



DETROIT AUTO SUMMIT 2025

Driving operational excellence with Digital Twins

Motherson SAS's approach.



1 Introduction to Motherson SAS

2 Why Digital Twin


3 Approach for Deployment

4 Adoption Strategy

5 Roadmap



Motherson.

motherson 

Motherson Group was started in 1975 by the Late Mrs. Swaran Lata Sehgal and her son Mr. Vivek Chaand Sehgal, hence the name Motherson.

The name signifies a relationship of trust with all stakeholders.

Our Vision.

To be a globally preferred sustainable solutions provider.

Our Purpose.

Together we aim to continuously delight all who put trust in us and go after seemingly impossible goals, so that we provide sustainable opportunities for our associates and are **proud to be part of** something larger than ourselves.

Mr. Vivek Chaand Sehgal
Chairman

Mr. Laksh Vaaman Sehgal
Vice Chairman



Proud to be part of the most exciting industries.



Among the **Top 15** automotive suppliers worldwide

Motherson has over **400** facilities in **44** countries.

Driven by **over 200,000** professionals from different cultures and nationalities.

Global customer base of all the world's major automotive OEMs.

Full system solutions for automotive and other related industries.



01 Wiring Harness

- Electrical distribution systems (EDS)
- Power modules
- Electrical cabinets and power packs
- Components for vertical integration



02 Vision Systems

- Exterior mirrors
- Interior mirrors
- Camera monitoring systems
- Components for vertical integration



03 Modules & Polymer Products

- Fully assembled interior and exterior modules
- Decorative parts and small assemblies
- Tooling



04 Integrated Assemblies

- Module assemblies and process automation
- Tier 0.5 system integration
- Testing of mechanics, electrical and software
- JIT and JIS supply chain services



05 Elastomers

- Rubber injection moulded parts
- Rubber to metal bonded parts
- Extrusions – Reinforced Hoses, profiles bonding with metal carrier, etc.



06 Lighting & Electronics

- Lighting systems
- Shock absorbers & air intake manifolds
- Paint coating solutions & air compressors
- Catch for car AC compressors & body control modules



07 Precision Metals & Modules

- Precision machining and cutting tools
- Sheet metal parts
- Process equipment
- HVAC for off-highway vehicles, commercial vehicles, buses and driver cabin modules



08 Technology & Industrial Solutions

- Information Technology and software
- Telematics
- Cyber security
- Cloud services



09 Logistics Solutions

- Logistics solutions for finished vehicles and components
- Integrated packaging solutions



10 Aerospace

- Soft-hand metal machining
- Surface treatment
- Sheet Metal, Tubes & pipes
- Wiring harnesses
- Metallic assemblies
- Interior polymer parts



11 Health & Medical

- Bio-Tissue
- Fluorescence imaging and 4K Laparoscopy imaging systems
- In-Vitro medical devices
- IT solutions for healthcare



12 Services

- Industrial park
- Automotive engineering services
- OEM-certified automotive parts, accessories, and dealer-fit products

Integrated Assemblies. Motherson Sequencing & Assembly Services.



We are « **Motherson SAS - Integrated Assemblies** » a leading global provider of Assembly, Logistics, Testing and Engineering Solutions for the automotive industry (interiors, exteriors) ... and beyond !

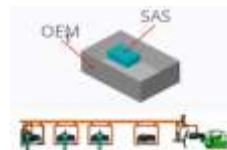
 **20%**
Market Share

 **12**
Countries

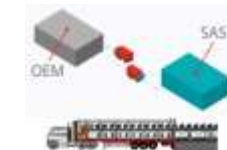
 **24**
Plants

 **6,000**
Associates

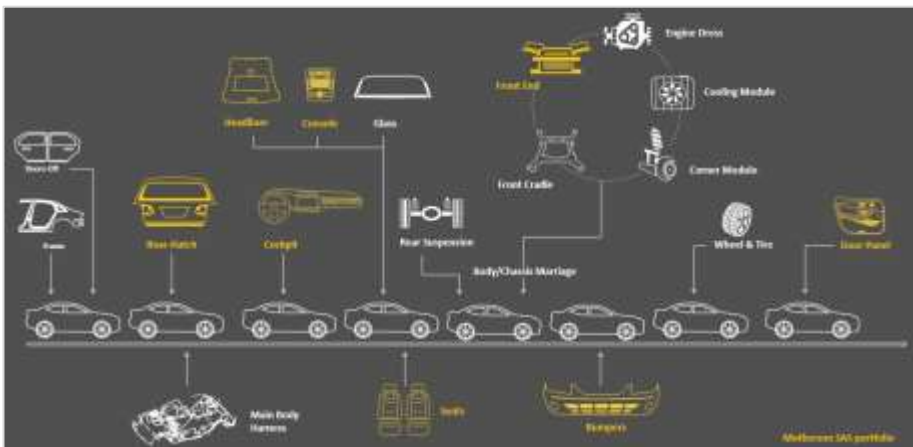
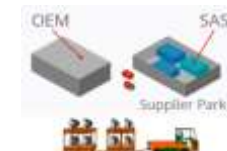
On OEM Side Plant



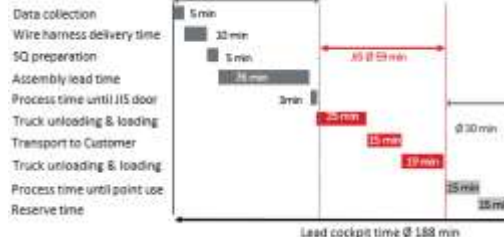
Supplier Park



Separate Plant



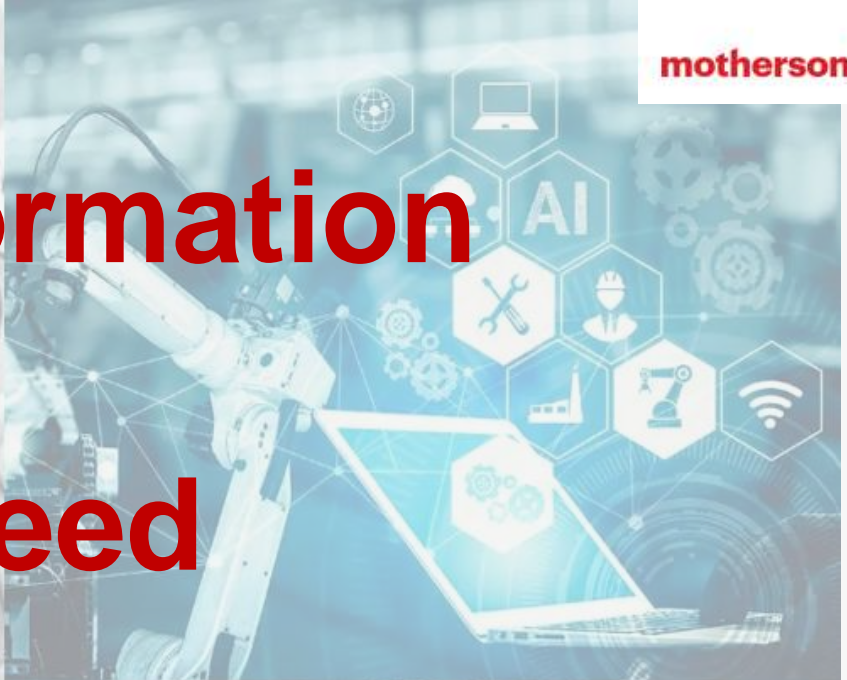
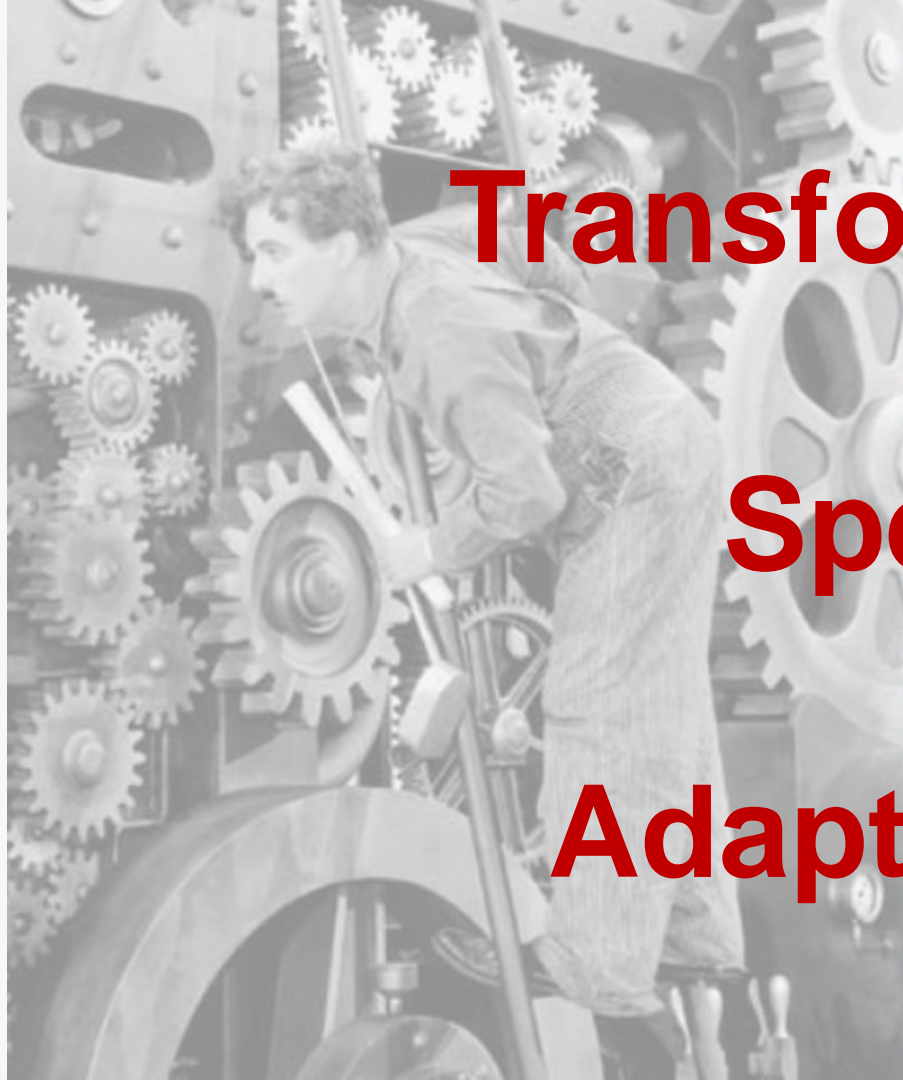
Modules Assembly and Delivery Just-In-Sequence.



Transformation

Speed

Adaptability



Leverage opportunities given by Digital Tools and Data

Monitor & Control industrial operations



Design Lines and perform efficient Simulations



End-to-End / Holistic Solution mandatory

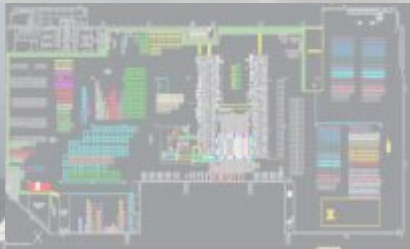




**Existing
Locations
with high
improvement
potentials**



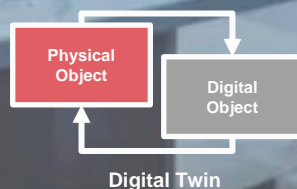
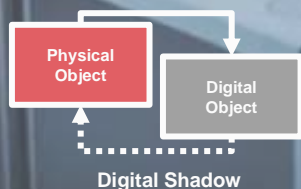
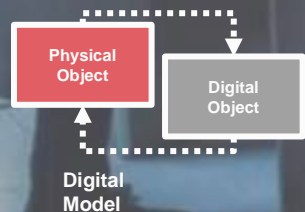
**New locations
– Greenfields –
to install right
from first time**



**Operation &
Manufacturing
Engineering**

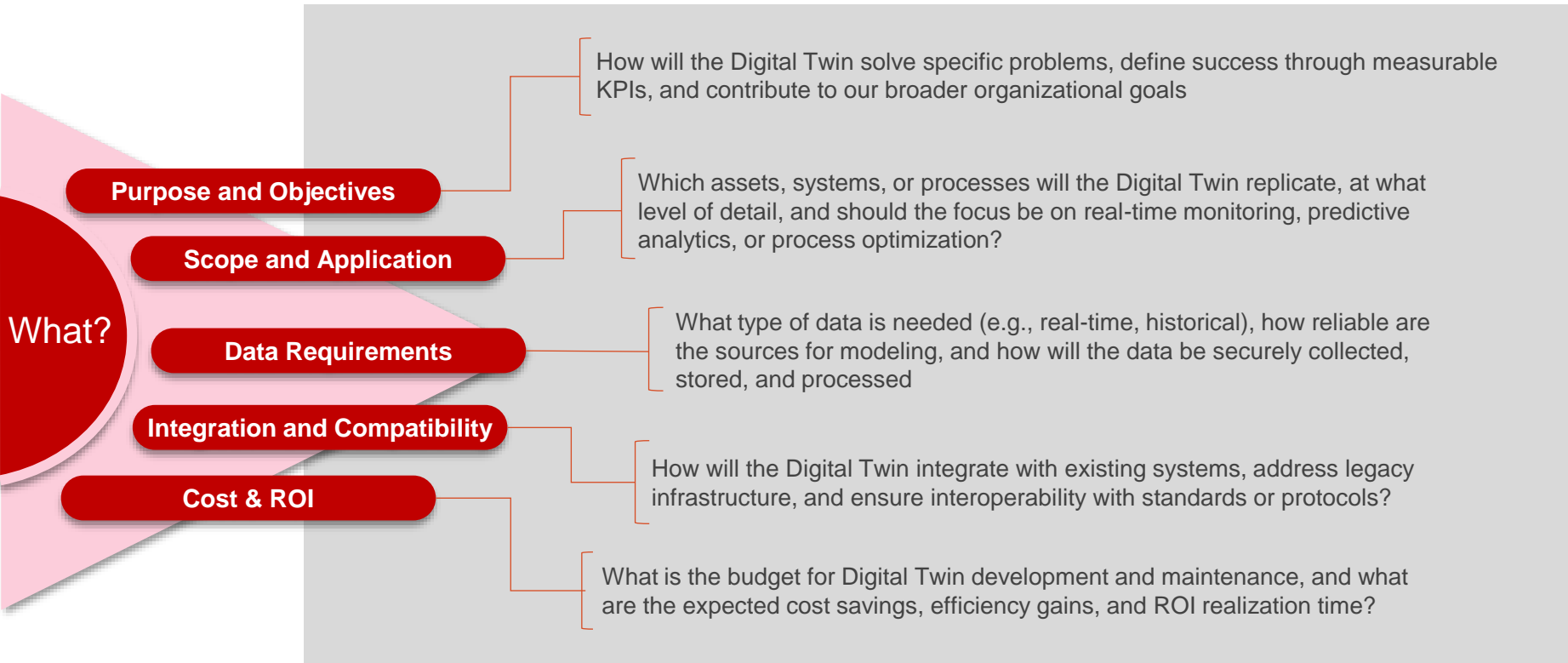
**Information
Technology**

AUTODESK
Coordination
&
Platform/Software



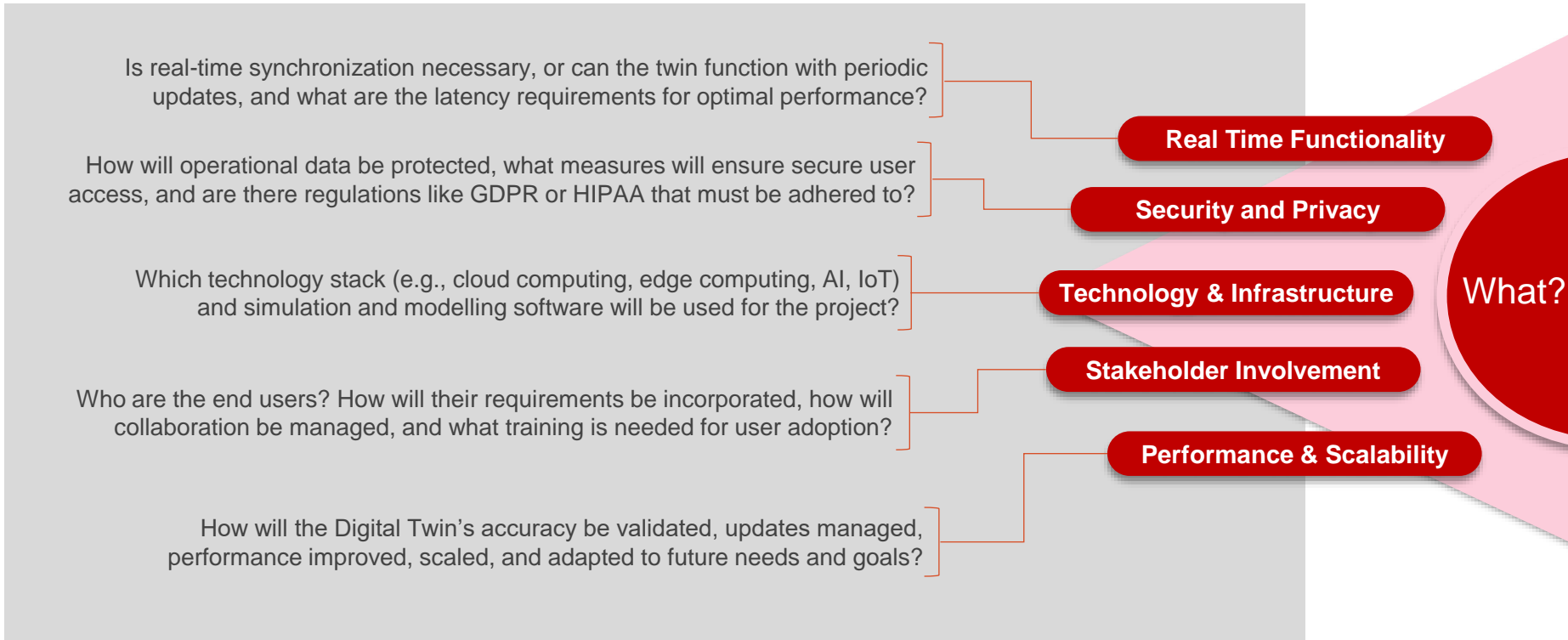
Approach to Deployment.

Key Considerations – Business Stakeholders.



Approach to Deployment.

Key Considerations – Technology.

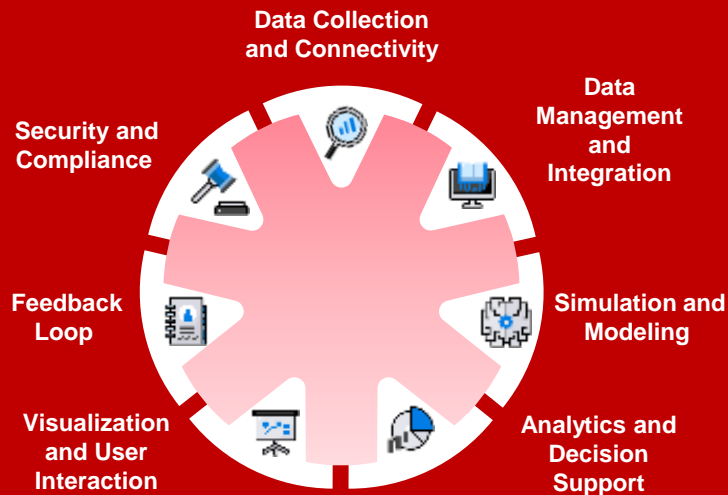
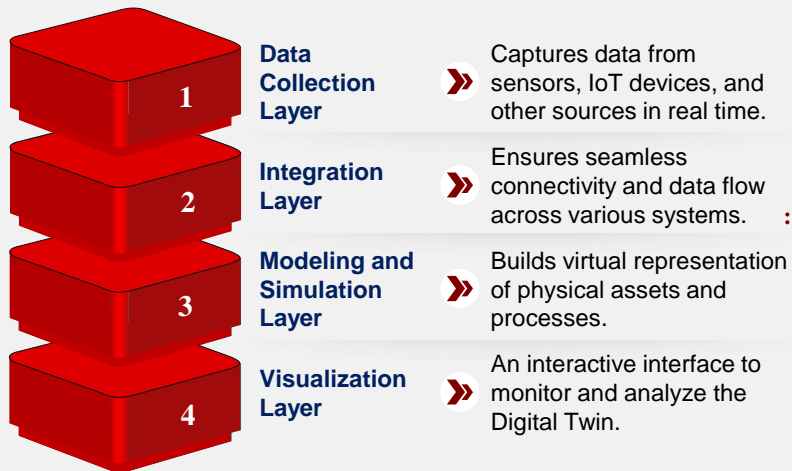


Approach to Deployment.

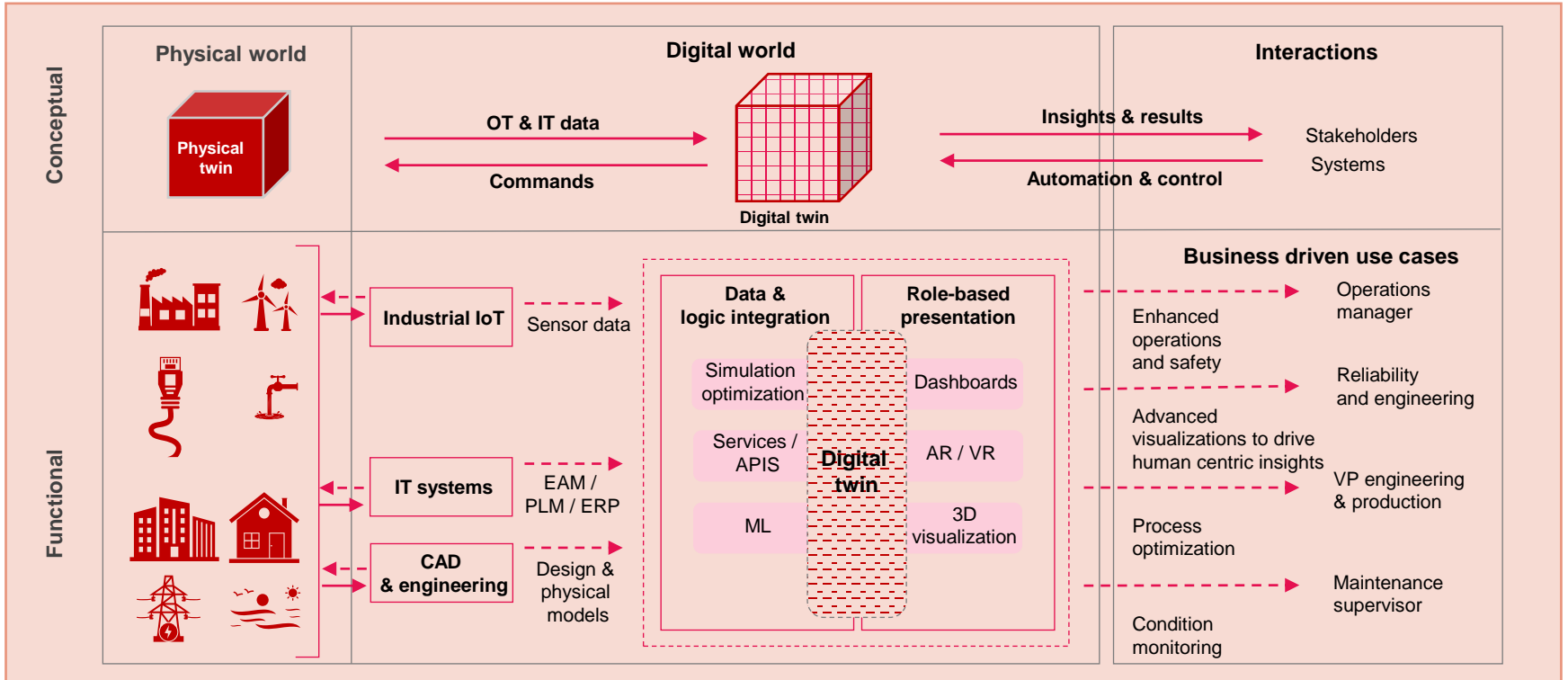
What are the technology stack components?

Key components to stack to prepare the ground

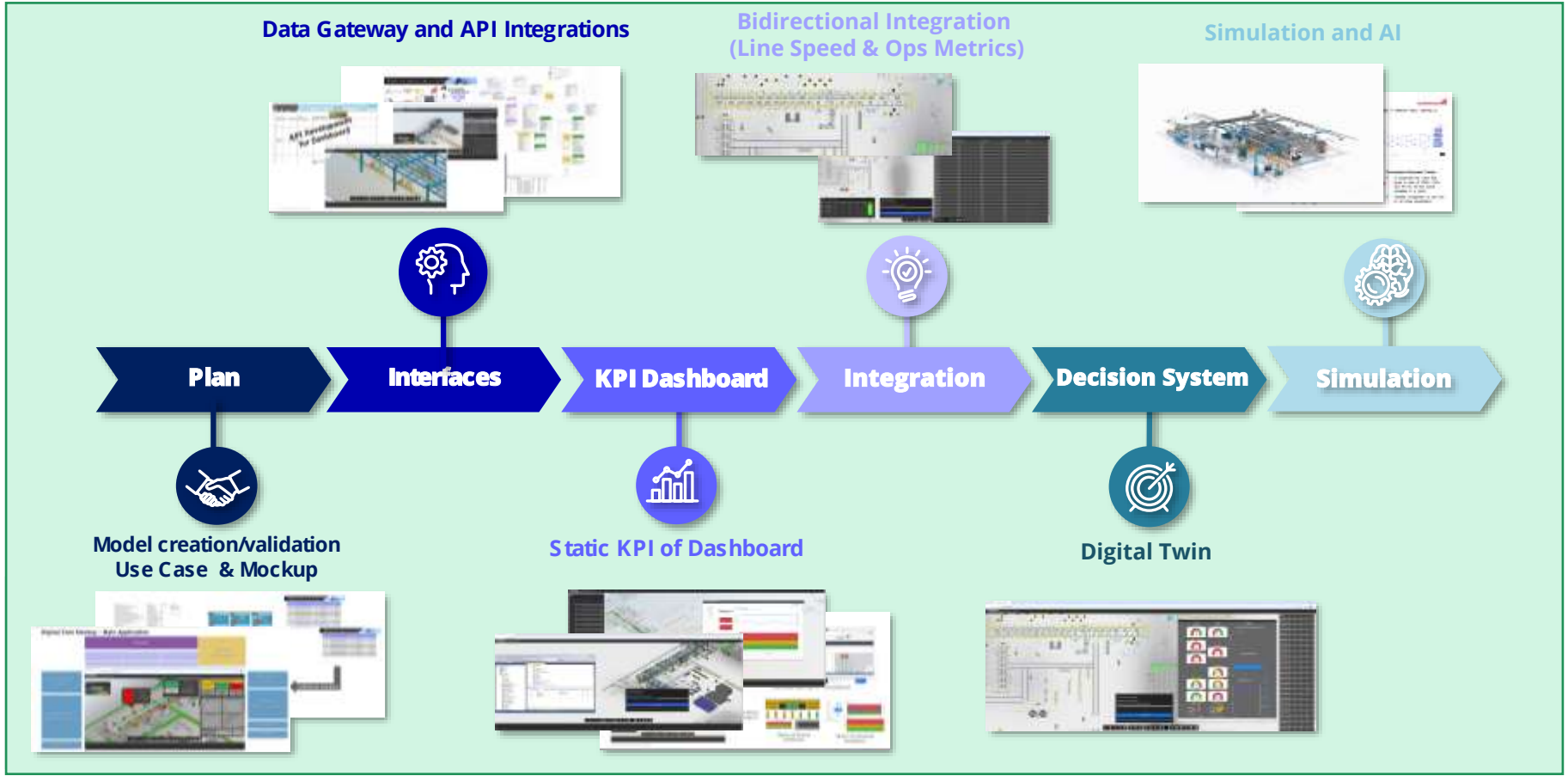
Align to them into eco-system



Implementation Strategy (Who and What).



Adoption Strategy what was our implementation journey?



Modular Implementation Approach.

WP 8 - Development of Standards

Module 1
Building and Facility Optimization

WP 3 - 3D Model Validation
WP 6 - Collaboration Platform & Processes

Module 3
IFM Aggregation Model

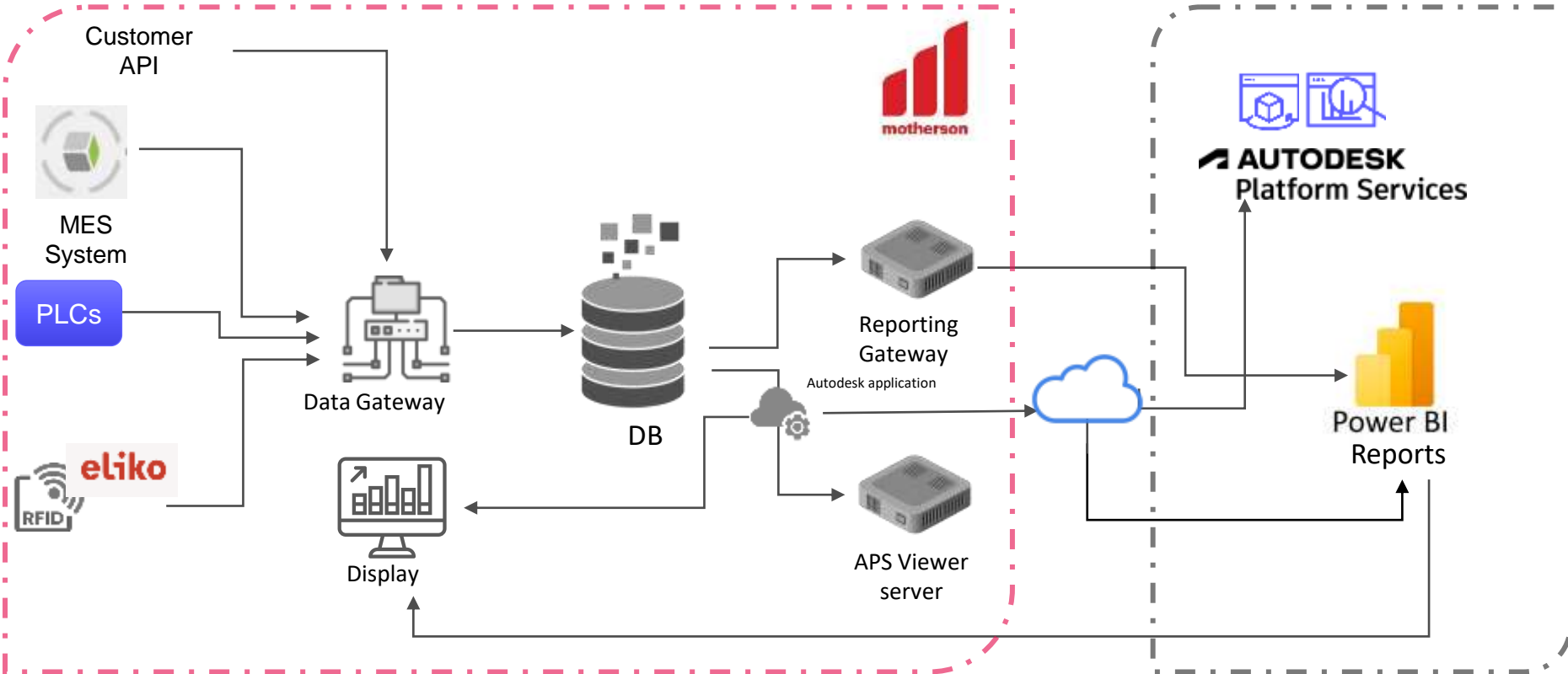
WP 1 - Data Management
WP 2 - 3D Model Creation
WP 4 - Asset Management

Module 2
Production Optimization

Module 4
Efficient Operations
Digital Twin for real-time monitoring

WP 7 - Data Collection
WP 8 - Digital Twin

Digital Twin Data, Software components and interfaces deployed.



Digital Twin Result – Control tower.

Viewer

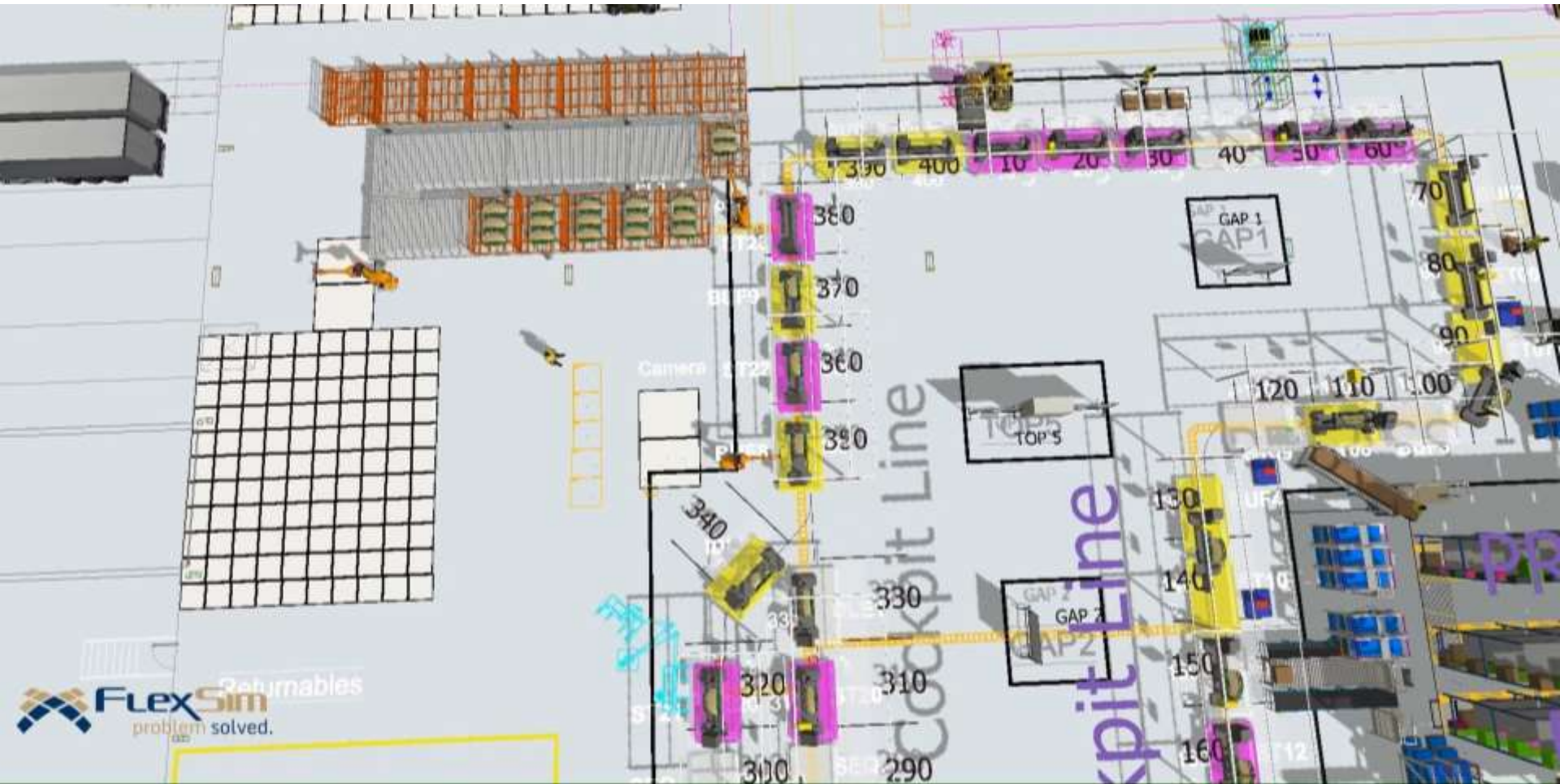


Some Binding Objects.

General Dashboard

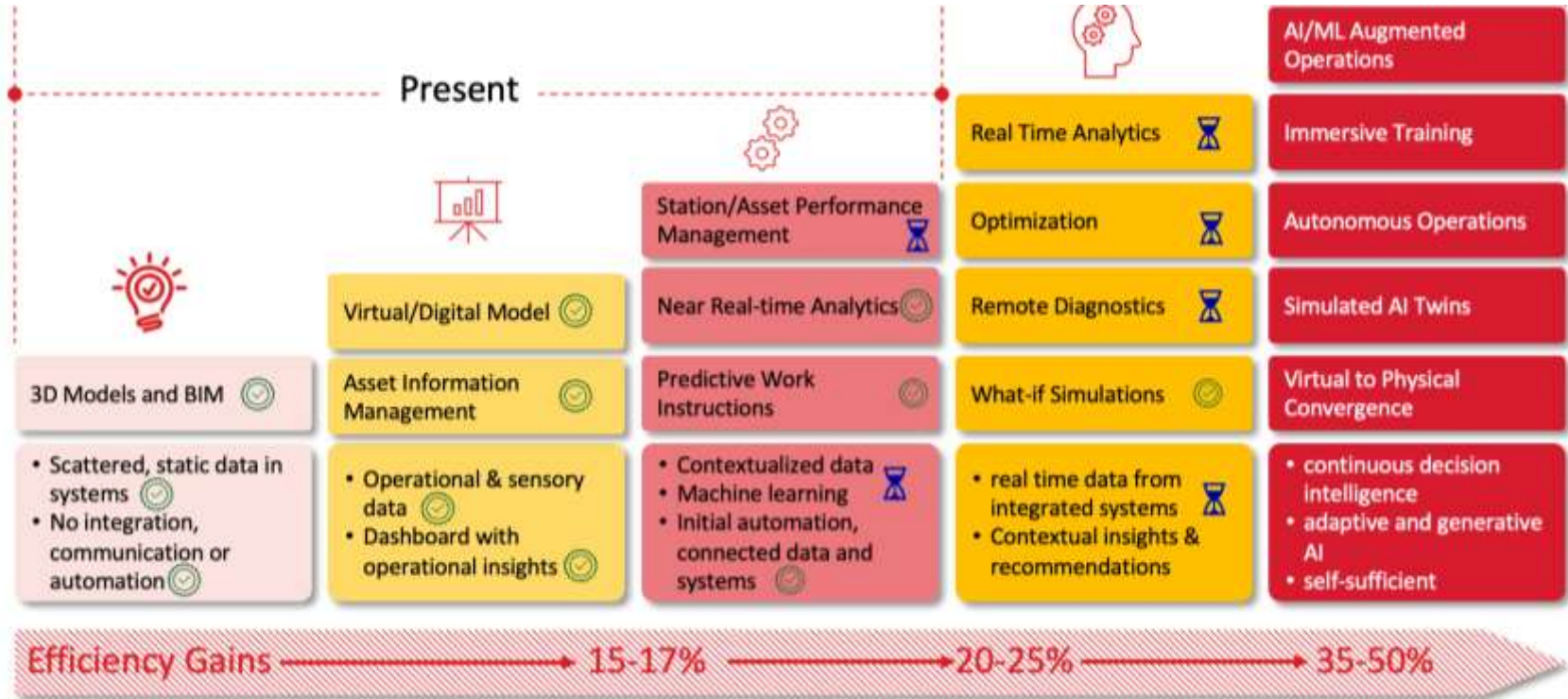


Enhanced simulation.



Motherson SAS – Digital Twin and AI

Developing a faster decision making to improve overall efficiency in the factories



Benefits

Real-Time Monitoring & Process Optimization

Downtime Reduction & Continuous Improvement through Data Analysis

Energy Efficiency & Resource Optimisation

Agile Decision-Making & Production Flexibility for Global Operations

Simulation for Green and Brown Field

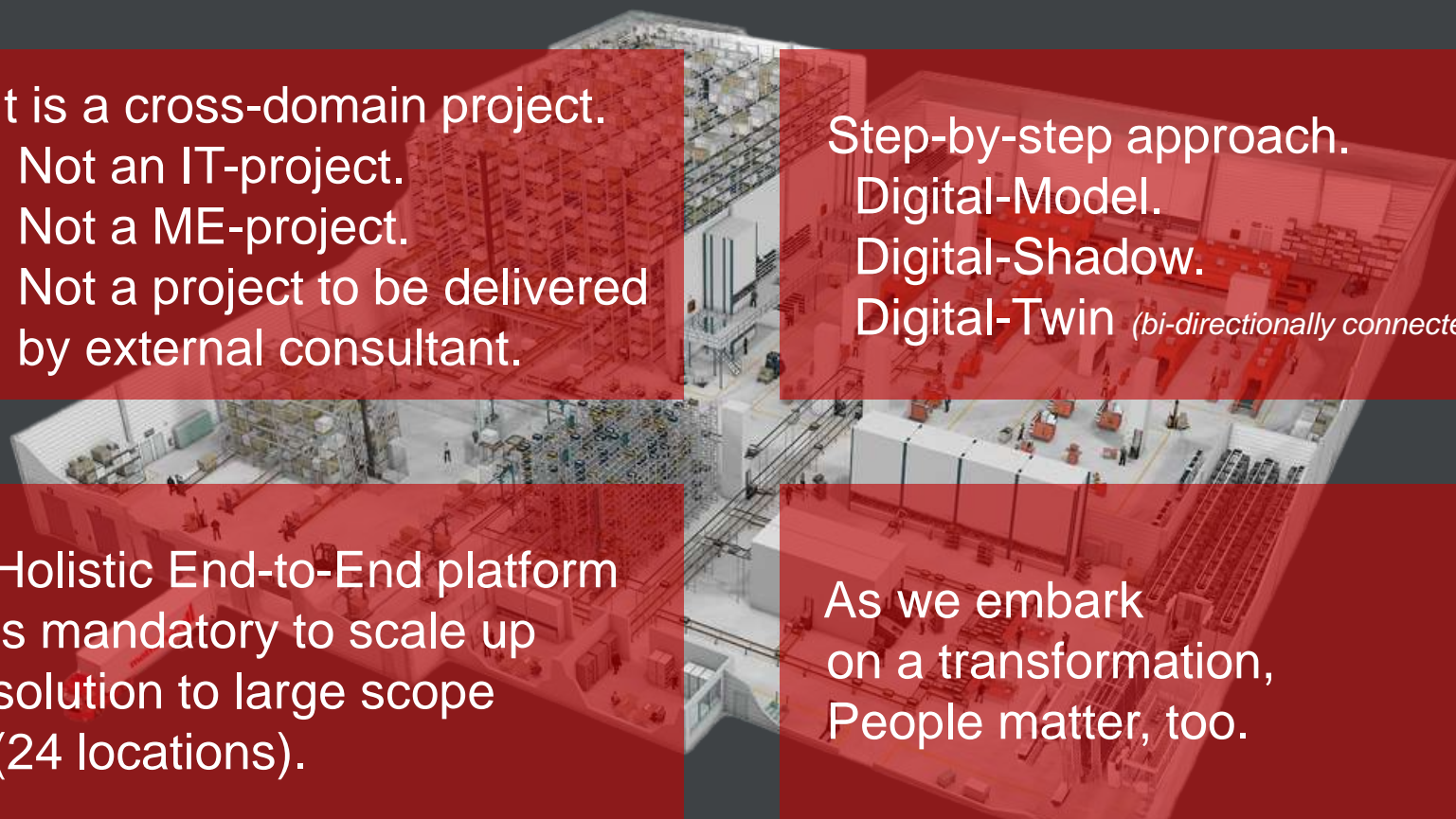
Lessons Learned

Start with the outcome

User stories first (KPIs, sensors, architecture, systems)

Allow time to test

- Optimize for latency. System fast, reliable, and ready to scale



It is a cross-domain project.
Not an IT-project.
Not a ME-project.
Not a project to be delivered
by external consultant.

Step-by-step approach.
Digital-Model.
Digital-Shadow.
Digital-Twin *(bi-directionally connected)*.

Holistic End-to-End platform
is mandatory to scale up
solution to large scope
(24 locations).

As we embark
on a transformation,
People matter, too.

Thank you!

