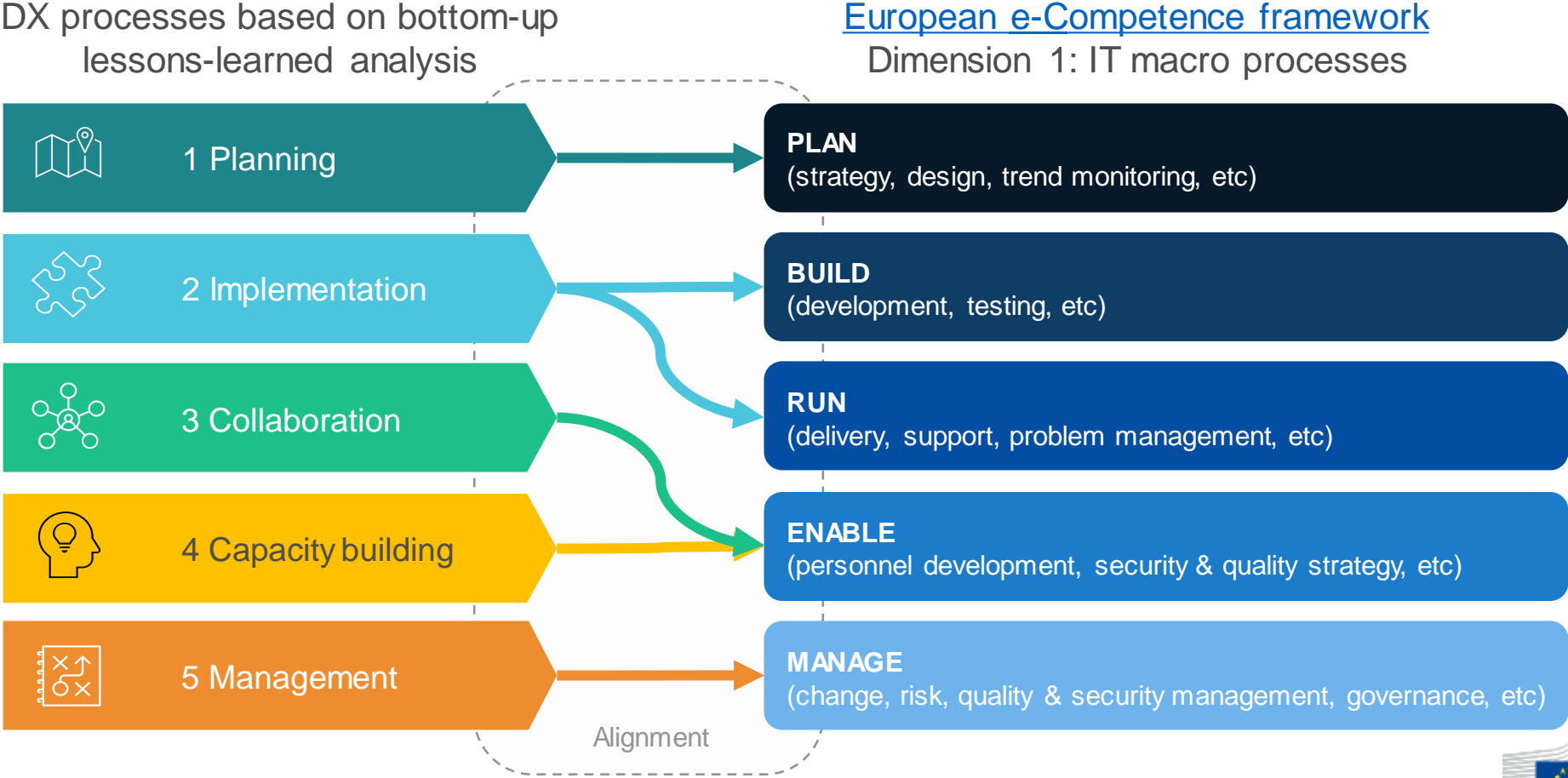
	SEP'22	OCT'22	NOV'22
Development and deployment of company selection questionnaire	█	█	
Selection process			█
Pilot programme development			█
Announcement of selection results and pilot design			█

A background image showing a dense network of fiber optic cables. The cables are illuminated from the bottom, creating a bright white and yellow glow that transitions into blue and purple light rays as they extend upwards. The overall effect is a sense of dynamic energy and digital connectivity.

4.3 Annex 3: Relationship between e-CF & digital transformation processes

The relationship between e-CF & DX processes

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. Given that this study aims to provide recommendations on collaboration between hubs and companies, we expand the e-CF 'ENABLE' process into two separate DX processes – cooperation and capacity building. Meanwhile, the e-CF process 'RUN' could not be explored in depth during the 6 month timeline of the pilots and has been combined with 'BUILD' under the DX process 'Implementation'.





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