MANUFACTURING

OPTIMIZE YOUR GLOBAL SUPPLY CHAIN WITH DIGITAL TWIN SIMULATION.



COSMOTECH
Find Your Forward

Manufacturing Challenges

Manufacturers face increasing challenges to maximize both customer satisfaction and profitability in the face of uncertain market circumstances. Modern industrial supply chains are increasingly complex and one factor can impact an entire organization. The coronavirus crisis has highlighted the need for resilience in the supply chain and when market conditions change fast, being prepared matters more than ever.

67%
of manufacturers indicate that manufacturing operations are complex[1]

$22,000
average cost of one minute of downtime[2]

94%
of the Fortune 1000 reported seeing Coronavirus supply chain disruptions[3]

1. Report by Gatepoint Research
2. Nielsen Research
3. Fortune

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The digital twin technology designing the future of manufacturing

50%
industries will be using digital-twin technology by 2021

10%
efficiency increase for companies using Simulation Digital Twins[1]

20-30%
cost reduction for industries deploying digital twins[2]

1. Top 10 Strategic Technology Trends, Gartner, 2019.
2. Howells, Richard. Thought-Leader Round Table: Three Experts Discuss Digital Twins, Forbes, 2019.

Simulation Digital Twins
Transform your manufacturing supply chain into a competitive force

What is a Simulation Digital Twin?

A Simulation Digital Twin is a new class of software that provides holistic and dynamic digital twin simulation and leverages both predictive and prescriptive analytics.
By building a digital representation of your entire system - entities, assets, resources, processes, workflows, and constraints - you have a functioning testbed to discover the effects of changes in the real world. With a 360° view of their process, decision makers can run unlimited scenarios to better understand the current behavior of their complex organization and assess future outcomes.

What do Manufacturers use Simulation Digital Twins for?





Anticipate disruptions

Develop scenarios that anticipate disruptions and ensure better planning for the future. By running simulations including the likes of machine breakdowns, workers' strikes, and increased costs, you can anticipate how to recover quickly in these events.

Simplify complex decisions

Uncover which range of parameters and processes to adjust in your digital twin to make complex decisions with confidence. View all the variables that go into decision making, as well as cascading effects from altering them, at a glance.

Optimize usage of constrained resources

Determine whether you are obtaining optimal ROI for each resource. When simulating each resource as a part of a complex system, it's possible to experiment with different levers such as uptime/downtime, individual supplier costs, lead times, etc.

Benefits of simulation for the manufacturing industry

Increased visibility
Gain greater visibility of operations across the supply chain. Identify suppy chain constraints, bottlenecks and develop a resilient supply chain.

Agile scenario management
Develop and run new what-if experiments when conditions look to be changing in the near-term and long-term future.

Plan for all futures
Take more rapid but resilient decisions that remain aligned with customer expectation and demand and create robust optimal plans for the short, medium, and long term.

Improve collaboration with customers and suppliers
Build customer and supplier data-gathering activities into your system for use in your digital twin. Gain greater insights while strengthening business relationships and reducing supply chain costs.

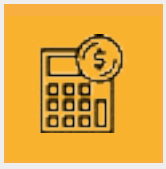
Results in manufacturing

Production Planning & Control	Asset Obsolescence Management	Inbound Logistics	Factory Planning & Scheduling	Strategic Sourcing
11%	**-26%**	**-2%**	**+1 to 3%**	**+6%**
operational efficiency at a constant CAPEX	**TOTEX**	**logistic cost**	**overall equipment effectiveness**	**profit**

Case study: Optimize Sourcing Strategies to Maximize Profit & Service Levels

Our client is a leading tire manufacturer who needed to build a 5-year plan to decide on the best capacity investment for their extended supply chain network. They chose Cosmo Tech's Simulation Digital Twin technology to determine the best ratio between local production and imports from all over the world to reduce total landing cost.
Our holistic digital twin simulation platform enabled our client to increase profit by 6.6 % by optimizing sourcing investment strategies based on cost and revenue structure while accounting for operational constraints.

Key features



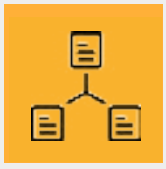
Cost Optimization

Balance production, storage, transport and custom costs to minimize total landed costs.



Robustness Analysis

Build an optimal sourcing strategy resistant to demand uncertainty.



Unlimited What-If Analysis

Design & simulate scenarios to predict the impact of changes on key parameters such as custom duties or currencies.



Risk Impact Assessment

Use risk simulation to anticipate potential cascading and bullwhip effects impacting performance.



Cost Optimization

Get insights about the resources and variables having the greatest impact on supply chain resiliency.



How-to Optimization

Prescribe the best operational strategy for your supply chain network.

6.6%
PROFIT INCREASE

For Tier 1 suppliers, using Cosmo Tech Supply Chain for strategic sourcing provides an optimal short, mid and long term plan that adapts to unexpected events and volatile demand.

Key benefits



Minimize total landed costs



Optimize existing flows



Reduce carbon foot print

How resilient is your supply chain?

Most businesses today put agility and innovation first. They know the key to sustainable growth is all about continually delivering value to customers in new and more meaningful ways. Advances in cloud computing and simulation technology have given rise to a new level of supply chain planning.
This move towards digitalisation delivers a true picture of your supply chain, making planning more resilient and efficient than ever before - oftentimes while lowering spending and improving production output. And the smart manufacturer relies on real-time simulation and holistic views of data to get products more quickly and efficiently to market.



Use this checklist to compare your current strategy against key metrics critical to every supply chain plan, including:

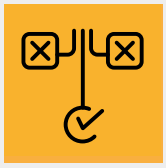
- **Vertical Alignment:**
  Implement strong vertical alignment between all the different planning layers.
- **Digital Supply Chain Twin:**
  Use a digital supply chain model that is a mirror of reality.
- **Responsiveness to Uncertainty:**
  Take full account of stochastic behavior to create plans that are cognizant of uncertainty.
- **Plan Stability:**
  Plans are more proactive and not reactive as uncertainty and volatility are already accounted for.
- **Buffer Usage**:
  Uncertainty buffers are planned to be used before any plan change is required.

Gartner, Innovation Insight fo Resilient Planning, 23 June 2020, Tim Payne. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. Ali rights reserved.

Case study: Achieve production planning excellence

Our client is an international car manufacturer that has to adapt to a very competitive market and uncertain environment. He needed to boost the production of specific engines to meet an increasing demand while maintaining the same level of investment. Our client needed a software solution that could anticipate the effect of bottlenecks on the whole organization, respect multiple constraints and consider end-to-end costs.

Key features



Unlimited what-if scenarios

Design & simulate scenarios to predict the impact of decisions



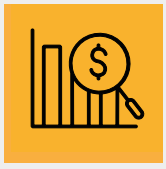
Safety stock positioning

Find the right safety stock level at each stage to ensure robust execution against variabilities



Bottleneck identification

Automatically identify bottlenecks and understand what actions to take, when and where



Sensitivity analysis

Test robustness to unexpected events to mitigate risks and improve production planning



How-to optimization

Prescribe the best operational strategy for your supply chain over any time scale



Cost calculation

Consider the costs of your scenarios and develop a realistic production plan

10%
OPERATIONAL EFFICIENCY

> **"With Cosme Tech, we have found a tool that allows us to identify bottlenecks in our flows and suggest areas of improvement."**
>
> Supply Chain Expert at a leading automobile manufacturer

Key benefits



Increase production throughput



Improve service levels



Reduce time to plan

Who is Cosmo Tech?

Cosmo Tech is a software provider of 360° Simulation Digital Twin solutions

We provide an innovative approach that simulates operational strategies to solve the most complex industrial problems and lead enterprise decision making. Industrial companies in manufacturing, energy & utilities and mobility rely on Cosmo Tech to better understand the impact of their decisions and ensure a future that is robust, resilient and sustainable.

Holistic and dynamic digital twin simulation

Our new class of software leverages both predictive and prescriptive analytics. With simulation digital twins solutions, decision makers have a 360° view of their process. They can run unlimited scenarios to better understand the current behavior of their complex organization and assess future outcomes.

$27 million

Series A and B venture capital funding

2010

Cosmo Tech founded

MEMBER digital twin CONSORTIUM Member since 2020

Recognition:

2020: sample vendor for Digital Supply Chain Twin technology in supply chain

2019: representative vendor of Digital Twin of an Organization

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