Point of View

Being Green
by Going Blue

Market context

Historically, cost and service have been the overriding factors in deciding whether a given supply chain was operating "optimally." As long as profits and margins were high and customers were satisfied, a supply chain was considered successful. That's not the case in our current landscape. Sustainability is the most recent hyper critical means to measure a company's ultimate performance.

Business, government, and consumer concern about environmental and sustainability issues shape the future of supply chain management. With the adoption of the United Nations (UN) 2030 Agenda and the Sustainable Development Goals (SDGs), we have entered a period where the world's nations have committed to ending global poverty, protecting our planet and promoting quality life for all.

"Supply chain sustainability" is the management of environmental, social and economic impacts, and the encouragement of good governance practices throughout the lifecycles of goods and services. The objective of supply chain sustainability is to create, protect and grow long-term environmental, social and economic value for all stakeholders involved in bringing products and services to market. Through supply chain sustainability, companies protect the long-term viability of their business and secure a social license to operate[1].
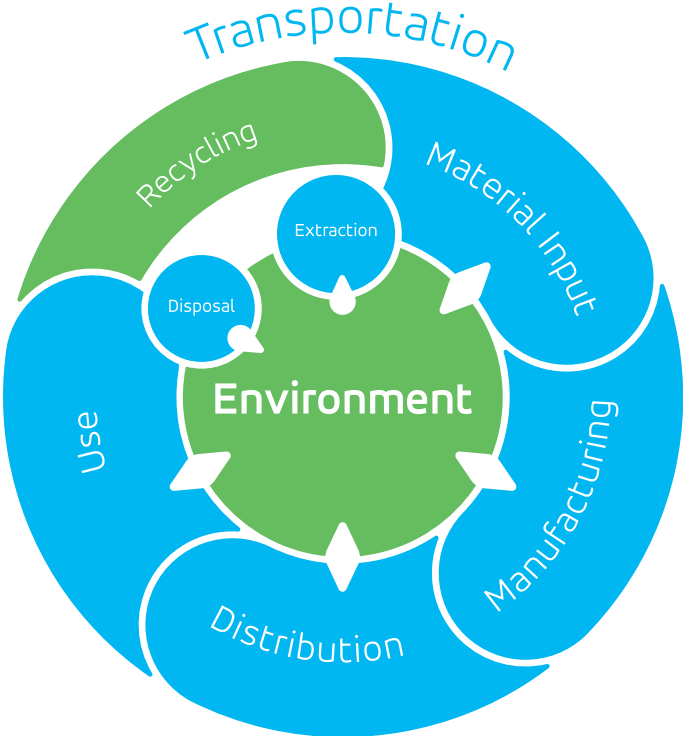
Environmental, social and economic impacts exist throughout every stage of supply chains.

62%

of Americans believe climate change is a problem

58%

of Americans say that in the absence of government progress, companies should take the lead in proactively seeking solutions to this problem[2].

Transportation · Material Input · Manufacturing · Distribution · Use · Recycling · Disposal · Extraction · **Environment**

Operating sustainably means that most companies must dramatically change their foundational supply chain practices, and they must do so quickly as this new generation of sustainability unfolds.

Companies and organizations must develop plans that are both strategic for their supply chains and that meet their responsibility and sustainability goals.

1 Our Global Strategy. (2020) Retrieved from https://www.unglobalcompact.org/what-is-gc/strategy
2 Cone. (2018). Climate Concerns Continue. Retrieved from https://conecomm.com/research

The supply chain dilemma

For decades, supply chains have had to deal with unforeseen events (economic, environmental and cultural) yet companies are somehow still being caught off guard by the complexity and interconnectedness of the changes they now have to deal with. The increasing unpredictability and complexity of events is particularly problematic for supply chains, which must interact closely with external as well as internal entities in order to perform effectively.

While the traditional linear model of supply chain is also being challenged, having a supply chain that is **challenge ready, connected, collaborative and circular** is key in overcoming challenges while simultaneously meeting both business and sustainability goals for the future.

Challenge ready: knowing the future

Take for instance the 2020 COVID-19 pandemic. A virus of this scale is certainly unforeseen, and it's vital that companies can adapt to crises to mitigate the effects on the supply chain. Whether an outbreak like COVID-19, an extreme weather event, or other unforeseen supply chain disruption, organizations with advanced supply chain technologies can plan for and instantly adapt to changing circumstances.

From a technology standpoint, the reactions during the COVID-19 pandemic mark a clear delineation of who is prepared to respond, and who is not. It is incredibly important to be prepared, as optimized supply chains are critical to getting people everything from food and medicine, to water and supplies. This goes beyond being prepared for the business' sake, it's about being prepared for the sake of humanity.

The companies using more advanced solutions are able to ingest internal and external signals like social media, news, events, weather and IoT data. These smarter, self-learning, self-correcting, autonomous supply chains can now sense actual and potential disruptions or demand changes, then identify the impact, and prescribe corrective action. These artificial intelligence (AI) and machine learning (ML)-driven solutions become incredibly important in moments of disruption or crisis, as we witnessed throughout the COVID-19 pandemic. Being challenge ready is vital to a supply chains' success.

Connection: transparency and visibility

The most significant and common challenge in today's global economy is the lack of transparent connectivity across the supply chain. The lack of real-time visibility to data is also ultimately impacting organizations' ability to maximize sustainability efforts.

When a disruption occurs to a company using advanced solutions, from a weather event to a missed delivery, a response can be defined that takes social and environmental responsibility into consideration. As it gathers data and provides decision support, supply chain software can consider sustainability issues such as fuel consumption or CO_2 emissions. For example, in the event of a materials shortage, alternative supply strategies can be evaluated in light of not only their cost and service implications, but their impact on natural resources.

If a delivery truck breaks down, transportation planning software can define a corrective action with a low environmental impact. Today's increased focus on sustainability has certainly added complexity to the determination of the best supply chain response, but advanced software has the mathematical sophistication to manage this additional business challenge and ensure supply chains are connected end-to-end.

Collaboration: internally and externally

Forming intelligent digital connections internally, as well as with external collaborators, is critical in order to achieve greater impacts to sustainability. Sustainable supply chain decisions must take into account key considerations across the end-to-end supply chain. The social and environmental impact of external stakeholders must also be assessed, including the ethical sourcing and child-free labor policies of suppliers and trading partners.
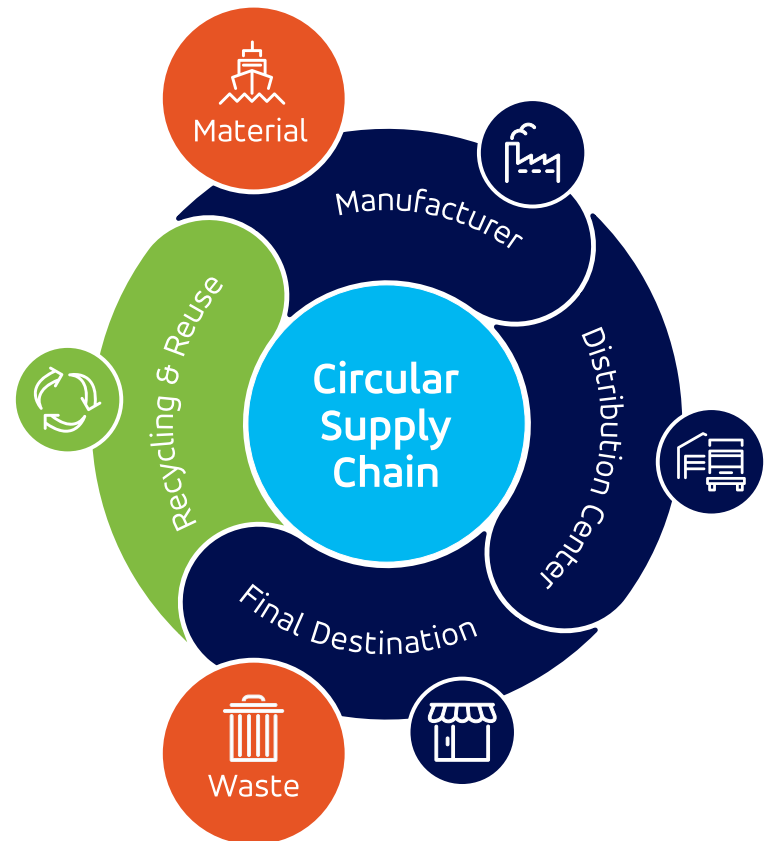
Companies can gain visibility into the everyday practices of their suppliers and choose to partner only with organizations aligned with 2030 Vision priorities. Procurement and transportation software can add sustainability as a consideration as it compares potential suppliers. While today's global supply chains are complex, digitalization has made it easy to form connections and share critical data. As a matter of fact, according to the 2019 CDP Supply Chain Report, 63% of CDP Supply Chain members either use, or are considering using, CDP data to influence supplier contracting decisions. Sustainability is becoming the apex of most business decisions, including partnerships.

Circular supply chain: the sustainable model

Linear supply chains have proved sufficient over time, but they are not the most sustainable option. Many organizations are now faced with the challenge of changing their current supply chain model. The circular supply chain model encourages businesses to loop their supply chains to create less waste, less excess inventory and minimize environmental impact.

Digitalization has significantly improved companies' ability to monitor changing customer needs and align the end-to-end supply chain with those needs in real time. Businesses with a shared technology platform and connected, proven solutions in areas like demand forecasting and S&OP, can now sense, anticipate and react to customer changes immediately and proactively make decisions that will preemptively solve against the changing pressures in their supply chain.
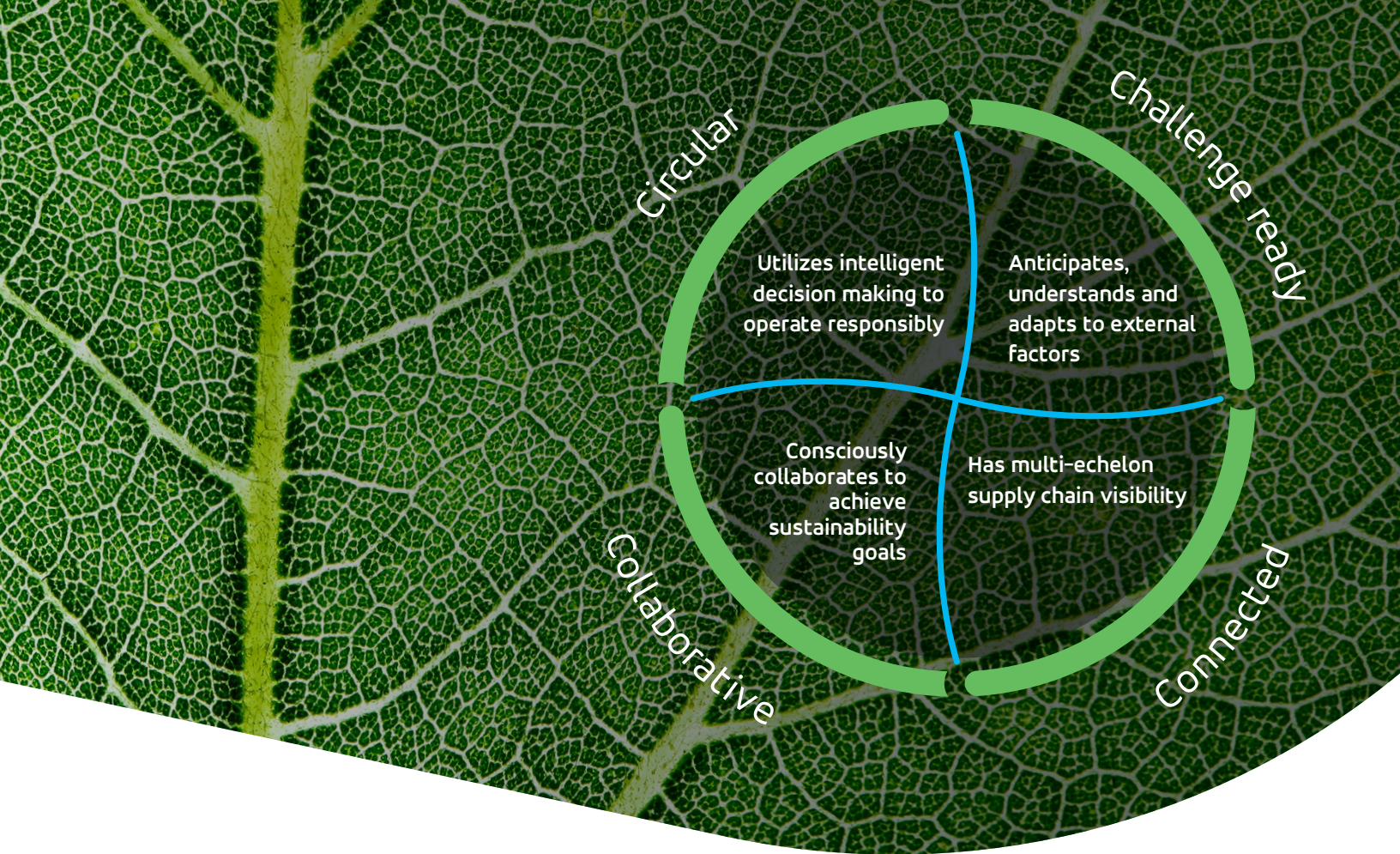
As forecast downturns or emerging unmet needs are communicated across the entire network, manufacturing and transportation plans can be instantly adjusted as well, leading to opportunities to reuse materials, a reduction in money spent on raw materials, and a decrease in waste of all kinds including labor, food and fuel. The application of advanced tools to design the supply chain for circularity and real-time responsiveness is a central tenet of sustainability.

Material

Manufacturer

Recycling & Reuse

Circular Supply Chain

Distribution Center

Final Destination

Waste

"As a business we see exciting commercial opportunities from companies taking action on climate change…some of these customers are also potential or existing suppliers, which means we have the opportunity to create a virtuous circle of engagement on climate change action. By providing low carbon products our action helps our customers to reduce their carbon footprint, brings us new revenue opportunities, and helps to reduce our supply chain carbon footprint – it is a real win-win from collaboration."

– Rachel McEwen, Chief Sustainability Officer, SSE

(CDP Supply Chain Report 2019)

Circular

Challenge ready

Collaborative

Connected

Utilizes intelligent decision making to operate responsibly

Anticipates, understands and adapts to external factors

Consciously collaborates to achieve sustainability goals

Has multi-echelon supply chain visibility

The 4 C's of the sustainable supply chain

Natural resource constraints exacerbated by population growth and our own tendency to waste threatens the wellbeing of the natural environment and society, but also the inputs that businesses depend upon for growth. Doing what is right for the environment can also be right for the business.

Though the sustainability challenge grows more complex every day, AI-enabled supply chains can help businesses to operate responsibly and profitably via reduced waste, more efficient production, smarter transportation strategies, reduced resource consumption and other stewardship practices.

One way to promote environmental stewardship is by achieving a truly autonomous supply chain in which disruptive events, including sustainability issues, are sensed and addressed in real time without human intervention. But the true power of digitalization and AI lies in their ability to reach beyond the four walls of the business, to achieve network-based stewardship and shared sustainable decision-making. A truly sustainable supply chain should be challenge ready, connected, collaborative, and circular.

Blue Yonder point of view

Blue Yonder's vision of the autonomous supply chain is built with sustainability at the core. It is even rooted in Blue Yonder's brand vision, which is to reduce the waste, energy and costs required to power global commerce, accelerating economic prosperity and global sustainability.

How will Blue Yonder bring such an impactful vision to life? By helping enterprises embrace the autonomous supply chain, the engine that powers their transformation from the traditional siloed supply chain organizations of yesterday, to the digital enterprise of today and the autonomous enterprise of tomorrow.

The benefits are tremendous. By pairing greater predictive capabilities powered by AI and ML along with automation, the autonomous supply chain can help businesses respond with immediacy, decisiveness, growth and sustainability by decreasing waste, reducing carbon footprint, increasing operational efficiency and providing higher margins and revenues. The autonomous supply chain is designed to deliver on-demand, anticipate and navigate disruptions months in advance, and help keep businesses ahead of any changes. The self-learning and self-healing approach predicts challenges, then transforms them into opportunities for growth.

Blue Yonder can help transform traditional supply chain organizations to autonomous supply chains that are challenge ready, connected, collaborative and circular.

Blue Yonder Luminate Portfolio

Meet the Luminate digital fulfillment platform

The Luminate Digital Fulfillment Platform is a comprehensive business solution for today's always-on, instantaneous marketplace. It supports integrated real-time planning, manufacturing, warehousing, transportation and commerce, and the efficient labor to run those functions, on an underlying platform that is smart, agile, mobile and connected. Luminate Digital Fulfillment Platform is the digital framework for autonomous supply chains that exceed customer expectations profitably.

Luminate Digital Fulfillment Platform consists of three integrated solution suites for planning, logistics and commerce, underpinned by the intelligent, cloud-based Luminate platform and ecosystem, with a business-to-business control tower that makes supply chain activities visible and controllable.

Luminate Platform

The foundation of the Luminate Digital Fulfillment portfolio is the Luminate Platform. It is a cloud-based digital ecosystem, delivered through a SaaS model, that provides the integration, intelligence, visibility and control needed to deliver comprehensive solution suite capabilities anytime, anywhere.

Going beyond delivering immediate responsiveness, the Luminate Platform embeds advanced AI and ML intelligence within the solution capabilities to support continuous learning and improvement, augmented by IoT sensors. This is critical because supply chains of tomorrow will have to be that much smarter and faster than they are today in order to keep ahead of rapidly changing consumer demands and remain circular. Luminate Platform is the enabling technology for empowering supply chains to be challenge ready, connected and collaborative end-to-end.

| Integration & APIs | User Experience | Control Tower | Data Management | Workflow Engine | AI / ML Services | Analytics & Insights |

Luminate Planning

The global marketplace moves far too quickly for linear supply chains and planning systems. Rapid response to changes and disruptions, once the gold standard, is inadequate today. Companies must now be able to predict not only changes in consumer demand, but also supply chain disruptions and shortages. And they must be able to react instantaneously and profitably to the unexpected, as well. This requires planning that is real-time and iterative.

Luminate Planning is an intelligent portfolio of planning capabilities covering everything from the broad scope of network design to the detailed plan for replenishment at the product/shelf level. By embedding AI and sensors in the supply network, it forecasts detailed requirements at every node in the fulfillment process and orchestrates plans for forecasted needs, as well as reactions to unexpected events. And because the planning suite is real-time and iterative, plans don't become obsolete when they encounter execution, they are constantly revised to support changing demand and situations. Luminate Planning helps create and maintain supply chains that are challenge ready, connected, collaborative and circular.

Luminate Commerce

No segment of the business world has been more impacted by the rapidly evolving global marketplace than retail. From commerce to e-commerce to omni-channel, every aspect of retail has been upended. However, retailers still have to profitably stock, display, sell and deliver merchandise to fickle and discerning customers on a local, regional and wider basis across any channel. This requires planning, pricing, allocation and management at a faster pace and more complex level than ever before. It requires supply chains to be challenge ready and circular, and Luminate Commerce provides the capabilities to do exactly that.

Luminate Commerce delivers responsive, integrated business planning and operations, inventory visibility and orchestration powered by AI/ML insights and forecasting models. With real-time data and intelligent insights, retailers can instantly pivot, adapt, and refocus their inventory, space, pricing, workforce, and store operations to new changes in demand. Luminate Commerce also delivers a single source of truth for inventory availability and fulfillment offerings. Say goodbye to reacting when it's too late and hello to responding in the now.

Luminate Logistics

Delivering on the customer promise and exceeding customer expectations is the enormous task of logistics. This charge is made infinitely more difficult in today's anywhere, anytime consumer-based environment. Delivering the right product through any channel when and where the customer wants it is critical to customer satisfaction and long-term success for every business. Doing so profitably is the challenge.

Luminate Logistics is an integrated portfolio of supply chain execution solutions that accurately and efficiently control the flow of goods from the source to the last mile. It models, plans and executes transportation, warehousing and fulfillment across the network, within the warehouse and in the yard. Supported by industry-renowned task and labor management solutions that drive maximum productivity, and source-to-consumption track and trace capabilities, Luminate Logistics provides the ultimate platform for ensuring supply chains are challenge ready, connected, and circular.

Value proposition

Single end-to-end platform

- Industry-first platform that spans planning, logistics and commerce in one end-to-end solution

- Workflow orchestration: extensible framework that enables customers to create, integrate and customize workflows and applications inside and outside your enterprise

- Integrated ecosystem: MuleSoft API services, as well as an extensive partner and developer ecosystem enables seamless integration with proprietary and third-party software and hardware instances

Actionable business insights

- Luminate makes your supply chain ecosystem future ready with 360° intelligence that delivers complete visibility across your entire supply chain

- Its built-in machine learning and artificial intelligence curates massive amounts of data, events and trends, unlocking actionable business insights that help you solve problems in real-time

Seamless user experience

- Modern UI and UX that provides a consistent, seamless experience across Blue Yonder's robust, feature-rich set of supply chain, logistics and commerce applications

- Available on your mobile or desktop

Sustainable outcomes

Autonomous end-to-end supply chains are aligned with customer needs at a degree of accuracy that simply can't be achieved via human cognition, which means waste is minimized and resources are utilized at unprecedented levels. With the Luminate Digital Fulfillment Platform, companies are reducing their fuel consumption in routing, reducing food waste, reducing over manufacturing and keeping over produced products out of landfills.

As a textile manufacturing company and the world's leading wood fiber producer, Lenzing identified an opportunity for efficiency improvement that could reduce textile waste in landfills. More so than simply reducing waste to save costs, Lenzing was concerned about positively impacting the environment as well as the social pressures faced by the textile industry. By implementing Blue Yonder planning capabilities, Lenzing has gained the potential to do exactly that. Ultimately, Lenzing envisions connecting the entire value chain and truly minimize their environment impact.

Having a sustainable supply chain is also about addressing bigger picture issues like food insecurity and avoiding food waste. Getting the right food items to the right place at the right time is vital to minimizing food waste and ensuring that any excess produce inventory is matched with the food insecure. Several current Blue Yonder grocery customers are making strides in the area of food waste by focusing on accuracy in their production planning and inventory optimization to reduce excess inventory and unnecessary spoilage.

Other companies, like Walgreens, are utilizing transportation management and modeling to reduce their carbon footprint and minimize their impact on the environment. By having better control over modeling, Walgreens was able to reduce both miles and number of trucks on the road, enabling them to meet their cost savings goals, but more importantly work toward their sustainability goals.

Going green by going blue

In the past, companies have been disconnected from their upstream and downstream partners, so it's easy to understand why many of the world's supply chains have acquired a sub-par reputation for their environmental impacts. As a significant number of companies have been challenged to survive in the face of increasing global competition and economic fluctuations, these organizations simply didn't have the resources to devote to understanding the complexities of environmental conservation from their suppliers and customers beyond their own four walls.

Today, all that has changed. Defining a sustainable top-level business strategy and enacting it across the value chain is still challenging, but powerful new technologies are available to help and empower organizations. Smart software solutions, connected on a shared platform, can now aid in breaking down silos to transform the global supply chain into a tool for environmental stewardship.

As these leading-edge solutions monitor, predict and respond to changing conditions in real time, they can consider sustainability goals alongside more traditional profitability and service objectives. As supply chain software increasingly connects all trading partners and leverages AI to support sustainable decision-making across the supply chain, today every business can contribute to the goals of 2030 Vision. Challenge ready and armed with connectivity, control, autonomy and a spirit of collaboration, today's globally complex, circular end-to-end supply chains can make the right decisions, to become true environmental and social champions.

Ready to go green?
Go with Blue Yonder.

BlueYonder