

Industry 4.0: state of play in France

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Boosting the role of HEIs in the industrial transformation towards the Industry 4.0 paradigm in Georgia and Ukraine – 609939-EPP-1-2019-1-BE-EPPKA2-CBHE-JP



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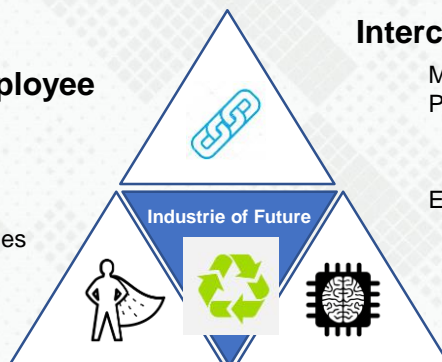
Industrie 4.0 (Industrie du Futur): Definition

Augmented Employee

- Technologies
- Life Long Learning
- Management Support
- Knowledge and Innovation Communities



Workplace Well-being
Enhanced Empowerment
Engagement
Agility



Interconnexion

Machines, software

Primary stakeholders

- Employees, management
- Partners suppliers and distributors
- Customers

Ecosystem

- large companies, SMEs, ETIs, suppliers of technology, *start-ups*, academia, research centers, learning centers, investors, gouvernement, ...

Intelligent Objects

Self Learning and

reconfiguration

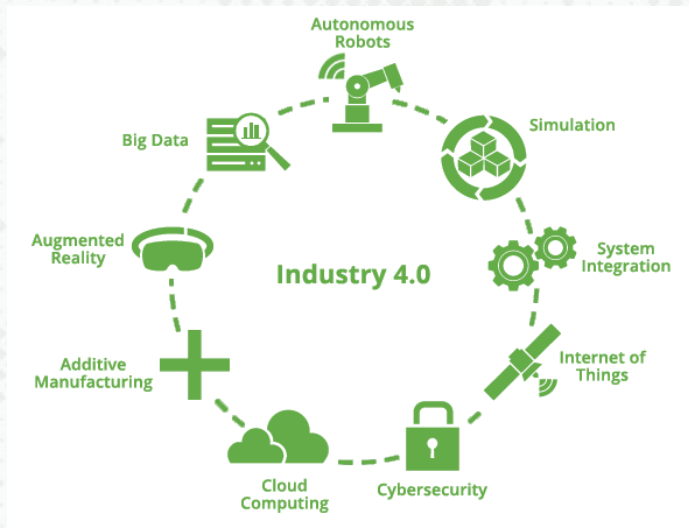
Interact with human in
natural way



Propose a new
EXPERIENCE
for and with the
CUSTOMERS

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Industry 4.0: Technologies



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Topics of the presentation

- **I4.0: How ready is your business?**
- **How can the technology of I4.0 be an opportunity for a more sustainable industry?**
- **How the customer is integrated in design and production?**

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Industry 4.0: How ready is your business?

- Acatech Industrie 4.0 Maturity Index

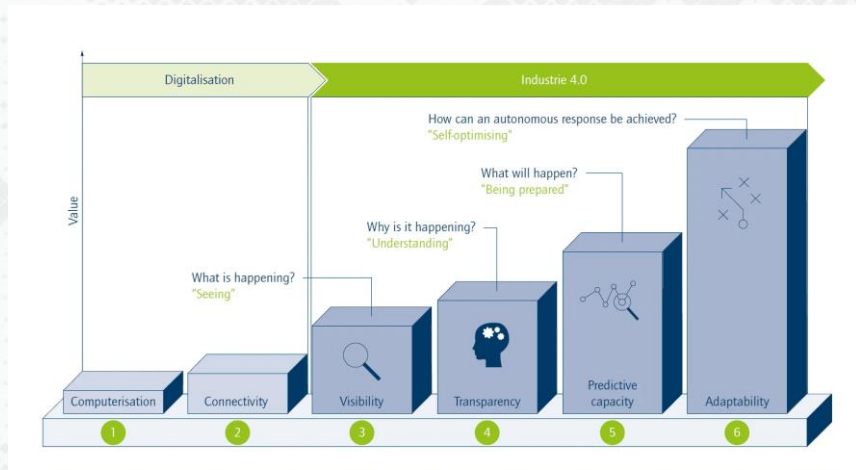


Figure 5: Stages in the Industrie 4.0 development path (source: FIR e. V. at RWTH Aachen University)

Acatech Industrie 4.0 Maturity Index, Ad Ultima Group's partner, RWTH Aachen University, 2018

Industry 4.0 in France



- Coordination: Alliance Industrie du Futur, created in 2015



Development and integration of future technologies and their standardization



Transformation of SMEs, Intermediary-size enterprises and sectors in the territories



Developing tomorrow's skills



Communication



Transversal actions



117 companies
4 start-ups, 35 SMEs
33 ISEs, 45 large groups

<http://www.industrie-dufutur.org/aif/>

Industry 4.0: How ready is your business?

- **AIF Index** <http://www.referentiel-idf.org/cetim/fr-FR>

Competitiveness levers



Connected Objects & Industrial Internet

Connected Products
Connection technologies
Infrastructure to exchange data



Connected, controlled and optimized factories and production lines

Virtualization for production system optimization
Real time data processing
Management of industrial transactions
Digital product and process engineering
Product control



Advanced production technologies

New & Intelligent Materials
Innovative manufacturing processes
Eco-responsible processes
Advanced robotic and intelligent machines
Automation and industrial robots
Intelligent components
Remote monitoring
Automatic control systems 7

TOPICS

Industry 4.0: How ready is your business?

- **AIF Index** <http://www.referentiel-idf.org/cetim/fr-FR>

Competitiveness levers



New approach to people at work, innovative organisation and management

Mobile and social applications
Quality of life at work
Physical support
Cognitive assistance
Leading change



Integrated customer/supplier relationships

Digitalization of the value chain
Innovation and collaborative production
Product/Service Life Management



New economic and societal models, strategy and alliances

Community integration, common goods
New business models
Extended and agile company
Strategic company
Intangible assets

TOPICS

Topics of the presentation

- I4.0: How ready is your business?
- **How can the technology of I4.0 be an opportunity for a more sustainable industry?**
- How the customer is integrated in design and production?

Sustainable Manufacturing - definition

- Integration of processes and systems
 - ✓ capable to produce high quality products and services using less and more sustainable resources (energy and materials),
 - ✓ being safer for employees, customers and communities surrounding
 - ✓ being able to mitigate environmental and social impacts throughout its whole life cycle

Industry 4.0 : Opportunities for sustainable value creation

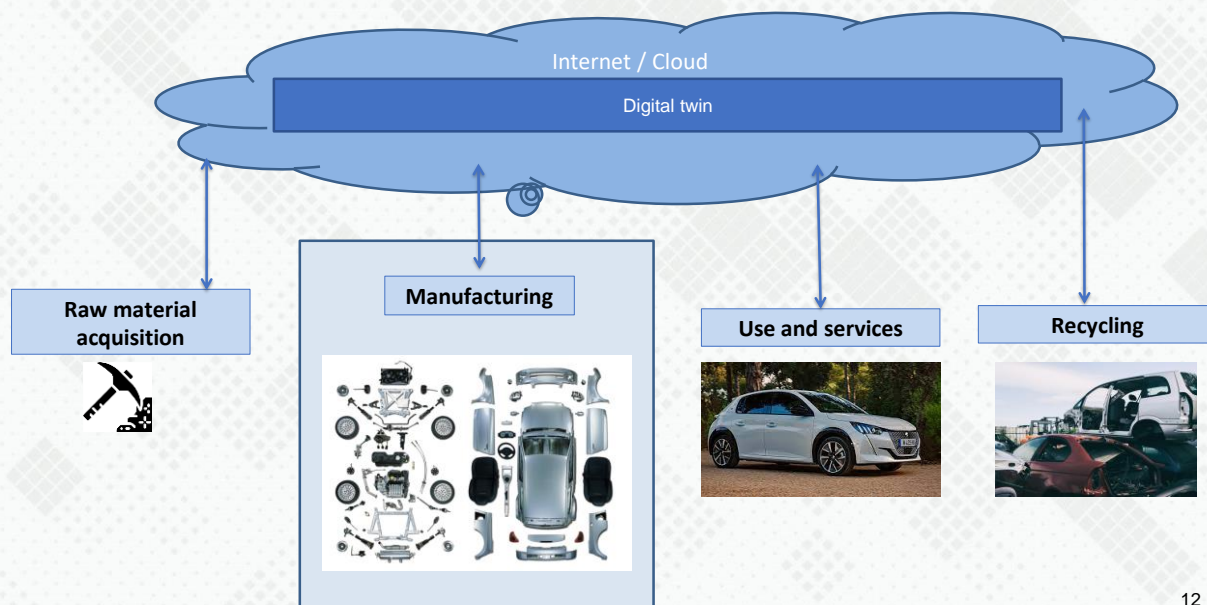
Sustainability guidelines for Industry 4.0

- **A more sustainable manufacturing in UK**
 - ✓ **Goal:** A sustainable industrial ecosystem
- **FoF 2020 Roadmap (EFFRA)**
 - ✓ **Goal:** Sustainable Value Networks: manufacturing in a circular economy
- **Sustainable Production for Smart Factories (Ministry of Enterprise and Innovation Sweden)**
 - ✓ **Goal:** Improving the industrial sector's capacity for sustainable and resource-efficient production



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Horizontal integration and product life cycles



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Predictive maintenance for resource efficiency

**One equipment
one dedicated sensor**

Plug and Play

- Based on IoT and AI



**All equipments
Software Solution
based on existing data**

Existing Data

- Industrial equipment
- Production (MES – SCADA)
- Maintenance data



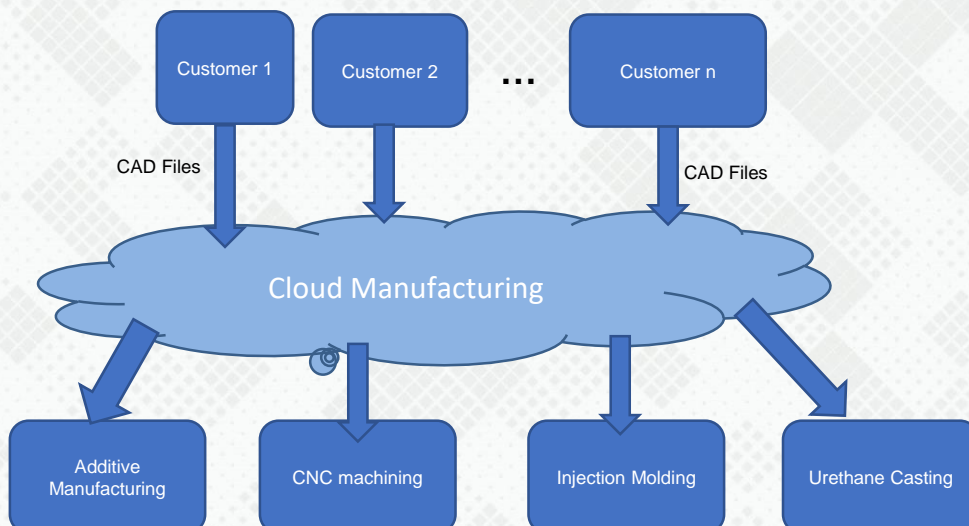
**Monitor all equipments
Forecasting**

- Using AI algorithms

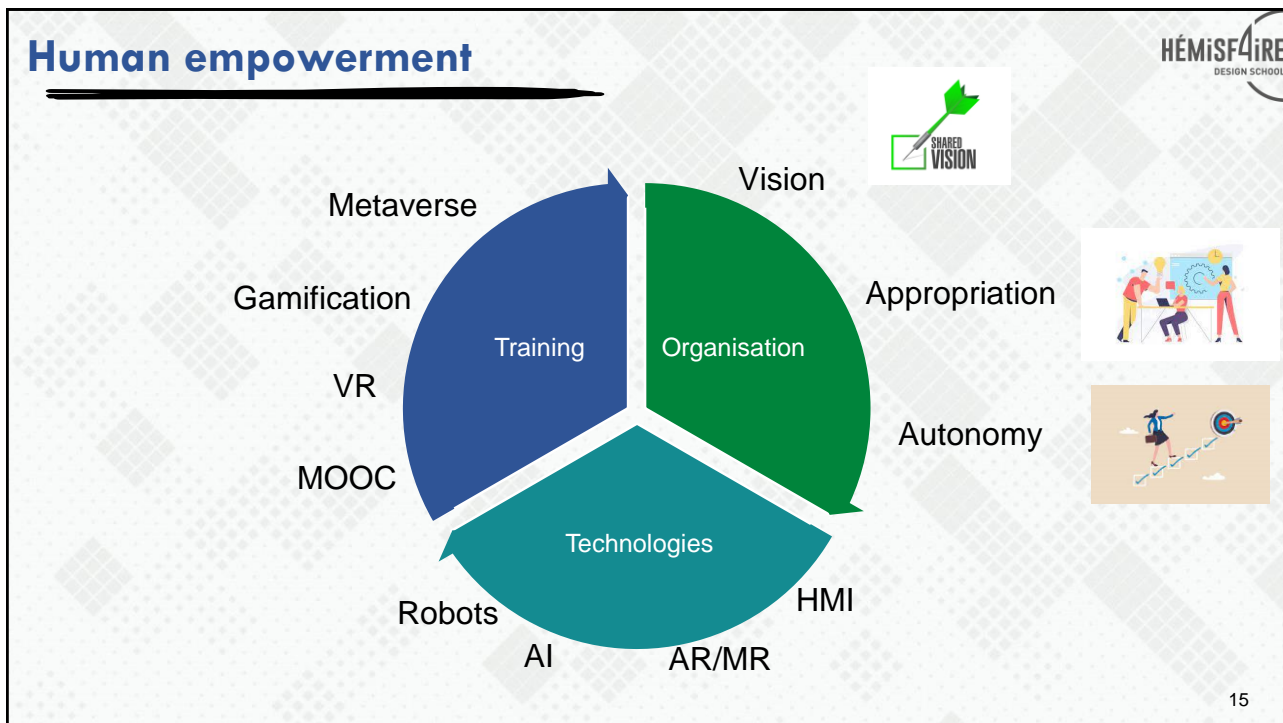


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On-demand production using Cloud Manufacturing



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Examples – French Companies labelled « Showroom of Industry 4.0 »

16%

New approach to people at work, innovative organisation and management

Type of initiative	Nb of companies / category		
New management	10	3	2
Academy / Training	5	4	1
Fablab		1	
Intrapreneurship program		1	
Network (companies / start-ups, local administration)	4	1	1
Collaborative projects		1	1
Incubator		1	

SME 10
 ISE 6
 Large 3

Alliances MINISTRE DU FUTUR
 Vitrites Industrie du Futur
<https://vitrinesindustriedufutur.org/>

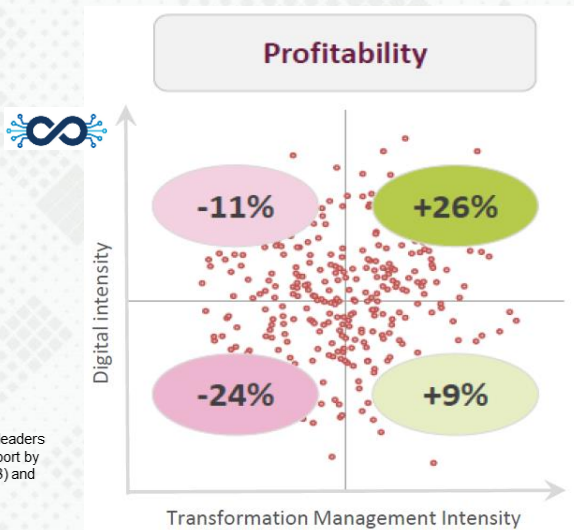
Note : Empowerment by technology - all of them

Legend

HÉMISF4IRE DESIGN SCHOOL

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Augmented employee by transformation management



Source: "The digital advantage: how digital leaders outperform their peers in every industry" report by MIT Sloan Center for Digital Business (CDB) and Capgemini Consulting

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Topics of the presentation

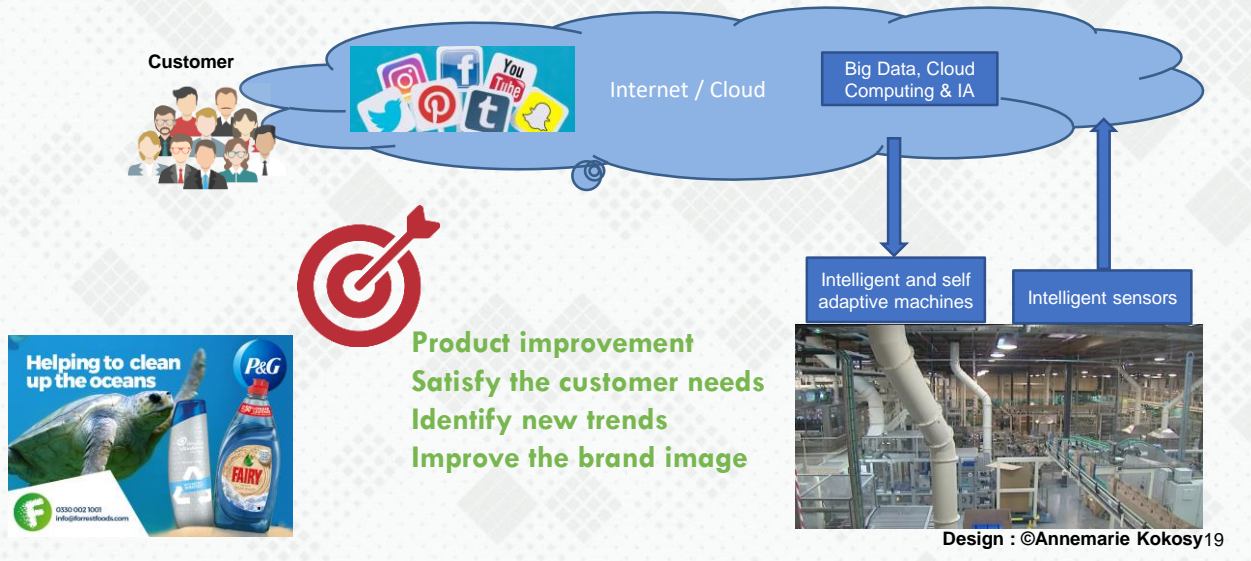
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- **How the customer is integrated in design and production?**

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Indirect interaction with customers



Study case – personal care and hygiene products



Direct interaction with customers



DAGOMA

- Direct interaction with customers for the product design & tests
- Production on demand

Alliance
INDUSTRIE
DU FUTUR

Vitrines
Industrie du Futur



From Direct interaction to DIT

open INnovation Ecosystems for Do It Together process



www.inedit-project.eu



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Thanks for your attention !

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