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Soft, **Digital** and **Green Skills**
for **Smart Designers**:
Designers as Innovative TRIggers
for SMEs in the manufacturing sector

www.intride.eu

Needs' analysis related to Soft, Digital, Green sets of competences in the furniture – interiors sector

WP3 – state of the art analysis

Italy national report

Co-funded by the Erasmus+ Programme of the European Union

INTRIDE survey

QUESTIONNAIREs to

20 SMEs

Tuscan Interior sector

june/july 2020

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20 SMEs

3	14	3
MICRO	**SMALL**	**MEDIUM**
15%	70%	15%

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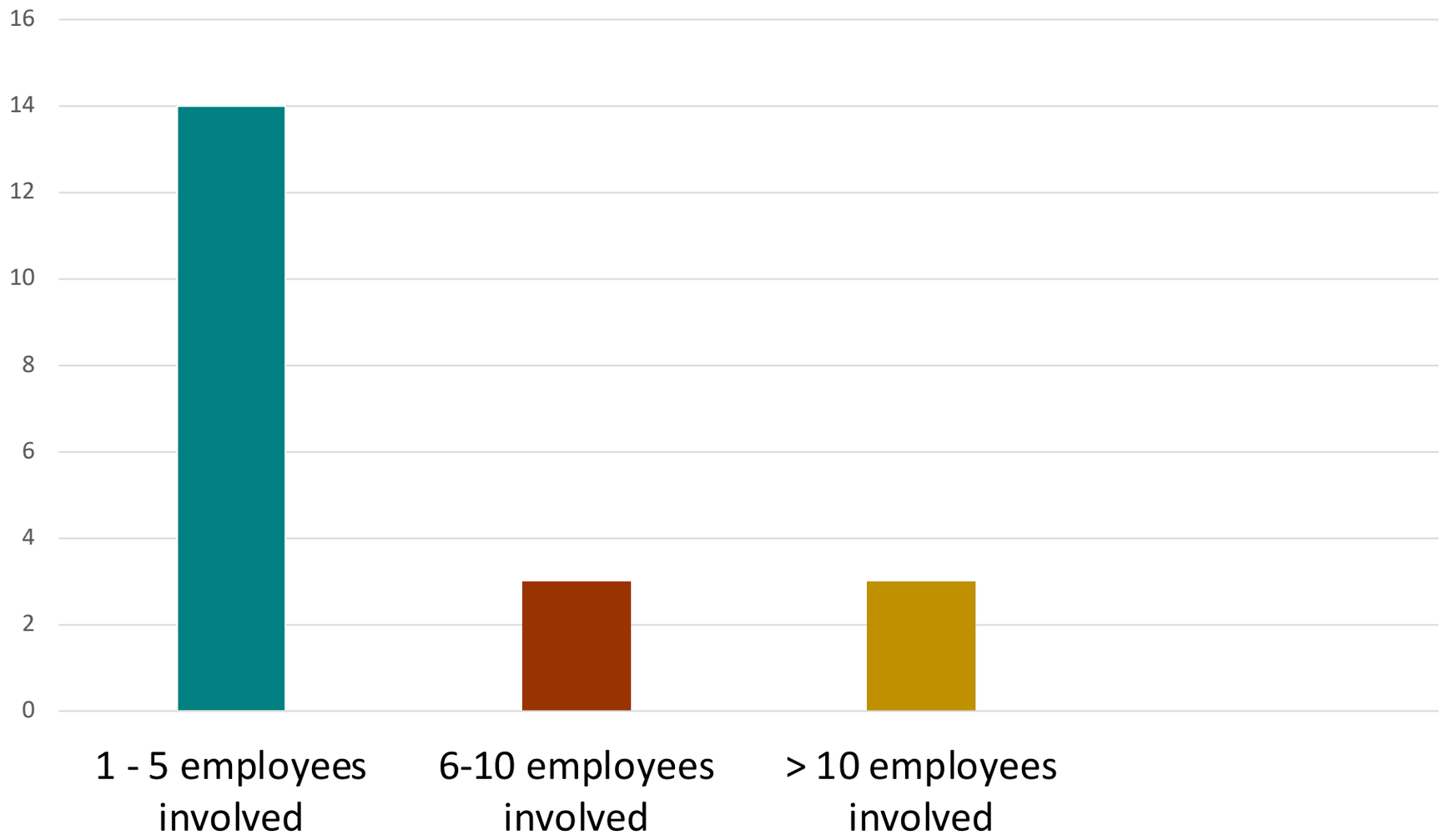
employees profile

Number of employees involved in product development processes



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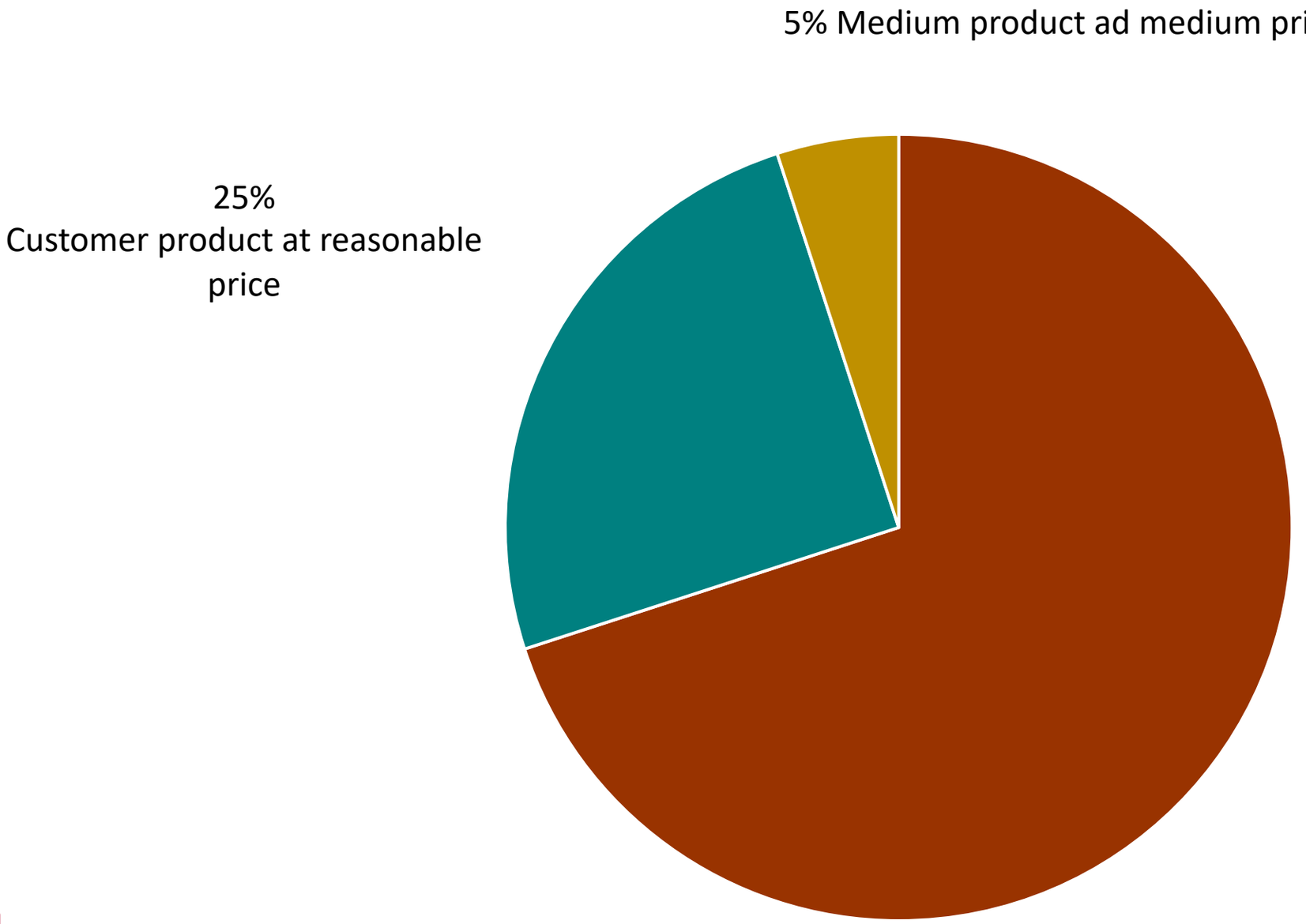
product type

Most of companies (70%) works on a turnkey projects' market (on demand products-living environments) or luxury / high end market



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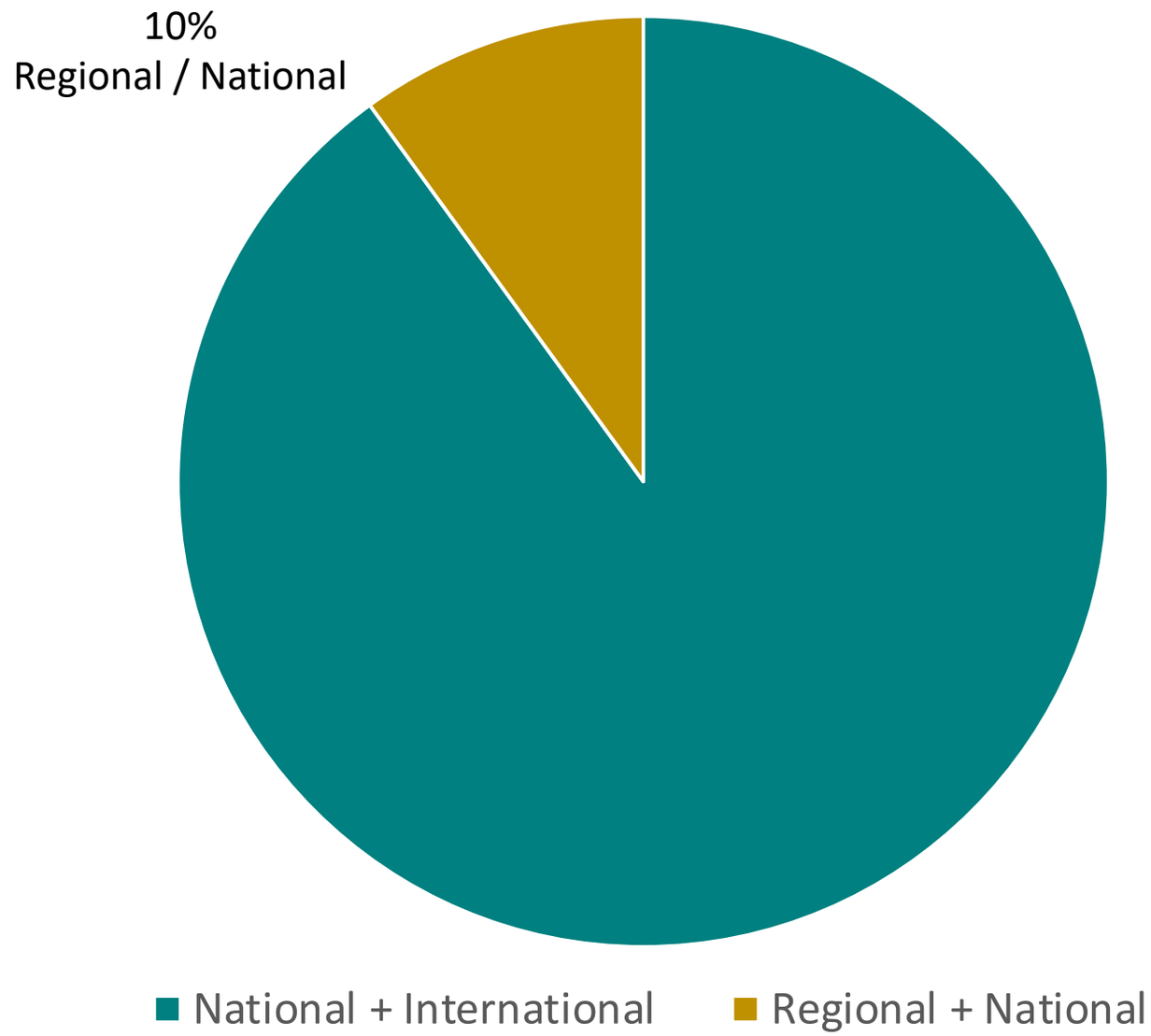
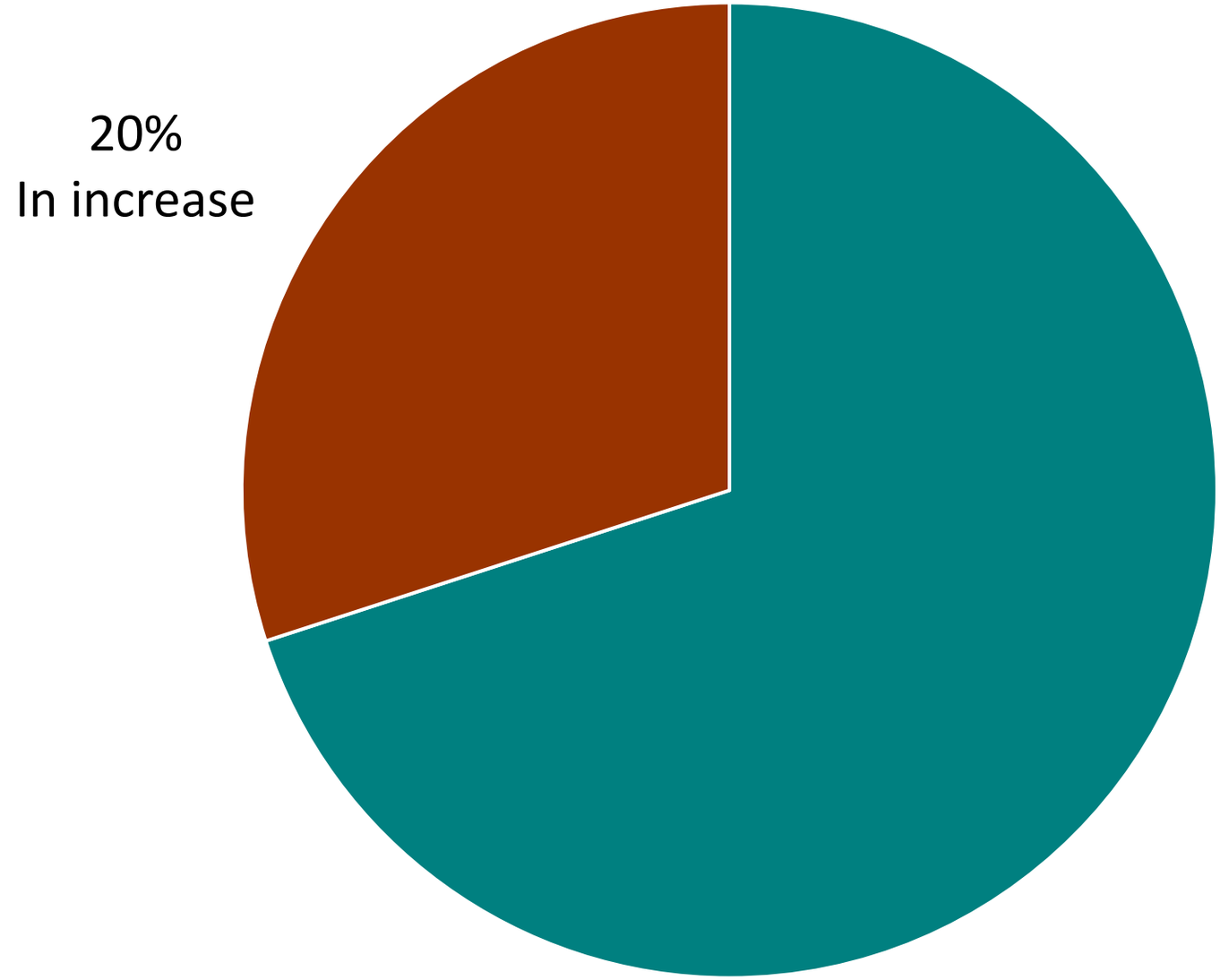
target markets

The 90% of companies operate in national and international markets (especially extra UE – Russia, UAE, USA, Asia). Only 10% operate at regional/national level



competitiveness

How do you consider your company's competitiveness?



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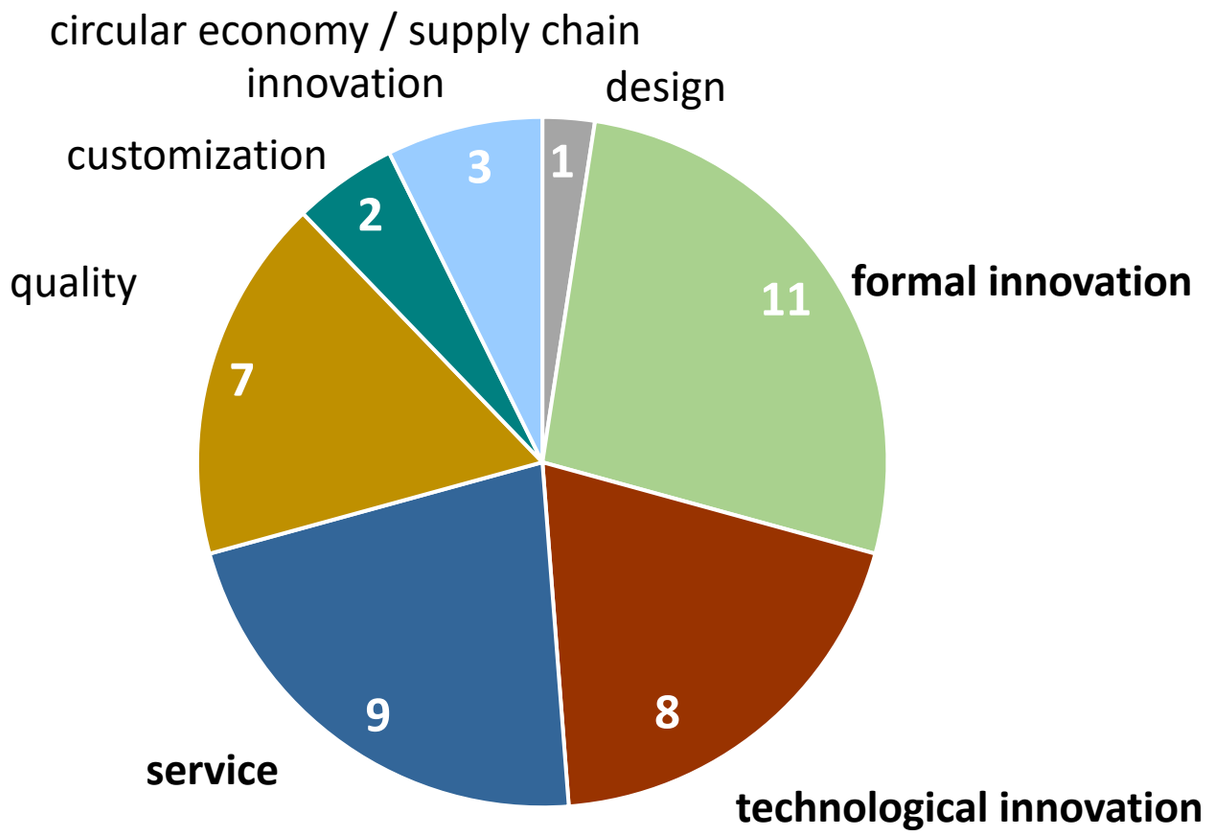
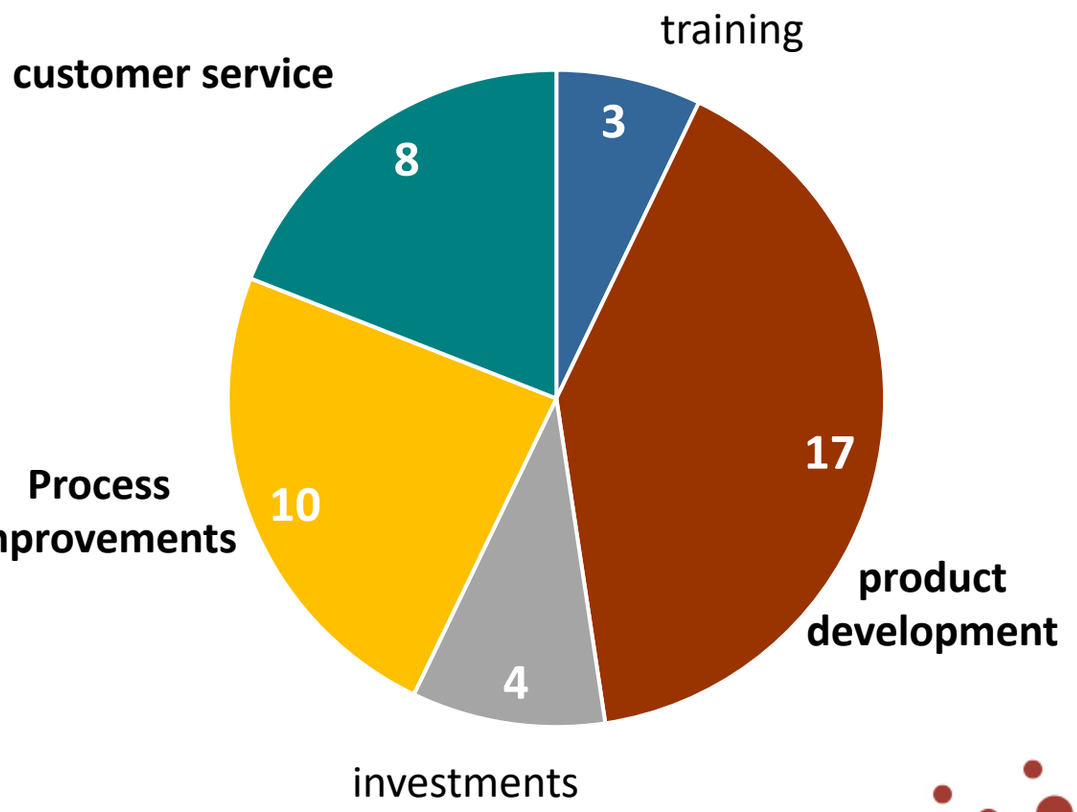
competitiveness

What is the most competitive element for your company?



How do you maintain your competitiveness?



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technological competences

IMPORTANCE	
Product management	**3,85**
Proiect management	**3,60**
Quality	**3,55**
Data visualisation	**3,35**
Process Engineering	**3,15**
Statistical analysis	2,95
Critical thinking	2,80
Rapid prototyping	2,40
Industry 4.0	2,35
Additive manufacturing/3D printir	1,90
Automation	1,85
Complex data analysis	1,75
Advanced logistics	1,70
Robotics/Smart hardwares	1,60
Machine learning/deep learning	1,45
Artificial Inteligence	1,35

WEAKNESS	
Artificial Inteligence	**1,20**
Additive manufacturing/3D printi	**1,20**
Machine learning/deep learning	**1,30**
Robotics/Smart hardwares	**1,35**
Automation	**1,50**
Complex data analysis	**1,55**
Advanced logistics	**1,55**
Industry 4.0	**1,70**
Rapid prototyping	**2,00**
Critical thinking	2,50
Data visualisation	2,56
Statistical analysis	2,60
Process Engineering	2,70
Quality	3,10
Proiect management	3,25
Product management	3,40

COMMITMENT TO IMPROVE	
Quality	**3,65**
Proiect management	**3,35**
Product management	**3,30**
Statistical analysis	**2,85**
Data visualisation	**2,80**
Process Engineering	**2,75**
Critical thinking	2,35
Rapid prototyping	2,35
Complex data analysis	2,25
Industry 4.0	2,05
Advanced logistics	1,70
Automation	1,65
Additive manufacturing/3D printing	1,60
Robotics/Smart hardwares	1,40
Machine learning/deep learning	1,30
Artificial Inteligence	1,25

The skills identified as **most important** are related to **product and process management**, **quality** and, in relation to digital marketing, probably the possibility of obtaining data in relation to the market from digital communication tools (sites, social networks, ...)

The world linked to **Industry 4.0 is perceived as moderately important,** mediating between enabling technologies that intervene on the process (automation, robotics, ..) not relevant for the SMEs of the traditional sectors and instead KETs applicable to the design, sales and after-sales services to support the customer constitute the technological skills most related to the upstream and downstream phases of the production process

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digital competences

IMPORTANCE	
Digital marketing	**3,75**
E-commerce and social media	**3,70**
Virtual reality/ Augmented reality	2,80
Mobile applications	2,55
Networking and IT systems	2,35
Cloud computing	2,15
Cybersecurity	2,10
Programming	1,90
Blockchain	1,75
Big data	1,70
Quantum computing	1,20

WEAKNESS	
Quantum computing	**1,15**
Big data	**1,20**
Mobile applications	**1,35**
Blockchain	**1,40**
Cloud computing	**1,50**
Programming	**1,65**
Virtual reality/ Augmented reality	**1,65**
Networking and IT systems	**2,05**
Cybersecurity	2,35
Digital marketing	3,15
E-commerce and social media	3,15

COMMITMENT TO IMPROVE	
E-commerce and social media	**3,75**
Digital marketing	**3,70**
Mobile applications	2,40
Networking and IT systems	2,25
Virtual reality/ Augmented reality	2,05
Blockchain	1,75
Cloud computing	1,70
Programming	1,70
Big data	1,70
Cybersecurity	1,50
Quantum computing	1,20

The Covid emergency brought out the need to **digitize corporate systems** and, consequently, the skills associated with it, both in terms of **process management and control**, both in terms of **sales and promotion channels**, and in relation **to the interaction with the market**.

In the foreground the skills (external but also internal) related to **digital marketing, the management of e-commerce sales channels and communication through social channels** that are considered extremely important and on which companies declare themselves interested in improving.
Technologies such as AR / VR are also perceived as important tools, especially as a function of customer relationships, but they are also weaknesses of the companies on which there would be interest in improving.

Although not recognized by all as a requirement, but certainly a weakness is the management of data and the IT system of companies which in fact forms the basis for any further digitization of activities

Design competences

IMPORTANCE	
Aesthetic sensitivity	**3,70**
Creative thinking	**3,60**
Display	**3,50**
Modeling	**3,35**
Industrial design	**3,30**
Drawing and layout	**3,25**
Design research	**3,10**
Ecological sensitivity	2,90
Operations analysis	2,85
Design methodologies	2,65
User-centered design	2,35
Simulation	2,30
DFMA	2,10
Programming	1,95

WEAKNESS	
Programming	**1,85**
DFMA	**1,85**
User-centered design	2,35
Industrial design	2,40
Simulation	2,50
Design research	2,50
Design methodologies	2,65
Operations analysis	2,65
Ecological sensitivity	2,95
Modeling	3,05
Drawing and layout	3,10
Display	3,25
Aesthetic sensitivity	3,55
Creative thinking	3,55

COMMITMENT TO IMPROVE	
Creative thinking	**3,70**
Aesthetic sensitivity	**3,65**
Display	**3,25**
Drawing and layout	**3,20**
Modeling	**3,05**
Ecological sensitivity	2,90
Design methodologies	2,75
Operations analysis	2,75
Simulation	2,45
Design research	2,40
User-centered design	2,35
Industrial design	2,30
DFMA	2,10
Programming	1,90

The majority of the companies interviewed, even if not of a contemporary product, note the **skills of design**, understood as linked to the world of design, **fundamental for their sector**.
Both the **set of technical skills** (modeling, drawing and layout, industrial design, ...) and the set of more **strategic and methodological skills** (creative thinking, design research, operations analysis, ...).

The companies show interest in improving the skills useful for rendering and communicating the product itself, both with a view to defining the project and in relation to the customer / market: display, drawing and layout, modeling.

Lack of skills and knowledge are highlighted in relation to more technical methodologies such as DFMA (Design for manufacturing and disassembling) or user-centered design which could lead to a more aware approach to consumer needs and sustainability issues.

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Green competences

IMPORTANCE	
Social responsability	**3,10**
Ethics / Fair trade	**3,10**
Sustainable product development	2,95
Life cycle analysis (LCA)	2,60
Clean technologies	2,60
Circular economy	2,50
Pollution control	2,50
Cradle to Cradle Approach	2,45
Waste management	2,45
Energy efficiency	2,45
Advanced / ecological materials	2,40
Renewable energy	2,15
Consumption reduction	2,15
Resource management	2,15
Carbon footprint / carbon sequestration	2,15

WEAKNESS	
Carbon footprint / carbon sequestration	**1,50**
Cradle to Cradle Approach	**1,60**
Life cycle analysis (LCA)	**1,85**
Renewable energy	**1,90**
Consumption reduction	2,25
Circular economy	2,25
Clean technologies	2,30
Energy efficiency	2,40
Social responsability	2,50
Pollution control	2,55
Waste management	2,65
Advanced / ecological materials	2,65
Ethics / Fair trade	2,65
Sustainable product development	2,70
Resource management	2,75

COMMITMENT TO IMPROVE	
Ethics / Fair trade	**3,10**
Pollution control	2,80
Energy efficiency	2,80
Resource management	2,75
Waste management	2,75
Advanced / ecological materials	2,70
Consumption reduction	2,65
Sustainable product development	2,65
Social responsability	2,65
Circular economy	2,60
Life cycle analysis (LCA)	2,60
Clean technologies	2,50
Cradle to Cradle Approach	2,40
Carbon footprint / carbon sequestration	2,05
Renewable energy	2,00

The average of the importance values assigned to the green competences reveals significantly lower than the digital, design and soft competences.

Even placing **social responsibility and ethics** in the first place of importance highlights a vision of sustainability linked to its production that does not perceive the environment as a potential for development. This is probably related to the fact that green products do not emerge as a pressing market demand.

Therefore, attention is paid more towards a **higher control of the process with a view to circular economy** with the aim, certainly more tangible, of cost savings and more optimized management of resources and waste.

The LCA tool is perceived as important for an assessment of impacts but also as a tool for communicating environmental value but companies admit the lack of skills on this issue.

Soft competences

IMPORTANCE	
Communication	**3,65**
Innovation	**3,65**
Creativity	**3,60**
Ethics	**3,50**
Adaptability, flexibility	**3,50**
Self-management	**3,50**
Solving complex problems	**3,30**
Time management	**3,30**
Strategic planning	**3,30**
Responsibility	**3,30**
Persuasion	**3,25**
Teamwork	**3,20**
Positive attitude	**3,20**
Crisis management	**3,20**
Emotional intelligence	**3,00**
Leadership	2,85
Good writing (reports, proposals, ...)	2,85
Empathy	2,60
Assertiveness	2,55

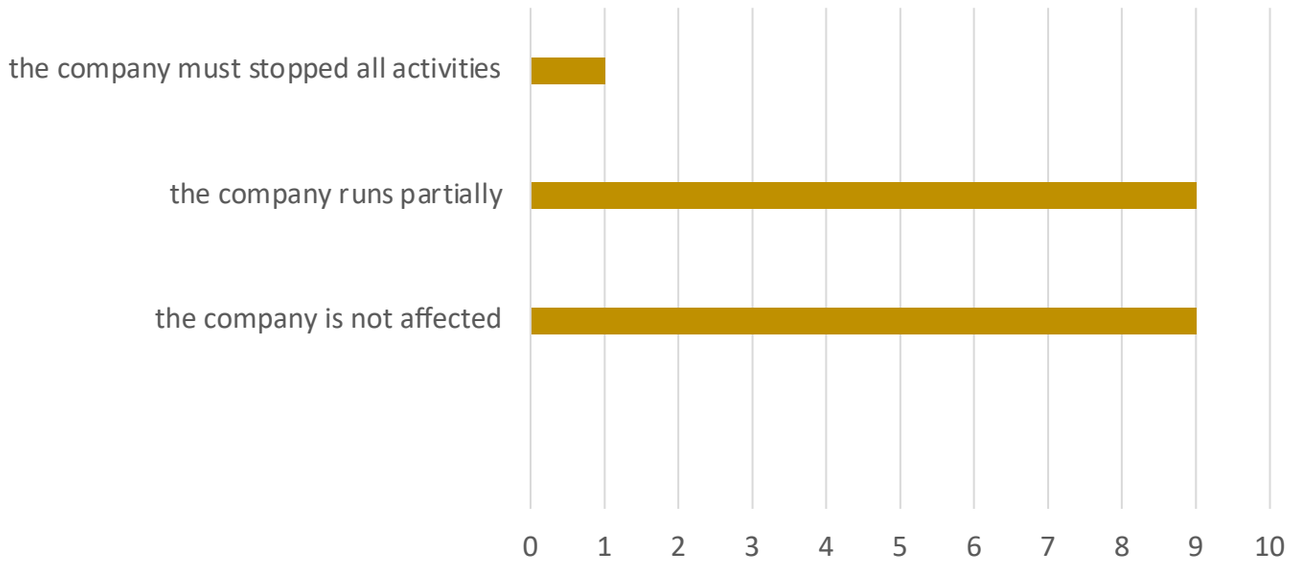
WEAKNESS	
Assertiveness	2,25
Leadership	2,45
Time management	2,65
Strategic planning	2,65
Empathy	2,65
Good writing (reports, proposals, ...)	2,65
Persuasion	2,70
Emotional intelligence	2,80
Crisis management	2,85
Positive attitude	2,90
Responsibility	2,90
Adaptability, flexibility	2,90
Innovation	3,00
Ethics	3,05
Solving complex problems	3,10
Communication	3,15
Self-management	3,15
Teamwork	3,30
Creativity	3,65

COMMITMENT TO IMPROVE	
Creativity	**3,60**
Innovation	**3,60**
Communication	**3,25**
Leadership	**3,25**
Strategic planning	**3,15**
Responsibility	**3,15**
Solving complex problems	**3,05**
Ethics	**3,05**
Persuasion	**3,05**
Adaptability, flexibility	**3,00**
Crisis management	2,90
Self-management	2,90
Teamwork	2,85
Time management	2,80
Positive attitude	2,65
Empathy	2,55
Assertiveness	2,40
Good writing (reports, proposals, ...)	2,30
Emotional intelligence	2,25

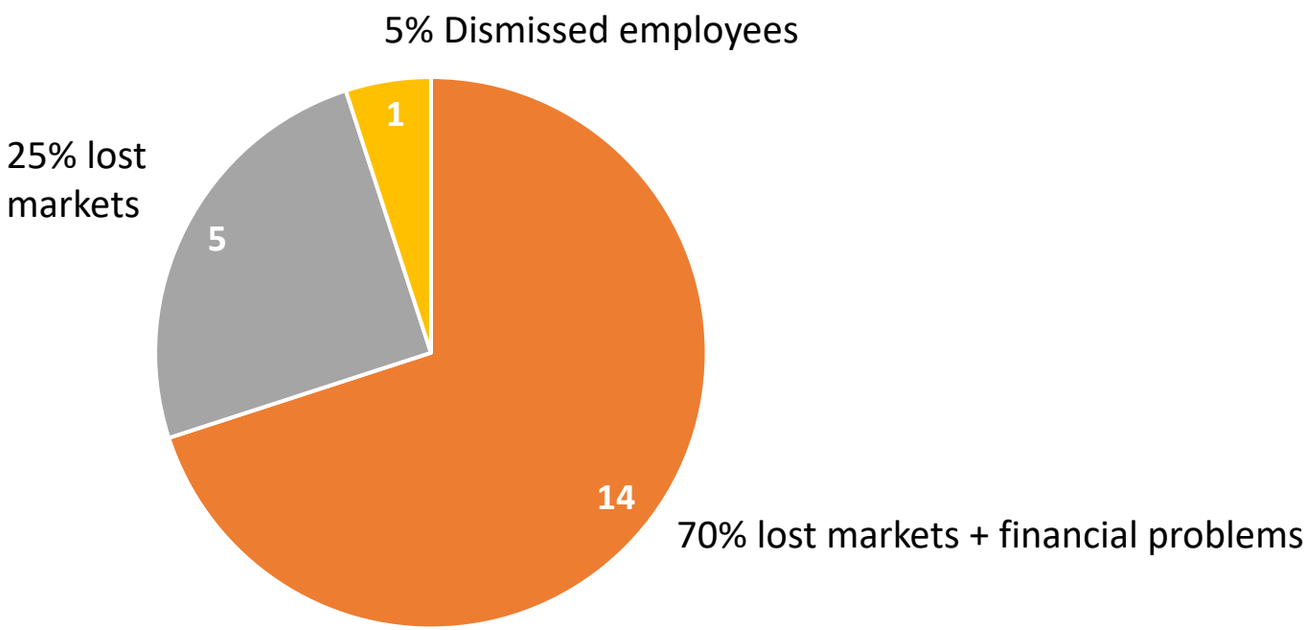
Soft skills are perceived as important attitudes for the management of business dynamics and in support of individual specific skills.
In the foreground, the set of soft skills related to the capacity for innovation, creativity, communication and, almost on an equal footing, the aptitudes for the management skills of work activities: flexibility, problem solving, time management, planning, teamwork, responsability, ...
Companies note its importance with the attribution of high scores, and equally the desire for improvement, while assessing that they are at a good level.
Instead, the emphasis is placed on the desire to improve the aspects of Leadership and Strategic planning which highlight as skills lacking within them.

Post COVID situation

How the current situation (COVID-19) affects your business activities?



consequences on business



skill to face industry challenges in the post-COVID-19 era

1_SOFT SKILLS
2_DIGITAL SKILLS
3_DESIGN SKILLS

The results that emerged depend on the moment in which the questionnaires were completed: some companies replied during the lock-down, most in June and July when the companies were open again.

The data on the most useful skills to face postcovid is interesting: **soft skills exceed digital.**
Many note the need for **design skills**

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National workshops

Needs' analysis related to Soft, Digital, Green sets of competences in the furniture – interiors sector

WP3 – state of the art analysis

03.06.2020 / 09.06.2020

Co-funded by the Erasmus+ Programme of the European Union

Erasmus+

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Participants to the workshops

Carried out virtually / dID and DIDA (Univ. Of Florence) as moderators

Workshop 1_03 June 2020

1) SMEs-furniture producers:

LUCE5 www.luce5.it (medium) / Stefano Cetoloni, Rosalba de Santo – managing director and assistant

ABBI STORE www.abbistore.it (micro) / Stefano Margiacchi, Michela Anatoli – CEO and architect

CHELINI www.chelini.it (small) / Antonella Rosanò – direction assistant

NOI DELLA NOTTE www.noidellanotte.it (small) / Paolo Pasquini, Marcello Cassioli – production manager and property

2) Design studio:

STUDIO MICHELI www.simonemicheli.com (micro) / Simone Micheli - CEO

3) Tech. Companies:

TELCOMMS www.telcomms.it (small) / Simone Pistolesi – innovation manager

NUVAP www.nuvap.com (small) / Marco Magnarosa - CEO

4) Research Organisations:

UNIVERSITY OF FLORENCE

DIEF – Mechanical Eng. + robotics / Filippo Cavallo, Benedetto Allotta

DIDA – design / Giuseppe Lotti, Marco Marseglia

The **4 furniture and interiors producers are all linked to a R&D** project idea (under development) connected to the **application of technologies to furniture products and living environments** – hospitality sector

2 of them have no experience in the application of technologies

the design studio: bringing the market needs perception

digital/technological companies: supporting in defining the needs together with RO competences

Participants to the workshops

Carried out virtually / dID and DIDA (Univ. Of Florence) as moderators

Workshop 2_09 June 2020

1) SMEs-furniture producers:

MARIONI www.marioni.it (small) / Simone Marioni – CEO

SAVIO FIRMINO www.saviofirmino.com (medium) / Cosimo Savio – CEO

2) REAL ESTATE SECTOR:

PROGENIA www.progenia.it (small) / Carlo Greco – partner

3) Tech. Companies:

AMT ITALIA www.amtitalia.com / Alessio Paolillo – CEO

4) Research Organisations:

UNIVERSITY OF FLORENCE

DIDA – design / Giuseppe Lotti, Irene Fiesoli

UNIVERSITY OF SIENA

DISPOC – dep. Of social sciences (competences on AR/VR and communication) / Maurizio Masini

The **2 furniture and interiors producers are all linked to a R&D** project idea (under development) connected to the **application of technologies to living environment contexts – AR/VR and digital tecnologies as part of services for architects and interiors designers**

both have experience in the application of technologies

the real estate company for the luxury sector has been involved as expression of the market needs

digital/technological company: supporting furniture companies in understanding the needs together with RO competences

Workshop steps

1) Review of the questionnaire (each company had already filled in before the workshop)

2) Analysis of the actual situation: pandemic related

3) Future trends of the sector and competences' needs

Main highlights

- **Due to the pandemic actual situation** (still affecting several international markets) the way to deal with clients has and will completely change → **towards virtualization and digitization of all services (sales, post-sales assistance)**

- **Companies, even micro ones, will be asked to manage internally+daily+continuously their presence on the market at digital level**

- **Competences related to** E-COMMERCE, DIGITAL MARKETING, SOCIAL MEDIA MANAGEMENT **will be the most requested in the near future**

- Most of SMEs have a very distributed territorial production chain: they don't manage production lines directly and in most cases they only assemble and finish → **robotics, process eng. and industry 4.0 are not seen as key important**

Main highlights

- **Digital and technological competences will need to be managed together with soft skills (<u>crisis management, creativity, teamwork</u>) and project skills (<u>aesthetic sensitivity, design methodologies</u>) or they could turn to be useless**

- **The market – clients (high level sector especially) don't require directly furniture companies to act towards sustainability**

BUT – their attention will grow following the market attention even at luxury level in the future

→ thus: actually GREEN competences are <u>only partially</u> requested to be integrated in the sector SMEs