THE TOP 5 DISRUPTIVE TRENDS SHAPING TRANSPORTATION AND LOGISTICS

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The BI Intelligence Research Team

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INTRODUCTION

BI Intelligence, a premium research service focused on digital disruption, is expanding its coverage to include the transportation and logistics industry. In our new research, we'll cover how digital is transforming the way businesses deliver and track goods and people, from the point of initiation to the final destination. Our coverage will include topics like last-mile delivery, autonomous cars and trucks, delivery drone and robots, and artificial intelligence applications in logistics, among others. Stay tuned for more launch details in the Transportation and Logistics Briefing.

Below we've highlighted five of the most important trends that we predict will drive major shifts in the transportation and logistics landscape in the next five years. Our predictions are based on our ongoing research, which includes forecasts, data tracking, and interviews with industry executives.

1. Amazon's Whole Foods Acquisition Will Accelerate Omnichannel Fulfillment In Retail

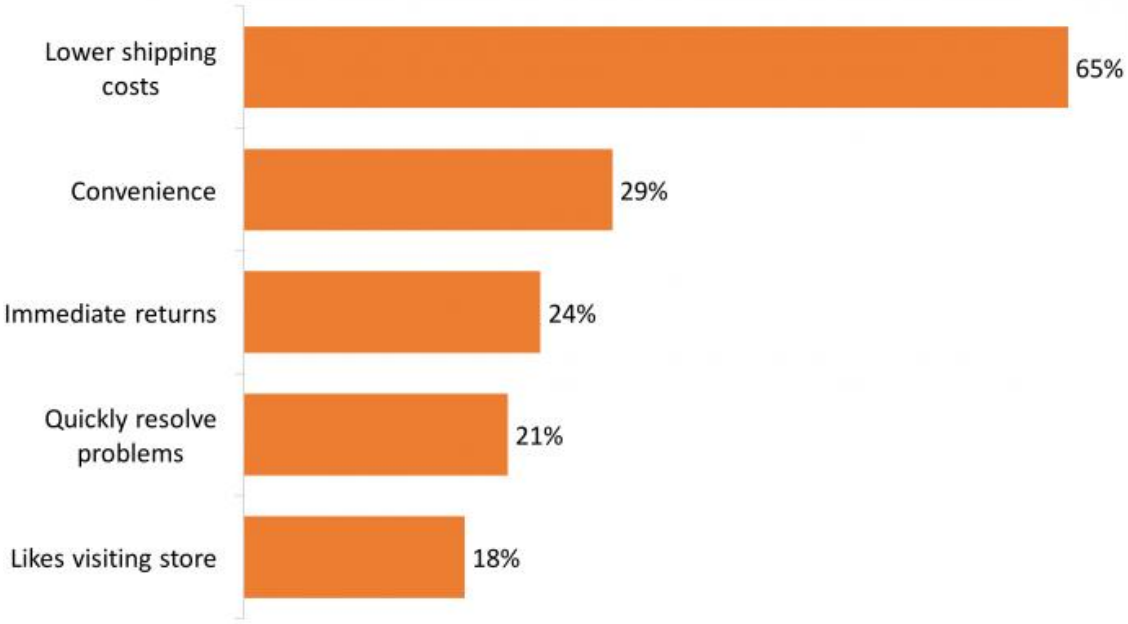
Amazon's acquisition of Whole Foods will push other retailers — particularly those with significant revenue from grocery and household goods — to accelerate their last-mile delivery and omnichannel fulfillment strategies.

Whole Foods' store network will give Amazon hundreds of locations to execute grocery delivery. Those locations are also very close to Amazon' customers, enabling same-day and time-window (within one or two hours) deliveries. Consumers already expect fast delivery, and this will further shrink the amount of time in which consumers expect their groceries to be delivered. This will create more pressure for competing retailers to develop similar systems in order to avoid being left behind as same-day delivery becomes table stakes.

Other retailers are already acting to speed up their own delivery times by leveraging their store locations, new technologies, and new delivery models. Target, for instance, recently announced plans to acquire Grand Junction, which provides a software platform that helps coordinate last-mile deliveries among a network of more than 700 regional and local carriers. The acquisition will help Target — which derives 20% of its revenue from groceries — expand a pilot test it's been running in New York City that allows shoppers to get same-day delivery from Target store locations. Meanwhile, Walmart has been testing new in-store pickup options, and expanding both its curbside grocery pickup and grocery delivery services. For context, groceries account for 56% of Walmart's annual revenue.

Why Shoppers Choose Click-And-Collect

North America



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Source: iVent Retail, 2017 (n=1000)

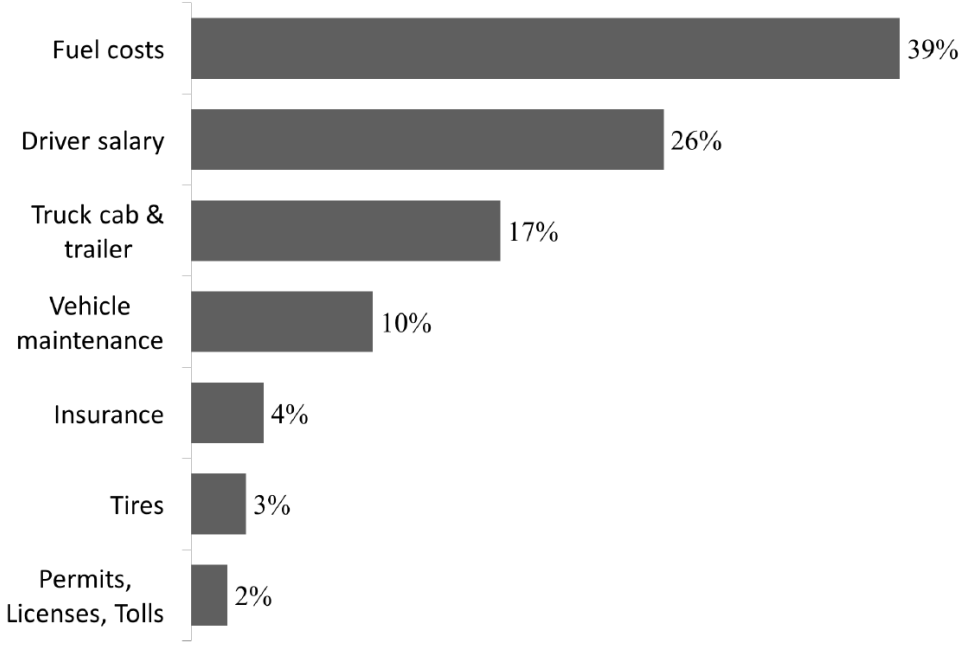
2. Platooning Technology Will Take Off In Long-Haul Trucking In The Next 2 years

Automated platooning software — which allows multiple trucks to autonomously follow each other in a closely bunched convoy — will start to make its way into commercial long-haul trucking vehicles in the next year or two. Startup Peloton, for example, is planning a limited commercial release of its platooning solution later this year, with a full launch scheduled for 2018. Several truck manufacturers, including Volvo, also have plans to introduce platooning technologies to their models in the near future.

Once it reaches market, platooning software will see quick uptake within the trucking industry. That's because it can reduce the single biggest cost for trucking fleets: fuel consumption. By following each other very closely together, platooning trucks face less wind resistance, which boosts their fuel efficiency. In a test involving a two-truck convoy, Peloton found that its software improved the fuel efficiency of the lead truck by 4.5%, while the rear truck saw a 10% boost. This improved fuel efficiency will increase demand for the technology, as truck operators seek to integrate it across their fleets over the next few years.

Average Cost Of Operating Commercial Truck, By Component

US



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Source: thetruckersreport.com

3. Congress Will Pass Self-Driving Car Legislation In The Next Year, But The Actual Rules Will Take Much Longer

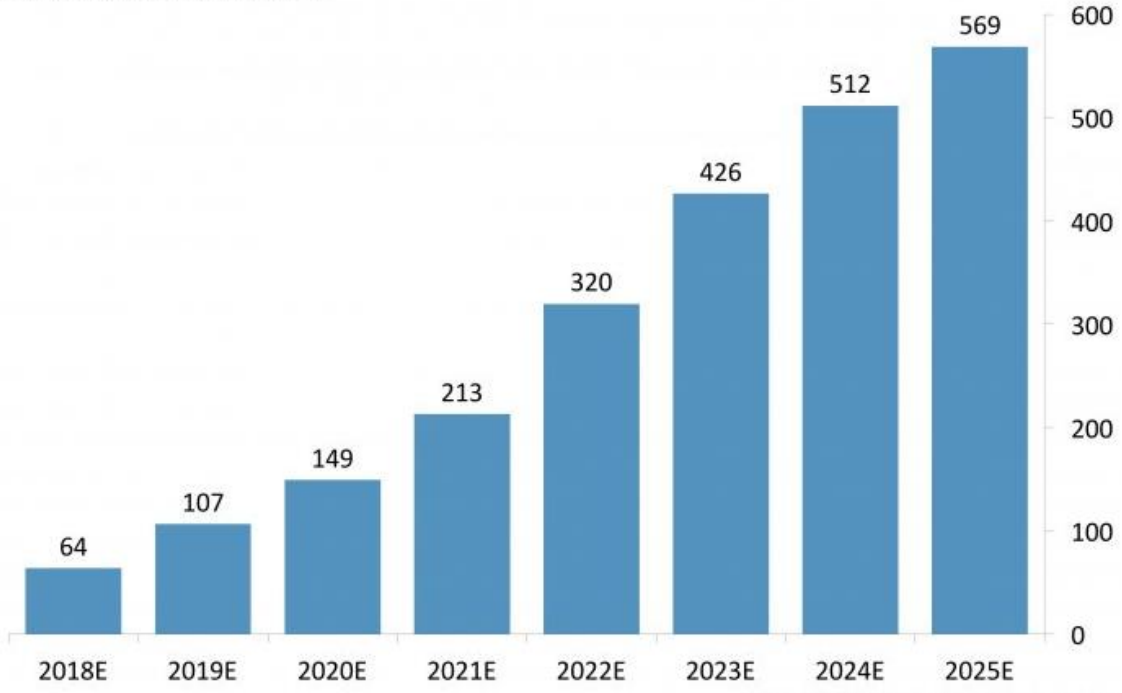
Congress will likely pass legislation in the next year that will direct the Department of Transportation to draft regulations for self-driving cars. Both the House and Senate have introduced legislation regarding self-driving technology with bipartisan support, indicating that there's wide acknowledgement among legislators that this disruptive technology must be addressed quickly.

The House is currently set to debate a bill that would allow the Department of Transportation to exempt specific numbers of autonomous vehicles from federal safety requirements, while also directing the agency to overhaul the nation's motor vehicle safety standards to account for autonomous technologies. However, regulators will likely take several years to draft those safety standards, even with a push from Congress. Drafting regulations will require extensive field testing and reaching a consensus among various stakeholders, including car companies and consumer advocacy groups. Right now, the National Highway Traffic and Safety Administration (NHTSA) lacks the staff and resources to conduct this wide-ranging field work and industry outreach in anything less than five years, according to former NHTSA administrator Joan Claybrook. NHTSA also remains without a director, and it seems unlikely to get much support from the White House, which has let its self-driving car task force fall apart in recent months.

That means NHTSA is unlikely to release real self-driving car regulations before 2020. In the meantime, automakers will have to wrestle with the confusing patchwork of state regulations around self-driving cars that has emerged in recent years. Twenty US states have now passed self-driving car regulations that overlap and sometimes conflict with each other. That means automakers have to account for all of these various state regulations when building self-driving vehicles, a ponderous task that has stalled innovation. However, the expanded exemptions in the Congressional bill will allow automakers to put far more self-driving cars on the road for testing purposes over the next few years.

FORECAST: Fully Autonomous Car Shipments

US, 2018-2025, Thousands



Source: BI Intelligence Estimates, 2017

4. Machine Learning Will Enable On-Demand Route Optimization For Deliveries

Route optimization is already a pressing issue for logistics companies and organizations that rely on them to deliver goods. A growing list of companies has already begun adopting more sophisticated technologies to help optimize routes for speed and fuel efficiency. For example, UPS finished the deployment of its ORION route optimization algorithm in the US in late 2016, and is working on expanding its use to international markets.

As on-demand delivery schemes begin to take hold in long-haul trucking and last-mile deliveries, it will force companies to generate more optimized routes more quickly to enable faster pickups and deliveries. That will require instantly aggregating and analyzing a wide range of both historical and real-time data on weather, traffic, and construction delays, as well as historical data regarding demand for pickups and dropoffs. Using such data, a courier's route for a late afternoon last-mile package delivery could be redirected through an area where there's typically high demand for package pickups during that time of day, increasing the likelihood that the courier will pick up an extra package for delivery on the way. This will enable on-demand logistics and delivery providers to deliver more orders more quickly, while also better managing their operational costs.

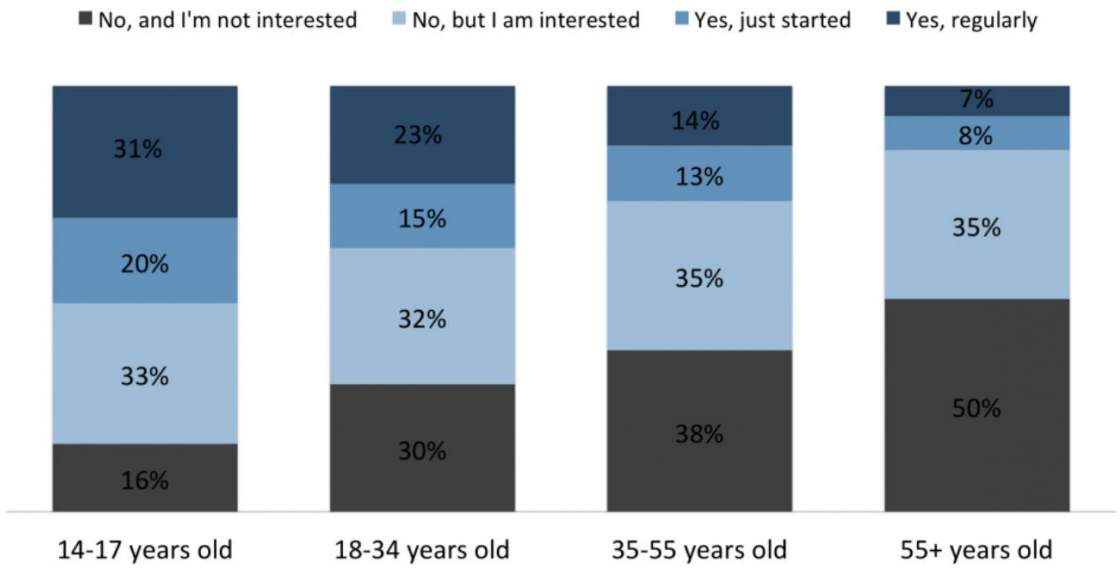
5. In-Car Voice Assistant Usage Will Take Off

Voice is going to be the preferred interface for apps and services in connected cars, and usage of voice assistants like Alexa, Siri, and Google Assistant will start to play a larger role in the driver experience over the next couple of years. Millions of cars on the road today have Siri and Google Assistant functionality through Android Auto and Apple's CarPlay. Additionally, Ford is in the midst of introducing Amazon's Alexa assistant to some of its vehicles. However, in-car usage of these voice assistants remains rather low because consumers aren't using many of their CarPlay and Android Auto apps. That's because they've been trained to primarily interact with apps by tapping and swiping on mobile devices, and consumers still have their smartphones with them while in their cars.

Over the next couple of years though, consumers will become conditioned to interact with apps via voice. Apple and Google are working to give their voice assistants a more prominent role in the smartphone experience. Growing adoption of smart home speakers like the Echo and Google Home will also further this trend. As consumers grow more comfortable with using voice assistants on these other devices, that comfort will translate quickly to the car as well. That will drive a boom in app usage and media consumption in vehicles, as voice is a much more natural interface in the car, allowing drivers to play music and ask for directions while keeping their hands on the steering wheel — that means new opportunities for app and content creators to reach consumers during the nearly one hour per day they spend in their cars.

Consumer Usage And Interest In Using Voice Assistants, 2017

Question: Are you currently using embedded voice -enabled digital assistants?



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n=25,996, Global
Source: Accenture

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