SMART INDUSTRIAL INNOVATION AS ENABLER TO DRIVE NEW VALUE CHAINS FOR TEXTILES AND AEROSPACE

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EXECUTIVE SUMMARY

This executive summary serves as an overview and introduction to the reports on the preparation activities in the GALACTICA project. It consists of four attached documents: **Three sectoral need analysis studies** (textile, advanced manufacturing, and aerospace) including the results of a market survey and a general market overview, plus the **coaching guidelines** that provide common base methodologies for further deploying workshops oriented toward innovation and cooperation seeding. The complete statistics of the survey results are available upon request.

MARKET ANALYSIS / SECTORAL SURVEYS

As first activity within the preparation activities, we conducted a survey addressed to our cluster members of the three participating sectors. The objective was to identify the main needs of each sector in order to better design the project activities and to identify potentially interested actors and their competences. In total, 157 complete responses were collected (mainly SME's) confirming the general interest to address collaboration between the sectors.

The poll and market analysis underlined that the textile and the aerospace industry face similar challenges in the present and future. The three studies converge in their message: advanced manufacturing and digitalization are an essential part of the challenges and at the same time of the solution. In particular, the focus should be on new production processes (e.g., additive manufacturing) that support the development of advanced materials (e.g., lightweight materials like composites) and Industry 4.0 in general. In addition, there is still a serious skill shortage related to these topics and the implementation in the industry is lagging behind partly existing strategies.

All sectors are highly linked through the need to develop sustainable materials, products and increase the environmental performance of production processes (re-use and recycle, bio-sourced materials, industrial symbiosis, circularity and optimization of value chains).
Besides, the COVID-19 crisis revealed -especially for the aerospace sector- the necessity to develop new hygienic solutions and concepts, which generates a focus on innovative surfaces and textiles.

All three surveys confirmed a joint willingness to create cross-sectoral and international collaboration, which could be the key enabler to address the major challenges of fostering innovation and the loss of business due to COVID-19. Cross-sectoral barriers are mainly the entrance into a new market, the lack of contacts and information, the lack of know-how and the specific regulation and certification. Whereas for the companies the other industry sectors are relatively unknown, the chance of the GALACTICA project relies on the use of the "Outsider Effect", resulting in a mix of new creative ways of thinking and innovation and of extending and find complementarities in business models.

Several best practice examples in the attached reports draw inspiration for seeding innovations.

The three report main findings and conclusions revealed that the GALACTICA project with all foreseen activities can provide effective support to potentially overcome the barriers and to create new cooperation and new value chains between companies and organizations of the involved sectors.

COACHING GUIDELINES

Together with the industrial learning expeditions, the matchmaking and networking events, and the hackathons, the cross-sectoral fertilization workshops are part of the cultivation stage of the GALACTICA project, which aims at fostering synergies, identifying common pain points, needs and opportunities for jointly developing new value chains across the aerospace, textile and advanced manufacturing sectors. The Coaching Guidelines were thus developed to ensure that the delivery of the workshops follows a harmonized and productive process across the GALACTICA consortium partners.

Workshops can be classified either as technological or non-technological. Technological ones highlight lessons learned within one industry that may be successfully applied to other industries, outlining validated use cases, and encouraging cooperation among players operating in different sectoral domains. Non-technological ones focus on the introduction of new organizational and marketing methods to support product and process innovation.

The document also envisions different methodologies to conduct the workshops, using creativity tools and brainstorming in combination with techniques for driving innovation such as design thinking, gamification, and the creative-thinking approach. Among the methodologies presented, Design Thinking is considered the most promising tool in general because of the broad material already available and its flexibility. However, regardless of the chosen methodology, the role of the facilitator is a key element in order to ensure a productive workshop. Several tools and facilitating tips are also provided, both for in-person and online workshops.