

Digitizing the Extended Supply Chain



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The digital economy is upending all industries and processes, placing a premium on speed, customer satisfaction, and collaboration. These dynamics require companies to change how they interact with customers, suppliers, and vendors, greatly affecting the supply chain. When companies adopt a **digitized and extended supply chain model**, they can respond immediately to changes and satisfy stakeholders.

SET THE STAGE FOR TRANSFORMATION WITH DIGITAL PRIORITIES

What can happen if a company does not identify these trends and change with the times? Consider the video rental industry: In just a few short years, the model went from customers roaming the aisles of a retail store to on-demand, subscription-based, instantaneous streaming with unlimited selection and personalized recommendations. To understand how transformative a change this has been, try explaining the concept of late fees to a teenager.

Transformative opportunities are available across the industry spectrum. To capture and create these opportunities, companies must develop an environment in which they can manage information and processes simultaneously across the extended supply chain. In this proactive state, an organization begins the transition to becoming a real-time enterprise. The digitization of the extended supply chain incorporates four intertwined trends that companies need to consider (see **Figure 1**).

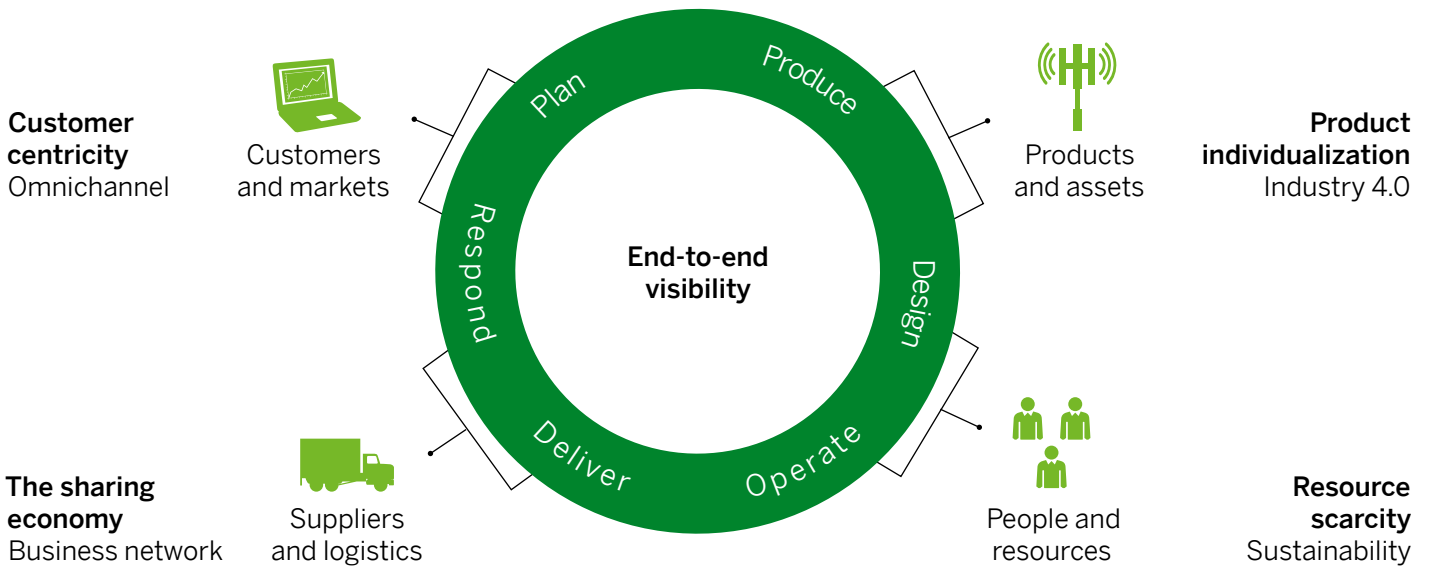


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Four Digital Priorities

Figure: Digital Transformation in the Extended Supply Chain



Customer Centricity

Customer centricity recognizes that customers are in control, and businesses must meet their expectations or risk losing them to a fast-moving competitor. To keep up, speed is certainly required, as customers expect products to be delivered to market – and to their doorstep – more quickly. Companies must transition to a true omnichannel model, with each channel requiring specific supply chain processes and capabilities to support the manufacture and delivery of goods to the customer according to the customer's preference.

PREPARING FOR CHANGING CONDITIONS

It's not just a more efficient manufacturing process that is required; companies must also have a more granular understanding of changing market conditions. To keep customer centricity at the forefront, companies need to recognize and act on market and environmental dynamics – weather, traffic conditions, and localized sentiment data, for example – that may influence buying decisions. Calculating and adjusting demand forecast in real time based on these ever-changing variables is essential to keeping customer centricity a top priority.



Raw materials such as water, minerals, oil, and gas are key components to many supply chains, but it is often challenging to obtain them.



Product Individualization

The importance of the design, manufacture, and distribution of individualized products is closely aligned with customer centricity. Omnichannel retailing has helped entrench this expectation in the consumer world, but it is accelerating in the business-to-business (B2B) environment with increased interest in 3D printing, additive layer manufacturing, and variable product configurations driven largely by the Internet of Things, Industry 4.0, and sensor technology. These technologies are changing traditional business models by connecting people, products, and assets, and manufacturers are investigating how these new technologies can help customers derive greater value. One way to

achieve this is with value-added partners such as contract manufacturers and logistics service providers that can customize products just before they leave the warehouse.

Contract manufacturers are keeping up with the changing demand market by transitioning to a “lot size of one” model to significantly reduce the lead time it takes to produce customized products. And by equipping machinery and logistics devices with sensors and location awareness, manufacturers can roll products off an assembly line in sequence despite having several hundred configuration options.



The Sharing Economy

The sharing economy is an important component of the digital framework. As supply chains become more global and distributed, collaboration becomes a vital component of the digital, extended supply chain. An increase in stakeholders requires open communication channels among manufacturers, suppliers, and designers.

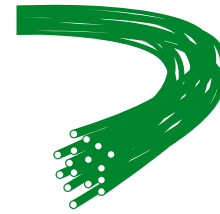
This helps explain the phenomenal growth and adoption of the Ariba® Network as the world's largest trading partner platform. Nearly 2 million

companies trust that this visibility into an extended partner network helps ensure product and supplier compliance and quality, customer centricity, and product individualization. Like the video rental example, consider the disruptive potential of 3D printing in the shipping industry. Once the technology matures, a shipping company in partnership with a 3D printer could potentially change its entire business model, reverting to "last-mile" delivery and slashing fuel and transportation costs.



Resource Scarcity

Demand is exceeding supply for many resources around the world. Raw materials such as water, minerals, oil, and gas are key components to many supply chains, but it is often challenging to obtain them. This phenomenon goes beyond natural resources; an aging workforce that struggles to adapt to the changing skill sets required by the extended supply chain creates a form of human resource scarcity. These factors necessitate real-time adjustments depending on the changing volume of all raw material consumption, as well as adjusting personnel resources in line with changing demand forecasts. Such adjustments could entail scenarios such as hiring a contingent workforce for a busy sales season or hiring for specific skill sets depending on changing production volumes or to develop new products.



The ability to successfully operate within business networks will be the difference between winning and losing. These networks will be the platform on which successful businesses innovate, collaborate, grow, and continually evolve at both speed and scale.





SATISFYING REGULATORS AND CONSUMERS

Consider how resource scarcity affects sustainability and product safety and stewardship. Companies can benefit from reused or recycled materials to minimize risk and lower costs in their supply chain. There is also a compliance angle to consider: Track and trace is vital to ensure both product and supplier compliance, satisfying not just far-reaching regulatory agencies but also the end consumer who expects visibility into a product's lifecycle.

PRODUCT STEWARDSHIP NETWORKS

Many organizations are developing online collaboration communities to address these and other sustainability concerns. Product stewardship networks help companies and their supply chains exchange sustainability data efficiently, and they help ensure quality, performance, and reliability across a distributed supply chain.



A Platform to Drive Digital Transformation

Taken together, the four digital priorities can position a company to respond in real time to sudden, unexpected fluctuations in market conditions. While there is no uniform hierarchy to these priorities, each leads to supply chain visibility and the possibility to truly orchestrate an organization's processes in a continuum of design, planning, response, production, delivery, and operations.

TECHNOLOGY SOLUTIONS

SAP has developed technology in direct response to the needs of enterprises in the digital economy, recognizing that companies need a seamlessly integrated infrastructure and real-time data to digitize their extended supply chain. With the SAP HANA® platform as the engine, and with additional simplicity coming from simplified data models in the SAP® S/4HANA suite, companies have the information and processing power they need for a real-time environment. We see an evolution from a situation in which data was moved to the application to one in which, with the advent of in-memory computing, the application is moving to the data.

SUCCEED WITH BUSINESS NETWORKS

As companies seek to simplify the increased complexity of a global economy, with omnichannels and the huge volumes of Big Data now available, we need to better collaborate across business networks and have a strong digital core at the center of the business processes.

The ability to successfully operate within business networks will be the difference between winning and losing. These networks (and networks of networks) will be the platform on which successful businesses innovate, collaborate, grow, and continually evolve at both speed and scale. For example, with the SAP Integrated Business Planning solution, tactical and operational planning are tightly integrated, allowing for simultaneous short- and long-term planning with financial information incorporated to support decision making.





SIMPLIFYING THE SUPPLY CHAIN

With advanced in-memory computing at the core of your operations, you can free yourself from running the business in batch mode and building complex procedures. With SAP solutions, you can simplify, connect, and enable processes along the extended supply chain. You have the ability to:

- Design for sustainable product innovation to win market share while meeting regulatory and quality requirements
- Plan with demand-driven business processes that integrate strategic, financial, sales, and operational goals
- Respond and orchestrate by sensing and capturing real-time demand and supply data and responding profitably in a timely manner

- Produce using agile and automated manufacturing processes to ensure full visibility of internal and external manufacturing operations
- Deliver through integrated logistics and order fulfillment processes to get the right product to the right place at the right time
- Operate and manage all assets to lower risk, improve safety and quality, and improve return on assets

FIND OUT MORE

To learn more about solutions for the extended supply chain from SAP, visit <http://go.sap.com/solution/lob/supply-chain.html>.



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