



Smarter Asset Investment Planning with Cosmo Tech AI Simulation

Balance risk, cost, performance



Client case
**Asset Investment
Planning**

AIRBUS

**Global Aircraft and
Space Vehicle
Manufacturer**

Major **pain point**

Balance risk, operational and financial performance

**Complexity &
cascading effects**

**Multiple
objectives and
constraints**

**Ineffective
methods and
tools**

Imagine you are the **Asset Management
& Maintenance Manager** at Airbus

Operational performance & Financial performance Optimal replacement strategy? & Optimal OPEX/CAPEX plan ?

From business group to site level

Asset replacement age
OPEX /CAPEX
Downtime cost
Safety Events
CO2 emissions
Custom KPIs



12 Riveting Machines & holding robots

Managed based on the end of their accounting life.



90 Asset components

Motors, arms, orbital heads, drill axes., hydraulics, riveting pins...



1-35 years

Replacement age ranging up to 35 years.



+€ Mn investment/asset

Each asset represent an investment of several million euros.



80% of asset decisions

are based on past experience vs. data-driven.



8 Types of stakeholders

Manufacturing engineers, CAPEX managers, operational planners, production, maintenance and program managers, financial controllers, asset manager.



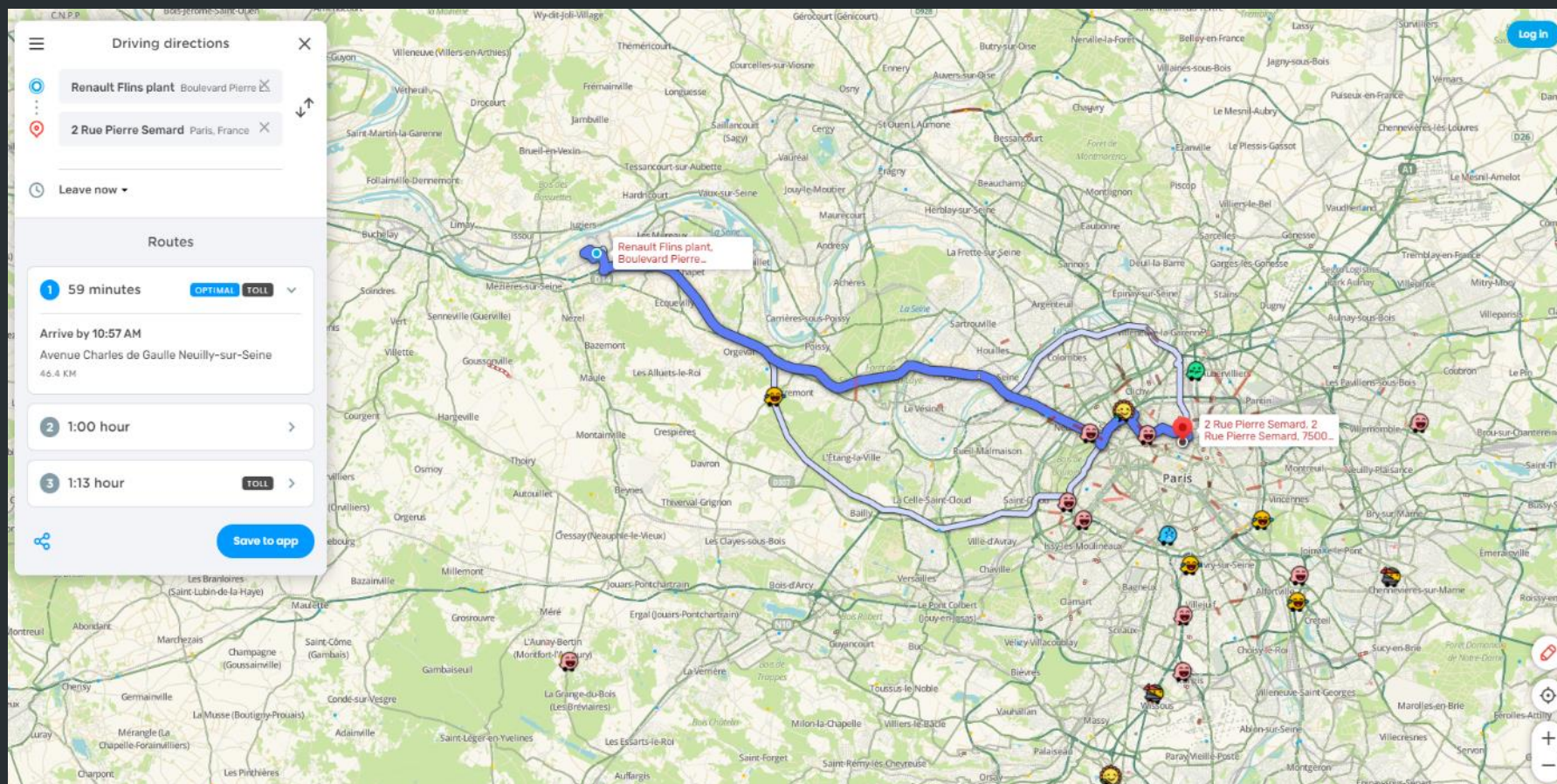
>150 parameters



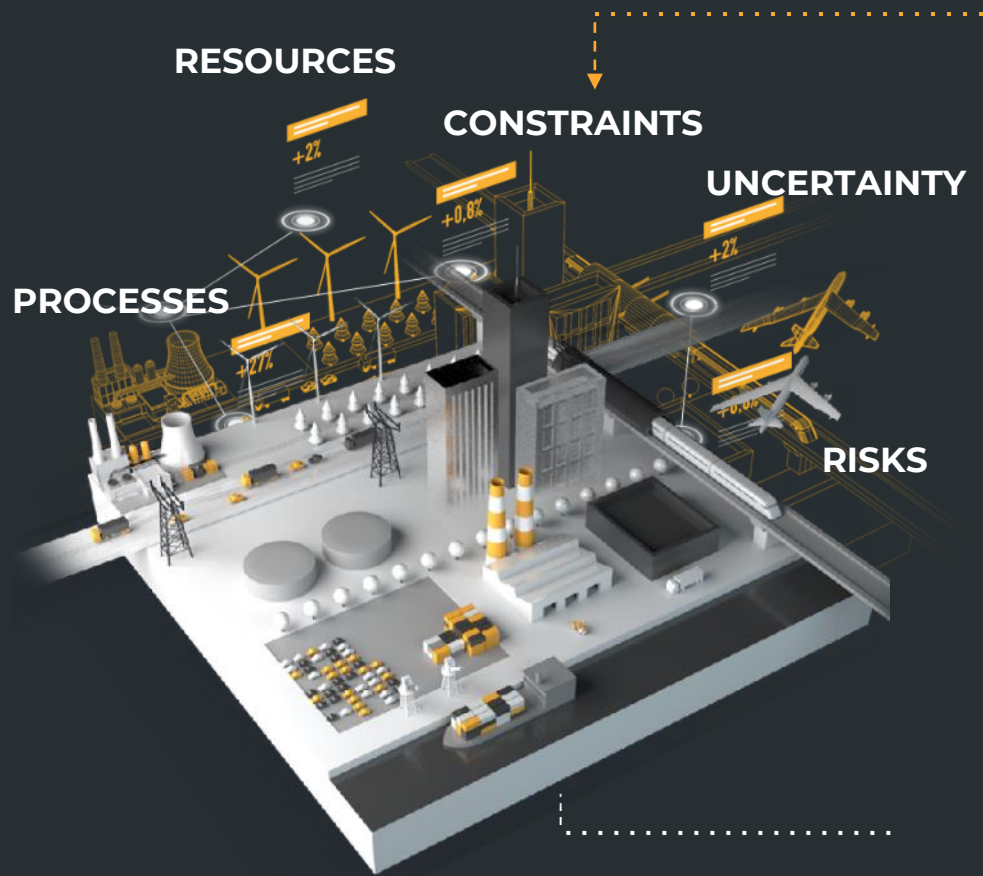
What do you do?



You use a navigation software



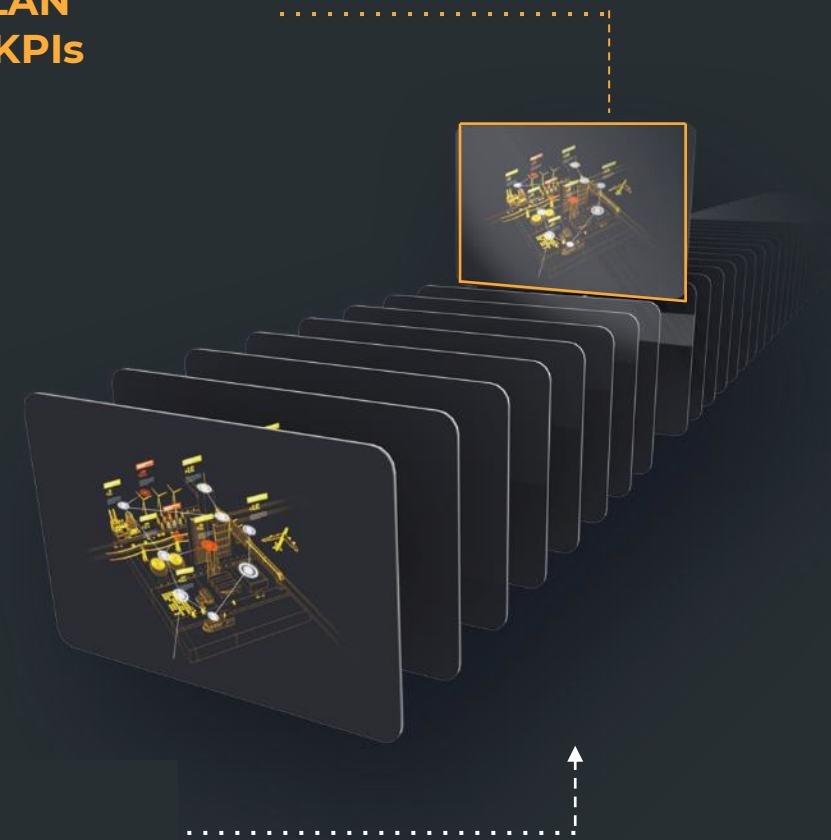
Goal-seeking simulation to optimize organizations



**DIGITAL REPLICA
OF THE ENTIRE SYSTEM**

**OPTIMAL ACTION PLAN
BASED ON CUSTOM KPIs**

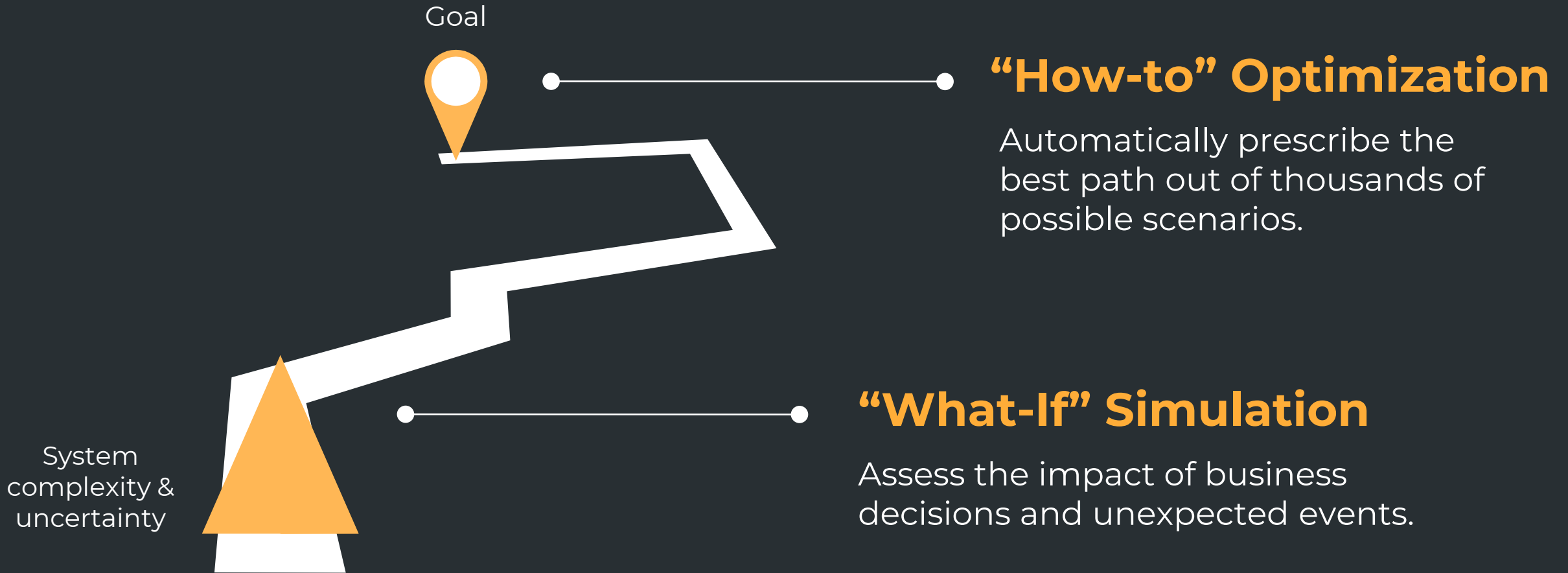
AI-SIMULATION



**THOUSANDS OF SIMULATION
SCENARIOS**

Navigating complexity and uncertainty

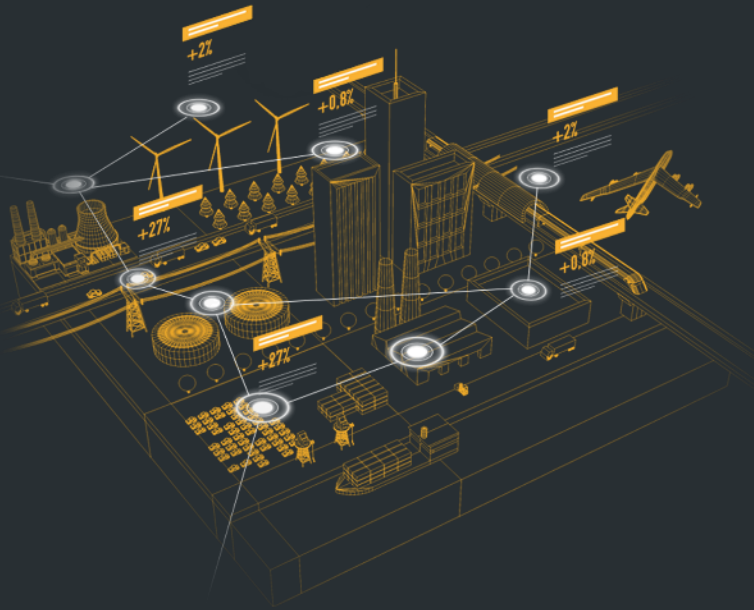
Uniquely combining **predictive** and **prescriptive simulation**



Cosmo Tech Asset Simulation Twin for Airbus

Identifying the optimal asset replacement strategy

Model complexity



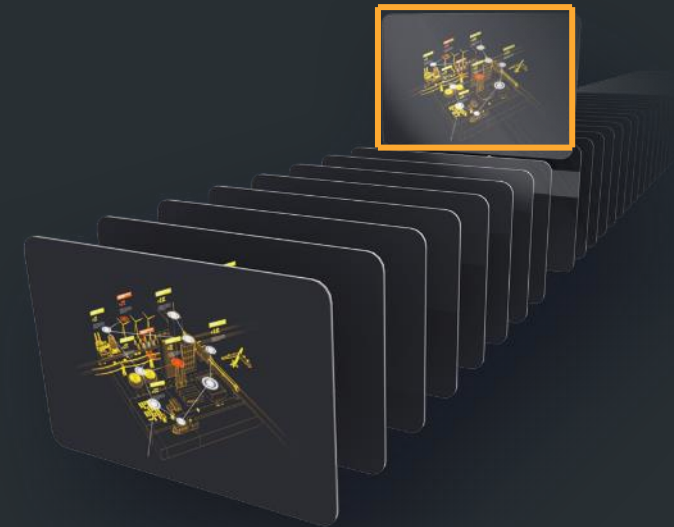
- +150 parameters
- 12 riveting machines and welding robots
- 90 components
- Operational, capital and downtime maintenance cost

Advanced experiments



- Simulation & Sensitivity Analysis
- 10 000 operations per age replacement scenario
- 60 years of simulated timeframe
- Identification of critical parameters and financial impact on production

Optimal strategy



- Optimal asset replacement strategy
- Optimal asset investment plan
- Maximal asset lifecycle value
- Plan explainability

AIRBUS

Key Results

“The conclusion was clear for me as simulation demonstrated a 15% TOTEX reduction. Stakeholders were able to align on the investment and operational strategy and have shown a real interest in expanding the deployment to other machines.”

- Joel Serres, Asset Management & Industrial Maintenance Expert at Airbus



**-15%
TOTEX**



**Optimal asset
investment plan**



**Cross-functional
alignment**



Industry Challenges

A close-up shot of an industrial robotic arm performing a welding task. Bright sparks are flying from the point of contact between the electrode and the metal workpiece. The background is dark and industrial.

**Disruption driven by technological
and demographic changes**

A group of business professionals in a meeting room. One person is pointing at a laptop screen. The image is overlaid with various data visualization elements like pie charts, bar graphs, and a data table.

AU	1.822	12,342,000
ER	3.638	238,481,000
HPL	1.892	69,678,000
KEL	4.51	6,369,000
NAI	8.561	187,301,000
QZP	4.462	102,495,000

**Constrained
CAPEX**

A worker wearing a yellow hard hat and a dark jacket is looking at a tablet computer. In the background, there are industrial robotic arms and machinery in a factory setting.

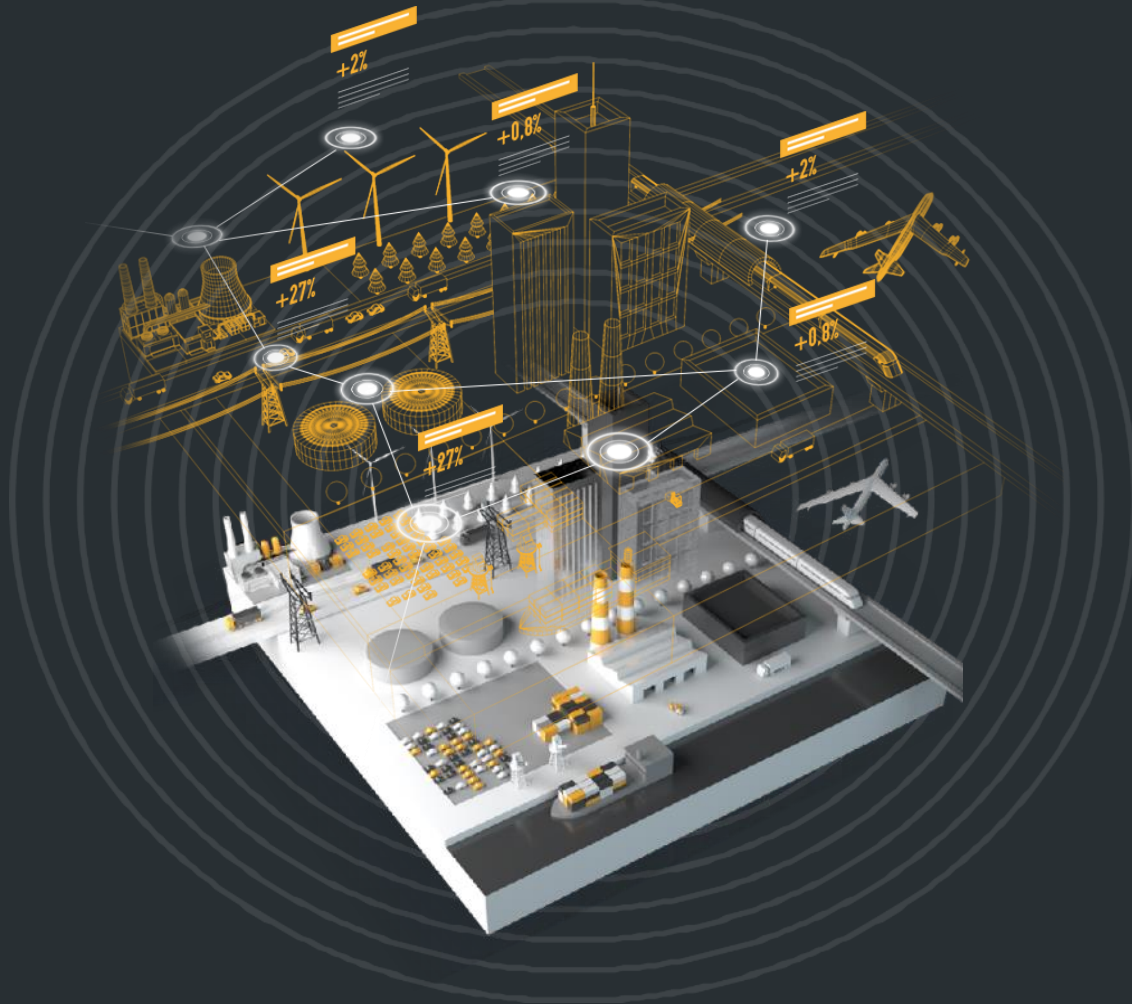
Aging Assets

A worker in a dark suit is holding a tablet and looking at it. A yellow industrial robotic arm is visible in the background, positioned near the worker. A vertical light tower with red, yellow, and green lights is also visible.

**Ensure optimal service level
while reducing risks**

Monitor and understand complex processes.

Make better, more informed and highly accurate decisions.



“Traditionally, the sophistication of long-term decision-making has been limited, due to a lack of understanding of how a large number of different variables interact with each other to affect a firm’s output, risk exposure and costs.”

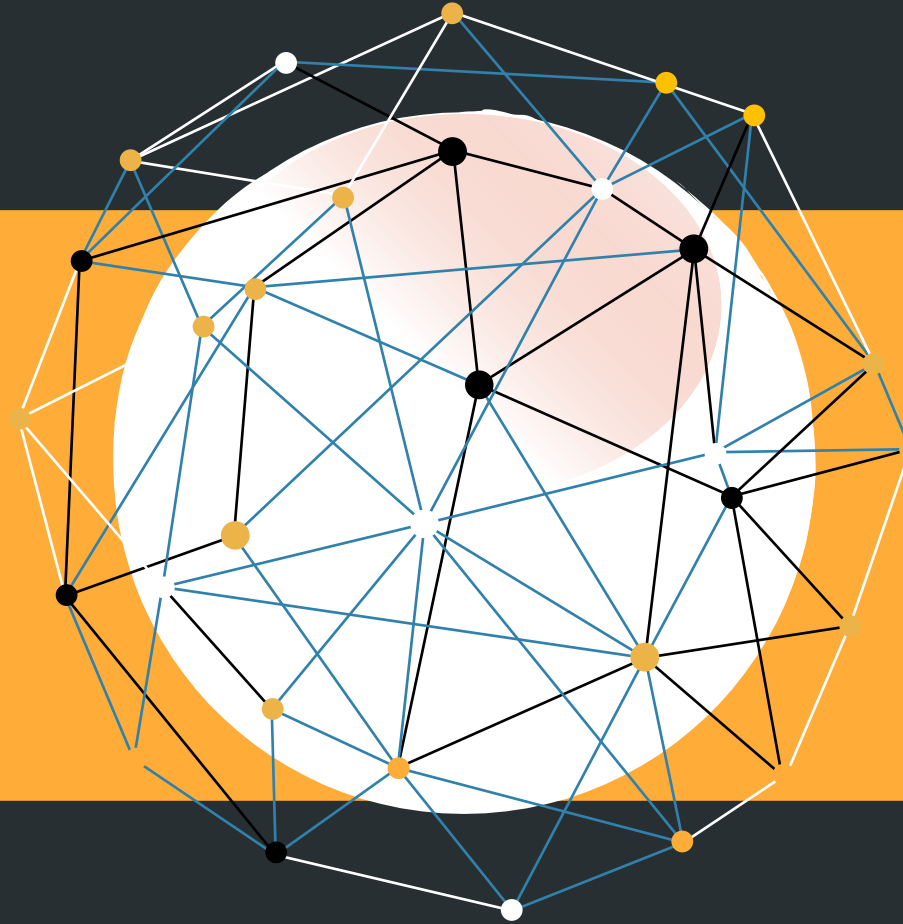
verdantix

An aerial photograph of a complex highway interchange, possibly a cloverleaf or similar multi-level interchange, with multiple lanes and overpasses. The image is overlaid with a network of yellow nodes and lines, suggesting a simulation or data visualization. The text is centered over the image.

**Cosmo Tech combines AI and Simulation
to solve these problems in ways that
were previously impossible.**

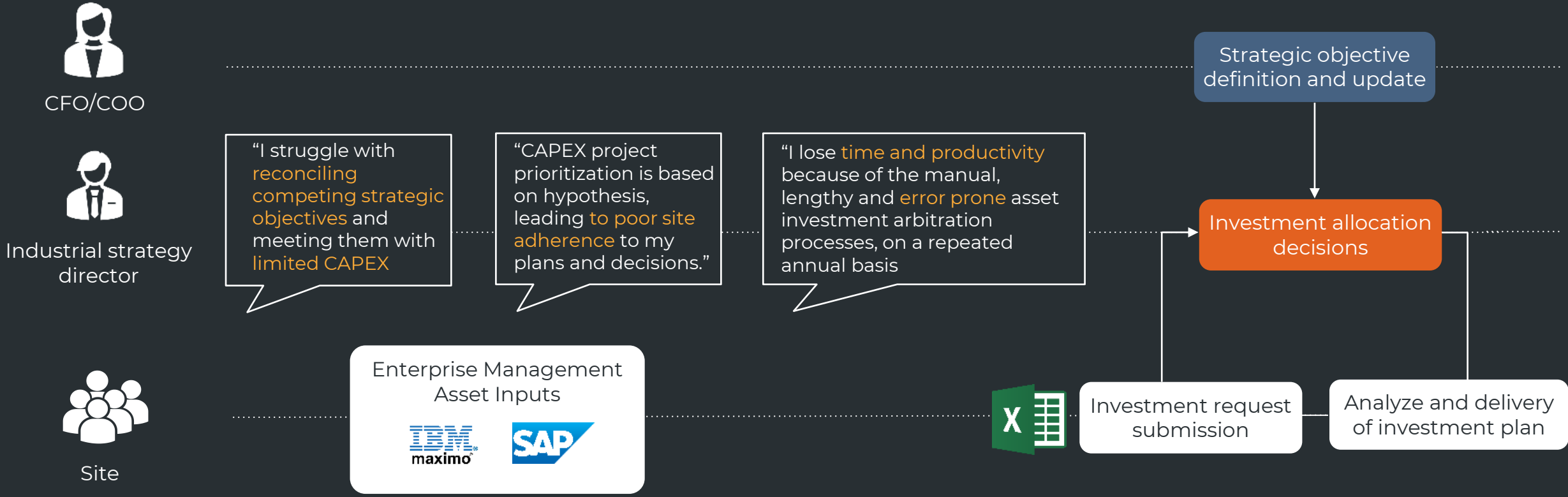
Challenging traditional approaches

A holistic approach to support asset lifecycle decisions in complex systems.



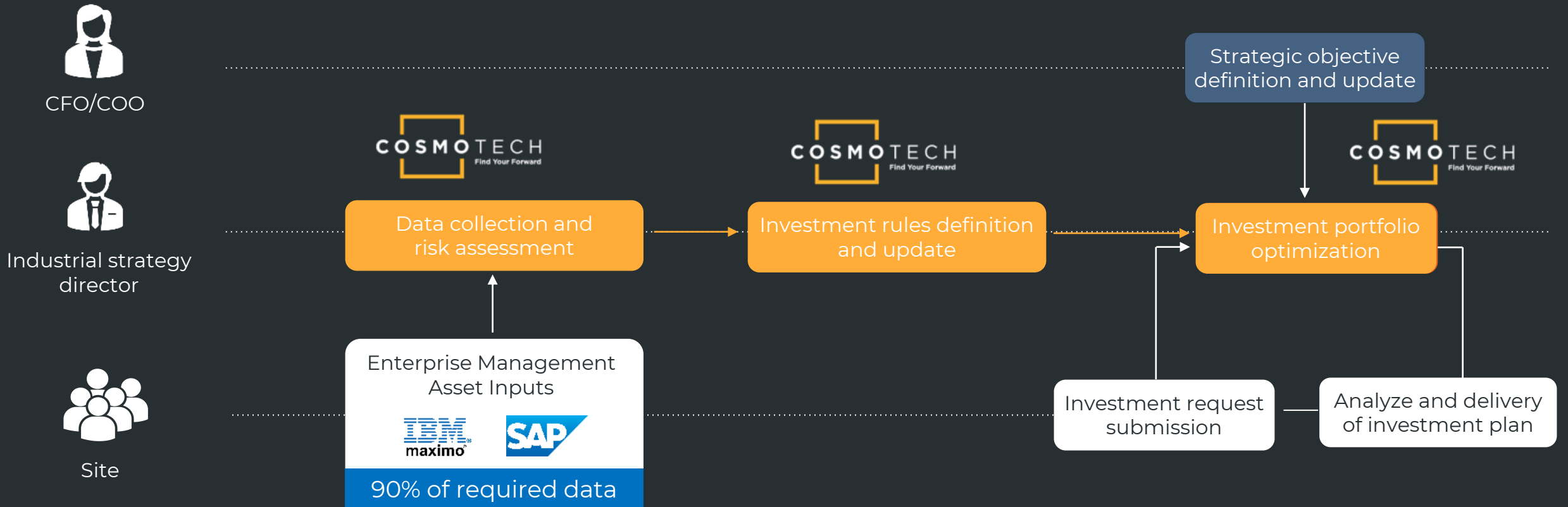
Model granularity to reconcile short and long term, asset centric and enterprise wide.

Traditional approach limitations for robust asset capital investment decisions



Asset Investment Planning Simulation Twin

Reconcile multiple projects, business objectives and resources



Objective 1 : Calibration of the organization digital twin to serve as baseline for all investment studies.

Objective 2 : Optimal annual asset investment plan.



Asset Investment Planning with Cosmo Tech AI Simulation

Product demonstration



**ASSET STRATEGIES
THAT REDUCE RISKS AND UNCERTAINTY
IN BUSINESS OPERATIONS**

**WHILE INCREASING REVENUE
THROUGH OPTIMAL ASSET OPERATIONAL
PERFORMANCE**

Cosmo Tech Asset Simulation Twin

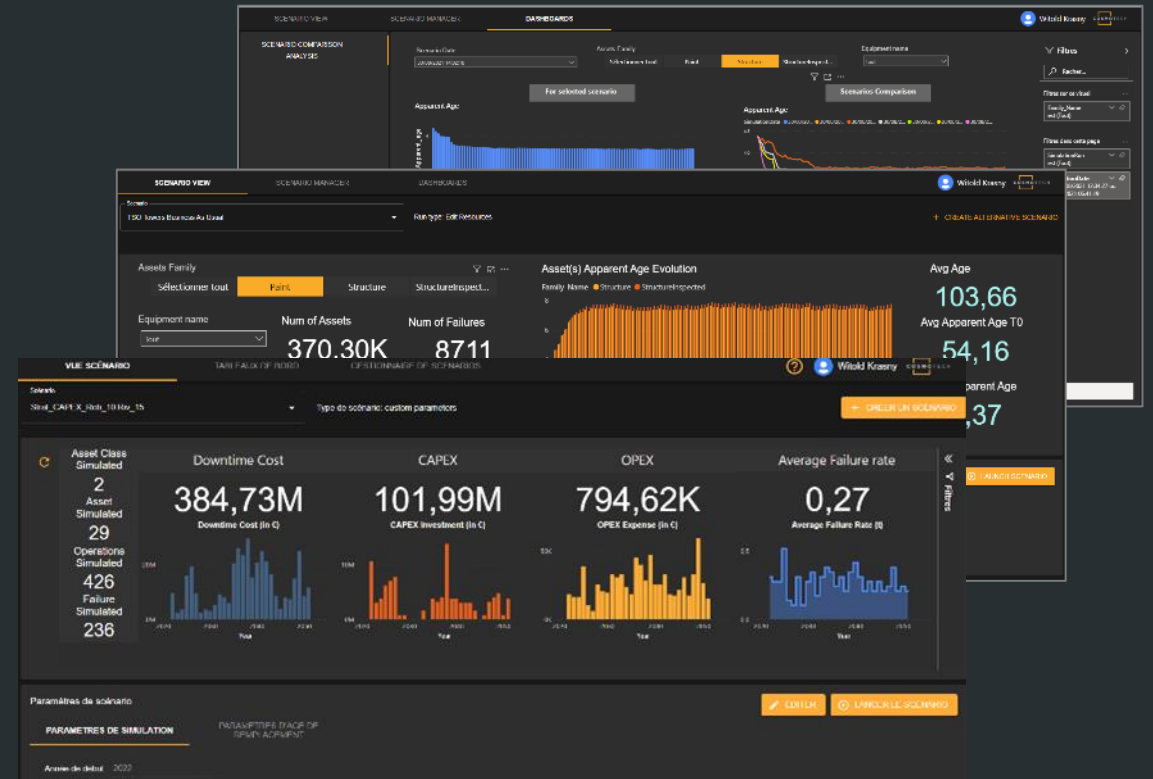
1 SIMULATE ASSET
MANAGEMENT STRATEGIES

2 PRESCRIBE AN OPTIMAL
OPEX/CAPEX INVESTMENT PLAN

3 JUSTIFY YOUR ASSET
MANAGEMENT STRATEGY

4 UNIFY ASSET PLANNING ACROSS
THE ORGANIZATION

5 MINIMIZE TOTEX AND MAXIMIZE
ASSET REVENUES



Key Results

Cosmo Tech Asset Simulation Twins

-75%

Time spent on
investment planning

-10%

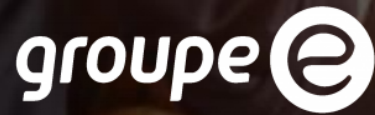
Total
expenditure costs

-20%

Operational
Conflicts



RENAULT



AIRBUS



Nexans

Cosmo Tech AI-Simulation Platform

Speed innovation to meet changing and complex business requirements

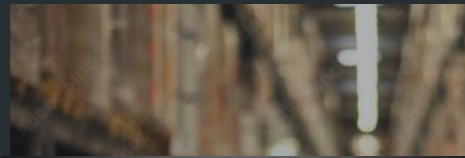
COSMOTECH



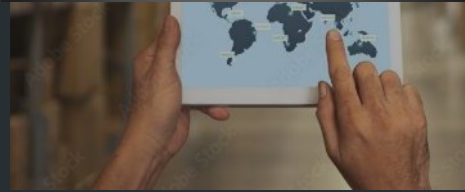
Asset Investment
Planning



Asset Management



Financially optimized
maintenance



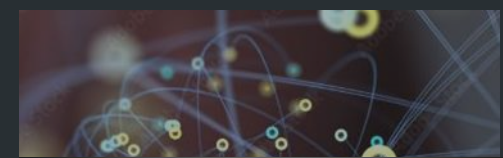
Asset Management



Financial & sustainable
performance



Sustainability



New Models



Others



Cosmo Tech AI-Simulation Platform

Native cloud services, developer tools, accelerators, pre-packaged solutions

How to test CAPEX allocation options in various contexts of asset obsolescence?

What is the best maintenance strategy?
What should I maintain, refurbish or replace ?

How can I align multiple objectives and constraints?

How to optimize maintenance policies and maintenance decisions based on all their financial impacts?

How can I **best balance** risk with operational and financial performance?

How can I ensure cross-functional alignment at the enterprise level?

What problems can I solve?



How can I simultaneously meet sustainability and profitability targets ?

How to optimize the planning's robustness to unexpected events?

How to automate the generation of a tactical planning and initialize work order in the EAM?

How to adjust my strategy to the available outage capacity on the grid?

What is the best asset investment plan and how can I justify its deliverability ?

How to optimize the key parameters of maintenance policies in order to maximize the plan value?

How to optimize the planning's robustness to unexpected events?

How to reconcile the production planning with maintenance planning around an "integrated planning"?

How to anticipate future OPEX / CAPEX profiles considering maintenance and renewal policies in place?

Starter Offer

Start small. Create value fast. Expand.



Prove value

Cosmo Tech deploys the platform, frames and configures a first version of the AI-Simulation Twin.



Ensure adoption

The **Digital Team** extends and integrates the AI-Simulation twin for immediate **business value**.



Scale value

Scale the adoption and expand with **additional use cases**.



TO

Business user & Digital Team early adoption.



Business Users are trained and can use the AI-Simulation Twin.

Digital Team is trained on the Cosmo Tech Platform.



Business Users & Digital Team are fully onboarded and autonomous.



Next steps

To be completed based on what has been discussed and the next meeting objectives.



Thank You

Find Your Forward.

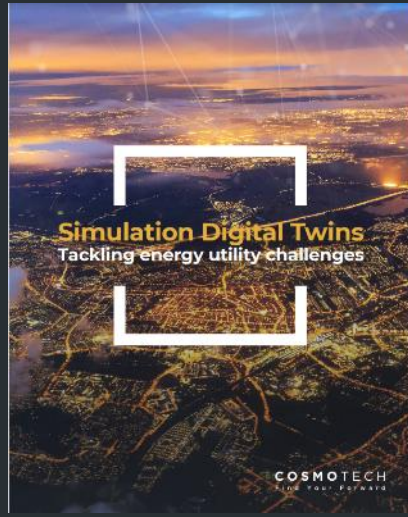


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Asset Investment Planning – Resources



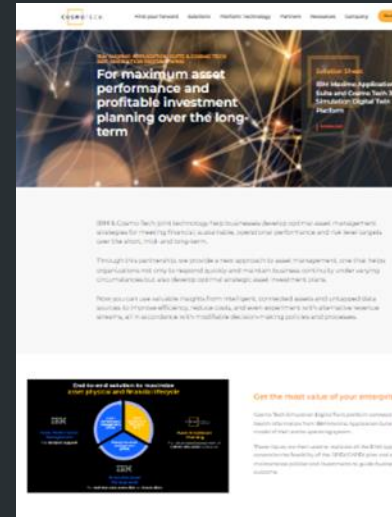
[Cosmo Tech Asset for Manufacturing eBook](#)



[Cosmo Tech Asset for Energy & Utilities eBook](#)



[Cosmo Tech & IBM Solution Sheet](#)



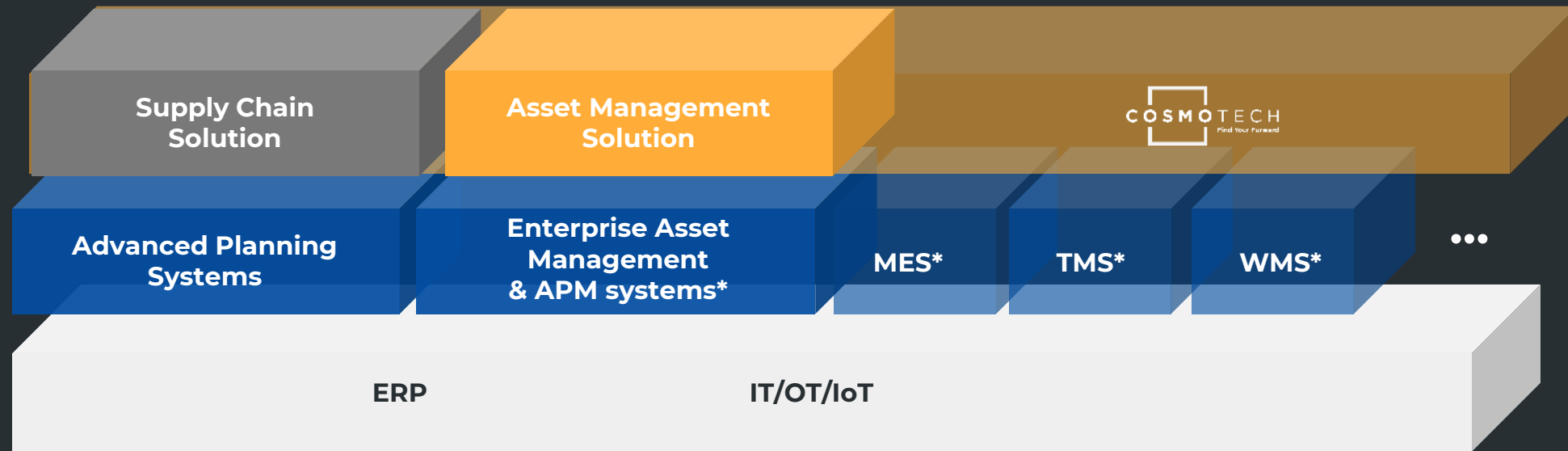
[Optimize investment decisions Use Case](#)



[Cosmo Tech Asset Investment Planning Product Demonstration](#)

Asset Management strategy optimization

Augmenting existing business applications



Key-Features

HOW-TO OPTIMIZATION

Prescribe the best operational strategy for your asset plan at any time scale and supporting your KPIs

UNLIMITED WHAT-IF SCENARIOS

Design & simulate scenarios to predict the impact of your decisions on your whole organization

OUTAGE CAPACITY

Translate grid topology into outage rules in order to comply with available redundancy and optimize work bundling

CAPITAL PROJECT PORTFOLIOS

Simulate candidate project portfolios assess their performance and optimize the investment plan

RESOURCES

Map capital and operational budgets, as well as internal and external worker availability to constrain the rollout of your scenario

ASSET LIFECYCLE & PERFORMANCE

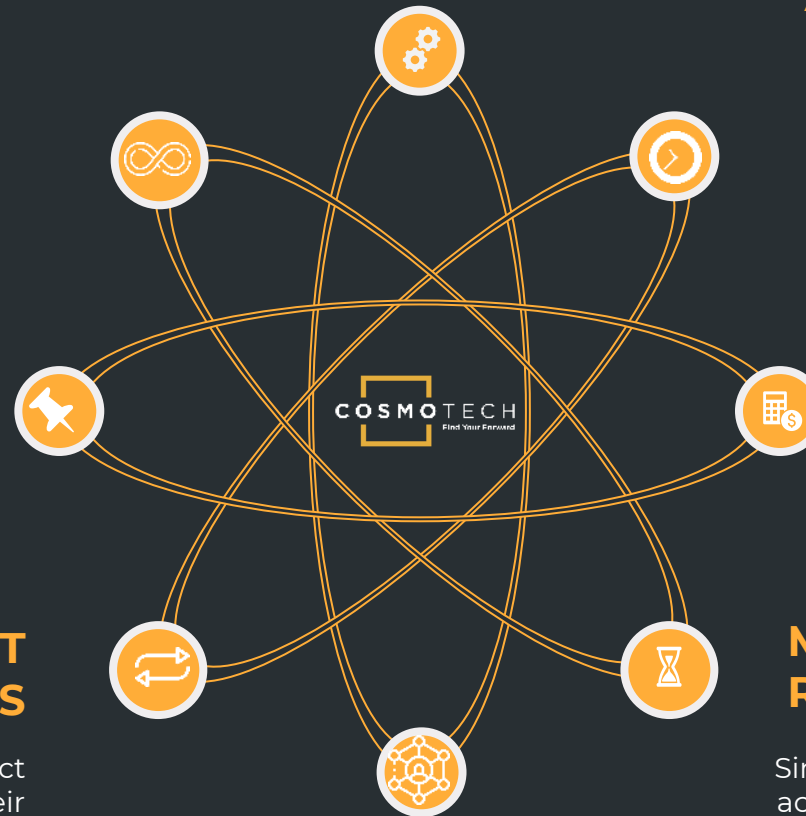
Forecast asset condition, simulate the occurrence of failures and account for effect of environment and load. Simulate asset financial depreciation and compute associated capital costs

VALUE FRAMEWORK, RISK ASSESSMENT & MONETIZATION

Configurable value framework, enabling risk assessment and valuation at system level

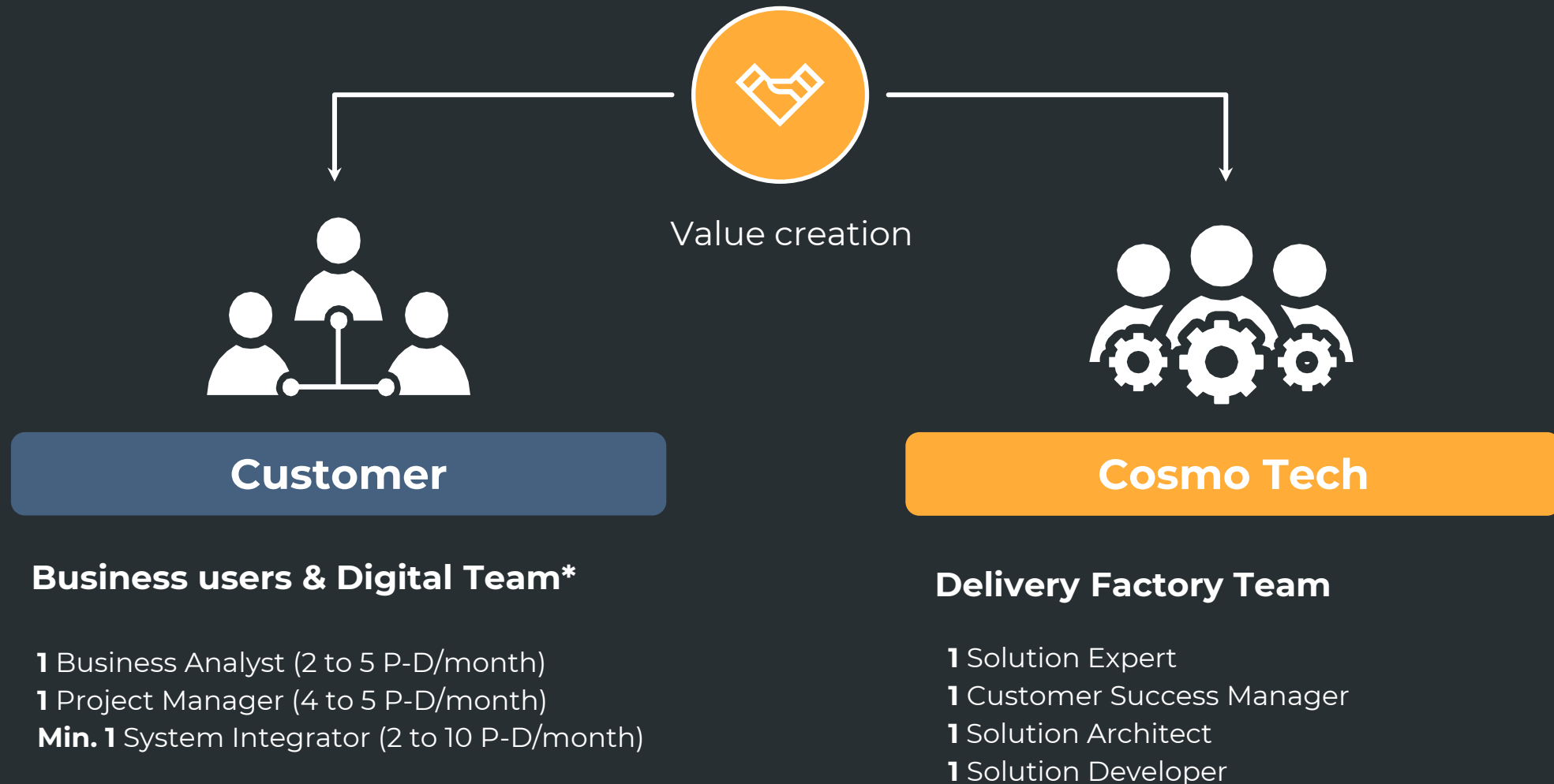
MAINTENANCE & RENEWAL POLICIES

Simulate maintenance and renewal activities with required resources to bring OPEX in the financial balance



Your deployment team

Maximum on-site interaction

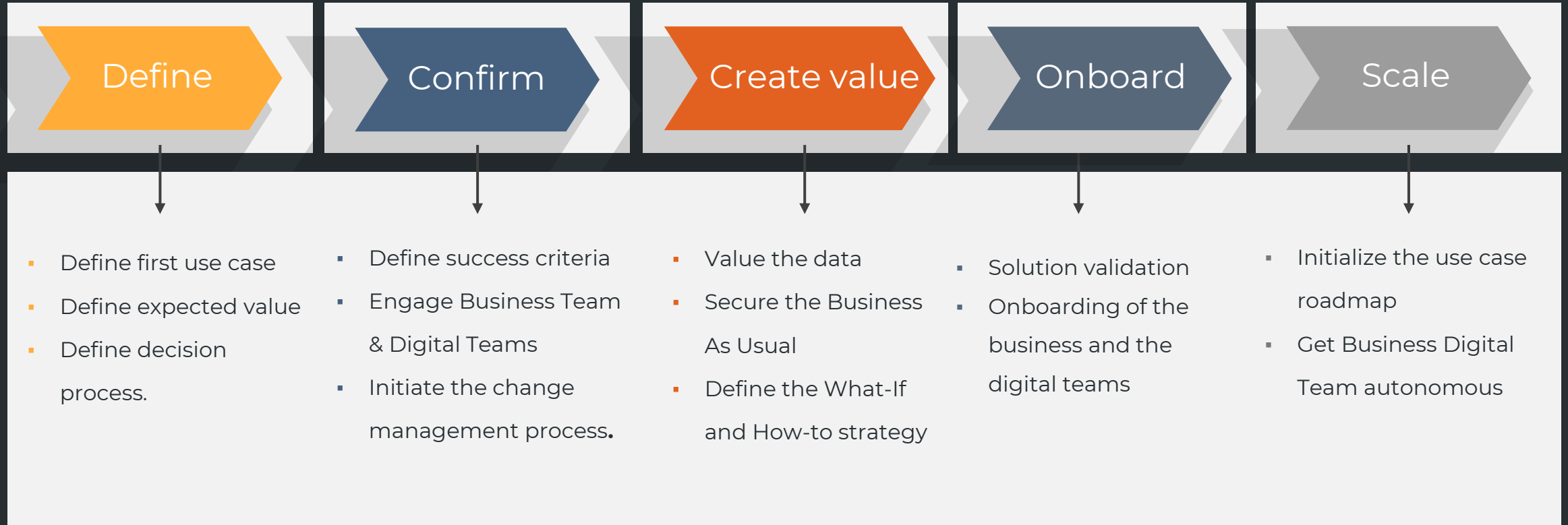


**from 0.5 to 1.5 FTE per month.*

Strictly confidential

COSMOTECH

Your journey to adoption



Start small and expand

One Simulation Twin program, several solutions

Multiple applications across the company (Nexans example)



Cosmo Tech AI-Simulation Platform

AIP Market Data

BY USING **ASSET INVESTMENT PLANNING (AIP) SOFTWARE**, FIRMS CAN HAVE A CLEAR VIEW OF **INVESTMENTS STRATEGIES** AND THE BENEFITS FROM A **FINANCIAL, ENVIRONMENTAL, AND SOCIAL POINT OF VIEW.**

THIS IS DRIVING DEMAND FOR AIP SOFTWARE WHICH IS FORECASTED TO GROW AT CAGR OF 13% BY 2026.



Licensing Model

One Platform instance, Expert Services & options

PLATFORM LICENCE

FROM
50K/mo

- Platform tools (including pre-packaged AI-simulation twins)
- 50 Scenario Run*
- Training materials
- Premium Support**

STARTER OFFER

**50%
DISCOUNT**

First 6 months, for €150K min.

Extra Services

Additional 10 person-day/month
the first 3 months

* usage based pricing

** 10 person-day/month

Usage-based pricing

Usage	Unit	1 Year	2 year	3 year
1-50 scenarios run	50 scenario run/month	Offered	Offered	Offered
51-150 scenarios run	50 scenario run/month	€35K	€31.5K	€24.5K
151-500 scenarios run	50 scenario run/month	€25K	€22.5K	€17.5K
>500 scenarios run	Per scenario	€200/scenario	€180/scenario	€140/scenario

Options	Unit	1 Year	2 year	3 year
Extra Platform instance	1 Platform instance	€4K	€3.6K	€2.8K
Hosted Platform instance	1 Cosmo Tech hosted Platform instance	€8K	N/A	N/A

Digital Twin Market

Global Forecast to 2027

Digital Twin market is expected to reach

**73.5
Billion**

CAGR OF 60.6%
2022-2027

