AARIAN MARSHALL   TRANSPORTATION   11.26.18 05:30 PM

IF YOU HATE TRAFFIC, CURB YOUR LOVE FOR ONLINE SHOPPING

The good news? Hitting "buy" on a day like Cyber Monday is likely to make shipping more efficient.

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IS THERE ANYTHING more magical than ordering something

Service expects to deliver 900 million packages between Thanksgiving and New Year's. Fedex and UPS expect to haul about 1.2 billion packages globally between them, up more than 10 percent since 2016.

But if you hate traffic as much as you love online shopping, freeze that finger. Research completed in the past decade suggests the boom in ecommerce plays an outsize role in worsening urban congestion and pollution. McKinsey estimates trucks alone will be responsible for $34 billion a year in American urban congestion costs by 2020, up 20 percent since 2014.

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"Right now, yes, absolutely: More traffic is induced on net by the online purchasing behavior that we're seeing," says Anne Goodchild, a civil and environmental engineer who directs the Supply Chain Transportation and Logistics Center at the University of Washington. "But it doesn't have to be true."

In other words, today's fast-delivery system is set up for customer convenience, not for the city's transportation system or even overall efficiency. That leads to road tangles and pollution. Luckily, there are fixes for the fast-delivery problem—though they might entail a few sacrifices, on everyone's part.

Convenience vs. Efficiency

The key to understanding whether your delivery is cutting or creating traffic, according to Alison Conway, a professor of civil engineering at the City College of New York who studies sustainable urban goods movement, is this question: "What is that trip replacing by ordering online?" If the online order replaces a trip to the store, your delivery might be better for your

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Then it gets complicated. The efficiency of the delivery depends on a whole host of factors, like the density of where you live, whether trucks stopping in your neighborhood have places to pull over out of traffic, and how many people near you are also ordering products. If everyone in your apartment building buys groceries on the internet and is cool with them being delivered at the same time, that's efficient. If just a handful of families in your sprawling suburban neighborhood get regular diaper deliveries, less so. The goal is to have a completely stuffed delivery truck traveling as few miles as possible.

(The worst-case scenario is a growth among those savvy customers who drive to the store, check out prices on things they want, then find them online for less. That's two trips to move one product.)

The biggest barrier to upping efficiency and downing traffic is how customer attitudes have adapted to ever-shortening wait times. Amazon, Walmart, Uber Eats, and others have trained customers to expect their wheatgrass tea now, or the Baghera Kids' Speedster tomorrow. To maintain those standards and keep up with competitors, they have to make good on those promises, even if it means half-full trucks taking less-than-efficient routes to fulfill the demand. If you order those sweet new sneakers today, and your neighbor hits Buy tomorrow, and you both expect two-day shipping, the truck might have to make two trips from the distribution center to your block, on consecutive days. And that's a waste.

Another barrier: Understanding the scale of cities' delivery problems is tricky, because no one's really tracking how delivery

might not know where a truck is at any given moment. Plus, urban places are complex. "We're distributing very large volumes, and incredible mixes of things, to hundreds and thousands of people," Goodchild says. "It's just, fundamentally, a hard thing to measure."

One thing that might help solve the traffic problem is a better idea of how it's playing out on the ground. Conway and her colleagues have found a few approaches, like tracking a few large buildings' package pickup and drop-off records as a proxies for others' around them. Or simply sitting outside and counting vehicle deliveries by hand.

Even as researchers sort the scale of the delivery problem, they are pointing to solutions. One is street design. "We're putting in a lot of effort to redesign our streets to make them more friendly for pedestrians and cyclists," Conway says. "But oftentimes, when we do that, we don't think about the freight impacts." New York has experimented with the idea of dedicating parking spots to delivery trucks at less-busy times, so drivers don't plug up a lane of traffic (or cycling space) while making their deliveries.

Retailers, meanwhile, are looking for their own solutions to the efficiency problem. Amazon is experimenting with allowing customers to order deliveries to one dedicated urban hub, like a Whole Foods, and letting them make the last-mile trek to pick up their goods themselves. In places like Seattle and Portland, Oregon, UPS has played with using electric delivery bikes instead of big trucks.

"The good thing about freight movement is, what's good for the environment and good for the city is also good for the shipper,"

Goodchild says. More efficient deliveries are cheaper for everyone, so everyone has an incentive to figure it out.

Individuals can tweak their behavior, too. Tell Amazon to go ahead and wait to group your different purchases into one box before sending out the package. Or pick a later delivery date, if you can handle it. That leaves shippers more time and flexibility to pack trucks full with goods.

Here's the fun part: Ordering deliveries on days like Cyber Monday, when everyone else is doing it might create fewer trips overall. If your neighbors are splurging for a TV this week, it will only be be more efficient if you finally hit Buy on the one you've been dreaming of, too.

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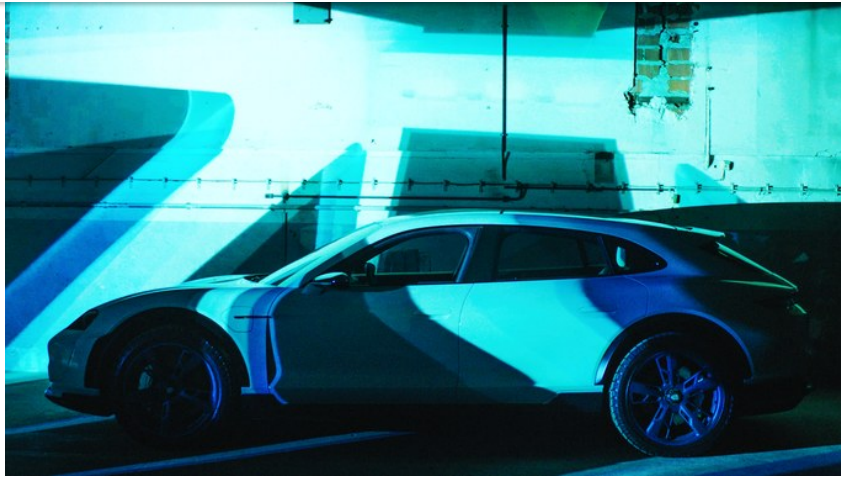
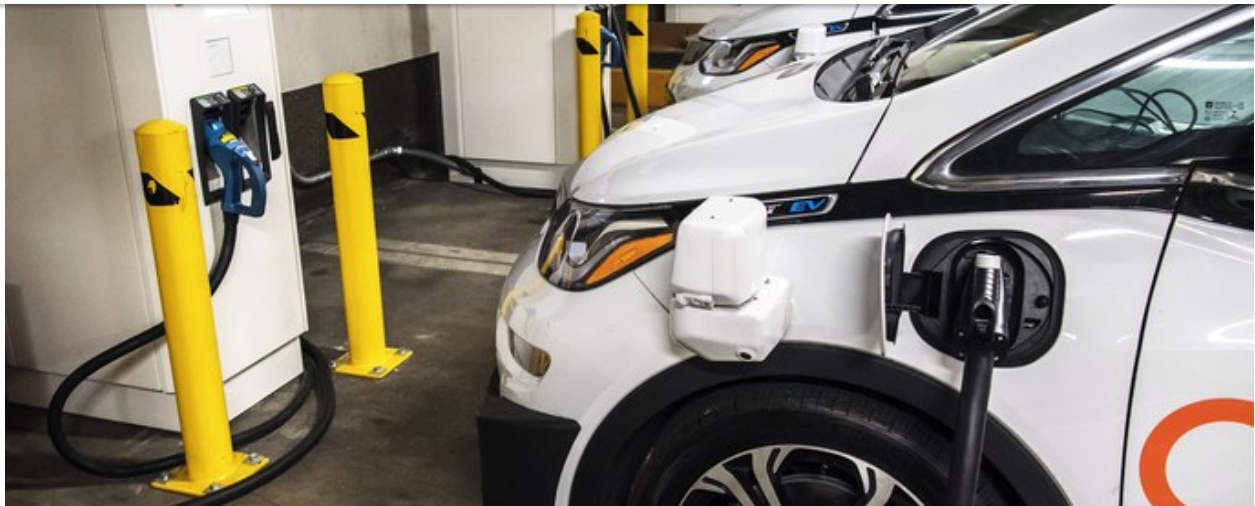## Porsche Wants You to Use Maps for Exploration—Not Navigation

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