



DIGITAL TWINS

**AS A NEXT STEP
IN OPERATIONAL EXCELLENCE**

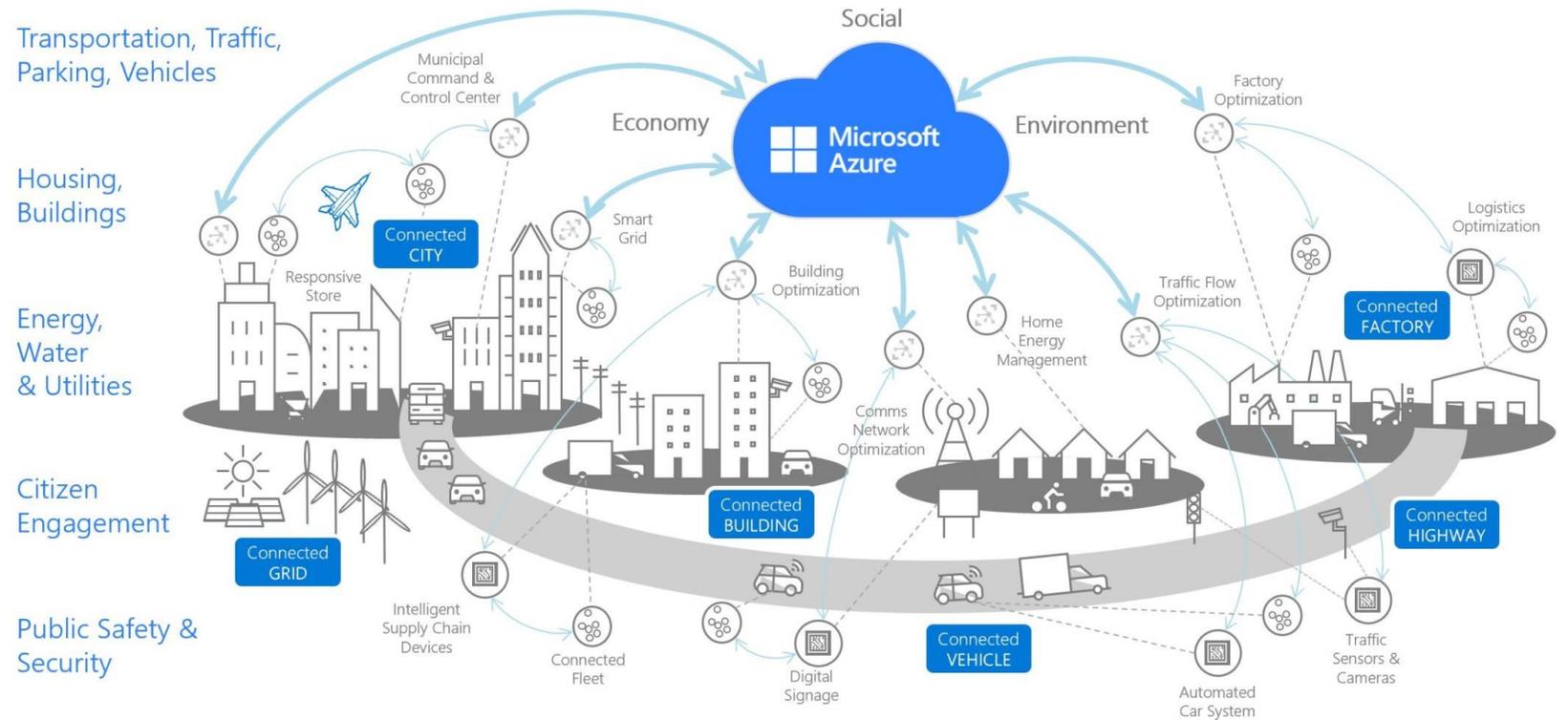


DIGITAL TWIN

What a digital twin can be?

The data

Azure Digital Twins



BIM – Building Information Management

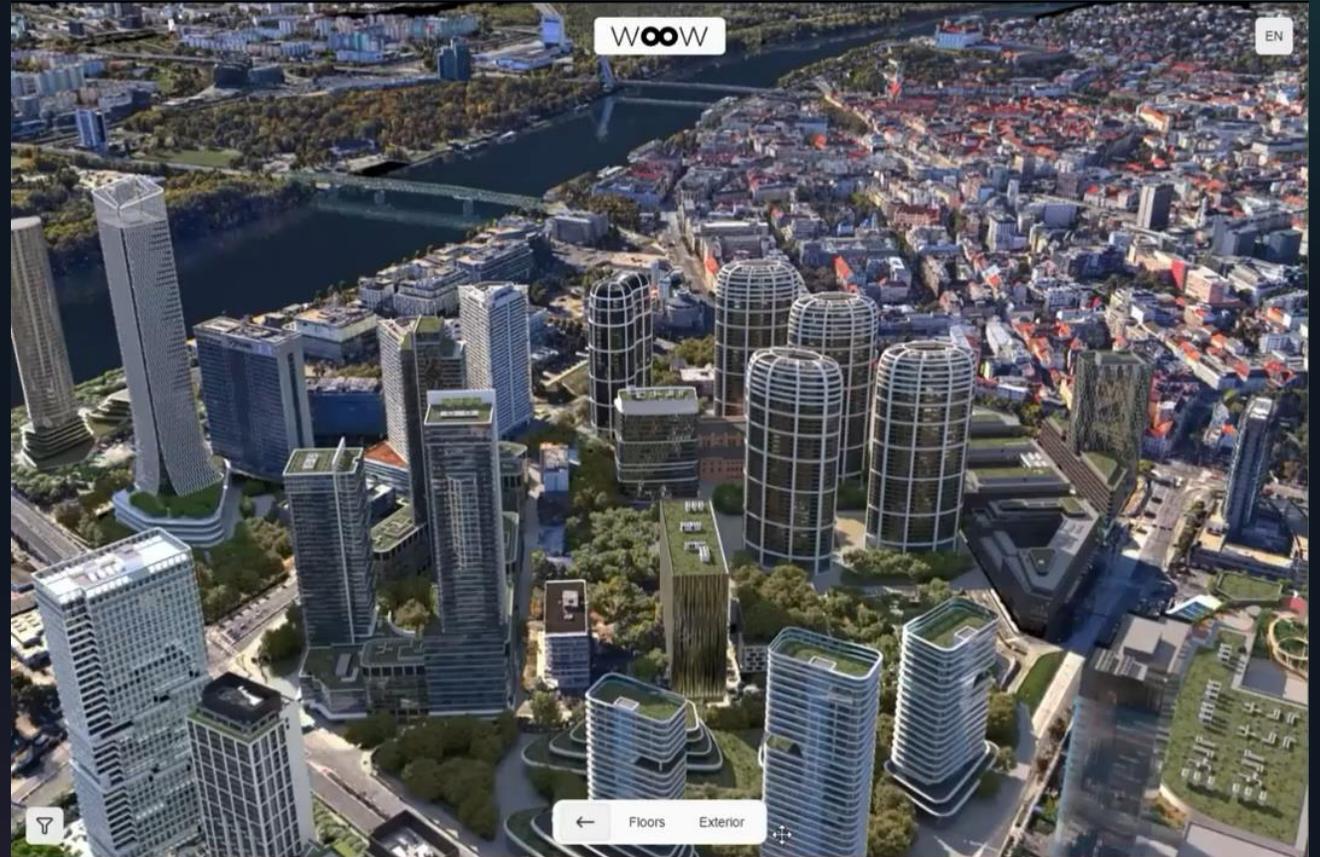


AUTODESK®
REVIT®



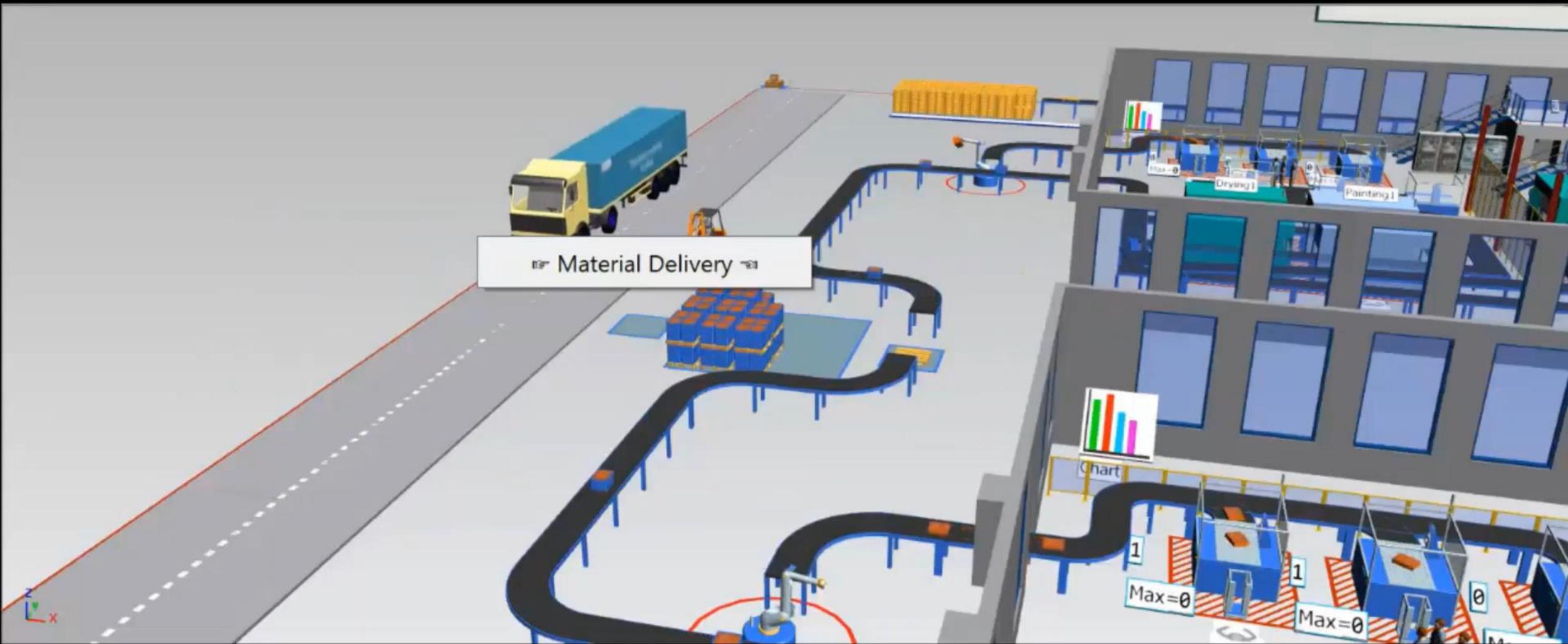
BIM

You need to sell it...



Gaussian Splatting





Material Delivery







Yeah, pups. My pups.





TWINZO APPROACH

What if we combine all the stuff under one roof?

3D

2D



- 8
- 7
- 6
- 5
- 4
- 3
- 2



SYMBIOSY
by treavis

PEOPLE


Position


Occupancy

EXPLORE


Meetings


Phone booths


POIs


Health & Safety

ENVIRONMENT


Temperature


Humidity


CO2

10:28

Tuesday, 11 April

v1.4.1



All clients 



 Alis-Tech >



 Al-Malaz >

 BENTELER >

 BMW >

 Borislavka >

 BSS >

 Continental >

 CPraha >

 Demos >

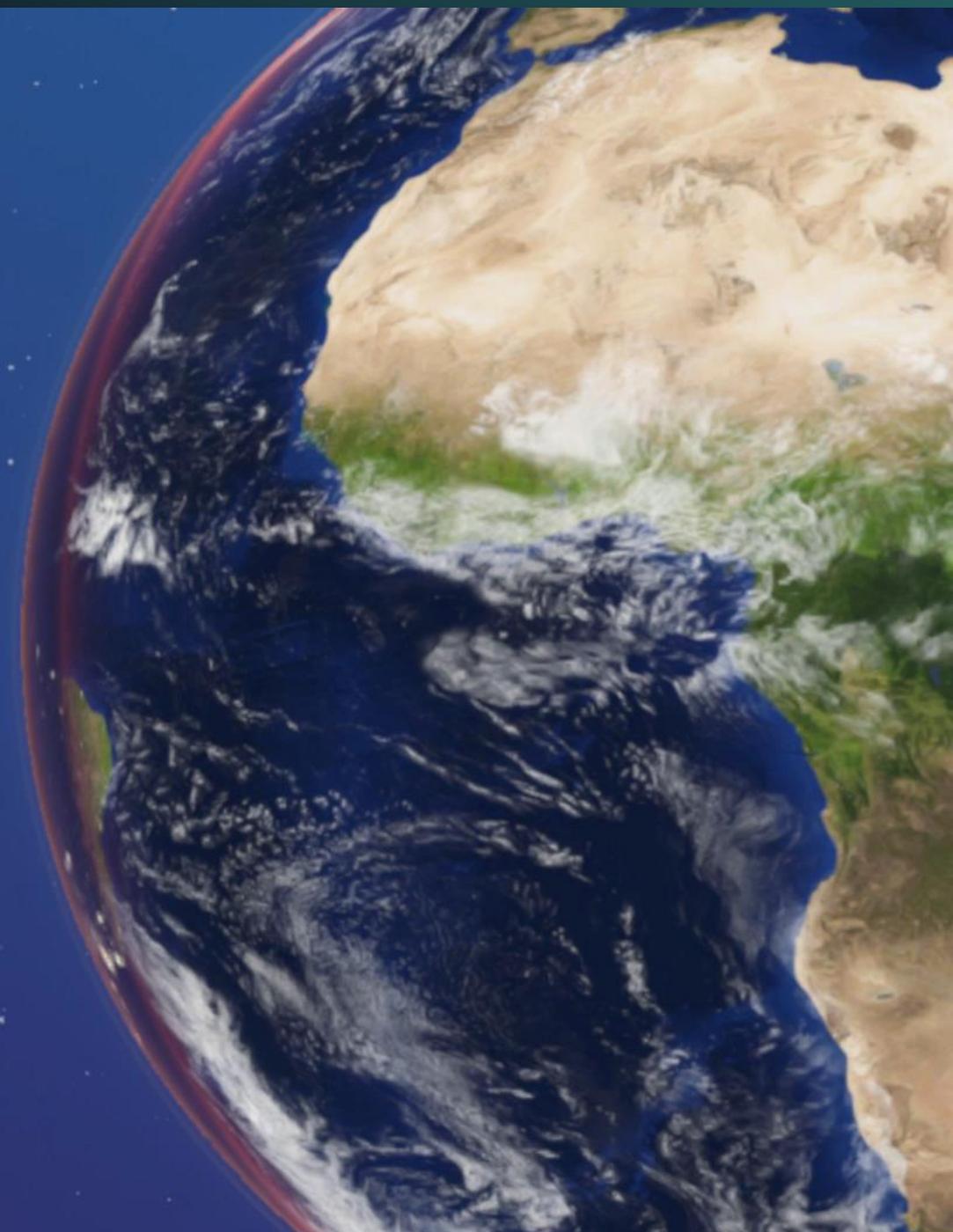
 DITEC >



 E M CODE TECHNOLOGY >



 FIREHOUSE SUB >





Connecting ALL Data

First, we connect all existing data sources.

e.g., MES, ERP, SAP, PLC, WMS, etc.

If a source isn't available but would be of value, we provide it.

(e.g., Plastic Omniums twinzo has 38 Internal Systems with 208 Critical KPIs connected to it.)



Global Digital Twin

We sort, unify and visualize all systems under one roof and your Global Digital Twin is ready.

All of this happens without you noticing or having to adjust or shut down anything.

Cross-departmental analytics is one of the first benefits.



Vision - M.A.C.E.P.

Manage **A**nalyze **C**ompare **E**valuate **P**redict

Everything under one roof (Data Lake), gives you the perfect overview and enables to deliver the information in context.

Smart notifications on your phone are only one of the ways.

Purpose

- No more inventory counts.
- Real-time inventory management.
- Work In Progress goods management.
- Fast response in quality emergencies.

Solution

- The combination of RTLS, eKanban, RFID and Ai recreates reality with the exact inventory information.
- Real-time verification against WMS records to detect any deviation.



Benefits

- Perfect real-time control over the current stock.
- Elimination of inventory counts.
- Elimination of searching for goods.
- Optimization of WIP stock quantities.

Partners:



Purpose

- To simplify the learning process
- Make it easy to implement
- One day, the DIY platform

Solution

- Scan the boxes
- Create 3D models
- Create the dataset
- Teach the AI
- Enjoy



Benefits

- Universal solution
- Supports multiple cameras with multiple lines
- 3rd party integrations possible



USE-CASES

Already implemented and running at various sites worldwide



Global Digital Twin In real-time and 3D

MODULES

- o **LOGISTICS** for optimization and automatic delivery management
- o **WMS** for real-time update and overview
- o **PRODUCTION** for every assembly line and every system for quick decision making
- o **HEALTH & SAFETY** for threat recognition and emergency response
- o **QUALITY** for reduction of error rate at minimal costs
- o **MAINTENANCE** for facility management, effective & timely response and employee's wellbeing
- o **REPORTING**
- o **IOT** for connectivity and all Internet of Things connected devices
- o **RTLS** for positioning (people, material, equipment) and navigation for external suppliers
- o **3rd PARTY INTEGRATION** e.g., MES / WMS / SAP / ERP / PLC / HSE



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3



M.A.C.E.P. *Future Vision*

TWINZO IS DATA SOURCE AGNOSTIC, WHICH GIVES YOU
ENDLESS POSSIBILITIES

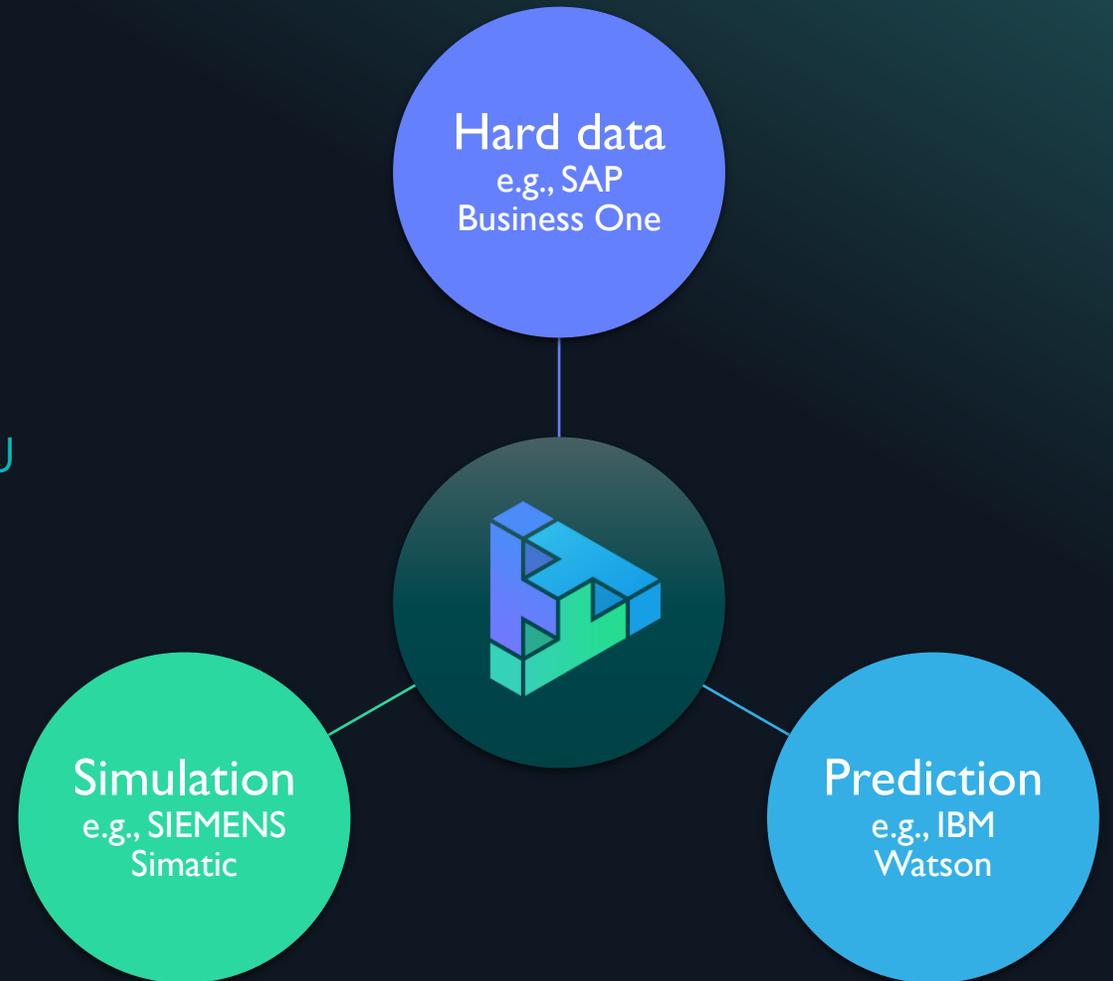
Manage your facility directly from your phone

Analyze data in real-time and 3D

Compare simulations with hard data and vice versa

Evaluate predictions and simulations

Predict in contextual meaning



Purpose

- The movement of machinery, people & material - who, what, where, when, how long, why?
- How long does it take to get from place A to B, to C, ...?
- Tuggers and timetable control.
- Navigation at line feeding.
- Cargo navigation in wide areas.
- Location of mobile equipment.
- Audit possibilities.

Solution

- Seamless deployment of Low Energy Bluetooth Beacons without any interruption to the production.
- 10,000 m² in 1 day.
- Logistics equipped with tablets, phones or beacons for tracking.
- Only solution that can track everything from AGV's up to people and material.



Benefits

- Perfect real-time overview whether logistics, material or people.
- Workload analysis drop for one device from 16 hours to 2,5 hours.
- - 85% less time required for audit.
- On average 25% internal fleet reduction.

Technology



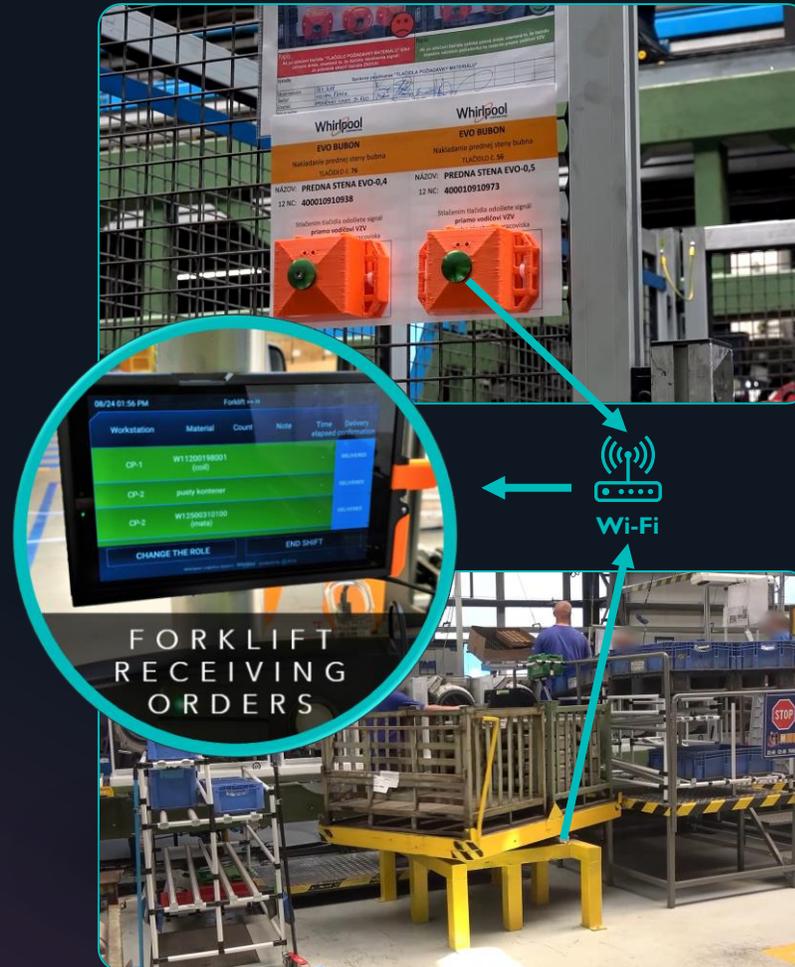
Automated Ordering System

Purpose

- UBER style management for the internal logistics.
- Calling system for material to production.
- Simple yet effective way to fully organize, manage and control the flow of internal logistics.

Solution

- Full utilization of the internal Wi-Fi network minimizes the required resources.
- Using IoT buttons, sensors, tablets, eKanban & Andon system, up to artificial intelligence.
- Logistics equipped with tablets for order receiving and interaction.



Benefits

- Perfect real-time control over the internal logistics.
- Elimination of the micro stoppages of the production lines.
- Patrolling reduction -95%.
- Increased VA of log devices +11%.
- Internal logistics speed reduction to safe 6 km/h.

Technology



Wi-Fi



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Purpose

- Real-time requisition monitoring.
- Automated replenishment of supplies.
- Overview of complete internal material flow.
- Shortening of supply times and elimination of excess capacity.
- Prevention of over- or understocking.

Solution

- Full utilization of the internal Wi-Fi network minimizes the required resources.
- Using your preferred choice of necessary hardware.
- Personnel equipped with portable scanners for order creation.



Benefits

- Automatic material supplies.
- Excess inventory reductions in the supply chain of 20-75%.
- Shorter delivery times for replenishments.
- Uninterrupted data flow and process transparency in real time.
- Reduced administrative costs on average by 50%.
- Considerably less room for "human" error.

Technology



Wi-Fi



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Purpose

- AI scanning for helmets through CCTV cameras.
- Recognition in real-time directly on a live feed.
- Real-time warning for workers violating the obligation to wear a helmet.
- Accessible directly through the digital twin on a smartphone.



Solution

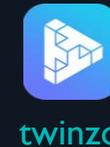
- Full utilization of the internal Wi-Fi network minimizes the required resources.
- Applicable on any existing camera.
- Using your preferred choice of necessary hardware.



Benefits

- Elimination of fatal accidents caused due to a missing helmet.
- Simple yet efficient way how to remind the personnel to look out for their own health and safety.
- No unnecessary reporting of a security breach.
- Very popular amongst workers and responsible personnel.

Technology



Purpose

- Artificial Intelligence scanning for material in buffer warehouses.
- Recognition in real-time directly on a live feed.
- Data source for the Warehouse Management System.
- Usable also as data input for the Call-Off Management system.

Solution

- Full utilization of the internal Wi-Fi network minimizes the required resources.
- Applicable on any existing camera.
- Using your preferred choice of necessary hardware.
- POC



Benefits

- Automatization of the buffer warehouses.
- Automated orders for replenishments.
- Like eKanban, but fully automatic without the need of human interaction.
- Labor Cost reduction and elimination of the "human" error factor.

Technology



Wi-Fi



Ai



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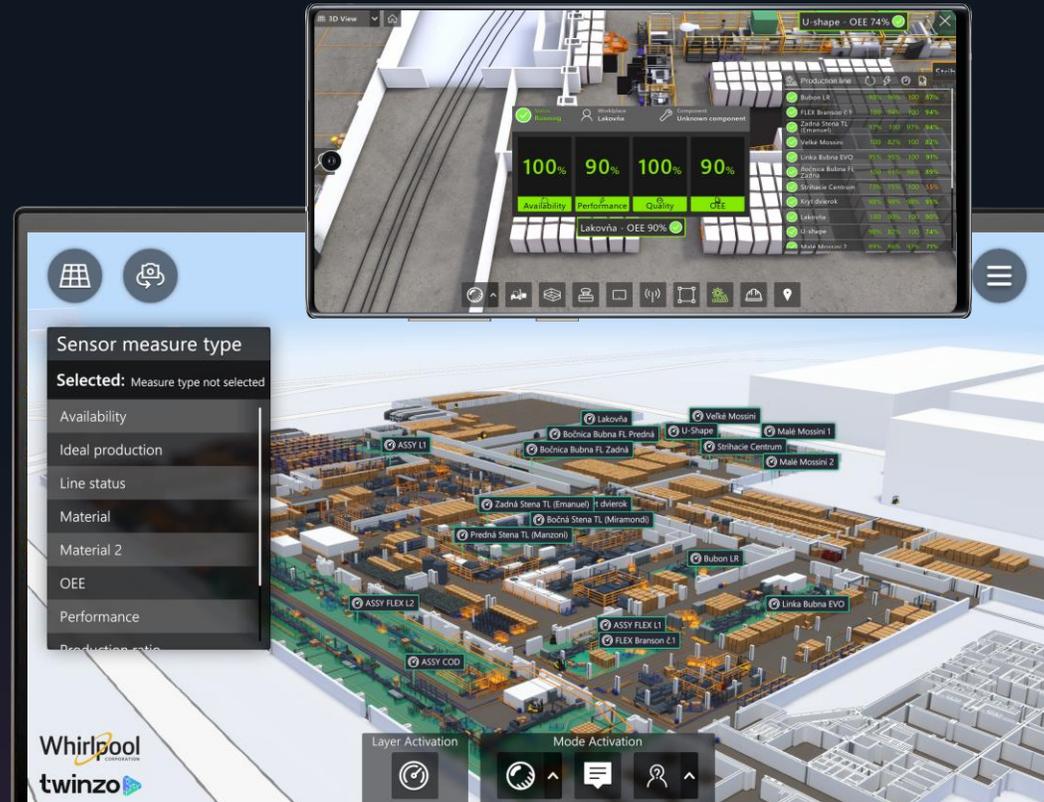
3rd Party Systems – e.g., SAP Integration

Purpose

- Production data of all different kind under one roof, accessible from a mobile device.
- Data connected directly into the 3D Live Digital Twin.
- Visualized according to the real-life factory.
- The possibility of perceiving several factors and conditions in certain context.

Solution

- Full utilization of the internal Wi-Fi network minimizes the required resources.
- Seamless integration with the SAP system over API.
- Updates in real-time.



Benefits

- Unprecedented access to vital production data.
- Fully customizable notifications based on your preferences.
- Faster reaction time to critical situations.
- Higher machine utilization, thanks to an OEE detailed monitoring and preventive maintenance actions (future for predictive)

Technology



Wi-Fi



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Thank you

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