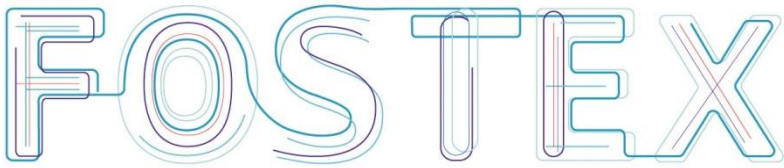
FOSTEX
Fostering innovation in the Jordan and Moroccan textile industry
Project No - 598347-EPP-1-2018-1-ES-EPPKA2-CBHE-JP

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



PROJECT FOSTEX Deliverable

D.1.3 EU Best Practices Database Template

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1	04/December/2019	Dr. Eng. Aileni Raluca Maria
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Contents

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Abbreviations and Acronyms

Abbreviation	Full name
Acronym	Full name
EACEA	Education, Audiovisual and Culture Executive Agency
EC	European Commission
EU	European Union
GA	Grant Agreement
HEI	Higher Education Institution
ICT	Information and Communication Technologies
PC	Project Coordinator
WP	Work Package
R&D	Research and Development

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1. INTRODUCTION

The essential roles of Higher Education Organization/Universities in fostering the creation and dissemination of the scientific results (knowledge) from research projects to the society have been widely presented and in many cases have generated examples of best practices such as training courses or workshops, good practice in experimental tests, quality testing and equipment selection and acquisition.

The good practices are lessons already learned about specific aspects concerning teaching, mentoring, dissemination (figure 1), providing skills, knowledge transfer, coaching for fostering the capacity building in the partner countries (Morocco and Jordan).

Fig. 1. Capacity building based on good practices

In the FOSTEX Erasmus+ project, one of the WP1 Preparation activities was to identify and analyze EU best practices and successful experiences to be transferred to target countries (Morocco and Jordan) and an electronic database. The database contains best practices identified across Europe with high potential for being transferrable to the partner countries (Morocco and Jordan) and successful EU funded project experiences in capacity building from different sectors.

Good practice examples include aspects concerning learning, teaching (courses), dissemination, quality testing, standardization, equipment acquisition, educational, and research projects.

In general, teaching and learning methods are useful for increasing the educational level of the students. The learning methods (formal or informal type) are necessary for establishing

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adequate tools and techniques to be used in classes. However, learning in advanced textile materials is the process of acquiring new or modifying existing knowledge, behaviors, skills that can be achieved by examples, theories, and practical examples.

The dissemination of the research results to the scientific communities or broad public represents a group of methods to transfer the knowledge to other researchers, academia, and students by scientific publication or scientific events such as conferences, seminars, and workshops.

The proposed best practices that envisage human resources, infrastructures, and sustainability boosting are essential for achieving the objective of the project Fostex. These best practices have the final goals to help to promote research and projects between EU and Moroccan and Jordanian universities in the advanced textiles sector, and to create a functional research innovation and training network that will continue to operate after the end of the current project.

In order to create the new advanced textile centers, it is vital to improve the knowledge level through seminars, workshops, e-learning and training, and the infrastructures by development of new research centers (Jordan), upgrading the existent research centers (Morocco) with new high-quality equipment for material testing, and by promoting the quality in textile materials testing by use of the adequate standards, methods, procedures, and equipments.

The main ambition of the project Fostex is to upgrade or to create research centers in advanced textiles and to improve the technological and non-technological knowledge and to adapt or create new methods for advanced materials, and products testing, and to create a sustainable collaboration in research innovation and training projects, and to generate the social and economic progress and to improve the life quality of the citizens. The EU best practices database is essential to achieve the objectives of the project Fostex, by creating a structured database about methods to improve the human resources knowledge, to upgrade or develop new research centers and to create a sustainable bridge for future collaboration in research, innovation and training.

According to the statistics, in the next years, the advanced textiles research challenges are e-textiles development, composites materials developed by computational and predictive modeling, 3D printed structures on textiles, new coating technologies and reducing waste through reusing and recycling textiles.

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2. EU BEST PRACTICES DATABASE

Capacity building of centers for advanced textiles based on EU best practices has the goal to select the shortest paths for improvement of the skills, knowledge, tools, equipment, and other resources needed to increase the quality, competitiveness and research quality.
Best practices represent a set of proper methods, guidelines, and techniques used in research, innovation, education, dissemination, teaching, learning, and quality testing that demonstrated good results over time, in their application at the organization level. Such best practices consist in seminars, courses, capacity building activities, workshops, specific labs, and success projects.
From a total number of 25 EU best practices received strongly connected with Erasmus+ and R&D projects (clusters, infrastructure foundation) 22 EU best practices have been selected that describe very well textile education, research, and industry aspects that can be implemented also in the upgraded or new centers developed in the project FOSTEX Erasmus.
The proposed best practices can contribute to human resource and knowledge transfer to internal or external stakeholders (seminars, workshops, and courses), developments of infrastructure and logistics (capacity building activities, specific labs) and context foundation for sustainable projects (success projects).
These EU best practices are presented on the following tables.

2.1 Best practices ➔Seminars

Name of good practice	Seminar about “Textile Industry and Sustainability ” Institut d’Investigació Tèxtil i Cooperació Industrial de Terrassa. Universitat Politècnica de Catalunya.
Type	**Seminar**
Topic	Textile Industry and Sustainability
Description	The Institut d’Investigació Tèxtil i Cooperació Industrial de Terrassa (INTEXTER) from the Universitat Politècnica de Catalunya organizes every year a seminar about textile industry and sustainability. This seminar is mainly addressed to entrepreneurs, technicians, researchers, designers, and students from the textile and fashion industry in Spain. When we talk about sustainability in the textile sector, we tend to associate only with the environmental dimension, avoiding social and economic.The majority of success stories related to sustainability in the textile sector are, exclusively, magnificent environmental solutions. In this seminar, sustainability is addressed from an integrative perspective in all its dimensions.

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Equipment	Conference room for around 200 people Personal computer Projector
Evidence of success	Evidence of the organization of the seminar in 2018: Title: "1ª Jornada Industria Textil y Sostenibilidad" A total of 132 people from textile companies, technicians, researchers, and students attend the seminar. 7 talks were done by 7 experts https://noticierotextil.net/entrevistas/enric-carrera-director-del-intexter-upc/attachment/acto-inaugural-de-la-1a-jornada-industria-textil-y-sostenibilidad Evidence of the organization of the seminar in 2019: Title: "2ª Jornada Industria Textil y Sostenibilidad" A total of 132 people from textile companies, technicians, researchers, and students attend the seminar. 11 talks were done by 11 experts https://www.upc.edu/intexter/ca/jornada-industria-textil-sostenibilidad https://noticierotextil.net/economia/segunda-jornada-industria-textil-y-sostenibilidad-en-terrassa
Funding sources	INTEXTER and UPC
Contact (Web site, address, email)	https://www.upc.edu/intexter/ca
Responsible person	Enric Carrera enric.carrera@upc.edu
Further information	Related documents https://www.upc.edu/intexter/ca/jornada-industria-textil-sostenibilidad/documentos

Name of good practice	Seminar about "Textiles for medicine and health" Institut d'Investigació Tèxtil i Cooperació Industrial de Terrassa. Universitat Politècnica de Catalunya.
Type	**Seminar**
Topic	Textiles for medicine and health
Description	The Institut d'Investigació Tèxtil i Cooperació Industrial de Terrassa (INTEXTER) from the Universitat Politècnica de Catalunya organize a seminar about Textiles for medicine and health.

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	This seminar is especially addressed to entrepreneurs, technicians, researchers, designers, and students from the textile and fashion industry in Spain. Currently, 25 million tonnes of technical textiles are produced in the world, of which 10% are textiles for medical applications. Current rates of growth of the world population and life expectancy, which lead to an aging population (mainly in Western Europe), the most significant social sensitivity in the prevention of occupational hazards, the transmission of diseases through the blood or by air and the increase in health infrastructures (hospital beds, geriatric homes, etc.) will mean that in the next 10 years, textiles destined for medical and health applications will experience exponential growth, much higher, even in textiles for to clothing and home. Terrassa concentrates a great capacity in teaching and university research in textile engineering (UPC) as in Health (Faculty of Optics and Optometry of the UPC, UAB Nursing School and University Hospital (Mutua de Terrassa). Aware of this reality and the need for greater collaboration between the aforementioned agents, the Institute for Textile Research and Industrial Cooperation of Terrassa (INTEXTER) convenes this Conference with the intention of creating a space Regular meeting, debate and exchange of experiences between textile and health researchers, health professionals, administrations and manufacturers of the broad spectrum of textile products used in medical and health applications.
Equipment	Conference room for around 200 people Personal computer Projector
Evidence of success (up to 1/2 pg)	Evidence of the organization of the seminar in 2018: Title: “Jornada Tèxtils per a la Medicina i la Salut” More than 130 people from textile companies, technicians, researchers, and students attend the seminar. 6 talks were done by 6 experts https://malarrassa.cat/2018/11/28/jornada-textils-per-a-la-medicina-i-la-salut-30-n-sala-dactes-de-leseiaat/ https://eseiaat.upc.edu/ca/noticies/jornada-textils-per-a-la-

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	medicina-i-la-salut
Funding sources	INTEXTER and UPC
Contact (Web site, address, email)	https://www.upc.edu/intexter/ca
Responsible person	Enric Carrera enric.carrera@upc.edu
Further information	Related documents https://www.upc.edu/intexter/es/ca/jornada-textil-medicina-salut/ponencies

2.2 Best practices Courses/Intensive Study Programme

Name of good practice	Creation of a strong connection with Industry and Universities through the Liaison Office UNIWA
Type	**Training course**
Topic	The staff of the liaison offices, which were established/upgraded in the frame of UNITE project (of three Belarusian universities participated in the project), were trained in an intensive training course on the premises of the Technological Institute of Piraeus in Greece. An intensive training course, which was appointed to staff the liaison offices, took place in Piraeus with duration of two weeks. It was conducted in the English language, and 15 people attended it.
Description (up to 1 pg)	The training course included the following topics: Management procedures, Quality processes, Funding opportunities in R&D, Technology transfer, IPR, Cooperation with industry, Cooperation with EU HEIs, Vocational guidance, Conflict management etc. Some of the learning units were the following: ● "Innovative Strategies for Creating Successful and Sustainable Cooperation with Industry and other EU HEIs – Case study Votex etc". ● "Cooperation with EU HEIs: Erasmus +, grants, other cooperation schemes." ● "How to create and run a Career and Liaison Office from scratch (organizational structure, processes-procedures, documentation etc)", ● "How to build long-lasting relations between the

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	University and the industry through Liaison Office' s services-Communication with beneficiaries-IT tools etc" ● "Introduction to innovation & technology transfer (case study ex Cleanmag)", "If you do not build a Strong University Brand, it will build You", "Companies engaging with Universities to develop a diverse Global Workforce". ● "How to apply a quality management system in a Career and Liaison Office (quality policy, measures, quality manual, quality evaluation plan, exercise flow process etc)", ● "How to measure the success of a Career and Liaison Office-Tracking analysis of beneficiaries (Career path monitoring research, Labour market research, technology transfer & innovation research, exercise good and bad practices, e.t.c.)", ● "Toolbox of Technology Transfer service" ● "The necessity of career and liaison offices in Education Institutes" ● "The advantages of the operation of a liaison office in a Technological Institute and the knowledge transfer to non-EU countries" ● "The importance of patents for the strengthening of the market in the period of the financial crisis" ● "Specification of the industry's necessities in nowadays – the role of Tempus activities to the connection of the industry with the education" ● "Dissemination policies towards the success of the UNITE project"
Equipment (up to 1 pg)	The learning lab was conducted at the premises of the Liaison Office Department.
Evidence of success (up to 1/2 pg) Good Practice	The staff of the liaison offices, which were established/upgraded in the frame of UNITE project, (of three Belarusian universities participated to the project), were trained in an intensive training course in the premises of Technological Institute of Piraeus in Greece. **The Good Practice of this particular Project is the creation of a strong connection with Industry and Universities through the Liaison Office.**
Funding sources	Co-funded by the Tempus Programme of the European Union

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Contact (Web site, address, email)	http://www.unite-tempus.eu
Responsible person	Georgios Priniotakis (gprin@uniwa.gr)
Further information (up to 1 pg)	

Name of good practice	Courses about technical textiles Collaboration between Universitat Politècnica de Catalunya Textile Engineering Section (Departament de Ciència dels Materials I Enginyeria Metal.lúrgica) with University of Shaoxing for capacity building
Type	**COURSE** conducted at Shaoxing University (China) from staff from Universitat Politècnica de Catalunya Capacity building action
Topic	Technical textiles Provide skills in Textile Engineering
Description (up to 1 pg)	The participants to the course were students from the Bachelor in Textile Engineering, Bachelor in Fashion Design and Engineering and Bachelor in Light Chemical Engineering and of the Shaoxing University Three courses were taught Course 1: Title: High-modulus and high-strength polyethylene fibers

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	Hours: 20 Teacher: Prof. Mònica Ardanuy Period: October-November 2018 Place: School of Textile and Apparel of the Shaoxing University Course 2: Title: Fiber- and Fabric- Reinforced Composite Materials Hours: 24 Teacher: Prof. Heura Ventura Period: Between 14th of April and 13th of July Place: School of Textile and Apparel of the Shaoxing University Course 3: Title: Introduction to Smart Textiles Hours: 24 Teacher: Prof. Heura Ventura Period: Between 14th of April and 13th of July Place: School of Textile and Apparel of the Shaoxing University
Equipment (up to 1 pg)	It was used the basic equipment for a presentation -Personal computer - Projector - Microsoft PowerPoint
Evidence of success (up to 1/2 pg)	The students could know more about technical textiles to try to transfer the knowledge in their future jobs. Moreover, the professors from Universitat Politècnica de Catalunya could visit different companies to know more about the textile industry in Shaoxing
Funding sources	LOCAL GOVERNMENT OF SHAOXING and UNIVERSITY OF SHAOXING
Contact (Web site, address, email)	Monica Ardanuy: monica.ardanuy@upc.edu
Responsible person	For Textile Engineering: Mònica Ardanuy
Further information (up to 1 pg)	(Emphasize on methodology, equipment, operation, management, advantages and benefits for industrial cooperation) Images of students participating in the lectures

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Name of good practice	Intensive Study for Higher Education Learners Invited teachers at higher education Intensive Study Programmes INCDTP & UMINHO (host of the Intensive Study for Higher Education Learners)
Type	**Intensive Study Programmes**
Topic	Advanced Textile Materials Provided skills in advanced materials from R & D organization to students
Description (up to 1 pg)	Objectives: -increasing students' interest in textile education and advanced materials through blended learning and interactive learning combined with SMEs visits in order to see, to understand, and to learn much more by real examples and industrial infrastructures.
Equipment (up to 1 pg)	Laptop Video Projector .pptx presentation
Evidence of success (up to 1/2 pg)	The training event included courses to improve and provide knowledge and skills for the group of 22 participating students from Lithuania, Greece, Romania, and Portugal. Participation in the Intensive Study Programme activities provided numerous courses and visits to the research and production centers. The course presented “Textile materials treated in plasma” was prepared based on the theoretical and practical knowledge gained in the scientific activity and included five

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	subsections: - The relevance of the plasma-treated textile materials; - Functionalization of the textile materials by plasma treatments (and examples); - Plasma technologies; - Equipment for plasma treatments; - Physical processes at the surface of textile materials (and examples). The presentation of the course for Textile materials treated in plasma has received excellent feedback from the students. During the training event, visits were made to several research institutes, such as Citeve, Centi, and INL, and the Riopele textile factory, where were visited the spinning, weaving, and finishing departments.
Funding sources	EU - Erasmus +
Contact (Web site, address, email)	www.texstra.eu
Responsible person	Radulescu Razvan – plasma course
Further information (up to 1 pg)	Images of the students and trainers participating in the lectures: 

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2.3 Best practices Workshops

Name of good practice	Creation of a networking connection between Universities and SMEs in the area of textiles and clothing. UNIWA
Type	**WORKSHOP**
Topic	Dissemination of the “TECLO” project outputs (presentation and training on TCBL)

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Description (up to 1 pg)	The participants of the workshop were as following: ● National authorities (1), ● HEI teachers (6), ● SME (12), ● organizations (6), ● press (1) The **main conclusions** concerning the TECLO MOOC are: - The TECLO MOOC provides significant benefits to participants with a modern curriculum and full internet delivery. It is also considered an advantage that the length of the presentations is not too long, but on the other hand, sources for further study are provided. In this way the learner can decide on his own in which topics he wants to go more in-depth, according to his/her needs. - The translation of the subtitles in local languages is important because it facilitates knowledge acquisition and enhances the participation of learners that are not so fluent in English. - The content of the MOOC courses reflects the need for skills for managers in SMEs from the T&C sector. The MOOC was found to be user-friendly and the examples given to illustrate different cases were considered clear and useful.
Equipment (up to 1 pg)	It was used the basic equipment for a presentation. So, it was used: -h/w: 1 personal computer -h/w: 1 projector -s/w: Microsoft PowerPoint
Evidence of success (up to 1/2 pg) Good Practise	Following the presentations about the TECLO outputs, the participants have been invited to **discuss the possibilities to implement the MOOC and the TECLO EU Developmental Network**. The feedback was summarised and analysed in the exploitation meeting reports. The following **benefits** of the MOOC were emphasized: ● certification of acquired qualifications ● improvement of knowledge and enlargement of competencies ● wide access to the expertise ● access to professional terminology in foreign languages ● mass education for an affordable price ● lifelong learning Some **weaknesses** of the MOOC were mentioned : ● The MOOC cannot fully replace formal education because some of the lectures could not only be presented online. ● Need for constant updating of the content of the

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	lectures, even after the completion of the project. TECLO MOOC could be implemented in the current study programs of **HEIs as an elective course** or integrated in one of the larger existing courses. The Belgian VET centers for textiles and clothing are interested to integrate the TECLO MOOC in their training programs, as they receive many questions from starters, who know nothing about management. Regarding the **EU Developmental Network** the following **remarks** were received : - The participants from SMEs considered the Developmental Network as a **positive instrument in expressing their needs for knowledge transfer and education** and LinkedIn was seen as a suitable environment for developing such a network. - The **benefits** of networking by means of the TECLO Developmental Network are considered to be: ● accessibility to information ● promotion of TECLO ● finding a common place for sharing ideas ● a tool for relationship with others in the same or related field ● rapid spread of information ● professional self-promotion ● networking is a kind of fair, where you can find all the innovations ● prompt response of learning content according to demand ● business links ● exposure and problem solving ● multimedia content. **The Good Practise of this particular Project is the creation of a networking connection between Universities and SME in the area of textiles and clothing.**
Funding sources	EU - Erasmus Plus European Commission | Horizon 2020 European Union funding for Research & Innovation
Contact (Web site, address, email)	http://teclo.eu
Responsible person	Georgios Priniotakis (gprin@uniwa.gr)

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Further information (up to 1 pg)	

Name of good practice	University of Bucharest, Faculty of Chemistry
Type	**Workshop** sustained at University of Bucharest from team members of the project "Interinstitutional program of developing advanced eco-nanotechnology solutions for multifunctional treatments of leather and textile materials", **PN-III-P1-1.2-PCCDI-2017-0743**
Topic	Technical textiles Provided skills in textile functionalization by physical methods
Description	The participants of the workshop were Master students from the Chemistry of Advanced Materials and also young researchers employees from Complex Project
Equipment	During the Workshop was used the following equipment: - Personal computer - Projector - Microsoft PowerPoint
Evidence of success	The students gained knowledge about the application of physical methods in order to obtain functional properties of technical textiles.
Funding sources	Public sources
Contact (Web site, address, email)	Laura Chirila laura.chirila@incdtp.ro
Responsible person	Laura Chirila

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Further information	Images of lectures and participants of the workshop

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Name of good practice	Lectures about advanced textile materials Department of Advanced Material Investigation, INCDTP
Type	**WORKSHOP** "*Innovative achievements and development perspectives of the advanced materials with electroconductive properties,"* 22 October 2019, INCDTP. -The workshop was developed in order to increase the degree of interest of the research staff and SMEs
Topic	Technical textiles Provide skills in Advanced Textile Engineering
Description (up to 1 pg)	Objective: -Knowledge transfer to research staff and SMEs in order to increase the interest in advanced materials and co-creation of the advanced textile material with electroconductive properties. Provided skills: -advanced knowledge in the field of electroconductive materials obtained by classical technologies and advanced technologies (3D printing, RF plasma, and microwave); -knowledge about polymers used for electroconductive materials; Some of the lectures are: ● 3D Electrotex –perspectives in developing advanced textile materials and intelligent textile prototypes with integrated circuits for sensors or actuators –Aileni Raluca

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	Maria ● Research concerning the electromagnetic shield development based on textile materials –Surdu Lilioara ● Polymers with electroconductive properties, used in printing, padding, and coating –Aileni Raluca Maria ● Conductive textile materials based on CNT – Chirila Laura ● e-Learning training modules in the field of textiles – Radulescu Razvan
Equipment (up to 1 pg)	-Laptop -Video projector -Presentation in Microsoft PowerPoint format
Evidence of success (up to 1/2 pg)	The participants were researchers, assistant researchers, and Ph.D. students from INCDTP. Also, from the private sector have been participated in several representants from SMEs. All participates declared that it was a lovely experience to found new researches and to understand the importance of the advanced materials developed in the final system. Besides, SMEs were very enthusiastic concerning the new possibility to know and to be involved in future research projects with INCDTP.
Funding sources	National Research Project "*Composite materials with electroconductive properties, based on 3D polymeric array for sensorial monitoring system and electromagnetic waves attenuation (*3D –ELECTROTEX)", contract PN 19 17 01 01
Contact (Web site, address, email)	Aileni Raluca Maria www.incdtp.ro raluca.maria.aileni@gmail.com
Responsible person	Aileni Raluca Maria
Further information (up to 1 pg)	Images of the researchers participating in the lectures: 

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2.4 Best practices Laboratories

Name of good practice	Creation of a MOOC for future textile and clothing managers. **UNIWA**
Type	**LEARNING LAB**: it was conducted at the premises of Department of Textile Engineering of Piraeus University of Applied Sciences, and specifically at the Garment CAD/CAM Laboratory, on 26th May 2016
Topic	Learning Lab with a sample of textiles and clothing students and managers for the validation of the training contents and definition of the amendments (one day, at least 10 participants per country)
Description	The implemented MOOC and its contents were validated in each partner country through Learning Labs, which were

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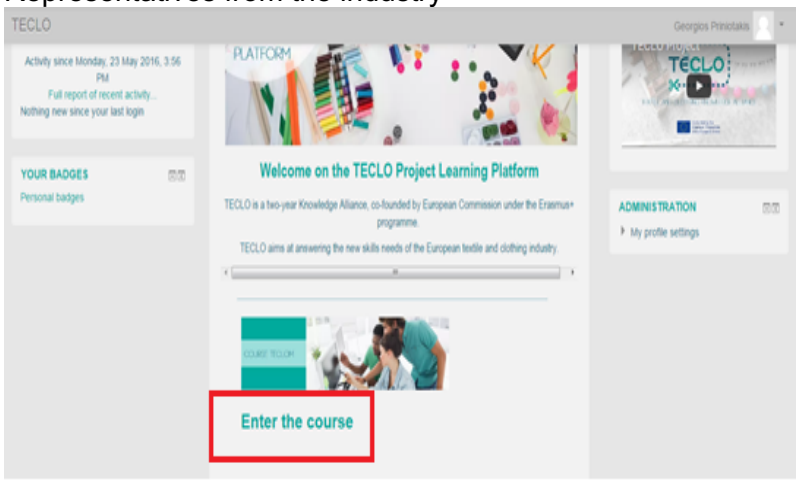
<table>
<tr>
<td>(up to 1 pg)</td>
<td>attended by, at least, 10 participants (total of 80 in all countries). Among them: textile and clothing students and managers and training experts. To each partner, specific learning objects have been assigned.
At the specific learning lab, there were participated 3 groups:
Students
Graduates
Representatives from the industry
 

Participants were entered to the platform
http://teclo.eu/moodle2/
and attended a learning unit according to their category.

Students
<table>
<tr><td>Unit 7- Act creatively</td></tr>
<tr><td>7.1 Change oriented approach</td></tr>
</table>

Graduates
<table>
<tr><td>Unit 4 - Re-engineer processes according to sustainability, CSR and Quality</td></tr>
<tr><td>4.3 Implement small-scale and specialized production</td></tr>
</table>

Representatives from the industry
<table>
<tr><td>Unit 2- Implement non-technological innovation within the T&C sector</td></tr>
<tr><td>2.1 Handle with mass customization trends</td></tr>
</table>
</td>
</tr>
<tr>
<td>Equipment

(up to 1 pg)</td>
<td>The learning lab was conducted at the premises of the Department of Textile Engineering of Piraeus University of Applied Sciences, and specifically at the Garment CAD/CAM Laboratory.</td>
</tr>
</table>

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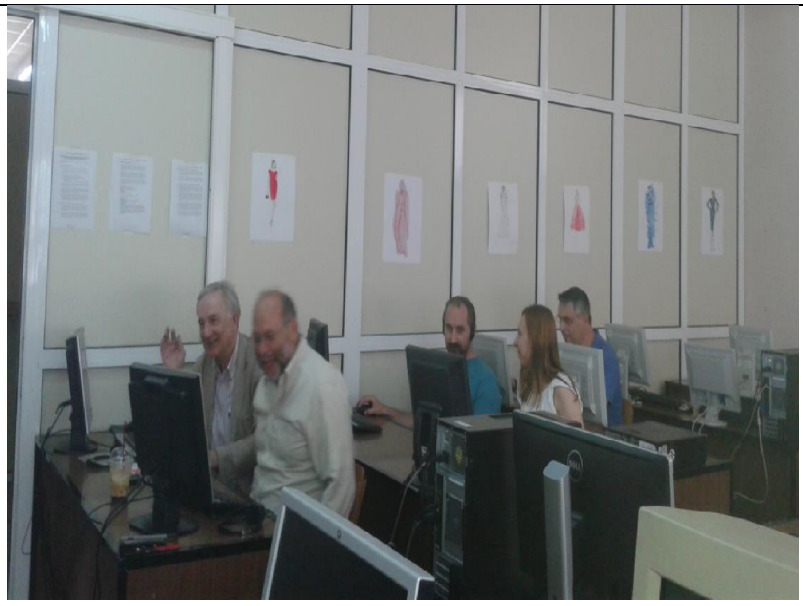
Evidence of success (up to 1/2 pg) Good Practice	SMEs: Based on companies' needs, the first version of the MOOC for future textile and clothing managers for Efficient and Innovative SMEs has been created by the TECLO partners. The learning units (formative videos and exercises for each learning object) were developed with the contribution of all partners. Learning objects have been assigned to the partners according to their expertise. (Examples of collaboration between HEI and Industry) **The Good Practice of this particular project is the creation of a MOOC for future textile and clothing managers.**
Funding sources	EU - Erasmus Plus European Commission | Horizon 2020 European Union funding for Research & Innovation
Contact (Web site, address, email)	http://teclo.eu/moodle2/
Responsible person	Georgios Priniotakis (gprin@uniwa.gr)
Further information (up to 1 pg)	 Photo of the learning lab.

Name of good practice	Development of sectorial methods for anticipation of skills needs UNIWA

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Type	**Laboratory**
Topic	Design and development of smart fabrics and smart clothes. Smart systems developed through multifunctional design.
Description (up to 1 pg)	As part of the Department of Industrial Design and Production Engineering established at the University of West Attica, the laboratory works under the following frames: Objectives: the collaborative development of innovative products that combine properties of more than one field, e.g. from the textile industry and electronics. Provided skills: - Ability to review the properties of the product in a holistic way. - The interdisciplinary approach to design - Generation of innovative ideas - Hands-on practice - Prototyping Methodology: step by step/iterative approach in order to develop an innovative product that has excellent properties or combined features. This approach takes place in an intensive collaborative environment where various teams operate to perform the project's tasks. The combination of doing technological research and offering education and training gives to the department the competitive advantage to deliver high quality results according to today's needs. The students after the graduation have the adequate experience to face the problems of the industry and find the appropriate solutions in line with the laws of the market. The fully equipped laboratory provides the technical infrastructure and hence, the scientific knowledge that can guarantee full, all-round education and training to students of the department as well as to members of the design industry.
Equipment (up to 1 pg)	The Laboratory has a variety of equipment that can be used for its activities: -Basic chemical lab equipment, e.g. glassware, wages, stirring devices, drying oven, ultrasound cleaning device,

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	temperature meters, PH meters, humidity meter, surface conductivity meter; -Tensile meter for measuring the tension durability of yarns and threads; - Electronic weaving machine. This machine is programmable and can be used to create various patterns. -Electronic knitting warp machine -Electronic knitting weft machine -Friction measurement device -Fabric wrinkle resistance measurement device -Specific measuring equipment for textiles.
Evidence of success (up to 1/2pg) Good Practice	- The Good Practices of this Project are - the development of sectoral methods for the anticipation of skills needs; - the set-up of the EU curricula of the new professional profile of the Textiles and Clothing Managers (TECLOM), endowed with more advanced social, entrepreneurial and management skills; - the development and pilot of a MOOC for the new TECLOM
Funding sources	National, EU and private, e.g. projects self-funded by industry partners.
Contact (Web site, address, email)	Laboratory of Design and Development of Innovative Knitted Textiles and Garments, Industrial Design and Production Engineering Department The University of West Attica, Campus II Thivon 250 & P. Ralli 12241, Egaleo, Athens, Greece Website: https://www.idpe.uniwa.gr/ Email: gprin@uniwa.gr

Name of the successful EU project	Zero Carbon Britain https://www.cat.org.uk/new-hub-and-innovation-lab-to-share-zero-carbon-solutions
Type	**Laboratory**
Topic	Lab
Description	A new Zero Carbon Britain Hub and Innovation Lab is being

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(up to 1 pg)	launched at CAT later this year to help communities, local authorities and policymakers to create Zero Carbon Action Plans, and to provide support for the development of innovative solutions. A new Zero Carbon Britain Hub and Innovation Lab are being launched at CAT later this year to help communities, local authorities and policymakers to create Zero Carbon Action Plans, and to provide support for the development of innovative solutions. In the past few months, as awareness of the urgency of action on climate change has grown, we have been inundated with requests from governments, political parties, councils, community groups and businesses, all wanting CAT's help with drafting policies and plans that will turn climate emergency declarations and targets into on-the-ground action.
Evidence of success (up to 1/2 pg)	The sustainability of the Zero Carbon Britain Hub
Funding sources	Moondance Foundation
Contact (Web site, address, email)	https://issuu.com/citypolska/docs/zero_carbon_britain_2030

Name of good practice	Good practice in technical quality inspection of the textile materials and infrastructure online presentation **INCDTP**
Type	**Lab/infrastructure**
Topic	Provided skills in quality testing and infrastructure presentation
Description (up to 1 pg)	Objectives: To increase the quality in textile materials testing; To optimize the access to the national research infrastructure To facilitate quality services in the testing of the textile materials according to standards;

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	To compare the laboratory results obtained by testing and the values obtained by other laboratories. Provided skills: Knowledge in quality testing according to standard methods; Knowledge in infrastructure presentation in order to be accessible for all national, European, and international partners. Methodologies: INCDTP use to promote the infrastructure configuration by national platform ERRIS (https://erris.gov.ro) that is a registry of Romanian Research Infrastructures, research & technological services; In order to support the quality testing of textiles and international recognition, INCDTP participates each year in interlaboratory comparison TESTEX Rundtest Fabric Properties, Function, Yarn Round Test (www.testex.com). Reports (TESTEX) provide information about textile-related physical and chemical tests on fibers, single and ply yarns, woven and knitted fabrics, non-wovens, and finished products.
Equipment (up to 1 pg)	Website: www.testex.com ; https://erris.gov.ro/Physical-mechanical-Laboratory
Evidence of success (up to 1/2 pg)	The infrastructure presentation on ERRIS facilitates the identification of the research organizations/universities/research centers or laboratories with adequate infrastructure for textile materials testing or research projects. The TESTEX interlaboratory comparison tests it is a method to verify if the values obtained in the organization by tests are or not in the correct range of values.
Funding sources	(public/private/EU/other)
Contact (Web site, address, email)	surdu.lilioara@incdtp.ro

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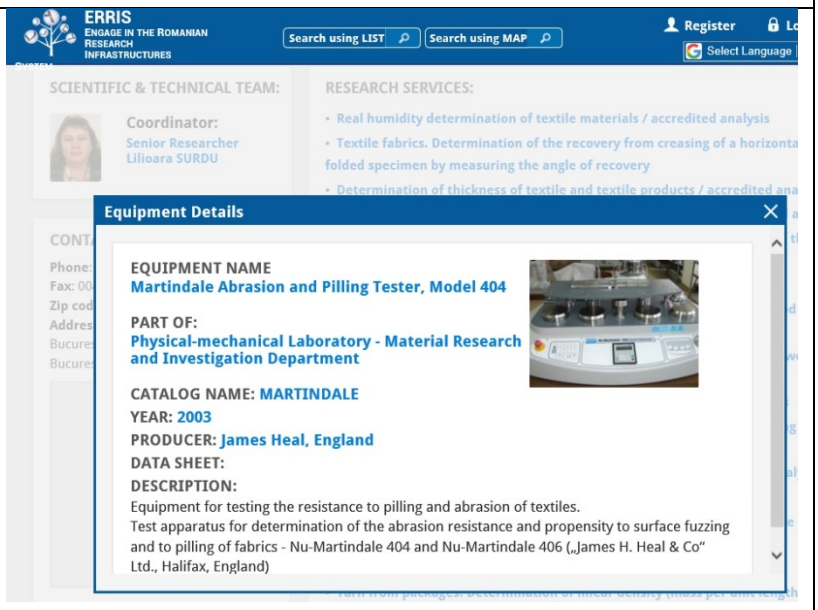
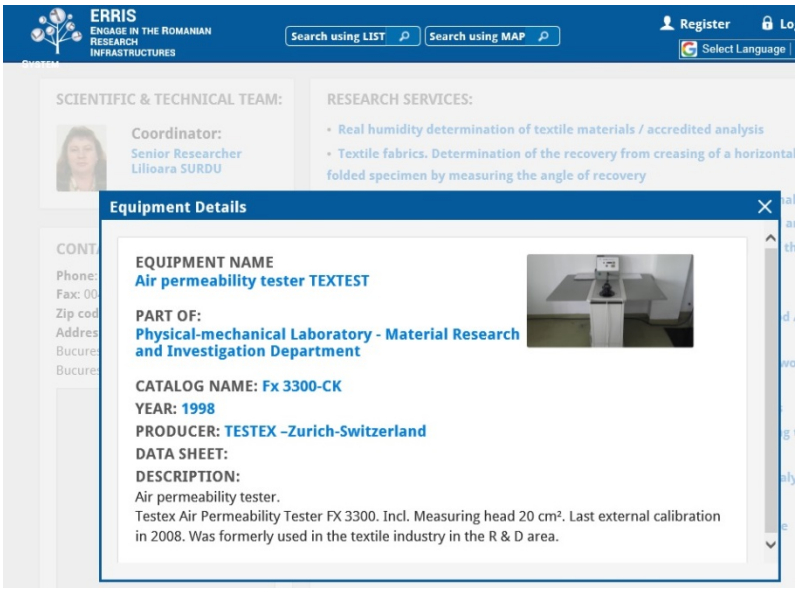
Responsible person	Surdu Lilioara
Further information (up to 1 pg)	 

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	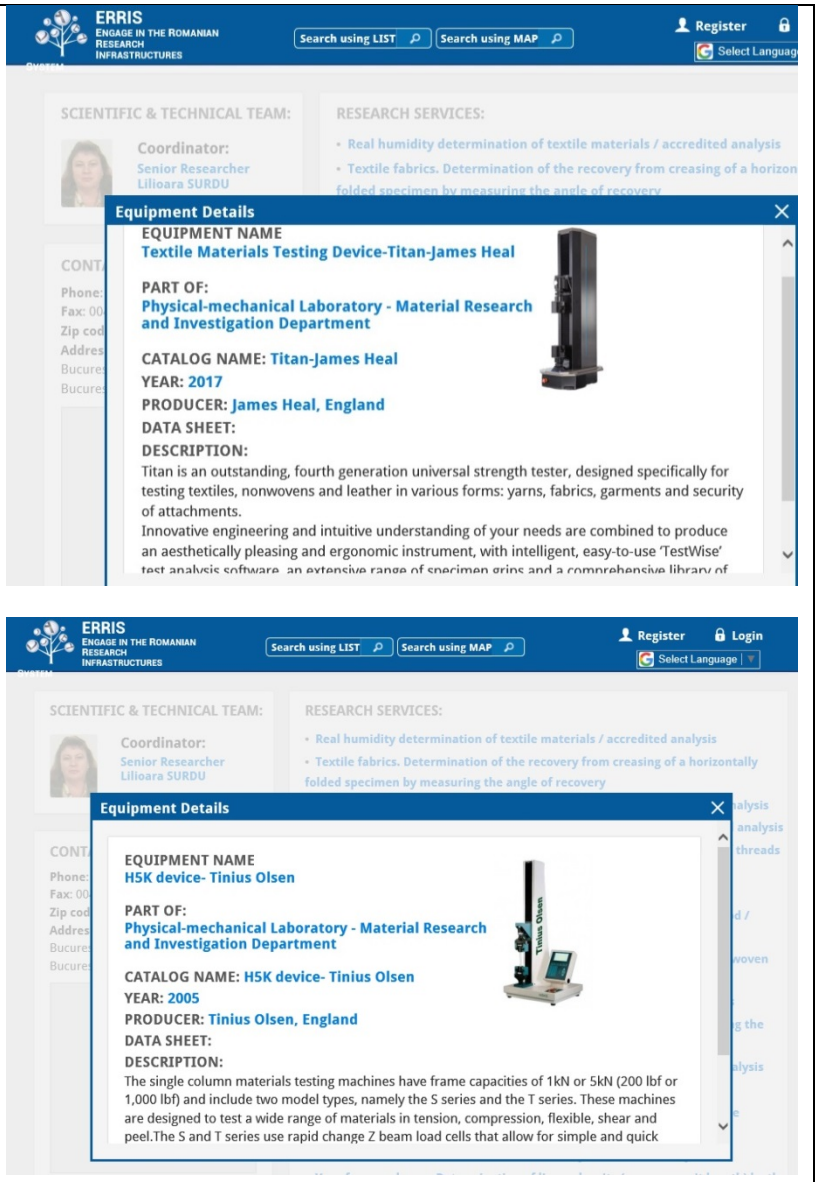

Name of good practice	**Royal College of Art**
Type	University
Topic	The Royal College of Arts is the only entirely postgraduate art and design university in the world: it offers postgraduate degrees in art and design to students from over 60 countries; its educational offer is reviewed annually, in order to give students the right perspective of the contemporary world. The academic programme offers 8 MAs, which are moving through various fields of design: Design Products, Fashion

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	Menswear, and Womenswear, Global Innovation Design, Innovation Design Engineering, Intelligent Mobility, Service Design, Textiles. Each programme offers a full package of assisted learning through tutorials, seminars, and support for individual and group projects, and learning is focused to give each student the support she or he needs to build expertise in their discipline.
Description	The methodology of the Royal College of Art is a unique case in the world: a user-centered approach, developed with co-creation, is used both by designers and researchers. It is possible to look at eight major activities that it is used to engage people in a respectful and equitable way throughout the design process: - *Asking:* Interviewing is one of our most powerful ways to understand people. The most common way of interviewing is face-to-face and one-to-one. There are also interviews with groups and communities. They do not have to be scientifically neutral or objective – they are simply about collaboration or conversation. - *Co-creating:* Co-creation moves beyond the expert and non-expert relationship between designer and participant. It involves people as valued contributors and even as co-authors of ideas. Co-creation workshops allow for a 'dream team' to work on any sort of design challenge together. - *Futuring:* This is an imaginative method that is developed that embraces fictional, future-based aspects of people-centered design. This presents a scenario in the form of a film or illustration where real users of a future concept act the idea with a script. This helps to explore, visualize and realize speculative outcomes. - *Immersing:* This is not about objectivity or subjectivity, but about full immersion within a context, environment, experience or community. This is about empathy building and attempts to generate a 360-degree view of an issue. It requires the designer to deeply experience other people's worlds. - *Listening:* Listening is at the heart of research methods. It enables a person to express their thoughts, needs, and

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	perspectives with the designer taking the role of facilitator or enabler. It is aimed to ask more open-ended questions rather than focusing on a single issue, putting people first. - *Prototyping:* This is the creation of a model of a design idea for evaluation. The prototypes can range from a quick mock-up of an initial concept to a more resolved artefact closer to production. Prototyping makes abstract ideas real, communicates concepts clearly and allows real interaction to happen. - *Provoking:* This is a novel method developed at the Centre called Design Provocations which involves showing people props, sketches or visuals to stimulate discussion and engage with people's imagination. This is not about validating ideas but about provoking responses from participants. The College also uses tools from Innovative Didactics, like E-learning platforms and MOOCs. The Fashion MA programme asks for a disruptive critical approach leading to new aesthetics and responses about the practice and industry of fashion. A shift in authorship, materiality, economic structure and communication allows new patterns of work and aesthetics. Equally, integrity, ingenuity and play are essential within this new fashion practice. Textiles at the RCA is a multi-faceted discipline, and structured as the creative interface between materials, making and meaning. They focus is on new knowledge that impacts many sectors, exploring new territories for tomorrow's textiles specialist.

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Equipment	The facilities and technical equipment at the RCA support students in their explorations of the creative possibilities of the new and the traditional, and the interplay between them. Access to a range of technical resources can be provided, and students are encouraged to use College-wide facilities, including the RCA Library, located in Kensington. Textiles facilities include a large-scale printmaking workshop, a dedicated dye lab, mixed media and sewing workshop and extensive knit and weave facilities that include computerised handlooms, an industrial jacquard power loom with APSO software and a dobby power loom. Some facilities are subject to an induction and access is granted following an assessment of academic need, such as Jewellery & Metal (anodising, CAD/CAM-milling, computer modelling and rapid prototyping, casting, electroforming, enamelling, forging, tool making, patination, plating, presswork, spark erosion and laser, MIG and TIG welding), Lens-based Media and Audio Resources, Painting and Sculpture, Printmaking (etching, lithography, intaglio, screen printing and letterpress areas, digital suite with large-format digital printing and a reprographics workshop), Resource Stores (free hire of lens-based media and AV equipment), SmartZone, Robotics Laboratory (provides a focal point for research into robotics within an art and design environment).
Evidence of success	According to *QS Rankin by Subject*, the RCA is the 1st school of Design in the world; the *QS Ranking by Subject* uses

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	standards such as Academic and Employee Reputation. The Higher Education Funding Council for England's 2015 report Research to Assess the Nature and Annual Value of Student Start-ups, ranked the RCA as having 'the highest number of student spin-outs with university ownership in recent years in the UK'. The RCA has important collaborations with big industries, like Huawei, Visa Europe, Tata Consultancy Services (TCS), Hyundai, Intel, and other.
Funding sources	Public
Contact (Web site, address, email)	Address: Kensington Gore, South Kensington, London SW7 2EU, UK Website: https://www.rca.ac.uk/schools/school-of-design/ https://www.rca.ac.uk/research-innovation/innovationrca/
Responsible person	Dean: Professor Paul Anderson Info: info@rca.ac.uk
Information concerning the project	**InnovationRCA** is the College's centre for enterprise, entrepreneurship, incubation and business support. It helps students and graduates to transform compelling ideas into successful businesses, and its mission is to strengthen the culture of design innovation and entrepreneurialism at the Royal College of Art. The centre has enabled the creation of more than 66 start-up and spin-out companies that have created over 650 UK-based jobs and generated over £121 million turnover. The University's academic experts provide consultancy and knowledge exchange for business by working with small businesses, multinational corporations, government institutions and not-for-profit organisations to help them develop new products, services and experiences. Building on the success of the RCA's existing research centres – the Helen Hamlyn Centre for Design and the HELIX Centre – the Intelligent Mobility Design Centre was established in 2016, and the Burberry Material Futures Research Group (the first part of our Material Science Research Centre) was launched in 2017. The College is also

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	investing in interdisciplinary collaborations in fields including artificial intelligence, digital visualisation and simulation, and design-led robotics, and will in due course launch new centres in Computer Science and in Drawing. By 2021 all of the research centres will be housed in the RCA's new state-of-the art building in its Battersea campus, designed by Herzog & de Meuron. The new building will include a dedicated research hub, as well as housing InnovationRCA, the College's highly successful business incubator. The research centres will work with partners from around the world – from business and industry, to charities, governments and NGOs and other universities, to establish new collaborative research partnerships with human-centred, design-led approaches at their heart. The RCA encourage their students' **Start-Up** and projects, giving them visibility through the website and fellowships (thanks to GenerationRCA, a fund for donations). Last but not least, RCA offers **Executive Education** through customised programmes and open-registration, senior-level education short courses for business, government and the public sector. Leading companies and organisations from around the world choose to work with RCA to address the strategic goals, unique challenges and opportunities of their organisation.

Name of good practice	**Politecnico di Milano**
Type	University
Topic	The School of Design offers a wide range of programmes: first level degree (Bachelor or B.Sc.), second level degree (Master or M.Sc.), Ph.D., specialization (first level university Master diplomas, second level university Master diplomas). The main fields of study are Fashion Design, Product Design, Interior Design, and Communication Design, which are also the Bachelor' courses. Milan has a long tradition of professional design practice,

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	which grew out of the material culture of craftsmanship and industry in Lombardy at the beginning of the last century and boomed after the war and in the fifties with an original, authoritative voice. Italy became excellence in this field, thanks to a unique design approach and to some great minds that made Italian Design one of the most important trends in the world. The graduates of Politecnico keeps this excellence going, proving to be especially skilled in methodology, in industrial cooperation and in design thinking.
Description	The School of Design in the Politecnico di Milano is today the largest international university for the training of product, communication, interior, and fashion designers, both by the number of students and of teaching staff. It is active in the recently built Milan campus. The following figures give some idea of its extent: approx. 5000 students, over 450 teaching staff and a further 400 or so research and teaching assistants working in various capacities. Degree programs are organized at two levels: a 3-year first level degree (Bachelor or B.Sc) and a further 2-year second level degree "Laurea Magistrale" (Master or M.Sc). It also has various range of courses, that revolves around the macro-areas of product, service, and interaction. Moreover, the school use a teaching approach based on the techniques of innovative didactics; the main tools used are e-learning platforms, social and soft skills, flipped/blended classroom, learning by doing approach, MOOC (Massive Open Online Courses). E-learning platforms are here used to develop some parts of the courses. The MOOCs are also very important in the School: in fact, they are daily used to take lessons.
Equipment (up to 1 pg)	The School of Design offers many facilities to students; apart from the library, study areas, print and college shops, lockers and some classrooms with ICT services, there are four laboratories. They occupy an area of around 10,000 square meters of the building which is home to the School of Design's teaching activities. In addition to supporting these activities, it has provided services for businesses, associations, bodies and professional organizations in various areas ranging from communication to product, from interiors to construction and

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	from textiles to fashion. They are: - LAB Fashion: The equipment and tools present to allow users to work with fabrics, yarns, skins, and innovative materials and to experiment with a range of working and model making techniques with the assistance of teaching staff and experienced technicians.  - LAB Exhibit: a space devoted to planning, implementation, and experimentation in the world of interior design understood as home, retail, exhibition, work, and transport spaces. - LAB Image: it focuses on teaching and research support activities in the fields of planning, production, and management of communication products in audio-visual and photographic format.

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- LAB Prototypes: This lab specializes in making models and prototypes for design and industry. Special attention is paid to practicability and production checks in order to optimize project time frames and costs working with all the materials on the market.

Another useful facility is pack station: Politecnico makes a deal both with Amazon and DHL in order to have two pack station with lockers that allow students to receive Amazon packages at any time of the day in safety and convenience. In the end, there are a kindergarten and a sports complex outside campus, that has the same deal with Politecnico.

- Polifactory: It is an interdepartmental research laboratory

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	that explores the relationship between design and new digital manufacturing processes, promoting a new culture of making. Polifactory is a makerspace that combines a coworking area. It is equipped with a large collective central table intended to accommodate its designers and researchers community, with two laboratories (Machine Shop and Workshop) equipped with machines and tools for the analog/digital manufacture.
Evidence of success	According to *QS Rankin by Subject*, the School of Design is 1st in Italy, 3rd in Europe and 6th in the world; the *QS Ranking by Subject* uses standards such as Academic and Employee Reputation. Furthermore, there is a strong connection with industries that come from different design fields: Luxottica, Dolce & Gabbana, Artemide, Smeg are only a few examples. Through the years, the researchers and students of the School have received some important awards in the design field, like ADI Compasso d'Oro, A' Design Award and Competition, and others, which are important to increase the weight of the School in international background. In addition, there are many calls both in national and international perspective; the calls are addressed to professors, Ph.D.'s candidates, researchers, administrative employers, etc.
Funding sources	Public-private
Contact (Web site, address, email)	Address: Via Giuseppe Candiani 72, 20158 Milano, Italy Website: http://www.design.polimi.it/
Responsible person	Dean: Professor Luisa Collina Info: Chat Online, various email for different problems, Chatbot
Information concerning the project	The School of Design has many connections with industries, which are constantly fed in order to keep them strong and up-to-date. These connections are encouraged by platforms like Career Service, where students and graduates can find internships and jobs, and by events such as workshops (intensive courses lasting a week) which are the subject of the design; didactics, where they can be partners of teaching; ideas competitions, in which the school is sponsoring the initiative; organization of seminars in which the school is sponsoring the initiative.

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2.5 Best practices Centers for Advanced Textiles

Name of good practice	Collaboration between Universitat Politècnica de Catalunya Textile Engineering Section (Department de Ciència dels Materials I Enginyeria Metal.lúrgica) with University of Shaoxing to create a Technology Transfer Center for Textile Engineering
Type	**Technology Transfer Center**
Topic	Textile Engineering Skills to transfer knowledge from Academy to Industry
Description (up to 1 pg)	The Universitat Politècnica de Catalunya (UPC) (Spain) and Shaoxing University (China) have signed a collaboration agreement for the creation of a technology transfer center at the Chinese university and the impulse of joint research projects linked to textile engineering and civil engineering. The agreement signed with the Shaoxing University (Zhejiang province), has the aim to provide support from the UPC in the creation of a technology transfer center based in the Chinese university to promote and strengthen collaboration in research and knowledge transfer between the two institutions and between the Shaoxing University and the companies place in Shaoxing. The project, which is promoted and funded by the Shaoxing City Council and has the support of companies in the area, wants to promote research and economic development in this Chinese region, in strategic areas such as textile engineering and civil engineering Thus, a dozen research projects have been identified in these areas, which, coordinated by the UPC, will be carried out jointly by researchers from both institutions. The agreement also provides for institutional visits to the Chinese university that were taken on November 2018 and January 2019 to organize a seminar on research innovation and valorization to promote the creation of an ecosystem of innovation in the region The visit of the UPC has also served to establish the foundations of these joint research projects.
Equipment (up to 1 pg)	NO EQUIPMENT

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Evidence of success (up to 1/2 pg)	<u>Institutional Visit October 2017</u> In October 2018 an institutional visit from UPC to the University of Shaoxing took place. During this visit there were different meetings with the City Council of Shaoxing and people from the University of Shaoxing, and an agreement was signed.  <u>Institutional Visit January 2019</u> On November 2018 an institutional visit from UPC to University of Shaoxing took place. During this visit, there were different meetings with the City Council of Shaoxing and people from the University of Shaoxing to continue with the collaboration. Moreover a Seminar was organized with the participation of more than 100 companies. Researchers from UPC presented their projects to these companies and academia.

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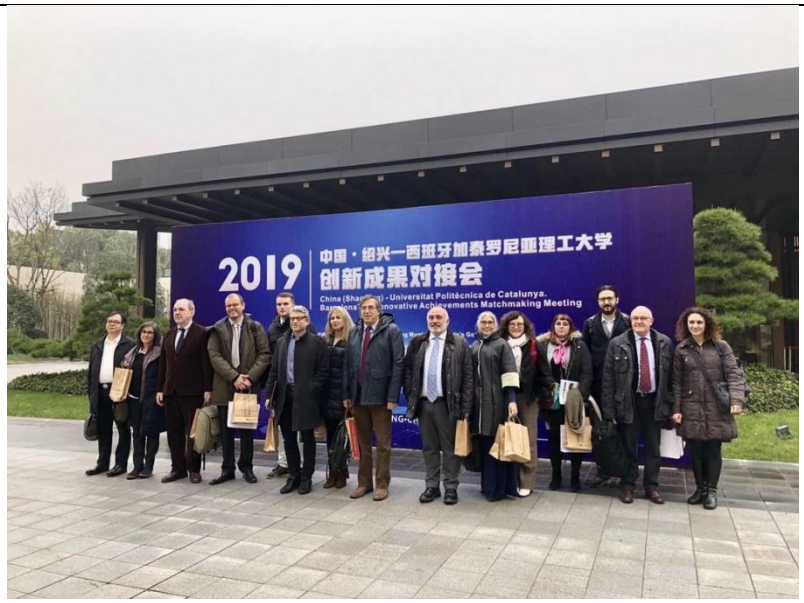

May 2019

The Technology Transfer Center started to run.

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	 https://www.upc.edu/ca/sala-de-premsa/noticies/alianca-estrategica-de-la-upc-amb-la-shaoxing-university
Funding sources	Local Government of Shaoxing and Shaoxing University
Contact (Web site, address, email)	http://iec.usx.edu.cn/
Responsible person	For the whole project: Dean of International Relations Office (Universitat Politècnica de Catalunya) For Textile Engineering: Mònica Ardanuy
Further information (up to 1 pg)	(Emphasize on methodology, equipment, operation, management, advantages and benefits for industrial cooperation)

Name of good practice	Center for Advanced Textile (CAT)
Type	**Advanced Textile Center** implemented to different service sectors
Topic	Design / Digital Textile Printing
Description (up to 1 pg)	The Centre for Advanced Textiles (CAT) at Glasgow School of Art was established in 2000. The remit of the centre is to: i) provide cutting edge facilities for textile design education; ii) investigate the aesthetic, technical, and commercial opportunities presented by digital

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	textile printing; and iii) operate a commercial service bureau for industry and individuals. The impact of this combination of technology, research and practice form a key element in Glasgow School of Art's developing research culture. The Centre also promotes the cultural and economic significance of design and its influence by disseminating research to a broader audience within the textile industry and Higher and Further Education. Considering the full application of digital textile printing the centre serves different kinds of sectors: fashion, clothing, footwear, furnishing, tapestry, accessories ecc. Digital textile printing technology allows designs and images to be printed straight from the computer screen onto fabric, creating exciting opportunities for customised design and allowing photographic quality reproduction onto natural fibers, such as silk, wool, linen, and cotton. The primary advantage of direct digital textile printing is to eliminate rapid prototyping of textile designs and products and eliminate the need for the traditional time consuming and expensive sampling process. It is no longer necessary to color separate a design, enabling much more complex and subtle effects to be produced than have previously been possible. The carrying of stock, with the associated cost implications, is not required as designs can be printed on demand. Lead times and start-up costs are minimal compared to conventional printing, and quantities as small as 1 meter can be provided. As a subject of study, the textile design has existed at GSA since 1845. The four year BA (Hons) Design – Textiles programme ran until 2013, when the BDes (Hons) Fashion & Textile Design programme was phased in, offering a new fashion pathway alongside the textile pathway with the specialisms of weave, knit, print and embroidery. The MDes Textiles as Fashion programme commenced in 2006 and has recently revalidated to become the Des Fashion & Textiles programme. Good workshop practice in terms of recording and analyzing technical, material and color exploration is promoted throughout the programme. Technical workshops cover pre and post-treatment processes and encourage combinations of digital and hand processes. Through group and individual feedback, emphasis is placed on individual image creation, innovative base substrate utilization and exploration of potential DTP product application. Classic Textiles fabrics are used as a teaching aid to demonstrate drawn qualities, repeat, and scale. These fabrics also form the basis of technical workshops during which students reconstruct

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	designs using dyeing and screen-printing processes. MDes students utilize the services of CAT due to the viability of DTP for fashion collection production and ability to engineer prints to garment shapes. CAT staff guides students on an individual basis.
Equipment (up to 1 pg)	2 Stork Sapphire digital textile printers (with bulk ink delivery system) for printing reactive dyes on fabrics up to 154cm (60in). Although acid inks have been used in the Sapphine machines, reactive inks are the primary dyestuff used. 1 La Meccanica R500 printer 1 SETeMa E-Wash machine/Portafix Colour Management System: to ensure color calibration throughout the process Flatbed and roll-fed scanners: used to scan high-resolution images for creating bespoke textile designs Vertical steamer, industrial washing machine, and dryer, wide-format roll-fed iron: used to ensure that all print dyes are fixed and stable before leaving CAT CAT Digital Service: an online service that lets clients upload their designs, customize them using layout and editing tools available and send the orders. Once uploaded, submitted, and paid for online, the customers' order links directly to the digital textile printer and the designees are added to the appropriate fabric queue. The system generates the customer's receipt and packaging labels, streamlining the administration process. There is potential to extend this system to integrate full product production, working with a network of local manufacturers.
Evidence of success (up to 1/2 pg)	CAT promotes the connection between HEI and Industry by supporting learning and teaching in different ways. One of them is represented by the work placement scheme that supports employability and entrepreneurship. CAT offers a work placement scheme that benefits participants by providing opportunities to enhance DTP and work-related skills. For GSA students work placements are optional, taking place during holiday periods. Placements vary in duration from a few weeks up to a couple of months depending on the applicant, their suitability and availability. Placements are unpaid but participants receive a substantial amount of printing credit related to placement duration to be

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	used at CAT when required. Through this programme, CAT has been able to support the born and the development of new textile start-ups. For instance: - Engelbrecht (2013) a graduated from Australia launched Alv Textiles thanks to the time she spent at CAT placement, where she was able to create a collection of new work featuring spontaneous paintings reproducing small-scale sampling on cotton, linen and silk base fabrics. Due to the understanding gained through the work placement experience, relationships formed with CAT staff and continued support through DTP services, Alv Textiles continues to grow. - Fiona Douglas (2012), graduated from GSA's undergraduate textile design programme, obtained the support of CAT to test samples of designs, progressing to short runs of textile lengths and fabric for make-up into products. CAT staff worked with her to transfer watercolor paintings onto fabric. As a graduate of GSA Douglas received a reduced printing fee. She wanted to print onto a linen base fabric, different from those currently available from pre-treated fabric suppliers. Working with Douglas the required fabric was purchased, CAT outsourced pre-treatment and undertook colour testing to ensure accurate reproduction. In 2011, Blubellgray, the Douglas startup, launched digitally printed textiles and products at trade shows, including Maison Object, Paris and Tent, London. CAT also supports PhD researchers favoring the collaboration with the enterprises of the sectors. For example, CAT let to Andy McDonald, as part of his PhD research, to develop together with BeastiesLAB a retail installation that invited customers to create their own cushion and to work with Natasha Marshall Ltd to design and test a multi-touch interface for customized textile design. McDonald benefited from CAT's previous connections to the companies involved in the projects and support with securing external funding. The projects permitted McDonald to undertake industry engaged practice-based learning relevant to his PhD study. As another example we can recall the Scottish Funding Council (SFC) Innovation Voucher (£5,000) awarded in 2010 by CAT to work collaboratively with the Scottish fashion designer Iona Crawford. The aim of the project was to develop a new collection of digital prints on linen/cashmere

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	fabric. As a fashion designer, Crawford required CAT assistance in developing selected imagery into repeating designs. CAT was responsible for testing chlorination, pre-treatment, digital printing, and post-treatment processes. The methods used for the most successful technical samples were utilized to print Crawfords textile designs, which she manufactured into garments. CAT has also worked on SFC Innovation Voucher projects with GSA graduates, Timorous Beasties, and Morton Young and Borland. Involvement in these projects enhanced CAT's reputation for knowledge exchange; the exploratory nature made possible due to CAT's unique position as a research facility and business located within an educational institution. Research activities, linked by GSA, contributed to the developments of new prototypes and textile product production. For instance in 2003 CAT established Classic Textiles, accurately recreating twentieth-century textile designs using DTP technology with important application in the industry. CAT is also engaged in important research projects that can produce relevant inputs for the textile industry. For example within the Machintosh Reinterpreted project, CAT staff worked with the Hunterian Art Gallery and University of Glasgow to reinterpret and create a collection of digitally printed textiles from the textile sketches of Charles Rennie Mackintosh. The project resulted in an exhibition in 2008 of newly created printed textiles and archive sketches (figure 5),an exhibition catalog (Campbell 2008), series of talks, and school workshops, contributing to understanding surrounding utilization of archive resources for textile design practice. The examples indicate the positive contribution of staff and doctoral researchers to the Centre and the critical synergies and positive outcomes created in the textile industry.
Funding sources	CAT was established thanks to a Research and Development Grant of £661,000 from the Scottish Higher Education Funding Council.
Contact (Web site, address, email)	https://www.catdigital.co.uk https://www.academia.edu/12559872/Transitioning_between_Industry_and_Education_The_Centre_for_Advanced_Textiles_CAT_Case_Studies_in_Digital_Textile_Printing CAT@GSA.AC.UK

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Responsible person	**Alan Shaw** BA Hons Printed Textiles, MDes Printed Textiles Industry Coordinator
Further information (up to 1 pg)	(Emphasize on methodology, equipment, operation, management, advantages and benefits for industrial cooperation)

2.6 Best practices Desk Research/Publications

Name of good practice	Implementation of a 6 month internship of students in the industry.
Type	**Desk research report**
Topic	Desk research "TRANSFERRING RESEARCH AND INNOVATION IN THE TEXTILE & CLOTHING-MANUFACTURING SECTOR"
Description (up to 1 pg)	Analysis and research of the methodology and assumptions currently used to ensure consistency between educational standards and curricula of training, retraining and advanced training and the labor market requirements in the Mechanical Engineering following the principle "Education of lifelong."
Equipment (up to 1 pg)	
Evidence of success (up to 1/2 pg) Good Practice	The Good Practice of this particular project is the implementation of a 6 month internship of students in the industry. This creates an active link between academia and industry and provides the graduates with valuable job experiences. Additionally, the academic institutions collaborate to some degree with companies of the private sector in the context of European or national programs.
Funding sources	Co-funded by the Tempus Programme of the European Union

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Contact (Web site, address, email)	
Responsible person	Georgios Priniotakis (gprin@uniwa.gr)
Further information (up to 1 pg)	

Name of Successful project	Impacts of Sustained Institutional Participation in Service-Learning: Perspectives from faculty, staff, and administrators
Type	**Research articles (Refereed)**
Topic	Collaboration between EU and America in order to engage Industry and University and foster a culture of community engagement in higher education institutions
Description (up to 1 pg)	The movement for greater civic engagement in higher education in the United States has taken hold across the core academic missions of teaching, research, and service. One manifestation of this movement has been growing participation in service-learning, a teaching method grounded in community-university partnerships in which students provide services that simultaneously address community-identified concerns and meet key learning objectives. In order to assess the benefits of long-term sustained institutional involvement in service-learning, in 2007–2008 we interviewed 23 faculty members, staff, and administrators from 16 academic institutions that had participated in a national demonstration program for service-learning, which ended in 1998. We found that 15 of these institutions had sustained service-learning to some degree and 12 had integrated service-learning into the curriculum, with varying degrees of institutional support. Interview participants described five main impacts of their institutions' sustained participation in service-learning: 1) increased community engagement and community-engaged scholarship, and increased valuation of both, among participating faculty members; 2) greater capacity for community-university partnerships among academic and community partners; 3) improved community-university relations; 4) diffusion of service-learning and/or principles of community-university

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	partnerships to other departments and schools; and 5) recruitment of students seeking community engagement opportunities. This study provides evidence that sustained institutional participation in service-learning can foster an understanding of the scholarly value of community-engaged teaching and research among participating faculty, and increase community-engaged activities at participating academic institutions. These findings suggest that funding agencies, faculty members and academic administrators can use service-learning as a strategy to foster a culture of community engagement in higher education institutions.
Evidence of success (up to 1/2 pg)	This study provides evidence that sustained institutional participation in service-learning can foster an understanding of the scholarly value of community-engaged teaching and research among participating faculty, and increase community-engaged activities at participating academic institutions.
Contact (Web site, address, email)	https://epress.lib.uts.edu.au/journals/index.php/ijcre/article/view/1789
Further information (up to 1 pg)	**Amanda L. Vogel** SAIC-Frederick, Inc. **Sarena D. Seifer**

2.7 Best practices SMEs capacity building

Name of good practice	Good practice – competitive infrastructure for SMEs Majutex
Type	SMEs/Production department
Topic	Support for consolidation and modernization of production in the private sector
Description (up to 1 pg)	Objectives: -Improvement of the production capacity; -Production equipment modernization
Equipment (up to 1 pg)	N/A
Evidence of success (up to 1/2 pg)	Majutex is a private company that received funds through the operational program “Improvement of the economic Competitiveness” in order to upgrade the infrastructure. Through this program Majutex received 913.533,06 EUR for innovative and ecological system upgrading for production

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	(weaving machines, printing & lamination machines, spray test James Heal). Because of the competitive infrastructure, Majutex is now involved in European research project to produce advanced textile materials, being a partner in the projects: TexEMFire Manunet (texemfire.inflpr.ro) and UV-Shield Eureka! (uv-shield.ro).
Funding sources	Operational Program "Improvement of the economic Competitiveness"
Contact (Web site, address, email)	www.majutex.ro
Responsible person	Iulian Mancasi https://majutex.ro/en/products/aramid-fabrics https://majutex.ro/en/products/laminar-membranes https://majutex.ro/en/products/special-treatments https://majutex.ro/en/products/printed-fabrics
Further information (up to 1 pg)	Images of the Majutex company upgraded: 

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2.8 Best practices Clusters

Name of good practice	Collaboration between Textile enterprises through a cluster AEI Tèxtils
Type	Cluster / Business association
Topic	Textile association
Description	**AEI TÈXTILS** is a non-profit organization representing the Catalan technical textiles cluster. Its mission is to promote

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(up to 1 pg)	AEI Tèxtils.cat AGRUPACIÓ D'EMPRESES INNOVADORES innovation with the aim of improving the competitiveness of its members, as well as cooperation, complementarity and communication among them. Its members comprise SMEs of the whole manufacturing chain of technical textiles, universities, research centers textile trade associations and other kinds of organizations related to the field. It works in 4 strategic lines: **R&D**: Promoting cooperation amongst its members, increasing the taking on level of innovation support initiatives; promoting the participation of the Catalan technical textiles sector in technological cooperation European projects and increasing their productivity in the territory promoting the implementation of new technologies and the development of new products and processes. **Internationalization**: Improving access to international markets, improving access to knowledge through international R&D and technological and commercial partners, and improving access to research and key production infrastructures in third countries. **Skills**: Increasing the training of current employees in the sector and improving the level of qualifications, promoting development and knowledge of career opportunities in the sector, and providing unique and specific training on technology and market in the technical textiles sector. **Marketing**: Promoting the exchange of best practices amongst local enterprises; improving the image of the sector in Catalonia; promoting its strengths and capabilities to other manufacturing sectors of the territory to increase global business opportunities and creating a dialogue between industry, scientific community, and public administration. It offers several services to its members within these 4 thematic areas. As a cluster structure and according to its strategy AEI TÈXTILS has a suitable profile to carry out the assigned tasks in this project. It has the appropriate skills and experience to provide support and added value services to SMEs which contributes to their increase in competitiveness. AEI TÈXTILS has built strong relationships with main stakeholders of the textile sector in Catalonia and internationally where has lead the creation of the transnational network on Smart Materials CONTEXT. It has also experienced in the creation and working with virtual

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	platforms, in organizing benchmarking and networking sessions, organization of thematic workshops, dissemination and exploitation activities, and providing several kinds of services to SMEs, working closely with them. Knowledge of the technical textiles' sector, technology, and markets.
Equipment (up to 1 pg)	n/a
Evidence of success (up to 1/2 pg)	Cooperation in several projects under EU funding with synergies between research and HEIs and industry to link the innovation gap. Several examples of (Examples of collaboration between HEI and Industry) AEI TÈXTILS has promoted the Cost Action **CONTEXT** (CA17107) - *European Network to connect research and innovation efforts on advanced Smart Textiles* (11/2018-10/2022) being its Cluster Manager the Action Chair, and AEI Tèxtils the Grant Holder Institution. CONTEXT aims are: - To promote the development of a ***joint research*** roadmap for smart textiles - To foster the ***transfer of knowledge*** among different actors in order to find suitable applications in various multidisciplinary fields - To act as ***stakeholder platform*** to identify needs and requirements from different points of view in a bottom-up approach - To promote ***networking*** activities in order to attract talent, build more and better research projects with more consciousness on the objectives of creating exploitable results. **Partner at FOSTEX project (**01/2019-01/2022), co-funded by ERASMUS+ programme under the Capacity Building for Higher Education. The main aim of Fostex initiative is to bridge the gap of university-enterprise collaboration in the area of specialized services for the textile sector by upgrading two textiles centers in Morocco and by establishing two fully operational advanced textile innovation centers in Jordan, training their staff by European experts. **Partner at TEXSTRA project** (09/2017-02/2020), co-funded by Erasmus+ Programme. The aim of the project is to promote and contribute to the transferring research and

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	innovation knowledge to students & trainees of the textile/clothing sector via project based learning. **Coordinator of PACTEX and ECODISTEX projects,** both co-funded by the Waste Agency of Catalonia. PACTEX aims to establish synergies between the companies of both clusters and foster among them the effective use of material resources by reducing industrial waste at source, reuse of products, improving recyclability and recovery of waste. ECODISTEX (03-12/2018) aims to promote the use of environmental criteria in the different stages of design, production, distribution, use and recycling of final products within the technical textile sector with the goal to reduce and mitigate the environmental impact during the whole life cycle. **Coordinator of LIFE-FLAREX project** (07/2017-06/2020), co-funded by LIFE Programme. The aim of the project is to carry out an analysis of the environmental impact of the best technologies currently available that are alternative to toxic Flame Retardants (FRs), used in textile finishing processes, especially those that are halogenated, and demonstrate which are the best alternatives: the less toxic and with lower environmental impact but at the same time those that will keep the required properties of the fabric. **Coordinator of MIDWOR-LIFE project** (09/2015-08/2018), co-funded by LIFE Programme. The aim of the project is to carry out an analysis of the environmental impact of the best technologies currently available that are alternative to toxic DWOR (liquid repellents), used in textile finishing processes, especially those that are fluorinated, and demonstrate which are the best alternatives: the less toxic and with lower environmental impact but at the same time those that will keep the required properties of the fabric.
Funding sources	Private and EU
Contact (Web site, address, email)	https://textils.cat/en/ info@textils.cat
Responsible person	Dr. Ariadna Detrell
Further information (up to 1 pg)	(Emphasize on methodology, equipment, operation, management, advantages and benefits for industrial cooperation) As a cluster, AEI Tèxtils supports its members to apply for funding at national and European level, including 3 SMEs

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	that were awarded the SME Instrument from the H2020 program from the European Commission. The cluster also organizes periodic workshops with the industry and research community in order to bring to date important aspects such as sustainability[1] and industry 4.0[2]. 1 - https://textils.cat/en/2019/02/exit-del-primer-workshop-del-projecte-flarex-a-catalunya/ 2 - https://textils.cat/en/2019/07/sessio-sobre-industria-4-0-a-les-pimes/

Name of Successful EU project	Compendium of Projects in the European NanoSafety Cluster 2017 Edition
Type	**NanoSafety Cluster**
Topic	NanoSafety
Description of the Project (up to 1 pg)	The 2017 compendium contains 17 H2020 projects and 10 FP7 projects. The compendium aims to showcase the exciting and essential European-wide collaborative research being undertaken to ensure the safe implementation of nanotechnologies, and to act as a one-stop-shop for all stakeholders interested in acquiring an overview of current research activities. The compendium also aims to bring the research community closer together and show the potential for synergy. It is a means to establish links and communication between them well before the publication of their results. It thus focuses on the communication of projects' strategic aims, extensively covers specific work objectives and the methods used in research, and documents human capacities and partnerships. As such, the compendium supports collaboration on common goals and the joint elaboration of plans, while compromising neither the potential for scientific publication nor intellectual property rights
Evidence of success	The compendium will continue to be a dynamic, frequently updated, web-based document available free of charge to all

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(up to 1/2 pg)	interested parties. Over the last number of years, the compendium has also provided an opportunity for the Nanosafety cluster Working Groups (NSC WGs) to provide an update on their activities.
Funding sources	EU funding
Contact (Web site, address, email)	https://mafiadoc.com/compendium-of-projects-in-the-european-nanosafety_5c80c12c097c47636e8b45b8.html http://www.nanosafetycluster.eu

Name of Successful EU project	Automotive Textiles Market By Product (Nonwoven, Woven, Composites), Application (Tires, Upholstery, Engine Components, Safety Devices) - Global Industry Analysis And Forecast To 2025
Type	**Cluster/Industry**
Topic	Automotive Textiles Market
Description of the Project (up to 1 pg)	The automotive textiles market is anticipated to develop significantly over the forecast period. Automotive textiles come under technical textiles and are generally useful in the automotive business. The automotive textiles are used for the interior of cars. The worldwide automotive textile market is anticipated to witness high development under the rising vehicle generation, especially in Asian nations, for example, India, China, Thailand, and Indonesia. Furthermore, expanding inclination towards technical textiles in the automotive business to take into account superior applications is additionally anticipated that would drive the worldwide request. Development in vehicle production and ideal security directions are anticipated to drive the development. The Automotive Textiles Market is based on different segments, namely, by product, the market is segmented into nonwoven, woven, and composites; by application, the market is segmented into tires, upholstery, engine components, and safety devices.

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Evidence of success (up to 1/2 pg)	On a global front, the Automotive Textiles Market covers North America (United States, Canada and Mexico), Europe (Germany, UK, France, Russia, Italy, Rest of Europe), Asia-Pacific (China, Japan, South Korea, India, Southeast Asia, Rest of Asia-Pacific), South America (Brazil, Argentina, Columbia, South Africa, Rest of South America) and Middle East and Africa (Saudi Arabia, UAE, Egypt, Nigeria, South Africa, Rest of MEA). The Asia Pacific automotive textiles market represented over 45% of global demand in 2015
Funding sources	
Contact (Web site, address, email)	https://www.crystalmarketresearch.com/report/automotive-textiles-market

3. BEST PRACTICES ANALYSIS

Following the survey concerning EU best practices and success stories from the textile sector, have been selected 80% of the most relevant for the textile sector (industry, education, and R&D) EU best practices.

The statistic concerning the type of EU best practices selected per partner is presented in Table 1 and figure 1. From 100% best practices received were selected only 80% related to the textile sector. Besides from EU best practices received, 35% are related human resources (15% courses, 5% seminars, 15% workshops), 25% address the aspects concerning the infrastructure/logistics and capacity building for advanced research centers (5% equipment/services, 20% research centers) and come from R&D (25%) and Erasmus+ projects (15% of the EU best practices received).

The selected best practices show that human resources can receive knowledge and qualification through courses/laboratories, seminars, and workshops organized in the organizations. Also, a reliable generator of best practice can be an R&D project that has the results such as scientific dissemination, methods/technologies, and new products and investments in infrastructure (equipment) and logistics.

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Table 1. Best practices/ success experiences types - distribution per EU organization participating in Fostex Erasmus+ project

Partner	Best practices/ success experiences types						
	Human Resources			Infrastructure/logistics		Context/Projects	
	Courses	Seminars	Workshops	Equipment /Services	Research Centers	Erasmus+	R&D
UPC	x	x					x
INCDTP	x		x	x	x	x	x
UNIWA	x		x		x	x	x
AEI Textils			x		x	x	x
CIAPE					x		x

Figure 1. Distribution of the Eu best-practice types

The situation both in Morocco and Jordan are different and the best practises should be implemented are different too; among the later discussed ones; the table below shows the applicable for each country:

Best practices recommended for JUST, BAU (Jordan)	Best practices (BP) recommended for ESITH, UH2C (Jordan)	Comments
Collaboration between Textile enterprises through a cluster	Collaboration between Textile enterprises through a cluster	N/A
Competitive infrastructure for SMEs	Competitive infrastructure for SMEs	You will need the support from your National Research Authority for opening calls of project proposals for

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		fostering the quality of life and research through advanced infrastructures (laboratory &industry equipment) for large enterprises/SMEs
Impacts of Sustained Institutional Participation in Service-Learning Jordan-US: Perspectives from faculty, staff, and administrators	Impacts of Sustained Institutional Participation in Service-Learning Morocco-US: Perspectives from faculty, staff, and administrators	Sustained e-Learning Jordan/Morocco-US (Collaboration between Jordan or Morocco and US in order to engage Industry and University and foster a culture of community engagement in higher education institutions)
Implementation of a 6 month internship of students in the industry.	Implementation of a 6 month internship of students in the industry.	Very useful for understanding the theoretical aspects from courses by practical applications
Center for Advanced Textile for design and digital printing	Center for Advanced Textile for design and digital printing	
Collaboration Jordan –China	Collaboration Morocco – China (Technology Transfer Center)	You will need the support from your National Research Authority for opening bilateral collaboration calls JORDAN/MOROCCO-CHINA
Technical services for quality inspection of the textile materials and infrastructure online presentation for Jordanian Research	Technical services for quality inspection of the textile materials and infrastructure online presentation for Moroccan Research	You will need the support from your National Research Authority for web platform implementation in order to map all research infrastructures and afferent services on Jordan/Morocco
Zero Carbon Hub & Lab Jordan	Zero Carbon Hub & Lab Morocco	Create Zero Carbon Hubs and Innovation Labs to help communities, local authorities and policymakers to create Zero Carbon Action Plans, and to provide

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		support for the development of innovative solutions for sustainable economy (minimise energy consumption, wastewater, implement circular economy)
N/A	Development of sectorial methods for anticipation of skills needs for smart textile industry	
Creation of a MOOC (Massive Open Online Courses) for future textile and clothing managers	Creation of a MOOC (Massive Open Online Courses) for future textile and clothing managers	
N/A	Workshop concerning innovative achievements and development perspectives of the advanced materials with electroconductive properties	
Developing of the inter institutional program of developing advanced eco-nanotechnology solutions for multifunctional treatments of leather and textile materials	Developing of the Inter institutional program of developing advanced eco-nanotechnology solutions for multifunctional treatments of leather and textile materials	
Creation of a networking connection between Universities and SMEs in the area of textiles and clothing.	Creation of a networking connection between Universities and SMEs in the area of textiles and clothing.	The network connection can be achieved through a textile cluster
Intensive Study for Higher Education Learners based on invited teachers at higher education Intensive Study Programmes	Intensive Study for Higher Education Learners based on invited teachers at higher education Intensive Study Programmes	
Courses about technical textiles	Courses about technical textiles	
Creation of a strong	Creation of a strong	

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connection with Industry and Universities through the Liaison Office	connection with Industry and Universities through the Liaison Office	
Seminar/Courses about textiles for medicine and health	Seminar/Courses about textiles for medicine and health	
Seminar/Courses about Textile Industry and Sustainability	Seminar/Courses about Textile Industry and Sustainability	

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4. BEST PRACTICES IMPACT

Best practices represent a set of proper methods, guidelines, and techniques used in research, innovation, education, dissemination, teaching, learning, and quality testing that demonstrated good results over time, in their application at the organization level.
UPC being Higher Education Organization is mainly focused on teaching/learning aspects, improving the competencies o human resources by courses, seminars, and supporting the technological transfer by capacity building actions:
➔Seminar “Textile Industry and Sustainability;
➔Seminar “Textiles for medicine and health.”
➔Capacity building activities in collaboration with Shaoxing University (China) -Technology Transfer Center (technical textiles)
➔Courses (High-modulus and high-strength polyethylene fibers, High-modulus and high-strength polyethylene fibers, Introduction to Smart Textiles)

INCDTP being a research organization is mainly focused on research and innovation action, textile material investigation, quality testing, and standardization. However, INCDTP was also involved in Erasmus+ project and capacity building project at the national and European levels.
By collaborating with other research centers (TESTEX, SC LACECA SA), INCDTP participates in the comparison between laboratories TESTEX Rundtest Fabric Properties Test, Function Test, Yarn Round Test (www.testex.com). Also, INCDTP is involved in training, intensive study programme (TEXSTRA, Advan2Tex, TEXMATRIX, Skills4Smartex). The scientific infrastructure is intensively presented on the national infrastructure web platform (https://erris.gov.ro/INCDTP)
Moreover, INCDTP organized some workshops during the research and development project (Reset Project, 3D-Electrotex, TexEMFire).
➔Workshop (3D-Electrotex project) “Innovative development and perspectives on advanced textile material with electro-conductive properties”;
➔Course: Textile materials functionalized by RF plasma (TEXSTRA Erasmus+),, Intensive Study Programme, Portugal 2019
➔Workshop “Interinstitutional program of developing advanced eco-nanotechnology solutions for multifunctional treatments of leather and textile materials,” PN-III-P1-1.2-PCCDI-2017-0743
In Romania, the company S.C. MAJUTEX S.R.L. that is involved in several research projects has received funds through the Operational Program “Improvement of the economic competitiveness” 913.533,06 EUR for innovative and ecological systems for production (weaving machines, printing & lamination machines, spray test James Heal).

UNIWA being a Higher Education Organization is intensively focused on teaching, learning aspects, being involved in numerous Erasmus+ projects, and multiplying the knowledge and research results.
UNIWA uses the courses, practical labs, and workshops (TECLO) to communicate scientific knowledge and to improve the students and academic personnel qualifications.
➔Workshop (TECLO Erasmus+)- Creation of a networking connection between Universities and SME in the area of textiles and clothing;
➔Learning Lab (TECLO)- Creation of a MOOC for future textile and clothing managers

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➔Training Course (UNITE TEMPUS)- Creation of a strong connection with Industry and Universities through the Liaison Office;
Report (Texstra Erasmus+) -Desk research "TRANSFERRING RESEARCH AND INNOVATION IN THE TEXTILE & CLOTHING-MANUFACTURING SECTOR" and research articles review
➔Practical laboratory (DIGKNIGA) - Design and development of smart fabrics and smart clothes. Smart systems developed through multifunctional design.
➔Successful relevant EU funded projects: NanoSafety Cluster, Automotive Textiles Cluster/Market by Product (Nonwoven, Woven, Composites), Application (Tires, Upholstery, Engine Components, Safety Devices) and Global Industry Analysis And Forecast To 2025
➔Innovation - Zero Carbon Britain Hub and Innovation Lab

AEI Textils being a non-profit organization representing the Catalan technical textiles cluster, has the mission is to promote innovation and to improve the competitiveness of its members, as well as cooperation, complementarity, and communication among them. AEI Textils use to organize workshops, mentoring companies in accessing the European funds for business development, education, and research and fostering the innovation and research by collaborative transnational projects.
➔Supports its members to apply for funding at national and European level;
➔Workshops with the industry and research community in order to bring to date essential aspects such as sustainability and industry 4.0;
➔Projects: COST CONTEXT, ERASMUS+ (TEXSTRA, FOSTEX), LIFE (FLAREX, MIDWOR); National projects (PACTEX and ECODISTEX)

CIAPE being a private non-profit organization is involved mainly in promoting accessible and inclusive learning for all.
CIAPE is involved in numerous Erasmus+ projects, training courses, and in organizing dissemination events and workshops in order to communicate the results of projects.
➔Center for Advanced Textile (CAT)

CRE.THI.DEV being a private non-profit organization is involved mainly in community development through the research and development of action plans, focused on the local and social economies, mainly on the fields of life-long learning, environmental protection, employment and local development.
CRE.THI.DEV is involved in numerous Erasmus+ projects, training courses, and organizing dissemination, promotion events in order to communicate the results of the projects and to increase the project visibility.
➔The methodologies of Royal College of Art and InnovationRCA which is College's centre for enterprise, entrepreneurship
➔School of Design in the Politecnico di Milano and labs (image, prototyping, exhibit, fashion, interdepartmental research laboratory (Polifactory))

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5. CONCLUSIONS

The best practices identified and selected can be used to help partner organizations (JUST, BAU, ESITH, and UH2C) to learn from the experiences of EU partners. The partners from Morocco and Jordan can discover what has and what has not a good impact in quality testing, research, education, innovation projects, dissemination, learning / teaching, communication and promotion of their organizations, as well as how to multiply successes and avoid mistakes during the upgrading or implementation of the new advanced textile centers in the Fostex Erasmus+ project. Also, the partner countries should do not discard the less than successful practices, because they often have as much or more to teach as the ones with best endings [1]. We can conclude that the leading best practices identified during the Preparation stage WP1 have been provided by:

- ***Universities (UPC, UNIWA)***
- ***Research organizations (centers, institutes) (INCDTP)***
- ***Clusters (AEI Textils)***
- ***Non-profit organization (CIAPE)***
- ***Non-profit organization (CRE.THI.DEV)***

Best practices and successful project stories provided during WP1 Preparation will be used as good examples for the implementation of the new advanced textile centers and development of the new textile materials according to the international trends predicted in statistics.

According to the statistics, several trends will dominate the research in advanced textile materials in the next years, such as:

- Advanced e-textiles materials (conductive yarns, fabrics, conductive polymers, conductive inks –figure 1) will have a considerable impact on the market in the future, such as advanced conductive materials [2] (e-textiles) for sensors, actuator or electromagnetic waves attenuation.

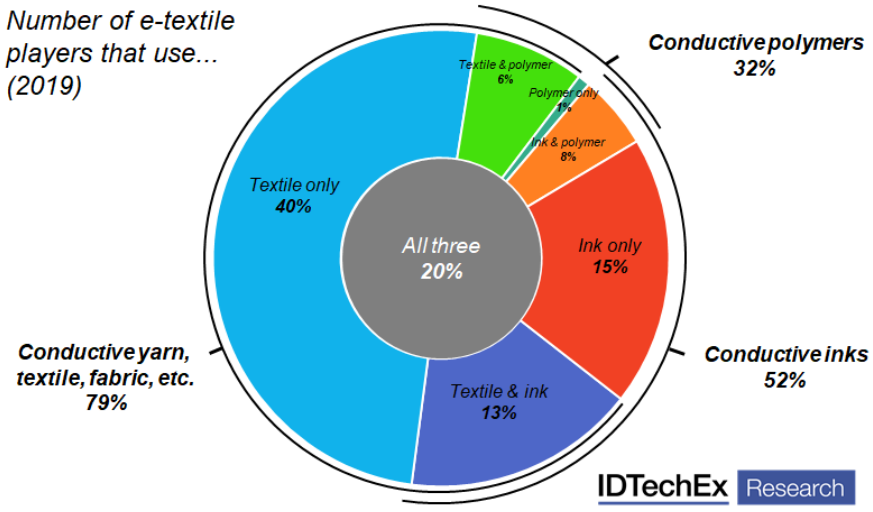

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Figure 1. Advanced conductive textile [2]

- Advanced composites materials developed by computational (figure 2) and predictive modeling [3]

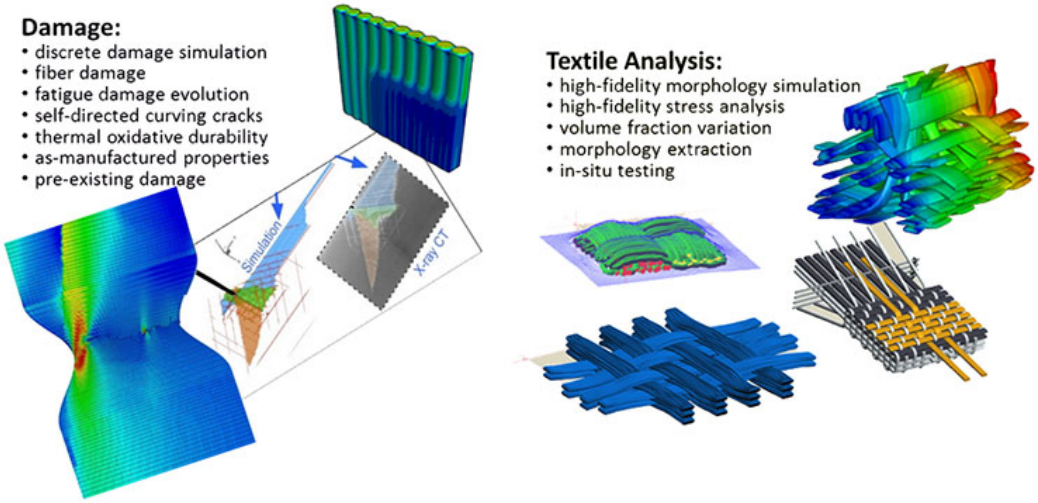

Figure 2. Simulation of the advanced textile composites [3]

- Textile waste management by reducing waste through reusing and recycling textiles [4] (figure 3) will contribute to reducing the limited resources used, the carbon footprint and environmental impact.

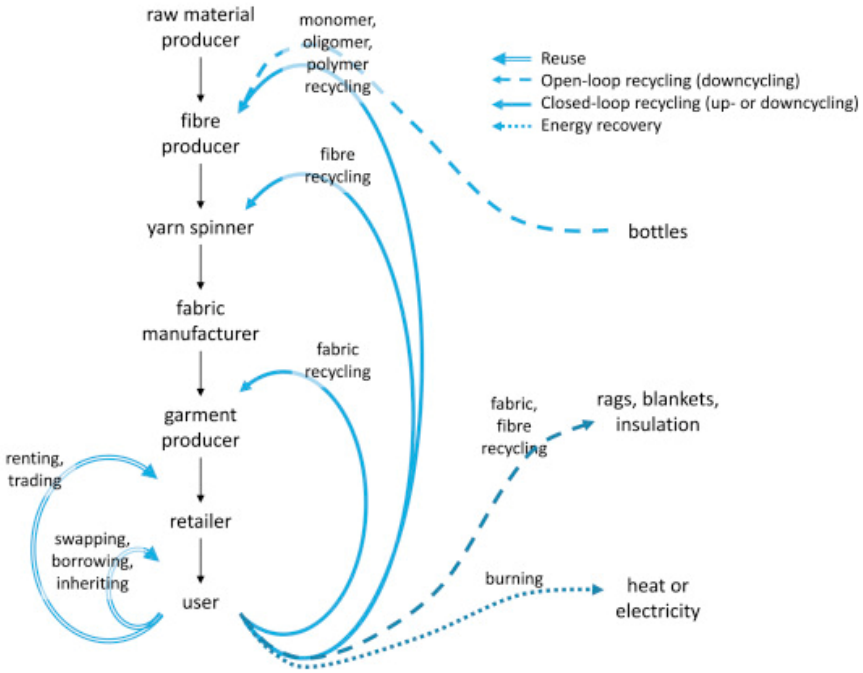

Figure 3. Classification of textile reuse and recycling routes[4]

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- 3D printed structures on textiles [5] (figure 4)

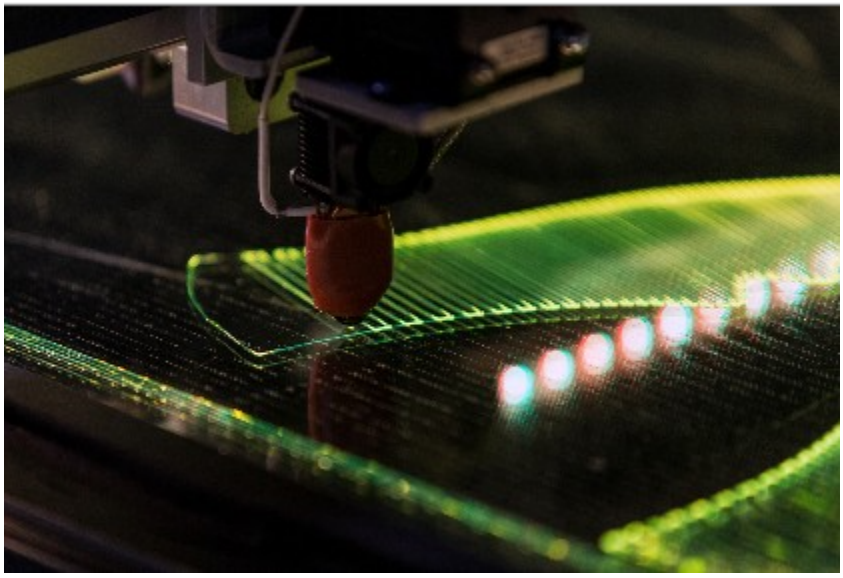

Figure 4. Nike Flyprinting process [6]

- Advanced materials based on new coating technologies. The Global Market Insights predicts that the global textile coatings market (figure 5) will increase to 5,600-kilo tons by 2024 [7]. The textile coatings, actually dominated by thermoplastics, have advanced applications in architectural products, large tents, waterproof clothing, and banners. Besides, high interest is anticipated to be for manufacturing in the area of automotive airbags, bulk bags, and leathers. Thermosets (natural, styrene-butadiene, polyurethane, and butyl rubbers) will grow over 4% up to 2024 [7]. However, the natural rubbers are mainly used in rainwear, military suits, protective clothing and carpet backing.

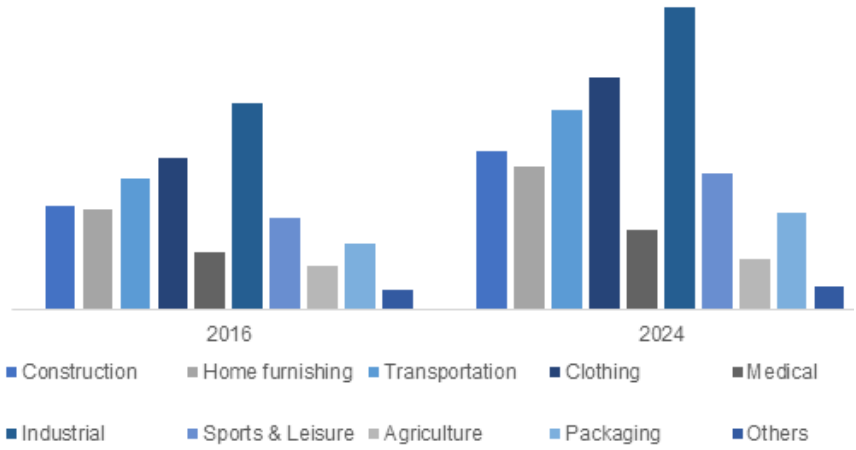

Figure 5. Global Textile Coatings Market dynamic [7]

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References

[1] Eglene, O., 2000. Conducting best and current practices research: A starter kit. Retrieved February, 17, p.2008.

[2] E-Textiles 2019-2029: Technologies, Markets, and Players, Available online: https://www.idtechex.com/en/research-report/e-textiles-2019-2029-technologies-markets-and-players/671

[3] Advanced Composite Manufacturing, Modeling & Characterization, Available online: https://udayton.edu/udri/capabilities/materials/advanced_composites.php

[4] Sandin, G. and Peters, G.M., 2018. Environmental impact of textile reuse and recycling–A review. Journal of Cleaner Production, 184, pp.353-365.

[5] Korger, M., Bergschneider, J., Lutz, M., Mahltig, B., Finsterbusch, K. and Rabe, M., 2016, July. Possible applications of 3D printing technology on textile substrates. In IOP Conference Series: Materials Science and Engineering (Vol. 141, No. 1, p. 012011). IOP Publishing.

[6] Nike claims first 3D -printed performance textile upper, Available online: https://www.just-style.com/news/nike-claims-first-3d-printed-performance-textile-upper_id133332.aspx

[7] Textile Coatings Market Size – Industry Forecast Report 2024, Available online: https://www.gminsights.com/industry-analysis/textile-coatings-market

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