TRANSFORMATIVE TECHNOLOGY

Can Technology Solve Retail's Last-Mile Delivery Problem?

Next-day or two-day delivery is the industry standard, with same-day delivery the next push. As online shopping spikes, retailers are grappling to ship orders as quickly as possible. But, to increase speed while keeping costs down, they will need to overcome last-mile challenges. Can technology solutions help?

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By Rodika Tollefson, Contributor

Not so long ago, package delivery timelines were of less consequence. You received your shipment when you received it, which often took several weeks.

But these days, next-day or two-day delivery is the industry standard, with same-day delivery the next push in evolution, according to McKinsey. For the last decade, retailers have been grappling with how to ship orders as quickly as possible.

The last mile—the distance from the warehouse or shipping hub to the final destination, often rural areas—has traditionally presented logistical challenges like costs and inefficiencies. This especially affects rural and remote areas that lack a robust transportation infrastructure. With COVID-19 creating a higher demand for online shopping, more retailers will need to figure out how to solve these challenges.

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Advances in technology can help with these challenges.

Technologies such as robotics and AI lend the power to speed up fulfillment; crowdsourced platforms source on-demand drivers; drones and autonomous delivery cars allow human workers to focus on other parts of the business. Technology-driven solutions are filling the last-mile delivery gaps and can also help small, local shops compete with global ecommerce giants.

Solving the Big Challenges: Cost and Inefficiency

The last mile accounts for 41 percent of overall supply chain costs, according to a 2019 report from the Capgemini Research Institute. Additionally, consumers are not willing to absorb the full cost of delivery, making online orders less profitable, especially for brick-and-mortar shops.

Enter crowdsourced platforms like Frayt, Roadie, and AxleHire. While they differ in various ways, they have similar models: harness available freight capacity and match drivers with retailers that need delivery services, ranging from a single package to thousands. Think of it as Uber or Lyft for ecommerce orders. And without the overhead of traditional delivery services, these crowdsourced models can charge lower fees.

Daniel Sokolovsky, founder and CEO of AxleHire, started his company in 2015 while trying to answer the question: Could he make delivery more efficient and cheaper by using software to optimize logistics?

Growing up in a family that owned a courier and transportation company, Sokolovsky had launched and run a different delivery business previously. But with AxleHire, he decided to use technology to solve last-mile problems. He had studied applied math at the University of Berkeley, after all.

"A lot of my early pitching for AxleHire was saying, 'We want to make same-day and next-day deliveries the same cost of two to three days,'" Sokolovsky says. "And now that's standard in the industry."

Crowdsourced marketplaces like AxleHire match drivers with companies that need delivery services. Typically, their networks of independent drivers are a mix of professional drivers and "gig workers."

All drivers supply their own vehicles. Based on their geographic location, drivers are notified about delivery requests from the mobile app. The request includes the fee they'll earn, calculated based on factors such as mileage and number of packages. They can then accept the deliveries based on their own accord.

In AxleHire's case, drivers bid on entire routes ahead of time, and deliveries are scheduled at least a few hours in advance. What makes AxleHire unique is real-time, route-plotting technology that optimizes the routes dynamically. The dynamic routing allows the company

to combine orders on the same routes if they match by time, location, and distance, Sokolovsky says, which provides the most efficiency.

"For instance, if tomorrow we have 400 packages and the next day, we have 40,000 packages, the routing is completely different," Sokolovsky says. "What this allows us to do is right-size capacity to demand."

AxleHire writes its own code and also relies on third-party sources for traffic and geolocation data. AI, machine learning, data analytics, and predictive analytics enable the system to "think by itself as much as possible," according to Sokolovsky.

"If we've delivered somewhere before, we know, for example, how long a particular address takes to deliver to. We know if it's an apartment building or a house, and what kind of density and parking the area has," Sokolovsky says. "Then maybe we can fit more packages on that route because the driver would still be able to do it in enough time."

These types of distribution models have made the supply chain more transparent for consumers, manufacturers, and retailers, Sokolovsky believes. "For consumers, it's a lot better because they're paying cheaper distribution prices," he says.

Answering the Consumer Demand Through the Last Mile

COVID-19 has dramatically shifted buying habits. In the last few months, the number of people shopping digitally has grown significantly—ecommerce has seen 10 years' worth of growth, according to Accenture research. Accenture surveyed more than 8,800 consumers in 10 global markets and also found that the shift to ecommerce will remain, as many people planned to maintain their new, online shopping habits.

This data on increased online shopping reflects what Lawrence McCord, founder and CEO of Frayt, sees in his business. He says that since the pandemic began, his company has grown 400 percent month over month. He expected growth to the triple in November and December, once the holiday shopping season commenced.

Frayt's crowdsourced marketplace operates in a similar way to AxleHire, except it doesn't use the dynamic routing. They both serve customers ranging from local, mom-and-pop shops to large chains, which are facing the same type of last-mile challenges. Customers can enter delivery requests manually into the cloud-based platform or automate the process by integrating the delivery platform into their back-end via APIs.

What makes Frayt's model different is on-demand deliveries. One of its largest customers, for example, is home-improvement chain Menards. A customer placing an online order can receive the products within 60 minutes, McCord says.

McCord has 20 years of experience in logistics and was a cargo-van fleet owner in the expedited freight industry. He says one of the problems the Frayt marketplace solves is the "capacity problem in the logistics space of empty vehicles and empty miles." The company, founded in June 2017, in Cincinnati, Ohio, now has a network of independent drivers in 34 states.

"We're allowing retailers to leverage our fleet to be a battle-ax against ecommerce giants," he says. "We leverage vehicles that are already in the delivery space—and we've leveled the playing field because we can offer delivery not just within the same day but within the same hour."

He believes that these kinds of delivery models are easy to scale, and "there's no going back" for merchants.

"Consumers now expect that anything can be delivered quickly," he says.

By using its technology to crowdsource last-mile deliveries—connecting merchants with independent drivers—Frayt is taking the pressure off businesses to staff deliveries in-house or to pay for the more expensive services offered by traditional transportation companies. And it's doing so even as merchants continue to adapt to new consumer patterns and as expectations change with an increased demand for same-day delivery.

"Our enterprise customers are still trying to adjust to after-hour, nontraditional business hours, and weekend deliveries," he says. "Because of our technology and our market reach, we are able to help them address this."

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>
> —Lawrence McCord, Founder and CEO of Frayt

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Future of Last Mile

Even with cost and efficiency solved by crowdsourcing deliveries, some logistics experts still see congestion and increased demand for drivers as a potential problem if the ecommerce boom marches on. That's why one of the answers may lie in delivery drones and autonomous vehicles.

By 2025, Frost & Sullivan estimates the number of drones in the global ecommerce industry to grow to 2.2 million units. And drones are a "faster, more affordable, greener solution" to deliveries, says Yariv Bash, co-founder, and CEO of Flytrex.

Based in Tel Aviv, Israel, the 7-year-old startup has been piloting several programs, first in Iceland and now in the United States, for business-to-consumer backyard deliveries via drones.

Operated from a mobile tablet dashboard that can manage an entire fleet simultaneously, the Flytrex drones can deliver packages up to 6 pounds within a 3-mile radius. Once an operator loads the order into the drone's cargo box and pushes a button, it only takes several minutes for the drone to reach the destination.

The drones use GPS and sensors to fly automatically, without a pilot controlling them. A cloud-based system, which integrates data such as weather, manages the fleet in real-time.

One of Flytrex's pilot programs is easing the pandemic crisis in Grand Forks, North Dakota, by delivering groceries and essential items to select homes observing stay-at-home restrictions. The company is also an official partner with the North Carolina's Department of Transportation UAS Integration Pilot Program (IPP). The Federal Aviation Administration launched IPP in 2017 to "test and evaluate the integration of civil and public drone operations with the national airspace system."

Currently, Bash explains, the drone regulatory framework only allows "line of sight" flights, geared to toys and other personal use. Flying drones commercially requires a certification process akin to what Boeing needs for a 747.

"We've been working with the FAA for the past three years to make drone delivery a reality," he says, adding that he expects Flytrex to receive certification by the end of the year.

Once that happens, the company can scale deliveries around the U.S. Yariv says Flytrex only needs a small warehouse-like space for a fleet of drones and a few personnel.

"It's a lot easier to scale than training people," he says. "When drones are out of the factory, they're good to go."

The influx of drones, of course, raises new concerns, such as sky congestion. Which means eventually, this nascent industry will have to grapple with its own issues.

In the meantime, retailers—big or small—can no longer ignore customers' demand both for cheaper and faster delivery. Of the 2,870 consumers surveyed by Capgemini in five countries, 55 percent said they would switch to a competing brand that offers faster delivery service. And 55 percent said two-hour delivery options would increase their loyalty.

For merchants to remain competitive, they'll need to embrace the faster pace and the technology that caters to that pace, whether that's crowdsourced platforms, drones, or—someday—autonomous vehicles.

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