



Such is the era in which we live today, the era of the customer-driven supply chain. In such a world, the traditional linear supply chain of *Plan – Source – Make – Deliver* becomes confounded by issues such as insufficient inventory visibility across multiple sales channels and fulfillment modalities, legacy systems with limited capabilities, cross-channel returns, and organizational silos. Pure e-commerce retailers have developed fulfillment systems based on tracking eaches, unlike the traditional systems based on cases and pallets. They are able to capture customers through an endless aisle of assortment and low price enabled by centralized scale and low overhead. And e-commerce retailers are rapidly figuring out how to purge inefficiencies from their inherent Achilles' heel: last-mile delivery cost.

With just 8 percent of supply chain executives<sup>1</sup> surveyed believing that their organizations are structured correctly to operate in this new environment, retailers and consumer products companies alike are now making significant investments to transform their supply chains. While urgent, the transformations need to be thought through and implemented with an enterprise-wide road map, something that nearly half of executives currently do not have when embarking on the omnichannel journey, according to a recent survey of senior supply chain executives.<sup>2</sup>

### Can you profitably deliver shopping experiences customers expect?

Providing a good retail experience for a shopper in search of the right pair of shoes for a wedding should not be a Herculean task (see "A customer-centric shopping journey"). However, with the customer expecting a broad and seamless experience, the range of technology-based capabilities

that a retailer needs to employ can be overwhelming. Customers today want whatever goods they need, whenever and wherever it suits them. For a retailer—or even a consumer products company seeking to connect directly with the end consumer—having the capabilities to deliver the type of experience that would satisfy Susan, in the example scenario below, has become essential. These omnichannel capabilities must enable seamless cross-channel shopping with multiple delivery options, a personalized touch, assurance of stock levels and delivery times, availability to suggest appropriate alternatives, communications in real time, and hassle-free returns.

Can you deliver? The answer is probably, "Not yet." According to the *Deloitte supply chain executive survey*, only 58 percent of shoppers are "satisfied" with their shopping experience, and just one-third are "very satisfied." Online shoppers say they are much happier (70 percent) than in-store shoppers (55 percent).<sup>3</sup> The biggest drivers of customer satisfaction online among respondents are: total price, transactional ease, assortment breadth, delivery modality, and delivery assurance. Knowing with surety when an order is coming is generally more important to customers than the immediacy of that delivery.

Postage and handling costs of small parcels shipped to a customer can be more than ten times as expensive as logistics costs associated with large, palletized truck shipments made through a distribution center network to stores. The average profit margin for an apparel retailer on an item bought in store is approximately 32 percent. But today, customer expectation for a range of delivery modality is eroding that traditional buy-in-store margin. The same

apparel retailer may realize only about 20 percent margin on an item bought online and picked up in a store, and just 12 percent margin on the same item that is bought online and shipped from a store.<sup>4</sup>

Margin erosion comes also from other supply chain inefficiencies. Many brick-and-mortar retailers initially responded to the threat of pure e-commerce players by utilizing quick fixes to get up and running in e-commerce and began operating separate, parallel supply chains—in some cases, nearly doubling inventory levels. These structural inefficiencies compound as the scale of the business grows, deferring inevitable restructuring that simultaneously grows in complexity. Enterprises should work to develop the appropriate systems technology and operational architecture sooner than later in the evolution of multichannel retail.

A customer-centric shopping journey



**1** Susan goes to a nearby store to buy shoes she saw online for her friend's wedding. They are the right price and fit comfortably.

*27% of shoppers surveyed visit a store before buying online<sup>5</sup>*  
*74% of millennial shoppers surveyed compare prices online<sup>6</sup>*



**2** The store doesn't have the shoes in red—the color she wants. Susan instantly uses her mobile device to order them online for free two-day delivery.

*91% of millennials surveyed make purchases on their smartphones<sup>7</sup>*  
*58% of consumers with a smartphone use it for in-store shopping<sup>8</sup>*  
*Around a third of customers surveyed are willing to pay for two-day shipping<sup>9</sup>*



**3** Susan finds out from the panicked bride that her red shoes are exactly the same as the bridesmaids' shoes. Susan messages the retailer about the return of the red shoes and orders a new navy pair, requesting delivery within hours.

*Nearly 10% of store-purchased and 30% of online-purchased merchandise is returned<sup>10</sup>*  
*67% of shoppers review the return policy before shopping; return costs are 4 - 12 times more important to the consumer than other attributes<sup>11</sup>*



**4** The retailer messages back with a happy smile emoji to signal that they have a solution. The new shoes will be delivered to a locker close to the wedding. She picks up her new shoes and leaves the red shoes in the locker for return. Susan's account is automatically credited and debited in real time.

*92% of millennials say that real-time product availability influences where they shop<sup>12</sup>*  
*Having delivery options is very important to millennial customers<sup>13</sup>*



**5** Susan dances all night long at the wedding, and she keeps recommending the shoe retailer to other guests. She is also planning to write a glowing online review.

*82% of very satisfied shoppers are also promoters<sup>14</sup>*  
*Satisfied shoppers are twice as likely to be repeat shoppers<sup>15</sup>*  
*More than 50% of millennials use smartphones to read reviews or ask for feedback while shopping<sup>16</sup>*

### The impact of customer-driven supply chain

There are a number of significant supply chain implications on retailers that seek to deliver a whatever-whenever-whenever experience.



**Increased fulfillment costs:** Not only is e-commerce retail encumbered by the additional costs of shipping eaches, it is also expected to provide a multitude of fulfillment options to customers (e.g., ship from store, pickup at store, ship to locker, same-day delivery, digital delivery). As illustrated in the wedding shoes example, a customer may even choose to change the fulfillment option while the product is in transit. Increased optionality and flexibility generally increase fulfillment costs.



**Complex inventory challenges:** Retailers are expected to have inventory to meet demand from different channels, whether in stores or online. In addition, the customers may even expect to get a product on the same day—and within a narrow delivery window. Without the capability to manage a single order pool, the proliferation of channels and fulfillment modality can significantly increase working capital requirements—and/or stockouts—for the overall business.



**Changing demand patterns:** As customers look for convenience, they tend to shift channels from where they shop, depending on where they are and what they are doing. Without real-time information and predictive analytics, retailers often struggle to develop forecasting models capable of predicting demand without double counting from the same customer.



**Increasing returns volume:** As customers shop online, they tend to order a wider variation of product, as variables such as size, color, and fit cannot yet be accurately conveyed through traditional internet devices. Part of this customer behavior is fueled by innovative business models like Amazon's Zappos, which lets customers order multiple sizes and colors online before making a final selection. This customer-centric prioritization puts tremendous pressure on the reverse supply chain in terms of cost and complexity—particularly if the product is returned through a different channel.



**Constrained systems:** Many established retailers are hamstrung by a network of aging, inefficient, and fragile legacy systems that lack the flexibility, responsiveness, and computing power to appropriately orchestrate a nationwide, multi-node, multi-echelon, dynamic supply chain. Furthermore, many of these systems are not integrated and are unable to provide the end-to-end visibility required to optimize across the enterprise.



**Constrained physical network:** Many of today's largest retailers have grown through acquisition, resulting in a network footprint far from any theoretical optimal solution. Distribution center coverage may overlap, but generally not enough to justify capital required for consolidation. Facilities of different eras and leadership ambitions may challenge efforts to standardize processes and handling.

Both traditional brick-and-mortar and pure-play e-commerce retailers need to address these and many other supply chain challenges in order to meet the increasingly demanding expectations from the customer. Linear supply chains that sequentially hand off information are not designed to solve the complex supply chain challenges of a customer-centric world that changes dynamically in real time.

**Under the surface: Empowering omnichannel with digitally enabled supply networks**

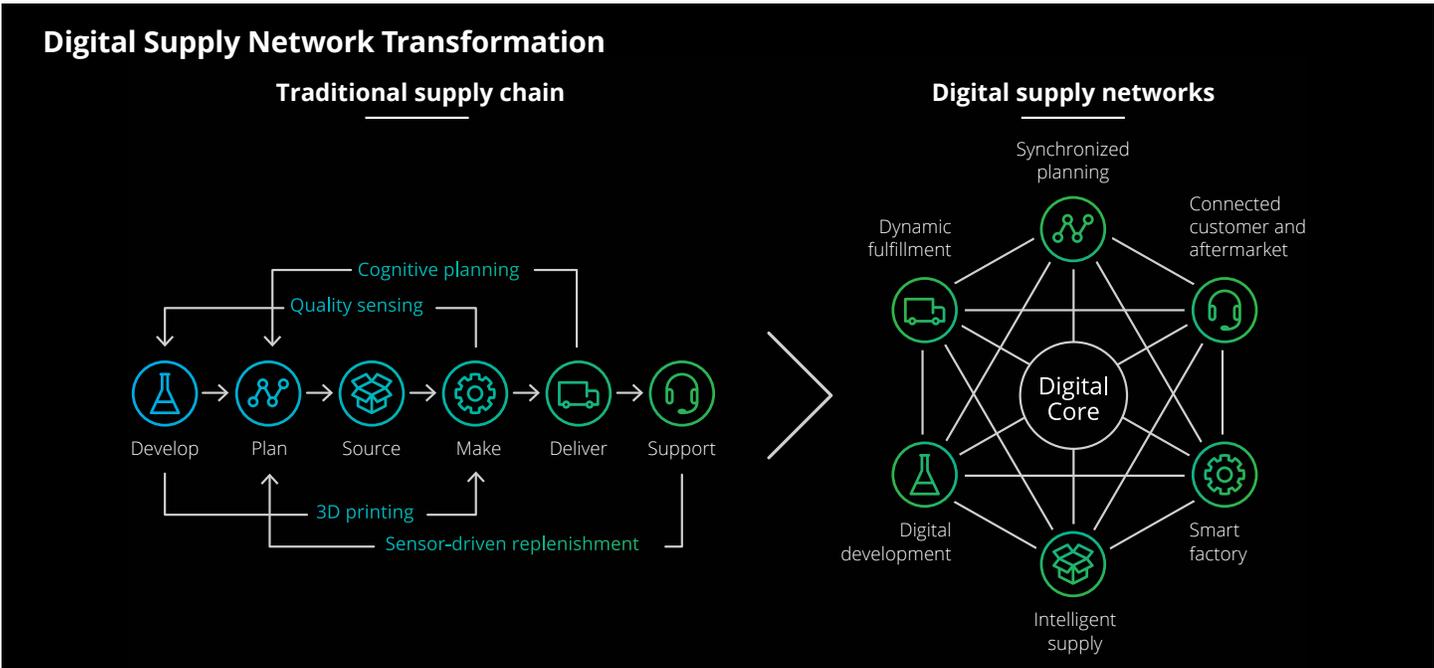
While it is fairly straightforward to identify best-in-class customer-driven capabilities in the retail space, it can be perplexing to determine all that is required behind the scenes to make them work. Many workarounds and temporary fixes can be made to prove out an omnichannel supply chain concept. Indeed, many brick-and-mortar retailers have built out their e-commerce platforms by making modifications on top of legacy system platforms—developed more than a decade earlier—to manage a supply chain moving truckloads of pallets from point to point. This patchwork approach enabled many brick-and-mortar retailers to open e-commerce functionality. However, as scale has rapidly grown, hybridized legacy systems are showing their lack of scalability, capability, and reliability. Meanwhile, off-the-shelf technologies have improved dramatically in breadth of functionality, depth of capability, and ability to interface effectively with other enterprise systems and tools.

The transformation to having an effective omnichannel market offering begins with the recognition that leaders in omnichannel supply chain have begun to move away from the linear logic of

traditional supply chain thinking. Driving this divergence are major technology advances, as well as quantum changes in customer expectations that were implausible just a few years ago. Computing power has continued to increase exponentially, even as costs for data storage and bandwidth have declined commensurately. This has led to a digital industrial revolution, where highly connected networks of supply can be dynamically planned, tracked, directed, expedited, merged, modified, optimized, and taught—all the way from upstream commodities to retail shelf placement.

These major, sustained advances in technology have helped propel increasingly demanding customer expectations to get whatever customers want—where and when, largely without sacrificing quality and price. In order to fulfill these heightened levels of expectation, a new supply chain model is called for, one built around a digital core of information that enables a dynamic capture and flow of data, full network visibility, real-time analytics, and machine learning capabilities that improve and automate decision making. We call this next generation of supply chain strategy the digital supply network (DSN).

**From the traditional linear supply chain to the interconnected, always-on digital supply network (DSN)**



Digital supply networks are “always on.” They are dynamic and leverage Internet of Things (IoT) sensors, applications, and artificial intelligence to make real-time decisions. For example, one could leverage sensors to monitor the quality of fresh produce as it is transported and dynamically make decisions on destination to maximize profits. DSNs are interconnected, with end-to-end visibility, centrally linking information and decisions from other nodes and flows in the network, suppliers, partners, and customers. Suppliers no longer wait to receive monthly plans of varying and questionable accuracy, but rather receive real-time feedback directly from point-of-sale (POS) data. With visibility to upstream supplier inventories and even back into raw material feed stocks, retailers with DSNs have more time to implement contingencies that reduce and eliminate shelf stockouts by no longer having to guess about a supplier’s ability to fulfill orders.

Rather than supply chain decisions being made in a linear way, with a corresponding bullwhip effect back and forth across the supply chain, a DSN recognizes that every touchpoint, flow, and hold of the network possesses information that has the ability to influence a decision taken just about anywhere in the supply network. An out-of-stock in St. Louis may trigger an immediate rerouting in Chicago. Real-time information and decision making enables more goods to be flowed rather than being held as staple stock.

With a DSN, the inflexible, sequential nature of the traditional retail supply chains is replaced by a multidimensional model that can orchestrate inventory and fulfillment decisions dynamically across the entire network to intelligently optimize service quality and cost. The combination of humans, machines, data-driven analytics, predictive insights, and proactive action creates a closed loop of learning. Data mining of weather reports and periodicals for local events informs unexpected demand to the DSN, which can respond by increasing orders for batteries and building materials in advance of a hurricane, or repositioning hot dogs and ground beef for sporting event weekends.

### **Producers and manufacturers are becoming retailers**

Historical lines between retailers and producers are increasingly blurring. Traditional brick-and-mortar retailers recognize the need to serve an “always connected” customer base with an endless aisle of product that can be delivered virtually anywhere within two days, next day, or even same day. E-commerce retailers recognize the value in having in-market nodes of forward-deployed

inventory to facilitate same-day delivery, function as showrooms, and serve as efficient access points for product returns. Meanwhile, producers and manufacturers—encroached by retailers seeking margin improvement through private-label brands—have begun to recognize the imperative to maintain a direct link with the customer and have begun to build retail capabilities. Many traditional consumer products companies are targeting consumers directly, through both brick-and-mortar retail and e-commerce. At the core of this convergence are early winners in the heart and mind-set of today’s customer, although very few have truly mastered it. Below are examples of some of the companies with noteworthy full or partial customer-driven solutions:

- Apple stands as an example of omnichannel supply chain leadership. Beyond informational content, media content, and cross-product depth and consistency of omnichannel, Apple provides extensive supply chain visibility to the customer across its brick-and-mortar and online retail formats to enable the customer to pick the desired model and product variation, modality across fulfillment formats, and the timing of order availability. Instead of just being able to go to a traditional retail store, a customer can go to an Apple-owned store, the Apple website, or the Apple mobile app; configure a product with a host of optional attributes; know precisely where and when it is available at any of Apple’s stores nationwide or online; and then select fulfillment modality by same day (in-store pickup), express shipment, or regular parcel post. There are few of the surprises experienced at many other brick-and-mortar retailers, where store inventories are often inaccurate and the customer may be disappointed to discover that his shopping list has been substituted or not fulfilled at all at pickup time.
- Zara maintains an internal data center that helps it track what customers at each of its individual stores want (and do not want). With an initial seasonal order, Zara only receives a small amount of merchandise. Once the merchandise hits the store shelf, Zara analyzes sales data by SKU and even by product attribute. It might recognize that pants with patches sell better than pants without, or that certain colors or fits move faster than others. Zara then uses these insights to guide subsequent orders, thereby ensuring that those subsequent orders have the most popular features to satisfy demand.

Some retailers have been slow to adapt to the new and disruptive force of the customer-driven supply chain. As mentioned above, in 2017, more than 2,000 fashion-focused stores shut their doors, with even more severe cuts across the broader brick-and-mortar retail space. Many of these retailers cite subpar omnichannel operations as the reason for closings or poor financial results.<sup>17</sup>

- One specialty apparel retailer had already planned on cutting 30 stores in 2018, but added another 20 to the chopping block as it reported a 9 percent drop in comparable-store sales for the most recent quarter. The company's COO noted that in order to drive top-line growth, he quickly needed to evolve the company from classic brick-and-mortar to a digital-focused omnichannel play.
- A department store chain said it would shutter at least 40 of its more than 250 stores through 2018 to build a more productive base. The CEO noted the need to increase assortment and drive growth through a radically improved omnichannel offering.

Much blame has gone to the oft cited "Amazon effect." Amazon's sales may account for nearly 50 percent of all online sales in the United States, but they still only account for 4 percent of total retail sales. However, Amazon's obsession with the customer has led it to innovate and transform e-commerce and retail, eventually leading to a transformation of customer expectations—expectations that few have the capability to meet in a profitable way.

### Key supply chain capabilities enabled by the DSN

Leveraging its supply chain expertise, Deloitte recently conducted executive interviews, analyzed vendor product road maps, identified a total of 158 supply chain core capabilities, and evaluated each against the relevance for enabling today's customer-centric supply chain. Of the 158 capabilities that supply chain executives evaluated, 10 were singled out as most essential to enabling today's customer-centric supply chain.<sup>18</sup> Perhaps most noteworthy is that all 10 of these capabilities require new digital capabilities to fully enable them.

**Foundational capabilities** are generally regarded as being the most fundamental of the top 10 key supply chain capabilities. Not only can they provide substantial operational benefit to the retailer, but they provide the grounding for more advanced capabilities. In some instances, foundational capabilities may drive decisions

around which core technology architecture and systems to select for key supply chain applications, such as warehouse management or inventory and order management. That being said, every retailer is unique and has different objectives, strengths, and challenges. The sequence below is intended to serve as a general guide.

1. **End-to-end analytics:** Digital information forms the core of the digital supply network, and its maturity and ability to influence the supply chain increases as a retailer develops other key capabilities that are interdependent. One of the most fundamental requirements of supply chain management is to have a single source of truth—one that is trusted and accepted end-to-end, across the enterprise as the basis on which to efficiently make decisions and to measure success. Over time, this grows into advanced capabilities that provide information dynamically for real-time decision making, enabling predictive analytics, and feeding optimization engines. Ultimately, this capability becomes the source for cognitive analytics and automated decision making.
2. **Network inventory visibility:** Being able to fulfill store demand and e-commerce orders from an *accurate*, single order pool is a critical capability to improve responsiveness to demand, reduce working capital, increase on-shelf availability, and lower fulfillment costs. Network inventory visibility is foundational to enable multichannel order fulfillment and competitive differentiators, such as same-day delivery.
3. **Integrated demand forecast:** A single, integrated demand signal for the entire enterprise across all channels provides end-to-end internal alignment of expected demand to avoid stockouts, overages, and capacity bottlenecks. This is a capability that should become increasingly predictive and dynamic as it matures, integrating the demand forecast across channels, business units, and marketplaces. If merchandising obtains a great spot-market deal on ripe strawberries, but stores do not simultaneously price the strawberries to move, then the retailer will stand to lose on the "deal." Retailers with large SKU assortments across a breadth of categories can quickly become overwhelmed and inefficient when merchandising decisions rely on one-off, time-intensive, manual decisions to communicate with the rest of the business.

**4. Supplier and carrier connectivity:** Benefits of end-to-end visibility are limited if the starting point is the distribution center (DC) receiving dock and does not include the time between outbound loading and store receiving. Building digital connectivity with suppliers and transportation carriers enables greater predictability and control over the overall supply chain. Labor can be better scheduled at the DC or at the store with precise knowledge of when shipments will arrive. Countermeasures can be deployed if transportation cargo sensors detect temperature variations in transit. Out-of-stocks can be more effectively addressed when lead-time warnings come in advance from the supplier—or even further in advance when the supplier obtains demand signals directly from the point of sale.

**Advanced capabilities** are generally regarded as being more complex or are dependent on foundational capabilities. While the three advanced capabilities below represent three of the most important retail supply chain capabilities to have, they are by no means exhaustive.

**5. Available to promise/on-shelf availability:** Availability—whether it be on the shelf or online inventory—is an imperative of the supply chain. If the product is not where the customer can access it, the product cannot be sold. It is not uncommon for customers of even the largest retailers to unhappily discover 10 percent of a desired shopping list to be out of stock. Not only does this represent lost retail sales and a purchasing substitution risk for consumer products suppliers, but it also creates an opening for competitors to tempt customer loyalty. Having accurate and real-time visibility into product lead times, order quantities, and contingency routing for product availability is a differentiating capability, as many retailers are plagued by phantom inventories and reactionary replenishment triggers.

**6. Order fulfillment optimization:** Demand order management examines each customer order or store replenishment order to assess how best to fulfill it—whether it be by each pick, break-pack, case pick, or pallet pick—with constraints that are dynamic and optimize current-state conditions. Instead of orders being fulfilled by a preestablished linear push or pull, trade-offs are evaluated as to how best to fulfill an order to most efficiently meet service levels and cost objectives. An e-commerce order might be fulfilled from a service-cost trade-off hierarchy of stores or distribution centers; and stores no longer follow a strict alignment to a singular distribution center, but rather a flow that optimizes enterprise service-cost goals.

**7. Continuous-flow order processing:** DSNs enable more product to flow as demand signals are continuously fed, supply chain visibility is real time and end-to-end, and machine learning improves forecast accuracy. Surprisingly, quite a few grocery retailers today still staple stock bottled water—as a means to ensure that it never goes out of stock, despite the fact that it is typically one of the bulkiest, least profitable, and most predictable products to move through the network. Information, analytics, and automated decisions from DSNs enable flow to extend well beyond bottled water, diapers, and dog food and into fresh produce categories, where handling costs can be reduced or eliminated and shelf life extended by embracing a technology—and culture—of continuous-flow order processing.

**Additional key capabilities:** Rounding out the 10 most important supply chain capabilities in a customer-driven retail world are three that build upon the seven foundational and advanced capabilities: last mile/last leg delivery optimization, dynamic workforce management, and cross-channel returns management, all of which build on the foundation of preceding capabilities. While these are the top 10 capabilities generally regarded as most important, they by no means represent the only ones that a given retailer should target or focus on. However, they do provide focus to a priority starting point—one enabled by a digital supply network.

### Building a DSN to enable the customer-driven shopping experience: Getting started

The first step in developing a digitally enabled supply chain that fulfills the customer-driven shopping experience is to understand the strategic objectives and longer-term direction of the business. There is no one-size-fits-all solution, and the future-state supply chain design should be defined by the uniqueness of the business it is serving. This uniqueness includes its points of competitive strategic differentiation, inherent weaknesses, business outlook, and legacy realities of past decisions that have led to the current state.

Only after understanding the strategic business requirements of tomorrow can the future state DSN be envisioned. This vision should include design of the fulfillment network to execute the business strategy, identification of the capabilities required, data needs, and scenario analyses that “pressure test” assumptions and future variability. Not to be underestimated is the change in organizational mind-set needed to effectively enable a customer-centric digital supply chain, in which nearly every employee action should be preceded introspectively by, “How will this best benefit the customer?”

The capabilities needed to achieve the future-state customer-centric vision can be daunting, but organizations should take the time to develop a robust road map that starts from a strong digital core with end-to-end transparency. From there, foundational capabilities—

fundamental to the business—can be sown, followed by more advanced capabilities that become differentiating. Certainly, there will be urgent operational fixes needed to ensure the daily operation of the supply chain, but those should be handled in parallel, mindful of the strategic direction.

In an effort to overcome the potential for paralyzing “fear of failure” when implementing leading-edge technologies and concepts of a DSN, leverage small-scale learning pilots as testing beds for innovation. Whether it be novel inventory tracking devices or new in-market fulfillment nodes, speed is essential. Amazon took fewer than 120 days from ideation to launch of its first same-day delivery service in Manhattan.<sup>19</sup> Its debut was not without its glitches, but it served as a confidence-building training ground to quickly differentiate itself from competitors and position itself for launches in other markets.

The journey of a thousand miles begins with one step, as the saying by Lao Tzu goes.<sup>20</sup> If not prepared to make an enterprise-wide transformation, consider ways to incorporate key attributes of the DSN that move the organization closer toward the customer-driven supply chain. Establish order to the digital aspects of the supply chain, create a single source of truth, expand it end to end, provide enterprise visibility, make it dynamic, plug in capabilities—and begin down the road to a best-in-class-world-enabled digital supply network.



# Endnotes

<sup>1</sup> Gerald C. Kane, Doug Palmer, Anh Nguyen Phillips, David Kiron, and Natasha Buckley, "Achieving digital maturity: Adapting your company to a changing world," MIT Sloan Review and Deloitte, July 13, 2017, <https://sloanreview.mit.edu/projects/achieving-digital-maturity/>.

<sup>2</sup> SCM World, World Survey of Global Supply Chain Officers, 2017.

<sup>3</sup> Deloitte Consulting LLP research

<sup>4</sup> Jonathan Camhi, "The Omnichannel Fulfillment Report: How retailers can overcome challenges to fend off Amazon's threat," *Business Insider*, 2017, <https://www.businessinsider.com/omnichannel-fulfillment-report-2017-8>.

<sup>5</sup> Deloitte Consulting LLP research

<sup>6</sup> The Nielsen Company, "e-Commerce: Evolution or Revolution in the Fast-Moving Consumer Goods World?," August 2014, <https://www.nielsen.com/us/en/insights/reports/2014/e-commerce-evolution-or-revolution-in-the-fast-moving-consumer-goods-world.html>.

<sup>7</sup> Ibid.

<sup>8</sup> Skrovan, Sandy, "How shoppers use their smartphones in stores," Retail Dive, June 7, 2017, <https://www.retaildive.com/news/how-shoppers-use-their-smartphones-in-stores/444147/>.

<sup>9</sup> Deloitte Consulting LLP research

<sup>10</sup> Ibid.

<sup>11</sup> Rudolph, Stacey, "E-commerce Product Return Statistics and Trends [Infographic]," April 10, 2016, <https://www.business2community.com/infographics/e-commerce-product-return-statistics-trends-infographic-01505394>.

<sup>12</sup> The Nielsen Company, "e-Commerce: Evolution or Revolution in the Fast-Moving Consumer Goods World?," August 2014, <https://www.nielsen.com/us/en/insights/reports/2014/e-commerce-evolution-or-revolution-in-the-fast-moving-consumer-goods-world.html>.

<sup>13</sup> Deloitte Consulting LLP research

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> The Nielsen Company, "e-Commerce: Evolution or Revolution in the Fast-Moving Consumer Goods World?," August 2014, <https://www.nielsen.com/us/en/insights/reports/2014/e-commerce-evolution-or-revolution-in-the-fast-moving-consumer-goods-world.html>.

<sup>17</sup> Evan Clark, "Which retailers are closing stores in 2017," WWD, December 11, 2017, <https://wwd.com/business-news/financial/retail-store-closures-2017-macys-bcbg-american-apparel-wet-seal-abcrombie-limited-jc-penney-sears-10842214/>.

<sup>18</sup> Deloitte Consulting LLP research

<sup>19</sup> Jodi Kantor and David Streitfeld, "Inside Amazon: Wrestling big ideas in a bruising workplace," *New York Times*, August 15, 2015, <https://www.nytimes.com/2015/08/16/technology/inside-amazon-wrestling-big-ideas-in-a-bruising-workplace.html>.

<sup>20</sup> Lin, Derek, *Tao Te Ching, Chapter 64, Skylight Illuminations*, 2006, <https://taoism.net/tao/tao-te-ching-chapter-64/>.

# Contacts

**William Kammerer**

**Principal**

Deloitte Consulting LLP

+1.312.486.2957

wkammerer@deloitte.com

**Piyush Sampat**

**Principal**

Deloitte Consulting LLP

+1.816.802.7327

pisampat@deloitte.com

# Acknowledgements

The authors would like to thank Pavan Sirpa, and John Breuninger of Deloitte Consulting LLP for their significant contribution to this publication.



**About Deloitte**

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. In the United States, Deloitte refers to one or more of the US member firms of DTTL, their related entities that operate using the "Deloitte" name in the United States and their respective affiliates. Certain services may not be available to attest clients under the rules and regulations of public accounting. Please see [www.deloitte.com/about](http://www.deloitte.com/about) to learn more about our global network of member firms.