



Factory logistics automation - it is a journey

LOGISTICS AUTOMATION IN BEIERSDORF

AND OUR JOURNEY TOWARDS FACTORY OF THE FUTURE

Beiersdorf

Dr. Filip Odważny



BEIERSDORF

AT A GLANCE

**INVENTOR
OF MODERN
SKIN CARE**

Founded in Hamburg in

1882

Business segments

Consumer and
tesa

DAX listed
company

>170

affiliates

€9.5

billion Group sales in 2023

~22,000

employees worldwide

OUR GLOBAL BRANDS
EVERYWHERE
AT HOME

OUR BRANDS



C H A N T E C A I L L E



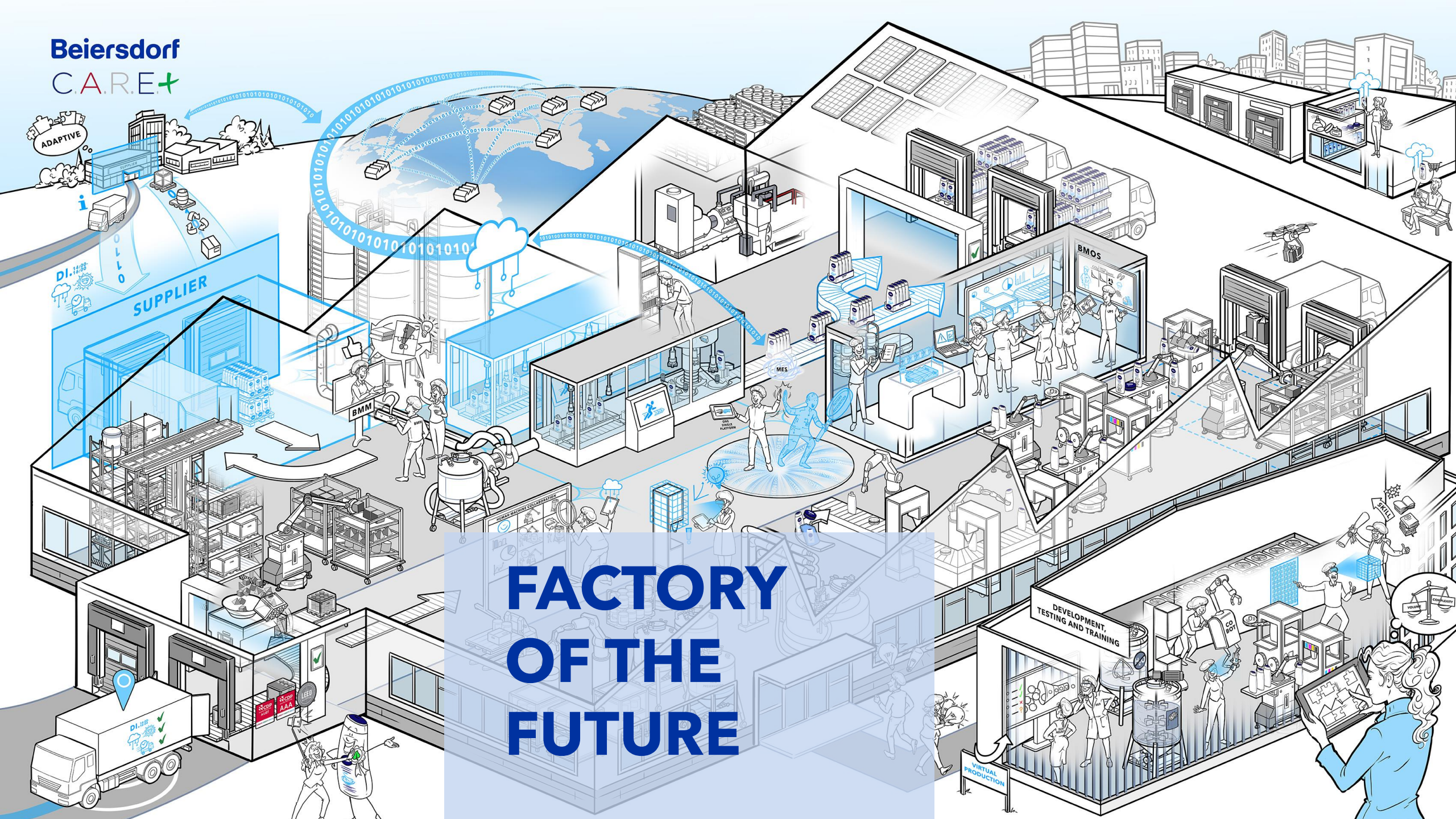
WE ARE ON THE JOURNEY. BUT WHERE EXACTLY?



Beiersdorf present in all continents

Logistics automation focus in Europe

only **20%** of factory logistics process automated in Europe



FACTORY OF THE FUTURE

BEIERSDORF'S FACTORY LOGISTICS TRANSFORMATION

OUR FACTORIES TRANSFORMING TOWARDS FUTURE

Increased volumes

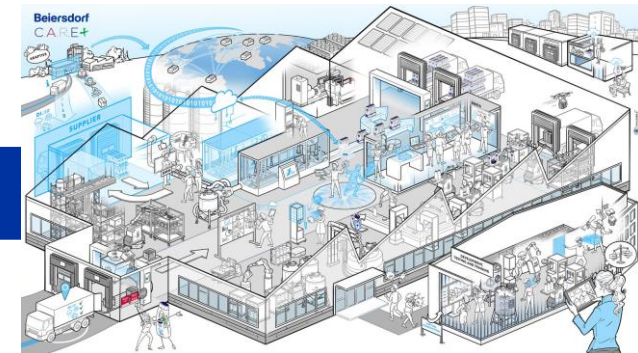
Supply chain disruptions

Labor shortages

Net-zero targets

Affordable automation (outside EU)

Major factory investments



FACTORY LOGISTICS PLAYS A KEY ROLE IN TRANSFORMATION OF OUR FACTORIES

up to **450** million
products per year

up to **300** pcs/
min line speed

Capacities for
sustainable growth

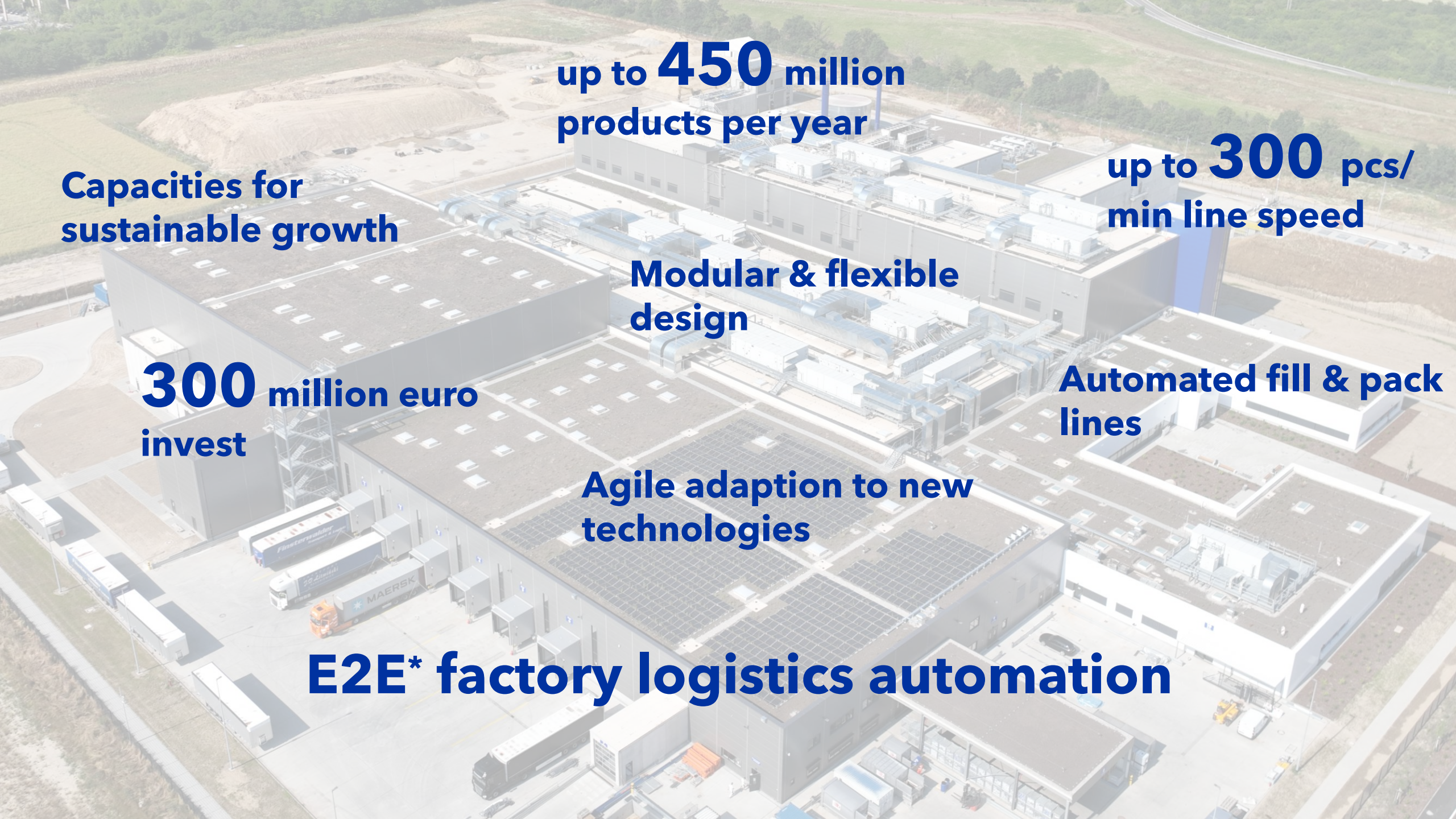
Modular & flexible
design

Automated fill & pack
lines

300 million euro
invest

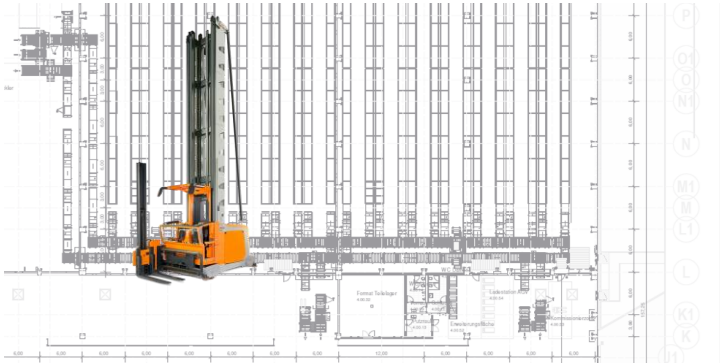
Agile adaption to new
technologies

E2E* factory logistics automation



BEIERSDORF'S FACTORY LOGISTICS TRANSFORMATION

MANY SUCCESS STORIES AND MORE TO COME



Leipzig, Germany:

- Automating: **warehousing and material replenishment**
- **Verry narrow aisle AGVs** in use within the warehousein together with conveyor loop.
- 8 AGVs covering ~120 transports/hour.
- „Live“ analytics available.

Madrid, Spain:

- Automating **material replenishment** within filling & packing hall.
- **Stacker AGVs** in use together with flow racks.
- 4 AGVs covering ~ 60 transports / hour.
- „Live“ analytics available.

Madrid, Spain:

- Automating: **double stacking, wrapping and outbound staging.**
- **Counterbalance AGVs** in use together with conveyor systems.
- 3 AGVs transporting stacked pallets.
- „Live“ analytics available.

... and more to come

ROME WASN'T BUILT IN A DAY. NEITHER AUTOMATION 😊

How typical success story looks like at conferences:



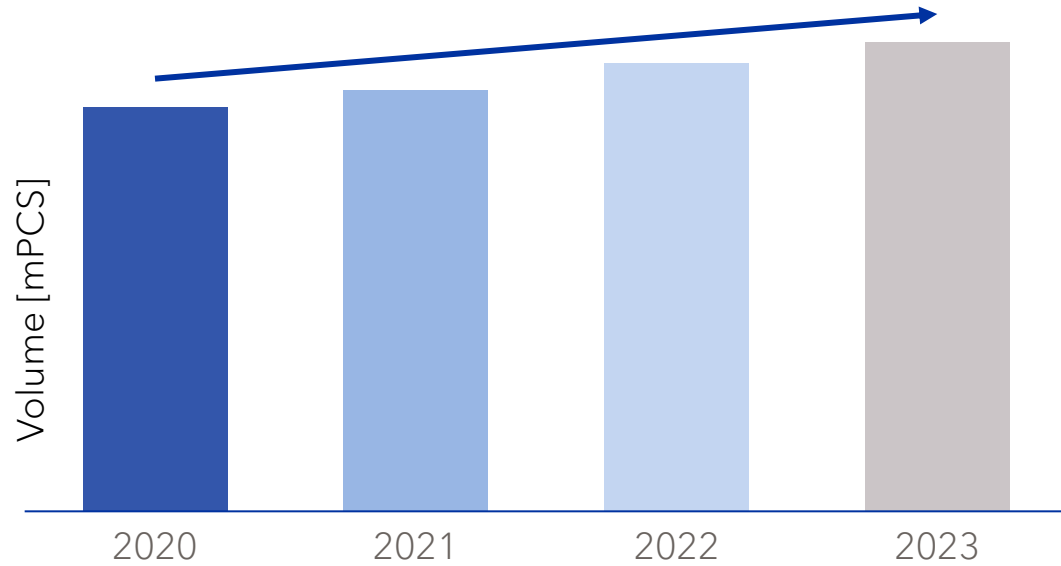
How it really is and we don't see:



WHY IT IS IMPORTANT TO CONSIDER LOGISTICS AUTOMATION

VOLUME GROWTH COMES WITH CHALLENGES

CONSTANT VOLUME GROWTH



CHALLENGES



Safety



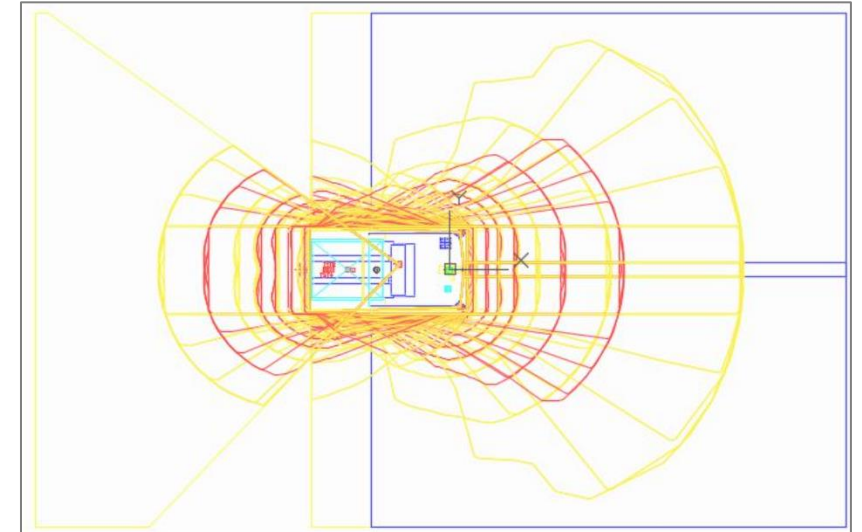
Labor

IMPLEMENTING AUTOMATION CAN REDUCE INCIDENTS AND IMPROVE WORKPLACE SAFETY

AUTOMATION CAN PREVENT UP TO 20% OF INCIDENTS



Up to 20% of incidents in Europe could have been avoided with logistics automation



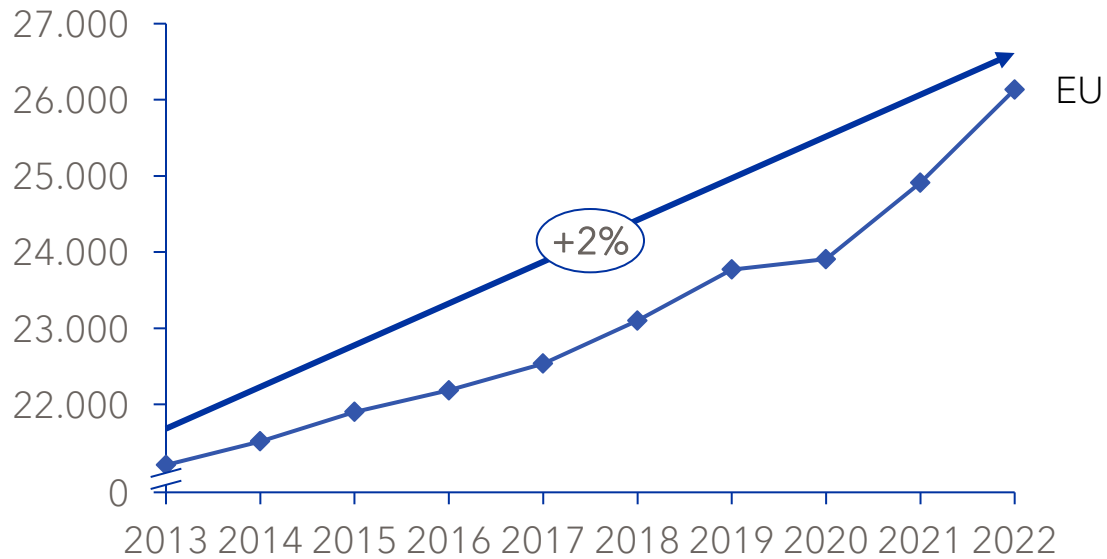
*Based on incidents in 2019-2023

> Logistics automation enhances safety through technology, flow separation and predictability

RIISING LABOR COSTS AND DECREASING UNEMPLOYMENT RATE ARE IMPACTING BDF

CURRENT LABOR/ECONOMIC TRENDS REQUIRE ACTIONS

Average annual net earnings in the European Union [€]



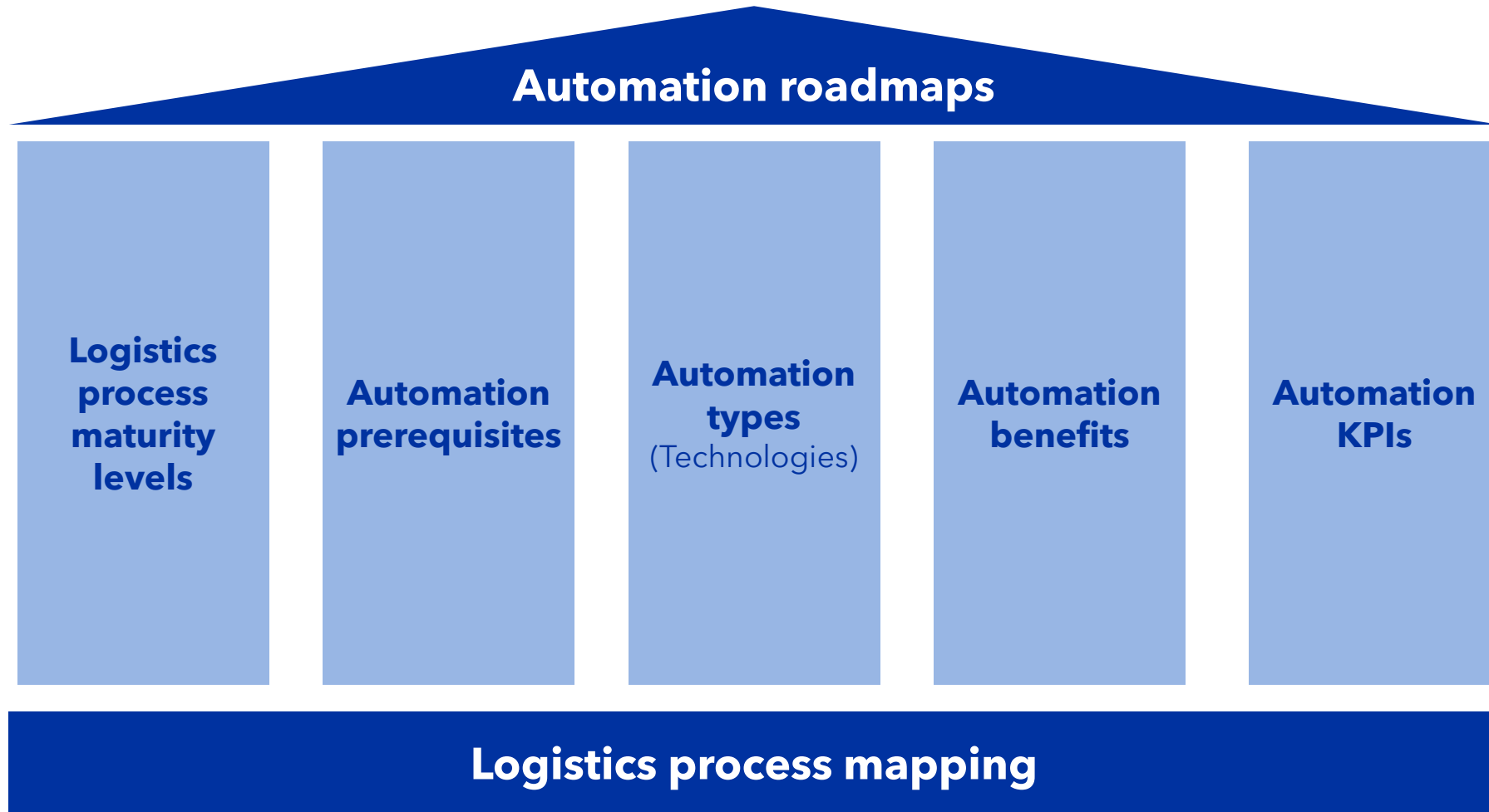
Statista



Automation can avoid risk of shortage and save costs by increasing productivity in factory logistics.

HOW TO BRING LOGISTICS AUTOMATION TO THE NEXT LEVEL

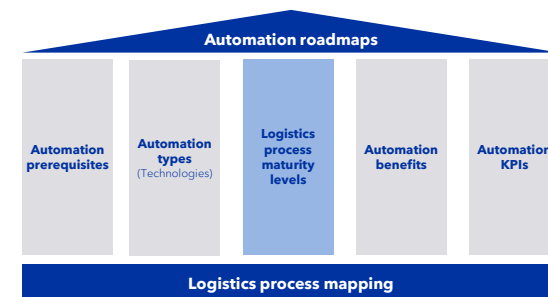
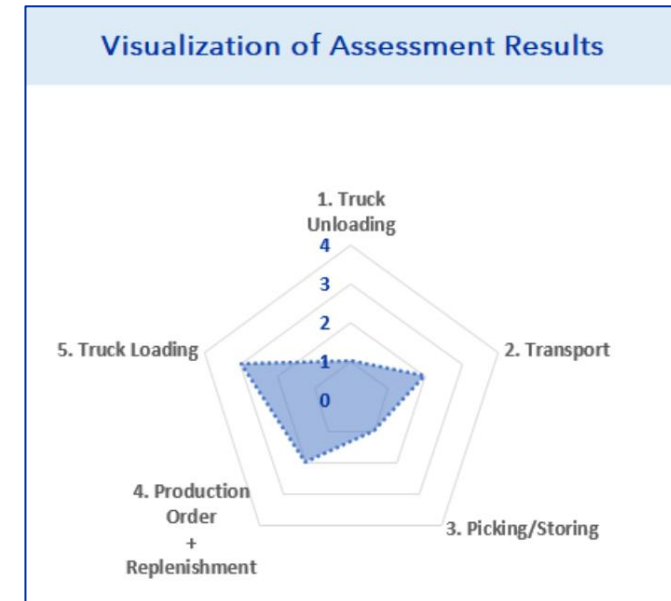
FIRSTLY - DEFINE STRUCTURE AND PRIORITIES



HOW TO BRING LOGISTICS AUTOMATION TO THE NEXT LEVEL

SECONDLY - ASSESS THE POTENTIAL

1. Truck Unloading		See how to reach next level ...
Current Technology	electric vehicles	
Current level	Level 1	
Description	Operators use electric vehicles with manual operation to unload + check + label and transport pallets in the inbound area.	
2. Transport Inbound to Warehouse		See how to reach next level ...
Current Technology	automated technologies + Etricc MFC implementation, handheld scanners + tablets (SAP WMS connected)	
Current level	Level 2	
Description	Automated technologies are used to pick up the pallets from fixed positions in the inbound area to transport them to other fixed positions (taxi). The order is triggered by a human to tell the technology where to pick up the pallets and to which position in the warehouse to transport them.	
3. Picking/Storing in HBW		See how to reach next level ...
Current Technology	electric vehicles, handheld scanners + tablets (SAP WMS connected)	
Current level	Level 1	
Description	Operators use electric vehicles to pick up pallets in the warehouse and store them. They have handheld scanners + tablets for tracking and guiding the picking/storing process (connected to SAP WMS).	
4. Production Material Order + Transport Material Provision to Production		See how to reach next level ...
Current Technology	automated pull system (SAP WMS connected), automated technologies for transporting + Etricc MFC implementation, handheld scanners + tablets (SAP WMS connected)	
Current level	Level 2	
Description	Automated order systems employ the kanban method (pull principle) to order packaging materials from warehouse triggered manually by an operator using SAP WMS. Automated technologies are used to pick up the pallets from fixed positions in storage area to transport them to other fixed line buffer positions (taxi triggered by operator).	
5. Truck Loading		See how to reach next level ...
Current Technology	automated technologies, IoT sensors, automated scanners, connection between Etricc MFC and SAP WMS	
Current level	Level 3	
Description	Automated technologies capable of operating without human intervention are used to load the pallets in corresponding trucks. Pallets are supplied by other automated technologies and not deposited in outbound area. Etricc MFC steering these technologies is integrated in SAP WMS.	



HOW TO BRING LOGISTICS AUTOMATION TO THE NEXT LEVEL

THIRDLY - STANDARDIZE

TECH AND SPACE CLARITY DRIVES EFFECTIVE PLANNING

Model	1700-4000-01	1700-4000-02	1700-4000-03	1700-4000-04	1700-4000-05
Max. load capacity	1700 kg	1700 kg	1700 kg	1700 kg	1700 kg
Max. length	4000 mm	4000 mm	4000 mm	4000 mm	4000 mm
Max. width	1700 mm	1700 mm	1700 mm	1700 mm	1700 mm
Max. height	1700 mm	1700 mm	1700 mm	1700 mm	1700 mm

Requirements:

- Safety
- IT

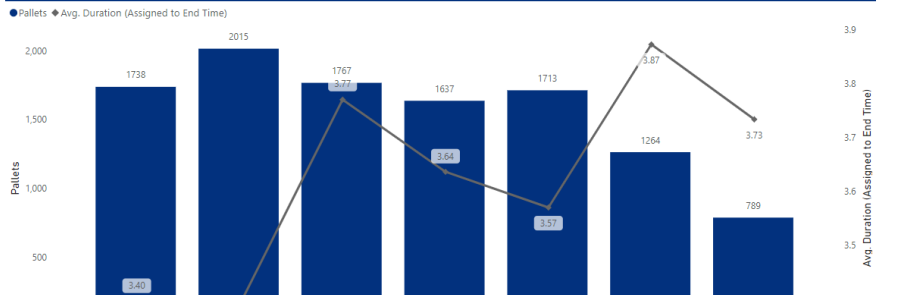
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Start Date	Vehicle	Outcome	Source	Destination	Last Refresh:
10/06/2024	All	All	All	All	04.10.2024 09:04:14
16/06/2024	Inbound	Aisle Change	Double Game		
	All	All	All		

Refresh Data

Average Duration (Assigned to End Time)		Total Distance per Pallet		Total UPDT (Failure Time)	
00:03:36		42.57		(Blank)	
Pallets	Pallets per Aisle Change	Double Games	Inbound		
10923	2.59	49.0 %	5353		

Pallets and Avg. Duration (Assigned to End Time)



3.5.4 AGVs Safety features for AGVs

AGV stands for "automated guided vehicle" and describes any kind of driverless industrial truck that is used in BDF premises to transport pallets or other transportation containers.

All purchased equipment, conditions of the surrounding as well as the operation of the equipment have to fulfill the requirements described in the ISO 3691-4 "Industrial trucks — Safety requirements and verification — Part 4: Driverless industrial trucks and their systems"

Specific BDF safety requirements:

- Layout of premises:
 - Dedicated pathways for AGVs are required. No shared pathways with pedestrians or operator driven trucks are allowed.

AGV - directions

INPUT AGV CONCEPTS

vazny, Katharina Hast, tscheck

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FAT Protocol

FACTORY ACCEPTANCE TEST PROTOCOL

ISO 9001:2015

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URS User Requirement Specification

USER REQUIREMENT SPECIFICATION

ISO 9001:2015

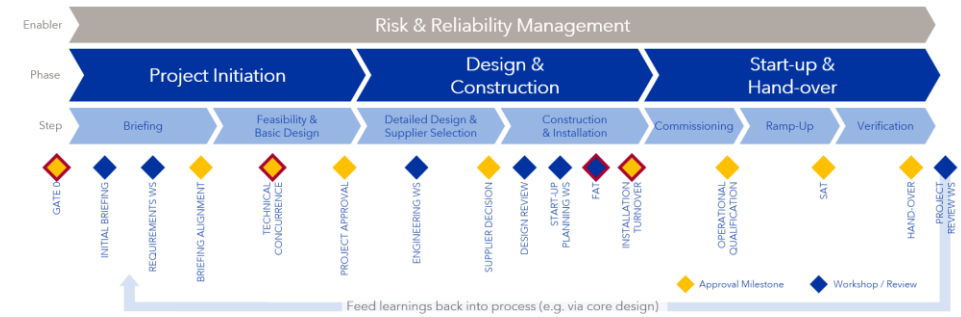
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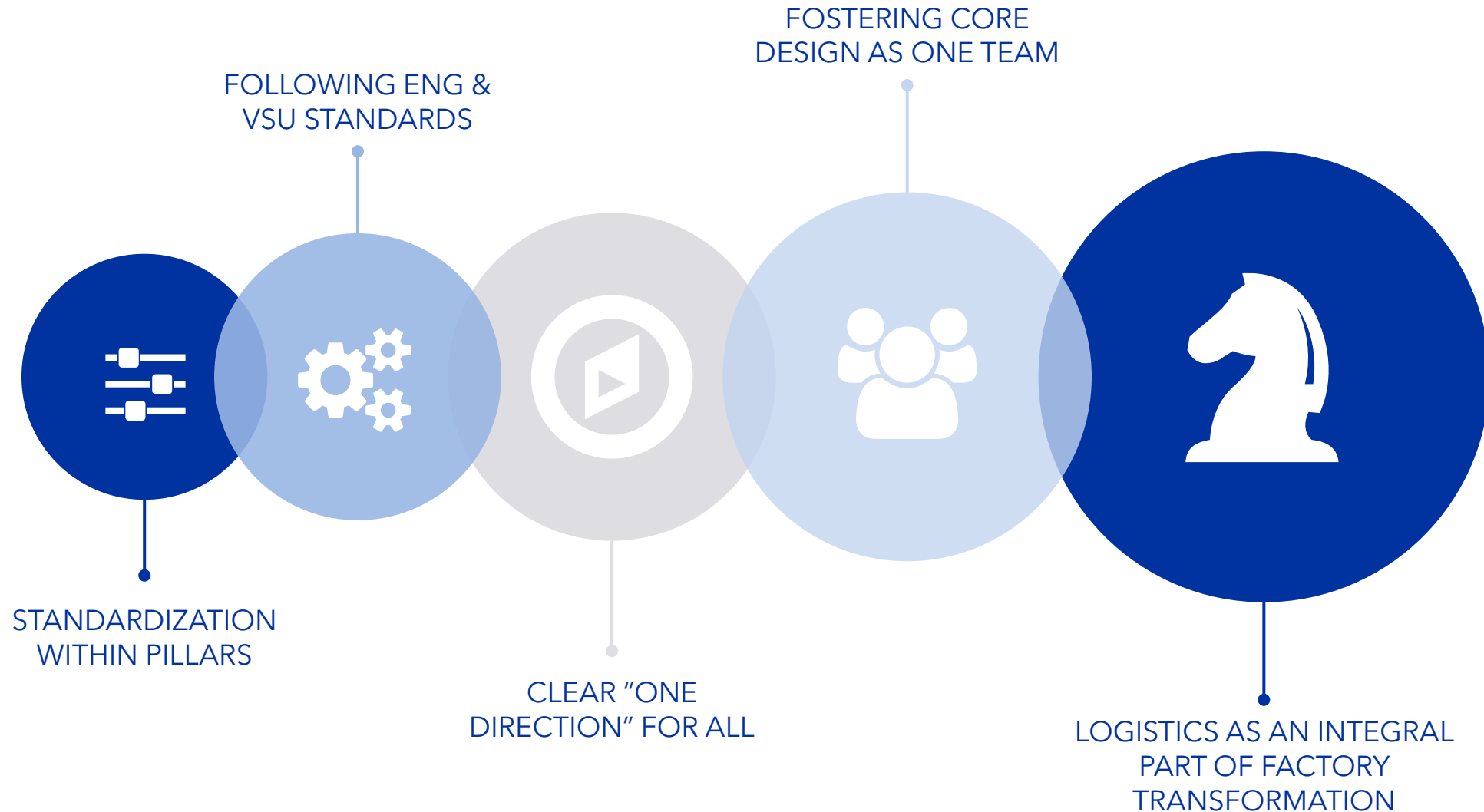
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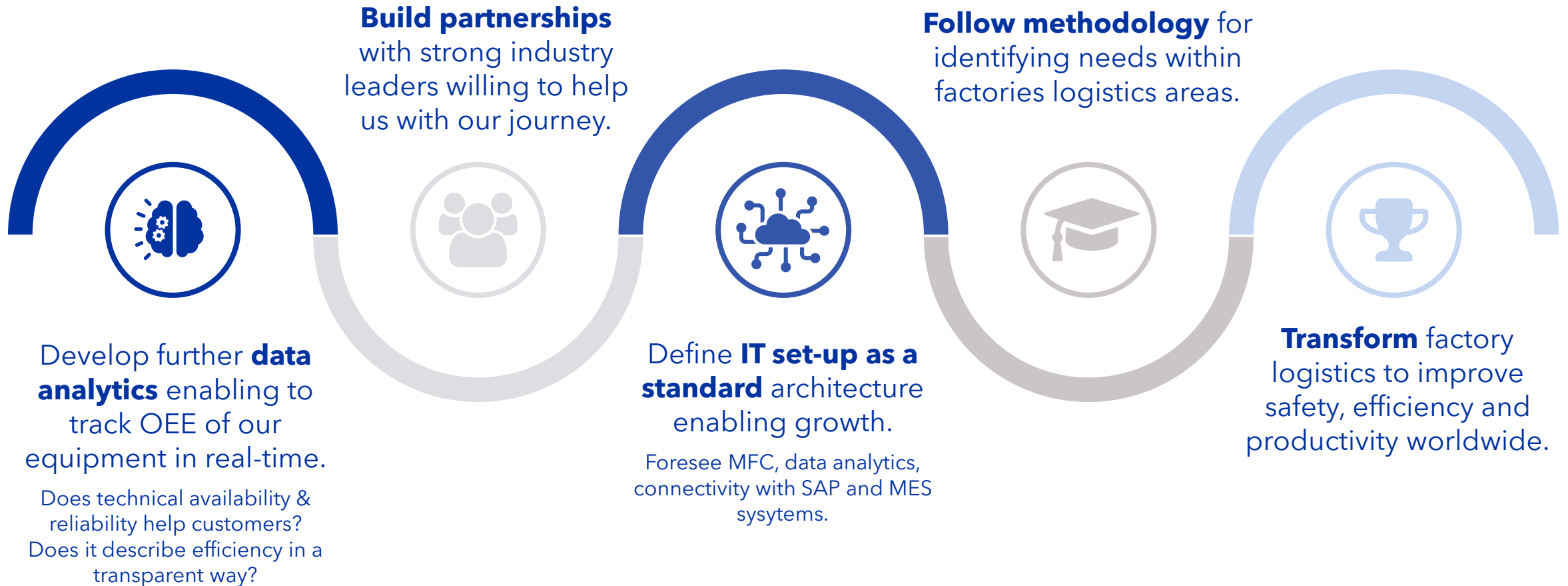
HOW TO BRING LOGISTICS AUTOMATION TO THE NEXT LEVEL

THIS TRANSFORMATION CONSISTS OF 5 ELEMENTS



HOW TO BRING LOGISTICS AUTOMATION TO THE NEXT LEVEL

WE STILL HAVE TO FACE CHALLENGES ON THE WAY



THANK YOU

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