



# twinverse

## Industrial site management with 3D reality models

for more efficient decision-making, collaboration, and innovation while  
reducing costs and risks

Solution introduction



# PROBLEMS WE ARE SOLVING



Getting complete picture of industrial environments and processes is not easy

- Understanding complex sites requires physical visits and long experience
- Floorplan gives only a limited view and making a CAD model for old sites is expensive



Asset information is scattered in purpose-built systems not linked to real-world

- Context of the assets at the production facility is missing making understanding of dependencies difficult
- Maintenance and training processes are inefficient due to difficult access to relevant information



Current 3D tools are meant for designing, not for ongoing operations

- Complex functionality needed for designing requires CAD skills prohibiting non-expert use
- Hand-crafted models are conceptual and don't include environment

# SOLUTION

# DATA-ENRICHED SPATIAL AWARENESS BASED ON VIRTUALIZED ENVIRONMENT

Organize, manage and visualize data and docs to understand their context and interrelationships

Twinverse collaborative 3D web platform

[see video](#)

Highly detailed structural replica of the real environment

Inspect and measure mm-level details remotely

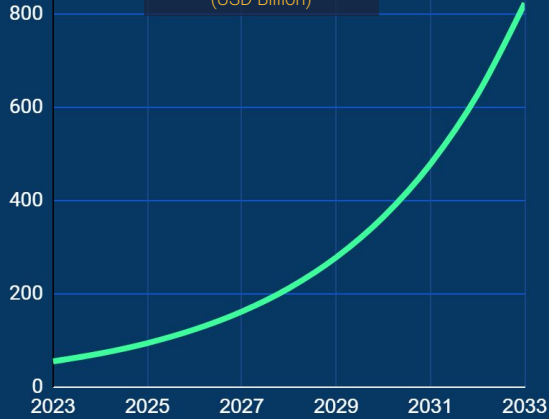


# VALUE PROPOSITION

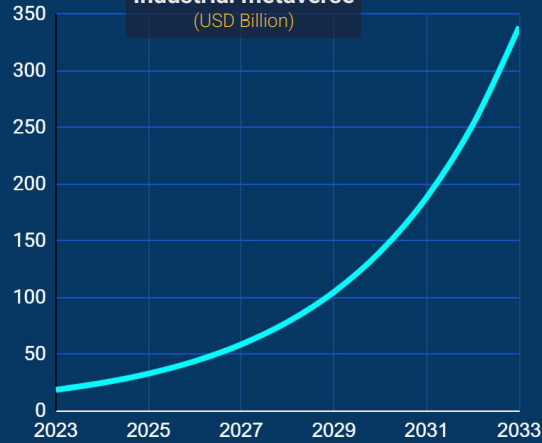


# WHERE THE MARKET IS GOING

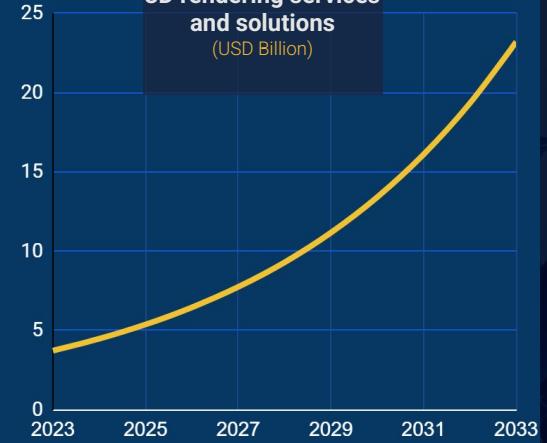
**Industry 5.0**  
(USD Billion)



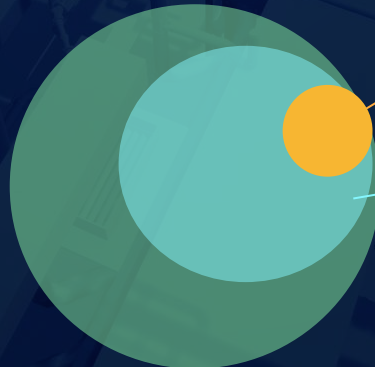
**Industrial metaverse**  
(USD Billion)



**3D rendering services and solutions**  
(USD Billion)



Industry 5.0 market

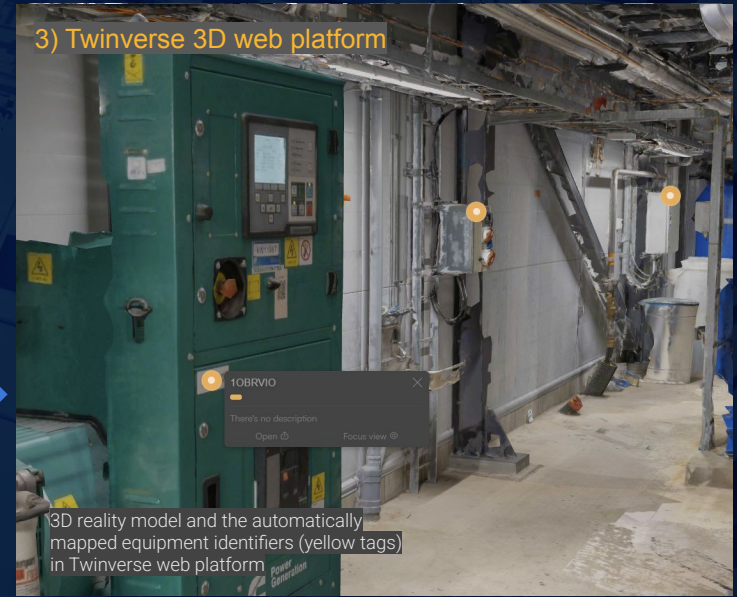


Industrial metaverse market

Twinverse's focus is on 3D rendering services and solutions

# COMPETITIVE EDGE: AUTOMATED ASSET 3D MAPPING

- 1) Detect equipment identifiers from high-resolution photographic dataset using an image recognition AI model
- 2) Localize detected identifiers and map them in the model using 3D reconstructed image dataset
- 3) Connect data from other systems to the assets in the model using the mapped identifiers



## Benefits:

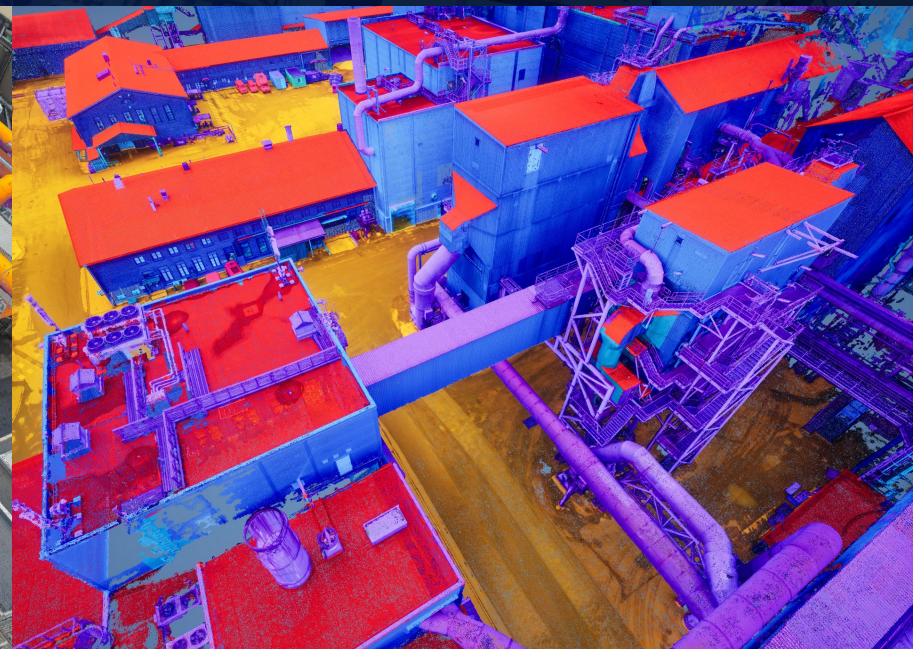
- a) Know real 3D locations for all assets in the industrial environment
- b) Link and view asset documentation and data
- c) See assets' assembly, interconnections, close-by objects and environment remotely

# COMPETITIVE EDGE: AUTOMATED 3D SCENE ANALYSIS

Segmentation of the 3D scene into individual assets for better and easier interaction and data integration

Separation of individual objects in 3D reality model using AI to show the structure of the assets

Other 2D and 3D materials can be added for different views



Benefits:

- a) Interconnect Piping and Instrumentation Diagram (P&ID) with physical assets
- b) Easy factory layout pre-design with existing infra

# COMPETITIVE EDGE: CONDITION MONITORING

Change detection and measurements between epochs

Deforming, wearing, deteriorating, rupturing, cracking, fracturing, etc.

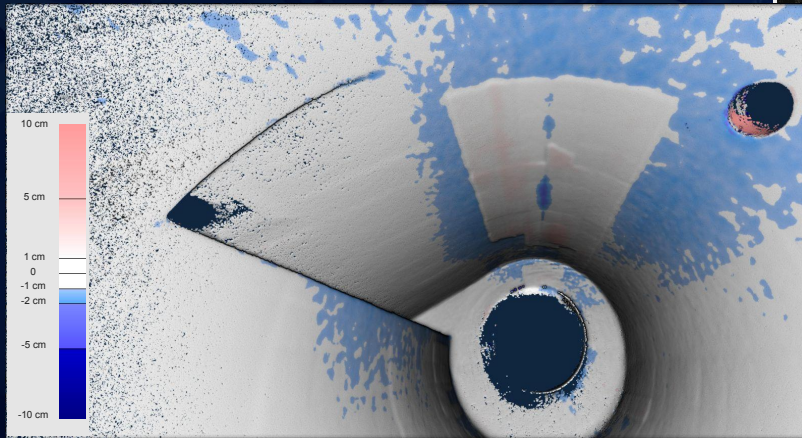
Visual view combined with measurements provide a powerful basis for analyses

Where the change is? Does it require immediate repairing or can it wait?

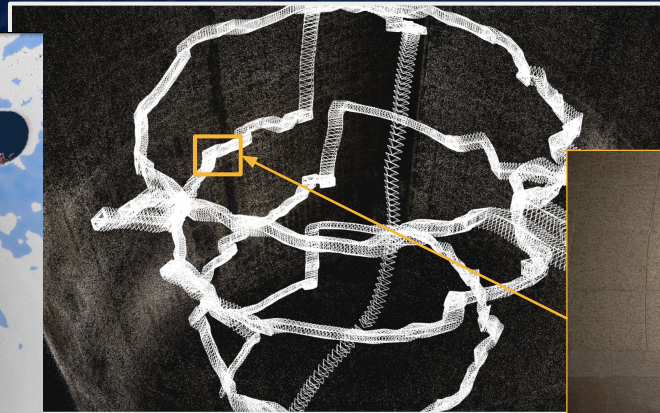
Comparing different epochs allows estimating the speed of change

Insight to forecasting the time for repair

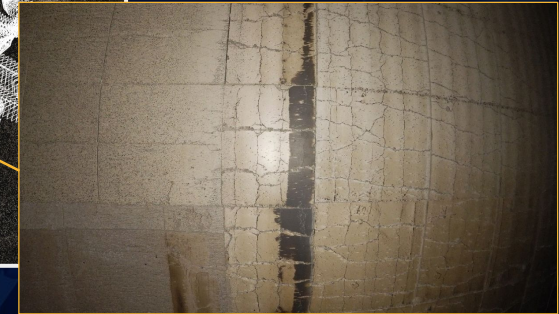
3D scan data



Drone flight trajectory



A frame in 3D scan data (video)



# CUSTOMERS

Existing



Metsä Adven Sumitomo SHI FW  
PORT OF HELSINKI  
FINGRID BOLIDEN 100 1924-2024 SSAB

Interested



BASF We create chemistry elisa NESTE fortum MERUS POWER TAMPEREEN ENERGIA  
KONECRANES Valmet Paulig Nordkalk  
CREATIVE TECHNOLOGY NOKIAN TYRES BOREALIS uni per NORILSK NICKEL  
WÄRTSILÄ HELEN DIGITA UPM HELSINKI SHIPYARD HELSINGIN MULLU

# COMMENTS FROM CUSTOMERS

Research Director at  
Valmet

Twinverse's expertise in modeling reality and utilizing the models is of a high level. The platform is well suited for our Digital Twin in Action project. For us the interesting use cases are: remote support, object recognition, and data integration automation with OCR tagging.

Manager, Asset  
Management at Fortum

Routes and models are nicely visualized in the Twinverse system. Annotation of maintenance data, process status and CAD models is important for us. Data can be accessed easily when all equipment are annotated with an identifier that can be used to get data from other systems.

SVP, Global Manufacturing  
at Kemira

The most important added value of the service is centralized access to scattered documentation from one place.

Safety Manager at Metsä  
Wood

The model is useful in preparing for annual maintenance shutdowns. The instructions are also useful for weekly maintenance. Guidance on the active force range of safety devices and SSS switches and how to reset safety devices is important.

Development Manager at  
Port of Helsinki

We don't need to use our security cams anymore to show places and thus reveal our security infra to outsiders. We can show details and assets, such as roads, lamps and other infrastructure, to our own staff and port operators in the office without going to the port area.



**twinverse**

Improving your operations with 3D and data