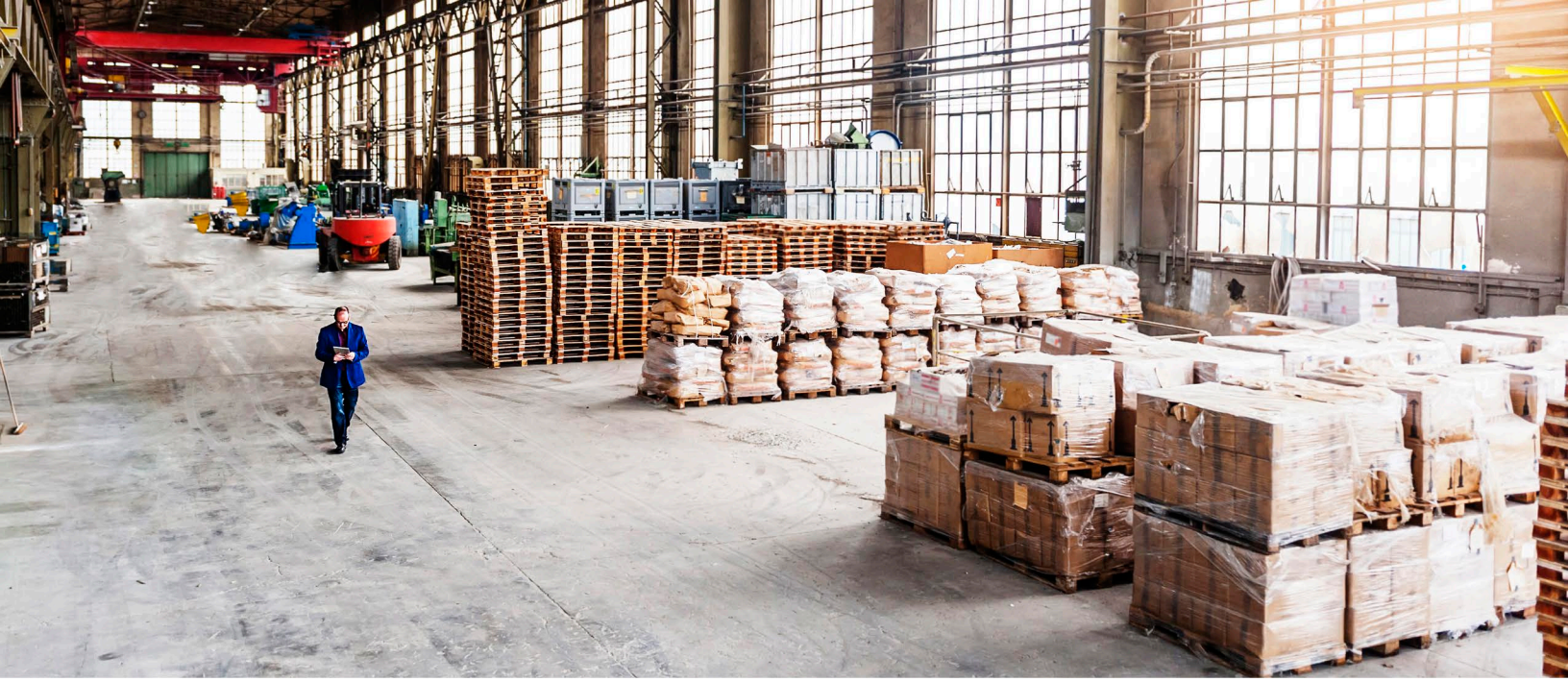

WHITE PAPER

Why supply chain digitization is no longer optional

In a data-driven world, navigating the challenges of today's supply chains requires an unprecedented level of agility. This calls for supply chain tools that deliver network-wide trading partner connectivity to enable real-time visibility, demand and supply planning, and production scheduling insights. Fortunately, modern tools deployed in an organization's technology stack can digitally transform the supply chain, revealing new opportunities for innovation across the entire network.

At the same time, automation and advanced analytics delivered in a digital environment can synchronize production and distribution activities to match demand.

Modern supply chain challenges

Today's supply chains are undergoing a digital transformation into more data-driven, cloud-based processes. Yet, many familiar obstacles remain: Improving visibility across siloed systems and partners with a digital network, leveraging better fulfillment and delivery processes for meeting evolving customer demands, and creating a more sustainable supply chain—from reducing waste or using materials better, to ethically sourcing goods and services. Combating these supply chain challenges begins with having the proper visibility and partner connectivity to digitize your network, integrate your systems, and break down silos.

The network value for digitization

Modern enterprises run on data, and yet much of the data they need are stored outside their four walls: "Up to 80% of a large enterprise's supply chain data is likely in the hands of other companies," **reports Ernst & Young**. And, the volume of data is growing exponentially. This can be overwhelming to even the most successful operations—you're not alone.

When large volumes of data are left unmanaged, locked up in silos, or spread across disparate systems and partners, data and data insights can become incredibly complex to manage, even more so when data quality is lacking or impossible to decipher. For a digital transformation of the supply chain to succeed, organizations require data strategies that will unify these complex data sets under one integrated system with the proper visibility for relevant stakeholders so the data can be properly stored, organized, analyzed, and made actionable.

Unfortunately, many organizations report that a **lack of proper visibility** prevents them from tackling the challenges that stand in the way of digital transformation.

Understanding the need for end-to-end visibility

Today, a digital network of real-time information must be available in order to see, control, and pro-actively manage inventory and shipments from the production source to their final destination. But a lot can happen in between, especially when so much of an organization's supply chain data resides with other companies and partners. Improving transparency, collaboration, and visibility between stakeholders means accessing real-time information about all of the processes that occur before and during transit—from planning, sourcing, production, handling, transport, and last-mile delivery.

Advanced, cloud-based, digitally transformed networks are connecting supply chain partners, events, and devices, so stakeholders can respond quickly and decisively to disruptions, seize opportunities, and orchestrate and fulfill demand from anywhere along the supply chain. But getting to this point is a challenge. Organizations have long struggled with complex supply chain orchestration because they rely on disparate or legacy systems and disconnected, manual processes.

In a modern supply chain, these outdated ways of working can slow down the speed of communication, creating silos and bottlenecks, and straining supplier and trading partner relationships.

Aligning strategy with customer demand

Customers have always expected their products to be delivered on time and in full. Meeting this need builds customer trust. This has not changed. In a digitally enabled marketplace, however, the time to meet these expectations, generate trust, and keep customers happy has accelerated to a point of almost total disruption. Though online retailers can often absorb losses in their logistics costs—many organizations cannot say the same. The supply chain must meet a holistic balance between all relevant stakeholders to create and sell quality products, ensure profits, maintain sustainability, and keep customer satisfaction levels high.

When new technologies and customer expectations disrupt industries—changing consumer markets for both B2B and B2C operations—supply chains often bear the brunt of the impact. Traditional supply chains must evolve alongside new technologies to meet the pressures demanded by more complex operations. "In fact, more than 57% of manufacturers have already responded to the shift by embracing direct-to-consumer (DTC) models, representing the fastest growing category in eCommerce," **reports Ally Commerce**. Organizations must think in reverse—instead of forcing their traditional supply chains to keep up in a changing playing field, they should focus on aligning their supply chains with modern tools and business models, so they can deliver to customers better and more efficiently.

Making sustainability initiatives matter

Producing affordable, ethical, and environmentally conscious goods or supplies has never been easy. As supply chains face more regulatory scrutiny—as well as evolving regulations across countries and borders—a digitally enabled and networked supply chain can be better positioned to make use of sustainable materials and produce less waste, while also sourcing these materials ethically. That's not to mention creating working environments, such as in warehouses or logistics operations, that put human welfare top of mind.

A **McKinsey report** highlights three ways to reduce the impact of these challenges: "Locate critical issues across the whole supply chain; link supply-chain sustainability goals to the global sustainability agenda; and assist suppliers with managing impact—and make sure they follow through." Technology is critical to achieving on these goals. Modern supply chain tools can be used to analyze and understand production and distribution activities to match them with changing customer expectations as to where and how goods are produced. This allows the organization to better understand what issues the supply chain faces—and where they're happening.

Supply chain visibility increases the opportunities for new programs to succeed, as well as the ability to view and understand working conditions to eliminate existing and potential partners if they cannot meet ethical standards. This is the objective of the **UN Sustainable Development Goals** that were established to help countries achieve **sustainable development goals (SDGs)** by using integrated solutions that can "define development of the future"—and mobilize collective intelligence.

In supply chain terms, it's a matter of visibility and sharing it with all relevant stakeholders to create more collaborative and transparent processes.

Building a new foundation for change

Merely adopting modern, cloud-based solutions isn't enough to modernize a supply chain and create a more valuable digital network. Processes and systems must adapt as the solution (or solutions) streamline old ways of working. Manual invoicing, spreadsheets, and traditional control towers utilizing outdated communication processes all reinforce siloes throughout the network. If achieving end-to-end visibility is the goal, these silos must be broken down. Digital processes can automate these activities, while also making them more transparent, improving visibility, and enabling stakeholders to manage the operation of their supply chain in real time.

Data management

Traditionally, managing large, complex data sets, while ensuring quality, was highly manual. It required having the right people with the right skillsets to analyze data and create actionable insights to inform proactive decision-making. Modern business intelligence (BI) and data analytics tools have become much more user-friendly in recent years, democratizing data and allowing every user—or at least every relevant user—access to the data they need, when they need it, so they can make timely decisions. These data management tools are cloud-based and device agnostic, which means reports can be generated on-the-go for users on mobile devices in the warehouse, out in the fleet, or back at the home office on desktop computers without having to rely on IT or a dedicated analyst to run the reports. However, efficient date management begins at the source, which must guarantee better quality of data, provide the ability to filter out the noise from important data, and facilitate actionable outcomes.

Warehousing

Warehouse operations have changed, which means warehouse management must change as well. Capacity challenges with warehouse space utilization, increases in SKU counts, operational challenges in the e-commerce and omni-channel realms, along with **rising fulfillment costs** and labor shortages, are only some of the challenges modern warehouse operations encounter. Additionally, warehouses face capacity and fulfillment cost challenges—and it's not going to get easier. Global e-commerce retail sales have consistently grown by 17% to 20% year over year, **reports Digital Commerce 360**. With holiday e-commerce up 18% in 2019, capacity and fulfillment will only become more challenging in the years to come. This is where advanced warehouse management solutions (WMS) come into play.

"Using a WMS is a fundamental building block for the adoption of many other technologies, and yet it is estimated that at least one-third of warehouses in the United States do not use such a system," **reports the UC Berkley Labor Center**. From picking and packing, to utilizing inventory space, and optimizing labor needs, the right WMS can orchestrate across a disparate network of facilities, synchronizing B2B and B2C operations and dynamically adapting to constant change, which legacy systems simply cannot do. This approach to WMS requires advanced warehousing capabilities with highly configurable rules, built-in labor, task, and inventory management, and 3D visualization, which a modern WMS can provide.

Logistics

Moving the flow of goods from source, warehouse, distribution network, and end-customer can't be done with old-school logistics systems in a competitive marketplace where customers have come to expect next-day fulfillment. At the same time, the necessary skillsets to deliver on these operations are becoming hard to find, with a predicted truck driver shortage that could reach 160,000 by 2028, if current trends continue, **reports the American Trucking Association**. Adding to this is globalization and the speed to which consumers can access and purchase products in omni-channel marketplaces.

Speed, accuracy, and costs must be aligned to meet customer demand. That requires logistics solutions that can provide complete, multi-modal, global visibility to stay on top of capacity uncertainty, as well as rate fluctuations and volatility. Organizations must be able to leverage WMS tools and processes to think—and see—beyond the four walls of their warehouse operations in order to improve performance. Warehouses and logistics centers can no longer operate in the silos that prevent end-to-end optimization, but they must be integrated into the supply chain network for enhanced inventory visibility. By seeing what's available at factory to ship, what's in-transit, and what's at the DC to run scenarios to best align supply with demand ensures that shelves remain stocked and orders are fulfilled efficiently and cost-effectively.

Forecasting and demand planning

Keeping up with forecasting and demand planning challenges requires agile solutions that can anticipate and prepare for seasonality issues, promotions, stockouts, and more. These efforts can no longer be managed with manual, disparate processes. Advancements in periodic item forecasting and intelligent baseline forecasting have helped to reduce the manual planning effort and smooth the impact of one-off events and sporadic demand. Meanwhile, periodic item forecasting provides a direct benefit to the user by factoring seasonal changes to decrease planning time and provide more precise statistical forecasts.

With a secure, cloud-based solution, users from every point along a supply chain can digitally share and align on plans, forecasts, and orders to obtain early warnings of potential issues and help to assure supply. This can also improve logistics throughput, beginning at origin, with solutions that automate supplier packing, labeling, and shipping processes. That way users can generate advance shipping notices to streamline receiving at distribution centers and warehouses to ensure packing and labeling accuracy to enable direct ship and cross-dock programs.

Communicating with the entire supply chain

Modern supply chain systems are built with the understanding that they will need to connect and integrate with other systems. Legacy systems and manual processes simply have not. A supply chain solution that provides this full integration across systems and partners can create the new foundational visibility and end-to-end optimization necessary to thrive in a modern, digitally enabled marketplace.

How technology helps optimize supply chain processes

True supply chain end-to-end optimization requires global, highly available, highly responsible application services to manage the movement of materials across a digital network. According to **Transparency Market Research**, the supply management software market "is projected to expand at a CAGR of 11.2% during the forecast period from 2018 to 2026." As the need for this software rises, the market will become increasingly crowded with players and products that lack the experience and expertise to provide true multi-enterprise agility, improved visibility, and supply chain performance.

Cloud-based, digitally enabled solutions can be the foundation to creating a global network of supply chain partners. But to support collaboration and hand-offs between trading partners, organizations must be able to work with a wide range of systems such as enterprise resource planning (ERP) software, transportation management solutions (TMS), warehouse management solutions (WMS), and supply chain planning solutions (SCP). Minimizing information latency is crucial for creating true end-to-end visibility so stakeholders can make optimal decisions in real-time, based on trusted data that can be accessed, updated, and analyzed as products move from order, to manufacturer, to shipment, to warehouse, to distribution center or shelves, to customers.

These applications will need to support a wide range of interaction modes, including mobile devices, AI, and machine learning–enabled digital assistants (for voice and process automation), as well as warehouse handhelds and other Internet of Things (Iot)-enabled devices for shipping and receiving, fleet tracking, container tracking, and more. Software partners with wide-ranging industry-specific networks, and years of experiencing delivering trusted, proven solutions will be prime influencers in the creation and execution of the future of the supply chain.

Final takeaway

A digitally transformed supply chain is one that has not only adopted modern technology tools but is also cdata-driven - leveraging predictive and prescriptive analytics for optimal decision-making. Organizations must begin their digitalization strategy with tools that can intelligently sense and respond to changing supply chain needs in competitive marketplaces, while also integrating data, processes, systems, and visibility across sourcing, warehouse, and distribution operations—from end to end. This requires agile solutions that can deliver enhanced performance in markets where customer demand is continually evolving.

End-to-end supply chain optimization does not end with adopting the right digital technology solutions to your supply chain processes. Needs will change over time. Instead, it begins when the networked enterprise integrates supply chain partners together.

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