E-Commerce: Cultivating a New Logistics Landscape

E-commerce continues to mow down traditional business practices. To adapt, companies serving manufacturing, industrial, and retail customers are seeding their portolios with new services, and not letting any grass grow under their feet.

As e-commerce continues to make inroads across industry sectors, it's disrupting numerous business models. That includes those of manufacturers who've traditionally been several steps removed from end consumers—the ones most known for shopping online. In 2015, e-commerce shipments accounted for 63 percent of the value of manufacturers' overall shipments, up from 48 percent in 2010, according to U.S. Census Bureau data.

"The difference between manufacturing and retail is starting to get fuzzy," says Bob Malley, chief executive officer of Pierbridge, a Marlborough, Massachusetts-based provider of supply chain technology solutions. "For instance, more manufacturers are becoming drop-ship suppliers, and have to support a business-to-consumer (B2C) distribution model."

"Manufacturers are deciding 'we better get in the game and sell our products directly to the consumer, or Amazon's going to do it for us, taking revenue and margin we could have captured,'" says Jason Minghini, president of FW Logistics, a Centreville, Illinois-based provider of logistics and warehousing solutions with facilities dedicated to contract, food grade, and chemical and hazardous materials. A number of FW's clients, across various industries, have considered opening facilities that will allow them to go straight to consumers and bypass brick-and-mortar outlets, he says.

Many companies outsource e-commerce logistics to FW Warehousing to leverage its low-cost, centrally located distribution and e-commerce fulfillment centers, enhanced IT capabilities, and scalability and flexibility to support growing businesses.

A few decades ago, manufacturer supply chains often included master distributors, distributors, and retailers, explains Tim Brown, managing director of the Supply Chain & Logistics Institute at Georgia Tech. Each party earned a margin, driving up overall costs. For many transactions, e-commerce has made personal relationships less important, and shortened the distribution channel, he adds.

Another change is the consumer-like behavior of many industrial and manufacturing customers. "They want their orders fulfilled quickly, at a price they want, and delivered where they want," says Adegoke Oke, associate professor of supply chain management at Arizona State University.

The launch of AmazonBusiness.com in 2015 provides further evidence of the continued blurring among manufacturers, distributors, and retailers. The marketplace features pricing tools and enables sellers to offer quantity discounts and list their credentials, among other functions.

"Amazon combined its expertise on the consumer side with logistics, planning, and warehousing, and is applying that knowledge to business transactions," Brown says.

These shifts offer manufacturers and their supply chains the opportunity to expand their markets, forge closer connections with end consumers, and price dynamically. At the same time, leveraging these changes requires rethinking business practices and investments in technology, people, and in some cases, brick-and-mortar locations.

Challenges and Opportunities

E-commerce has accelerated the speed with which order volumes move both up and down the supply chain. During the recession, many business buyers, noticing a drop in spending by consumers and other customers, quickly cut their own orders, says Chris Christopher, executive director of IHS Markit, which provides information and analytics to support business and government decision-making.

Small changes at the consumer level can quickly pick up momentum and impose a sizable impact on companies farther from end consumers. "It's the bullwhip effect," he says. "When things turn sour, they move very fast."

Another challenge facing some manufacturers is growing pushback from retailers that are also struggling to manage changing consumer expectations, says Sam Ganga, partner, digital strategy and transformation, with KPMG U.S. For instance, some retailers expect manufacturers to adjust their inventory placement models to better accommodate consumer demand for instant (or near-instant) order deliveries.

Meeting customers' expectations—always a challenge—has become even more demanding. A company can lose customers if it fails to meet expectations, yet the complexity of fulfilling all orders, across all channels, accurately and on time, is significant, says Perry Belcastro, vice president, fulfillment services with Saddle Creek Logistics Services, Lakeland, Florida. Saddle Creek offers warehousing, omnichannel fulfillment, transportation, and packaging services.

"Having technology that can provide inventory visibility across channels and drive proactive management is critical for both business-to-business transactions and direct-to-consumer sales," he says.

After all, critics find it easy to be vocal when companies fall short. "Social media opens brands to a tremendous amount of exposure," Belcastro says.

Amidst these challenges, however, bright spots emerge. The speed of change helps when orders increase, Christopher says. Businesses that are

The Pace of Parcel Industry Change Is Accelerating – Are You Being Left Behind?

Demand from e-commerce is driving the price of parcel quickly — currently at twice the pace of inflation — while Amazon is making free shipping commonplace, all as customers demand more and faster delivery options. Bricks-and-mortar retail isn't immune from it as customers won't wait for out-of-stock products, while also looking for same-day shipping from the store.

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electronically connected to both customers and suppliers can quickly transmit information on a bump in demand to factories and warehouses across the globe, and then capitalize on the increased interest.

Changing Prices on the Fly

Similarly, manufacturers can quickly change prices to reflect the signals they receive from e-commerce orders and their inventory systems, Christopher says. Extra inventory might prompt lower prices, while an order backlog could signal an opening for price increases.

With e-commerce making possible direct access to end customers, manufacturers also gain an opportunity to increase brand awareness, Oke says. Some decide to sell straight to consumers, forgoing traditional distribution channels.

One challenge prompted by the rise of e-commerce is the growing volume of smaller, more frequent and often parcel shipments, says Pierbridge's Malley. Because of increased demand, parcel costs are going up at roughly twice the rate of inflation, he notes.

What's more, those costs don't include many accessorial charges carriers are adding, such as dimensional weight rating fees, sometimes called an air tax. Shippers who make wasteful packing decisions can end up paying fees based on both weight and dimensions. So, a package of paper towels doesn't get off cheaply just because it's light.

New cartonization technology uses algorithms to find the most cost-effective way of packing each order, given the length, width, height, and weight of the items. That helps avoid the air tax, Malley says.

Because most manufacturers have already hammered down supply chain expenditures, such as labor costs, they are turning their focus to transportation, Malley notes. One way to reduce parcel shipping costs is to ship from facilities located closer to end customers.

Another is to identify and control cost-effective carrier service selections, particularly with the growing number of parcel delivery options available for last-mile delivery. "Companies that do this will improve customer service, margins, and the bottom line," Malley says.

Addressing Parcel Challenges

Accomplishing this means addressing several challenges. Freight, less-than-truckload, and truckload shipping were once regulated industries with largely standard operating processes and documentation, Malley says. But that has never been the case with parcel shipments. Every parcel carrier has proprietary ratings, labels, and tracking formats. "It's the Wild West," he adds.

Moreover, traditional freight transportation management systems (TMS) have largely ignored parcel modes, says Mark Picarello, chief operating officer for Pierbridge. As a result, many companies have only a fragmented view of their parcel shipping spend. "They have a point shipping system over here, and a carrier-supplied solution over there," he says. "Because data is locked in silos, they don't have a full understanding of all their expenditures."

A parcel TMS solution can upload all shipment data to a cloud-based data warehouse. Shippers can analyze spending trends, identify potential cost savings, and engage in predictive analytics. The result? "They can make better decisions and control costs," Malley says.

Another trend is the shift from opening a handful of "mega, million-square-foot distribution centers" scattered across the country, to smaller facilities in a greater number of locations, Minghini says.

A company that might have opened four mega distribution centers, one in each corner of the United States, now is more likely to consider what Minghini calls "flex space." That could include, for instance, 20,000 square feet of product stored in St. Louis, 20,000 square feet in Dallas, and yet another 20,000 square feet outside Pittsburgh.

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"That way, manufacturers can get their product to the customer more quickly," he says. "It's causing a radical shift in real estate buying and supply chain management."

On top of that, many consumer and business-to-business companies might need, say, 30,000 square feet of storage for most of the year, along with the ability to flex up to 100,000 square feet during peak season. "And, they'll need that model in 10 cities," Minghini notes.

"Because space and workforce flexibility have become increasingly key, working with a solid third-party logistics (3PL) provider often makes sense," says Mike Dieckhaus, director of business development with FW Logistics. A 3PL can offer many companies the flexibility they need, when they need it.

Because 3PLs can spread their technology investment across multiple organizations, they can offer solutions that might be outside the budget of an individual company. "For instance, multiple companies can use our pick-to-light line, offering each one flexibility," Dieckhaus says.

FW also is able to invest in its own fleet of trucks, which allows it to provide the flexibility and speed many organizations need when moving products.

The end goal is "using technology to enable inventory visibility across all channels within a distribution network that provides optimal delivery speed at the best cost," Belcastro says.

Next Steps

Success in today's business-to-business e-commerce environment often requires multiple actions. One is developing a customer-centric supply chain, Ganga says. The traditional pressures placed on supply chains—to deliver the best products at the cheapest prices—aren't going away, of course. Now, however, supply chain organizations are "expected to delight customers," he adds.

That requires a rethinking. Supply chain organizations have to understand all segments of their companies' customer base, and how and why they buy. "Gone are the days of one-size-fits-all," Ganga says. "You need to create supply chain archetypes."

What's more, accomplishing this transition won't result from incremental improvement. It requires looking at the world through a different lens. "You can't just make and deliver products," Ganga says.

Many supply chain organizations currently rely on lagging indicators—for instance "44,000 orders were received last month, and 42,000 shipped"—to guide business decisions. They need to shift to leading indicators, Ganga says. That likely requires employing a mix of artificial intelligence and machine learning to arrive at signals that can act as proxy for leading indicators. It also requires greater interaction between a company's supply chain organization and its sales and marketing functions.

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> –Adegoke Oke, associate professor of supply chain management, Arizona State University

A company whose products ease spring allergy symptoms, for instance, may assemble government data, social media posts, online search volume data, point-of-sale results, and perhaps third-party data to estimate the severity of the upcoming allergy season. Then they can more intelligently and efficiently allocate products to each location.

"Improved predictive capacity is key," Oke says. "Trying to ensure fast delivery times is almost impossible without good forecasting." A solid flow of supply chain and inventory information also is critical, he adds.

One important factor for success in an omnichannel, e-commerce world is "an order management system that allows you to see the inventory across all channels in real time," Belcastro says.

The system should be able to determine the optimal fulfillment source for each product, based on its location, and the customer's location, Belcastro says. Say you have inventory in Nevada and in Ohio, and you need to fill an order placed from Phoenix. The system, such as the one Saddle Creek offers, should steer you to the Nevada location.

Before a company can rationalize its SKUs and inventory levels, it needs to "understand exactly what SKUs are moving, what SKUs aren't moving, and how much of each SKU it has," Minghini says. That requires systems that can monitor ordering patterns, enabling the company to shift inventory from one distribution center to another to achieve quality service, while keeping transportation costs in check.

The Distribution Network

Along with technology, a distribution network that enables an organization to optimize the location of its inventory is key. Given transit time and shipping costs, operating from one or two locations rarely is optimal any more.

A 3PL with a network of facilities provides the flexibility needed to manage inventory and orders across multiple locations and to accommodate growth, Belcastro says. That's key for companies that lack the volumes needed to make it practical to operate from multiple locations. As a company grows, it can expand throughout the 3PL's network without an inordinate capital investment.

Another type of flexibility an organization needs today is within its own operations. Many companies need to ship small parcels to consumers, and also build pallets for wholesale and retail deliveries. "We're seeing more demand for these dual capabilities," Belcastro says.

In addition, more companies also are looking for some level of customization, such as embroidery, engraving, or special product configurations such as multipacks, Belcastro says. Companies that decide to offer these solutions often need to invest in training and capital equipment. They also need to determine how to fit these capabilities into the flow of just-in-time shipping.

"Managing the overall throughput of these services adds complexity," Belcastro says.

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Many companies turn to 3PLs to help them meet these goals cost effectively. "We view ourselves as warehousing, distribution, and logistics experts," Belcastro says. "Many companies prefer to stay focused on product development, brand management, and customer lifetime value expansion, and leave the rest to us."

Customer service also has become a critical differentiator. Simply offering products on a shelf no longer suffices, as somebody else will come along to do that more quickly and cheaply. "You need a compelling hook with customers," Brown says. This can mean offering skilled technicians, installers, and/or product expertise.

Developing these attributes requires significant investment in technology, people, and locations. Failing to address the disruption e-commerce is causing, however, entails its own risk. "Technology often requires a long lead time," Oke says. "If you wait, you might get left behind."

That's true even for market leaders facing ankle biters who are offering enhanced products or services. Not only could the new entrants siphon off customers, but the market will soon expect leading companies to match the upstarts' offerings.

Looking Ahead

The changes prompted by e-commerce show no signs of abating. For example, within the next several years, practical applications for blockchain technology are likely to emerge. That's especially true in small parcel shipments, given the current lack of standards in this market. "Blockchain offers hope for new entrants to get in on a trusted and standardized platform," Malley says.

In fact, several parcel companies are sponsoring blockchain pilots to help execute smart contracts, Malley says. Here's how it could work: Because blockchain essentially is a ledger, a solution could record and retain the history of the shipping transaction, such as when it was picked up and by whom, and when and where it was delivered, among other information. This technology could be particularly valuable for manufacturers of pharmaceuticals, alcohol, and other products that must maintain a chain of custody, he adds.

The number of brick-and-mortar stores will drop, while online ordering and fulfillment will continue to grow at an exponential pace. "Many shopping malls will be repurposed into warehouses," Minghini says.

Transportation rates will continue to head up, Minghini predicts, noting that average truck drivers in the United States are 50 years old or older. In addition, the ELD (electronic logging device) mandate will cause some drivers to leave the field. "That will create another crunch and drive rates up even further," he adds.

Indeed, labor shortages exist in many supply chain functions, boosting competition for qualified candidates. "3PLs can offer the flexibility of sharing labor across multiple customers," Belcastro says.

"To date, the supply chain has been a behind-the-scenes competitive edge," Ganga says. "The supply chain of the future needs to be a front-and-center competitive edge." ■

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