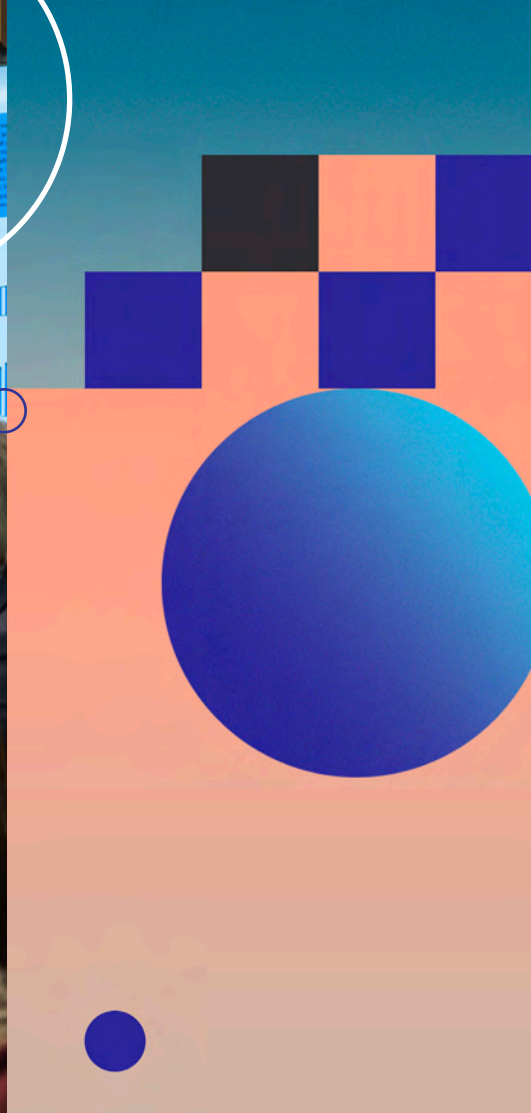




Optimizing Supply Chain Performance with Unified Data

A Survey of 450 Senior Supply Chain Decision Makers



Executive Summary

This report summarizes the findings from a survey of **450 senior supply chain decision makers** spanning various industries including fast-moving consumer goods (FMCG), logistics and transport, manufacturing/consumer packaged goods (CPG), pharmaceuticals, and retail across the US, UK, Germany, Australia, Austria, Brazil, China, France, Ireland, Japan, Netherlands, Singapore, and Switzerland. The survey was conducted for InterSystems by Vitreous World.

In our ever-changing world, supply chain organizations **must be able to respond to a wide range of variables** including geopolitical factors, supply shortages, transportation bottlenecks, extreme weather, and public health events.

End-to-end supply chain visibility is vital, but as these findings show, top organizations around the globe struggle to achieve it. If businesses can see accurate and timely data across the entire supply chain, they will be able **to seize new revenue-boosting opportunities** and achieve optimized performance metrics.

To succeed today, companies must uncover critical insights from masses of disparate data located inside and outside their supply chains. They must provide their line of business teams with near-real-time predictive and prescriptive insights that enable them to make the right calls in minutes, not days. Even though analytics, AI, and decision intelligence are becoming central to effective orchestration, **many organizations are stuck in the past**, relying on manual methods to process days-old data.

Only with increased automation and embedded analytics, can organizations make sense of data to supply the rapid, relevant, and accurate insights their frontline teams need. This holds true across the five use cases covered in this report:



- Environmental, social, and governance (ESG)
- Demand sensing and forecasting
- Fulfillment optimization
- Supply chain orchestration
- Production planning optimization

Although each use case comes with varying challenges, **the common thread among all of them is the need for rapid access to trustworthy data** and insights from as many sources as possible.

The good news is that so many businesses recognize that **AI, predictive and prescriptive insights, and innovations such as an ultimate control tower are ready to transform performance, agility, and revenue**. However, before these important advances are possible, businesses must rethink and transform their current data management strategies.

To succeed today, companies must uncover critical insights from masses of disparate data located inside and outside their supply chains.

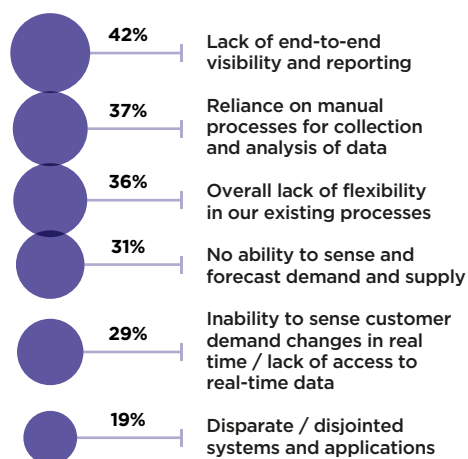


39%
of respondents use multiple solutions from different vendors to inform decision making

Key Findings

Almost all respondents struggle to unify their data across various systems. They cited **lack of end-to-end visibility and reporting or reliance on manual processes for the collection and analysis of data as their most significant supply chain technology challenges.** This can prove to be problematic because the lack of real-time, accurate visibility of end-to-end data results in poor operational decisions.

What are your most significant supply chain technology challenges right now?*

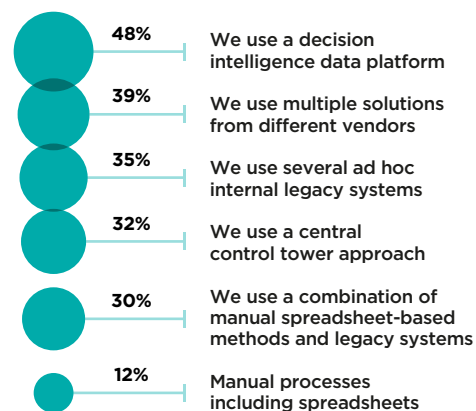


Not only do organizations lose countless hours of productivity by extrapolating and analyzing data from multiple silos, but

they also miss out on opportunities for real-time decision intelligence because of the lack of unified data. **The majority of respondents are using manual processes, legacy systems, and multiple solutions from different vendors to integrate and prepare disparate information for decision making.**

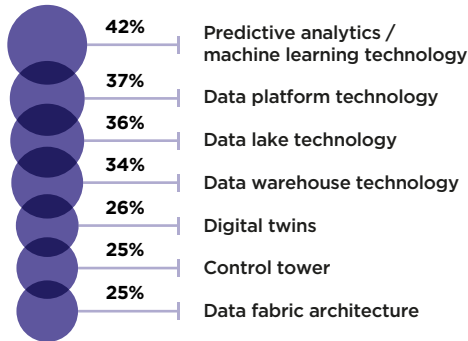
Despite many respondents citing issues surrounding manual processes and lack of real-time data, **only 48% of supply chain businesses are ahead of their peers by using a decision intelligence platform.**

How do you currently integrate and prepare disparate information for decision-making?*



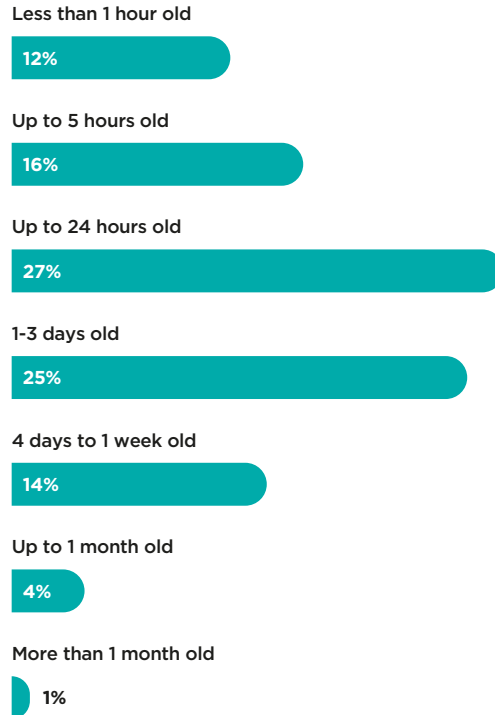
Although the percentage of respondents currently using a decision intelligence platform is relatively low at 48%, the tide is changing as **key supply chain executives are looking to implement or evaluate predictive analytics/machine learning technology.**

Which, if any, of the following are you currently evaluating or implementing?*



Without access to real-time, or near-real-time data, supply chain organizations cannot respond quickly to opportunities or disruptions.

On average, how old is the data used by supply chain leaders in your organization?*



42%

of respondents are evaluating or implementing predictive analytics / ML technology





Environmental, Social, and Governance

38%
of respondents
stated that ESG data
is highly disparate
and difficult
to analyze

Environmental, social, and governance (ESG) reporting and compliance suffers from a lack of real-time visibility of data as scrutiny in regulation constantly increases at a global scale.

Data-related issues lend themselves to this lack of visibility as respondents report that ESG data is highly disparate and difficult to analyze, while also heavily siloed and voluminous. **ESG data is difficult to harmonize, normalize, and make available in real time** due to weak reporting mechanisms in-house and among partners and suppliers. In fact, 67% of business owners and partners cited no real-time data visibility along the supply chain as a top challenge in monitoring ESG.



What are your three chief challenges in monitoring environmental, social, and governance (ESG) in your supply chain?*

No real-time visibility of data along the supply chain

56%

Weak reporting mechanisms among our supply chain partners and suppliers

43%

Lack of in-house expertise or understanding of legal requirements

43%

ESG data is highly disparate and difficult to analyze

38%

Weak reporting mechanisms in-house

29%

Current processes are too manual

28%

Heavily siloed data

25%

High volume of ESG data

23%

Poor data practices / data management among third-party ESG monitoring organizations

17%

As discovered in the previous question, many of the top issues respondents face with ESG monitoring concern the lack of access to, or visibility of, necessary data. **These data issues are impeding organizations' ability to meet vital ESG monitoring requirements** as just 12% of respondents are already compliant with US and EU requirements and only 26% of respondents are very confident they will be compliant with US and EU requirements in the next 12 months. With financial penalties, as well as potential issues like reputational damage and operational impacts stemming from non-compliance, improving ESG reporting should be a priority for supply chain.

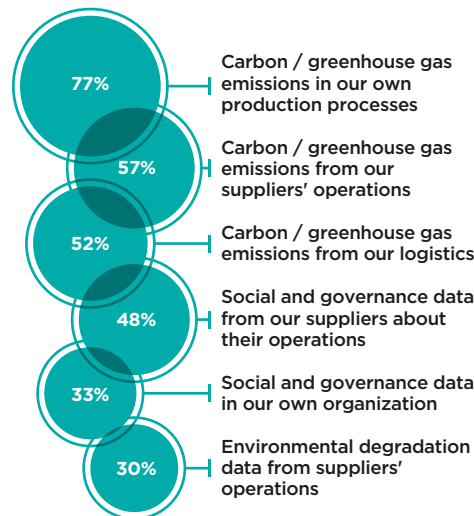


How confident are you that you will achieve ESG monitoring of your supply chain that is compliant with US and EU requirements within the next 12 months?

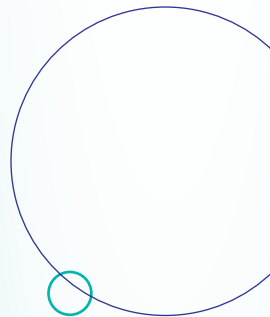
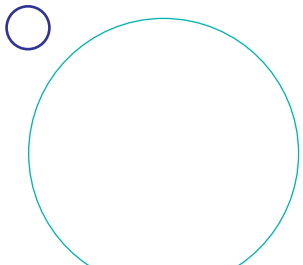


Lack of unified data in analytics contributes to even more challenges concerning ESG, most notably the carbon/greenhouse gas emissions in respondents' own production processes, their suppliers' operations, and their own logistics. In fact, when analyzed by size of organization, 75% of Fortune 500 companies report that carbon/greenhouse gas emissions in their own production processes is a top problem area for obtaining and analyzing data.

Which of the areas of ESG are most problematic for you in terms of obtaining and analyzing the data?*



Only 26% of respondents are very confident they will achieve ESG monitoring of their supply chain that is compliant with US and EU requirements within the next 12 months





Demand Sensing and Forecasting

37%

of respondents cited inaccuracies in data within the organization, partners and suppliers as one of their biggest challenges in demand sensing and forecasting



When it comes to demand sensing and forecasting in the supply chain, the ability to quickly ingest, analyze, and subsequently make strong business decisions is crucial. However, **this crucial need can be slowed down or even impeded by issues such as a lack of end-to-end supply chain visibility, antiquated data management processes, or even inaccurate data.**

The top demand sensing and forecasting challenges are all related to issues with data: its collection, visibility and analysis. It's no surprise that all of these issues are directly tied to data inconsistencies because **when it comes to collecting and analyzing data, no real-time visibility (41%) and manual processes (39%) are cited as the two leading challenges.**

What are your three biggest challenges in demand sensing and forecasting?*

No real-time visibility along the supply chain

41%

Current processes are too manual

39%

Inaccuracies in data within the organization, partners, and suppliers

37%

Difficulty working out interplay of macro-economic factors with demand

34%

No real-time sensing of demand and supply changes

33%

Processes built on outdated algorithms without agility to adapt

30%

Cannot ingest and analyze data in a timely way

30%

No short-term trend modeling capability

30%

Sensing demand changes throughout your supply chain ecosystem

26%

The capabilities respondents believe would most improve their ability to forecast demand correlate with their biggest challenges. For example, the biggest challenge cited by supply chain decision makers—the lack of real-time visibility along the supply chain—could be solved by the most desired improvement—the ability to **ingest and analyze real-time data** from many sources in disparate formats.

Which of the following would most improve ability to forecast demand?

Ability to ingest and analyze real-time data from many sources in disparate formats

27%

Integrated inventory management with ERP and EPOS to automate demand-sensing and forecasting

24%

Delivery of fast insights to frontline supply chain staff

15%

Use of prescriptive insights to provide real-time ROI-based decisions

15%

Embedding of analytics in processes

11%

Less human decision-making through automation

6%

Ability to use real-time data with existing systems or applications

2%

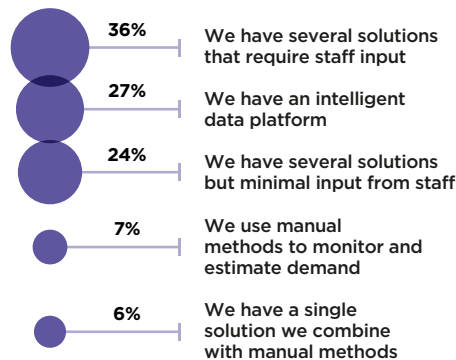


The challenges identified with demand sensing and forecasting could be the result of ineffective methods used to forecast demand. 36% of respondents currently have several solutions that require staff input, which can be both time-consuming and error prone, **while only 27% have an intelligent data platform**. This is most notable in logistics and transport with only 18% using an intelligent data platform, and 39% relying on several solutions that require staff input, as well as pharmaceuticals with only 19% using an intelligent data platform, and 52% relying on several solutions that require staff input.

36%

of respondents use several solutions that require staff input when forecasting demand

How do you currently forecast demand?





Fulfillment Optimization

Only 1%

of respondents achieve 80% or higher for their OTIF metrics

Measuring a supply chain against OTIF (on-time in-full) metrics is a key strategy that helps decision makers attach a tangible value to the success of their fulfillment and allows them to determine success strategies. Factors like planning tools, demand patterns, and innovations in technology contribute to the success or failure of fulfillment optimization.

Only a mere 1% of respondents achieve 80% or higher for their OTIF metrics, with the average percentage of OTIF being a mediocre 62.21%. When it comes to performing against OTIF metrics, there is certainly room for improvement.

How do you perform against on-time in-full (OTIF) metrics?

Achieve between 50% and 60%

33%

Achieve between 60% and 70%

63%

Achieve between 70% and 80%

4%

Achieve between 80% and 90%

1%

The ability to meet OTIF metrics is impeded by several issues. Most notably, respondents cited concerns around the high volumes and complexities of SKUs and the inadequacy of existing planning tools. Considering that the majority of

respondents are using manual processes, legacy systems, or multiple solutions from different vendors to integrate and prepare disparate data, this makes sense.

What are your three biggest challenges for optimization of fulfillment?*

High volumes and complexity of SKUs

59%

Existing planning tools are inadequate

51%

Volatile demand

42%

Current processes are too manual

39%

Lack of innovation

39%

No real-time visibility along the supply chain

30%

Unable to redirect inventory from anywhere in the supply chain

18%

Poor ability to adapt to sudden changes in production

13%

Poor agility in the face of disruptions

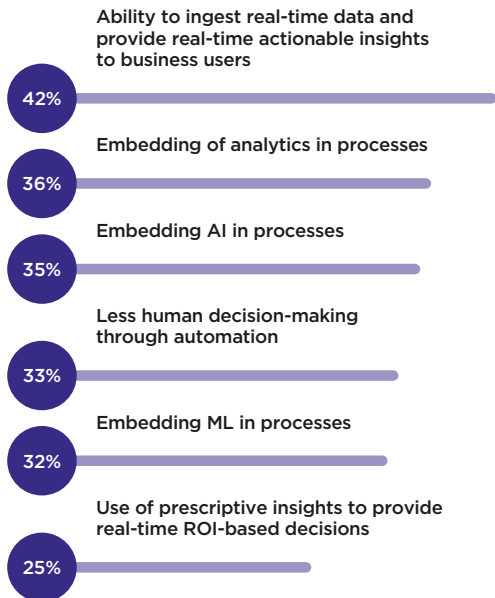
4%

Poor agility to meet customers' promotional requirements

3%

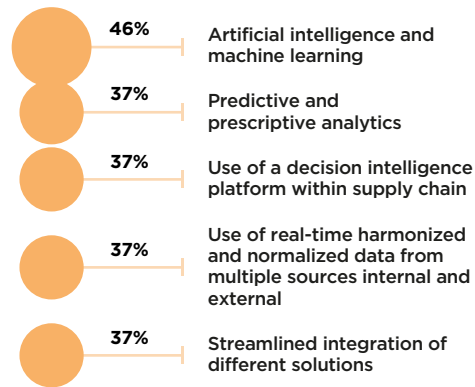
Given the challenge around the inadequacy of existing planning tools, it's understandable that 42% of respondents said the ability to ingest real-time data and provide real-time actionable insights to business users will improve fulfillment rates. Perhaps not surprisingly, the industries that reported they would see the biggest improvement in fulfillment rates if able to ingest real-time data and provide actionable insights to business users were automotive and aeronautics (55%), FMCG (44%), and manufacturing/CPG (43%).

Which of the following, if any, would improve your fulfillment rates?*



All respondents recognized the need to implement some form of data technology innovation to achieve fulfillment optimization, however there was a difference of opinion regarding which innovation respondents would most want to implement. Although there was a relatively even split on all responses, **AI and ML** stood out from the rest. This demonstrates the common desire to improve upon current systems and processes to make better sense of their data.

Which of the following data technology innovations would you most want to implement in your fulfillment processes to achieve optimization?*



100%
of respondents
recognized the
need to implement
some form of data
technology innovation





Supply Chain Orchestration

39%
of respondents stated
that the lack of
real-time performance
data is holding them
back from achieving
full orchestration of
their supply chains

It's no secret that unified, real-time data and metrics are the keys to success in supply chain orchestration. **The biggest barrier to achieving full supply chain optimization is having little or no integration of disparate data sources** (including systems and applications) according to 46% of respondents. It's worth noting that this barrier ranked consistently high across multiple industries, including automotive and aeronautics (46%), FMCG (56%), logistics and transport (52%), manufacturing/CPG (44%), and retail (45%).

A lack of real-time performance data also emerged as significant, as it was the second most common barrier holding respondents back from full orchestration. Without real-time data, organizations are unable to get an accurate, up-to-date view of all the moving parts within their supply chain.

What is holding you back from achieving full orchestration of your supply chain?*

Limited to no integration of disparate sources of data throughout the supply chain, including systems and applications

46%

No real-time performance data

39%

Outdated systems and applications

35%

Overwhelmed by data

30%

Weak digital culture

28%

No central planning capability

27%

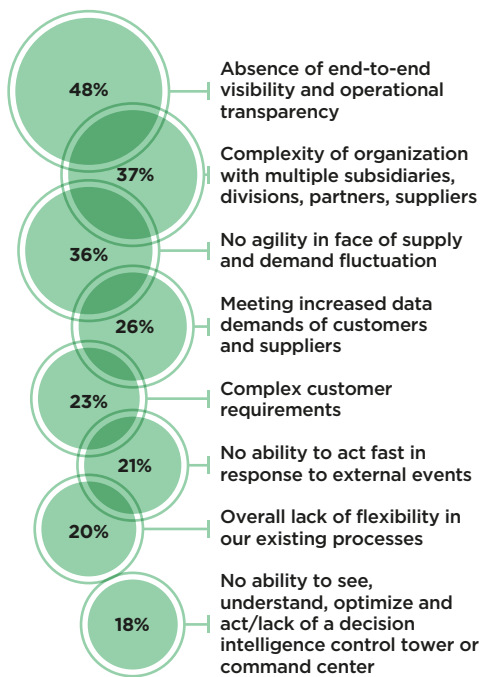
Reliance on manual processes

23%

In terms of challenges, 48% of respondents with a supply chain orchestration use case cited **lack of end-to-end visibility and operational transparency as their most significant challenge**. The higher their level of seniority, the more likely respondents were to say lack of end-to-end visibility and operational transparency are difficulties—almost 60% of VPs and Directors of Logistics selected this as a challenge, along with almost 70% of C-level respondents.

A lack of agility in the face of supply and demand fluctuation was also revealed to be a major supply chain orchestration problem.

What are your most significant challenges in supply chain orchestration?*



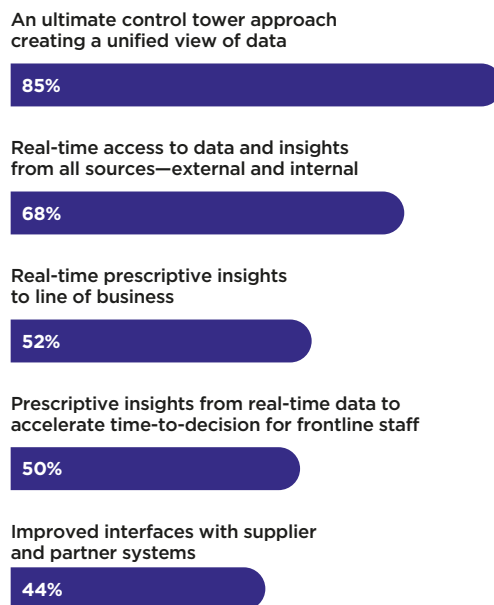
Looking at how supply chain organizations can overcome these challenges, almost all respondents agree that an ultimate control tower approach would most improve supply chain orchestration by giving them a unified view of their data.



The responses also emphasize the importance of real-time capabilities, a recurring theme throughout the survey. 68% of respondents said having real-time access to data and insights from every source of information they use—from inside and outside their organization—would most improve supply chain orchestration. **Half reported that providing real-time prescriptive insights to line of business users was another capability that would most improve supply chain orchestration.**

The access to accurate and timely insights would ultimately allow supply chain organizations to make more intelligent decisions across all areas of operation.

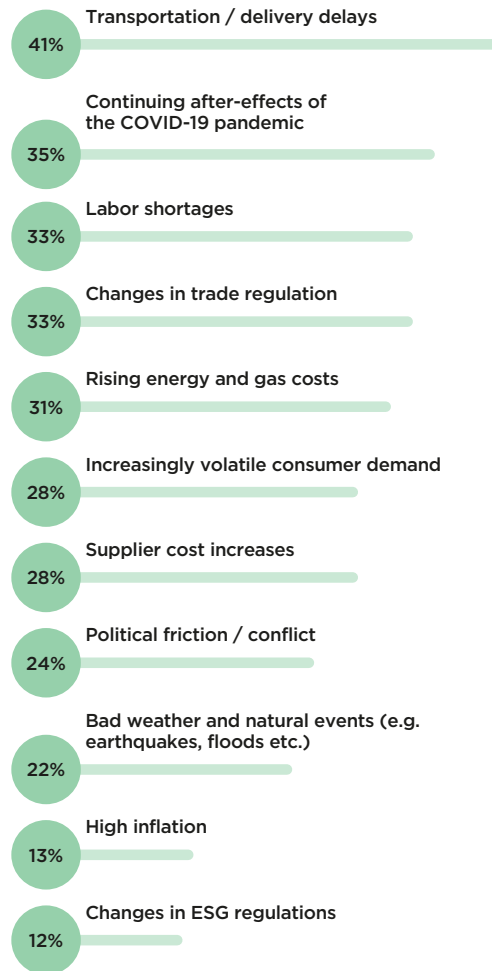
Which of the following would most improve your ability to improve supply chain orchestration?*



85% agree that an ultimate control tower approach would most improve supply chain orchestration

Regarding current disruptions to the supply chain, **the biggest standout was rising costs or inflation** as these choices were cited by a vast majority of respondents. Following costs and inflation, transportation/delivery delays have been the biggest disruption for 41% of respondents in the last 12 months, while 35% reported they still feel the effects of the COVID-19 pandemic.

Which of the following had the most disruptive impact on your supply chain in the last 12 months?*

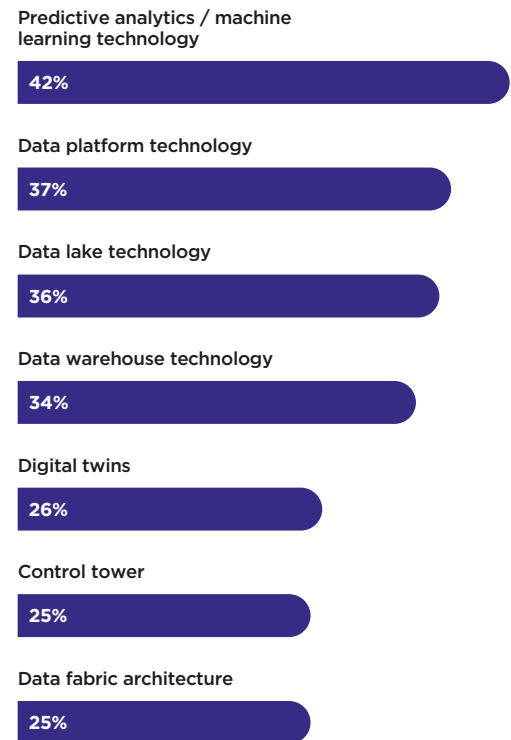


41%
of respondents said that transportation and delivery delays had the most disruptive impact on their supply chain in the last 12 months



Predictive analytics and machine learning are currently the front-running technologies that businesses are either evaluating or implementing to transform their performance in the supply chain. Other **innovative approaches such as a data fabric architecture and a control tower are also gaining ground.** A data fabric is more heavily favored by respondents from the retail sector (40% compared with an average of 25%). While most businesses are still making up their minds, the supply chain is evolving fast and now is the time to start looking at the options.

Which, if any, of the following are you currently evaluating or implementing?*





In terms of looking toward the future, **opinions appear to be split about which trends are likely to impact the supply chain most.** Respondents believe that the top trends impacting supply chain will be AI and ML, digital supply chains, and big data and analytics. There is a multitude of data challenges and risks to be evaluated when managing supply chain orchestration, not just one current trend.

Out of the current trends, what do you see impacting your supply chain the most?

AI and ML

19%

Digital supply chains

15%

Big data and analytics

12%

Data security and cybersecurity

11%

Robotics

10%

Supply chain risk and resilience

9%

Smart logistics and IoT

9%

Essential goods supply chains

5%

Circular and sustainable supply chain

4%

Fully outsourced service

2%

AI and ML was most commonly cited as the trend that would impact respondents the most





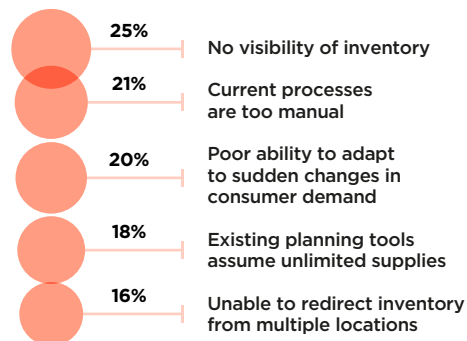
Production Planning Optimization

25%

of respondents stated that the lack of inventory visibility is their biggest challenge for optimization of production planning processes

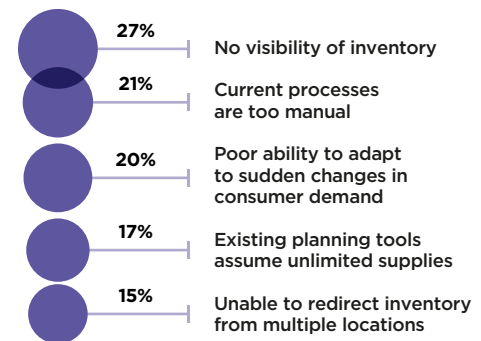
Disjointed or invisible data is a major problem for businesses that need to optimize production processes. Respondents cite having no visibility of inventory as their biggest challenge followed by issues with existing planning tools and manual processes. This is consistent with the data across all other use-cases, as antiquated or manual processes and a lack of visibility of data in supply chain are commonly cited challenges.

What is your biggest challenge for optimization of production planning processes?



When the same question about their biggest challenge was posed to respondents at organizations engaged in *repackaging*, the results were very similar. The lack of inventory visibility was also their top choice, while **challenges with manual processes proved more prevalent than challenges with existing planning tools**, though the change was nearly negligible. This indicates that both subsets of the production planning optimization use case could benefit from automated/digital tools to provide clearer visibility of inventory.

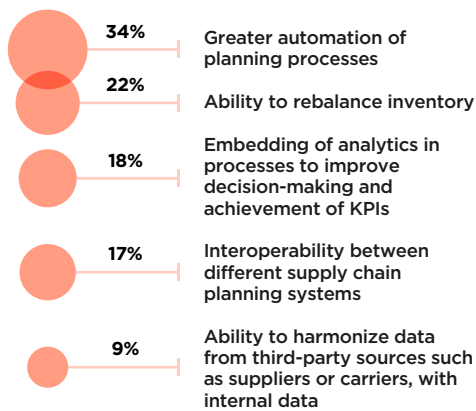
Specifically for *repackaging*, what is your biggest challenge for optimization of production planning processes?



In terms of future technologies impacting production planning optimization, automation of planning processes was respondents' top choice. This was followed by the ability to rebalance inventory and the embedding of analytics into decision making processes. Although respondents seemed split in what they thought would have the biggest impact on production planning optimization, the common theme between their selections concerns achieving greater visibility by implementing new data technologies.

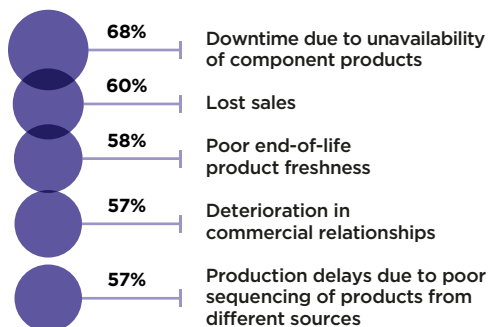


What would have the biggest impact on your production planning optimization?



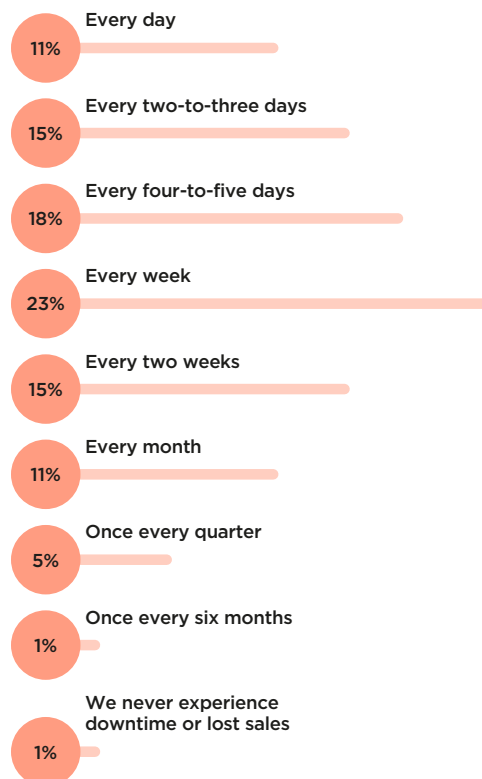
For respondents engaged in *repackaging*, the results were very similar, **supply chain decision makers most frequently pointed at the downtime caused by lack of component products.** Perhaps most notably, almost all C-level respondents selected this response. Other costly pitfalls reported were lost sales, and poor product freshness.

What pitfalls have you experienced as a result of poor production planning optimization?*



The most significant takeaway from the previous question is that **the majority of respondents experience lost sales from poor production planning**, but what's more significant is how frequently these sales are lost. Optimization failures in production planning are having a significant impact on supply chain organizations, with 67% of respondents revealing they lose sales at least weekly for this reason, with **11% of this large group experiencing sales losses every single day.** These numbers become even more daunting when added together over the span of a year.

How often does suboptimal production planning cause lost sales because of optimization failures?



34% of respondents stated greater automation of planning processes would have the biggest impact on their production planning optimization



Conclusion

These survey findings confirm that **most organizations lack the necessary capabilities to optimize highly complex supply chains** with interwoven dependencies.

To be truly agile and competitive, organizations must be capable of extracting critical insights in near real-time. But as things stand, this remains a significant challenge when so many businesses lack end-to-end visibility, or rely on manual data analysis and ad hoc assemblages of different solutions.

In the face of constant change, disruption, and opportunity, **organizations need a streamlined source of standardized, clean, meaningful, and reliable data that is available to business users.** InterSystems Supply Chain Orchestrator™ intelligent data platform eliminates the significant data challenges that supply chain organizations encounter on their path to insight-driven performance. The data platform provides the ultimate control tower, enabling razor-sharp, end-to-end visibility and unmatched predictive and prescriptive capabilities that take supply chain performance beyond the next level.

As an intelligent data platform, **InterSystems Supply Chain Orchestrator provides a complete view of an organization's supply chain**, harmonizing and normalizing disparate data from applications, suppliers, manufacturers, distributors, retailers, and consumers. Without replacing current systems, it acts as connective tissue, harmonizing and analyzing all types of data using AI and ML to uncover what is currently happening and to predict what is likely to happen next. Its prescriptive insights outline the best options, so teams can respond quickly with maximum effectiveness and minimum delay. The result is one reality, powered by unified data.

As supply chains become increasingly dynamic, **decisions around capacity and constraints are made with greater frequency and involve more variables.** An ultimate control tower, built with InterSystems Supply Chain Orchestrator will create a resilient, highly agile supply chain, enhancing orchestration from first mile to the last.

For more information, visit InterSystems.com/Supply-Chain-Orchestrator

Audience Data

Industry

Automotive and aeronautics – 10%
(45 respondents)

FMCG (fast-moving consumer goods) –
16% (72 respondents)

Logistics and transportation – 20%
(92 respondents)

Manufacturing and consumer packaged
goods – 17% (77 respondents)

Pharmaceuticals – 10% (45 respondents)

Retail – 9% (42 respondents)

Other industries – 17% (77 respondents)

Experience

Between 11 and 15 years' experience – 48%

15 or more years' experience – 52%

Seniority

Part of a senior group or team involved in
supply chain decision making – 58%

Ultimate decision maker – 26%

Influential in decision making – 16%

Responsibility

C-level / C-suite – 16%

Owners or partners – 8%

VP level – 76% including:

VP/Director of eCommerce – 18%

VP/Director of Distribution – 16%

VP/Director of Logistics – 17%

VP/Director of Transportation – 12%

Planning/Forecasting – 13%

Organization Size

Fortune 100 – 0.4% (2 respondents)

Fortune 500 – 62% (280 respondents)

Fortune 1000 – 37% (168 respondents)

Region

US – 22% (100 respondents)

UK – 11% (50 respondents)

Germany – 11% (50 respondents)

Australia – 5.6% (25 respondents)

Austria – 5.6% (25 respondents)

Brazil – 5.6% (25 respondents)

China – 5.6% (25 respondents)

France – 5.6% (25 respondents)

Japan – 5.6% (25 respondents)

Ireland – 5.6% (25 respondents)

Netherlands – 5.6% (25 respondents)

Singapore – 5.6% (25 respondents)

Switzerland – 5.6% (25 respondents)



About InterSystems

Established in 1978, InterSystems is the leading provider of next-generation solutions for enterprise digital transformations in the healthcare, finance, manufacturing, retail, consumer goods, logistics and distribution sectors. Organizations depend on InterSystems Supply Chain Orchestrator data platform to integrate and complement their existing supply chain applications and IT infrastructure to provide real-time, intelligent, actionable insights into supply chain disruptions, and accelerate time to value. InterSystems cloud-first data platforms solve interoperability, speed, and scalability problems for large organizations around the globe. InterSystems is committed to excellence through its award-winning, 24/7 support for customers and partners in more than 80 countries. Privately held and headquartered in Cambridge, Massachusetts, InterSystems has 36 offices worldwide. For more information, visit InterSystems.com/Supply-Chain-Orchestrator