THE FUTURE OF SHIPPING REPORT

WHY BIG E-COMMERCE RETAILERS ARE GOING AFTER THE LEGACY SHIPPING INDUSTRY

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Cooper Smith | Senior Research Analyst

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KEY POINTS

- **Transportation and logistics could be the next billion dollar opportunity for e-commerce companies.** The global shipping market, including ocean, air, and truck freight, is a $2.1 trillion market, according to World Bank, Boeing, and Golden Valley Co.
- **There is much at stake for legacy shipping companies, which have seen a boom in parcel delivery as e-commerce spending has risen.** Twenty different partners currently share the duties of shipping Amazon's 600 million packages a year, with FedEx, USPS, and UPS moving the most.
- **Retailers want to handle more of their own shipping for a variety of reasons.**
    - By handling their own shipping and improving on-time deliveries, retailers should be able to increase customer satisfaction. UPS could only deliver 91% of packages on time in the week leading up to Christmas 2015, according to ShipMatrix.
    - Big online retailers have valuable data on customers, which they can leverage to make shipping more efficient. E-commerce companies could then sell shipping and logistics services to third-party merchants and create a new revenue stream.
    - Retailers could also cut down on shipping costs by building out their own shipping capabilities. Amazon has seen revenues from shipping through its Fulfillment By Amazon program rise faster than shipping costs.
- **Amazon, Alibaba, and Walmart have so far focused on building out their last-mile delivery and logistics services but are increasingly going after the middle- and first-mile of the shipping chain**.
    - Amazon has already made major moves across each stage of the shipping journey. It launched same-day delivery service, which it handles through its own fleet of carriers, cutting out any third-party shippers. The company also recently began establishing shipping routes between China and North America.
    - Walmart's interest in expanding its transportation and logistics operations is almost purely related to cost-savings. It's begun leasing shipping containers to transport manufactured goods from China and is making greater use of lockers and in-store pickup options to cut down on delivery costs.
    - Alibaba, like Amazon, sells its own goods and operates as a third-party marketplace. Alibaba has begun leasing containers on ships, similar to Amazon's Dragon Boat initiative. This means that Alibaba Logistics can now facilitate first-mile shipping for third-party merchants on its marketplace.

Download the charts and data in Excel »

INTRODUCTION

The parcel delivery industry — a segment of the shipping sector that deals with the transportation of packages to consumers — is booming thanks to e-commerce growth, and players outside the industry want a piece of the pie.

Legacy parcel carriers including FedEx and UPS have been relatively immune to disruption because of the scale, cost, and complexity of their industry. But now retailers, traditionally customers of carriers, are looking to reduce their reliance on delivery partners and even potentially compete against them.

The global shipping market, including ocean, air, and truck freight, is a $2.1 trillion dollar market, according to World Bank, Boeing, and Golden Valley Co.

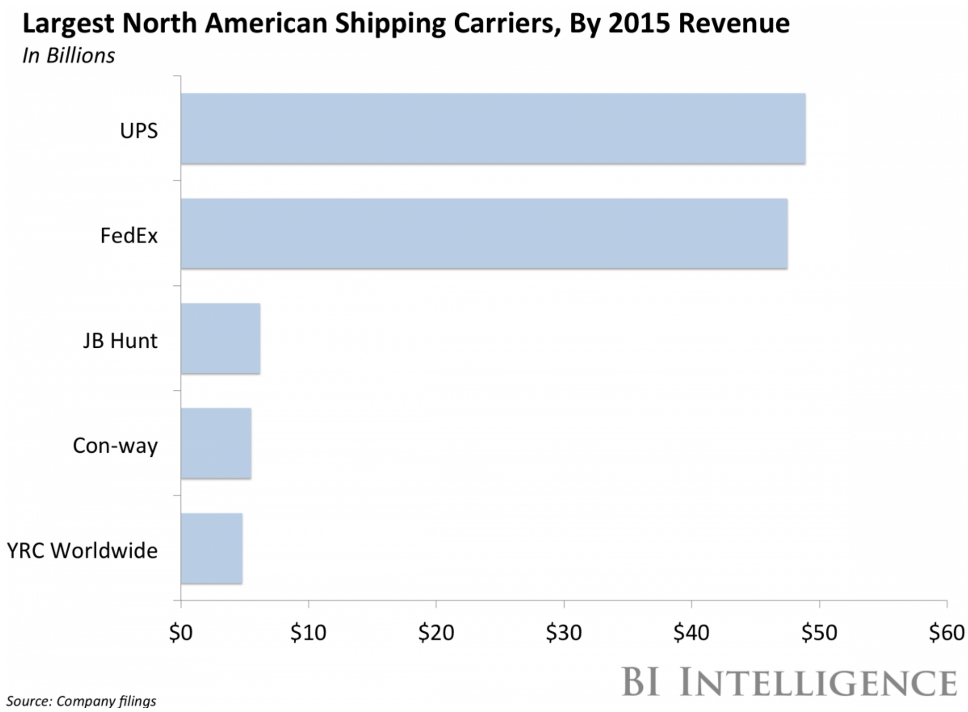
Amazon, Alibaba, and Walmart are the big retailers beginning to shake up the parcel delivery industry. Their moves should scare legacy carriers like FedEx, UPS, and the US Postal Service, which risk losing business, or even worse, becoming irrelevant. The entrance of new players into the once stable shipping space also matters to brands and retailers more broadly. These companies may soon have new partners and options for the transport of their products. This could lead to faster shipping speeds and reduced costs.

In this report, we'll look at the size of the shipping industry, how it operates in broad terms, and why major e-commerce retailers are looking to disrupt the space. Then we'll explain what Amazon, Walmart, and Alibaba are doing in shipping and how these moves might impact traditional carriers and other third-party retailers.

UNDERSTANDING THE PARCEL DELIVERY MARKET

The parcel delivery industry is large and complex.

In 2015, UPS and FedEx, the top two North American carriers, earned $96.4 billion in revenue. This revenue came largely from retailers that partnered with them to ship goods.



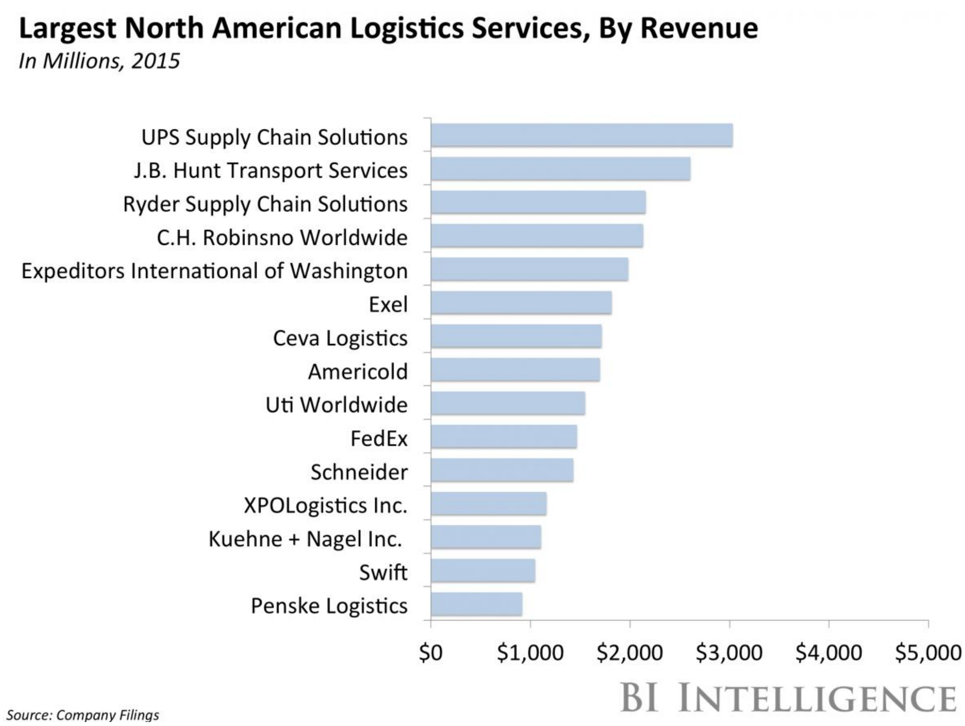
There are typically three stages of transporting retailer goods:

- The **"first-mile"** refers to intercontinental shipping, typically by sea. In this stage, goods are shipped from the manufacturer to warehouses where inventory is held.
- The **"middle-mile"** refers to intracontinential shipping, usually by air or truck. In this segment, retailers move merchandise from warehouses that hold inventory to sortation centers where orders are labeled and prepped for pickup by delivery trucks.
- The **"last-mile"** is the last leg in shipping in which delivery trucks take packages to consumers' doorsteps. This is the stage consumers are most familiar with — when the USPS, FedEx, or UPS carrier rings the doorbell and drops off a package.

And there are three types of services used to move parcels across the first-, middle-, and last-miles of delivery:

- **Maritime services —** This subsector includes seaports, terminals, and container ships which are used to move goods intercontinentally across oceans.
- **Air and express delivery services —** Air cargo services help retailers move merchandise intracontinentially between warehouses and/or sortation centers. Retailers typically rely on air freight to move merchandise to another region within the country or region quickly.
- **Trucking —** Trucking is used to move goods over medium and short distances. Nearly 70% of domestic freight tonnage is transported over roads.

The final component that connects all these services is **logistics services**, which help carriers manage things like warehouse inventory, trucking fleet locations, order fulfillment, and other areas that support the transportation of goods within a logistics network. Logistics services are offered by major shippers like FedEx and UPS, as well as dedicated third-party logistics services that specialize in providing supply chain management and planning for retailers.



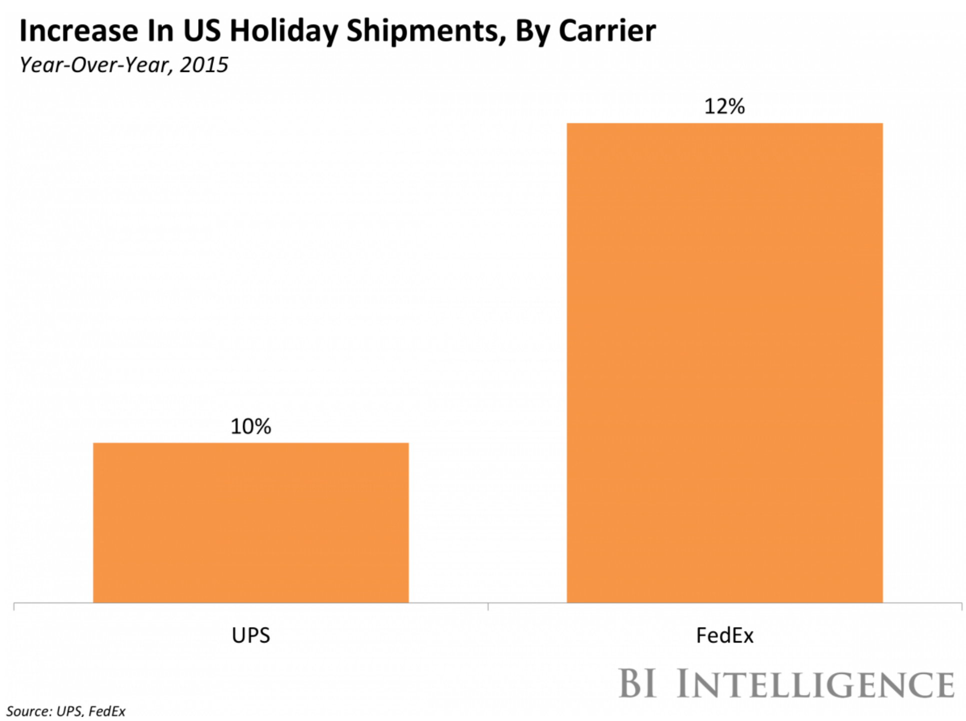
To date, major retailers such as Amazon, Alibaba, and Walmart have focused much of their shipping investments on last-mile logistics and trucking. This is the part of the supply chain that deals with moving merchandise from sortation centers to consumers' doorsteps — and these companies' increased activity in the last-mile already poses a threat to legacy parcel shippers that have seen revenue increase as the e-commerce industry has taken off. Now, as some retailers begin moving into first- and middle-mile delivery, their efforts have the potential to further undercut legacy shippers like FedEx and UPS.

WHY RETAILERS ARE GETTING INTO SHIPPING

The shipping industry is extremely complex and very different from the ins and out of running a retail business. Nonetheless, retailers are increasingly look to handle their own shipping for a variety of reasons.

Customer service: The main reason e-commerce retailers are moving further into shipping is because carriers aren't doing a great job of meeting demand. With consumers doing a greater share of their shopping online, there are more packages to be shipped. While in general, this has been a boon to shipping companies, they've struggled to deliver packages on time.

- FedEx had to deliver 15% more packages during the 2015 holidays than the 2014 season, and UPS had to deliver 10% more.
- Peak shipping volume was so extensive during the 2015 holiday season that in the week leading up to Christmas Day 2015, UPS could only deliver 91% of packages on time, [according to](#) ShipMatrix. FedEx did only slightly better, delivering 95% of packages on time.



The problem for retailers is that delivery delays end up angering consumers, and it is the retailers — not the shippers — that get blamed for these issues.

Ultimately, poor customer service — including slow delivery — can impact a retailer's bottom line. 66% of US consumers are willing to spend more money with a company that provides them with excellent customer service, according to Microsoft, while 60% of consumers say they've decided not to complete an intended purchase due to a poor customer service experience.

This is one of the big reasons why major retailers are building out their shipping capabilities. Retailers want to reduce shipping delays and expedite shipping times to keep customers happy.

Cost: Another important reason retailers want to handle more of their own shipping is related to costs. Retailers would love to reduce their reliance on shipping partners and save money by handling their own shipping. Amazon spent nearly $12 billion in 2015 on shipping-related costs. Some of those costs include service fees Amazon pays to its shipping partners, such as UPS and USPS.

If retailers start handling more of their own transportation and logistics, retailers could potentially cut down on costs and even earn additional revenue if they begin offering shipping services to third parties.

20 different partners currently share the duties of shipping Amazon's 600 million packages a year, with FedEx, USPS, and UPS moving the most.

Amazon's Delivery Partners
As of April 2016

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Big online retailers handling more of their own shipping and logistics capabilities certainly isn't good news for FedEx, UPS, and other global shipping providers, but the bigger concern is the possibility that retailers will begin competing *against* them, which we believe is inevitable. Once retailers begin offering their shipping and logistics services to third-party sellers then they'll effectively become carriers themselves.

Amazon and Alibaba already do this for merchants that sell on their marketplaces, as we discuss below. But if they started offering transportation and logistics services to merchants even *outside* of their marketplaces that would put Amazon and Alibaba even more squarely in competition with legacy carriers.

Data: As retailers get deeper into big shipping, they'll be able to leverage a major strength over shipping providers — consumer data.

Amazon, Walmart, and Alibaba have enormous troves of data on consumers. These companies understand who their customers are, where they live, what they shop for, and can also deduce personal information about them, such as whether a shopper has children. For retailers, this is their biggest advantage over legacy carriers because it allows them to anticipate what customers might need and when. Retailers can use this information to streamline their own shipping and logistics operations as well as operations for third-party retailers. In fact, Amazon has even patented a concept called “predictive shipping.”

Further diversified revenue streams: Amazon and Alibaba aren't just retailers, they also have businesses in media, financial services, and software. Shipping is a hugely expensive business to get off the ground, but Amazon and Alibaba can take profits from high-margin businesses, such as their cloud computing services to fund their shipping ventures.

While this is potentially bad news for UPS, FedEx, and others, it could be a boon to third-party sellers. If Amazon and Alibaba are able to offer more services to merchants then sellers won't need as many partners. Further, Amazon and Alibaba could bundle services together — like retailing, logistics, marketing, and cloud storage — and possibly offer sellers a lower rate for shipping than legacy carriers could for a la carte services.

RETAILERS MAKING MOVES IN SHIPPING

Three of the world's largest online retailers have made moves recently that suggest they're looking to get deeper into shipping— whether to cut shipping costs, own more of the shipping and logistics business, or possibly begin offering shipping and logistics services to other retailers.

Amazon

Amazon has been the most proactive in the shipping space and appears to be going after all three legs of the shipping chain. It is among the world's largest retailers, and its name is synonymous with e-commerce in the US. In 2015, sales made through Amazon's marketplace accounted for 40% of the total US e-commerce market, and its share will continue to grow in the years ahead, making Amazon a critical customer for carriers.

First Mile

The first-mile has so far been the least disrupted leg in shipping but a recent move by Amazon codenamed "Dragon Boat" suggests that the company is looking to get into maritime freight transportation. With Dragon Boat, Amazon wants to establish shipping routes from China to North America — effectively allowing it to do its own cross-border shipping without relying on global shipping carriers like FedEx and UPS. Because cross-border shipping deals with the transportation of goods intercontinentally, it falls under the first-mile of delivery.

We first learned of Dragon Boat in January 2016, when Amazon's China subsidiary registered as an ocean freight forwarder in the US. The registration allows Amazon to subcontract work on freight ships to deliver packages between China and the US. It will not be operating the ships itself but leasing containers from the ships transporting them. While Amazon hasn't announced what it will do with these containers, we expect that it will start transporting goods from merchants located in China and India to consumers in the US.

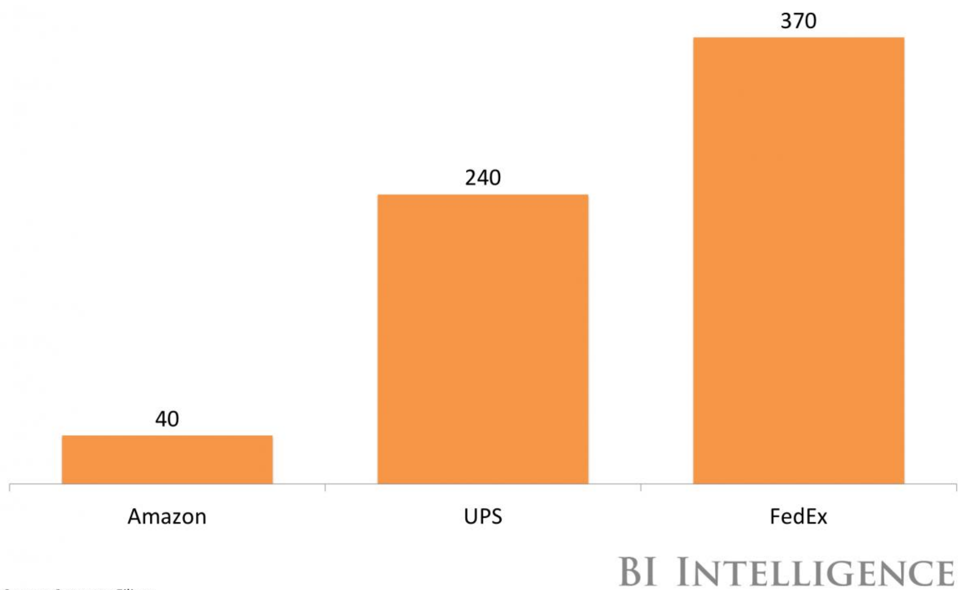
This should help Amazon attract more merchants to its third-party marketplaces. One way Amazon does this now is by offering services to merchants — such as Fulfillment by Amazon, whereby merchants pay Amazon to handle parts of their supply chain. But there are limitations to Amazon's FBA program. For example, if Amazon has to ship a package from China to the US for an FBA merchant, Amazon still needs to enlist the help of a cross-border shipping partner like FedEx. With Dragon Boat, Amazon won't need to rely on cross-border shipping partners as much, and the money it saves from that can be passed onto FBA merchants, effectively attracting more to sell via Amazon's ecosystem.

Middle Mile

To own more of the middle mile of shipping — getting goods from warehouses to sortation centers **—** Amazon doubled the size of its air cargo fleet between January and May 2016.

As of May 2016, Amazon had signed leases to put at least 40 air cargo planes into operation by the end of the year. The planes are being leased from two US air freight operators — Atlas Air Worldwide and Air Transport Services Group.

Number Of Global Air Cargo Planes In Operation, By Carrier
March 2016



Source: Company Filings

Amazon's air cargo operation still pales in comparison to legacy carriers such as UPS and FedEx, but the speed at which Amazon is investing shows that the retail giant isn't afraid of getting into air freight. For context, FedEx recently placed an order for 50 additional cargo planes to be delivered over a five-year period, so Amazon is building out its fleet at a much faster pace.

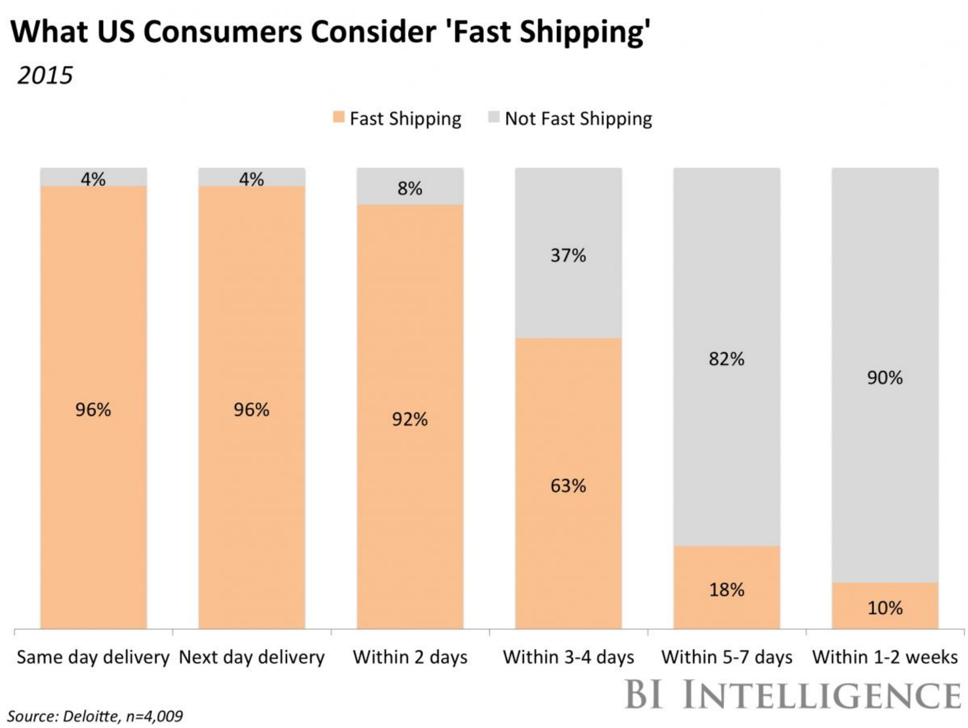
The e-commerce giant is looking to invest in its international air freight capabilities alongside its middle-mile moves in the US. It's been reported that Amazon expressed interest in acquiring the Frankfurt-Hahn Airport in Germany, which could be used to ship merchandise in and out of its European fulfillment centers.

Meanwhile, Amazon purchased "thousands" of tractor-trailers in December 2015 that are branded with the company's logo. These trucks transport merchandise from warehouses to sortation centers, where they're prepared for delivery to consumers' households.

Last Mile

Last-mile delivery centers on offering consumers fast and flexible fulfillment options. Amazon has staked its reputation on this piece of its business model, rolling out a number of initiatives aimed at giving consumers the best possible prices and speeds.

As a result, customers are being conditioned to expect standard delivery to occur during a shorter time frame. Anything longer than two days and US consumers start considering it slow shipping, according to a 2015 survey conducted by Deloitte. Amazon realizes this and offers some of the fastest guaranteed delivery among retailers. Through its Prime program, customers can select shipping options as fast as one- or two-hour delivery for select purchases. Amazon has its own fleet of couriers that manage these one- and two-hour deliveries. These contract workers, outfitted in Amazon-branded apparel, make deliveries by bike or car in select cities. As Amazon moves more of its shipping over to same-day, it will further cut out third-party shippers, which have no part in this ultra-fast delivery option.



Now Amazon is looking beyond delivery to people's homes and offering lockers in dense cities that allow people to pick up orders at a convenient time.

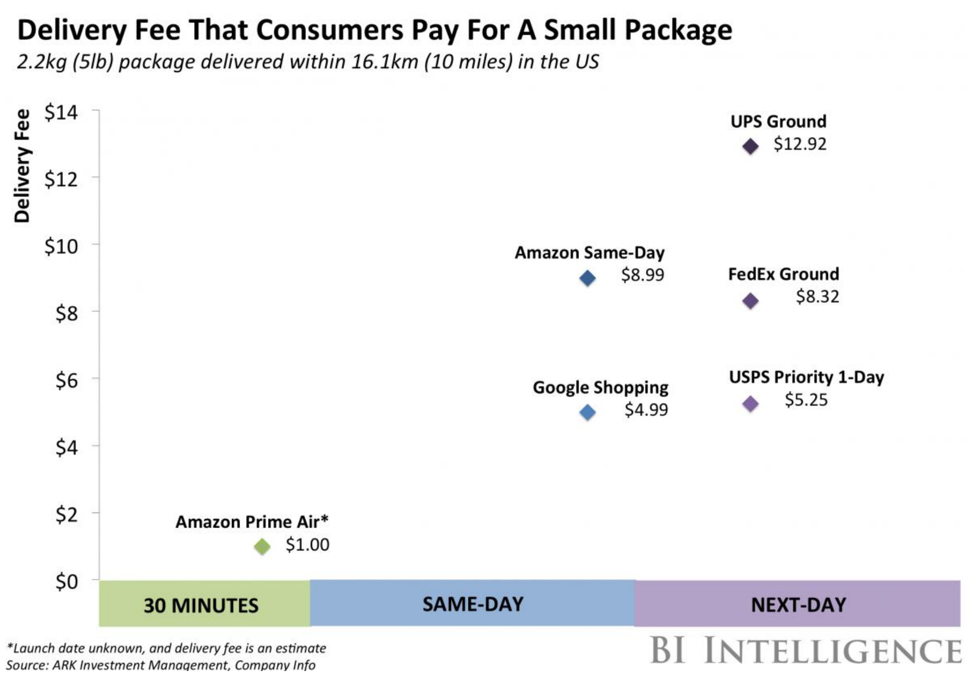
Lockers: Lockers are a self-service, low-cost fulfillment method. Amazon doesn't have a large brick-and-mortar footprint itself, yet. So in order to offer its customers a self-service fulfillment method it has to partner with other retailers. 7-Eleven and Rite Aid are among the retailers that have permitted Amazon to install lockers in their stores. These lockers allow Amazon's customers to pickup their orders at their convenience.

The purpose of these lockers is to fix online delivery's sign and receive problem. If a customer isn't home to sign for their package, the shipping company has to try again. And, if after three tries no one retrieves the package, it gets shipped back. This is why shipping companies often charge more for residential deliveries than commercial ones. If, instead, packages are shipped to lockers, it means there's a centralized location where multiple items are going and items don't have to be sent out three times or more. This helps lower fulfillment costs for Amazon and provides another way for the company to cut out its heavy reliance on shipping companies.

Wikimedia

Drones: This is one of the more high-profile moves Amazon is making to own and expedite the last-mile. Amazon has developed an aerial drone device that is capable of flying at speeds of up to 50 miles per hour while carrying a 5-pound payload. This is significant because 86% of orders shipped by Amazon weigh less than that, according to company documents. Various research firms, including BI Intelligence, believe these drones will allow Amazon to deliver a 5-pound package over 10 miles in just 30 minutes, and charge that customer only $1 for delivery.

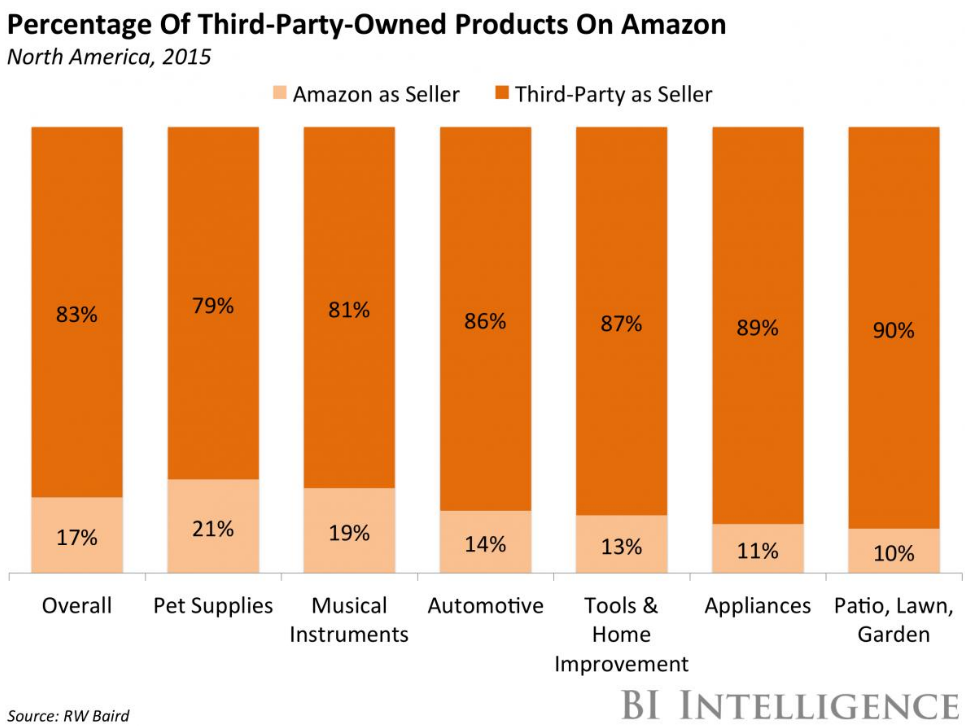
Drone delivery is still at least a few years off. For now, the Federal Aviation Administration (FAA) is permitting Amazon to test its delivery drones as long as they're within sight of the pilot operating the device. It won't be until 2018 that Amazon and other companies can operate delivery drones for commercial use and fly beyond the sight of pilots. Once drones begin to start delivering packages, however, there's no question that it will cut into much of the business Amazon does with shipping companies. It will also further incentivize people to shop with Amazon over other online retailers with slower and more expensive shipping options.



3D Printers: Amazon wants to actually truncate the supply chain by manufacturing products on-the-go inside delivery trucks through 3D printers. Amazon filed for a patent in 2015, which outlines a plan to install 3D printers inside delivery trucks. In theory, this will allow Amazon to manufacture things like tools and auto parts on-demand and deliver them to customers in a matter of minutes. This initiative would eliminate first- and middle-mile shipping and cut shippers entirely out of the last mile.

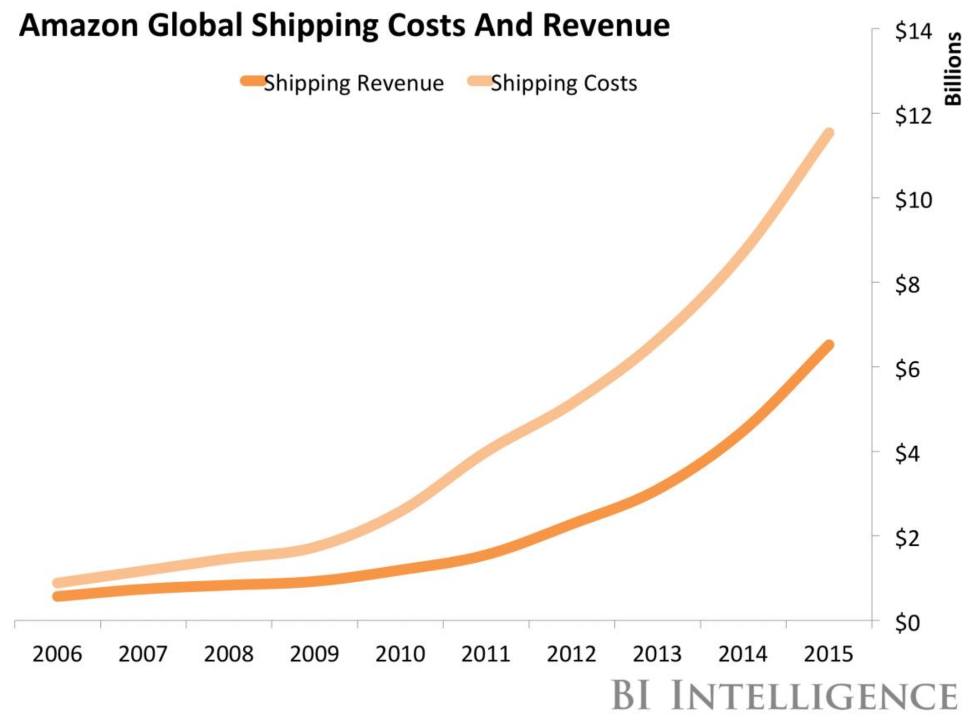
Logistics

More than 80% of the products sold on Amazon.com are actually owned by third-party brands and merchants, not Amazon itself. So Amazon already has a relationship with sellers that it knows need partners in the transportation and logistics space.



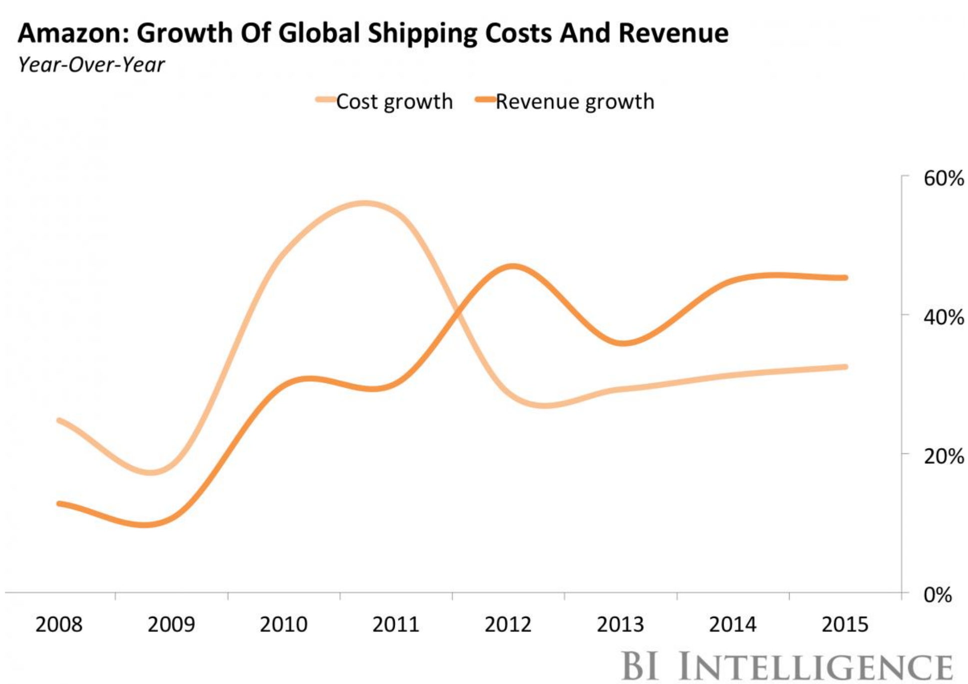
And Amazon already acts as a logistics provider to many of these merchants through its Fulfillment by Amazon program. Merchants that sell via Amazon's online marketplace can pay to have their merchandise stored in Amazon's warehouses, then labeled and shipped to customers by one of Amazon's shipping partners.

Through this program, Amazon grew shipping revenue 45% in 2015 to $6.5 billion. In fact, growth in the revenue Amazon generates from shipping and logistics-related services is rising faster than growth in shipping costs, giving Amazon a strong incentive to continue building out shipping as a revenue stream.



Source: Amazon

For now, FBA deals with getting merchandise from warehouses and sortation centers to consumers, and so it's limited to being a middle- and last-mile logistics service. Amazon could expand the service into the first mile of the supply chain. For example, Amazon could offer large US brands maritime freight shipping from their manufacturing plants overseas through the FBA program.



Source: Amazon

Walmart

Walmart's interest in expanding its transportation and logistics operations is almost purely related to cost-savings. Unlike Amazon and Alibaba, which are third-party marketplaces, Walmart owns the majority of the products it sells. Therefore, we don't envision Walmart becoming a logistics service provider for other merchants. But it's still relevant to talk about Walmart in the context of transportation and logistics since it's such a large customer for carriers. Walmart is the No. 2 e-commerce player in the US — it accounted for $8.9 billion in e-commerce revenue last year, or 2.6% of the US e-commerce market.

Walmart poses the biggest threat to legacy carriers in trucking — so the middle- and last-mile segments of shipping. If Walmart starts handling more of that parcel volume itself, or if it convinces customers to fulfill orders in a way that bypasses shipping altogether, that will take business away from companies like FedEx, UPS, and USPS. In addition, Walmart has also started to look into handling more of its own first-mile shipping.

First Mile

More than 90% of Walmart-owned products are made in China, so a few years ago it decided to start leasing space on container shippers owned by container shipping company Maersk. Because Walmart is a direct-to-consumer retailer, as opposed to being a third-party marketplace, the use of container ships is for its own operations exclusively.

Each ship is capable of carrying 15,000 containers (more than 123,000 tons worth of goods), and can make the trip from China to North America in just five days. The container ships that Walmart commissions are designed specifically for consumer goods. Unlike shippers like FedEx that have to accommodate all types of goods, Maersk designed a ship for Walmart that is more economical and efficient. This gives Walmart an opportunity to save significant sums on its cross-border, first-mile shipping.

Middle Mile

Walmart also operates one of the largest retailer trucking fleets in the US, with more than 6,000 tractor-trailer trucks used for transporting goods from warehouses to sortation centers. Due to its reliance on its own trucking fleet, Walmart has invested significantly in the efficiency of its trucks. In fact, the company said its truck fleet efficiency "doubled" between 2005 and 2015, thanks in part to an auto design built specifically for Walmart.

Last Mile

Walmart has made a number of moves in the last mile, some of which benefit partnered shippers and others which cut shippers out of the online retail equation.

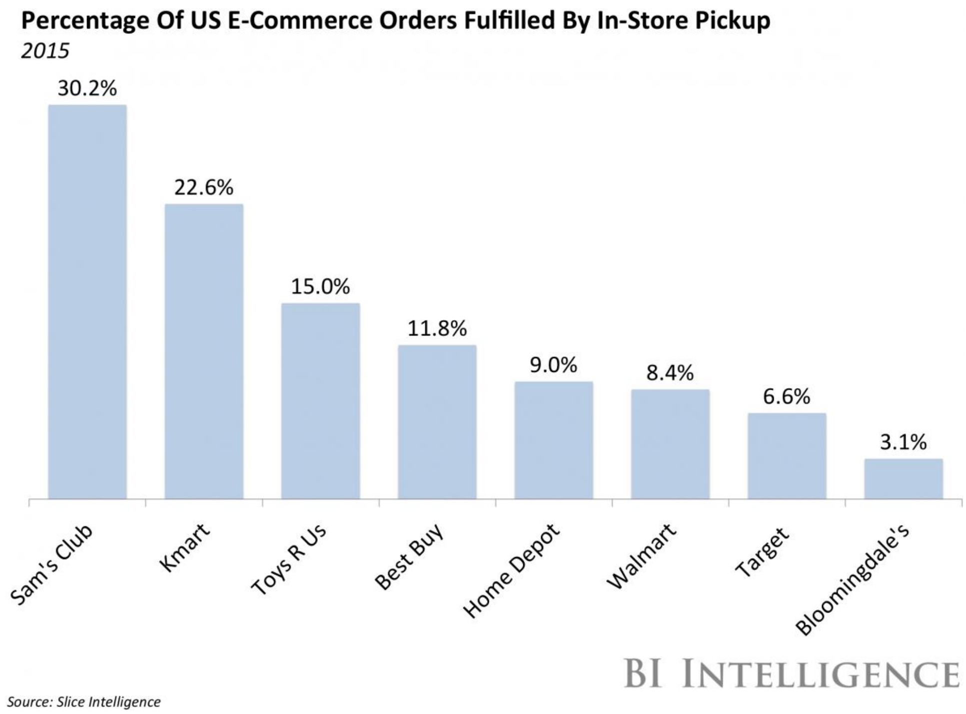
To better compete against Amazon, Walmart has begun offering **same-day delivery** in select markets, but it can only offer this service due to a partnership with UPS. Walmart is also currently testing **lockers** in 7-Eleven stores located in the Washington DC, and Toronto, Canada areas. These lockers operate in the same way as Amazon's and do not rely as heavily on shipping partnerships.

In addition, Walmart is leveraging its key advantage over Amazon — its brick-and-mortar stores — for in-store pickup. **In-store pickup** is a low-cost fulfillment method that allows a shopper to place an order with a retailer online and go to one of that retailer's brick-and-mortar store locations to pick it up. It cuts out the need for any additional shipping that would normally be associated with an online order.

Walmart

Walmart's in-store pickup is already popular in the US, with 8% of its e-commerce orders fulfilled in such a manner. It's in Walmart's favor to get its customers to fulfill orders via in-store pickup or lockers because then it doesn't have to pay carriers a delivery service fee.

And to make sure it is continuing to keep pace with Amazon on shipping innovations, Walmart is also investing in **delivery drones**. Walmart applied in late 2015 for approval to begin testing its drones for home delivery and curbside pickup.



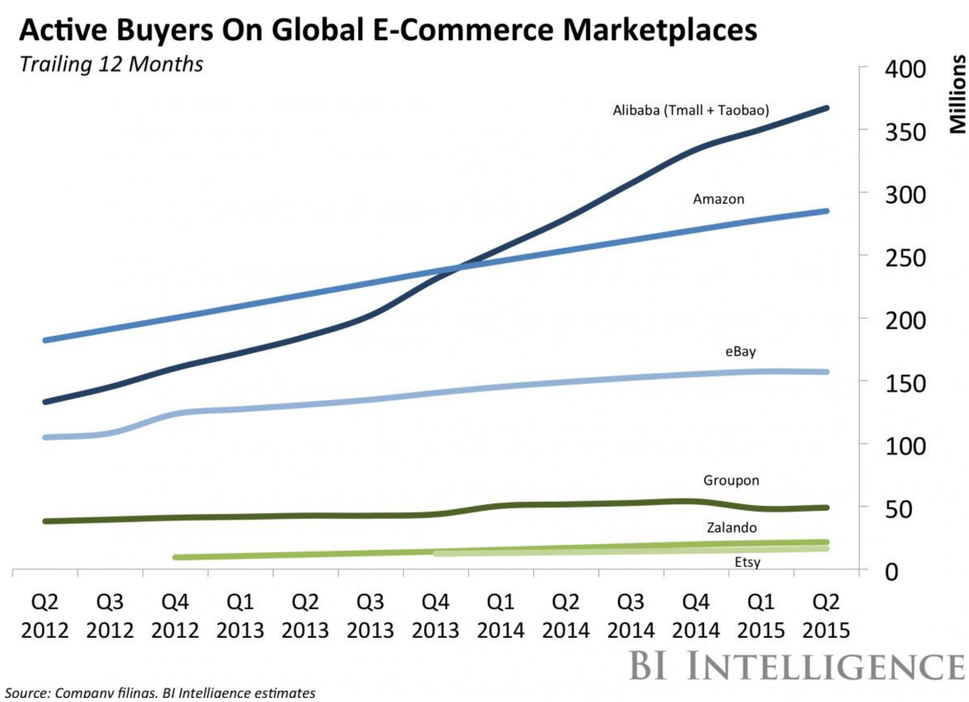
Alibaba

Based in China, Alibaba's marketplaces accounted for more than $450 billion worth of online sales in 2015, making it the largest e-commerce company in the Asia-Pacific region. And now Alibaba is becoming an important potential partner for shippers in the US as it makes a bigger dent in US e-commerce.

Alibaba continues to gain mindshare among US shoppers. Traffic to AliExpress.com, an online marketplace owned by Alibaba, increased nearly 70% year-over-year to 7.5 million unique visitors in September 2015, according to Compete data cited by Internet Retailer. For comparison, Overstock.com attracts approximately 10.5 million unique visitors each month in the US.

In addition, Alibaba has moved further into selling more US-made goods in China. The retailer's e-commerce marketplace, Tmall, launched "country pavilions," which allow Chinese consumers to shop products from different countries, including the US. And Alibaba has already succeeded in getting major US brands such as P&G and Estée Lauder to sell on its Chinese e-commerce marketplaces, helping them with marketing and shipping. Chinese consumers will pay a premium for US-made goods — over 60% of Chinese consumers are willing to pay more for products that are made in the US as opposed to China, according to a report from the Boston Consulting Group.

Thus far, Alibaba has been too small a player in the US to make a big impact on revenue for US shippers. However, as it moves further into the US market — both to sell Asian goods in the US and to sell US-made goods in Alibaba's core markets — the shipping partners it chooses could end up seeing an uptick in revenue. At the same time, Alibaba could take share from other established US e-commerce companies. If this happens, and Alibaba handles more of its own shipping and logistics, it could increasingly register as a loss for major US shipping and logistics companies that are partnered with other e-commerce companies.



Alibaba's move into the US market has already benefitted one shipper. Alibaba reached an agreement with the US Postal Service in 2015 whereby USPS treats all inbound packages from Alibaba as priority mail. This means US consumers will receive orders from Alibaba's e-commerce sites faster than in years past. The agreement also makes USPS the exclusive last-mile delivery partner for Alibaba in the US, cutting out competing carriers like FedEx and UPS, which used to provide shipments for Alibaba.

Alibaba also recently launched a full-fledged logistics service called Alibaba Logistics. The service helps Chinese brands and merchants transport goods around the globe after they've been sold on one of Alibaba's marketplace sites like Taobao or Tmall. Merchants can tap into Alibaba Logistics to handle middle- and last-mile shipping in Asia-Pacific as well as the US. And Alibaba has begun leasing containers on ships, similar to Amazon's Dragon Boat initiative. This means that Alibaba Logistics can now facilitate first-mile shipping for third-party merchants on its marketplace, as well.

While all three major retailers still rely on major shipping companies to execute their deliveries, for now, there is no question that they're each looking at ways to reduce their third-party shipper reliance both for their own products and third-party merchants. Shipping companies that do not catch up to these trends and invest in reducing shipping delays and improving efficiencies will find themselves increasingly cut out of the e-commerce delivery market.

THE BOTTOM LINE

- Transportation and logistics could be the next billion-dollar opportunity for e-commerce companies.
- There is much at stake for legacy shipping companies, which have seen a boom in parcel delivery as e-commerce spending has risen.
- Retailers want to handle more of their own shipping for a variety of reasons, including improving efficiency and reducing costs.
- Amazon, Alibaba, and Walmart have been focused on building out their last-mile delivery and logistics services but are increasingly going after the middle- and first-mile of the shipping chain.

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