Improving the Supply Chain through Predictive Insight

Sense and Respond to Supply Chain Risk

BlueYonder

Microsoft Azure

Introduction: Protecting a Fragile Web

The term supply chain can be misleading in the age of global industry. What most companies rely on to operate tends to be less a resilient chain than a delicate web of connective filaments stretched across the globe. As we've seen in recent months and years, both regional disasters like mega-storms and global events such as COVID-19 can bring supply—and business—to a sudden halt.
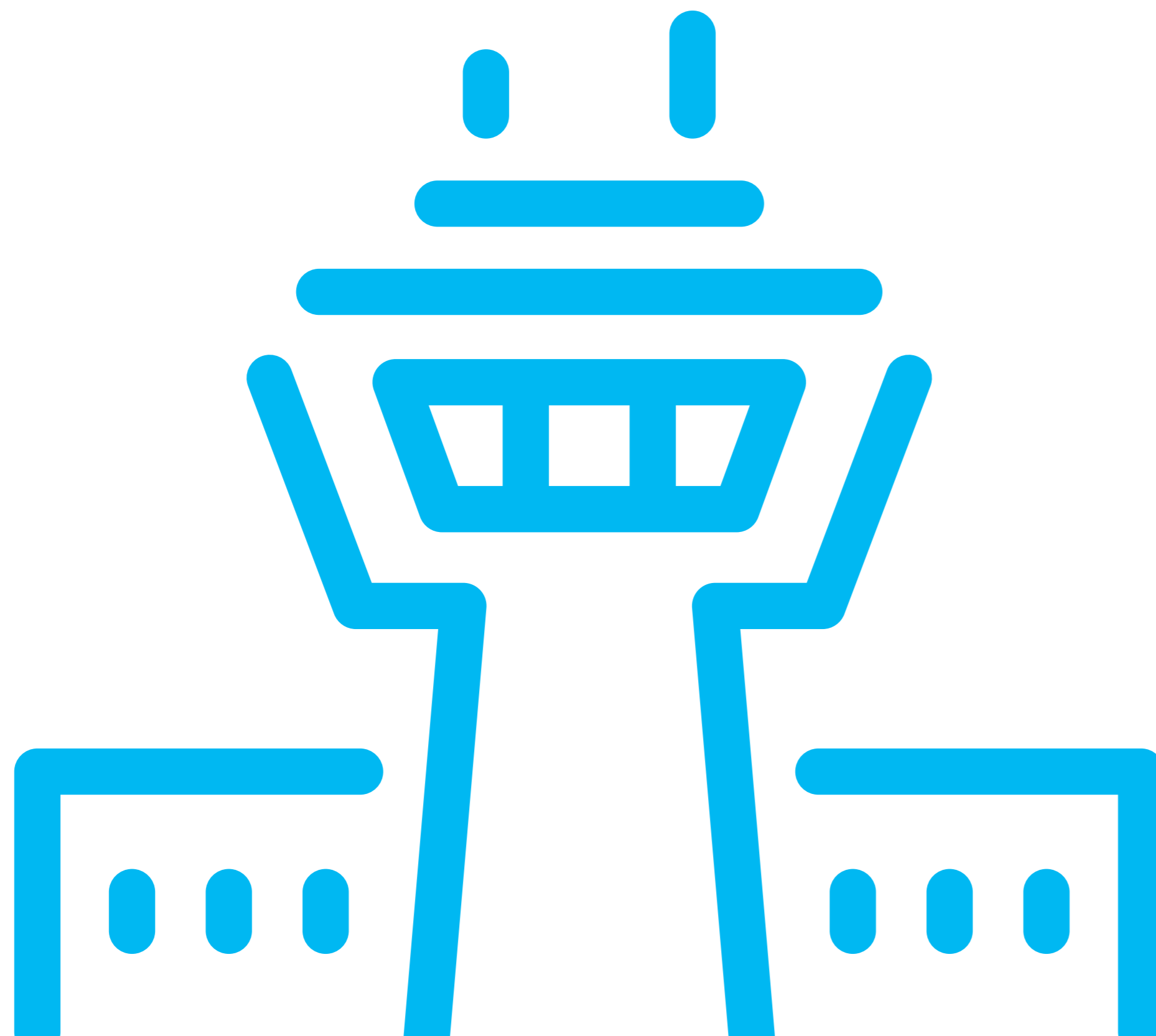
Supply chain leaders must be more than vigilant about planning ahead for disruptions. They must be as predictive as possible, and adaptable enough to take the shocks when they arrive. They need to be almost psychic in the face of inevitable but unpredictable breakdowns. This adds in another layer of complexity for those trying to navigate supply chains. And it's not just your own supply chain you've got to watch. Sometimes when disruptions affect the supply chains of other companies,[1] they cause delays and strain already-fragmented supply chain infrastructures elsewhere. In some cases, it's very much like the butterfly effect:

The longer the supply chain, the greater the impact a seemingly minor disruption can have.

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To weather the blows of this new world, we need to redefine supply chain capabilities to better align how we see and manage supply chains with changing world markets and technologies. And on top of that, even when interruptions do occur, consumers continue to purchase and maintain high expectations on receiving their goods or services quickly.

Unfortunately, the use of siloed data and legacy systems often hampers the timely measurement of these consumers' rapidly changing needs. These legacy systems are no longer sufficient in the modern age. They don't provide data in real time, and thus impede the organization from swiftly sensing and responding to changes in their entire supply chains. To do this, and increase efficiencies, traditional models won't work.[2] Things like short-term, historic order patterns are insufficient to run the emerging supply chain.

In this e-book, we'll share breakthrough thinking from Blue Yonder that allows companies a new way of looking at the entire supply chain.

[1] https://globaledge.msu.edu/blog/post/55717/how-extreme-weather-affects-supply-chain

[2] https://www.forbes.com/sites/loracecere/2020/03/17/planning-for-the-cov-19-supply-chain-recovery/#4c1094a23550

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Cutting Edge, Mitigated Risk.

To be truly competitive in the 21st century, organizations cannot spend valuable time piecing together a fragmented picture of what is happening (or worse, just happened) in the supply chain. For security, you need to proactively orchestrate full visibility in real time. This is where methods using relatively new technologies will enable you to get out in front of disruptions by providing data in real time to improve efficiency, resiliency, and ROI. These digital edge technologies include SaaS, IoT, artificial intelligence (AI),[3] advanced analytics, and cross-platform integration.

All cutting-edge two years ago, each of these tools has become a standard of industry. In fact, Gartner predicts that in 2020, 95% of supply chain planning (SCP) vendors will be relying on supervised and unsupervised machine learning in their solutions. Gartner is also predicting by 2023 intelligent algorithms and AI techniques will be an embedded or augmented component across 25% of all supply chain technology solutions.[4]
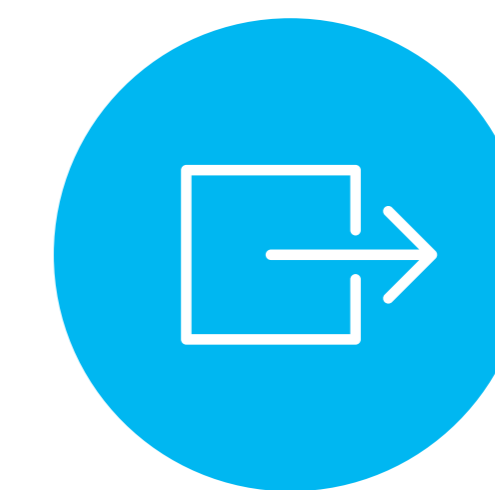
Software as a Service (SaaS)
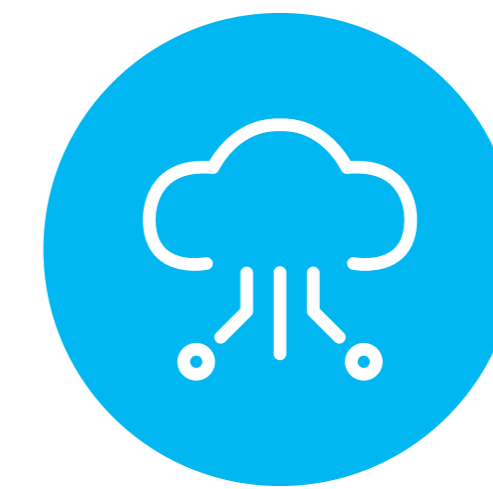
Internet of Things (IoT)

Artificial Intelligence (AI)

Advanced Analytics

Cross-Platform Integration

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Contextual Commerce

Contextual commerce [5] is the new name of the game. It allows for a "what if" analysis for different resolution options to help your organization identify optimal guided choices that balance short-term responsiveness with long-term strategic goals. In creating a strategy for contextual commerce, ensure that it is both **flexible** enough to be quickly executed at any time, and **highly responsive** to internal and external signals.

External
Signals

Contextual
Commerce
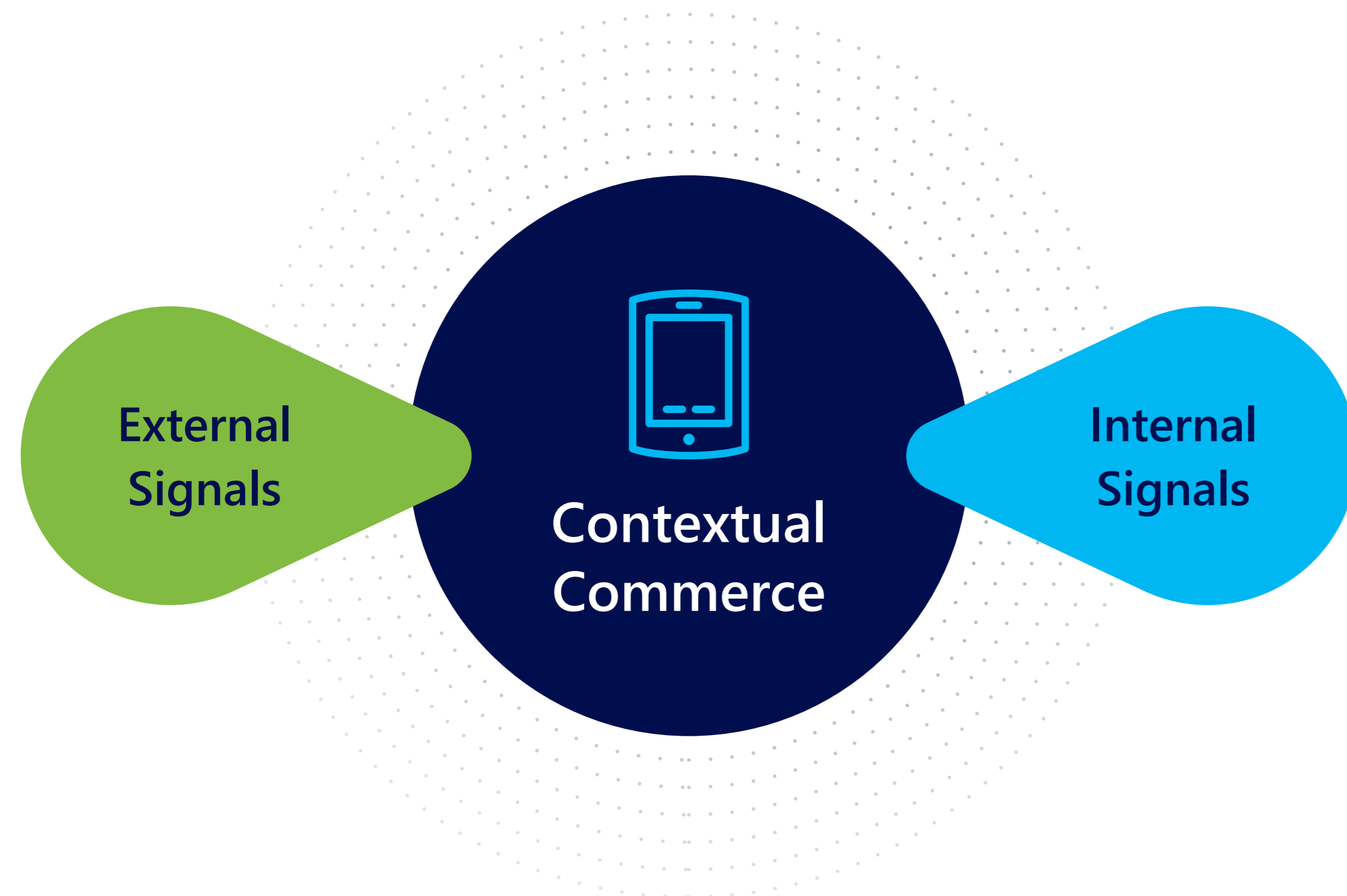
Internal
Signals

By incorporating third-party data streams from these external and internal factors, you can gain the critical capability to predict disruptions and take corrective actions that shape future demand.

3   https://blueyonder.com/knowledge-center/collateral/7-steps-to-an-autonomous-supply-chain-white-paper. A recent paper from McKinsey projects that the application of AI in the supply chain is one of the single most important areas that will generate future financial value.

4   https://www.forbes.com/sites/louiscolumbus/2019/04/28/how-to-improve-supply-chains-with-machine-learning-10-proven-ways/#4fa92ef73f3c

5   https://blueyonder.com/knowledge-center/collateral/7-steps-to-an-autonomous-supply-chain-white-paper

Internal and External Signals

External Signals

- Inability to fill orders due to an unexpected peak in demand

- Excess of inventory (due to jammed supply chains)

- Impacts of unexpected news—from social media or other channels

- Effects of events such as the weather or geopolitical events, which can in turn affect the status of second-tier and third-tier suppliers

- Extended views of supplier networks and customer receipts in order to forecast sales (the "outward view")

Internal Signals

- Competitor promotions that may alter their or your market positions

- Mergers and acquisitions and how they can abruptly change the competitive landscape

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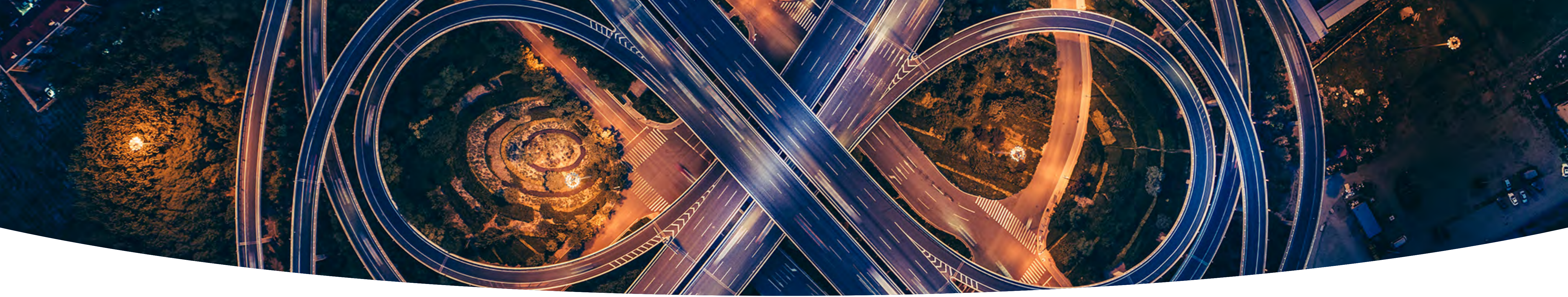
Profile of the Modern Supply Chain

By creating a data visibility system to monitor your supply chain from end to end, you advance a modern, digital transformation journey to help you:
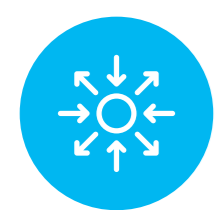
Achieve the ability to sense and respond to signals in the digital ecosystem and use them as a feedback system to maintain end-to-end supply chain visibility.

Receive continuous intelligence in real time from rapidly changing transactional data and digital signals enriched by machine learning. These systems learn, adjust, and constantly consider supply constraints, thereby empowering the entire operations.

Create a framework for predictive and prescriptive analytics that give planners almost prescient ability to proactively react to issues and solve them in real time.

Respond quickly and efficiently to disruptions based on fully audited decisions driven by collaboration with internal and external partners from various functions.

Leverage the scalability, security, and flexibility of Microsoft Azure, which utilizes best-of-breed cloud technology with the intelligent edge. The intelligent edge is a continually expanding set of connected systems and devices that gather and analyze data—close to your users, the data, or both.

All these fuel the future-looking ability to proactively manage the predictable as well as the unpredictable to bolster cost savings and efficiency.

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When you can visualize the entire flow of goods across suppliers, factories, distribution centers, distributors, retailers, and customers, you can measure the impact of supply, demand, and disruptions—in real time, with an eye to greater resiliency in the future.[6]

Real-Time Supply Chain Visibility

ETA: **2 Days**

ETA: **3 Days**
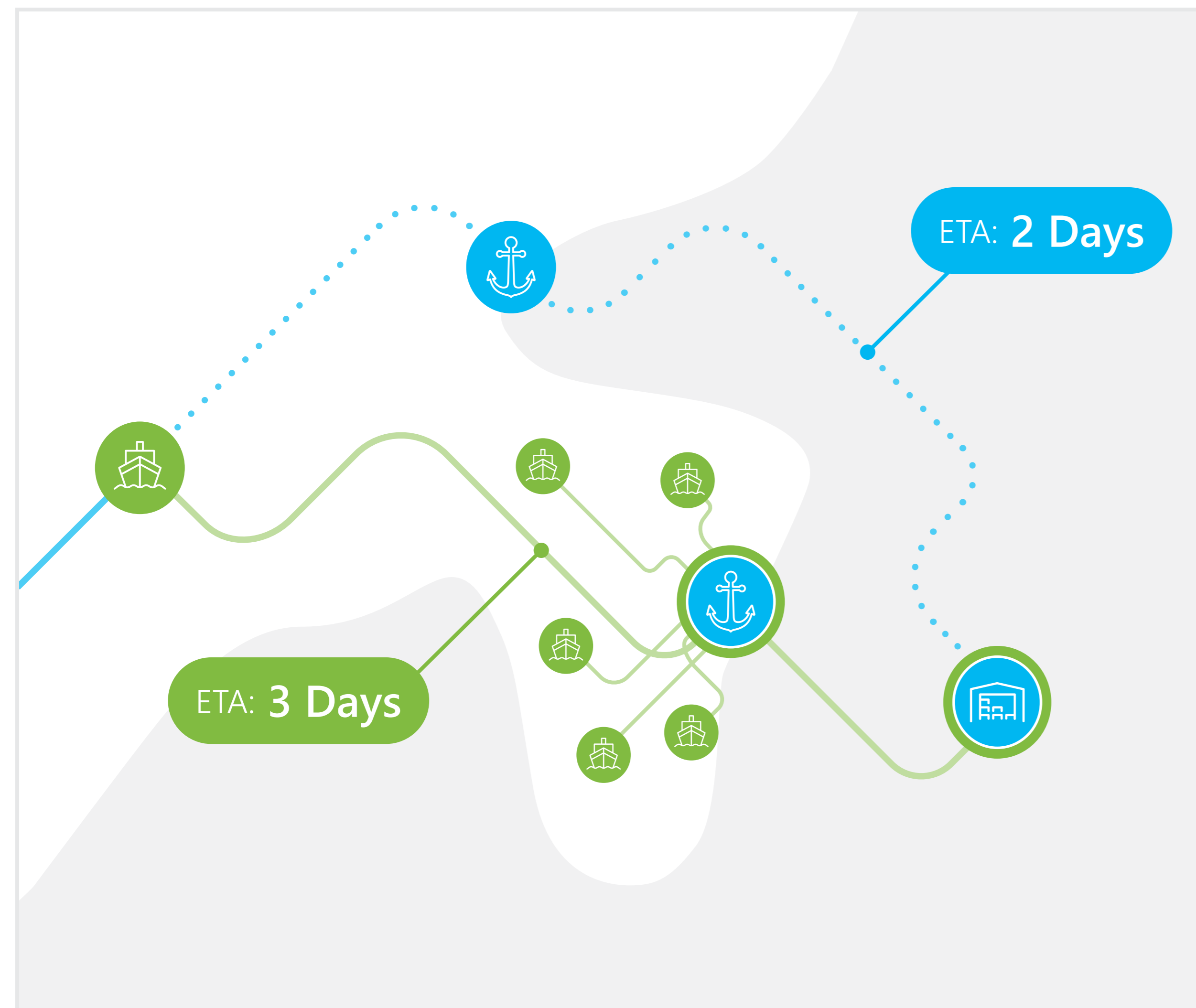
These improvements have measurable results, including:
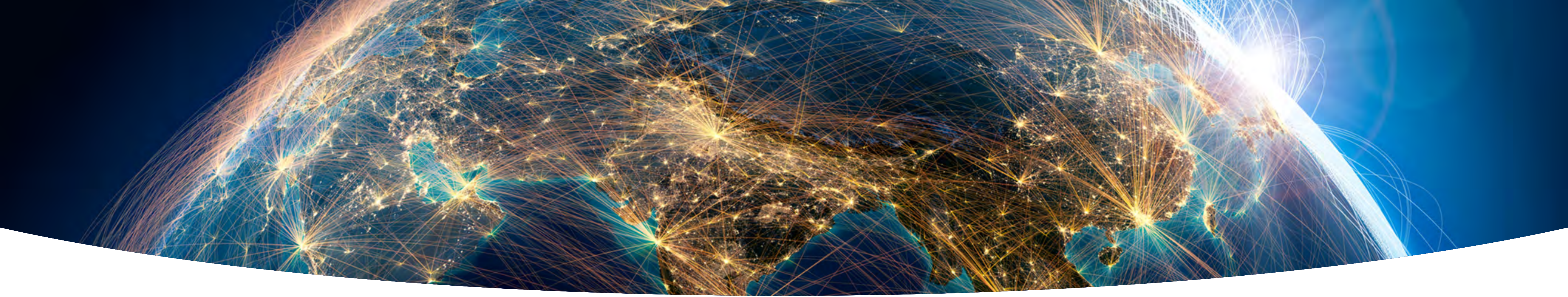
Reduction in inventory expense by up to

30%

(plus a one-time reduction between 5% and 10%)

Increase in revenue as high as

1.5%

Boost in planner efficiency by up to

60%

6 https://blueyonder.com/knowledge-center/collateral/luminate-control-tower-solution-sheet

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Spinning the Web: How Azure Cloud Connects a Predictive and Secure Supply Chain

The roadmap to a truly autonomous supply chain we're about to share with you has been created and tested through a powerful partnership between Blue Yonder Luminate™ Control Tower and Microsoft Azure. By leveraging an intelligent response framework and exception management capabilities, you can easily prioritize responses to current and predicted disruptions based on severity and impact.

First of all, it's important that your solution be tailored to your specific industry, whether you're in retail softlines or hardlines, process manufacturing, discrete manufacturing, restaurants and food service, grocery and pharmacy, third-party logistics, or wholesale distribution. Each of these has particular needs that cannot be glossed over; whether you turn to a bespoke, DIY, or powerful cloud solution like Luminate™ Control Tower. In addition, when you use a sophisticated cloud solution based in a well-configured cloud environment like Microsoft Azure, you'll find it's far simpler to unify siloed data for the improved visibility discussed above, as well as increased speed and agility.

Luminate™ Control Tower

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Scale and Security in the Azure Cloud

The Azure platform is built to provide an agile and secure experience across the intelligent cloud/intelligent edge. The native resiliency, security, scalability, and monitoring capabilities of a world-class cloud like Azure give you a consistent hybrid cloud with unparalleled developer productivity, and comprehensive compliance coverage—including meeting the requirements of the General Data Protection Regulation (GDPR). As for security, Azure provides a global reach with local presence that many businesses and organizations need with datacenters in more regions than any other cloud provider. This allows you to reduce the cost, time, and complexity of operating a global infrastructure while meeting local data residency needs.

Let's take a look at a real-world example of how an autonomous supply chain can self-correct and provide the data for the question "what's coming next?" to deal with a sudden catastrophe—not in days, but in minutes.

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When Predictability Goes Overboard in a Crisis

BD is a leading global medical technology company with annual revenues of approximately $16 billion. Their broad product offerings include solutions used in COVID-19 research and testing, as well as other products used for treating hospital patients. If you go to a hospital in the US, there's a 90 percent chance you'll come across one of their products.

Challenge: Navigating the Biggest Disruption Ever

The COVID-19 pandemic represents the biggest supply chain disruption in BD's—and the world's—history. BD has dealt with many supply chain disruptions, whether caused by mergers, port closings, hurricanes, or in the most recent case, by a global pandemic. But, these issues are becoming more frequent and more disruptive. For this reason, the ability to track, control, and predict product movements and potential issues is critical.

Because of their need to "see the future," BD sees their digital transformation as a "physi-digital" journey. To meet their goals, they require a best-in-class physical chain, enhanced and accelerated with digital capabilities. They must have the visibility to track every unit, everywhere, in near real time, across an end-to-end supply chain. That calls for using the control tower as the one source of truth. This visibility, in turn, is seen as being critical to better serving customers—getting them products when they are promised or advance notification when that is not possible. End-to-end visibility also allows for cost savings and new supply chain efficiencies based on better collaboration.

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Solution: Seeing the Multiple Strands of the Future

BD turned to Blue Yonder to launch its Luminate™ Control Tower with a panoply of important capabilities. The fact that they could apply machine learning to Big Data to allow the solution to automate more and more decisions over time would (and does) save hours or even days of work. And automation will continue to improve. Because of the near-psychic needs of the company, BD needed their solution to reveal near-real-time exceptions to allow for smart resolutions to issues such as over-supply, back orders, and supply disruptions. In short, BD needed Blue Yonder Luminate™ Control Tower to form the foundation for a new, future-looking, and customer-centric supply chain that would support the company's digital transformation.

Result: Righting the Ship in Rough Global Seas

One customer that desperately needed BD supplies as part of pandemic response called out of the blue to ask why their ordered goods had not shipped. An analyst on the BD COVID response team was able to see that the products were sitting on a carrier's dock waiting for a dock appointment at the customer's site. They put the customer and carrier together and the situation was quickly resolved.

In another recent example, 28 containers were thrown overboard on purpose when a ship's rudder malfunctioned in the midst of a delivery from Freeport in the Bahamas to Le Havre, France. This was declared "general average," a principle of maritime law whereby when losses result from a voluntary sacrifice of a ship's cargo to save the vessel in an emergency. All stakeholders share any losses and costs. That same ship was scheduled to carry two more BD containers on the return trip. To establish their costs, BD needed quickly ascertain the impact for insurance and legal reasons. And more importantly, they needed to understand the impact to their supply chain. What other customer orders might be affected? Would BD have enough product to replace the loss? Would air freight be needed to rush product to customers?

Here's the amazing thing. All that insight would once have taken days to research, analyze, and answer; with all the different data streams and formats to coordinate, it would have stopped or slowed other projects. But with Blue Yonder Luminate™ Control Tower, the answers were available in minutes.[7]

That's the power of predictive supply chain insight.

[7] The BD Medical Products Control Tower Powers Their Pandemic Response. Steve Banker, Forbes, May 6, 2020.

Stay Multiple Links Ahead of Supply Chain Disruption

Managing the as-yet invisible: That's the key to navigating and thriving in the complex and unpredictable modern supply chain. Find out more about how Blue Yonder Luminate™ Control Tower and Microsoft support the prescience you need to discover, interpret, and act on real-time information from the entire digital ecosystem, including third-party data sources.

Take a Look at Your Supply Chain Future

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Microsoft Azure