

# TOP 5 STARTUPS TO WATCH

DELIVERY ROBOTICS

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# INTRODUCTION

Digital leaps in areas like AI and autonomous technology are fundamentally changing the way goods and people move around the world. Startups are the lynchpin of this transformation, pinpointing areas of need that can be tackled by cutting-edge digital solutions, including digital freight services, warehouse robotics, AI for supply chain management, delivery robotics, and autonomous driving software. That's ultimately forcing incumbents to evolve or see their core businesses erode. Monitoring these startups thus offers unique insight into the development of the transportation and logistics industries at large, and how incumbents are defending their turf.

In a series of five notes, Business Insider Intelligence will look at the top startups disrupting transportation and logistics. In the first note, we [discussed](#) the leading startups in digital freight and offered an assessment of their value and impact on the sector. In the second note, we [examined](#) the startups spearheading the rise of warehouse robotics, and in the third, we [explored](#) the leading startups offering AI software to enhance the routing of shipments and speed up delivery times. This fourth note will dive into the robotics startups automating last-mile delivery. And finally, the fifth note will analyze the startups developing autonomous driving software and how they're challenging big automotive and tech companies in the race to put a self-driving car on the road.

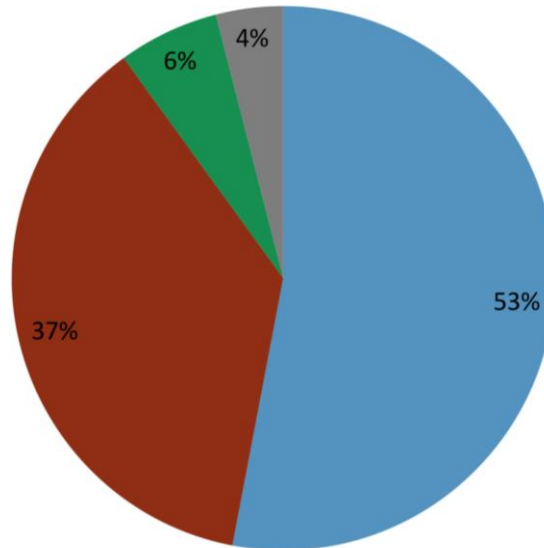
# DELIVERY ROBOTICS: AUTOMATING THE PROBLEMATIC LAST MILE AS PACKAGE VOLUMES GROW

Retailers, logistics companies, and delivery startups are all rushing to find ways to improve the last mile of delivery, or the final stage of the delivery process when the package arrives at the customer's door. Automating the delivery process through robots is at the center of these efforts — other technologies like drones and autonomous cars will be held back for a few years by regulatory barriers and technological limitations. Business Insider Intelligence defines a delivery robot as any ground-based robot that's used to deliver packages, groceries, or prepared meals from one point to another.

**Last-mile deliveries are notoriously difficult to conduct, and rising e-commerce volume is making the problem worse.** Honeywell estimates that the last-mile comprises 53% of the entire cost of delivering a package. And with package volumes on the rise — Business Insider Intelligence [projects](#) annual global e-commerce volume will rise 91% over the next five years, hitting \$23 trillion in 2023 — these costs are skyrocketing. Worse yet, 63% of US internet users expect their package delivered within 3 days of their order, [according to](#) Kibo Commerce data. And that's forcing retailers and their logistics partners to handle a surging package volume quicker than ever before. This means demand for automated solutions like delivery robots, which can not only reduce the cost of last-mile delivery but also speed up the process, is high and growing.

## Share Of Delivery Costs, By Part Of Journey

■ Last-mile delivery ■ Line haul ■ Sorting ■ Collection



Source: Honeywell, 2017

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A McKinsey [study](#) found that automating last-mile deliveries through technologies like robotics will provide savings of at least 40% on traditional last-mile delivery methods, assuming courier wages of about \$23 per hour. The promise of such large cost-savings has prompted the rise of a slew of delivery robotics startups over the last half-decade. These companies' robots typically scurry around the sidewalks bringing products to customers. Once the robot arrives at the customer's location, the customer receives a text with the code they can enter into the robot to open it and pick up their order.



## TOP 5 DELIVERY ROBOTICS STARTUPS

Name	Total Investment	Notable Investors	Geographies/Markets	Highlights
Starship Technologies	\$42 million	<ul style="list-style-type: none"> <li>Daimler</li> <li>Matrix Partners</li> <li>Shashta Ventures</li> </ul>	<ul style="list-style-type: none"> <li>London-based company that makes food and package delivery robots for US and European markets</li> </ul>	<ul style="list-style-type: none"> <li>Delivering packages for Postmates and Doordash in California and Washington, DC</li> </ul>
Nuro	\$92 million	<ul style="list-style-type: none"> <li>Greylock Capital Partners</li> <li>Gaorong Capital</li> </ul>	<ul style="list-style-type: none"> <li>San Francisco-based firm that offers two-foot-tall robots for the US</li> </ul>	<ul style="list-style-type: none"> <li>Focused on the online grocery space, which will be worth nearly \$100 billion by 2022</li> </ul>
Marble	\$10 million	<ul style="list-style-type: none"> <li>Tencent</li> <li>Maven Ventures</li> <li>Kyle Vogt (CEO Cruise Automation)</li> </ul>	<ul style="list-style-type: none"> <li>California startup that manufactures three- and four-foot-tall robots for the US</li> </ul>	<ul style="list-style-type: none"> <li>Delivering food for Grubhub, the largest food delivery company in the US by market share</li> </ul>
Robby Technologies	\$2.1 million	<ul style="list-style-type: none"> <li>Sinovation Ventures</li> <li>Yunqui Partners</li> <li>Y Combinator</li> </ul>	<ul style="list-style-type: none"> <li>San Francisco company that makes foot-tall robots for the US</li> </ul>	<ul style="list-style-type: none"> <li>Robots have traveled over 4,000 miles delivering items for customers</li> </ul>
Boxbot	\$9 million	<ul style="list-style-type: none"> <li>Toyota AI Ventures</li> <li>Artiman Ventures</li> </ul>	<ul style="list-style-type: none"> <li>Oakland-based company working on four-foot-tall robots that can carry up to 80 lb. payloads</li> </ul>	<ul style="list-style-type: none"> <li>Recently added a former Amazon Flex exec to lead business development team</li> </ul>

Source: News reports, Crunchbase, FMI and Nielsen, TechCrunch, company websites

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# TOP 5 STARTUPS IN DELIVERY ROBOTICS

We selected each startup based on the amount of funding it's received, the value of its products, the potential value of the market it serves, the quality and number of its customers and partners, and the number of noteworthy investors — either from within the industry or the technology space more broadly — it has secured.

**Startup:** Starship Technologies

**Founded:** 2014

**Notable investors:** Daimler, Matrix Partners, Shashta Ventures

**Why it's worth watching:** Starship Technologies is arguably the most well-known startup in the delivery robotics space. It's [based](#) in London and makes foot-tall robots designed to deliver up to 40 pounds of goods over 2 miles. The company was founded by a pair of former Skype executives in 2014, making it the oldest startup to crack our list. This early start allowed Starship's engineering team to design and produce hundreds of robots before many others entered the market. More importantly, it allowed the company to develop a strong brand image, which has helped it secure partnerships with Postmates and DoorDash, the [third and fourth largest](#) companies in the US crowdsourced delivery space by market share (15% and 9%, respectively). These partnerships involve Starship robots picking up orders at restaurants in Redwood City, California and Washington, DC on Postmates' and DoorDash's mobile apps, respectively. Today, Starship's robots have [driven](#) over 100,000 km (about 62,000 miles) in total in eight major metro areas in the US and Europe.

**What's next:** When the company completed its most recent funding round in June, it [said](#) it planned to use the money to grow its fleet from only a few hundred robots to over 1,000 by the end of this year. Starship could thus expand its relationships with Postmates and DoorDash to new geographies as it manufactures hundreds of more robots over the coming months. In addition, Starship has built an innovative enough brand that it could conceivably launch its own proprietary delivery service.





**Startup:** Nuro

**Founded:** 2016

**Notable investors:** Greylock Capital Partners, Gaorong Capital

**Why it's worth watching:** Although Nuro got a later start than rivals like Starship, it's quickly emerged as a leading player in the delivery robotics space. The company was founded by Jiajun Zhu, who was one of the first engineers at Alphabet's autonomous car spinoff Waymo. Nuro's products are slightly larger than Starship's, and can thus fit more goods. That could be why it was able to nab a partnership with US grocer Kroger, which [grossed](#) a whopping \$122 billion in sales last year. Grocery orders are often larger than prepared food orders, meaning larger robots are more ideal for delivering these goods. Although Nuro is currently only working on deploying about six robots in the Silicon Valley area, it's the most well-capitalized startup on our list — having recently announced a \$92 million Series A — showing it could expand its fleet in the near future.

**What's next:** If Nuro is intent on honing in on the grocery delivery space, it'll likely seek more partnerships with online grocers to better compete in this massive market — Nielsen [estimates](#) that 70% of US consumers will try an online grocery service by as early as 2022, up from only 26% in 2016.



**Startup:** Marble

**Founded:** 2015

**Notable investors:** Tencent, Maven Ventures, Kyle Vogt (CEO of Cruise Automation)

**Why it's worth watching:** Marble's primary product is a three-foot-tall robot designed to deliver prepared food and groceries over distances fewer than five miles. The company emerged in early 2015 — shortly after rival Starship but ahead of most of the other startups we've chosen to highlight. Marble is the only company on our list that has two different sized robots — the firm unveiled a larger, four-foot-tall robot in April. Additionally, Marble's robots have a modular cargo bay inside that can be swapped out based on load size. This unique versatility — Marble is the only startup on our list with robots designed this way — likely helped it secure partnerships with GrubHub (also known as Eat24/7), the largest food delivery company in the US by market share, and Doordash. Both partnerships involve Marble's smaller robots picking up orders placed through GrubHub's and Doordash's websites or mobile apps and delivering them to consumers.

**What's next:** When Marble completed its \$10 million Series A funding round this past April, it said it's hoping to move into the parcel delivery space over the next 18 months. Additionally, in a call with Business Insider Intelligence, CEO Matthew Delaney said it planned to hire at least another dozen engineers by the end of 2018. Marble was [granted permission](#) to test its robots in Arlington, Texas in late June, and more expansions could be coming soon.



**Startup:** Robby Technologies

**Founded:** 2016

**Notable investors:** Sinovation Ventures, Yunqui Partners, Y Combinator

**Why it's worth watching:** Robby Technologies — which was founded by a pair of MIT engineers and makes a two-and-a-half-foot-tall, four-wheeled robot — launched in 2016 but has quickly emerged as a powerful player in the delivery robotics space. That's likely due to its product and engineering teams' ability to continually develop new products. Robby is the only company on our list that has already deployed the second generation of its robot; it [released](#) the product back in June 2018. Moreover, it allows partners to put their logos on the outside of its robots, a unique value-add that most startups on our list don't offer. That's enabled the firm to grab partnerships with Doordash, Instacart, and Postmates to deliver parcels and prepared food in the San Francisco area. Robby's robots pick up and deliver food or packages from restaurants or retailers operating on these marketplaces. As of this past June, Robby's robots [had traveled](#) 4,000 miles delivering food and parcels to customers.



**What's next:** Robby's relationships with Doordash, Instacart, and Postmates could be expanded to new geographies in the near future, especially given the massive reach of these crowdsourced delivery companies. Postmates [operates](#) in 235 US cities, while Instacart has a presence in about 150. Meanwhile, Robby [poached](#) an Apple exec back in April to lead its sales and marketing teams, so we could see it adding to these teams in the coming months.



**Startup:** Boxbot

**Founded:** 2016

**Notable investors:** Toyota AI Ventures, Artiman Ventures

**Why it's worth watching:** Boxbot, which got the latest start of any of the startups on our list, was founded by two autonomous driving engineers, Austin Oehlerking and Mark Godwin, who previously worked for Tesla and Uber, respectively. The company's robots [are](#) about four feet tall and can fit up to 80 pounds of goods, making them the largest of any product developed by a company on our list. That makes them more ideal for large grocery orders and parcels, and also gives the company a unique value proposition among the startups we've discussed. This, coupled with the expertise of its founders, could be why the startup has managed to land impressive backers like Toyota AI Ventures. Boxbot [wants](#) to operate a delivery network that local retailers, restaurants, and other small businesses can use to deliver their products. In exchange, Boxbot will take a percentage of the revenue earned from each delivery.

**What's next:** Boxbot will seek partners and customers for its services in the grocery and parcel delivery spaces. Meanwhile, Toyota's investment in the company could be a sign that the Japanese auto giant is interested in using its products long term, perhaps either in its own warehouses or for a stand-alone delivery service.



[Download the charts and data in Excel »](#)

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