Supply Chain Resilience

Planning and disruption management in an ever-changing landscape

The pandemic has been a true test of supply chain resilience – but how are companies reprioritizing and leveraging technology to react to changing situations?

Contents

Acknowledgments

We would like to give our wholehearted thanks to those who gave their time and expertise to this project:

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Case Studies

Blue Yonder's Luminate® Platform has seen marked improvements in supply chain visibility and planning across multiple sectors. More details can be found at the end of Chapters 2 and 3, or by accessing the case studies online:

- Microsoft Cloud Supply Chain Partners with Blue Yonder to Maximize Service and Reliability

- Armada Cuts Disruption Response Times by 65%

- Business Revenue Grows 10% for Mahindra & Mahindra

- HERBL Cuts Operating Expenses by 20%

- PepsiCo Latin America Achieves Over 80% Forecast Accuracy, Driving Greater Precision

Introduction

With all the best technology in the world, nobody could have predicted the events of the turn of the decade. The conflict in Ukraine has had catastrophic impacts on the availability of raw materials, energy prices, and general economic stability. With the timing off the back of a post-pandemic recovery, there has never been a more difficult period for supply chain professionals.

In spite of this, the pandemic taught organizations some key lessons, namely in agility and forward planning. It also emphasized the need for trust and collaboration, shifting key performance indicators from long-term views to short-term survival tactics.

This report examines the events of the pandemic and beyond from the perspectives of six companies. These collaborations offer key insights into the impacts on supply chains in the food, consumer products, pharmaceutical, and healthcare industries. Likewise, the invaluable insights from the report sponsor, Blue Yonder, showcase the need for supply chain planning, execution, and Control Tower technology in an ever-changing landscape.

Starting with a snapshot of resilience in today's volatility, uncertainty, complexity, and ambiguity (VUCA) world, we examine the influencing factors on supply chain – including 'black swan' events and changing customer behaviors. We then discuss the importance of end-to-end visibility, and how it fosters collaboration, driving efficiencies and putting the customer first.

Looking ahead, we study the impacts of short, medium, and long-term supply chain planning. We consider the effects of both micro and macro factors, and how they have a role in future forecasting. Each contributor offers their own perspective on scenario planning, emphasizing the importance of not just looking back, but forward.

We also consider the value of people power, understanding how supply chain roles have adapted into technology roles. We look at recruitment and the new generation of supply chain professionals, and how we can leverage technology to foster cultural transformation and new ideas.

It would be short-sighted not to look at sustainability, too, and discuss how climate change factors into organizations' long-term plans for resilience. We examine some companies' strategies and look at the long-term implications of switching to alternatives. In tandem, we underscore the importance of having a 'Plan B' – seeking alternative suppliers to mitigate the effects of conflicts, labor gaps and raw material shortages.

Finally, we explore the future, analyzing the differences that digital transformation is making in the here and now. We look forward and consider the technology that will shape supply chain in the future – powering decision-making and even saving lives. We begin to understand the role automation will play in saving time and bureaucracy.

We'd like to offer our deepest appreciation to all the contributors to this supply chain resilience report. Their continued dedication to innovation will see them weather the storm of future events. Paired with technology such as Blue Yonder's supply chain planning, execution, and Control Tower, these organizations will have the foresight and tools to succeed long-term.

Chapter 1: Defining the Problem

The turn of the decade has been defined by 'black swan events' – first, an unprecedented global pandemic, and second, a devastating conflict that has sent ripples throughout the world. In the wake of these events, we are compelled to question the very meaning of 'resilience.'

In the world of supply chain management, the definition is shifting. Mathieu Linder, Vice President Product Management Group at Blue Yonder, explains how the pandemic changed things.

"The way we approach resilience has changed with COVID, as well as Ukraine and rising energy costs. Organizations are seeking ways to rebuild their business model."

Indeed, Blue Yonder are not the only company considering evolution in changing times. In 2019, Colgate-Palmolive announced their Reimagine 2025 strategy. Luciano Sieber, Vice President of End-to-End Supply Chain for North America, says that resilience was one of the pillars of the company's strategy. "Resilience has a clear definition at Colgate: thriving in a world of uncertainty."

On a broader level, we can think of resilience in supply chain as "responding to events in an agile manner with speed." Such is the focus for AstraZeneca, whose pandemic response has been a key driver since the turn of the decade.

Rogerio Pezutto, Vice President for North America Sales and Operations/Integrated Business Planning at Estee Lauder, ponders the word's Latin origins. "Resilience comes from the Latin 'resilire,' which means to recoil or rebound. In mechanics, this is about the ability to deform and absorb stress. But in supply chain it comes down to two things: how the problem can resolve itself, and how we react to consumer trends."

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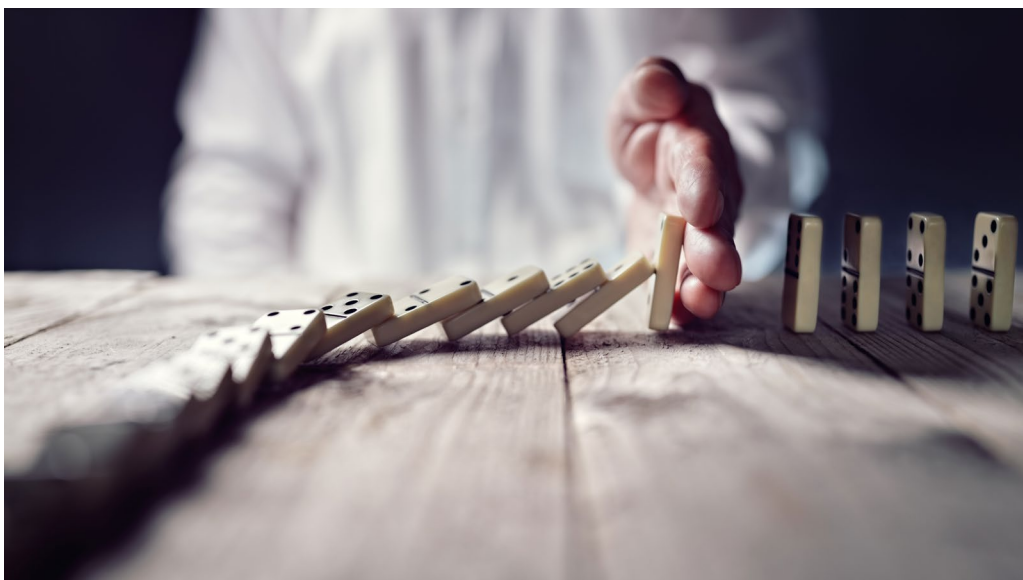
Changing customer behaviors

Certainly, there are multiple drivers for resilience in a post-pandemic world. Much of this depends on the industry itself – for example, the conflict in Ukraine has had a devastating impact on food production.

David Boulanger, Executive Vice President and Chief Supply Chain Officer at Arla Foods, says: "Ukraine is at the heart of all the issues. It's driving many things that are impacting businesses both directly and indirectly. Lots of animal feed is produced in Ukraine and Russia, while we're also concerned about our reliance on Russian gas for our factories. By comparison, COVID was far more controlled – the main issues were with labor shortages. We're still discovering the knock-on effects of Ukraine to this day."

But another driver for supply chain resilience is changing consumer behaviors. As the world continues to adapt to changing post-pandemic demands, supply chain planners must look forward in order to anticipate customer needs.

Linzell Harris, Senior Vice President of Global Supply Chain and Strategy at AstraZeneca, says: "Our patients have changed during the past two to three years. Our patients' ability to maintain their requirements, plus our own portfolio of products, have changed during these disruptions. There are so many variables that drive the significance for resilience, from suppliers to patients and world governments."

Likewise, changing customer behaviors affect non "life or death" industries. Michael Spandau, Chief Innovation Officer and Senior Vice President for Global IT at Fender Musical Instruments, says: "Our world has been turned upside down. We saw 200% growth, 300% growth – everyone is trying to figure out what the new normal is."

While the uptake of a lockdown hobby may not be long-term, there are broader changes on the horizon. Linder at Blue Yonder warns that buying behavior has impacted demand – and that organizations are re-segmenting their portfolio.

The question now is how these drivers – be they energy costs, COVID labor shortages or wider conflicts – affect organizational KPIs.

How KPIs are changing

One of the key performance indicators most affected by the pandemic is fill rates – a unanimous factor across all industries. This has catalyzed a shift to shorter-term thinking. Harris at AstraZeneca says: "From an operational management view, we have focused on a high level. Our priorities would have been on a three or six-month basis, but now we're managing on a daily basis."

In tandem, lead times are affected – with delivery windows turning from one week to six weeks in some industries. Coupled with a rise in consumer demand, this has put extra emphasis on the need to be agile. Sieber at Colgate-Palmolive says: "Many KPIs have been affected in one way or another, but we have a very good grasp of the situation.

"While on-time delivery was always a priority for us, we had to be more agile in the way we responded. It could be that one site was lacking labor, or another couldn't get access to raw materials. We would need to activate alternative supply sources."

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Diversifying sources

A key component for organizational agility has been a diverse range of suppliers. At Colgate-Palmolive, seeking alternative suppliers is a key discipline that the team has practiced for 15 years. It's something others are embracing too, particularly when it comes to risk management. Boulanger at Arla Foods says agility is upstream.

"We need to balance the risk, not just with suppliers but with formulating products and changing recipes. The same applies to manufacturing and energy. We don't want to rely on fossil fuels."

People power

Ed Magee, Executive Vice President of Operations at Fender Musical Instruments, also agrees that everything is moving upstream. But while a diverse range of suppliers is essential, so too is a strong internal team. Magee adds that people power is key – ensuring the right teams are in place to prevent errors.

"We need to factor in thinking time. This is especially important in manufacturing. We have to ask ourselves, what did we learn from the pandemic, and how can we make sure we don't repeat it?" Spandau agrees, stating that the right teams need to update ERP constantly to keep lead times in check. "If you have the wrong lead times, everything is affected."

New considerations

It would be remiss of modern enterprises to dismiss sustainability in their supply chain. While perhaps not an immediate priority but a medium-term goal, sustainability can be a KPI for supply chain managers. Linder at Blue Yonder says: "Companies are reviewing their targets, including CO2 emissions. We are seeing growth in these KPIs, but the level of maturity is fairly low. For example, it's easy to measure emissions from a plant or distribution center, but what about when you're sending goods via a plane? There is still progress to be made and this is where software can help."

Chapter 2:
The Current State of Supply Chain Resilience

With new considerations for supply chain resilience, from post-COVID recovery to sustainability, visibility is no longer a luxury. According to Pezutto at Estee Lauder, this comes down to two key factors: volatility in markets and volatility in supply.

"End-to-end supply chain visibility is vital for disruption management. We need to partner with consumers and suppliers – we can't rely solely on solutions from within. At Estee Lauder, we always seek win-win solutions, being collaborative internally and externally, and partnering with customers and suppliers."

Collaboration continues to grow in precedence. Harris at AstraZeneca describes end-to-end visibility as "10-times more important" in today's world. "Visibility is not just end-to-end as we know it, but an extension of the supplier's suppliers. We have to consider the logistics carriers and the networks, brokers, and internal distribution. The scope of end-to-end has expanded, and visibility of that is truly critical."

Likewise, internal and external visibility is crucial – as echoed by the team at Fender Musical Instruments. Magee says: "End-to-end visibility is essential for managing buffers and flow. We don't want to see surprises all the time – we need internal and external visibility to be reliable. That starts from within – forecasting well to manage disruptions in supply chain."

Once again, this highlights the need for a diverse range of suppliers, as Sieber at Colgate-Palmolive comments. "The ability to anticipate issues is critical. Once you're aware of all the issues you could face, you'll be able to activate alternative sources. Visibility has been the lifeblood of our supply chain – looking ahead to activate different plans and react."

For others, visibility is the starting point. Linder at Blue Yonder says: "End-to-end supply chain visibility is essential for disruption management. It's the starting point – for example, with the war in Ukraine, we could look at fertilizers being produced there.

"The first question to address is how long we'll survive with the stock we have. Then it's a case of how much and when it will arrive over the next two to three months. Finally, we look at how we can mitigate it and come up with plans."

Developments and investments in supply chain visibility

Buffers, flow, and all-around collaboration cannot be managed without the proper tools in place. As such, we are seeing a lot of developments and technological advancements in visibility, with each industry taking a unique approach.

In food manufacturing, the team at Arla Foods have invested heavily in Control Tower software. Boulanger says: "I know many companies that have invested in visibility, largely in response to COVID. We had already started investing into planning before the pandemic, but today we're seeing a lot more Control Towers in place. This helps people have more control of their suppliers and manage things in a more agile fashion. There's a huge investment increase in this area."

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The Control Tower model – pioneered by Blue Yonder and often imitated – has been revolutionary in providing team-time feedback. Linder adds: "Everyone has invested in real-time visibility in the supply chain, but large organizations have multiple nodes. Companies struggle to have visibility across all SAP and ERP instances.

"Blue Yonder started with Electrolux in 2018. We built a layer on top of clients' ERPs, so they could see at any time where goods were. Visibility has been amplified today – we're looking at scenarios like checking how many orders we can fill if we can't source goods from China."

In the pharma world, the team at AstraZeneca are investing in three key areas for real-time information. Harris says: "We're looking at visualization tools to view the network. We're also using advanced planning packages to plan our parameters in a much more visual way. Meanwhile, digital twin development is helping us conduct scenario planning at a higher level than before."

While visibility is key for stock management, it can also play a role in manufacturing – as evidenced by Fender Musical Instruments. Spandau discusses the "artistic process" involved in creating the perfect product and the sensitivity of particular environments.

"We track wood stabilization throughout the entire manufacturing process, looking at how long the wood has been maturing. We have yellow and green light systems to indicate whether or not we should move on to the painting stages."

This highly meticulous process is made even more challenging by exterior factors. Magee at Fender Musical Instruments describes the tough climate conditions for one of Fender's factories in Ensenada, Mexico. "We're always finding new ways to improve reliability and predictability, giving us a line of sight on things like wood conditioning.

"In our Ensenada factory, we have to adjust to the humidity – but Michael and his team have great visibility thanks to dashboards, monitoring and alarms, all of which help us determine when the wood is ready for the next step."

The outcomes of better supply chain visibility

From risk management to better order fulfillment, organizations have benefited enormously from these investments. In particular, maintaining better flows of communication has helped to avoid disruption. Spandau at Fender Musical Instruments adds that even shop floor workers are benefiting from visibility, working together towards a broader organizational goal.

This transparency forms just one of many best practices for visibility – and the results speak for themselves. At AstraZeneca, teams were able to maintain their stock availability and service levels above their targets, despite being in the midst of a pandemic. Similar to Fender Musical Instruments, this also crossed over with the shop floor.

Harris says: "We used a number of business intelligence tools to give us data visualization capabilities on the shop floor. This helped to improve manufacturing efficiency, connected portals and supplier bases for one integrated package. Being able to react and maintain our service levels throughout a vaccine rollout was a huge achievement."

Avoiding silos

Another recurrent theme in today's supply chain is the need to avoid silos – bringing teams together in a collaborative effort to manage disruption. Pezutto at Estee Lauder says: "We focus on maturing our integrated business planning process. We needed to have supply chain involved with our commercial partners, not as silos but as an integrated area."

Supporting this notion is Sieber at Colgate-Palmolive. He says: "A flaw in many supply chains is looking in silos. In reality, there are a series of elements in an end-to-end supply chain. We need to make sure all systems and processes operate as a unit. This will allow you to communicate. We understand that issues will come and go, but those who thrive in an uncertain world operate as one. We operate end-to-end at a divisional and global level. It's essential to have the right systems in place to achieve that visibility."

Putting the customer first

The current VUCA environment is also putting more emphasis on customer care. Boulanger at Arla Foods says: "There are two levels of visibility – top level and local level. We need that additional local level visibility from suppliers to customers to make the right decisions. We do everything we can to go further upstream and downstream, and this is where we find the most value."

Linder at Blue Yonder adds that visibility is all about people. "Today we can see data in real time, instead of the next day or even the next week. By sharing value driver data, we see improvements in service level and productivity."

Indeed, the team at Estee Lauder have empirical evidence of this. Pezutto adds: "The pandemic has accelerated our need to synchronize the supply chain and put the customer first. One change we've implemented is incorporating customer orders into the supply chain process. As a result, we've seen a 10% increase in service metrics.

"We measure fill rate and on-counter service. As we've applied this methodology, we've seen service metrics increase both internally and externally. It's no doubt given the brand a boost."

Risk management

By leveraging tools, organizations are now better equipped to deal with disruption. Linder notes the importance of machine learning for managing customer service. "Not only can we study real-time data as it happens; we can also archive it and feed it into machine learning models to better predict times of arrival.

"Rather than relying on an ETA, we have the historical data to give a better-quality prediction of when stock will arrive. This helps organizations plan better, for example, checking what stock they have available, or offering customers an alternative at a discount."

While there truly is no silver bullet for supply chain planning during black swan events, organizations can learn from their data. The benefits of collaboration and a customer-centric shift have helped these companies weather the storm of macro factors – and they will take their learnings with them in years to come.

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Real results

Microsoft Cloud Supply Chain partners with Blue Yonder

Microsoft Azure is the supplier of choice for 95% of Fortune 500 companies. The team chose Blue Yonder's Luminate® Control Tower to maintain high levels of service and reliability, monitoring data centers in 34 countries.

With 200 products and services to help customers build, deploy, and manage cloud applications, Microsoft needed real-time, end-to-end visibility. Blue Yonder partnered with Microsoft at a time of substantial growth – with more the 200 data centers, and 50 to 100 being added every year.

With a geographically distributed network of manufacturing, transportation, distribution centers and channel partners, Microsoft needed an uninterrupted service. Blue Yonder's Luminate® Control Tower, powered by artificial intelligence and machine learning, monitors this complex network in real time.

Microsoft are now capable of making faster decisions and maintaining post-pandemic resilience. They said: "We're grateful to Blue Yonder for helping us build a world-class supply chain that's agile, resilient and innovative."

Armada cuts disruption response times with Blue Yonder

With approximately $4 billion in revenue, Armada provides supply chain solutions to some of America's largest restaurant chains. The nationwide company moves 100 million cases per year, comprising around 450,000 truckloads. One in eight US citizens benefits from its services each day.

Armada's goal was to create a digital thread across their locations throughout the US, enhancing visibility and connectivity for network stakeholders. In turn, this would lead to greater agility and responsiveness in the face of disruptions.

Having used Blue Yonder's services for some time, Armada became an early adopter of Luminate® Control Tower. This would enable their Profitable Response OrchestrationTM solution. With artificial intelligence and machine learning at the helm, Armada could monitor conditions in real time, connecting orchestrators with network stakeholders.

This resulted in 96% of disruptions being detected in under an hour, a 65% reduction in disruption response times, and $1 million in early freight cost savings. They said: "Our long partnership with Blue Yonder gives Armada the ability to stay at the leading edge of technology, taking us from legacy systems to true digital transformation."

Chapter 3:
Supply Chain Planning as a Strategic Solution to Disruption

Never has the value of data been so high as it is in today's VUCA environment. But in any organization, the true skill is knowing how to harness this data to make the right decisions – leveraging tools to look at snapshots, long-term trends, anomalies, and the past or present.

When it comes to supply chain planning, these organizations need to take both a strategic and operational approach. In tandem, this requires planning in both the short and long term to manage disruption.

Estee Lauder break this down into three "horizons." On their strategic horizon, they look at the long term, while on their operational horizon, they look at the medium term – between two and 12 months. Finally, the execution horizon looks at the next one to two months. Pezutto says: "We have clear plans for three horizons. If you don't sequence them correctly, you could run into problems."

Echoing this short and long-term strategy is the team at Arla Foods. Boulanger says: "We mean to look at things from both a strategic and operational perspective. In the short term, people on the front line must have access to end-to-end information, and we're growing our investment in these areas.

"On the tactical and strategic horizon, you need to make decisions – how you organize your flow long-term to be more resilient." He cites energy as an example, stating that in the short term, fossil fuels will be in short supply, but investment in renewable fuel is long-term. Again, there is also the need to be diversified in sourcing – without having to rely on Ukraine alone.

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Mitigating supply issues

Strategic planning is essential for avoiding supply issues, as evidenced by the current food production struggles with Ukraine. Linder at Blue Yonder warns that supply chain has become too fragile with a single source. "Today, everybody is mitigating with at least a dual source, if not more. From a strategic perspective, we need to think of a second resource of supply.

"We need to consider how long it will take to onboard them, how much they'll cost and whether or not they'll give us agility to mitigate these circumstances."

This is something the team at Colgate-Palmolive has practiced for many years, as Sieber explains. "Companies are using both strategic and operational level planning to fight disruption. If you look at our brand's pre-COVID operational level, there weren't many disruptions save for hurricanes or one-off events.

"We have always done evaluations of alternative suppliers for materials. If one facility is not operational, statistically, we know how to exercise our muscles at an operational level. Throughout the pandemic, we have executed global strategies."

Relying on talent

Much of the value of supply chain planning comes from people power. In some industries such as pharma, there is simply no way of relying on a single source – but likewise, people are essential for mitigating errors.

Harris at AstraZeneca says: "You must elevate the planning talent and the core capabilities to deal with this VUCA environment. This level of change requires a deep understanding of its implications across the network."

AstraZeneca regularly uses training academies, benchmarking capabilities, and external groups to promote this planning talent. Likewise, the team at Estee Lauder acknowledge the power of strong recruitment. Pezutto adds: "More and more, supply chain professionals need to be IT professionals. They need to understand data, systems, and how they interact. We are trying to hire people with that skillset.

"We also have big internal processes – lots of training where cultural transformation is required. We're trying to hire generations with new ideas and ways to deal with this VUCA world – a sort of reverse mentorship model."

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Planning for all scenarios

The VUCA events of the pandemic and beyond have led organizations to "expect the unexpected," putting additional pressures on scenario planning. Magee at Fender Musical Instruments says: "I think it's about stepping back and simplifying. We need to go back to basics – the tendency is to hang on to that latest trend too much.

"We're living in very unique times and we have seen brands get it wrong. We need to run experiments and stay two steps ahead."

Fender Musical Instruments achieve this by focusing on what they can control, particularly within the confines of a new "Zoom world." They use a Failure Modes and Effects Analysis (FMEA) to map their processes end-to-end, leveraging essential "thinking time."

Harris at AstraZeneca suggests that different industries will have different drivers – for example, immediate response on shelves for fast moving consumer goods. "We see generics for pharma or premium luxury goods. The products must be on the shelf or else the competition will take over your market share.

"In the pharma world, patients can't switch as easily. We now see changes when countries tell us they have a one-month supply as a signal. It's happening a lot in European markets, so being able to plan and adjust is critical."

"Dynamic contingency"

At Colgate-Palmolive, supply chain professionals regularly run exercises to plan for all different scenarios. Sieber says: "We use the term 'dynamic contingency.' On paper, scenarios are very easy to run, but in reality, you never know what's going to hit. On an operational level, we look at what we would do in each scenario, like the conflict, the situation with lockdowns in China – we review the risks every week constantly and develop action plans.

"Then we formulate actions to prevent these scenarios from impacting us. This could be activating alternative sources, increasing inventory for contingency, or finding extra labor." Sieber adds that sometimes, macro factors may not be immediately obvious – and the team makes plans to spot them before they reach the media.

"We also identify weak signals, for example, what are the indications that something is changing, but hasn't made the news yet? Usually, people react to what they read in the news – but if you read carefully, you can identify the next big thing."

Similarly, it's important not to fall victim to assumptions – including the assumption that all scenarios will play out. Pezutto at Estee Lauder says: "The big thing we learned before the pandemic was to work with commercial partners. They understood that demand planning was uncertain. Once the forecast was set, we predicted that it would be met – but now we realize we need to build scenarios in both supply and demand."

While all industries are facing similar issues, Pezutto notes, it is the speed of the product cycle that determines their response. This is where integrated demand and supply planning becomes so essential – avoiding "life or death" scenarios and meeting customer expectations regardless of the outside world.

A single source of truth

While people are essential for mitigating risk, they also need to collaborate for integrated demand and supply planning. Boulanger at Arla Foods says this comes down to a need to harmonize data. "Everyone has their unique version of the truth – there's no time to fight and challenge everyone's information. If you have the right processes and organizational capabilities to do that, you can make decisions at the right level. This is essential for local and short-term planning."

Linder at Blue Yonder adds to this, saying we need to bring demand and supply planning together. "We need a single source of truth. Today, planners are supply or demand planners. We used to say it should be one single role or become closer together. Our tech enables teams to collaborate better. In the longer term, tech should negate the need for planners – automating scenarios and leaving staff to do fewer menial tasks."

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Looking forwards and backwards

While forecasting tools can be incredibly helpful, Magee at Fender Musical Instruments warns that they can be wrong up to 50% of the time. Spandau supports his comments, citing the pandemic as a key event.

"Forecasting sounds simple, but how do you develop and create good forecasting models in a post-pandemic world? All the models are showing anomalies because they don't take the pandemic into account. The conflict in Ukraine is a great example – it would be great to see how macro developments make a difference. Most forecasting models have trouble considering external factors."

Sieber at Colgate-Palmolive concurs. "I would say the best practice for integrated demand and supply planning is to use tools that allow you to look forward. From my perspective, past data is interesting, but if you take the pandemic, it can be irrelevant. Signals are distorted and it's hard to make decisions based on that. We should use end-to-end tools to look ahead and anticipate the effects of events."

Connecting the business

Pezutto at Estee Lauder adds that connecting the planning organization to the business is fundamental. "For example, instead of being a supplier or demand planner for our processes, we'd do it for lipsticks or skincare instead. You understand the market and the business, and this allows you to be proactive."

Harris at AstraZeneca adds that challenges must be approached at an enterprise level. "Demand management is not a commercial or operations issue – it is an enterprise capability. Each group has to be accountable in stakeholder ownership on what the forecast is, and how fast we can sense and respond. Joint accountability is one of the best practices for me."

What's next?

While the pandemic may have catalyzed short-term changes, its long-term effects could help organizations to predict and react to black swan scenarios. While we are already seeing investment in key areas such as forecasting, scenario planning, collaboration, and visibility, there are still developments to be made.

The future of supply chain resilience may rely on tech – but it has people at its heart.

Real results

Business revenue grows for Mahindra & Mahindra

Mahindra & Mahindra is the world's number-one tractor company by volume. The Spare Business Unit (SBU) provides vehicle and tractor spare parts, with more than 100,000 SKUs and 21 distribution centers.

The SBU came to Blue Yonder with a challenge – they were losing sales revenue to stocks and tight working capital, as a result of high inventory investments. They were manually analyzing and using Excel to create demand and supply plans, which were not adequate for the scale of their business.

Mahindra & Mahindra onboarded Blue Yonder's Luminate® Platform to provide more accurate forecasting and replenishment, fueled by artificial intelligence and machine learning. They saw a 10% increase in business revenue, a 10% service level increase, a 20% decrease in inventory investment, and a 40% decrease in customer response time.

HERBL cuts operating expenses by 20%

HERBL is California's largest cannabis distributor and supply chains solution company. They came to Blue Yonder at a time of explosive growth, servicing more than 850 storefront and non-storefront retail licensees.

Having grown from $20 million to $200 million in revenue over just three years, HERBL had to meet this growing demand sustainably. In tandem, they would need to meet strict regulatory requirements while supporting their retail partners. Blue Yonder implemented artificial intelligence and machine learning solutions with Luminate®.

These would increase demand visibility, support fact-based decision making, and enable HERBL to execute more efficiently. The Luminate® Platform offered greater transparency and traceability, helping to meet regulatory requirements. The HERBL team saw a 20% reduction in operating expenses and a 15% improvement in productivity.

They said: "We made the decision early to partner with Blue Yonder because it's an industry-leading commercial software provider with strong cloud capabilities. Blue Yonder is proven to work at scale."

PepsiCo drives precision with better forecasting accuracy

PepsiCo Latin America employs more than 70,000 people in 34 countries, with more than $7.2 billion in annual sales. As a long-time Blue Yonder customer, PepsiCo Latin America sought a new solution: a customer-focused and synchronized value chain, with standardized usage of supply planning and execution solutions across 16 countries.

Demand variability, materials costs, and transportation costs all fluctuated regularly – requiring greater speed, accuracy, and responsiveness. Blue Yonder implemented a suite of solutions including demand planning, supply planning, inventory optimization, shipment scheduling, and promotions. Known as "Horizon," this is the largest supply chain transformation effort in PepsiCo Latin America's history, extending to 34 countries.

The team saw forecast accuracy levels above 80% across multiple countries. Costs were reduced, with marked improvements in warehouse capacity planning and plant utilization. They said: "Blue Yonder is helping us achieve our mission: to be an integrated supply chain, to generate value not only for our customers and consumers, but also to have that same value throughout the supply chain and in our supplier relationships."

Chapter 4:
Future Plans for Supply Chain Resilience

The events at the turn of the decade have doubtless caused an organizational reshuffle. The lessons learned have put a renewed focus on agility and collaboration, with short-term goals taking precedence over operational, long-term concerns.

Over the next few years, we should expect these organizations to make strategic investments in people and technology. One company taking this two-pronged approach is Fender Musical instruments.

Leadership development

Magee at Fender Musical Instruments says the team plans to continue investing in people. "We're going to look at problem-solving and management, as well as leadership development. We want to create an environment where people feel comfortable raising their hands and saying there is a risk. This will help us to get to the single source of truth fastest."

Similarly, Arla Foods is incorporating recruitment into its forward supply chain resilience strategy. Boulanger says: "We have to consider labor and how to ensure we're attractive as a company. It's about creating the right working environment in the factories to embed digital transformation. In the future, new generations will want to work for digital companies with new technologies."

Harris at AstraZeneca adds: "We really need to invest in people to maintain our ongoing agility. We have a strong business continuity planning processes, so it's all about how the entire network interacts."

Climate considerations

Sustainability is moving from a luxury to a key driver for today's supply chain – particularly when we consider the effects of climate change. Boulanger says that in the long term, Arla Foods wants to look at renewable fuels to counter reliance on Russian fossil fuels.

Other organizations have key strategies for sustainability, such as AstraZeneca. Harris says: "Sustainability will be key and will impact our ability to be agile." The company produces annual sustainability reports and in February 2022 announced new targets.

AstraZeneca is one of the first seven companies to have its net zero targets verified by the Science Based Targets Initiative, in line with their Corporate Net Zero Standard. By 2025, the company aims for 95% of its key suppliers to have science-based targets.

Colgate-Palmolive, meanwhile, has produced its 2025 Sustainability and Social Impact Strategy. The plan sets ambitious targets for reducing plastic waste, conserving water, and improving oral health, including: eliminating one third of new plastics as part of the transition to 100% recyclable, reusable, or compostable packaging by 2025, achieving Net Zero Carbon emissions in global operations by 2040, sourcing 100% renewable electricity for global operations by 2030, and more.

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Investments in digital transformation

With companies like Arla Foods wanting to attract a new generation through digital tools, now is the time for key investments. Boulanger says: "We have an ecosystem of tools in our factories – many of which are remote control, which saves essential time on travel. There's a positive business case for these, and there are many more examples.

"We're also investing in tools that reduce bureaucracy. A pillar of our digital strategy is to use physical automation to reduce physically difficult tasks. We're looking at robots and AGVs, for example. Likewise, we want to use advanced analytics to take data from our machines and use artificial intelligence to optimize it further."

Over in the cosmetics industry, the team at Estee Lauder has built a suite of tools for decision-making. Pezutto says: "These tools merged different databases and generated insights to make decisions. We're also using artificial intelligence to identify trends, and data warehouse management systems for further insights.

"Bringing this to real life has unlocked so many opportunities for us. Something like a shortage in raw materials will become knowledge in Salesforce, so the customer is aware. The trust and visibility are revolutionary for us."

For Harris at AstraZeneca, it's a case of how fast they can move. He says: "We're making strategic investments in advanced planning systems and moving forward with them at lightning speed. Our Factories of the Future Program has multiple digital investments on the shop floor for efficiency and lead time reduction."

The benefits of digital transformation

While many of these plans are still a work in progress, today's supply chain professionals are already benefiting from digital transformation. In a 2020 survey by Gartner, 33% of supply chain planners saw their customer experience increase when digitizing their Control Tower.

The benefits go far beyond customer experience alone. In a case study with a global beverage giant, Blue Yonder revealed how the drinks manufacturer remained resilient through changing weather conditions. Linder says: "These disruptions require a new paradigm of organization – it is no longer viable to respond with short-term responses and local optimizations. The supply chain team is building layers of intelligence that allow them to respond to local markets and continue to optimize at a global level.

"Lots of companies spread out across Europe have the same problem. Is it the right resilience model if weather is warm in Spain and Italy but cold in the UK? This has a huge impact on demand." Using tools such as Control Towers helps these organizations to understand stock levels in real time, as well as sales orders and goods in transit."

Linder adds: "Our clients leverage Control Tower to see where things are, as well as use our analytical frameworks to predict what's going to happen in the short term."

For others, the benefits may not be as specific, but they are highly valuable. Harris at AstraZeneca names four key drivers for digital transformation: visibility, speed, agility, and faster decision-making. He says: "There will always be a trade-off between cost and service, but at the end of the day, we must never forget that there is a patient behind it. Our focus is always on health – we must supply because lives are at stake."

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Connecting people

At Fender Musical Instruments, the connection between people and technology is clear. Spandau says: "When you connect people to the purpose of the business, whether they're on the floor or at the top, this helps to build trust and identify risks." The team is leveraging machine learning tools and cloud technology to access all business processes – creating essential transparency.

Sieber at Colgate-Palmolive suggests that the visibility these tools bring means we don't need to rely on people's insights alone. "Visibility gives us the ability to predict in different scenarios. This brings us agility and better competitive advantage. If you have visibility on what you're selling, it augments teams' analytical thinking, leading to better decisions. We use tech to forecast and predict, which helped us to react faster."

While each industry has varying priorities, the merits of tools like Blue Yonder's supply chain planning, execution, and Control Tower cannot be underestimated. End-to-end visibility is an essential for every organization – and these insights are driving us forward to navigate through even the toughest of times.

Conclusion

The very meaning of supply chain resilience has evolved in line with the changing times. Today, organizations are re-segmenting their portfolios according to changing customer needs, be they in pharmaceuticals or musical instruments.

How we react to these changes will define our success – causing organizations to reassess their KPIs and plan on a short-term basis, sometimes as often as daily. By seeking alternative sources, we can prepare for black swan events and avoid disruption, but much of this comes down to collaboration.

This is where end-to-end supply chain visibility is not just a luxury, but an essential. The impacts on this visibility are seen in multiple scenarios, from the manufacturing stage through to shop floor data visualizations. Quite simply, by harnessing the power of technology, we can keep everybody informed and work towards a common goal.

Of course, with these changing customer behaviors comes a renewed focus on customer care. Today's organizations are recognizing the benefits of having the customer involved in the supply chain – keeping them informed and making better predictions. In turn, we are seeing service metrics improving, offering long-term business viability and navigating through tough times.

All of this would not be possible without the right data at our fingertips. But we must be cautious with how we use this data. Historical data can be a lifeline for machine learning models, helping to offer more predictable delivery times and mitigate disruption. However, we must also look forward – acknowledging that unprecedented events can skew figures, and instead, planning for the worst.

As a result, we are now seeing organizations change their approach, taking into account both strategic and operational factors. In everyday scenarios, this may look like short and long-term planning – overcoming a short-term raw material shortage, for example, versus planning to switch to renewable energies. Macro factors are accelerating our approaches with this, particularly as companies begin to seek alternatives and reduce their reliance on Russia or Ukraine.

At the heart of this planning comes people power, and it is important to continue investing in training as well as technology. Today's supply chain professionals need to be informed, refreshed and ideally cognizant in IT skills – an essential for modern supply chain management. With this knowledge, we can make better use of the data on offer.

Different organizations may take their own approaches to leveraging this data, such as a single source of truth or FMEA. But they are united in their need for "thinking time," empowering all individuals to raise the alarm if there are risks. With people in mind, organizations need to consider their long-term strategies for recruitment, pushing a digital-first culture where ideas can flourish.

Lastly, supply chain resilience should be considered an enterprise capability. We should not work in silos, but share information to overcome the next challenges. With the help of technology, we can make better decisions – leveraging analytics, forecasting, machine learning, and more in tandem with human input.

The current unstable situation may not last forever, but we should always be prepared for anything to happen. The new collaborative supply chain, powered by tools like Blue Yonder's supply chain planning, execution, and Control Tower, is making this possible.

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