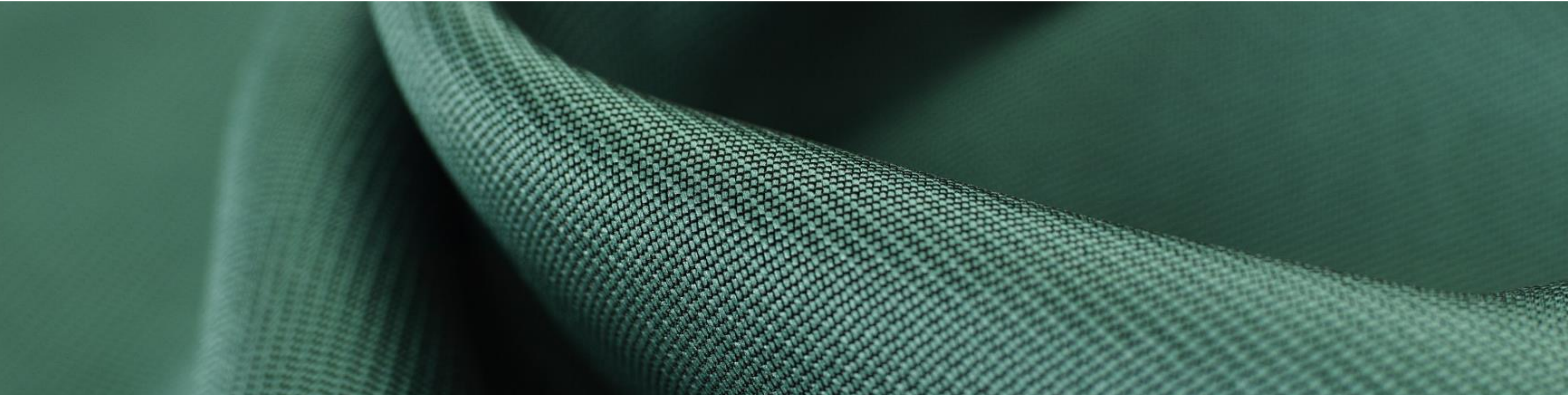


# SUMMARY

## General trends of innovation in the technical textiles' sector



Developed by:

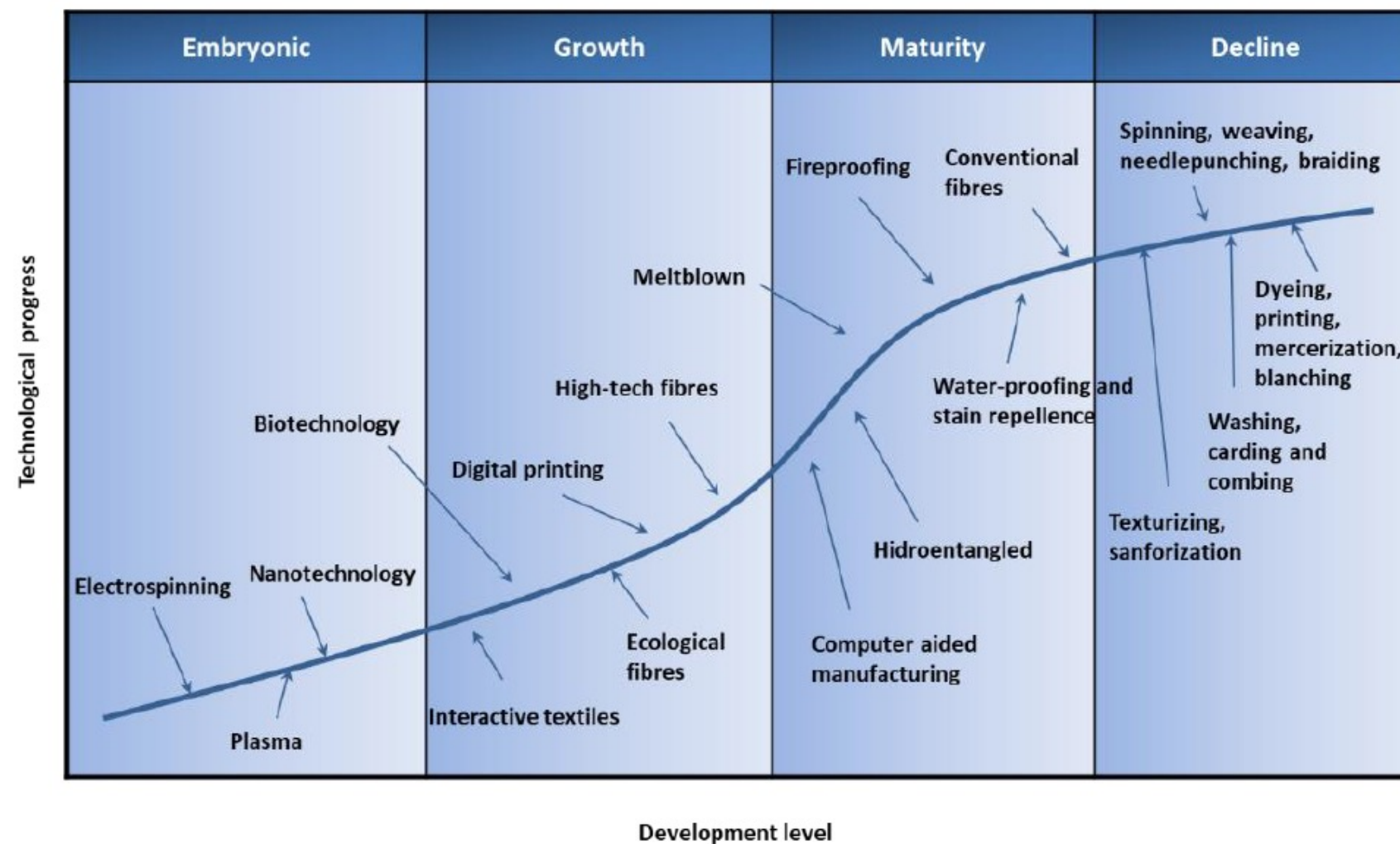


Co-funded by the  
Erasmus+ Programme  
of the European Union



# Goals

Competitive intelligence is the key of a successful business strategy. However, the pace at which technology is the value of emerging technologies, strengthening useful technologies at hand, and allowing new market opportunities.

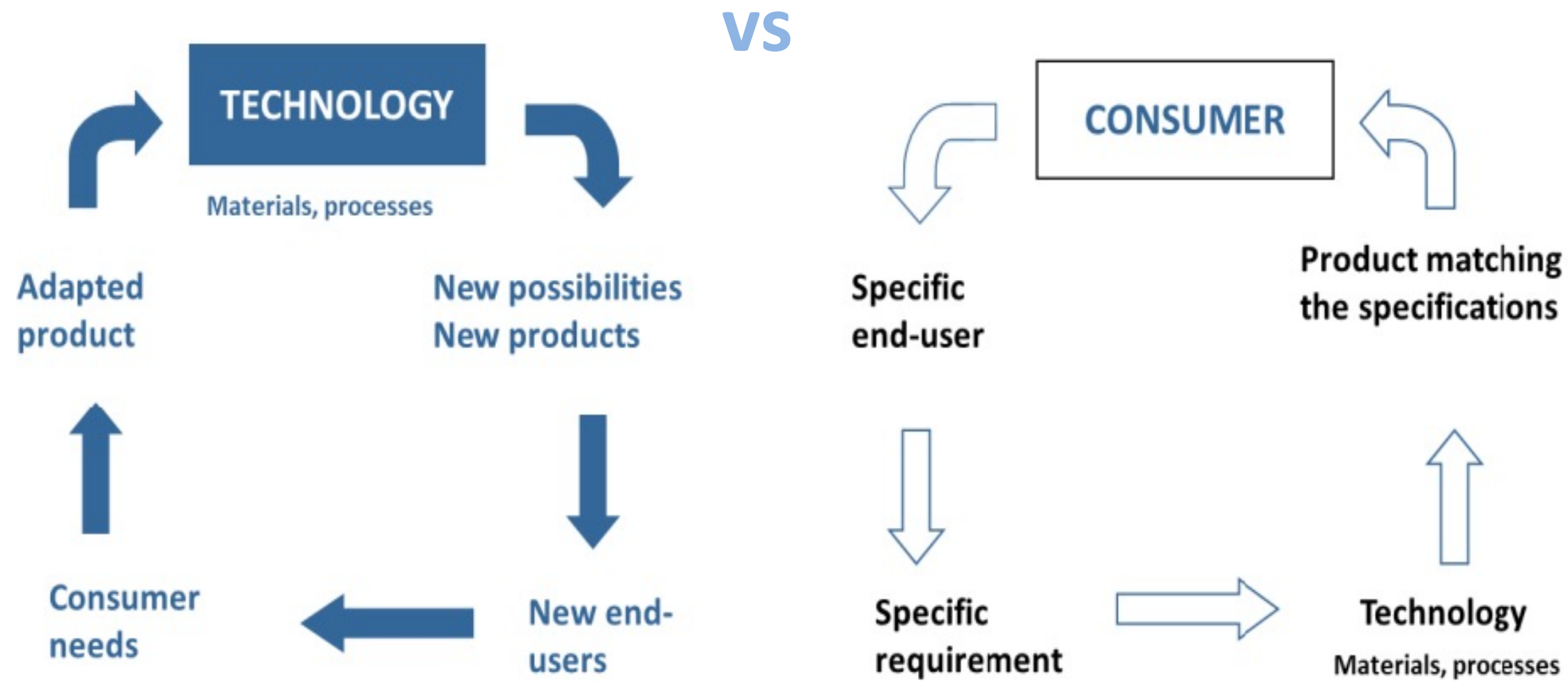


# 1. Trends in technical textiles

The common trends of innovation in technical textiles can be stated as<sup>3</sup>:

- The **dynamism**, at the level of product development, to respond to new market-pull demand or to replace other materials in analogous functions.
- The **multiplicity of possibilities** for the selection of materials, structures, products manufacturing and their adaptation to very diverse uses.
- A slow but continuous progress of **substitution of conventional raw materials for new materials** of high cost and performance.

# 1. Trends in technical textiles



## 2. Main research lines in materials, structures and treatments

### 2.2. Research lines in materials / fibres

<b>Technological area:</b>	Materials / fibres
<b>Main lines of research:</b>	<ul style="list-style-type: none"><li>• Deployment and exploitation of technical capacity from current fibres.</li><li>• Development of adaptable fibres, capable to regulate their functionality according to the surrounding environment.</li><li>• Production of super-mimetic fibres, with a deployment functionalities alike living beings.</li></ul>
<b>Technological area:</b>	Structures
<b>Main lines of research:</b>	<ul style="list-style-type: none"><li>• More resistant composites, including lightweight and improved manufacturing processes</li><li>• Creation of 3D structures using high technological value yarns, new manufacturing processes for new applications</li><li>• Seamless products</li></ul>
<b>Functionalization treatments (embryonic technologies)</b>	Plasma
<b>Main lines of research:</b>	<ul style="list-style-type: none"><li>• Anti-aging of wool.</li><li>• Treatment prior to dyeing (improvement of dye absorption).</li><li>• Plasma induced grafts (creation of surface active centers that bind covalently to chemical compounds applied later to confer different properties (antimicrobial, hydrophilic / hydrophobic, etc.).</li></ul>

## 2. Main research lines in materials, structures and treatments

### 2.5. Research lines in functionalization treatments: Nanotechnology

<b>Functionalization treatment (embryonic technologies)</b>	<b>Nanotechnology</b>
<b>Main lines of research:</b>	<ul style="list-style-type: none"><li>• Sol-gel nano-finishing</li><li>• Thermo-chromic and photo-chromic microcapsules resistant to high temperature</li><li>• High durability PCMs</li><li>• Microencapsulation of bug repellent and natural antimicrobial products, reducing toxic biocides</li><li>• Drug microencapsulation in medical textiles</li><li>• Halogenated-free fire retardant microcapsules</li><li>• Kinetic control of microcapsule release of active compound</li><li>• Formulations of micro- and nano-capsules finishing with improved fastness</li><li>• New methods of application, including surface modification</li><li>• Determination of nanomaterials' health and environmental impact</li></ul>
<b>Functionalization treatment (embryonic technologies)</b>	<b>Electrospinning</b>
<b>Main lines of research:</b>	<ul style="list-style-type: none"><li>• Scale-up to large volumes</li><li>• Precision and reproducibility during the whole manufacturing process</li><li>• Safety and environmental aspects</li></ul>

*This was a summary of an open educational resource. Please visit <http://destexproject.eu/> to see the full amount of intellectual outputs of the project.*



**Disclaimer:**

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**Acknowledgement:**

DESTEX project (INDUSTRIAL AND CREATIVE DESIGN IN ADVANCED TEXTILE MANUFACTURING; project reference number 2019-1-SE01-KA203-060379) is co-funded by the Erasmus+ programme of the European Union.

