



SUPPLY CHAIN REPORT 2019

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TO ‘EACH’ HIS OWN

Product manufacturers are rebuilding supply chains to meet the needs of omnichannel commerce

BY DAN OCHWAT

For decades, consumer goods companies have exacted and excelled at manufacturing and moving mass quantities of products through retail stores for sale to consumers across the country. But as brands continually evolve in an age of omnichannel commerce – meeting consumers in the store, at the curb, in their mobile phone messenger or at their doorstep – organizations are making key adjustments to their supply chains.

As Greg Buzek, president of IHL, a retail technology analyst, says, “retail is very, very good at moving cases; it’s not very good at moving eaches.” The latter, of course, refers to e-commerce fulfillment, whether shipping a single order to a store for pickup, to the home or elsewhere. Brands face a new challenge of using the actual store as a fulfillment house, building “dark” stores solely for online fulfillment, or constructing new warehouses that manage both traditional retail cases and single orders.

For example, two years ago, Conair Corp. opened an 800,000-square-foot distribution center in Glendale, Arizona, to manage direct-to-consumer orders and online orders through retail partners. The state-of-the-art, omnichannel fulfillment house is adjacent to two traditional fulfillment centers handling “old-fashioned” pallets.

Path to Purchase IQ’s sixth annual Supply Chain Report looks at the steps consumer goods companies are taking to build a supply chain process for an omnichannel era, focusing on four key areas: demand planning, fulfillment, manufacturing, and last-mile/direct-to-consumer delivery.

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Demand Planning

Technology is making it easier to better predict consumer behavior

Traditionally, consumer goods companies have leaned on a product's sales history to drive decisions around demand planning. It's more reactionary, examining sales data, shipments, orders and market data. Today, technologies such as artificial intelligence provide manufacturers with better insights into a customer's overall shopping behavior that not only look backward but forward, providing brands with analytics that can predict a customer's future behavior.

Getting smarter about demand planning by better understanding the omnichannel consumer leads not only to higher sales but greater profits: less inventory failing at the shelf and getting shipped back to the brand.

Neil Ackerman, head of advanced technologies, global supply chain, Middle East and Africa, at Johnson & Johnson, says technology and predictive analytics enable "demand-driven planning capabilities that deliver increased efficiencies, lower inventory costs and, more importantly, higher customer satisfaction levels."

Jon Harding, global chief information officer at Conair Corp., agrees that new business intelligence enables the company to have a better response to demand in as timely a manner as possible, and is also driving a digital transformation around supply chain planning. Conair looks at real-time availability of inventory levels along with social media analytics to predict buying trends, and layers in retailer point-of-sale data, market research and sales history to build out smarter demand planning.

IBM recently launched a new supply chain suite that uses

Watson AI and blockchain technologies to integrate into a brand's or retailer's system. It's an open platform with hybrid-cloud support that doesn't necessarily do the demand planning for a brand partner but carries and generates the demand signals. The company estimates the digital supply chain transformation market to be about \$50 billion.

Sudhir Balebail, director of offering management, IBM Sterling Order Management, says manufacturers and retailers are becoming better at working together these days, being flexible around contracts and how they interact with their customers.

"There is a phrase we use: a demand chain makes a supply chain," Balebail says. "We always kind of looked at the supply chain as being inflexible and always being stoic. Things don't change. But demand is always fickle, and the customers change their minds the most – where to place the order, when to place the order, and so on."

Brands are better today at making e-commerce and demand generation channels collaborate well with fulfillment channels and warehouses, as well as managing profit sharing across groups, he says. Manufacturers have come a long way from the days of thinking an online order for store pickup is a competing demand, he says.

Technology aside, Buzek of IHL feels demand planning hasn't changed much. Brands have been forecasting based on shopper demographics, creating store clusters and making decisions in advance, for some time. They're planning where merchandising should go to what stores in what regions, hoping items will be sold through that store, and if not, hopefully through e-commerce via the local community.

But as they adjust to omnichannel commerce, brands will shift toward focusing on improving through predictive analytics, not just relying on sales history. But Balebail laughs at the idea that



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Conair opened a distribution center in Glendale, Arizona, to manage direct-to-consumer orders and online orders through retail partners. It is adjacent to two traditional fulfillment centers handling "old-fashioned" pallets.

consumers are in control of demand today, as opposed to the heyday of brands driving demand for their products.

"It's not really that the customers are in charge," he says. "I think the vendors have become smart enough to give the illusion to the customers that they're in charge."

Technology is bringing intelligence to commerce platforms so that, if a consumer is wavering about buying a product online, the systems know how long they're lingering, what they've put in a cart or put back, and can then send off messaging to complete that purchase – such as adding in free shipping to help them make up their minds.

A system like IBM's supply chain suite and other platforms leveraging AI, Internet of Things, location-based positioning and weather monitoring are informing the modern supply chain, and Balebail says the key to making it work is the open collaboration between brands, retailers, suppliers and customers.

Fulfillment

Automation drives efficiency in the warehouse; RFID across the supply chain

Whereas technology is aiding brands with forecasting, tools such as machine learning and robotics are helping to transform the warehouse. By the year 2023, more than one-third of operational warehouse workers will be "supplemented, not replaced, by collaborative robots," according to research from Gartner Inc.

Buzek expects to see robotics grow as well. Although naysayers often push back on the idea because they think it will replace jobs, that's generally not true, he says. "The job [just] goes to a higher level of thinking."

Rather than requiring an employee to repeatedly lift a heavy object or move a pallet out of a bin from one side of the

warehouse to the other, deploying robots makes a lot of sense, Buzek says. And it's just one part of the advancements happening around fulfillment today. "There's massive transformation and optimization going on right now," he says.

RFID (radio frequency identification), for one, is driving more accuracy within the supply chain for the companies already using it. GS1 US partnered with Avery Dennison and its RFID technology to study a small apparel company in Clemson, South Carolina, called Southern Fried Cotton. The company had been experiencing a lot of chargebacks from retailers because of inaccurate orders. But after testing the RFID technology, it enjoyed a near 99% reduction in chargebacks. The company had been working with paper-based records that caused mistakes in order accuracy, too, but after switching to the RFID tags, Southern Fried Cotton now registers a mark of 99.5% accuracy for all orders.

GS1 US is a member of GS1 Global, the not-for-profit standards organization that works with retailers to drive industry-wide supply chain standards, such as the standards developed for the use of the bar code (which just celebrated its 45th anniversary, by the way) and RFID tags.

Susan Pichoff, senior director of industry engagement, retail apparel and general merchandise, at GS1 US, says RFID tagging enables a brand to immediately identify a specific product and know what's going on with it. Therefore, she says, it's ideal for click-and-collect. If an item is on the wrong shelf, it can be found much more easily to expedite click-and-collect or e-commerce fulfillment.

The organization ran a study with Auburn University measuring 1 million items from five retailers and eight brands that found that, without RFID to tag and track items, nearly 70% of orders shipped and received from brands to retailers contained some data errors – either in picking, shipping or receiving – that resulted in inventory inaccuracies and chargebacks.

Buzek says BOPIS (buy online pick up in-store) is a larger growth area than a traditional e-commerce purchase for delivery from a warehouse. "That is growing at a rate close to 50%, whereas overall pure-play e-commerce is growing about 10%-12%, depending on the market."

The problem, however, is that retailers need clean data and accurate inventory, which is where technologies like RFID and machine learning/automation come into play. Current store-level data is too inaccurate without it, Buzek suggests. For instance, a consumer searching for a product online to buy in-store who's told that there are five or fewer items at that store might ultimately find none when she arrives, he says.

Fulfillment these days is about fine-tuning stock-outs in an omnichannel environment, Ackerman says. "The line between stores and warehouses when it comes to e-commerce is slowly breaking down."

Consider that one e-commerce order could involve five items with deliveries from five different locations that need to be delivered as quickly as possible, Ackerman says. "This requires us to think differently about how we leverage data and ultimately



manage inventory differently.”

For manufacturers, this partly goes back to demand planning and deciding: what inventory needs to be in which location for a retailer’s online orders; where the traditional brick-and-mortar pallets need to be housed; and what to do about direct-to-consumer orders. “The online channels of our retail partners frequently want up-to-the-minute inventory availability for our products so they can accurately report available stock on their e-commerce sites,” says Harding.

Conair made a significant investment in its new omnichannel distribution center to tackle some of these inventory challenges. “It has enabled us to support our retail partners with the necessary ‘last mile’ delivery capabilities for their online consumers, as well as enable us to start our own direct-to-consumer e-commerce [business],” Harding says.

Rick Bingle, senior vice president of supply chain at retailer REI, spoke about his company’s challenges during an IBM Think event earlier this year. He pointed out that, when moving toward an omnichannel strategy, looking at inventory in stores and distribution centers and how that affects the customer experience, REI learned that the company was declining shopper orders way too frequently.

“We calculated that we were saying ‘No’ 800,000 times every year, because we weren’t accessing the inventory in the store,” he said during the presentation. That cost REI an estimated \$100 million in sales. In response, the retailer has applied IBM Watson technology to optimize its inventory process and gain that money back.

Buzek says he’s seeing major trends around the ways in which brands are fulfilling e-commerce orders, with many moving to dedicated fulfillment centers that are closer to being customer centers, as well as by opening dark stores to handle e-commerce. One specific job to tackle within the dark store strategy is called “chaos binning,” through which a company can improve pick times by up

to 40%.

The idea is that a traditional warehouse is designed to stack cases – the “stack ‘em high, watch ‘em fly” mentality of old. But when fulfilling e-commerce orders, it’s more efficient to have product arranged in very specific bins. For example, a hockey equipment company will have all size 7 helmets in one bin, so when the order comes in, there’s only one bin to choose from.

As large brick-and-mortar footprints continue to downsize, IBM’s Baleball sees an opportunity for retailers to reformat those stores into hybrid distribution centers that can sell product in one area but use other space as a mini-warehouse. “Why open a new warehouse? Why don’t I use the stores to do fulfillment,” he asks.

And within that warehouse, machine learning, robots for improved picking, drones, autonomous vehicles and other tools will continue to transform the operation. A 2018 Gartner study addressing the future of supply chain operations forecasts that, by 2023, half of large global companies expect to be using AI, advanced analytics and IoT in their supply chain operations. In addition, 20% of warehouse transactions will be processed by augmented reality or conversational voice technology.

Buzek believes that adoption of voice-picking technology is already moving ahead, replacing the tried and true scanner gun. Employees are assigned a task over a headset in their native language, then respond in their native language when tasks are completed. Everything else is voice-activated as well, with no scanning of bar codes or tags needed. Conair uses the technology in its DCs.

Automation and advanced technologies also bring more data, an issue brands do need to address. “We need analytical people who can interpret and [turn the] data into actionable information,” Harding says. “I believe the role of IT is to be a catalyst in bringing solutions and explaining what is possible to teams in other functions to develop, implement and use these solutions to drive business improvement.”



Nike is working with Foot Locker and its own stores to give online consumers a full view of stock availability over e-commerce, including locations that traditionally aren’t visible online such as outlet stores.

The Last Mile

Manufacturers are finding unique ways to deliver product anywhere

IBM's Balebail thinks last-mile delivery is a skill that all brands must sharpen to compete, to become so in tune with consumers that they can deliver directly to their homes, to the next hotel they'll be staying at, or anywhere else they might want the delivery.

One brand to watch is Nike, which is working with Foot Locker and its own stores to give online consumers a full view of stock availability over e-commerce, including locations that traditionally aren't visible online such as outlet stores. "The power that Nike has put in ... really made sure that their product – in any form, wherever it is – is visible and available to the customer," he says. "I think that's going to be the template for a lot of consumer companies as they get into this model of distribution."

Harding says the big question Conair's been answering on its digital transformation journey since 2016 is, "How do we meet these last-mile delivery expectations?" From a direct-to-consumer capability standpoint, the company is focusing on products less likely to be available through traditional retail stores, such as spare parts for countertop kitchen appliances. And it's leveraging DTC as an initial launch platform for some of its more innovative new products.

"Our vision of last-mile delivery is ultimately to provide our products to consumers when and where they want to receive them, in response to online orders placed on either our retail partner sites or our own direct-to-consumer sites," he says. "We aim to provide the best possible customer experience, wherever initiated, via our drop-ship to consumer capabilities out of our omnichannel fulfillment centers."

Of course, Conair isn't abandoning its traditional retail customer, just building out an omnichannel strategy that meets the needs of all customers. The new omnichannel distribution center is a prime example. "It was a big investment," Harding says. "I think it's a critical success factor on the journey for us to be able to survive in this digital world. If you can't do the last mile fulfillment, then you have to rely on third-party fulfillment houses. You're outsourcing a key function, and it's not wrong, it's a different strategy."

Last mile delivery is a high priority for Johnson & Johnson, too, given the company's commitment to providing better health remedies globally. "Last mile delivery is vital in instances where we're delivering critical, cold-chain medications to developing countries," says Ackerman.

DTC purchases "will definitely continue to increase over the next few years," he suggests, and could involve drones delivering products where possible, bikes in crowded cities handling deliveries, or the use of autonomous vehicles.

"Being built for omnichannel commerce and the last mile are essential for success in today's market," Ackerman says, advising

brands and retailers to consider getting real-time tracking and visibility and making sure consumers are informed from end to end.

"The next frontier will be aggregating all the last-mile delivery offers at a single point," he continues. "This will ensure the best carrier wins for each individual shipment and consumers and customers then gain the best experience possible. New startups focused on this aggregation will have the edge to influence logistics long-term."

Manufacturing

Customization is having an impact on product runs, too

E-commerce is impacting the supply chain all the way back to the manufacturing process, as the efficiencies around mass production of flagship SKUs must now be combined with customized items and smaller runs that reflect changes in consumer buying behavior. Companies these days might find that producing a small run of an innovative flavor and selling it direct online is more efficient than shipping it out to every store. In some cases, brands might even find it more efficient to manufacture purely on demand.

But whatever strategy a brand takes with manufacturing, its success will depend on data, information that can be used to truly optimize orders and fulfillment. "It really comes down to understanding our customer needs and enabling on-demand, personalized, accessible products, services and experiences," Ackerman says.

J&J has run numerous pilots to test practices for different business units and specific markets, he says. This includes testing 3-D printing to enable manufacturing smaller quantities. The company just opened a new manufacturing facility in Cork, Ireland, to increase capacity and expand its ability to pursue innovation.

GS1 US emphasizes the importance of brands to be as transparent as possible and having all product data visible to consumers. "We always talk about complete and accurate data being the most important thing," says Pichoff.

IBM's Balebail says brands do a great job of introducing new products into specific geographic locations and they do a great job of pulling products that aren't selling well in places. Manufacturing in the omnichannel era is about being smart with product assortment, he says.

REI is guided by sustainability, so as a principle won't ship products made in California to a store in Boston because of the carbon footprint that would generate. But the company can input those types of fulfillment decisions into its automated platform, Balebail says.

It's just another way in which getting smarter about the supply chain – from manufacturing and demand planning through last-mile fulfillment – has become the new battlefield for consumer goods companies, Buzek says. **IQ**