



# Future-Proof Your Supply Chain with Digital Twin

The Effective Supply Chain Officer Guide to  
Using AI-powered Digital Twin





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# 01 **A no-fluff introduction**





Supply chain resilience is key for responding to disruptions effectively and thriving in unpredictable times. To ensure stability, supply chain officers need tools that will help them make both: the right customer-centric decisions in real- time and highly accurate predictions about the future. Digital twin is among the most effective tools to get the job done.

In this e-book, you will learn how digital twin can help you streamline supply chain operations to boost your revenue, slash costs, and win the heart of your customers despite any kind of disruptions.

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*“According to McKinsey, digital twins can help increase revenue by up to 10%. Seeing the huge potential of this technology for our current and future clients, we have used almost 15 years' worth of experience in the fields of supply chain and technology to create just the solution supply chain winners need — Time Machine, Streamline’s digital twin. We’ve also put together this e-book to show you how exactly you can benefit from using digital twins to bring your supply chain management to the next level.”*

**Alex Koshulko**

CEO and Co-founder of GMDH Streamline, PhD, Forbes Technology Council contributor.



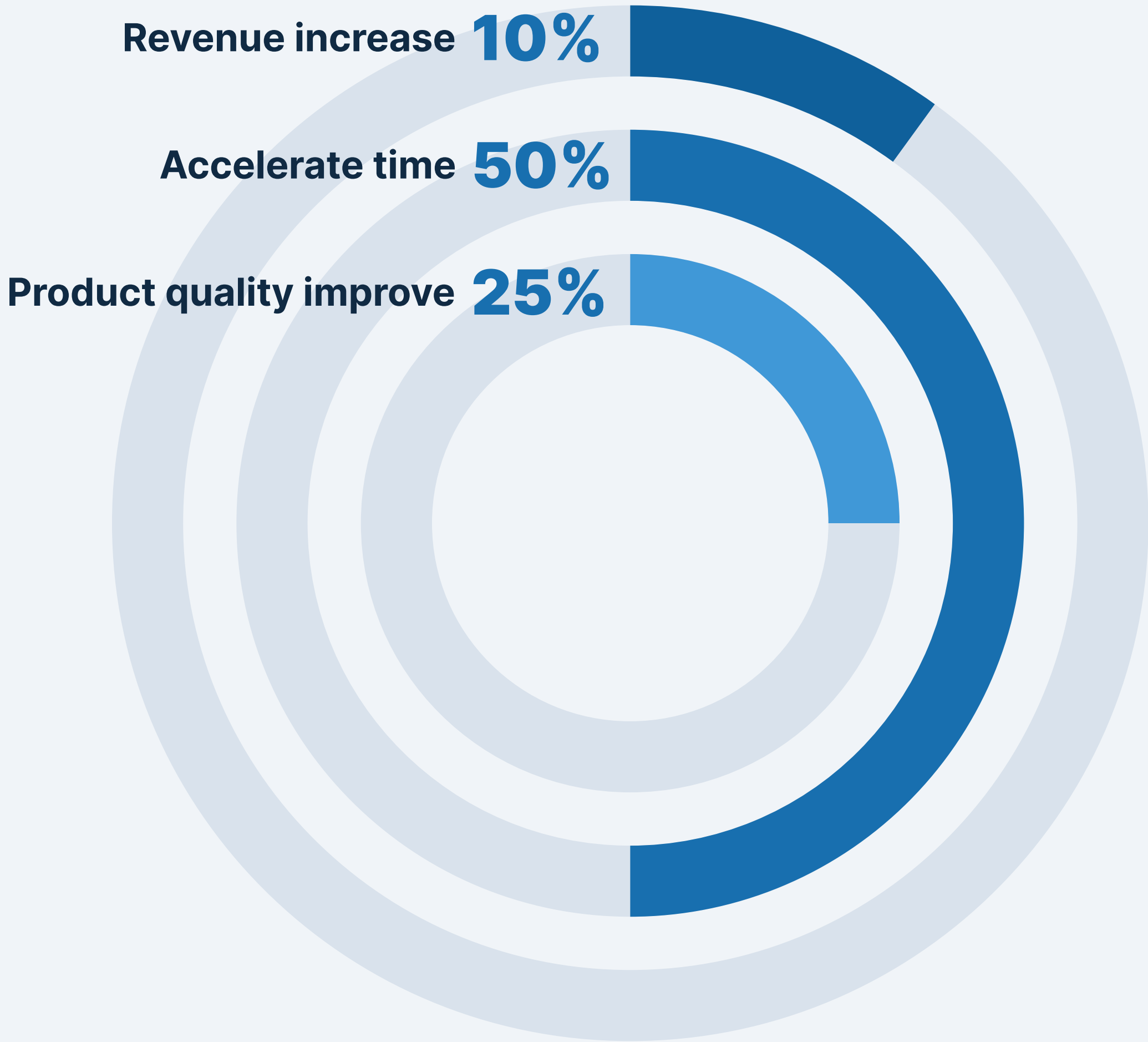
# 02 **10 key facts, figures, and tips supply chain officers should know to stay ahead**



# Figures

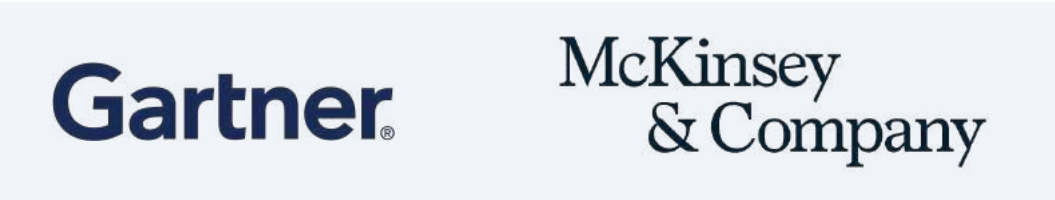


- 01** Digital twin technologies can drive a revenue increase of up to 10%, accelerate time to market by up to 50%, and improve product quality by up to 25%.  
[McKinsey](#)
- 02** 60% of chief supply chain officers are expected to make faster, more accurate, and consistent decisions in real time.  
[Gartner](#)
- 03** 61% of surveyed supply chain organizations say technology is a source of competitive advantage.  
[Gartner](#)
- 04** Four out of five surveyed supply chain executives expect to or already use artificial intelligence and machine learning in planning, and another 60% plan to in the future.  
[McKinsey](#)
- 05** 83% of companies demand that supply chains improve customer experience as part of the digital business strategy.  
[Gartner](#)





# Facts



**06** Improved decision making through the use of advanced analytics and artificial intelligence is a high priority for supply chain users in all markets and industries.

[Gartner](#)

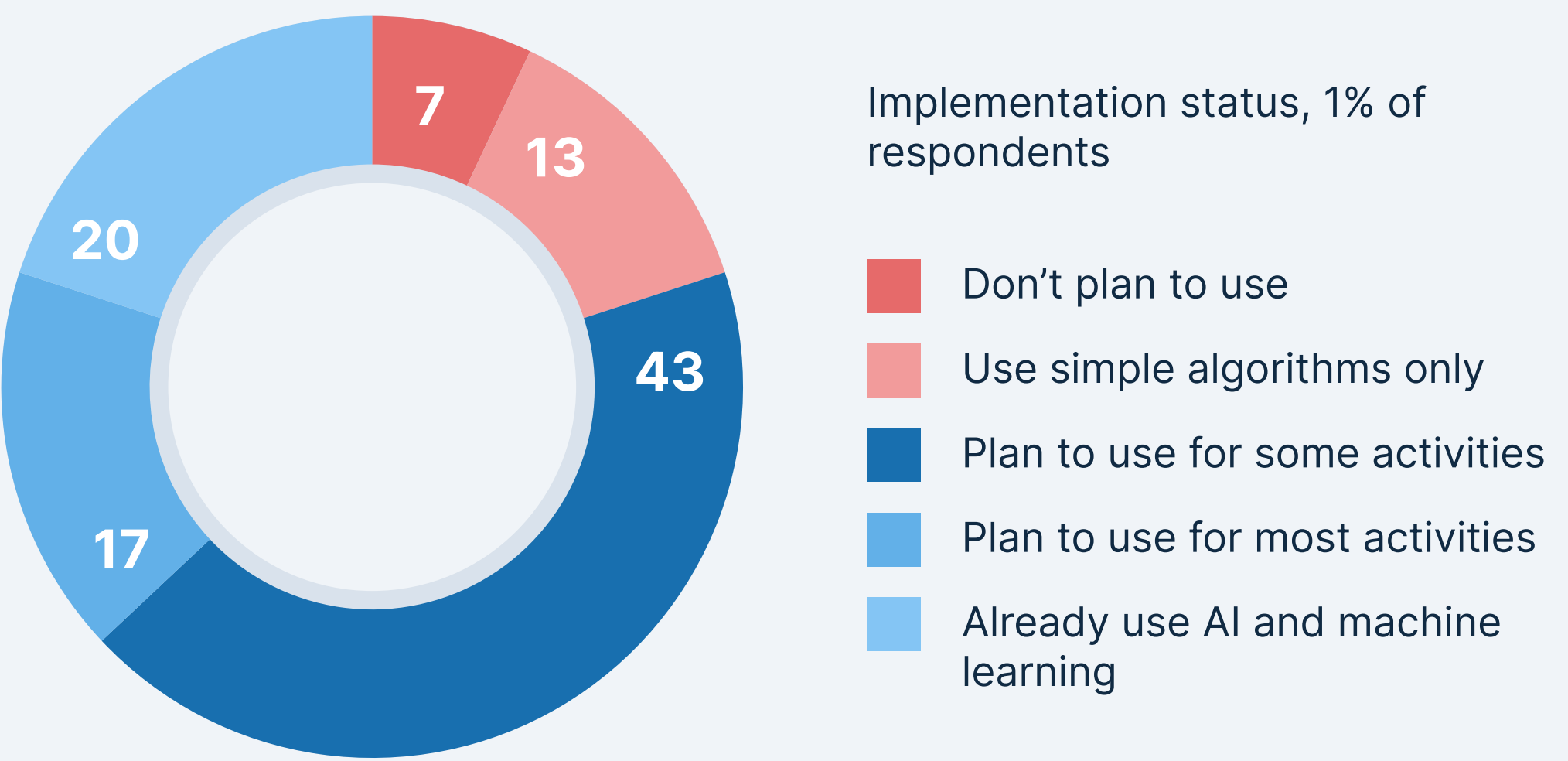
**07** Top applications for artificial intelligence and machine learning include demand planning, and sales and operations planning, among others.

[McKinsey](#)

**08** Supply chain organizations will mature their data capabilities in two phases: first converting real-time data into real-time analytics, then from real-time analytics to real-time decision making that can enable automated execution of planning, inventory optimization, and other key processes.

[Gartner](#)

## Four out of five supply chain leaders expect or already use an AI/ML technology



1n = 30  
Source: McKinsey survey of global supply-chain leaders (May 6-June 3, 2021)

# Tips

Gartner

McKinsey  
& Company

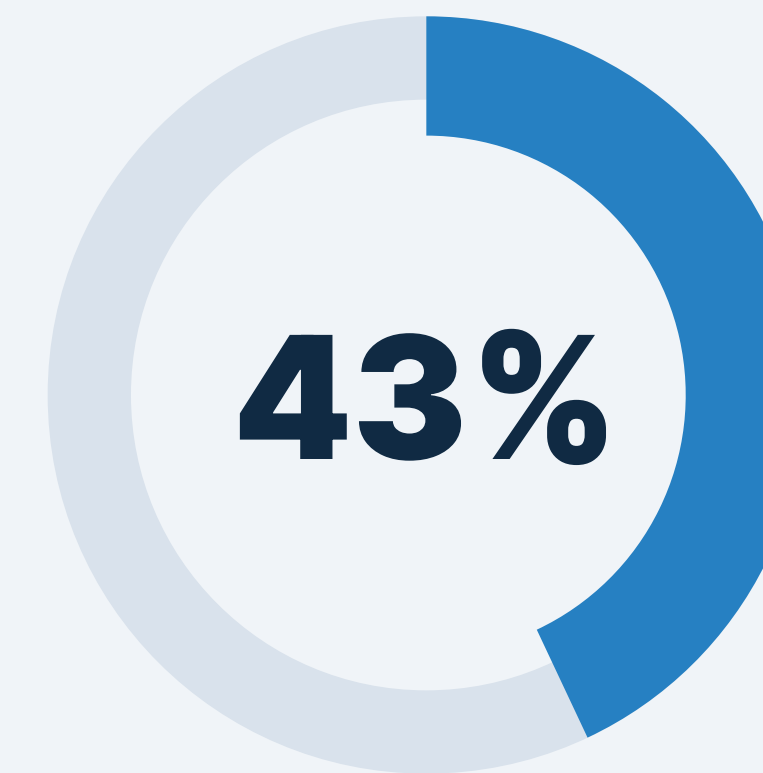
- 09** Accelerate investments in supply chain technology to enable real-time analytics as a step on the path toward real-time execution.

[Gartner](#)

- 10** Acquire and develop supply chain skill-set in analyzing real-time data and generating actionable insights from it.

[Gartner](#)

## Supply Chain Must Continually Adapt to New Technology



of enterprises will continue to digitalize and integrate innovative technology into enterprisewide systems. Supply chain will be expected to continually adapt.

n = 983  
Source 2021 Gartner Future of Supply Chain Survey



# 03 **How digital twin can make the supply chain more resilient, agile, and efficient**





# How digital twin can make the supply chain more resilient, agile, and efficient

## What is Digital Twin?

*A digital twin is a complete digital simulation of all the assets, processes, and operational details that are part of the supply chain.* Powered by advanced analytics and artificial intelligence, it gives you a comprehensive and deep view of the supply chain performance in all its complexity and provides **instant insights on what's working well, what can be improved, and what potential risks are.**

The digital twin provides real-time end-to-end visibility into all supply-chain stages. It dynamically highlights all the risks, inefficiencies, and bottlenecks that have already decreased your revenue or can occur in the future. It also gives immediate data-driven suggestions on how to address these issues. This helps supply chain managers make **rapid, proactive, customer-centric decisions with a much higher level of confidence than ever before.**

Being a parallel, virtual version of the supply chain, the digital twin can play the role of a 'sandbox' to test various 'what-if' scenarios without disrupting the real-life supply chain processes. This allows you **to future-proof supply chain operations by creating data-driven plans** to respond to unpredictable events like natural disasters, market and logistics disruptions.

**In addition to making the companies highly resilient to unpredictable changes, the digital twin allows them to drastically improve product availability, grow revenue, cut costs, and get rid of S&OP inefficiencies, among other things, by optimizing inventory.**





# 04 **How you can benefit from digital twin in the supply chain — use cases**





## How you can benefit from digital twin in the supply chain — use cases

As Alex Koshulko, CEO and Co-founder of GMDH Streamline, says, **“The digital twin is a very detailed digital model of business processes that allows a realistic simulation of the business’s future. It can include KPIs, demand, and inventory that company will have. It’s a window to our future.”**

Introducing digital twins can strengthen the company at different levels. However, the key departments that benefit from the technology the most are demand planning, purchasing, sales, marketing, and operations teams.

In the meantime, the digital twin technology is advantageous for companies across various verticals. Among the businesses that have successfully implemented Streamline’s solution are those working in retail, distribution, and manufacturing fields.

Many of them have listed the following benefits when describing their cooperation with Streamline:

- **The ability to manage up to 4 million SKUs simultaneously**
- **Access to advanced sales and operations planning functionality**
- **Advanced role-based permissions management**
- **User-friendly and simple interface**
- **Cross-team collaboration tools**
- **Unlimited customer and technical support**

Let’s look at a couple of use cases of Streamline’s solution in more detail.





# Inventory optimization

## Type of the company:

The biggest logistics provider for one of the largest fast food companies in the world.

## Challenge:

Working in the fresh food industry, where demand varies on workdays and weekends, the company addressed the need for a solution that allows reducing overstock while ensuring uninterrupted supply.

## Before Streamline:

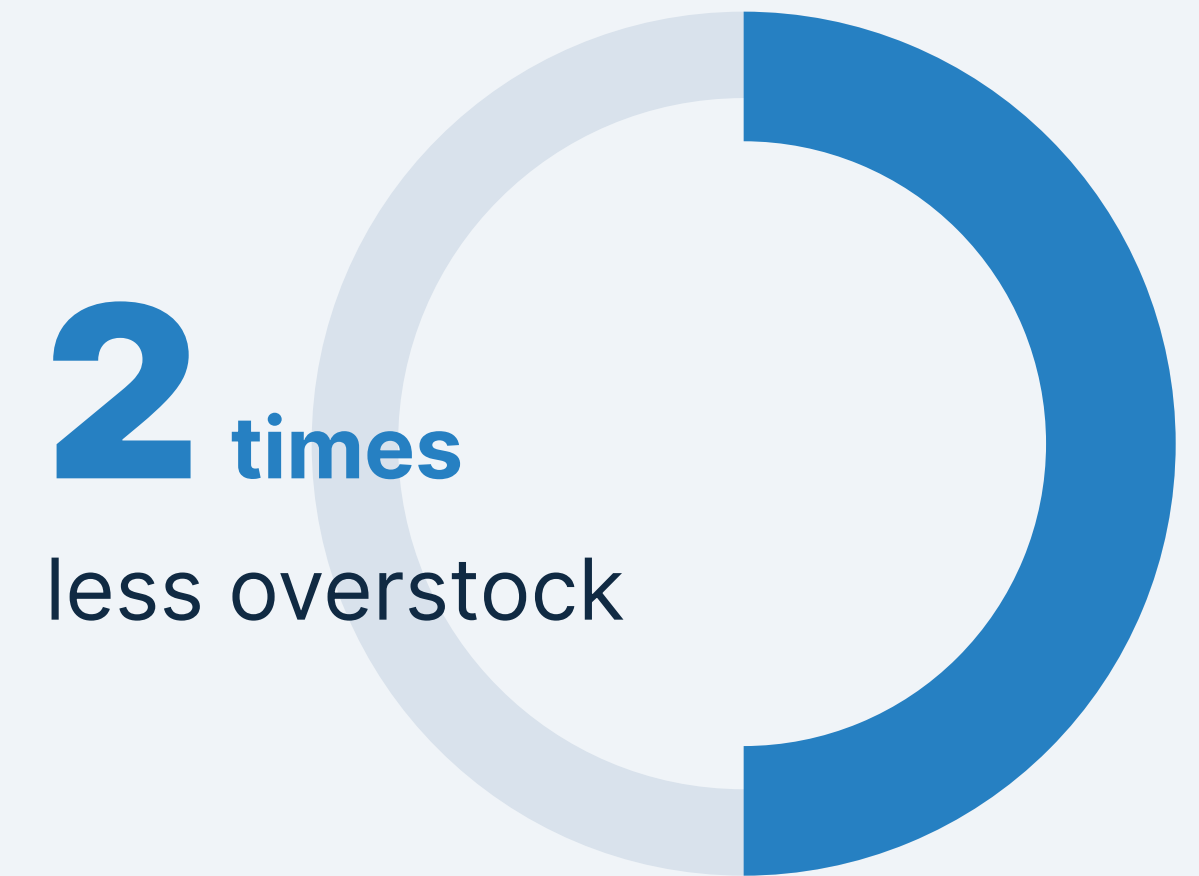
The company used to rely on Excel spreadsheets, which required a lot of manual work and was extremely time-consuming. Coming up with an actionable plan was challenging as it required analyzing information about thousands of products in different locations very fast. Also, everyone in a team had non-synchronized different numbers to rely on.





## Results

- Decreased costs and stockout. The excess stock has been reduced from 14 days to one week.
- Recognition. Competitors and customers are asking the company about their secret sauce to overcoming COVID-provoked supply chain disruptions.
- All stakeholders have access to the same unified database with one click. All changes are tracked automatically.
- Highly accurate near-real-time future projections and actionable insights.
- Boosted efficiency. Streamline's solution is quite responsive and quick, which allows customer's team to spend less time on manual tasks and focus more on analyzing the numbers and AI suggestions.





## Other benefits

- Up to 100+ users can have access to Steamline's solution per client.
- A very responsive customer success team.
- A user-friendly interface.



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*Many companies working with Excel find it difficult to succeed in the constantly changing environment. What you need is to be able to create a simulation of the future, not just look at your past. Demand forecasting is about looking at future projections and analyzing them. Steamline is a great tool to do that. It is about the speed and accuracy of demand forecasting, cost and inventory optimization, and user-friendliness.*

Sheetal Yadav  
COO at Anamind





# Short and mid-term demand, production, materials, and distribution Planning. Alternate scenarios development (what-if)

## Type of the company:

A group of packaged consumer goods companies in Mexico that manufacture part of their portfolio and re-distribute the rest.

## How long the companies have been using Streamline:

6 months to over 2 years.

## Before Streamline:

The whole group of companies used to work with Excel spreadsheets.





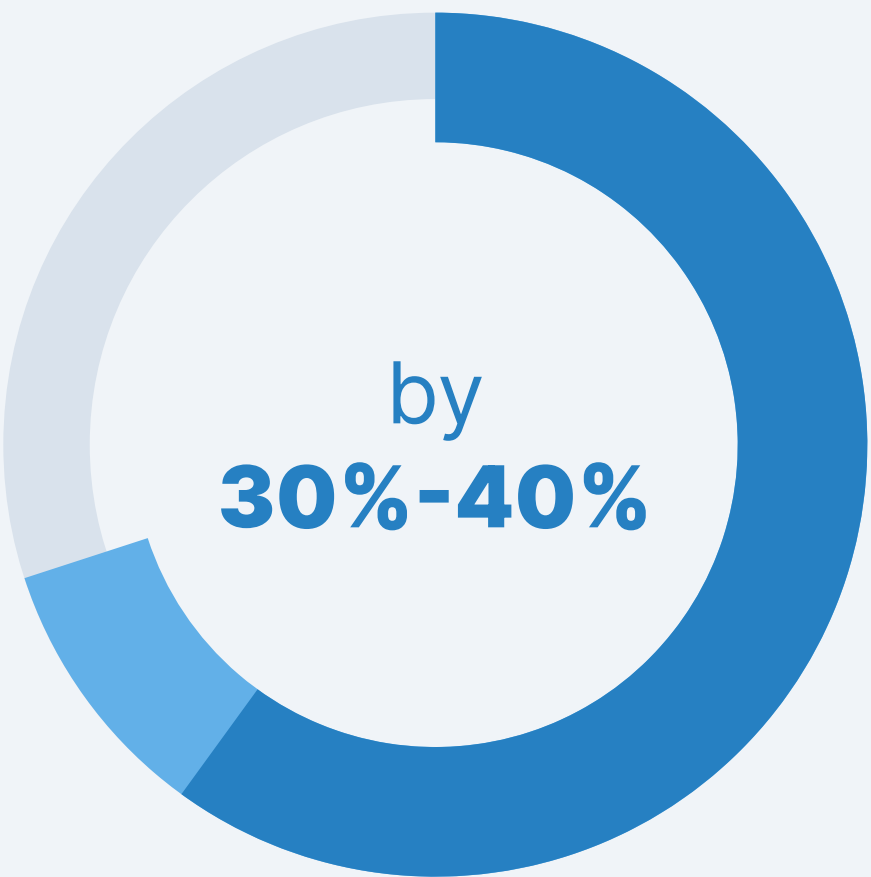
# Results

- Inventory reduction by 30%-40%,
- Customer service increase by 5%-10%

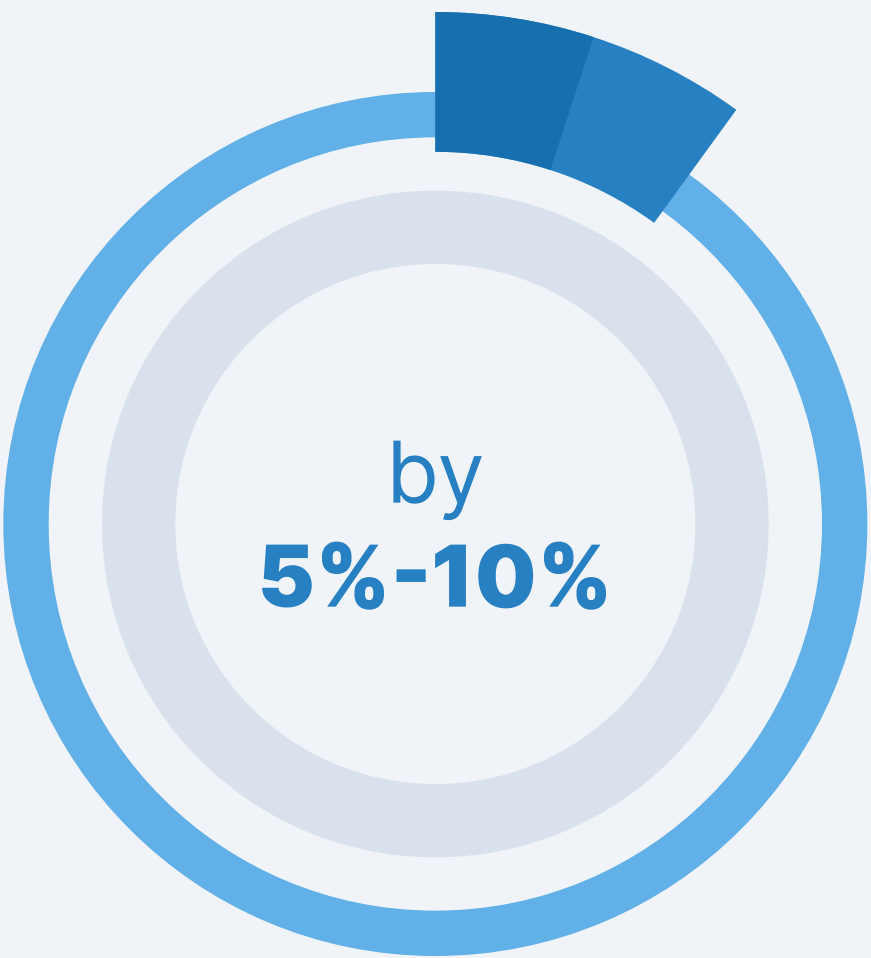
# Other benefits

- A faster, more accurate, and easier-to-use solution
- Fast implementation
- Easy integration with ERP
- Fully integrated planning across functions
- Customer success team is open to new functionalities and responds fast

## Inventory reduction



## Customer service increase





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*Beyond the forecasting and number crunching for Supply Chain Planning in real time that can be performed by Streamline, it also works beautifully to create the "What if" scenarios that are required within the S&OP process. The artificial intelligence built inside the system, like in the Time Machine feature, allows to introduce a Digital Twin functionality that simulates the future and potentialize business performance. It can also be used to modify key variables and view alternative results immediately. Nonetheless, the solution is presented in a very intuitive, easy to manage software, and at a very competitive cost vs. other options.*

Pablo Gonzalez Paullada

Sr. Consultant Value Chain & Purchasing, GMDH Streamline Strategic Partner





# 05 **A sneak peek into Streamline's digital twin solution**



To ensure accurate demand forecasting, Streamline covers over 100 supply chain parameters and constraints: Frequency of ordering, Container size, Safety Stock, Shipment schedule, Lead Time and its variance, Min lot and Max lot, EOQ, etc.

Here is a quick overview of how Streamline's digital twin technology works.

- 1 **Let's assume we have increased our sales forecast for 1 SKU by 10% to see if this step can lead to any disruptions in the supply chain.**

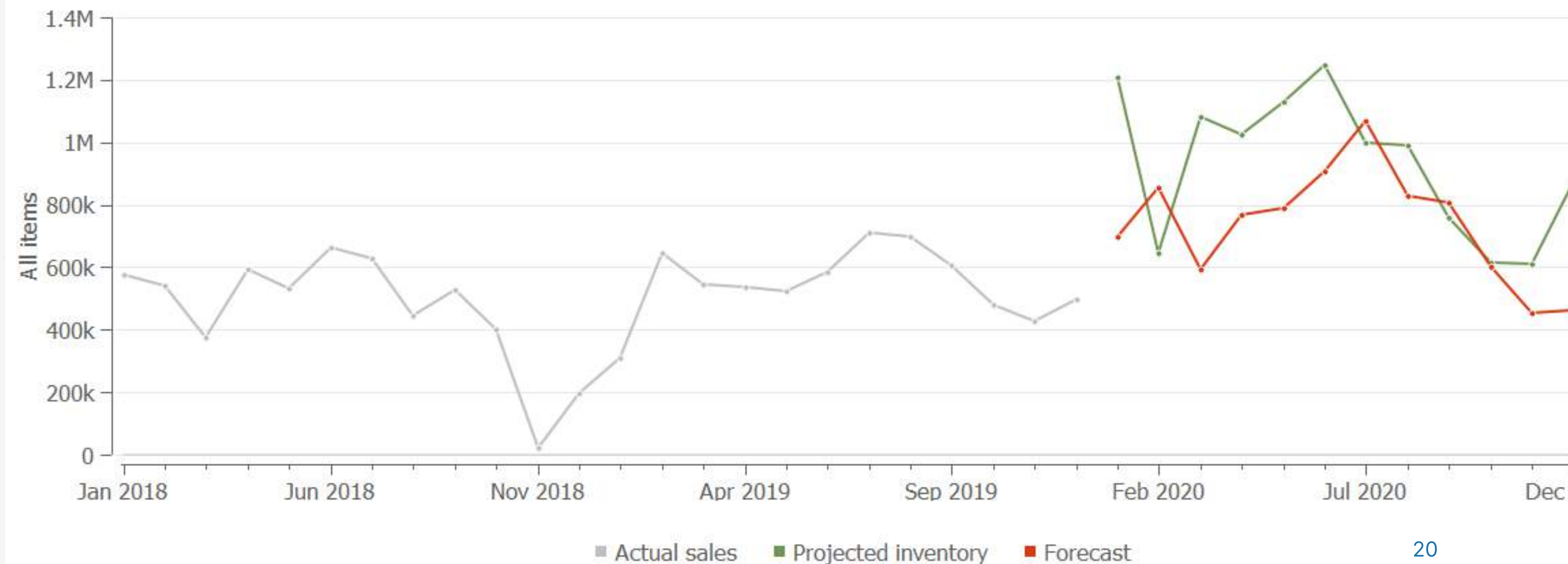
Update data ▼ Last updated on Oct 1, 2020

Approve/Unapprove Needs attention Checked Add note Forecast versions

	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020
8 Actual sales	697,624	605,640	480,686	427,920	497,612					
\$2,023.6 Statistical forecast						612,966	854,524	593,010	766,550	787,890
22,822.8 Final forecast overrides						699,974				
Average sales price	110.64	114.21	108.64	114.25	105.45					
Revenue	77,181,977.14	69,168,701.96	52,220,398.95	48,890,507.96	52,473,098.54	76,221,431.79	94,389,448.97	64,663,188.13	84,310,801.59	86,687,766.19
On hand					1,144,720					
Stockout days										
Projected inventory levels						1,206,621	644,838	1,080,300	1,025,662	1,128,146
Ordering plan						804,375	553,191	761,618	790,279	964,533
To ship							2,240			
Ignore actual sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

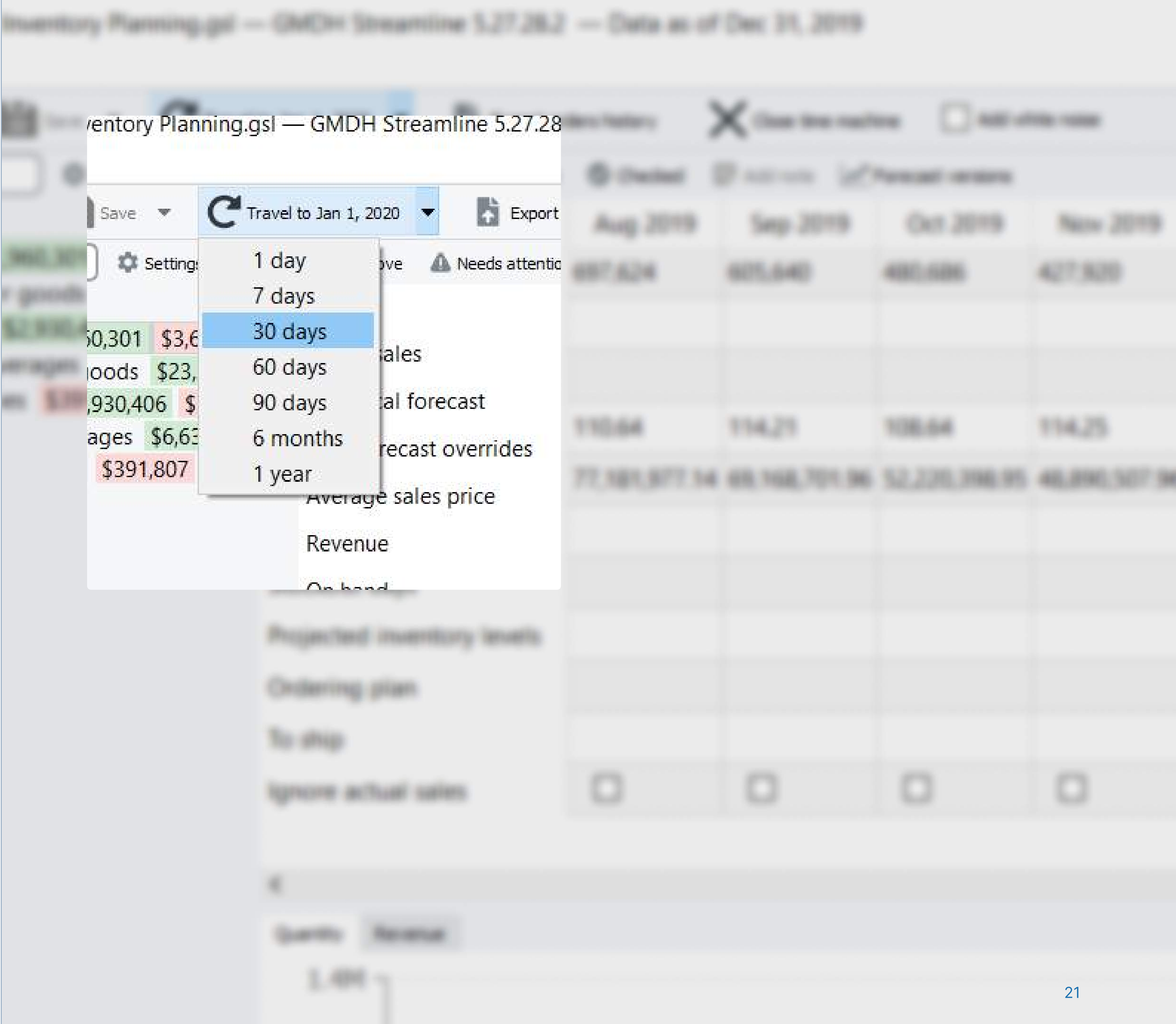
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Quantity Revenue





- 2 Our next step would be to launch Streamline’s Time Machine (digital twin) to simulate what the supply chain will look like if sales go up by 10%. Let’s choose a 90-day period and stress test our supply chain simulation.



3 Our final step would be to get the reports covering 90 days. These reports will indicate if we are going to experience shortages or overstock.



Please note that, with Streamline, you can analyze such KPIs as Turnover, Total Inventory Value, Write-Offs, Overstock and Stockout Value, and Dead Inventory.



# 06 **What are the benefits of the digital twin technology and the what-if scenario?**





## What are the benefits of the digital twin technology and the what-if scenario?

Streamline uses the combination of digital twins and what-if scenarios. Here's why.

The digital twin technology is a more advanced version of what-if scenario planning. It is based on analyzing timelines and events. Companies use the technology to get a realistic supply chain forecast and track business impact, e.g. inventory and value.

Meanwhile, the what-if scenario planning is based on using formulas and it is used to calculate and highlight what needs to be done differently.

**Utilizing these two approaches gives you a basis for a realistic simulation of your future supply chain performance!**





# 07 **How to streamline your supply chain management right away**







## Digital twin is the next step in S&OP and workflow efficiency.

Nowadays, business is both global and highly competitive, which brings the need for quick but correct decision making process to a completely new level. We have to speed up communication not only between our team members, but also with our external partners, like vendors and clients. We need to quickly analyze not only related information, but also huge amount of data and make the whole business infrastructure clear, visible, and feasible. We need to have an excess to our historical data, nowadays spot, and potential future outcomes in one source for quick access, comparison, and analysis. By connecting all departments, like Demand forecasting, Inventory planning, Procurement, Marketing, Sales, Financial, etc. digital twin technology brings business execution and S&OP to a mature, efficient, accurate and predictable level.

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*To succeed today, businesses need to make extremely fast, yet accurate decisions, communicate quickly and effectively with all the internal and external stakeholders, as well as ensure the end-to-end visibility of their key processes. To be able to do that in the world of growing globalization and competitiveness, they require a tool that can help them analyze and get insights from enormous amounts of data; have ongoing access to their past performance results, real-time information, and future projections; create a single “source of truth” for all the stakeholders to rely on. Digital twin technology is just the tool for the job. It is perfect to boost workflow efficiency and ensure the maturity, efficiency, and predictability of S&OP processes.*

Natalie Lopadchak-Eksi

VP of Partnerships at GMDH Streamline



# 08 Further reading





# Further reading



**Overcoming Supply Chain Challenges With AI: What Large Manufacturers Need To Know**

Alex Koshulko for the Forbes Technology Council

[Read more](#)



**How Digital Twins Can Help Supply Chains Survive Disruption**

Alex Koshulko for the Forbes Technology Council

[Read more](#)



**How AI Can Streamline Sales And Operations Planning**

Alex Koshulko for the Forbes Technology Council

[Read more](#)



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