



Logistics **four**dotzero

THE DIGITAL TRANSFORMATION ACCORDING TO ENGINEERING



AGENDA

Engineering and the Industry 4.0

Awareness about Logistics 4.0

Engineering strategy and process approach

The opportunities

The example

The case study



The awareness

| what we know?

Apparently we
all know a lot
about
INDUSTRY 4.0

But what we
know about
LOGISTICS 4.0 ?



Engineering as System Integrator of Logistics 4.0

INDUSTRY 4.0 =

CPS Systems (Cyber-Physical Systems) partial transfer of autonomy, intelligence and autonomous decisions to machine that in **real time** control and monitor physical processes simulating in a virtual environment the real physical operations



LOGISTICS 4.0 =

Apply the Industry 4.0 approach to the Supply Chain & logistics thanks to IOT supports installed and implemented at any level of the physical flow of goods

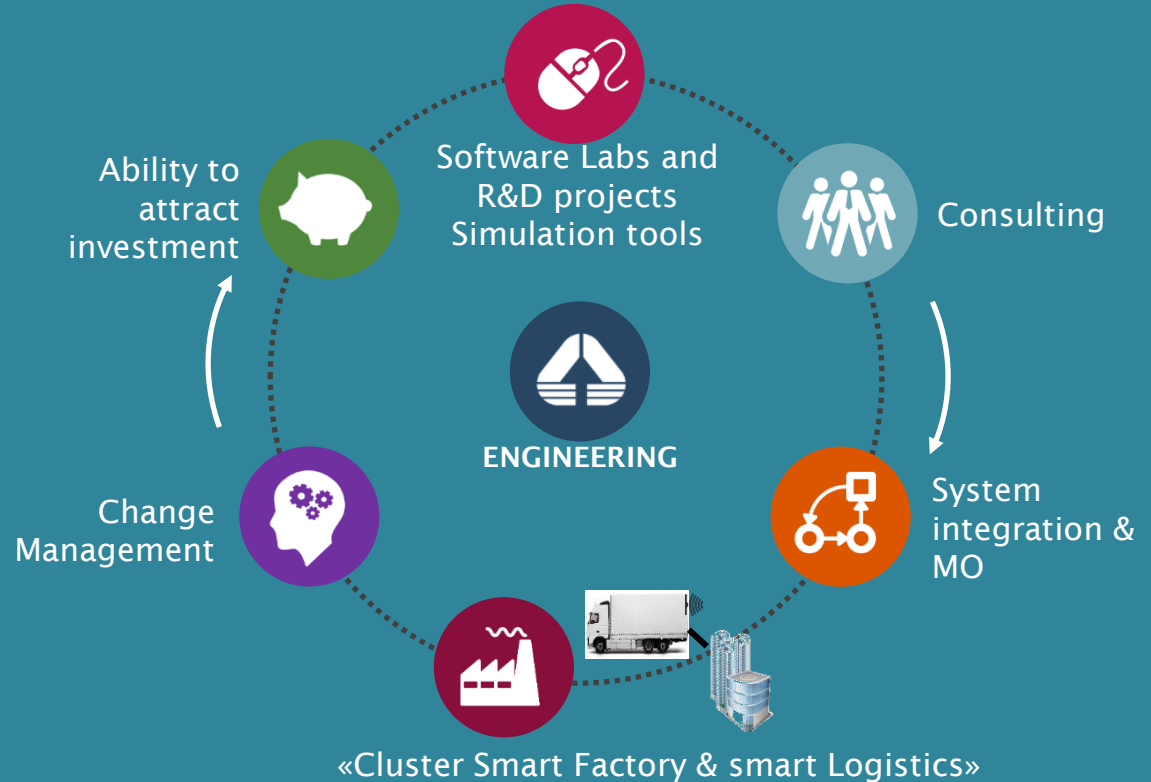
What a challenge to the Companies ?

Link Industry 4.0 to Logistics 4.0

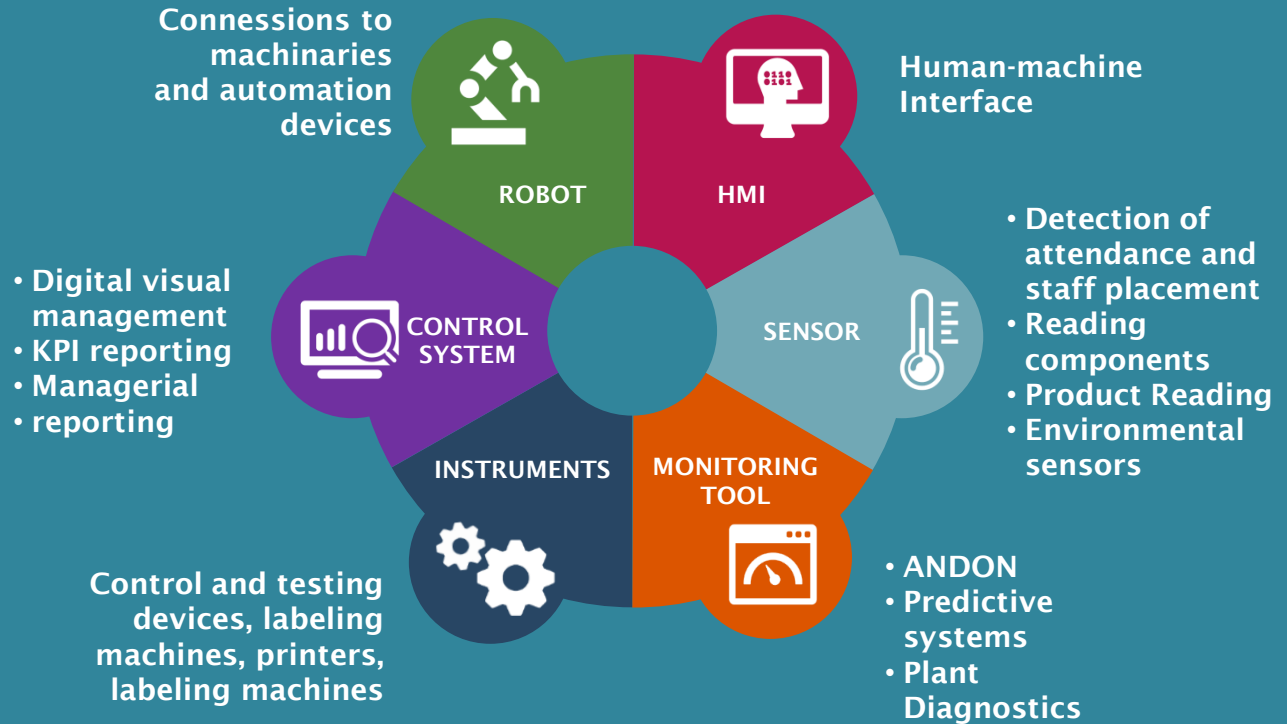
Identify operational, managerial tools and skills to provide a truly integrated and open to continuous dynamic interaction along the Supply Chain processes and goods flow



As in industry
guiding digital
transformation
as well in
Logistics



Factory 4.0 transformation & Logistics



Engineering approach | studying and planning before deciding

We propose an agile and effective approach to digital transformation



Simulation To be used to Better address Next steps & Decision

Customers and their locations
Demand/orders
Possible warehouse locations
Real routes
Means of transportation
Sourcing policies policies
Costs - transportation, handling,
warehousing, renting, guarding,
insurInventory/replenishme
nt policies Transportation
policies Production ance...
Uncertainty
Capacities
BOMs
...

Simulation-based
Network Optimization

Optimization over
simulation

What-if

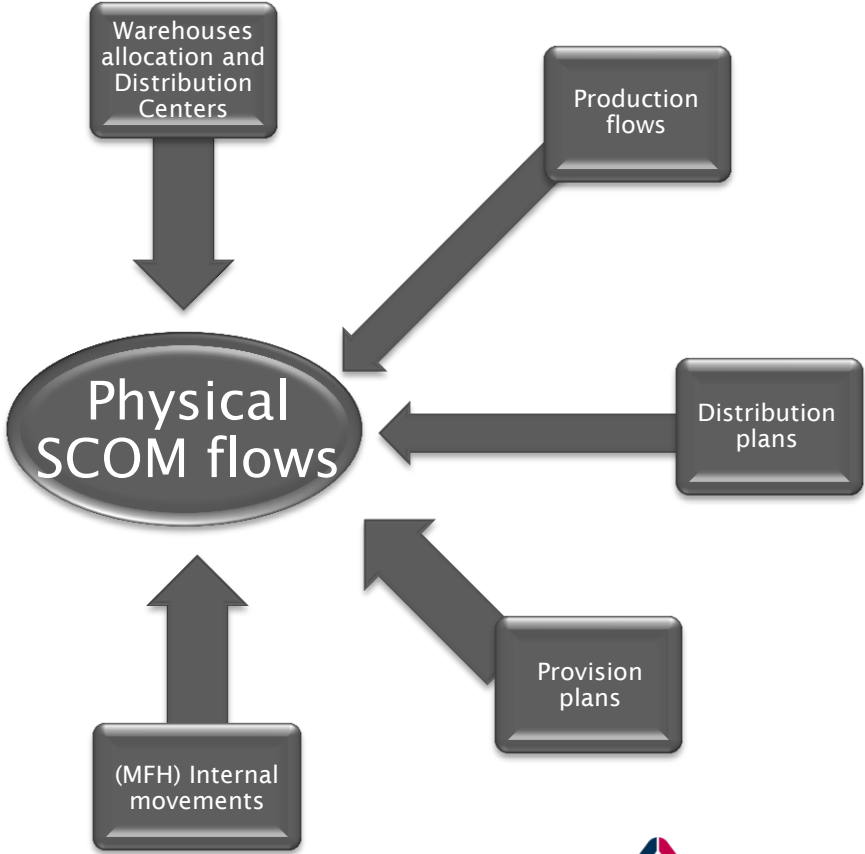
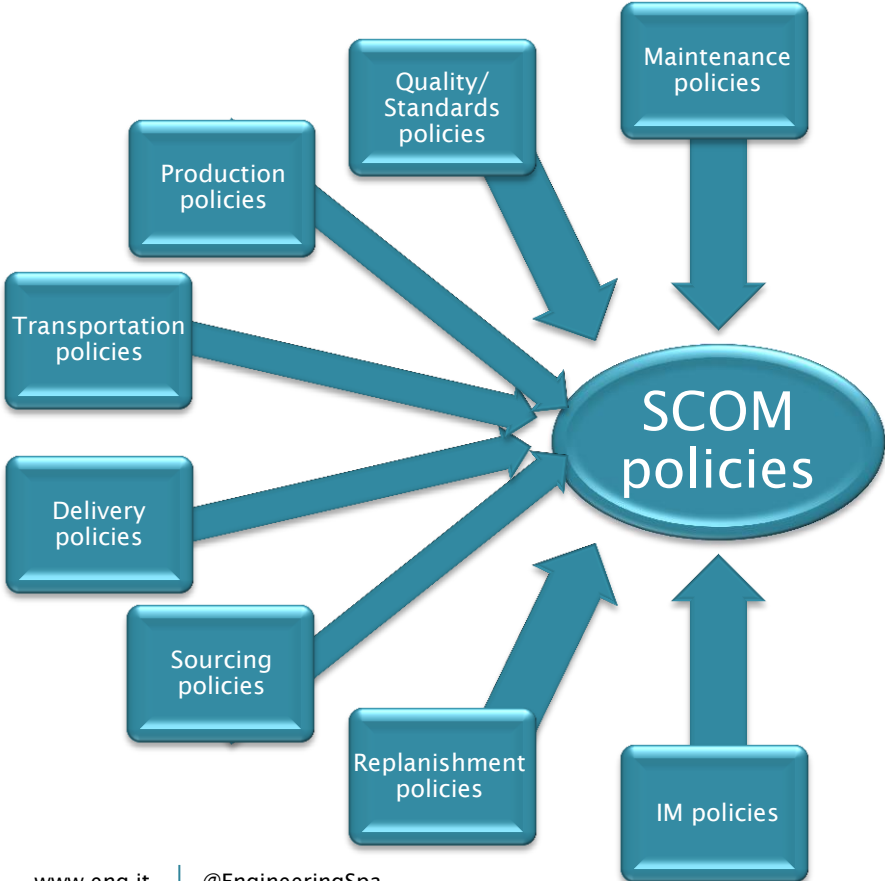
Sensitivity Analysis

Production planning




Fleet optimization

Number of sites
Investments in inventory
Capital employed
Operational cost by
category.The best
sourcing, inventory,
production policies.
Loss because of out-of-
stock. Resources
utilization & capacities.
Fleet size, service levels,
budget estimations,
risk assessments,
time to delivery,
stress testing results




Policies and SCOM flows | supported by «package» approach



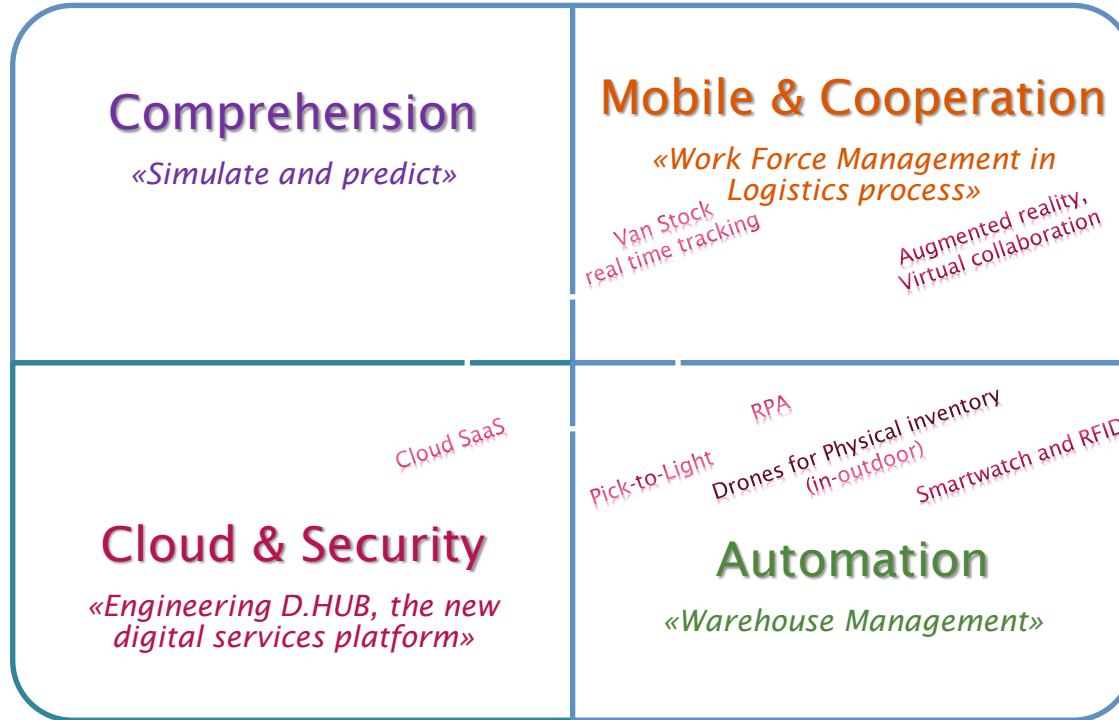
Industry & Logistics 4.0 according to Engineering | our digital bricks

ENABLING TECHNOLOGIES	ENGINEERING DIGITAL BRICKS			
Advanced Solutions	AUTOMATION	<i>Of Factory & WHS</i> 	Efficiency operational cost reduction	Revisiting and reconfiguration of warehouse processes
		<i>Of Decisions</i> 	Development of new professional figures	Increase of operational capabilities
Simulation	COMPREHENSION	<i>Trasformarming data in value</i> 	Better customer engagement	Better customer knowledge
Big Data & Analytics			Development of new VAS	Increase service level
			Decline big picture into actions	Reduce time to market improve operational effectiveness

Industry & Logistics 4.0 according to Engineering | our digital bricks

ENABLING TECHNOLOGIES	ENGINEERING DIGITAL BRICKS			
Horizontal/Vertical Integration	COOPERATION	<i>Interconnection of systems, people, processes, technologies</i> 	PLM CRM MES ERP WMS Transport system	Full integration
Industrial & logistics Internet		<i>Collection and transmission of data from production products and Phys Flow (WHS / Transport) to engineering, maintenance and marketing</i> 	Traceability, reporting	Advanced control
Augmented Reality		Geocall for technical assistance	Ability to check each event to increase operational performances	
Cloud	SECURITY	<i>Protection and conservation of data in compliance with the Regulations (UE) 2016/679</i> 	Cloud Engineering	Cisco CCNA SECURITY
Cyber Security		ISO 27001	NATO AQAP 2110/160	

Case History (Engineering experiences)



And to close

| integrated approach

Understand the big picture

Simulate alternative scenario

Involve / engage / commit all partners along the SC road

Gradually call for technology implementation (all partners)

Share KPI and admit deviation as key factors for improvement

Evaluate social as well as operational impacts

Forge the SYSTEM 4.0 (Industry & Logistics)



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*Thank you for **your attention***

