

The New Intelligent Supply Chain:

Strategies for agility, sustainability, and operational excellence



The consumer goods and retail landscape is changing faster than ever before

Rapidly evolving consumer preferences. A changing and disruptive retail landscape. The dramatic rise of e-commerce. Supply chain shortages and the unprecedented consumer demand for sustainably produced products.

These changes are largely driven by the three Cs: consumers, customers, and capabilities.

Consumers: Consumers' purchasing preferences are rapidly evolving. Sustainability and convenience are now high on all consumers' agendas. Also, opportunities are increasing as purchasers are progressively joining the global consuming class.

Customers: The changing retail landscape is impacting the industry. Large retail chains, put under pressure by online and discount retailers, are pushing consumer goods companies to offer deeper discounts on products while prioritizing their own private-label products to increase margins.

Capabilities: Given these shifts in behavior among consumers and customers, companies need to adapt their historic operating models. This means rethinking marketing investments, enabling better communication across their enterprise ecosystems, and aggregating data sources to enable them to make faster and more accurate business decisions.

In this changing retail landscape, companies have begun to build an agile, connected, and resilient supply chain to maximize operational efficiency, product quality, and profitability.

This guide explains what's driving these changes, outlines the capabilities you'll need to respond, and provides guidance and useful resources to help you:



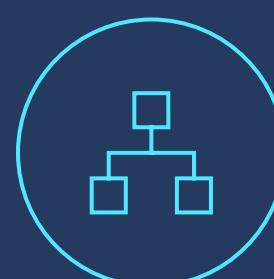
Optimize brand performance

Engage and serve your customers and convert shoppers.



Deliver sustainable and operational excellence

Optimize operations to build an agile and sustainable product life cycle.



Connect your enterprise

Enable secure collaboration to deliver retail execution excellence.



Accelerate innovation

Build brand affinity and market share in new and innovative ways.

The challenges facing the consumer goods and retail industries are real. And so are the opportunities.

Macro forces driving industry change

The three macro forces impacting the consumer goods and retail industries are:



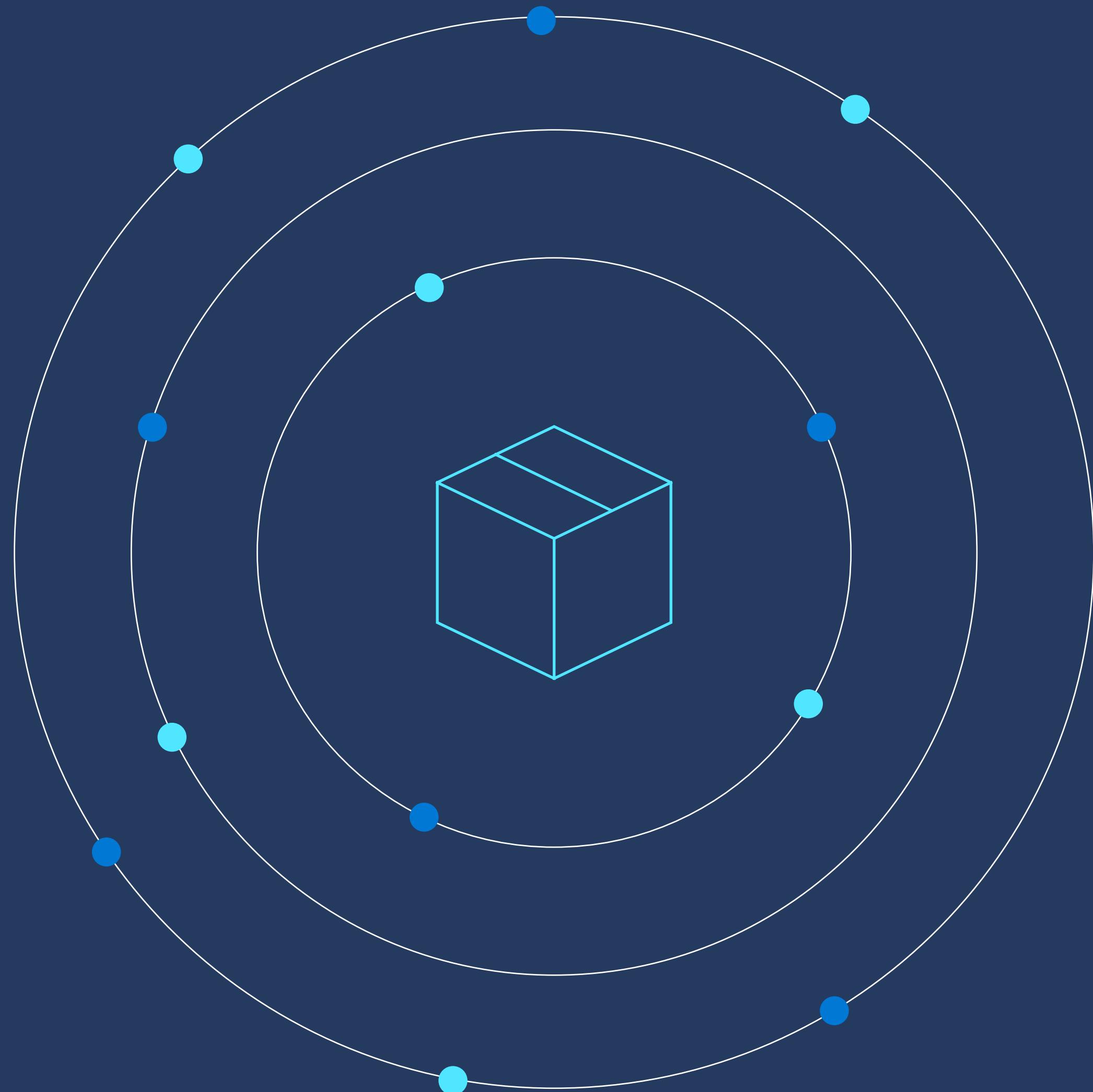
Rapidly changing
consumer expectations



Growing demands for
sustainability



The shift to a digitally
fueled supply chain



Macro force

Rapidly changing consumer
expectations

The way we work, live, and shop has changed

Companies today face unprecedented challenges as they respond to the new ways we work, live, and shop. Contactless shopping. New e-commerce channels with authentic, personalized brand experiences that are secure, measurable, and scalable. The rise of hyperlocal retailing. New retail formats such as pop-up stores. Consumers are increasingly shifting away from in-person shopping and exploring the many online options available.

Disruption is the new reality—where the edges are no longer the boundaries, and retailers and brands are increasingly adapting to an environment of constant change.

Part of adapting to these changes means building a supply chain that has the agility needed to rapidly respond, as well as the resilience needed to manage unexpected disruptions.

Historically speaking, supply chains have been push-based, reactive systems. Consumers came into a store and asked for a product, and if the store didn't have it, they could order it and pick it up in a week.



Past: Push-based, reactive

Produce, stock, and dispose of excess, with no visibility into customer expectations.



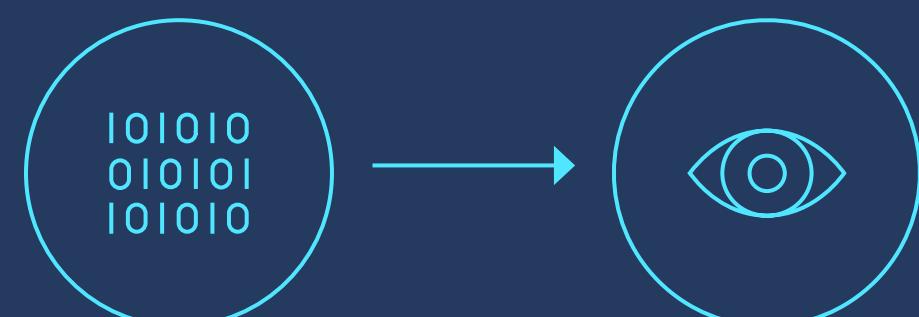
Data stranded across the entire enterprise



Isolated supply chain

Current: Semiautonomous supply chain

Partial automation allows organizations to selectively digitize (e.g., via sensors on pallets).



Data

Insights



Products



Sensors

The traditional supply chain needs to evolve

In today's environment, consumers often expect every conceivable product to be perpetually in stock and shipments to be delivered to their homes within hours. In this marketplace, consumers don't want to wait—and often, they don't need to. The consumer experience now belongs entirely to the consumer. And as this experience changes, organizations are adapting and developing new capabilities, including:

- Detecting and understanding consumer changes as soon as they occur.
- Predicting consumer demands and expectations.
- Building the agility needed to accommodate rapid change, along with previously unheard-of levels of resiliency to weather unpredictable, mass-disruption events.

What's needed is an approach that evolves from a traditional, reactive supply chain to one that can use data and advanced analytics to detect, predict, shape, and service demand peaks *before* they happen.

Future

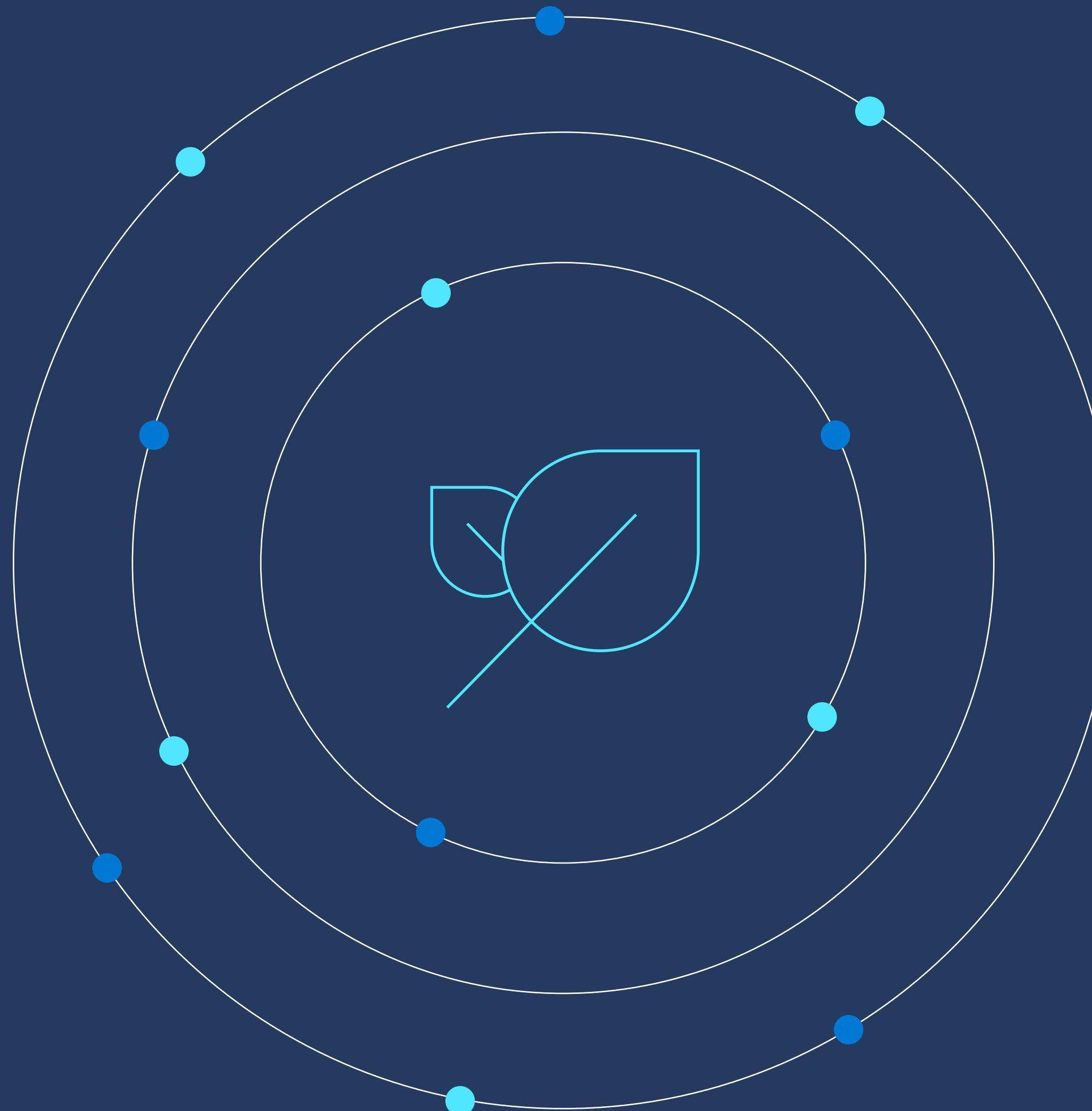
Responsive and dynamic network of smaller networks and demand webs, connected by a single cloud platform, streamlining data collection and the surfacing of insights.



A customer experience powered by insights

Organizations can reimagine their consumer experience by using or developing tools that provide real-time insights into what consumers want, and then using predictive analytics to understand what consumers *will* want.

Perhaps most importantly, organizations can use these insights in a way that delivers an authentic and personalized consumer experience across all channels and all devices.



Macro force
Growing demands for
sustainability

Today's consumer goods players, retailers, and transporters face unprecedented complexity, as multiple parties must cooperate to move goods around the globe

They face new challenges in maintaining visibility into origin, authenticity, and asset handling as they cross geographic boundaries. Their ability to deliver and market a more sustainable product depends heavily on supply chain processes.

Acting sustainably and responsibly has become a mandate—not just by consumers, but from governments, with Paris Agreement obligations that are pushing countries to lower greenhouse emissions. These obligations can, in many regions, translate into new regulations on companies.



"Far from perceiving sustainability as a costly inconvenience, supply chain leaders are using it to their advantage."¹

—Miguel Cossio, Principal Research Analyst, Gartner

Sustainability really matters

What's good for the planet is continually proving to be good for business, with 66 percent of consumers now willing to pay more for sustainable goods.²

Manufacturing sustainably produced goods is becoming more complex. Take the relatively simple but important matter of carbon emissions. Scientists account for carbon emissions by classifying them into three categories, or "scopes."

Tracking these emissions across these scopes can be challenging, as Scope 1 and 2 are operational data that companies may own, such as electricity and corporate fleets, but Scope 3 covers the full end-to-end supply chain. As companies take a more sophisticated, data-driven view of carbon management, they are discovering that much of their impact is embedded in their supply chains, where they have less direct control over driving reductions.

As you can see in the diagram to the right, even an essential sustainability practice like measuring carbon emissions requires a company to have a deep level of supply chain visibility and traceability. Knowing the data across your full supply chain and how to use it will give you the insights you need to fully measure and understand your business's true impact.

Measuring the impact of a carbon footprint

Scope 1 emissions are the direct emissions that your activities create—like the exhaust from the car you drive, or, for a business, the trucks it drives to transport its products from one place to another, or the generators it might run.



Scope 2 emissions are indirect emissions that come from the production of the electricity or heat you use, like the traditional energy sources that light up your home or power the buildings owned by a business.



Scope 3 emissions are the indirect emissions that come from all the other activities in which you're engaged. For a business, these emission sources include the materials in its buildings, the business travel of its employees, and the full life cycle of its products—from materials development to manufacturing to movement of those goods, all the way to the electricity customers may consume when using the product and the end-of-life carbon footprint of that product.

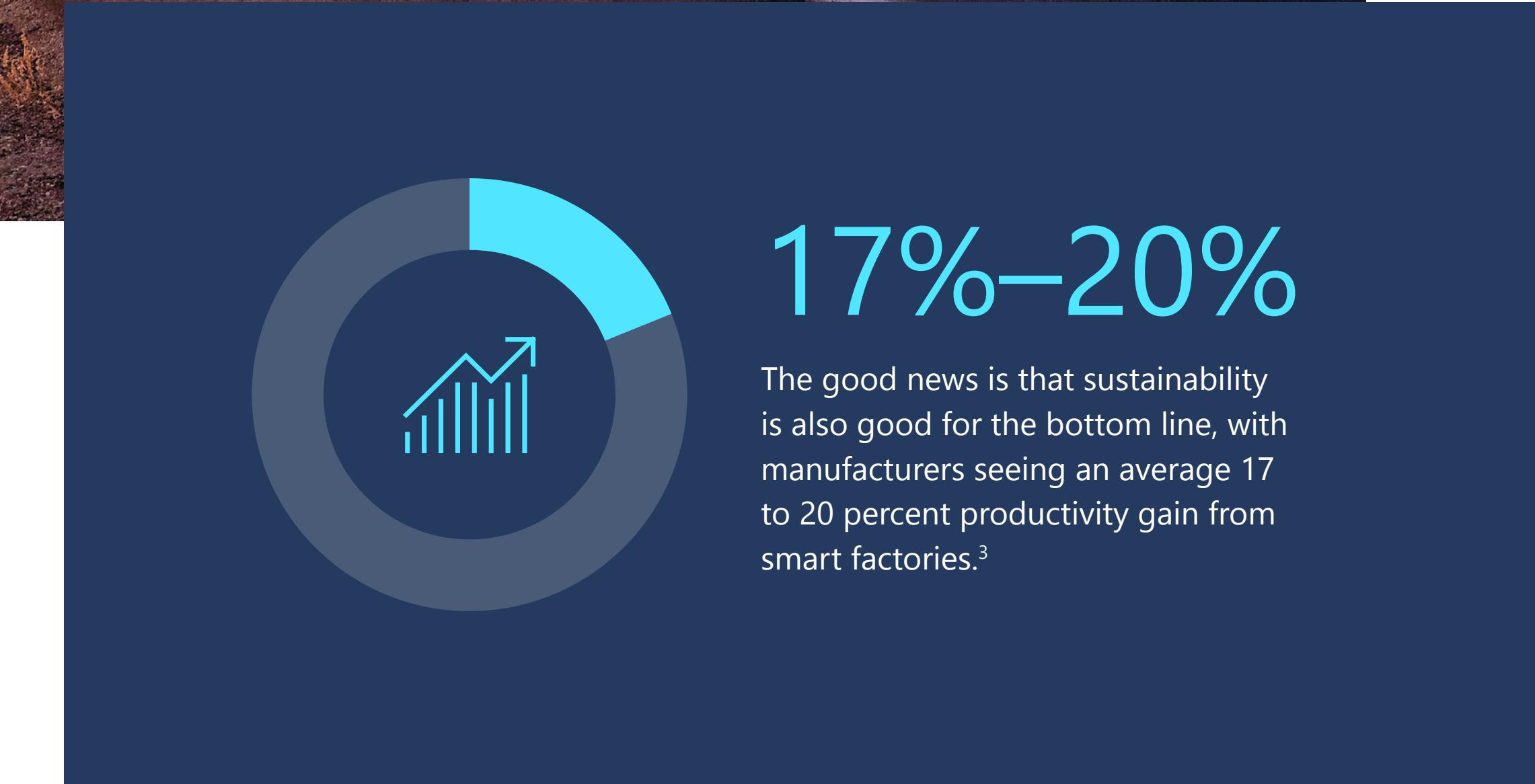


Increase resilience with better traceability, productivity, and predictability

Beyond monitoring sustainability metrics like carbon emissions, better supply chain visibility also helps your other business goals, such as more accurately responding to fluctuating demand or developing a more resilient operating model.

Consumer goods companies should look at their end-to-end manufacturing and product life cycle processes, along with their suppliers and consumers, and use the data to optimize operations and improve overall sustainability, as well as:

- Drive improvements in manufacturing and operations to automate processes, enhance quality and safety, and create sustainability.
- Provide intelligent solutions using data, artificial intelligence, machine learning, and the Internet of Things (IoT) to optimize forecasting and inventory management and improve transparency.
- Drive toward next-generation manufacturing by focusing on smart buildings, process optimization, and digital twins.



Sustainability as a customer experience

Pivot sustainability priorities from cost center into profit center by focusing on key areas of the value chain.



Design

Design with sustainability in mind, as this is where it ideally starts.



Assembly

Packaging material use can be optimized by design, along with the right choice of materials.



Engineering

Simulate and iterate to understand a product's carbon footprint across its life cycle.



Logistics and distribution

Locally booked and built, locally sourced. This reduces the carbon footprint.



Manufacturing

Sustainable design leads to sustainable manufacturing and responsive raw-material consumption.



Services

Remote troubleshooting and support streamline the life cycle experience.

One big step toward a smaller carbon footprint

Microsoft's most important contribution to carbon reduction will come not from our own work alone, but from helping our customers around the world reduce their carbon footprints. With the power of data science, artificial intelligence, and digital technology, we can take the tools we've developed and the lessons we've learned and empower our customers to do more.

Sustainability is already a core part of many customers' businesses, while other businesses are just beginning. But wherever your organization is on its journey to sustainability, we can help.

We've developed tools such as the [Microsoft Sustainability Calculator](#) and can share learnings from our own initiatives. Microsoft has made [significant investments](#) in sustainability, and we are committed to becoming water positive and carbon negative by 2030.

[Learn more about Microsoft's latest commitments to sustainability](#)





Customer success story: Starbucks

Tracing the journey of every bean: From farm to cup

Challenge: Starbucks sources coffee beans from over 380,000 farms and needed visibility into the movement of beans across its vast supply chain.

Microsoft solutions used: Starbucks used Microsoft Azure Blockchain Service and Microsoft Edge for storage, massive data-volume ingestions, machine learning, and predictive-model generation. With these powerful tools, the company achieved real-time traceability and improved visibility into the entire supply chain.

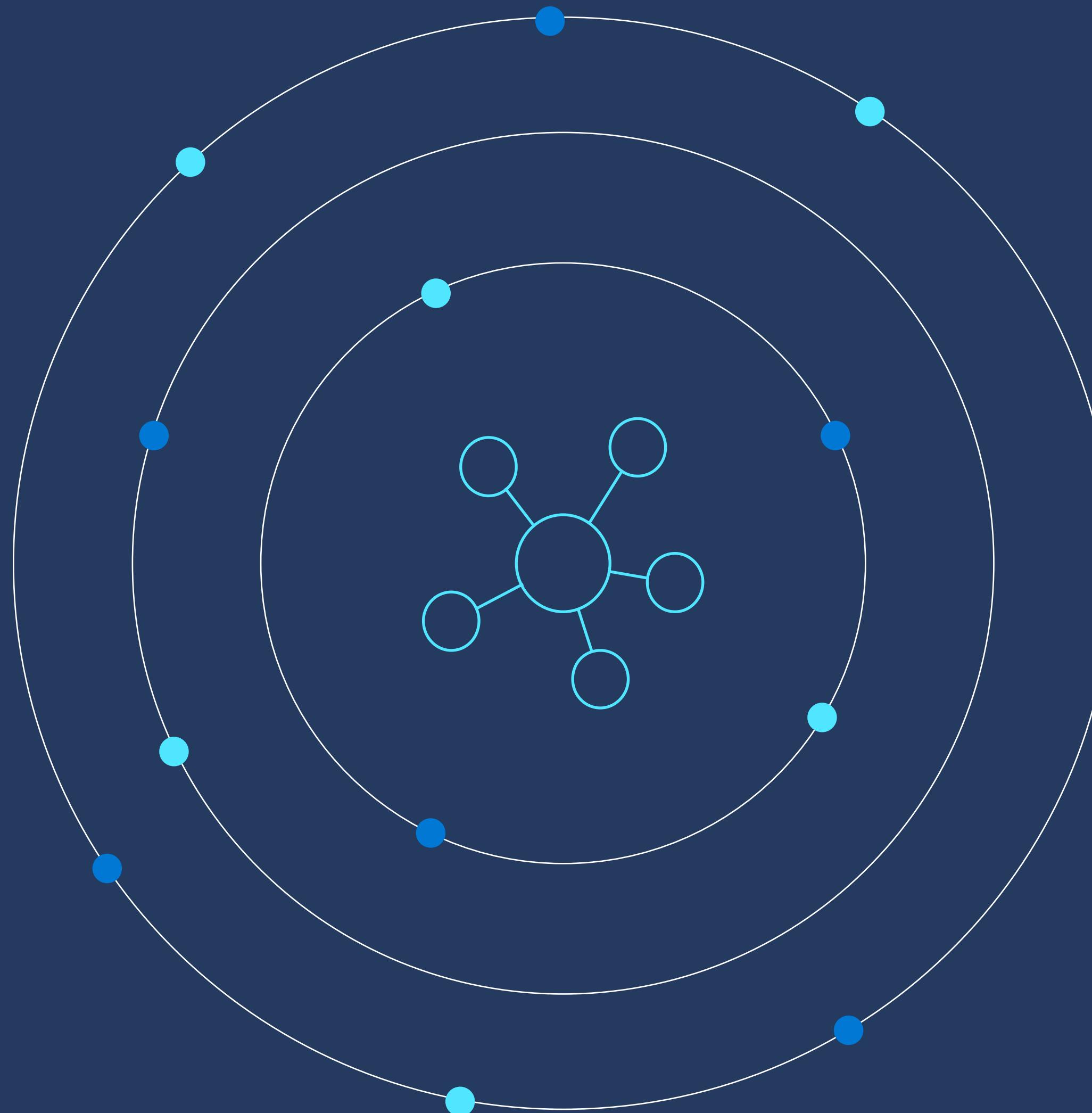
Results: This solution provided farmers with trusted proof of end purchase and access to higher-quality credit. It also allowed them to monitor the movement of beans all the way from farm to pour across more than 380,000 farms.

[Read more about the Starbucks story](#)



"From the ground our coffees come from ... to the talented baristas who handcraft each beverage for the perfect cup—each step reflects ... [our] commitment to a brighter future for our farmers, our partners, and our customers."⁴

—Michelle Burns, Senior Vice President of Global Coffee and Tea, Starbucks



Macro force

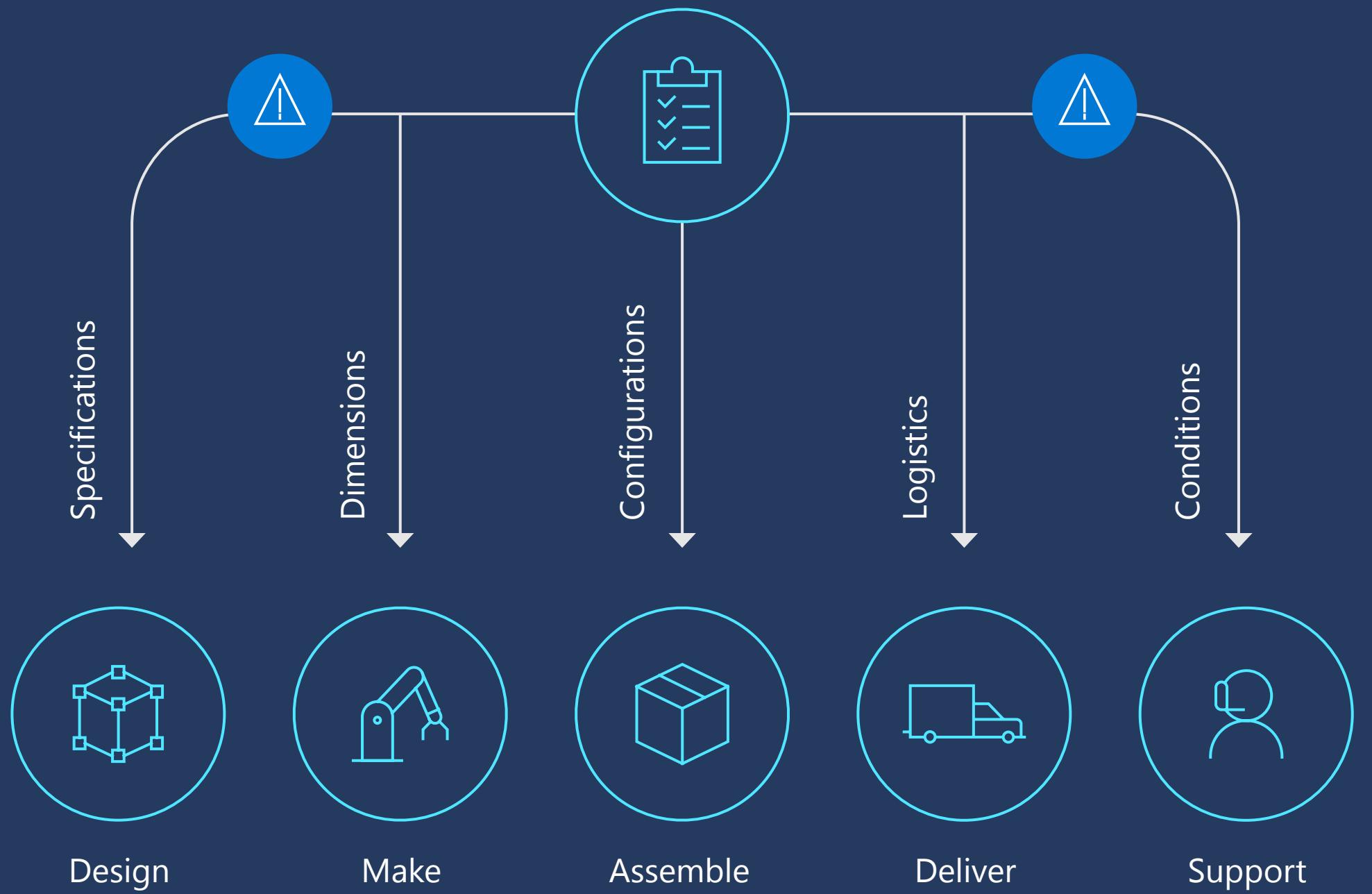
The shift to a digitally fueled
supply chain

A better supply chain depends on better data

Supply chains were built to follow materials, products, and people. And while the traditional supply chain approach may have worked well in the past, the expectations of today's consumers—along with the explosion of data and the proliferation of competitors, products, and sales channels—often mean that this approach results in too much inventory, not enough, or, worst of all, the wrong kind.

In other words, yesterday's supply chain cannot deliver against the expectations of today's consumer. Nor can it adapt quickly enough to unforeseen disruptions to ensure business continuity even in times of distress.

Today's supply chain



Long lead times, low schedule compliance, and lost productivity

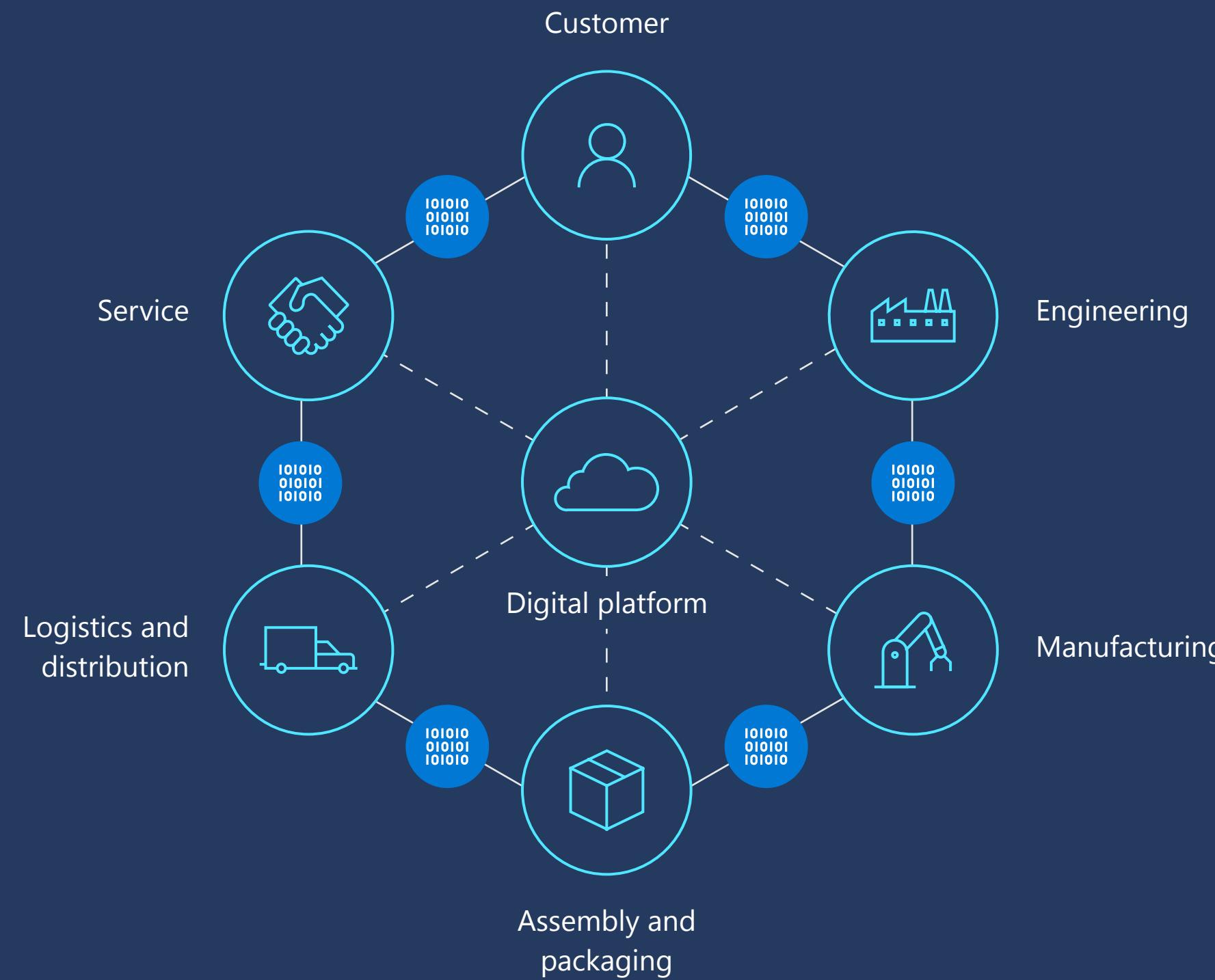
Disconnected process

Layered planning

Reactive extension

Excess inventory

Future supply chain



High service levels, cost-optimized, and dynamically responsive

Orchestrated process

Layered planning

Predictive extension

Closed loop end-to-end

Macro force: The shift to a digitally fueled supply chain

Get the full picture of your supply chain

Today's consumer goods and retail industries require circular supply chains, powered by core, cloud-based, central platforms that integrate, orchestrate, and execute actions in real time. This means monitoring every data point within the value chain and responding to the information it contains, as it happens.

This gives companies a full picture of what's happening inside their organizations, enabling new levels of agility, responsiveness, and risk mitigation.

Technologies such as artificial intelligence, blockchain, and IoT can give organizations the end-to-end visibility, insight, and capabilities they need to reimagine operations and processes in new and unexpected ways.



Customer success story: Majans

The key ingredients: Technology and innovation

Challenge: Majans, a small, family-run consumer goods manufacturer, had grown to the point where production and operations needed to be streamlined in order for the company to reach its business goals.

Microsoft solutions used: With Microsoft Dynamics 365 Supply Chain Management and IoT Intelligence, Majans provided its frontline workers, management, and C-level decision makers with near-real-time data offering meaningful signals and insights.

Results: A 15 percent improvement in availability through optimized scheduling, a 10 percent improvement in overall effectiveness, and the design of a new, innovative product.

Read more about the Majans story



"With Dynamics 365 IoT Intelligence, we can rely on meaningful signals and insights and thus reducing the cycle time to action, keep our teams engaged as well as deliver on our promise to our consumers."

—Amit Raniga, Director, Majans



Accelerate your intelligent future

Today's retailers and brands face unprecedented challenges from a wide range of forces. By building resilience and agility into your supply chain, your company can rapidly respond to changing conditions and better manage unexpected disruptions.

Microsoft can help you strengthen the resilience across your people, teams, and organization to thrive in an ever-changing world. With our end-to-end, integrated portfolio of cloud solutions across Microsoft 365, Dynamics 365, and Azure—together with the Microsoft Power Platform—all built on a foundation of security and privacy, we are uniquely suited to partner with you.

Ready to learn more?



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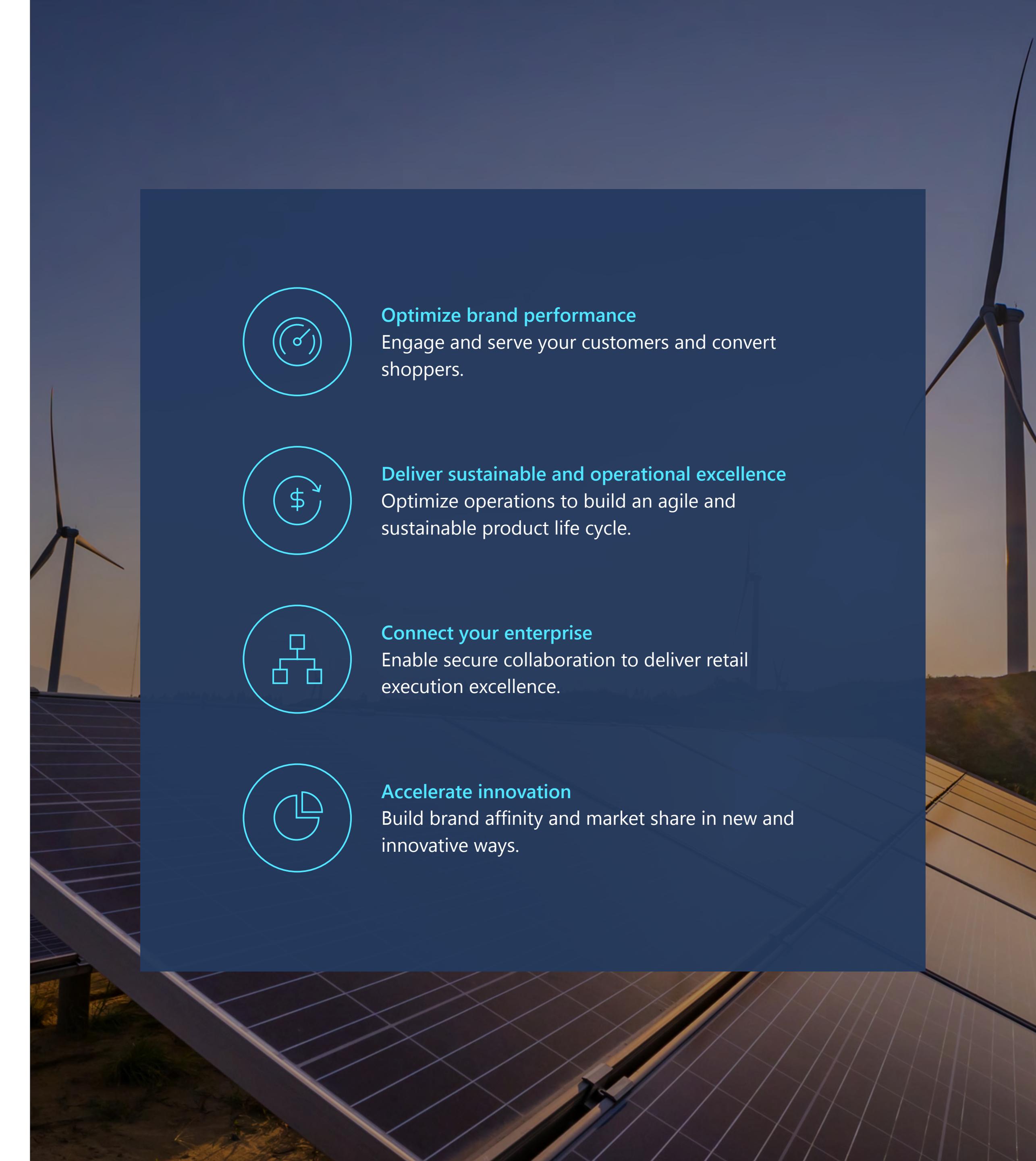
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Sources

¹ Christy Pettey, "[Why Sustainability Matters to Supply Chain Sourcing](#)," Smarter With Gartner, April 4, 2018.

² Nielsen, "[Consumer-Goods' Brands That Demonstrate Commitment to Sustainability Outperform Those That Don't](#)," October 12, 2015.

³ Capgemini, [*Smart Factories: How Can Manufacturers Realize the Potential of Digital Industrial Revolution*](#), 2017.

⁴ Jennifer Warnick, "["Knowledge Is Valuable": Coffee Journey Going Digital for Customers, Farmers](#)," Starbucks, March 20, 2019.