

DI4TEX

Fostering the digital transformation
in the textile industry



www.di4tex.eu

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The sector, one of the largest and most important in Europe, needs to reassess its position by assuming the two drivers of competitiveness: **green transition and digital transformation.**

The main objective of DI4TEX is to foster the digital transformation of the textile industry by providing its employees with the required skills to face the current challenges of the sector.



Topic 04: Data Analytics and Artificial Intelligence

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Disclaimer

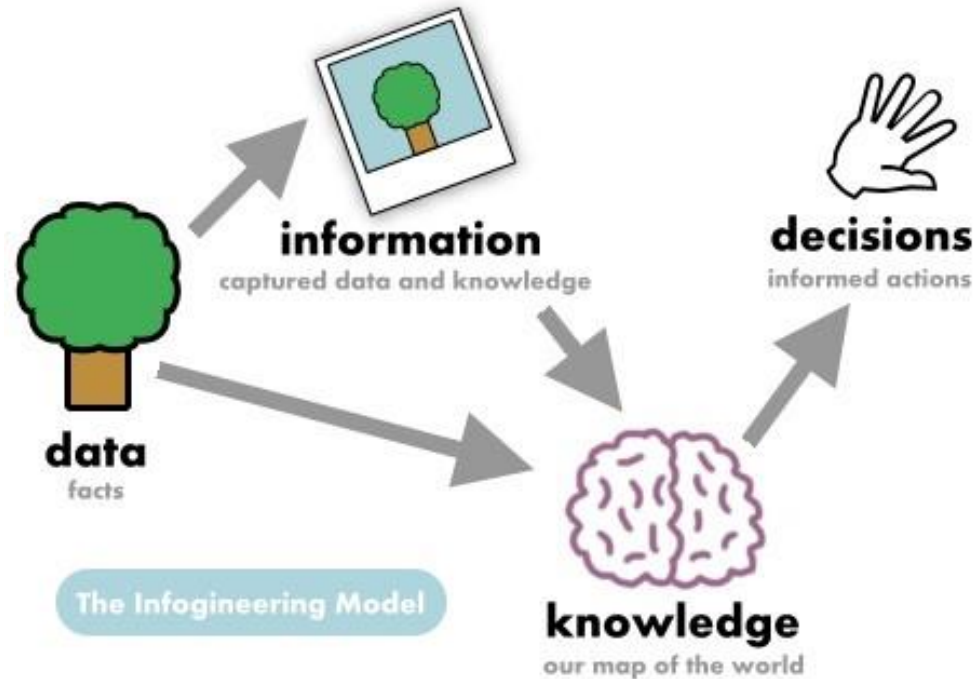
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Data Analytics and AI



Source: infogineering.net/data-information-knowledge.htm

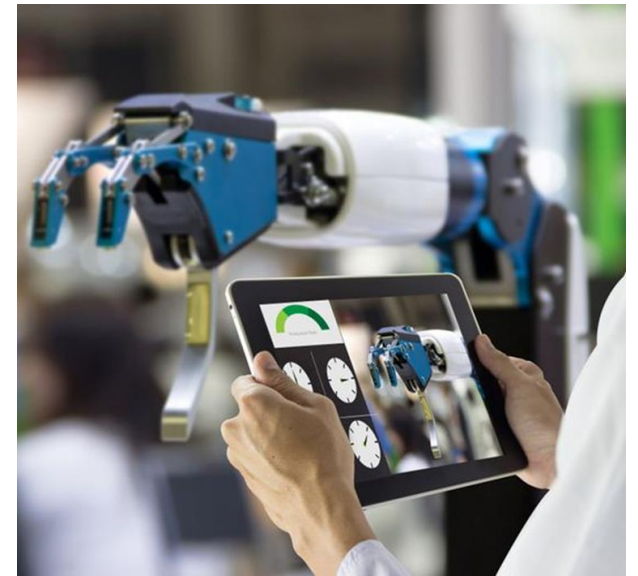
Artificial Intelligence – a real business driver for Europe?



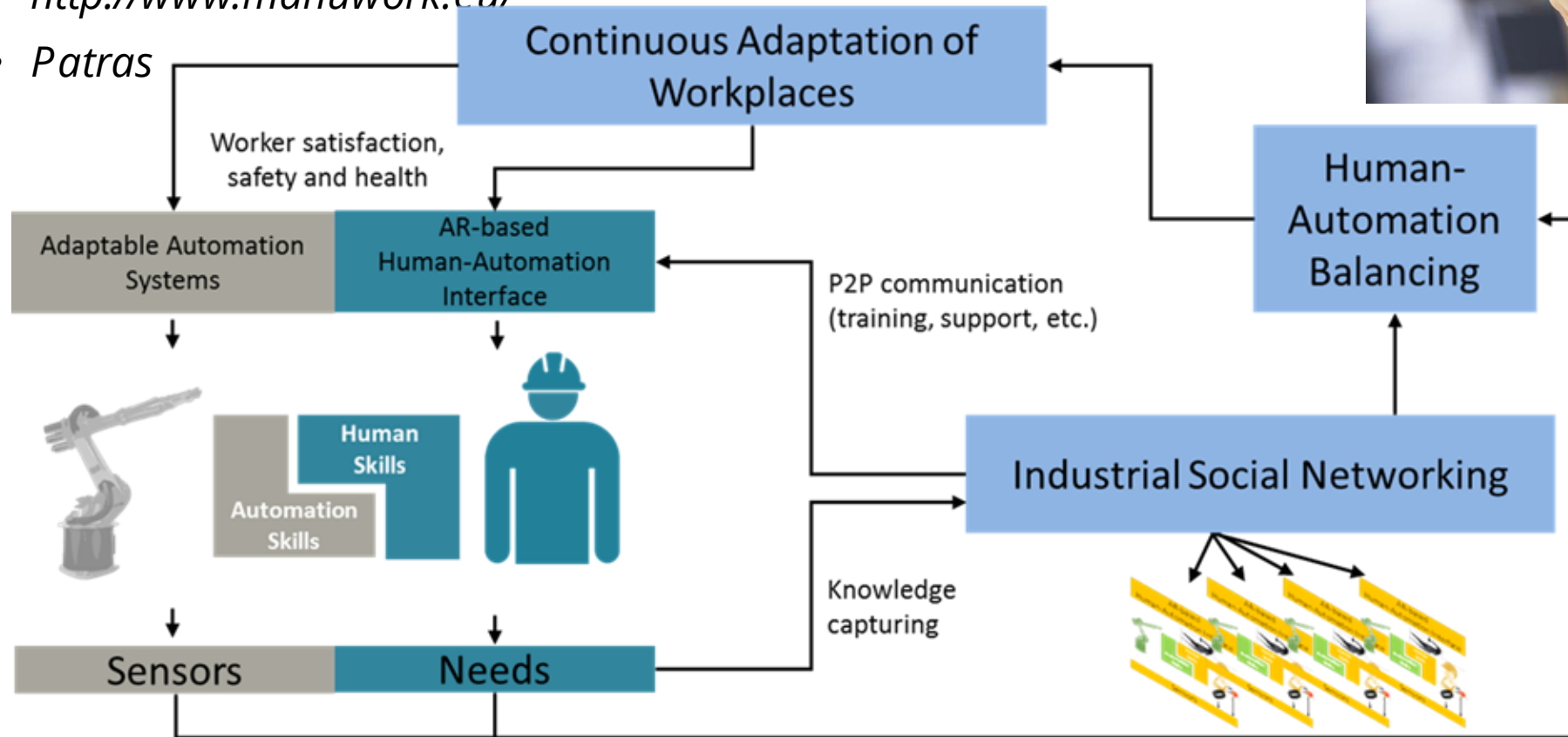
Productivity gains achieved by more efficient resource, energy, and material use through contextual knowledge provided by AI-driven information technologies will be instrumental in establishing EU industrial leadership and competitiveness.

ManuWork

- *The MANUWORK (Balancing Human and Automation Levels for the Manufacturing Workplaces of the Future) .*
<http://www.manuwork.eu/>



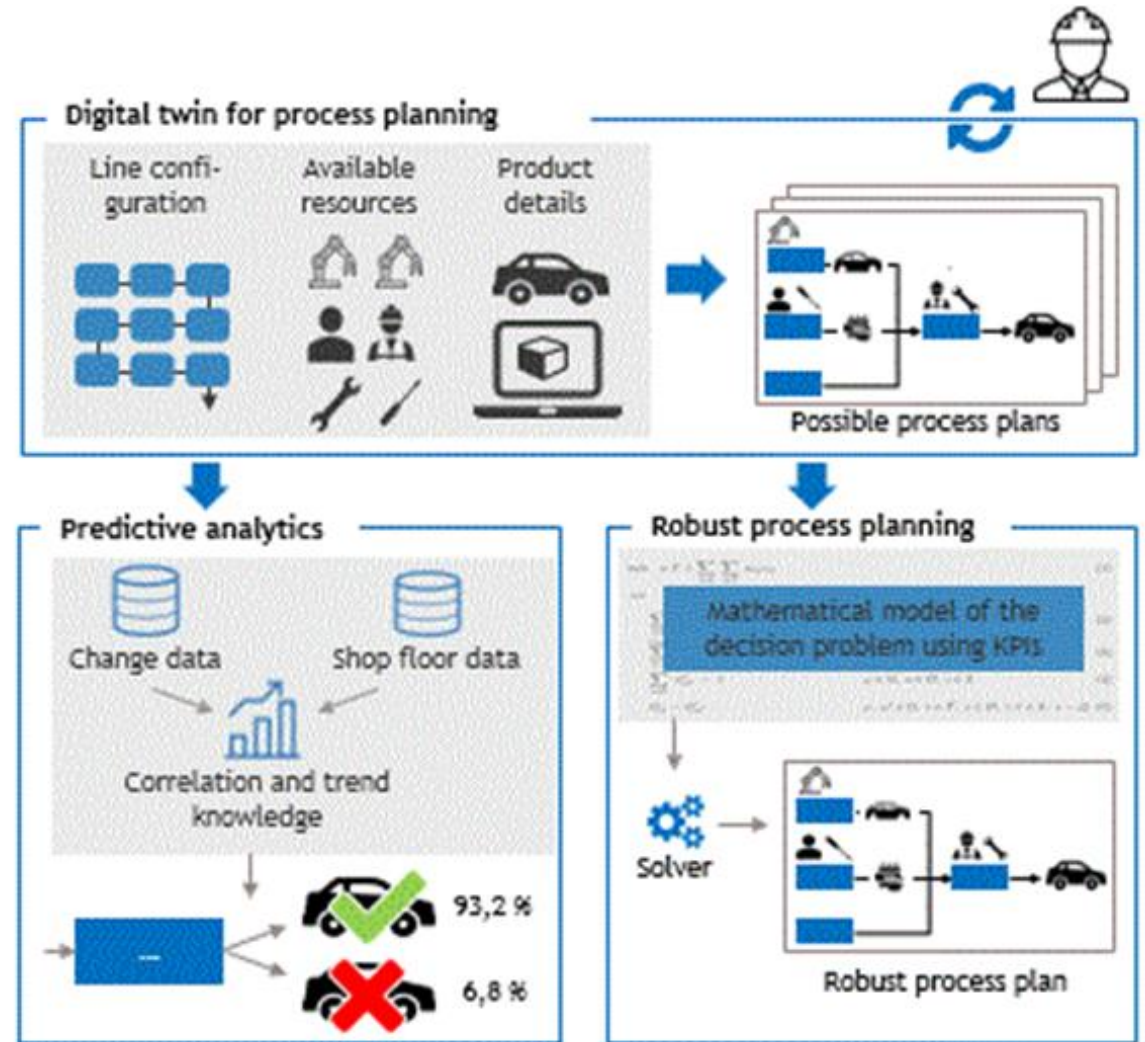
- *Patras*



ASSISTANT project

By combining machine learning, optimization, simulation, and domain models, ASSISTANT develops tools to help production managers design production lines, plan production, and improve machine settings for effective and sustainable decisions that guarantee product quality and safety.

- *Data-oriented digital twin for the planning of production processes.*
- *Predictive analytics modules determine process quality, product quality, and consider the impacts of changes based on data.*
- *A generative and automated process planning functionality designs and redesigns robust process plans with various contradicting KPIs by comparing requirements with skills.*
- <https://assistant-project.eu/>



Manufacturers Alliance for Productivity and Innovation (MAPI) – 2020 Survey

- Just **5%** of MAPI member companies have mapped where AI opportunities exist and developed a clear strategy for sourcing the data that AI requires.
- By 2025 - 14% of respondents expect to have completed such mapping by then, while 63% expect to be in the process of doing so.
- **AI Making Inroads in Manufacturing.** AI is most commonly deployed in industrial robotics, machine vision, intelligent products, machine learning, and cobots. Over the next five years, industry leaders expect significant growth in predictive systems and in their use of AI to manage intelligent supply chains.

Significant Technical and Workforce Barriers Remain. Lack of clarity about how to implement AI solutions, and a lack of interoperability between equipment are the most significant barriers to deployment. However, these are paired with significant workforce challenges, including a lack of employees with the necessary digital skills to implement AI or understanding of how to define the AI skills needed.

New Roles Emerging for Humans and Machines. AI will generate new roles where human capacity will reign supreme (e.g., creating and judging) and others where machines will outperform humans (e.g., iterating and predicting). Hybrid roles will arise where humans will enable machines (e.g., in training, explaining, and sustaining) and where AI will augment human capabilities (e.g., in amplifying, interacting, and embodying).

New-to-World AI Jobs on the Way. Few organizations have introduced dedicated new job categories focused on AI. However, such jobs are emerging. 43% of manufacturers have added “data scientists/data quality analysts” to their workforces, and 35% more expect to do so within the next five years.

Six Recommended Elements of the Manufacturing Evolution

A sustainable AI and workforce transformation requires a deliberate and comprehensive change management strategy.

1. Manufacturers should define their own AI transformation strategy to assess the company's processes and operations and then evaluate how the application of AI-enabled systems could transform and improve them.

2. Assign an "AI governing coalition" of business, IT, HR, and analytics leaders to own activities such as setting the direction of AI projects, analyzing problems to solve with AI, and managing internal change.

3. Evaluate AI and workforce transformation readiness.

4. Set measurable objectives for digital and AI transformation.

5. Redefine digital and physical product innovation processes.

6. Overinvest in communication for change management.

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