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Industrie 4.0 : les défis humains et organisationnels

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mithra
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diagenode
A Hologic Company



Geoffroy JENNES
EQUANS Digital BeLux

Anastassiya ZABUDKINA
LENTIC, HEC Liège - ULiège

Industrie 4.0

les défis humains et organisationnels



PART1: Research study

Industry 4.0 implementation:
potential issues within industrial
SMEs



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LENTIC, HEC Liège - ULiège



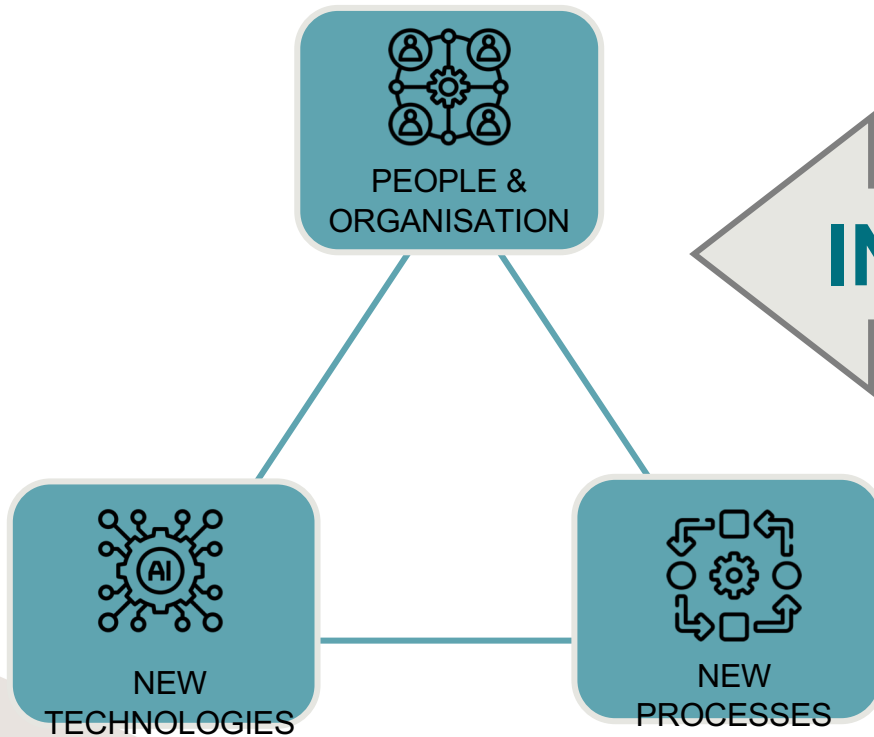
Industry 4.0: human and organizational challenges – LIEGE CREATIVE EQUANS DIGITAL



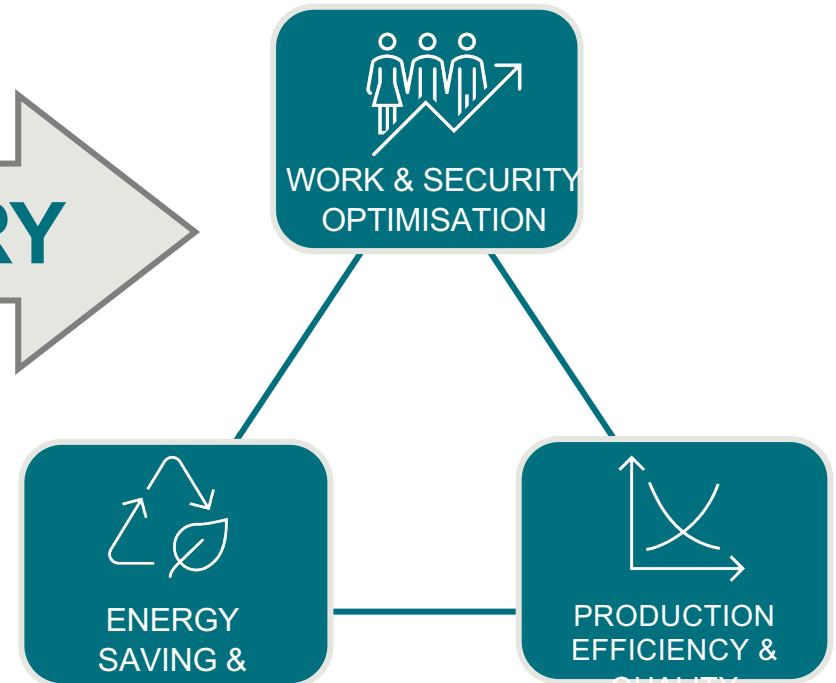
« I don't really know what Industry 4.0 is or where it's going, but I do know that we have to get there... and fast ! »

Common positioning of German industrial leaders towards Industry
4.0
(Kohler & Weisz, 2021)

Key changes



Key outcomes



WHY

23%
Wallonia market value added by industrial sector

239
Wallonia actors offer Industry 4.0 solution

104
Activities by Digital Wallonia to support Industry 4.0

99,6%
companies are in SME sector

Medium	<25
Small	25-99
Micro	<10

50%
Lack of digital culture

38%
Lack of skilled workforce

Major barriers for Industry 4.0 according to 26 Walloon companies

WHO



Agence du Numérique

WHAT

4-year PhD research project
Organisational and human challenges of Industry 4.0 in the reality of Walloon industrial companies

Literature review

Survey

Case studies

Research study based on the literature review

Potential issues within industrial SMEs

related to

Enablers of Industry 4.0

Barriers of Industry 4.0

Strategic choices for Industry 4.0



39



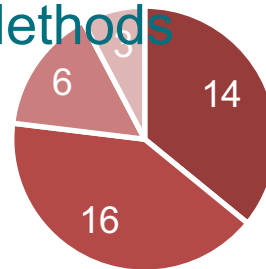
STUDIES

Year of research



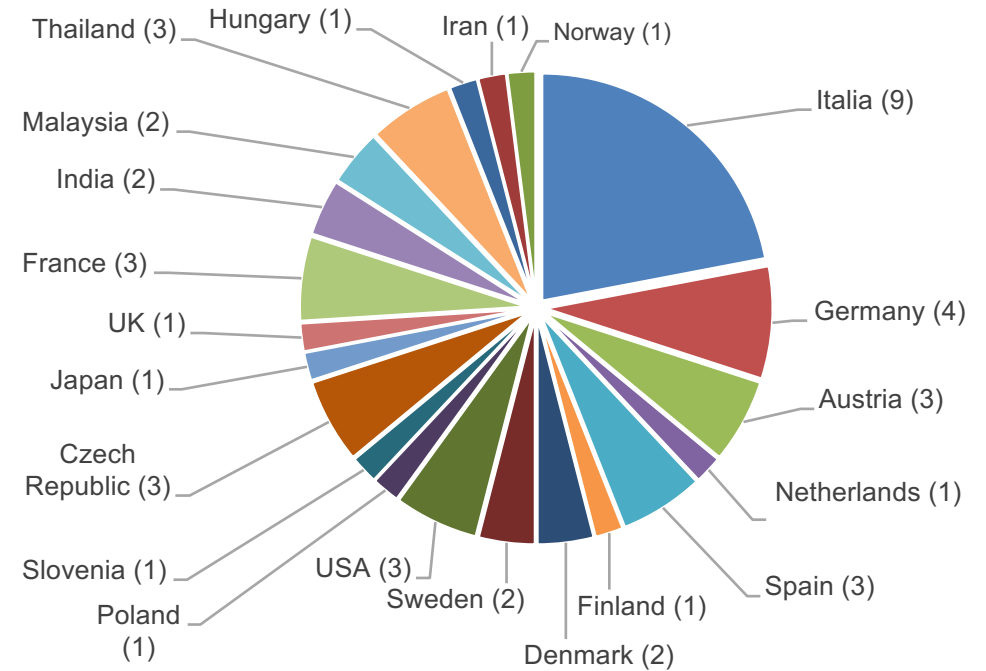
■ 2018 ■ 2019 ■ 2020 ■ 2021 ■ 2022

Research Methods



■ Quantitative
■ Qualitative

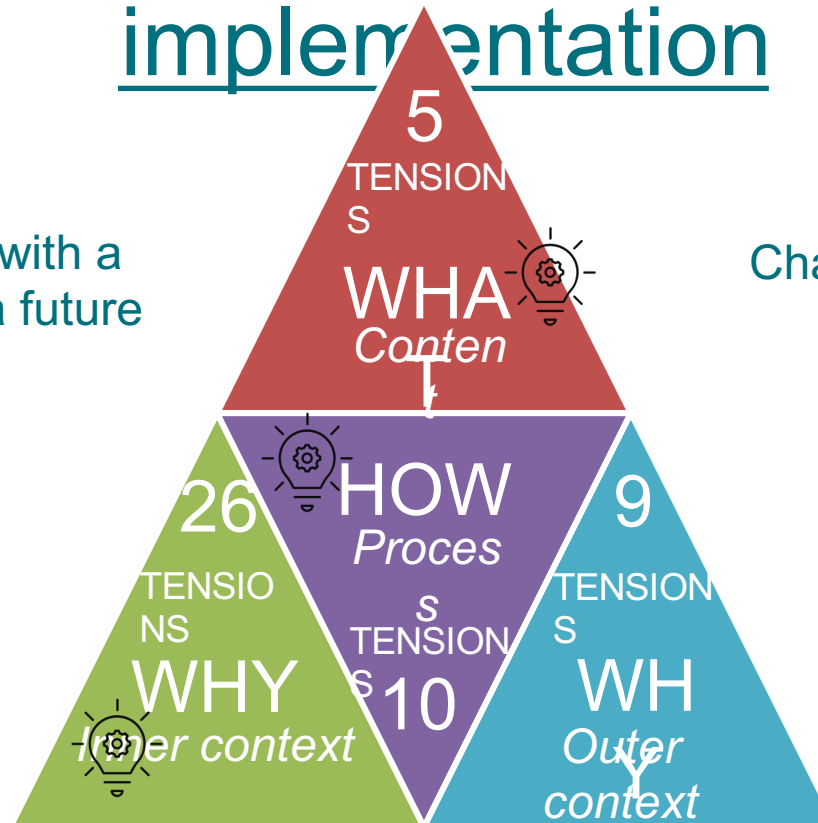
Country of research



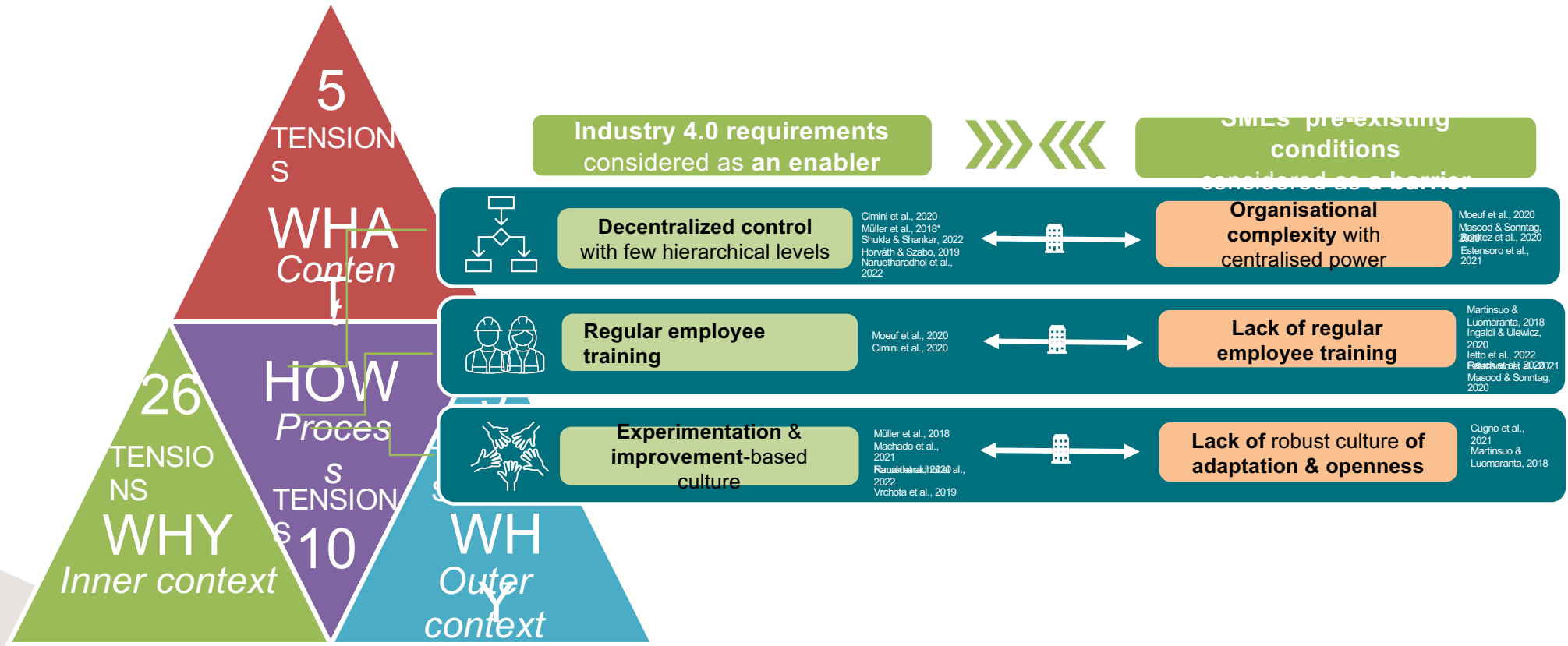
Industrial SME facing Industry 4.0 implementation

Continuing system, with a past, a present and a future

Change management project



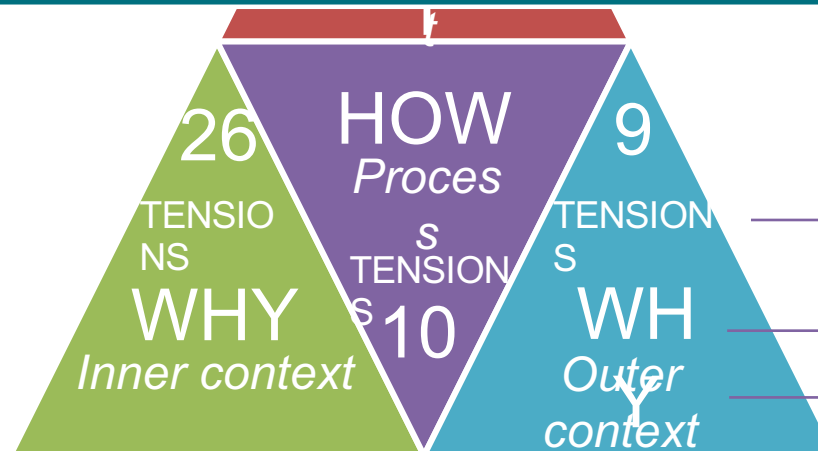
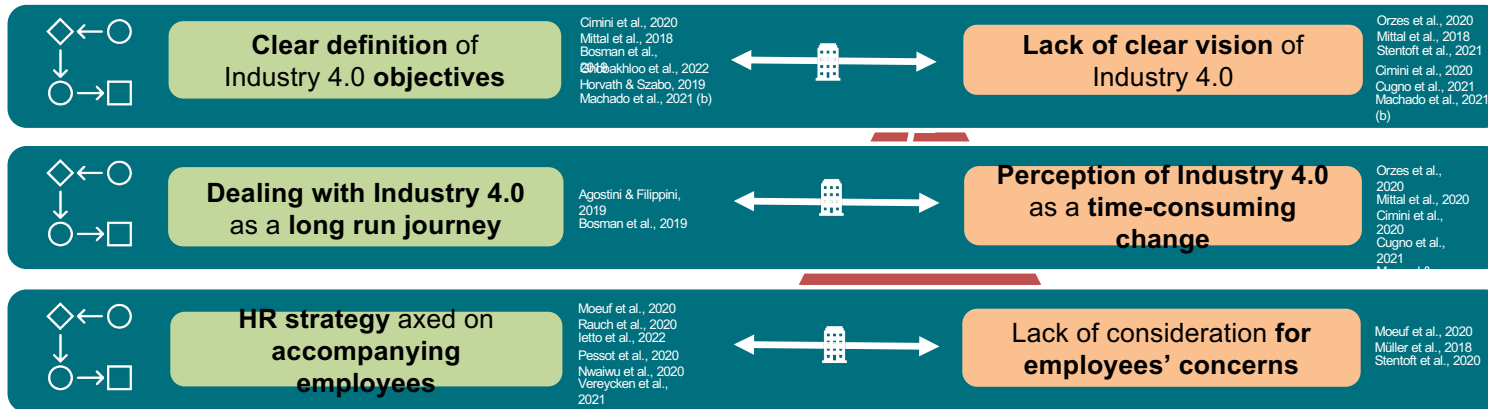
Analytical framework

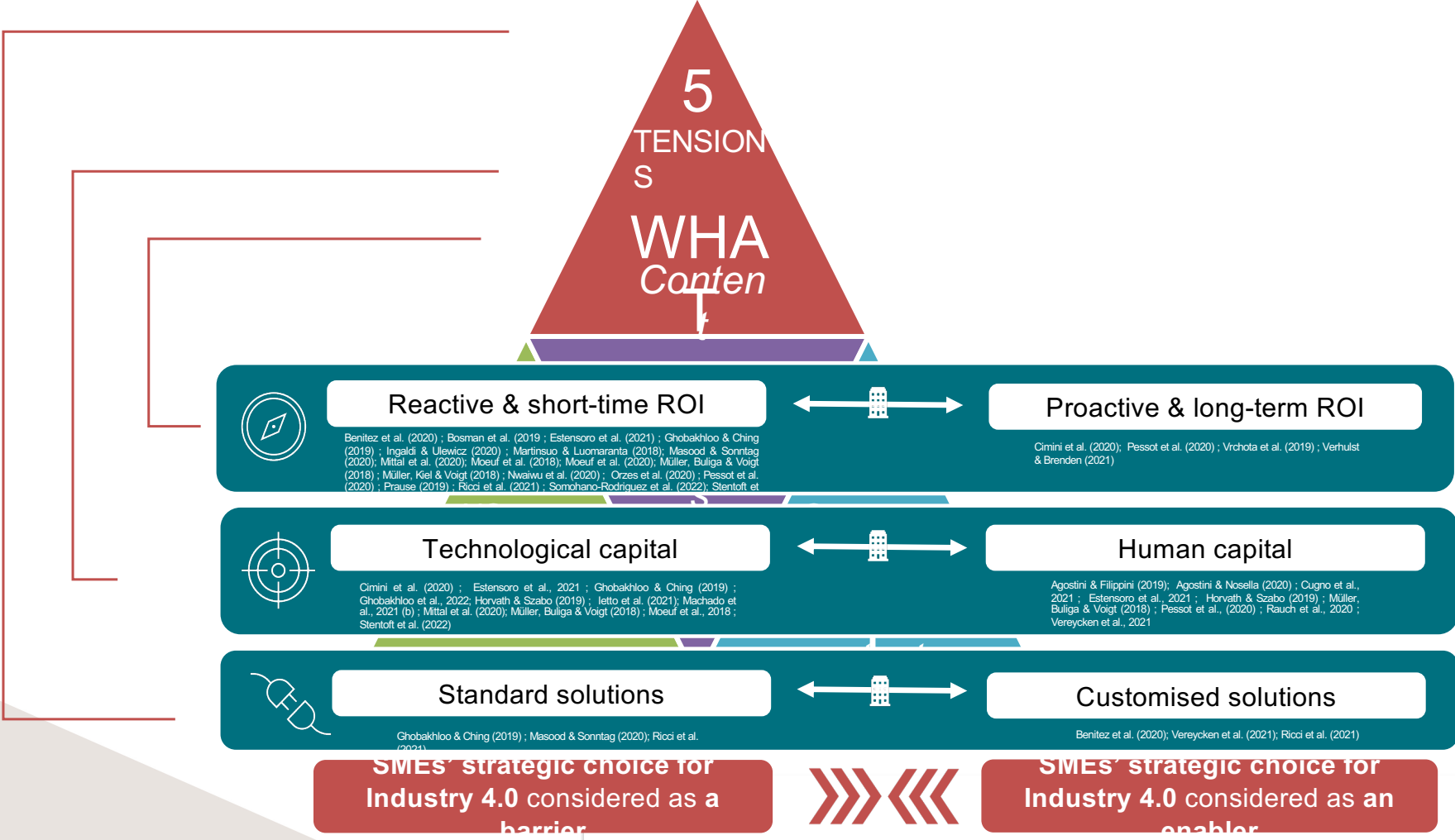


Industry 4.0 requirements considered as an enabler



SMEs' actions & reactions considered as a barrier







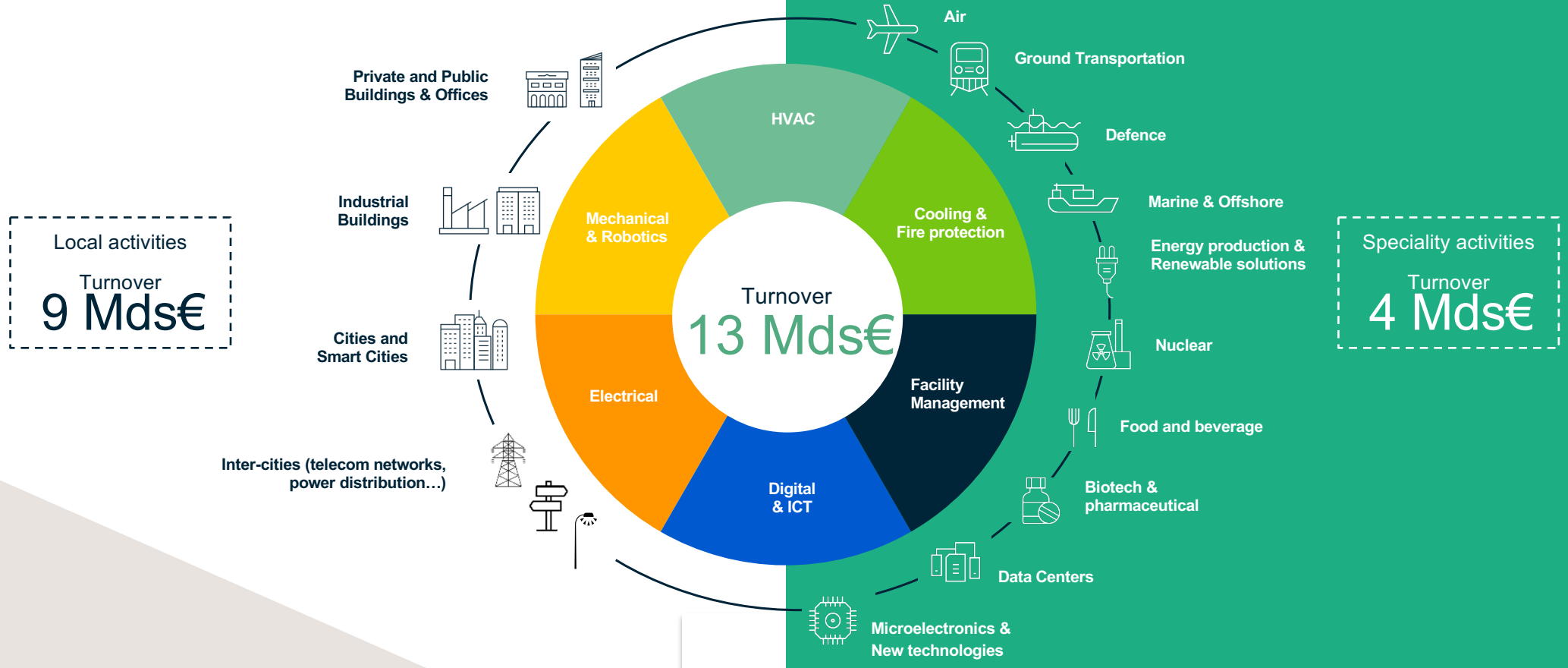
PART2: Industry 4.0: human and organizational challenges

Support for Walloon industrial companies in their transformation towards "Industry 4.0" methodologies, processes, solutions and technologies.

Geoffroy JENNES
EQUANS Digital BeLux

EQUANS – Who are We

Our expertise, our clients, our market segments



EQUANS Digital BeLux : 12 Digital Entities

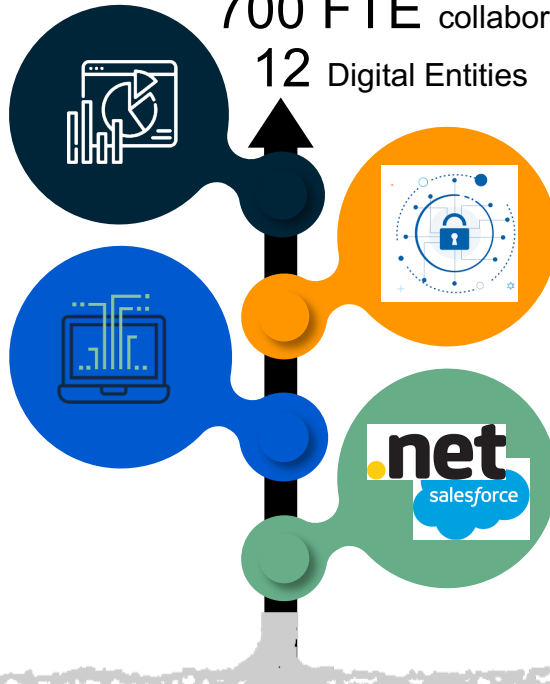
into our 4 BU : Smart Building, Infra, Industry North and Industry South



134 M€ turnover (forecast 2022)

700 FTE collaborators

12 Digital Entities



AUTOMATION - 320 people

Your multi-brand integrator controlling the entire value chain from control command to information system

- # PLC
- # SCADA + HMI
- # BMS (Building Management System)
- # IOT

Data Management, API, AI - 80 people

Big expertise around Data :

- # Data Analytics
- # Hypervision Solutions
- # AI
- # Predictive Maintenance Solutions
- # Digital Twin

AUDIO-VISUAL – VIDEO - SECURITY- 175 people

Global approach and assist step by step our clients. A wide range of solutions are known for their exceptional performance, ease to use, high ROI, interactivity and high scalability.

- # Audio-Visual
- # Multi-media Solutions
- # Fire security
- # Access Control
- # CCTV

Specific End User developments - 85 people

Your multi-manufacturer integrator of secure turnkey robotic solutions at the service of your performance

- # Production efficiency
- # Virtual training
- # Nuclear handling and transport

Moving forward to Industry 4.0...



Industry 4.0: human and organization



Titre de la présentation

They trust us



Key Elements for Industry4.0 transformation



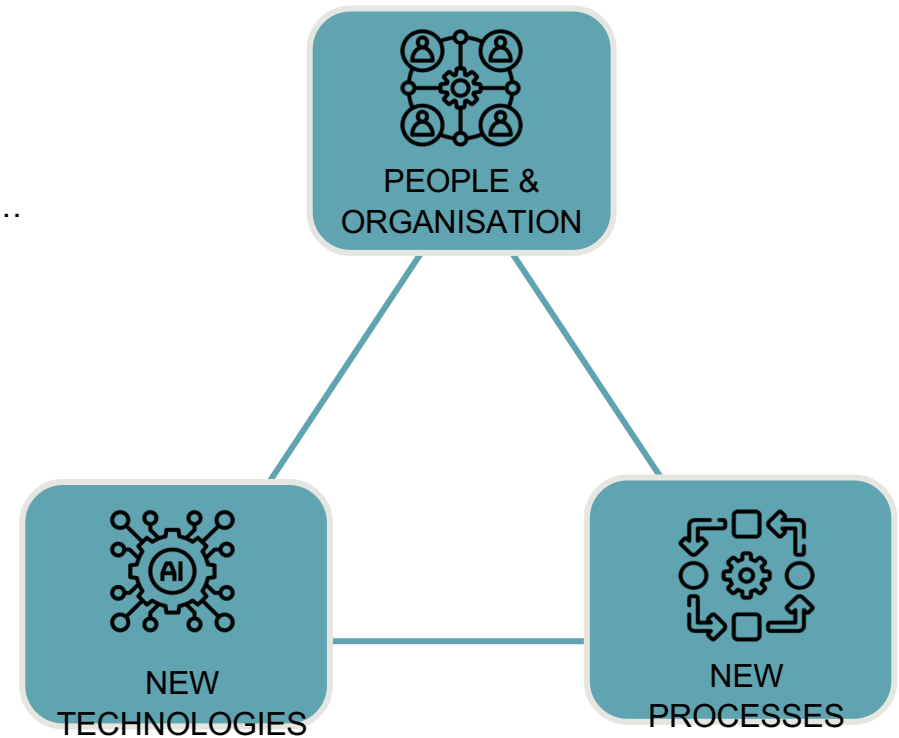
75% of I4.0. projects fail if **human is not the corner stone** of the project

Humans related transformation tasks take **50%** of the **project energy**... and what about the cost?

85% of I4.0 project **longer than 8 months** fail

70% of I4.0 transformation projects fail if **only driven by financials KPIs**

Key changes

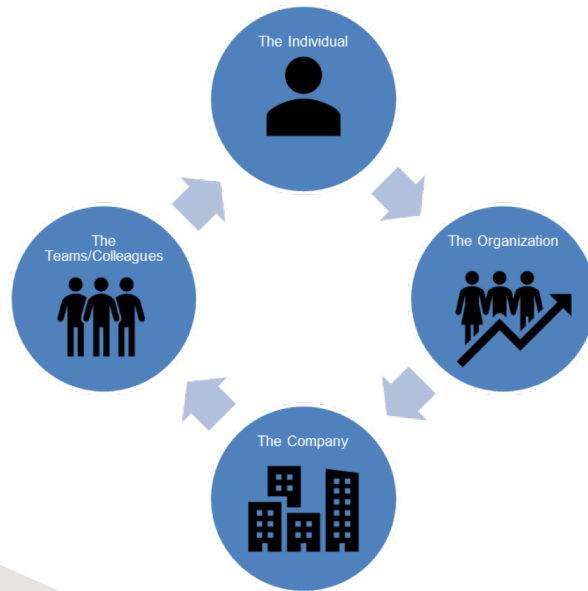


But What is the Human Factor in a project



Humans factor combines different facets

- ⇒ The individual
- ⇒ The organization
- ⇒ The company
- ⇒ The colleagues/Team



Human factor is the combination of people involved

- ⇒ Top Management
- ⇒ Manager/leader
- ⇒ Workers



Every Succeeding project start with the “WHY”



- Human need to understand **WHY** to do something.. (Move a stone)... Even before the WHAT and the HOW



- Crucial starting point.. Be **involved** and not only concerned...
 - What is the diff. between involved and concerned (*Story of the bacon omelette*)

perhaps “**Evidences**” but success arrives when is transformed into On-the-job reality

- ⇒ Take care and involved all of these stakeholder continuously during the projet
- ⇒ Each have a reel impact in the Project success
- ⇒ The main challenge is to assure animation, evolution, transition of this ecosystem



The Human Factor – Let's COLLABORATE

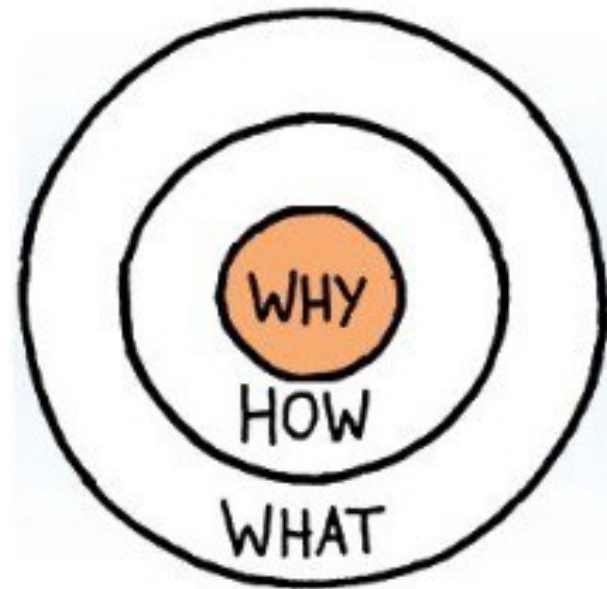
Everything start with « WHY » ..

We believe that

Therefore, **we will**

We will facilitate to

Act, Think & Communicate from the **INSIDE OUT!**



WHY - Your Purpose

Your motivation? What do you believe?

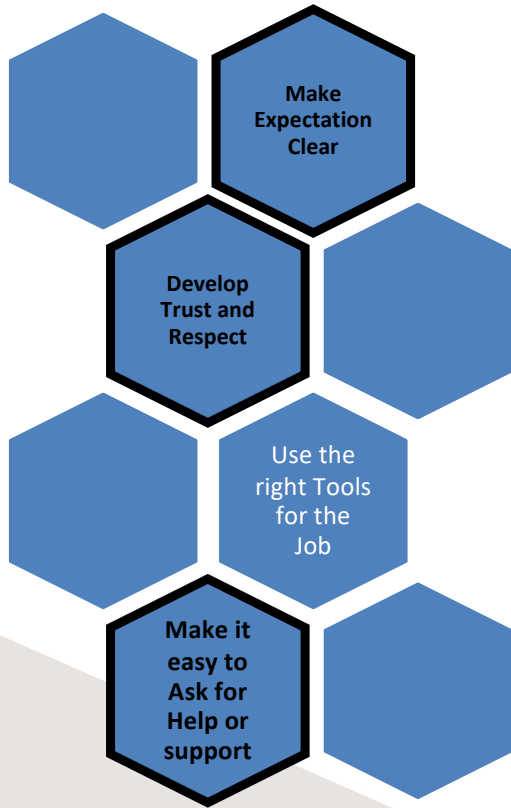
HOW - Your Process

Specific actions taken to realize your Why

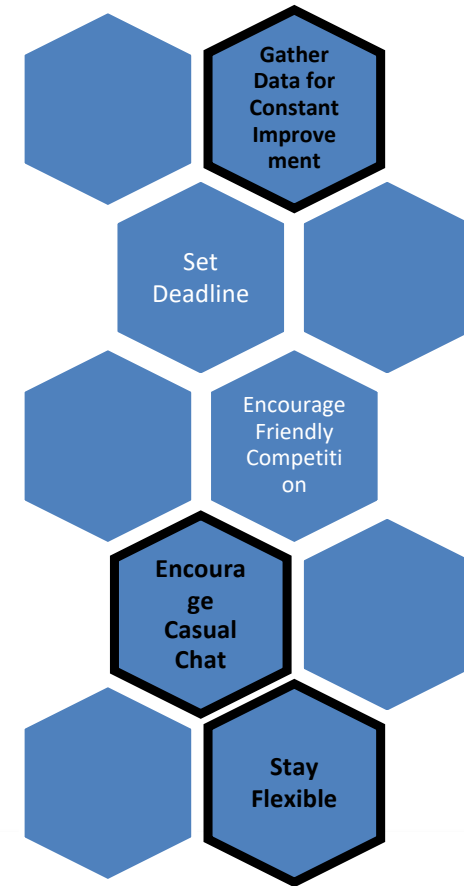
WHAT - Your Result

What do you do? The result of Why. Proof

And fix the key success factors...

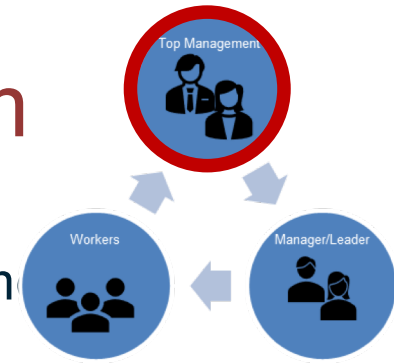


Kindness and respect



Human Factor – a transversal ecosystem

The role of the Top Management – 10 Golden Rules.....



The major I4.0 Change Management are coming from the Top Management

1. Break the rules... tear down the walls ... Who I'm to changes such things.. I thought you were the boss

2. Define the strategy and fix the objectives

3. Make it clear and realistic

4. Give and assure the means.... (not only financial...)

5. Keep the course but stay flexible in the trajectory

6. Share the pain and share the gain...

7. Be Involved and be present...

8. Measure, act and **decide...** with Kindness and respect

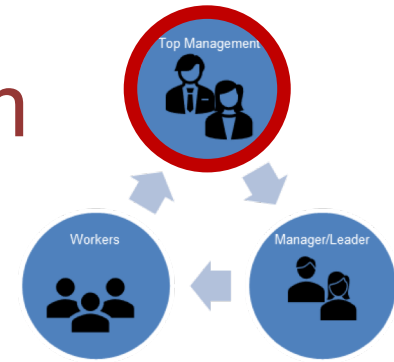
9. Celebrate succes...

10. You are in the Driver Seat



Human Factor – a transversal ecosystem

The role of the Top Management



The major changes are coming from the Top Management

- Industry 4.0. transformation is a *journey*... with targets and stopovers...
make it simple.. Not simplest
 - Keep in mind... The key benefits in Industry 4.0, in the regard of the human Factor **are not only financials**...

- Security, Wellbeing, Satisfaction, productivity, gratitude, success, stability... **Let's Talk "Human"**

Human Factor – a transversal ecosystem

The rôle of the Manager/Leader

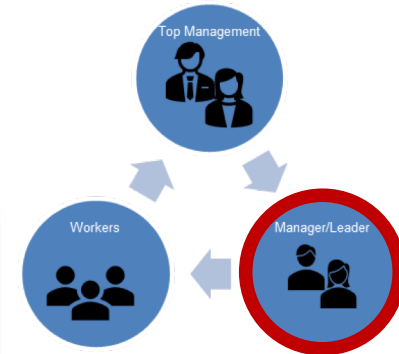
- Become a **leader**...
 - Lead by the talent



Management is about persuading people to do things they do not want to do, while leadership is about inspiring people to do things they never thought they could.

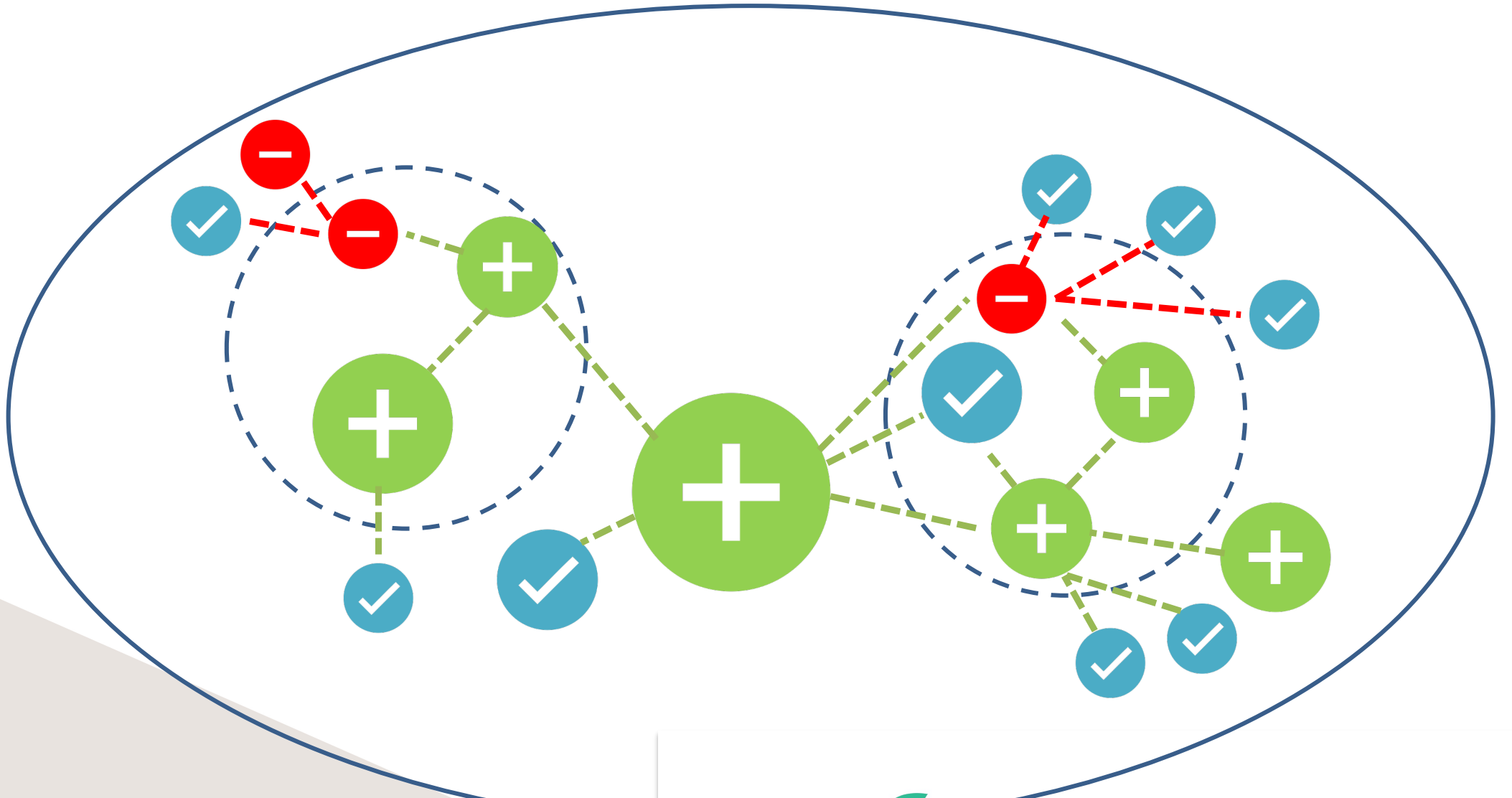
— Steve Jobs —

AZ QUOTES



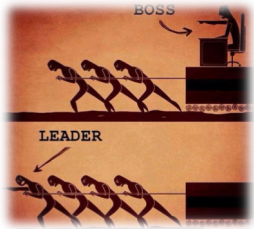
- Build the right Project Team.. **Energy Relay**

... Don't think based on the hierarchy but on energy...

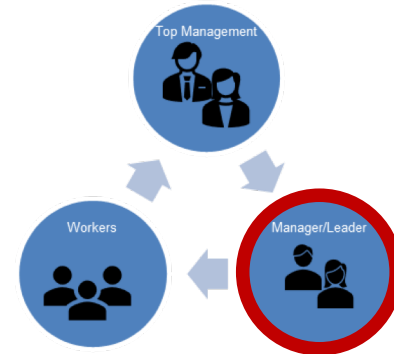


Human Factor – a transversal ecosystem

The rôle of the Manager/Leader



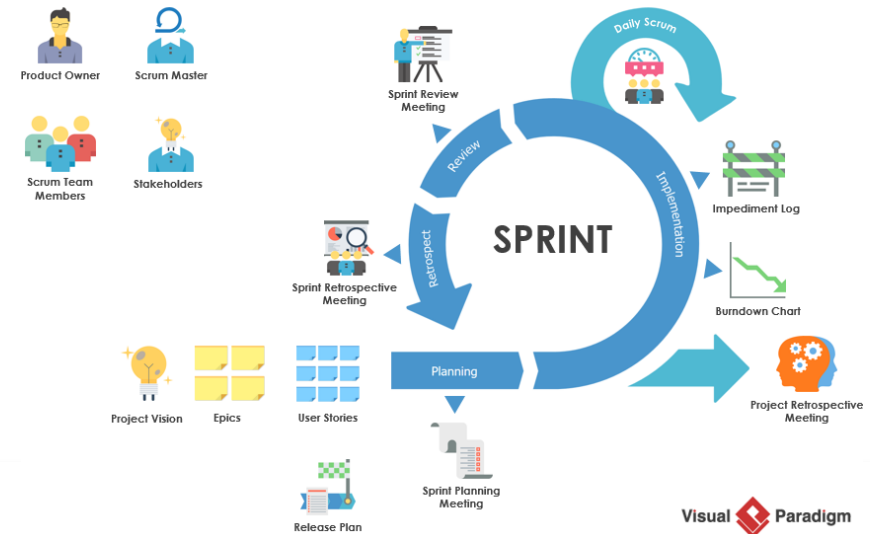
- Build a management based on leadership
 - Management is doing things right, leadership is doing the right things
 - Adapt your way to lead regarding the team maturity.. Lead by Doing, Showing, fixing objectives, by empowerment...
 - Define and Fix Roles and responsibilities (RACI Matrix)
 - Listen and Learn....



- Be flexible and **Agile**... “ability to move **quickly** and **easily**” but with rules, methods and organization...

- Give **Fun**... Have **Fun**
 - Set-up project ceremonies and methodologies (Epic/Story, Planning, Review, Retrospective)
 - Communicate... and Follow

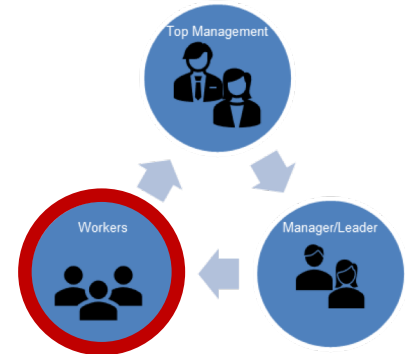
The Agile – Scrum Framework



Human Factor – a transversal ecosystem

The role of the Worker

- Capitalize and develop your **Talent**.. Not only the experience..
 - Talent is... What are you **doing well, better** than others, **more easily** than others...
 - What are **your skills** (Soft-skills and Hard-Skills)
 - Be ready .. for **continuous improvement**
 - Have fun & passion
 - Say What I Do, Do What I say
 - **Small step** approach (*Story of Eating a Whale*)
 - **Solution oriented**, responsible and involved
 - Let's do It ... Just do It...



Key Elements for Industry4.0 transformation



75% of I4.0. projects fail if **human is not the corner stone** of the project

- ⇒ In Industry 4.0.. “Human” has to talk to “Human”...
- ⇒ Move from Management to leadership
- ⇒ Be involved instead of concerned
- ⇒ Build the right team at the right place..
- ⇒ Keep the course but stay flexible in the trajectory

85% of I4.0 project **longer than 8 months** fail

- ⇒ Be Agile.. Split into epics and stories
- ⇒ I4.0 project is a journey with stopovers

Humans related transformation tasks

take **50%**

of the **project energy**... and what about the

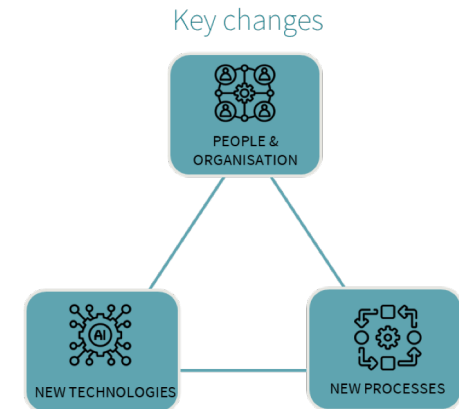
- ⇒ Just capitalize on that to move from cost to enabler, based on Talent management
- ⇒ Be agile
- ⇒ Move forward step by step
- ⇒ Give Fun.. Have fun...

70% of I4.0

transformation projects fail if **only driven by financials KPIs**

- ⇒ The WHY is the starting point
- ⇒ Security, Wellbeing, Satisfaction, productivity, gratitude, success, stability... **Let's Talk**

“Human”



Let's stay in contact



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About research
project

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MODULE DE FORMATION CONTINUE COMMENT RÉUSSIR SA TRANSFORMATION VERS L'INDUSTRIE 4.0 ?



En collaboration avec



Visite du démonstrateur 4.0 de Technifutur incluse

- Evaluer les enjeux du 4.0 pour votre société et son écosystème.
- Mobiliser les équipes autour du projet de transformation Industrie 4.0.
- Sortir d'une vision stratégique autocentrée et nouer des alliances.
- Maîtriser les premiers pas à réaliser pour passer à l'acte.

NOS EXPERTS



Dorothee Kohler
Fondateur & DG
KOHLER C&C



Jean-Daniel Weisz
Associé
KOHLER C&C

Experts dans les diagnostics de croissance des entreprises familiales et dans le coaching des équipes confrontées aux projets de transformation.

Industry 4.0: human and organizational challenges – LIEGE CREATIVE EQUANS



HEC LIÈGE EXECUTIVE EDUCATION
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Digital Transformation | Innovation | Change

S'INSCRIRE

Les Cahiers du Digital #1

Industrie 4.0 : la quatrième révolution industrielle
Tome 1 – Enjeux technologiques et économiques
Dorothee Kohler & Jean-Daniel Weisz

Découvrez les deux premiers numéros des *Cahiers du Digital* consacrés à l'Industrie 4.0 et rédigés par nos experts.

TELECHARG

HEC LIÈGE ACCREDITED **EQUIS** ACCREDITED **AACSB** ACCREDITED

Potential value of findings for Walloon SMEs

Empirical test of findings

Survey with *Industry 4.0 adopters, planners* and *sceptics* about their strategic positions

Case studies with *Industry 4.0 adopters* about their change management



Methodological tool



Industry 4.0 planners



Check of strong & weak points
Tailoring of Industry 4.0
implementation according to these
specificities



Analytical tool



Industry 4.0 adopters



Step back on ongoing situation
Defining the triggers of existing
challenges

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