

## D.1.3.1 Technology Maturity Level (TML) index

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# 1 Overview of TML framework methodology

## 1.1 TML framework design

As a first step, an in-depth study of the current literature and various digital and technological assessment tools and in particular the EDIH DMA was carried out ([DMA Tool | European Digital Innovation Hubs Network \(europa.eu\)](#)). This analysis paved the way for the design and development of a new technological and innovation maturity assessment framework able to capture the technological and digital maturity of companies of the Blue economy sectors of the Italy-Croatia areas.

During the project meeting held in Ferrara on 22/05/2024, a comparison was done between different partners' experiences and territorial needs agreeing on the format and criteria to be used for the TML framework design.

The TML tools were selected based on a series of criteria including:

- The partners' prior knowledge of digital maturity tools.
- The experiences gained in the assessment of the [IP4FVG project](#) (based on that of the Polytechnic of Milan), sustainability assessment tools developed by the partners of [Enterprise Europe Network](#) and approved by the European Commission, assessment of the Newtopia project - sustainability and digitalization laboratory for artisan businesses of the DIH of the CNA with the scientific partnership of Re:lab, laboratory of the high technology network of Emilia Romagna
- Internet search based on publicly available information, considering the maturity of the tools, the country of reference, the digital maturity of the companies.

After this initial mapping and evaluation phase, the following tools were selected:

- IMP3ROVE Digital Innovation Quotient (DIQ) (Germany)
- DREAMY 4.0 by Politecnico di Milano (Italy)
- DMA by EDIHs
- Assesment sulle tecnologie CNA HUB 4.0

Thanks to the collaboration between Area Science Park and CNA Ferrara, a comprehensive questionnaire was prepared consisting of a set of questions within different modules:

Module 1: Customer data

Module 2: Innovation and Technology/Digital maturity

Module 3: Sustainability.

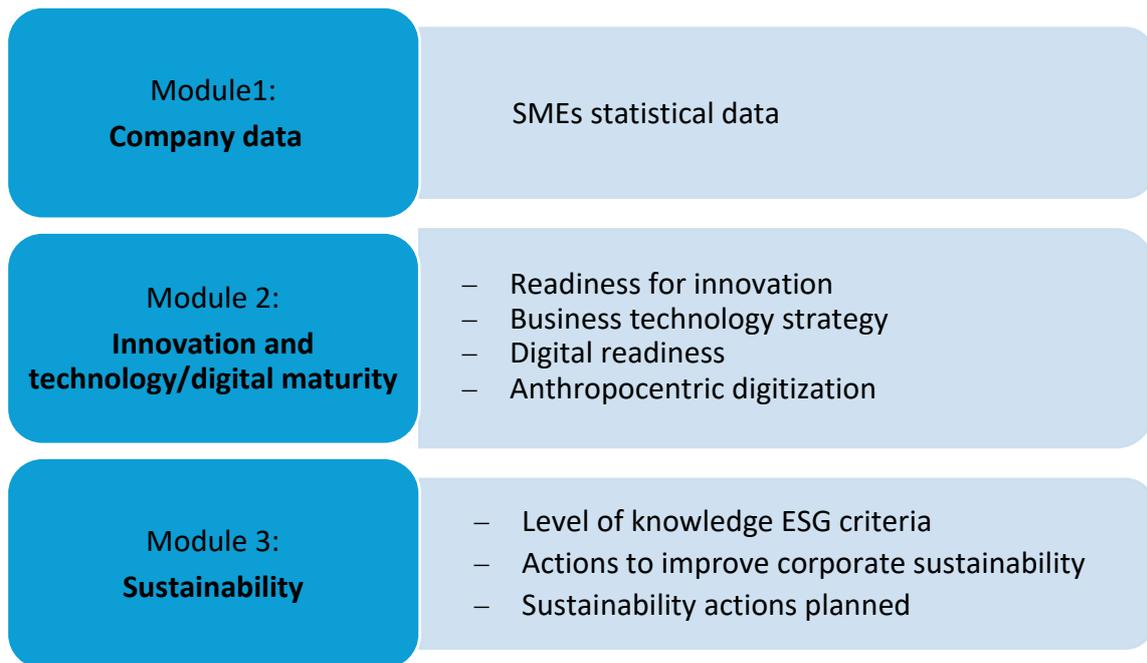
The analysis and evaluation of the proposal provided the following key findings and recommendations:

- There is no specific tool that meets the TML monitoring and evaluation requirements for Blue Economy companies and it is necessary to develop a purpose-built framework/tool inspired by existing ones.
- This tool should be linked mainly to Interreg Italy-Croatia territories, but also fit into the technological and digital policies of European Programs.
- The TML evaluation questionnaire should cover the main areas where potential impacts are expected.
- The framework and questionnaire should not be strictly related to Industry 4.0 criteria but be broader to cover most market sectors, including services.



The TML evaluation will be carried out by means of in-person interviews based on an online questionnaire ready to be used by companies assisted by an expert appointed by the partners' technical teams who will ensure better interpretation of the questions to get more accurate feedback and results.

At the end of this process, a scheme of the new TML framework was released as presented in the figure below:



*Overall structure of the proposed TML framework for SMEs*

*Source: Author's own elaboration*

## 1.2 TML framework modules for SMEs

### MODULE 1: Company data

This first module collects general data about the SME such as contact details, address, type and size of organization, sector of activity and more that will serve for statistical analysis. This information will also serve to analyze the company's level of technology and digital maturity compared to that of others in the same sector, size or category (from micro to large), region and/or country. This will be possible only when a substantial number of questionnaire data will be filled into the database.

### MODULE 2: Innovation and technology/digital maturity

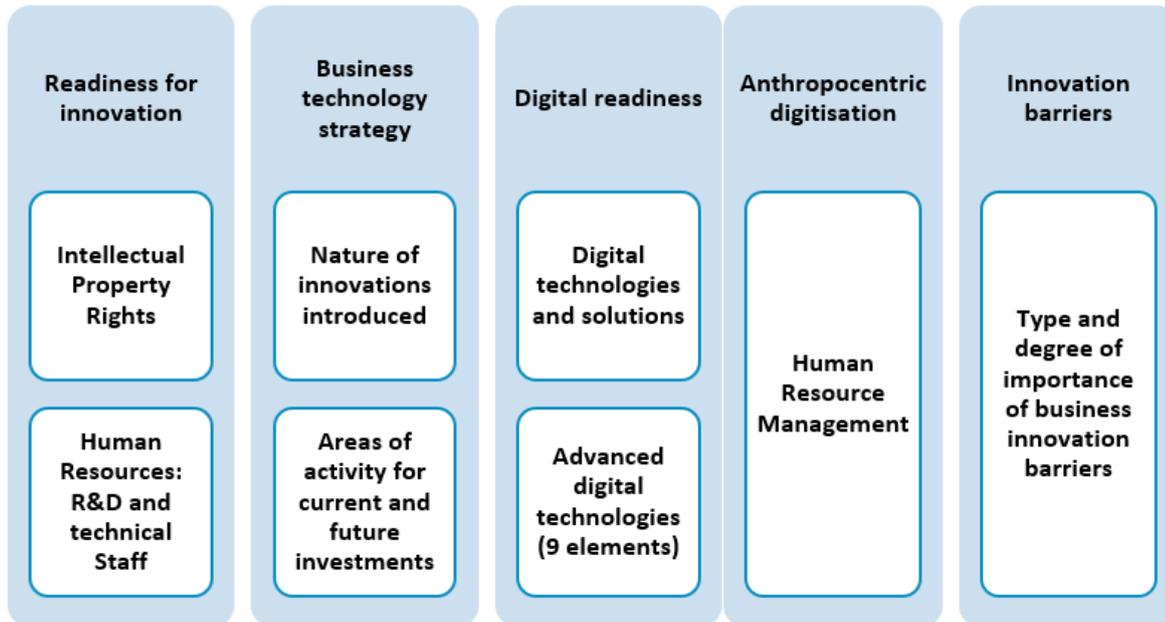
The second module is the core part of the questionnaire and is aimed to assess the different aspects of technological and digital maturity within an organization, grouped under the following five company dimensions:

1. Readiness for innovation
2. Business technology strategy
3. Digital readiness



- 4. Anthropocentric digitization
- 5. Innovation barriers

These 5 main dimensions contain 8 sub-dimensions (questions) and several options (items) that all together aim to capture in a holistic, but not exhaustive, way the digital maturity within a business entity today. This information will provide a picture of the starting point of the company’s journey via digitalization and will help identify potential areas for improvement defined under WP3.



*The 5 dimensions and 8 sub-dimensions of the Technology Maturity module for SMEs  
Source: Author’s own elaboration*

Within these dimensions there are some questions that do not directly contribute to the quantitative TML evaluation but are very useful to get a qualitative insight of the company necessary for a more complete and correct classification.

1 Readiness for innovation

This dimension seeks to determine the company's propensity for technological innovation and digitalization.

2 Business technology strategy

The questions of this dimension intend to capture from a business perspective the overall status of an enterprise’s digitalization strategy. These questions investigate the enterprise’s investments in digitalization per business areas (either executed or planned) as well as the company’s readiness to embark in a digital journey that might require organizational and economic efforts not yet foreseen.

3 Digital readiness

The digital readiness dimension provides an assessment of the current uptake of digital technologies (both mainstream and more advanced technologies) that is valid for both manufacturing and service companies.

4 Anthropocentric digitization



This dimension looks at how employees are trained, engaged and empowered with and through digital technologies, and how their working conditions are improved to increase their productivity and well-being.

#### 5 Innovation barriers

This dimension measures the enterprises' difficulty in adopting an innovative approach to technologies and digitalization often caused by obstacles external to the company. Its evaluation will be reversed because it is a negative value.

### MODULE 3: Sustainability

The third module has been inserted in the assessment to:

- Raise awareness to the SMEs about ESG criteria
- Analyze the level of sustainability of the SMEs by ESG criteria
- Understand the potential of innovative strategies (including sustainability aspects) of the company
- Give a more complete action plan to the company

The third module is composed of 3 qualitative questions that investigate how much the company knows about ESG, which types of actions (27) have already been done to be more sustainable and which actions (3 macro-areas) they are planning to do in the next 3 years.

This module will not contribute to the definition of the TML index.

## 2 TML testing and validation

The TML assessment tool was presented and validated by the partners during the project meeting held in Ferrara on 22 May 2024.

Afterwards, the questionnaire tool was tested by experienced auditors working for CNA Ferrara in order to evaluate its structure, modules and wording and to identify any issues to be improved according to the organizations' background and personal experiences and observations in the field. The revised version of the questionnaire was again shared with all the partners in June 2024 and some additional integrations and suggestions for improvement were included in the final version. The questionnaire was also tested in the online Microsoft Form version by entering more than 10 simulated cases into the online form and testing the correctness of the output and the effective use of the dataset.

Thanks to the collaboration between the team partners (CNA Ferrara and Area Science Park), after several rounds of refinement and simplification, the TML framework, guidelines and questionnaire for SMEs were finalized.

### 2.1. How to carry out an audit of a company

BEST 4.0 project partners should use the TML questionnaire to evaluate the initial level of technological maturity of SMEs in their area before recommending any service for improvement. Each partner should interview at least 20 enterprises in their territory.

The assessment will be conducted by partners' most experienced auditors that will first map, select and then involve local company.



The BEST 4.0 auditor will interview the company, possibly in the presence of 3 company members with different profiles such as: 1 managing director, 1 chief technician and 1 IT manager (even if external to the company).

The questionnaire is based on company knowledge and future plans at the time of the interview. Questions may contain technical terms or unfamiliar aspects: to facilitate filling out the questionnaire, auditors will guide the interview through the modules and questions and provide clarifications whenever necessary.

### 3 Digital Maturity evaluation criteria – Scoring rules

Microsoft Form will be used to fill-in the on-line questionnaire and the results in percentages will be calculated using a separate calculation sheet implemented specifically for this project (xls file) XL. As a final result we will have a radar graph composed with the five dimensions described in detail in the previous paragraphs.

#### Definitions

*Dimension:* is the term used to describe the 5 main categories of the TML framework. Each dimension is scored on a 0-100 scale (with higher scores indicating higher maturity).

*Question:* is the term used to describe the eight sub-dimensions of the TML framework. The other questions contained in the questionnaire will contribute to have a qualitative and not quantitative positioning, therefore they are excluded from the sub-dimensions.

*Item:* is the term used to describe each of the several options within each question of the questionnaire. The actual number of options in each question varies.

Each Item contributes equally to a question score and each question contributes equally to Dimension score. Considering that the answers will have the same weight, it was decided to assign a unique score to the items as shown below:

- Item grading types:
  - No/Yes (No = 0, Yes = 1);
  - No/Planned /Done (No=0, Planned=1, Done=2)
  - 0-5 scale

The score for **Dimension 1** (readiness for innovation) has been calculated as follows:

Dimension 1	Readiness for innovation	
<b>Questions</b>	<b>Q7</b> -Intellectual Property Rights (patents, copyright, industrial design rights, trademarks)	<b>Q8</b> -Human Resources: R&D and technical Staff
<b>Number of Items for each question</b>	6	6
<b>Scoring for Items</b>	A=0; B=1; C=2; D=3; E=4; F=5	A=0; B=1; C=2; D=3; E=4; F=5
<b>Estimation of the Dimension (100/100)</b>	$D_1 = mean(\overline{Q7}, \overline{Q8}) * 100 \text{ where } \overline{Q_i} = \frac{\overline{Q_i}}{\max(Q_i)}$ Note : $D_1$ is normalized between 0% and 100%	



The score for **Dimension 2** (business technology strategy) has been calculated as follows:

Dimension 2	Business technology strategy			
<b>Questions</b>	<b>Q10</b> - Areas of investment in the last 3 years and/or in which you plan to invest in the future	<b>Q11</b> - Nature of innovations introduced in the last 3 years	<b>Q12</b> - Activity areas in which the company has invested in digitization (in the last 3 years) and/or in which it plans to invest in the future	<b>Q13</b> - Nature of innovations introduced in the last 3 years
<b>Number of Items for each question</b>	8	8	13	13
<b>Scoring for Items</b>	0=No; 1=Planned; 2=Done	0= Any; 1= random incremental inn.; 2=semi-structured incremental inn.; 3=regular /planned incremental inn.; 4=incremental or disruptive inn. not using specific tools; 5=incremental and disruptive balanced innovation using specific tools	0=No; 1=Planned; 2=Done	0= Any; 1= random incremental inn.; 2=semi-structured incremental inn.; 3= regular /planned incremental inn.; 4=incremental or disruptive inn. not using specific tools; 5=incremental and disruptive balanced innovation using specific tools
<b>Estimation of the Dimension (100/100)</b>	$D_2 = mean(\overline{Q10}, \overline{Q11}, \overline{Q12}, \overline{Q13}) * 100$ <p>where the score of each question is the mean of all corresponding items, normalized between 0 and 1 <math>\overline{Q_k} = \frac{mean(Q_{k,items})}{max(Q_{k,items})}</math></p> <p>Note: <math>D_2</math> is normalized between 0% and 100%</p>			



The score for **Dimension 3** (digital readiness) has been calculated as follows:

Dimension 3	Digital readiness	
Questions	<b>Q14</b> - Which of the following digital solutions are already used by the company?	<b>Q15</b> - Which of the following advanced digital technologies are already being used by your company?
Number of Items for each question	6	18
Scoring for Items	0= Not used; 1=Use under evaluation; 2= in prototyping phase; 3=Undergoing testing; 4=under implementation; 5= operational	0= Not used; 1=Use under evaluation; 2= in prototyping phase; 3=Undergoing testing; 4=under implementation; 5= operational
Estimation of the Dimension (100/100)	$D_3 = mean(\overline{Q14}, \overline{Q15}) * 100$ where the score of each question is normalized between 0 and 1 $\overline{Q}_i = \frac{Q_i}{\max(Q_i)}$ Note: $D_2$ is normalized between 0% and 100%	

The score for **Dimension 4** (anthropocentric digitalization) has been calculated as follows:

Dimension 4	Anthropocentric digitalization
Questions	<b>Q16</b> - Human Resource Management: Business investments in HR
Number of Items for each question	8
Scoring for Items	0 = poor; 5 = a lot
Estimation of the Dimension (100/100)	$D_4 = \frac{mean(Q_{16,items})}{\max(Q_{16,items})}$ Note: $D_4$ is normalized between 0% and 100%

The score for **Dimension 5** (innovation barriers) has been calculated as follows:

Dimension 5	Innovation barriers
Questions	<b>Q17</b> - Innovation barriers. Type and degree of importance of business innovation barriers
Number of Items for each question	9
Scoring for Items	From 0 to 5 (0 = strong barrier to innovation - 5 = no barrier to innovation):
Estimation of the Dimension (100/100)	$D_5 = \frac{mean(Q_{17,items})}{\max(Q_{17,items})}$ Note: $D_5$ is normalized between 0% and 100%



Finally, the TML score will be calculated as the average percentage of the scores of the dimensions.

For each dimension analyzed, 5 categories were classified, representing different score ranges that indicate distinct levels of awareness and proactivity in the company's approach to digital and technological innovation.

The levels, are: initial; basic; average; moderately advanced; advanced and they recur in the overall TML score and in every dimension but the one related to sustainability,

Below is a brief overview of the main characteristics of each category. For a detailed description, please refer to Annex 1.

LEVEL	%	
INITIAL	0 -5	The average score shows that the organization has not yet considered a true digital transformation process and could certainly benefit significantly even from limited investments in digital technologies and skills to improve operations and products.
BASIC	6 -25	The average score shows that the organization is at the beginning of the digital transformation process and could certainly benefit significantly even from limited investments in digital technologies and skills to improve operations and products. Investments in digital technologies are still limited and mainly cover administrative activities.
AVERAGE	26 -50	The average score shows that the organization has already reached a medium level of digital maturity, but there is still room for improvement. It could benefit significantly from further investment in digital technologies and skills to improve operations and products. Current investments in digital technologies cover a number of core business operations, while the level of readiness (in terms of plans and resources) could be increased to accommodate more advanced solutions.
MODERATELY ADVANCED	51- 75	The organization is already at a moderately advanced stage of the digital transformation process. This means that business benefits are already being reaped from the use of both traditional and advanced digital technologies. Competitiveness, resilience and sustainability could be further improved through more targeted investments in digital technologies and skills; there is still a lot of untapped potential thanks to the adoption of more advanced, even more disruptive technologies.
ADVANCED	76 -100	The average score shows that the organization is in an almost optimal phase of the digital transformation process. This means that the company is a pioneer of digitalization and has been reaping the benefits of using digital technologies for a long time. New, more targeted investments in advanced digitalization technologies could help the company achieve digital maturity such as to increase global competitiveness in its market of interest.



## ANNEX 1

# TML Reporting Guidelines



The indications described below should be seen as examples on which to build your own targeted assessment based on the interview conducted in the company.

## DIMENSION 1 - READINESS FOR INNOVATION

From/ to	Level	
0 -5	INITIAL	The company has not yet developed the idea of developing its products or services with the support of research. It is at a stage where it lives on a consolidated product/service and is not in a position to support the costs of a research department. It is beginning to explore the possibility of collaborating with external bodies to participate in funded projects.
6 -25	BASIC	At this level the company began to evaluate the idea of participating in funding calls for the design and creation of products and services through various types of research and development. Collaborations with research centers are gradually being created. The company research structure is present but not yet structured as a separate department. In some cases, patenting steps have also been taken for their products.
26 -50	AVERAGE	The company at this level has staff dedicated to research and development, to the creation of new services and products, often with a dedicated department; some collaborations have been established at project level with research organizations and structures. The structuring of an IT department also begins. The company is aware of the value of IPR and demonstrates this through various activities, including participation in specific tenders. Specific training is provided, even if not on a regular basis.
51- 75	MODERATELY ADVANCED	The company's staff dedicated to the research and development of new services and products has an organized and structured department; cooperation at project level with local research bodies and structures is now being consolidated. The IT department is structured with dedicated staff. Specific planned training is carried out. The company is aware of the value of IPR and demonstrates this through various activities, including participation in specific tenders. Part of the company's budget is dedicated to these activities.
76 -100	ADVANCED	The company has an internal research and development department, which is useful for the creation of new services and products; collaboration at project level with local research bodies and structures is consolidated and part of the budget is allocated to ensure continuity. The research and development staff has an organized department. The IT department is structured with dedicated staff. Specific training is carried out, programmed and differentiated by professional figure. The company is aware of the value of intellectual property and it is now an



		activity that is part of the company's strategy, which also includes the purchase of third party patents in order to increase the company's competitiveness. Part of the company's budget is dedicated to these activities.
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## DIMENSION 2 - BUSINESS TECHNOLOGY STRATEGY

From/ to	Level	
0 -5	INITIAL	The company has not yet thought about a real digital strategy, the implementations are fragmented, stimulated by emergencies or by available funding. The random nature of the implementations does not allow us to appreciate their real usefulness and to understand the development possibilities with the planned and planned introduction of digitalization in the company.
6 -25	BASIC	Companies at this level of maturity tend to be at a very early stage in terms of business strategy and digital investment. This means that there is a significant opportunity for improvement. To improve the level of digitalization, you could start by defining a clear plan and identifying the financial means to support it. You could start by automating key parts of your operations (e.g. production, customer service) or applying more advanced digital technologies in areas such as logistics, marketing... A budget should be allocated for continuous improvement of the IT infrastructure, to ensure management commitment and to get the most out of it. Organizational and process changes are needed to digitize the business and may require the recruitment of more skilled IT staff.
26 -50	AVERAGE	At this level of maturity, the company has already understood the importance of technological and digital updating, but still has a lot of potential for improvement. After the initial investments in the main areas of the company, it is necessary to extend automation, also taking into account the widespread connectivity of all areas of the company. The roles associated with the development and management of digital transformation are clear, with dedicated people probably already in place or some specific functions outsourced. The organizational and process changes needed to digitize the business may also require the recruitment of more IT profiles and digital specialists. The commitment of the management must be aimed at increasing the strategic importance of digitalization in order to achieve a more positive impact on internal/external processes or costs, and to obtain maximum cooperation from employees.
51- 75	MODERATELY ADVANCED	The company at this level of maturity tends to be moderately advanced in terms of business strategy and investment in digitalization. Some benefits from previous investments are already visible, but there is still untapped



		<p>potential. There is still room for further improvement in the quality of products or services through digitization, even if they have actual digital characteristics. Current and planned investments in digitization have been made to optimize internal processes/operations and reduce costs. There is a plan for future investment.</p> <p>Senior managers are prepared or willing to lead the organizational and process changes needed to support business digitization. All employees in the organization are involved in the process in various capacities. IT staff play a role in digitalization, but could play a greater role in decision-making about business digitalization. There may be a need to recruit digital professionals to support a higher level of digitalization. They could consider adopting more digital and data-intensive business models.</p>
76 -100	ADVANCED	<p>The company at this maturity level is at an advanced stage in terms of business strategy and investment in digitalization. There is a clear digitalization plan with the necessary resources (people and budget) allocated to support it. Digitalization is already a priority for the company, but there is always room for organizational and business improvement. Significant investments have been made in digital technologies and ongoing updates in technology and training can be planned.</p> <p>Senior leaders are committed to driving the organizational and process changes needed to support the digitalization of the business, and employees have sufficient digital skills.</p> <p>We are in the presence of a fully connected enterprise, where very specialized technologies such as artificial intelligence, advanced data analytics, ...</p>

### DIMENSION 3 - DIGITAL READINESS

From/ to	Level	
0 -5	INITIAL	<p>The company at this level of maturity can be considered not digitalized as all the processes are probably still not very automated and with a massive use of paper, the digital systems used are mostly of the traditional type such as emails, XL sheets, etc. . . perhaps we are also in the absence of an updated website. Despite the presence of a real competitive disadvantage for the company, there is the possibility of starting from a complete planning of digital development.</p>
6 -25	BASIC	<p>The company at this level of maturity tends to be in a very early stage of digitalization. There is widespread use of traditional digital technologies but without coordination of their use within the company.</p> <p>The company has started to consider the implementation of a number of digital technologies that could increase internal productivity, sales (e.g. e-commerce, e-marketing, etc.), improve business efficiency (management</p>



		<p>systems information, ERP), improve customer satisfaction (CRM, platform-based information management systems).</p> <p>These future implementations will have to be done with planning and by breaking down any resistance from staff in various ways (involvement, specific awareness and training courses, and possible incentives for the most proactive figures).</p> <p>At this level, if it has not yet been thought about, a cyber security plan must be implemented in a structured manner.</p>
26 -50	AVERAGE	<p>The company already uses major digital technologies in its business. Digital solutions find application in numerous business sectors, especially in the administrative area and in the production department. At this level, optimized connectivity between the implemented systems is missing.</p> <p>The increase in connection between the implemented solutions (ERP, CRM, MES...) would give the possibility of better management of production data, optimization of times and reduction of costs.</p> <p>The staff training process and the encouragement of those with higher digital skills or with specific roles must be constantly updated.</p> <p>The cyber security plan is partially implemented.</p>
51- 75	MODERATELY ADVANCED	<p>The company at this level of maturity is already reaping the benefits of the digital technologies already implemented. You have a solid connectivity infrastructure and use technologies and applications in all areas of the business. Digital solutions are mainly used in internal operations such as administration and management, as well as in production.</p> <p>The potential of more specialized or advanced digital technologies that require greater effort to implement but could provide an additional competitive advantage has not yet been exploited. Digital transformation could be accelerated by experimenting and implementing more advanced technologies to close the gap with the most digitally advanced companies in their target market.</p> <p>The staff training process and its incentive is an established practice.</p> <p>The cyber security plan is completed.</p>
76 -100	ADVANCED	<p>At this level of maturity the company is at a very advanced stage in terms of digital readiness (adoption of digital technologies). It is benefiting from the use of virtually most of the major digital technologies available in your internal and external operations (e.g. customer and supplier platforms). Digital solutions in all business areas, (including administration and management, production, marketing, purchasing, logistics, customer service, etc.) and are connected to each other. Information management is integrated and there is good use of data derived also with the use of artificial intelligence. Where useful, we have started to experiment or implement more advanced digital technologies in specific business areas of the company to really understand how to derive greater benefits from them.</p>



		This would provide a unique competitive advantage in operations and bring us closer to industry leaders.
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#### DIMENSION 4 - ANTHROPOCENTRIC DIGITIZATION

From/ to	Level	
0 -5	INITIAL	Companies at this level of maturity have not yet understood the fact that digital development is closely connected with the development of internal skills and their involvement. Involve staff with awareness-raising courses to avoid any obstacle to a smooth and effective technological and digital implementation for the company. In this range there is enormous untapped potential to increase employee digital literacy even starting from limited investments.
6 -25	BASIC	Companies at this level of maturity tend to be at a very early stage when it comes to human-centric digitalization (skill development for digitalization). The potential of improving staff's digital skills should become clearer at a management and/or operational level. The company could start by carrying out an assessment of staff's digital skills, followed by a concrete training plan for reskilling or improving skills. You should consider providing more training or learning tools online as well.
26 -50	AVERAGE	<p>The management of companies with this level of maturity has understood the importance and potential of staff training in digital technologies, some steps have been taken in that direction.</p> <p>As a next step, a detailed training plan could be put in place to reskill or upskill staff; propose personalized courses based on specific needs and training requirements, thus starting to identify useful roles within the company for the digitalization process.</p> <p>You could combine training with opportunities for experimentation and autonomy to execute decisions or innovate. Offer professional development opportunities to employees with digital skills, contemporary redesigning workplaces for the digital age. Staff's digital skills should match those needed to modernize their job functions.</p> <p>The personal format would be more receptive to the introduction of new digital technologies and more conducive to changes. Increasing digital skills would provide the environment needed to hire advanced IT staff and offer them a career path.</p>
51- 75	MODERATELY ADVANCED	Companies at this maturity level believe that skills/improvements in digital technologies are a priority and that employees are provided with digital skills training. The company already has a training plan to reskill/upskill staff, but may include more advanced digital technologies to be implemented in the future.



		<p>Staff are skilled enough to do their jobs digitally, but it would be helpful to experiment with new tools to execute decisions or innovate. The staff is to some extent involved in the design and development of the digitalization of the product/service/process.</p> <p>Workplaces have been redesigned for the digital age, including innovative/digitally enhanced working environments and can be supported by a digital support service. The digital skills of the staff are particularly suited to the job functions and the roles are defined with the probable existence of an IT department.</p>
76 -100	ADVANCED	<p>Companies at this level of maturity tend to be at a very advanced stage when it comes to human-centric digitalization (skill development for digitalization). We are almost certainly in the presence of an IT department and all the staff have well-defined roles regarding the company's continuous digitalization process. There is a complete training plan for constant updating of staff skills. Training is often combined with opportunities for experimentation and autonomy to execute decisions or innovate. Staff are actively involved in the company's strategy. Workplaces have been redesigned for the digital age – including innovative/digitally enhanced working environments – supported by a digital support service. The digital skills of the staff are advanced.</p>

## DIMENSION 6 - INNOVATION BARRIERS

From/ to	Level	
0 -5	INITIAL	<p>The company's business is traditional-artisan, which often leads to the feeling of having many barriers to innovation because time and costs weigh heavily on company management. The culture of company management also plays a big role, often not predisposed to innovation but more focused on maintaining the status quo.</p>
6 -25	BASIC	<p>Management is more culturally inclined to turn externally to improve its problems of access to innovation while also trying to create a corporate culture in this sense to have the support of the staff. Redefining your business model is also useful.</p>
26 -50	AVERAGE	<p>At this level, the company already has clear objectives of the innovation process it wants to pursue and has begun defining the people responsible for each activity of this process.</p> <p>The relationship with the outside (training institutions, research centers...) begins to take shape.</p>



51-75	MODERATELY ADVANCED	The company is open to an ecosystem of external actors and partners - startups, research centers, lead customers, suppliers and even competitors - to share costs and risks and shorten time to market. It would be useful to strengthen the board with people who are representative of each company area, with the presence of top executives to more easily extend the decisions and activities to be introduced to all levels.
76-100	ADVANCED	At this level, the company perceives that it has overcome the barriers to innovation or in any case feels capable of overcoming them. It is perfectly integrated into the territory of your business. It is able to strategically leverage internal and external ideas and bring them to the market in the most appropriate way, reinterpret its business model and redesign the role of the internal research and development department. It is able to select and evaluate the technologies available on the market and integrate them within the corporate innovation process and business model.

### OVERALL RESULT

From/ to	Level	
0-5	INITIAL	The average score shows that the organization has not yet considered a true digital transformation process and could certainly benefit significantly even from limited investments in digital technologies and skills to improve operations and products. The company is using some traditional technologies for daily operations but is benefiting more from the opportunities offered by more functional technologies such as ERP management systems and I4.0 machinery. We could begin to analyze what the digital propensities and skills are within the organization and begin to define roles within the staff in predicting corporate digitalization. The involvement of all staff through specific awareness or training courses (based on the roles identified) is essential to avoid blockages in the implementation process. Planning is key in all aspects of digital strategy and must be targeted, based on the company's development needs. Cybersecurity activities must be considered at the same time.
6-25	BASIC	The average score shows that the organization is at the beginning of the digital transformation process and could certainly benefit significantly even from limited investments in digital technologies and skills to improve operations and products. Investments in digital technologies are still limited and mainly cover administrative activities, while the company could take steps (in terms of plans and resources) to accommodate more advanced solutions. It could benefit more from the opportunities offered by the latest Internet-based technologies (e.g. e-commerce, B2B, B2C etc.) and other



		<p>more advanced ones (e.g. artificial intelligence). You could also invest more in staff training, hiring specialized IT professionals, and actively engaging and preparing staff to adopt new digital solutions that could change the way business is currently done. Many benefits could be gained by adopting and implementing an integrated enterprise data strategy, including data security. This would provide greater data analysis capacity and support decision-making processes. At this time it would be crucial when adopting technologies to consider those that could help the organization become more sustainable in operations (decrease the environmental footprint) and to prioritize the selection of environmentally friendly digital products (IT equipment).</p> <p>The company has huge untapped potential, experimenting and adopting more digital technologies could give an immediate boost to the company's productivity and prospects.</p>
26 -50	AVERAGE	<p>The average score shows that the organization has already reached a medium level of digital maturity, but there is still room for improvement. It could benefit significantly from further investment in digital technologies and skills to improve operations and products. Current investments in digital technologies cover a number of core business operations, while the level of readiness (in terms of plans and resources) could be increased to accommodate more advanced solutions. Staff have an average level of digital skills, however, to advance in digital transformation, there will be a need for well-planned and constant staff training, carried out by specialized IT professionals, internal training by staff with more skills in digital digitalization. A lot of company information is already in digital format, but a comprehensive data strategy, including data security, would be useful and beneficial. This would provide greater data analysis capabilities and support high-level decision making. Technologies could also be adopted to help the organization become more sustainable in its operations (decrease environmental footprint) and prioritize the selection of environmentally friendly digital products.</p> <p>Improving the company's digital maturity could increase its competitiveness and bring it closer to more digitally mature competitors in its market of interest. It would also provide a competitive advantage over less digitally developed competitors.</p>
51- 75	MODERATELY ADVANCED	<p>The organization is already at a moderately advanced stage of the digital transformation process. This means that business benefits are already being reaped from the use of both traditional and advanced digital technologies. Competitiveness, resilience and sustainability could be further improved through more targeted investments in digital technologies and skills; there is still a lot of untapped potential thanks to the adoption of more advanced, even more disruptive technologies. Staff have a higher level of digital skills, however, to advance digital transformation, a well-planned and executed staff training program and possibly the introduction of specialist IT professionals is required. All levels of management and staff</p>



		<p>should be given the encouragement needed to fully engage and support the adoption of more advanced digital solutions without fear of the changes this would bring. Business management and data security capabilities are advanced, but you could further benefit from digital technologies that provide the business intelligence you need to outpace your competition. Technologies could also be adopted to help the organization become more sustainable in its operations (decrease environmental footprint) and prioritize the selection of environmentally friendly digital products.</p> <p>New investments in digitalization would bring the company's digital maturity to a more advanced level offering significant advantages compared to competitors in its reference market.</p>
76 -100	ADVANCED	<p>The average score shows that the organization is in an almost optimal phase of the digital transformation process. This means that the company is a pioneer of digitalization and has been reaping the benefits of using digital technologies for a long time. Traditional and more advanced technologies are used in the company for different aspects of operations. Further improvement can be had in areas such as competitiveness by experimenting with/implementing newer and more revolutionary digital technologies or by improving cybersecurity, an often overlooked but very important area for a technologically and digitally advanced company.</p> <p>New, more targeted investments in advanced digitalization technologies could help the company achieve digital maturity such as to increase global competitiveness in its market of interest.</p>

