



Creating a Frictionless Supply Chain

What services and capabilities do procurement professionals need to keep pace with evolving business models and new product offerings? Speed, global reach, market insight, and supplier collaboration—from prototype to volume production—are part of the equation.

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companies, from Amazon to Apple, Facebook, and Uber, have all employed technology to profoundly alter customers' buying and user experiences. Purchasing physical or digital products, connecting with friends, and arranging a ride can now all be carried out with greater speed, efficiency, and convenience than ever before—and typically without any human interaction.

In the process of transforming the user experience, disruptors such as these are also upending the “traditional” business landscape. Consumers now expect and insist on a wide range of purchase and delivery features and options: desktop- and mobile-friendly interfaces, visualization of inventory, free and/or overnight delivery, real-time shipment tracking, e-receipts, etc.

Merchants that cannot accommodate such customer requests lose business to those that can. Manufacturers, retailers, and others that do compete in this on-demand economy, however, face ever-mounting pressure on their supply chains to support these evolving business models. Frequently global and increasingly networked, these supply chains must operate efficiently across greater geographical distances than ever, in areas that may carry regional or emerging-market risks, while meeting customer demands for speed and accuracy and public calls for sustainable sourcing practices.

Successfully adapting to this changing business environment requires adoption of new technologies, processes, and supplier relationships that enable rapid communication and responsiveness across the supply chain. Moreover, it increasingly demands that executive management consider the supply chain when developing business offerings and strategies—and expand the role for supply chain managers and chief procurement officers in helping to devise such plans.

The Growth of Digital Business

Part of that transformation has already begun, as many vertically integrated companies over the past two decades have sold off non-core operations, opting to outsource those functions to third-party vendors that can carry them out more cost-effectively. Increasingly, companies are relying on suppliers for services ranging from product design to assembly and delivery.

However, supply chain pressures are expected to surge as the next iteration of “digital business” takes off in the coming years. Described by Gartner Inc. as the integration of intelligent connected devices with people and business that will generate new types of consumer transactions, digital business will necessarily drive profound change in supply chain processes and capabilities, the firm says.

Gartner offers the hypothetical example of a connected car that automatically notifies emergency services and the insurance company after an accident. Clothing sensors could communicate with car and smartphone to convey actionable information about the victim's condition to the coming ambulance. And so on.

A 2016 Gartner survey of supply chain executives found that the imminence of such new types of digital transactions is driving “fundamental changes in the business model” of most manufacturers and retailers that will impact supply, demand, and product management. More than 75% of companies with digital capabilities in place expect digital initiatives to apply to more than 50% of their products and services revenue by 2021, the survey found (*Fig. 1*).¹ But while giving such companies many more opportunities for customer intimacy, this evolving digital reality presents supply chains with myriad challenges, from exposure to greater market volatility to requirements for supporting new business models that transcend the traditional goal of fulfilling the demand for physical products.

Figure 1. Percentage of companies with digital capabilities that expect digital initiatives to apply to over half of product/service revenues...



Source: Gartner Inc.

“Customer intimacy allows the supply chain to shape demand much more effectively and extensively than has been possible in the past, which can generate more profitable supply response,” according to the study, *The Supply Chain Path to Becoming a Digital Disrupter*. “But customer intimacy can introduce a higher level of volatility that supply chains must contend with. The supply chain must decipher market signals, separating the noise from actual trends that deserve a response. To devise a profitable response, the supply chain must act like an orchestrator to choreograph a network-wide response that can meet those expectations.”

A dynamic supply chain operating effectively in this emerging environment will link multiple systems, suppliers, and distributors by sharing data immediately and transparently. Cloud, mobile, and connected technologies will play central roles in enabling communication among all parties under this construct.

Technology Shapes the Supply Chain

According to a 2016 Ericsson Mobility Report, the Internet of Things (IoT) is expected to surpass mobile phones as the largest category of connected devices in 2018 and will comprise 16 billion of the forecast 28 billion connected devices in 2021 (Fig. 2).² IoT—systems of sensors and computing devices attached to products that allow data transfer over networks unaided by humans—already is being used by businesses in such routine tasks as monitoring warehouse stocks, managing inventories, and optimizing transportation routes. (Continued on page 5.)

Figure 2. IoT will surpass mobile phones as the largest category of connected devices by 2021

	15 billion	28 billion	CAGR 2015–2021
Cellular IoT	0.4	1.5	27%
Non-cellular IoT	4.2	14.2	22%
PC/laptop/tablet	1.7	1.8	1%
Mobile phones	7.1	8.6	3%
Fixed phones	1.3	1.4	0%

Source: Ericsson AB

Case Study: Giving Suppliers a Seat at the Strategy Table

With almost 37,000 restaurants worldwide and “billions and billions served,” McDonald’s Corp. operates an extensive global supply chain. Part of its “secret sauce” for success, according to Accenture Strategy, lies in its supplier councils, which tap the expertise of a small group of the company’s key vendors for assistance in new-product development.³

According to Francesca DeBiase, chief supply chain and sustainability officer, McDonald’s maintains separate councils for chefs, as well as for each product—beef, chicken, potatoes, and toys, among others. While many of these vendors compete with each other in the larger marketplace, at council meetings they openly advise McDonald’s on innovations, process improvements, and best practices designed to help the company save money and drive business growth.

Part of the reason these suppliers are willing to operate in this fashion is because of the enormous purchase volume that McDonald’s represents for each of them; a number of the suppliers have whole business units dedicated to servicing the restaurant giant. With the long-term commitments that McDonald’s has made to each of them, these vendors have sufficient “skin in the game” to the extent that they are willing to, effectively, work with their competitors to provide counsel to McDonald’s.

This “virtually integrated” enterprise model relies on trust, transparency, and a seamless flow of information between company and supplier. McDonald’s openly shares development, expansion, and innovation plans with these suppliers. “And we really believe that that’s a competitive advantage for us,” DeBiase told Accenture. ■

A hand is shown pointing upwards at a large, glowing, rounded rectangular button with the text 'SUPPLY CHAIN' in white, bold, uppercase letters. The background is a dark blue digital interface with a world map, binary code (0s and 1s), and various glowing UI elements like rectangles and lines.

SUPPLY CHAIN

However, smart technologies are expected to reshape supply chain management in ways that go beyond automating mundane functions. As noted in Ernst & Young’s 2016 report *Digital Supply Chain: It’s All About That Data*, “it is a small conceptual leap from products-as-a-service to intelligent, self-organizing supply chains.” Specifically, IoT sensors and the data they generate may soon be able to be analyzed by increasingly sophisticated machine-learning systems that can make operational decisions in response to changing conditions.⁴

Procurement executives surveyed by Accenture Strategy in 2015 said that many of the transactional processes of the requisition-to-pay cycle will increasingly be handled by intelligent systems in the next five years. Moreover, cognitive technology is likely to be utilized in tasks such as conducting requests for proposals; locating suppliers and evaluating their performance; creating cost models and industry cost curves; and analytics and advanced modeling.⁵

Augmented reality (AR) and artificial intelligence (AI) technologies are also being readied for expanded roles in supply chain operations. AR applications such as digital displays are now being tested to help boost efficiency at distribution centers—whether for inventory picking or loading freight. Meanwhile, experimental AI technologies such as self-driving trucks continue to make headway as viable tools in the logistics space.

With robotic technologies threatening to reduce and in some cases replace the need for humans in parts of the supply chain, where does that leave procurement’s place in the value chain? Increasingly, chief procurement officers’ focus is likely to be on strategy rather than transactions, helping translate the growing data storm into actionable business insight.

Sourcing in the Digital Age

In past decades, procurement officers focused their efforts primarily on purchasing, cost savings, and security of supply. With elements of these functions potentially subject to varying levels of automation, their role is ripe for reinvention if it is to survive.

Figure 3. Procurement is the least likely corporate function to use data analytics



Source: Accenture Strategy

While cost-reduction strategies will continue to be a central goal of sourcing operations—typically manufacturing operations spend over half of company revenues on direct materials—procurement’s role and that of supply chains are increasingly seen as adding value in more strategic ways: risk management, product/service ideation, technology adoption. Delivering this value from the supply chain will require that procurement officers begin to make sense of the burgeoning streams of data that their supply chains produce.

Effectively harnessing the value of big data will demand that procurement organizations master data mining and analysis methods—skills that are underutilized in many organizations and particularly by procurement departments. Accenture Strategy has found that, among seven corporate functions surveyed, procurement is currently the least likely corporate function to use advanced analytics (Fig. 3).⁶

Ernst & Young's 2016 analysis reports that the consensus of its teams working in the field is that exponential data growth is a fundamental problem that continues to overwhelm most businesses. Its teams have concluded that to derive value from this data requires that businesses develop a single overarching enterprise data management strategy that aligns with company goals.

Supply chains that invest in technologies to help draw insights from raw data will enjoy a competitive advantage over those of other companies. With command over data, businesses can instill end-to-end supply chain visibility and extract intelligence to help forecast outcomes, anticipate problems, and develop solutions to prevent delays and disruptions.

In particular, applying predictive analytics to supply chain operations will represent a step change for procurement organizations, which to date have largely employed retrospective analysis—logging shipments, calculating cost savings, etc. With forward-looking models that compare real-time metrics with past results, predictive analysis could potentially be used to anticipate where supply disruptions are likeliest to occur and even which products are most likely to fail—so that appropriate supply chain solutions can be efficiently deployed to respond to the situation.

Collaborative Partnerships with Suppliers

Beyond attaining greater insight from data, procurement departments are recognizing the need to tap into the market intelligence of their supply base—a trend that is already under way. According to a 2015 Oxford Economics study, 56% of procurement executives and 65% of practitioners say that they are becoming more collaborative with suppliers (Fig. 4).⁷



The goal is competitive advantage, and supplier relationships are now seen as critical to innovation. Expanded business networks that channel the knowledge and talent of third parties can be an effective and scalable avenue by which companies can broaden their labor resources and market expertise for planning purposes relating to pricing, transportation logistics, tax and legal issues, and more.

Supply chain partners are increasingly being engaged earlier in product development—from the ideation phase to concept development and prototyping—to better control costs, development time, and quality. Leveraging supplier expertise in the development stages can help avert the risks and expenses associated with a design change at a later phase.



Key to enlisting third parties as business partners is identifying those that are the high-value, strategic suppliers. Gartner estimates that 80% of spend is with 20% of the supplier base. The objective, then, is to partner with those suppliers that—due either to the volume or the criticality of the work that they perform—have a vested interest in helping the company achieve business growth.

This comparatively new business model, in which vendors are treated more like an internal department of the company than a traditional supplier, implicitly requires assurance that such strategic suppliers will not “leak” information, intellectual property, or strategy to the company’s competitors. Yet this very model is being successfully carried out by a number of companies today, including McDonald’s Corp., one of the world’s largest restaurant chains (see case study on page 4).

Procurement’s Strategic Role in Driving Growth

The impact of technology, big data, automation, and supplier collaboration all point to a dramatic evolution in how supply chains will need to operate in order to satisfy the varying demands of customers, distributors, suppliers, and other stakeholders going forward. Equally, it illustrates the need for a rethinking of procurement’s traditional role in the corporation.

Procurement is no longer just about cost savings. In its key role in the management of the supply chain, it is increasingly a driver of overall business value—with expanded responsibilities for ensuring sustainable sourcing practices, protecting intellectual property, and upholding brand reputation.

This ongoing transformation will require recruiting personnel with different skillsets to those traditionally associated with the profession, from data analysis to relationship and team building. If realized, the payoff will be in the achievement of the elusive frictionless supply chain.

By John Simpson

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1. “The Supply Chain Path to Becoming a Digital Disrupter,” Gartner Inc., 2016.
 2. “Ericsson Mobility Report,” Ericsson AB, 2016.
 3. “Procurement’s Next Frontier,” Accenture Strategy, 2015.
 4. “Digital Supply Chain: It’s All About That Data,” Ernst & Young, 2016.
 5. “Procurement’s Next Frontier,” Accenture Strategy, 2015.
 6. Ibid.
 7. “The Future of Procurement,” Oxford Economics, 2015.
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