

# Autonomous Delivery Systems: Consumer Awareness & Favorability

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**The Authoritative Source for Consumer  
Technology Market Research**

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**Consumer  
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## **About Consumer Technology Association:**

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# Objectives

Understand public perceptions of autonomous systems used for delivery, such as self-driving vehicles, drones and delivery robots during the coronavirus outbreak. Specific objectives include:

- Gauge awareness of autonomous delivery systems used for contactless delivery during the coronavirus outbreak.
- Explore favorability toward autonomous delivery systems used for contactless delivery during the coronavirus outbreak.
- Understand if favorability toward autonomous delivery systems has changed compared to before the coronavirus outbreak.

# Methodology

This report was designed and formulated by the Consumer Technology Association (CTA). The quantitative study was administered to an online sample of 1004 U.S. respondents ages 18+ between May 11 and 13, 2020.

The margin of sampling error at 95% confidence for aggregate results is +/-3%. Sampling error is larger for subgroups of the data. As with any survey, sampling error is only one source of possible error. Precautionary steps were taken in all phases of the survey design, collection and processing of the data to minimize its influence because non-sampling error cannot be accurately calculated.

As is common practice in survey research, we weighted the data to reflect the known demographics of the study population based on age, sex, geographic region, race, education and household income.

CTA is a member of the Insights Association (IA) and adheres to the research and analysis guidelines set forth in the MRA Code of Marketing Research Standards and CASRO Code of Standards and Ethics.

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# Executive Summary

# Executive Summary

Over one-quarter (27%) of respondents indicate some degree of familiarity with autonomous systems used for delivery, including self-driving vehicles (31%), flying drones (28%) and delivery robots (23%).

Familiarity breeds favorability, and increased deployment of autonomous delivery systems amid the coronavirus health crisis has played a role in growing levels of favorability toward these technologies because they facilitate contactless delivery — an emerging mode that minimizes or eliminates human-to-human contact during delivery. Overall, 49% of respondents indicated they are “very” or “somewhat favorable” toward the technologies surveyed. This high degree of favorability is strengthened by the need for contactless delivery during the pandemic. In fact, 26% of respondents indicated they now view autonomous delivery technologies such as drones, self-driving vehicles and delivery robots more favorably than before the coronavirus health crisis.



# 2

## Detailed Findings

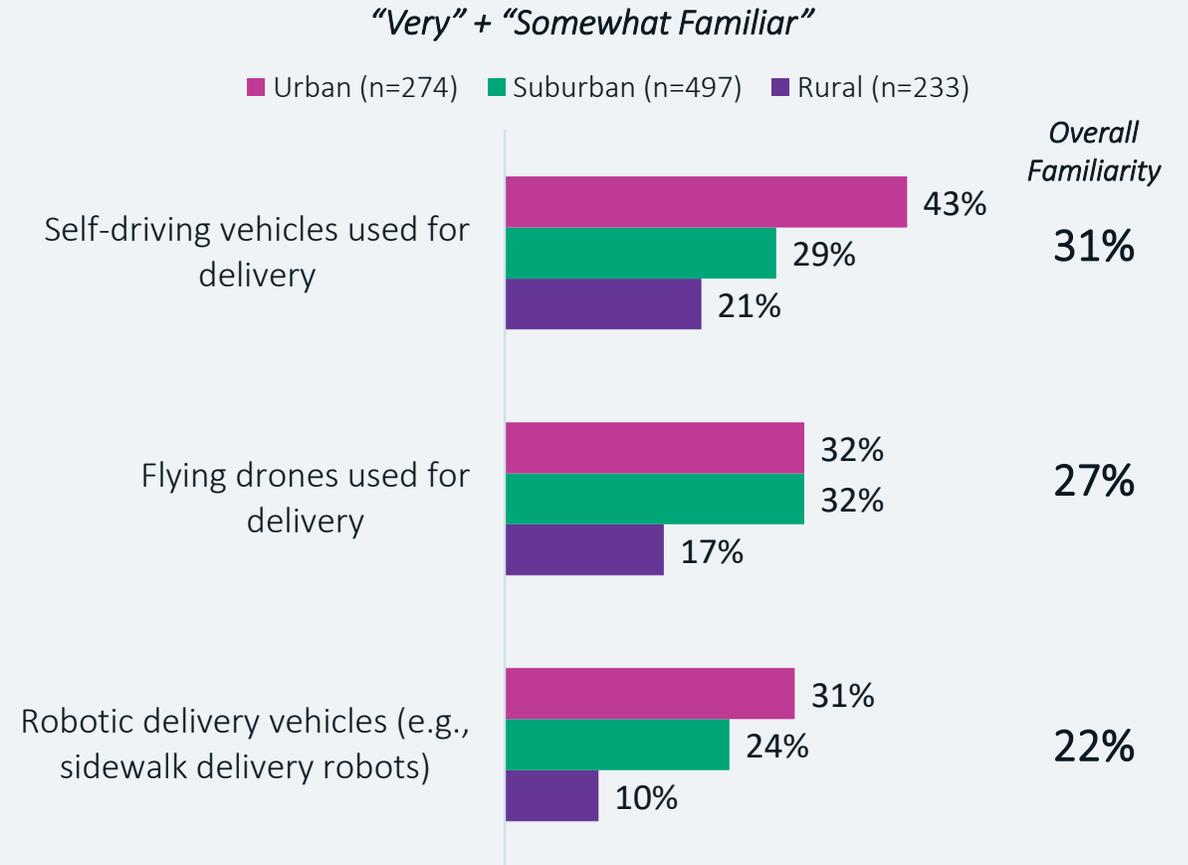
# Familiarity With Autonomous Delivery Systems

Consumer awareness around new delivery systems such as the use of drones, robots or self-driving vehicles is building as the coronavirus health crisis has pushed contactless delivery to the forefront.

Overall, over one-quarter (27%) of respondents indicate some degree of familiarity with any of the autonomous delivery systems surveyed.

Notably, over one-third (35%) of urban dwellers indicate familiarity with autonomous delivery. This is significantly more than suburban (28%) or rural (16%) residents. Increased familiarity in urban areas is likely due to the easily navigable distances and could be the result of experience with pilot programs that are taking place around the country.

Generationally, over two-fifths (44%) of Gen Z (18-23) indicate familiarity with the delivery technologies surveyed. This is significantly more than their older counterparts. This younger cohort represents future consumers and adopters of technology, and their widespread familiarity is indicative of what could be a burgeoning demand for autonomous delivery systems.



Q. How familiar are you with the following autonomous delivery systems for contactless delivery of food and other goods?  
Base: Total respondents (n=1004)

# Favorability Toward Autonomous Delivery Systems

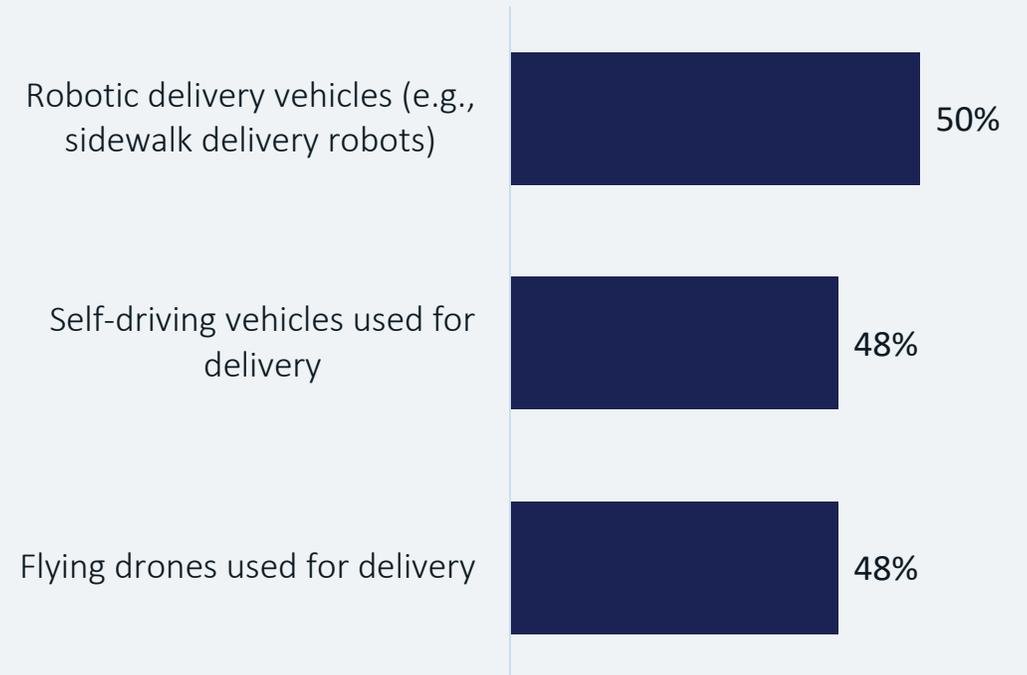
Consumer favorability toward autonomous delivery systems such as drones, robots or self-driving vehicles is split down the middle. However, with the rise in demand for contactless delivery during the coronavirus health crisis, CTA sees potential for favorability to grow.

Overall, nearly half (49%) of respondents indicate favorability toward any of the autonomous delivery systems surveyed.

Regionally, those living in the Northeast (21%) and West (24%) are significantly more likely to indicate that the technologies surveyed are “very favorable” than their counterparts in the Midwest (15%) and South (15%). What’s more, one quarter (25%) urban residents indicate autonomous delivery is “very favorable.” This is significantly higher than for those living in suburban (18%) and rural (10%) areas.

Interestingly, nearly three-fifths (57%) of households with children indicate high favorability toward autonomous delivery systems. This degree of favorability is significantly higher than households without children (46%) — a difference that points to convenience playing a role in the degree of favorability.

## “Very” + “Somewhat Favorable”



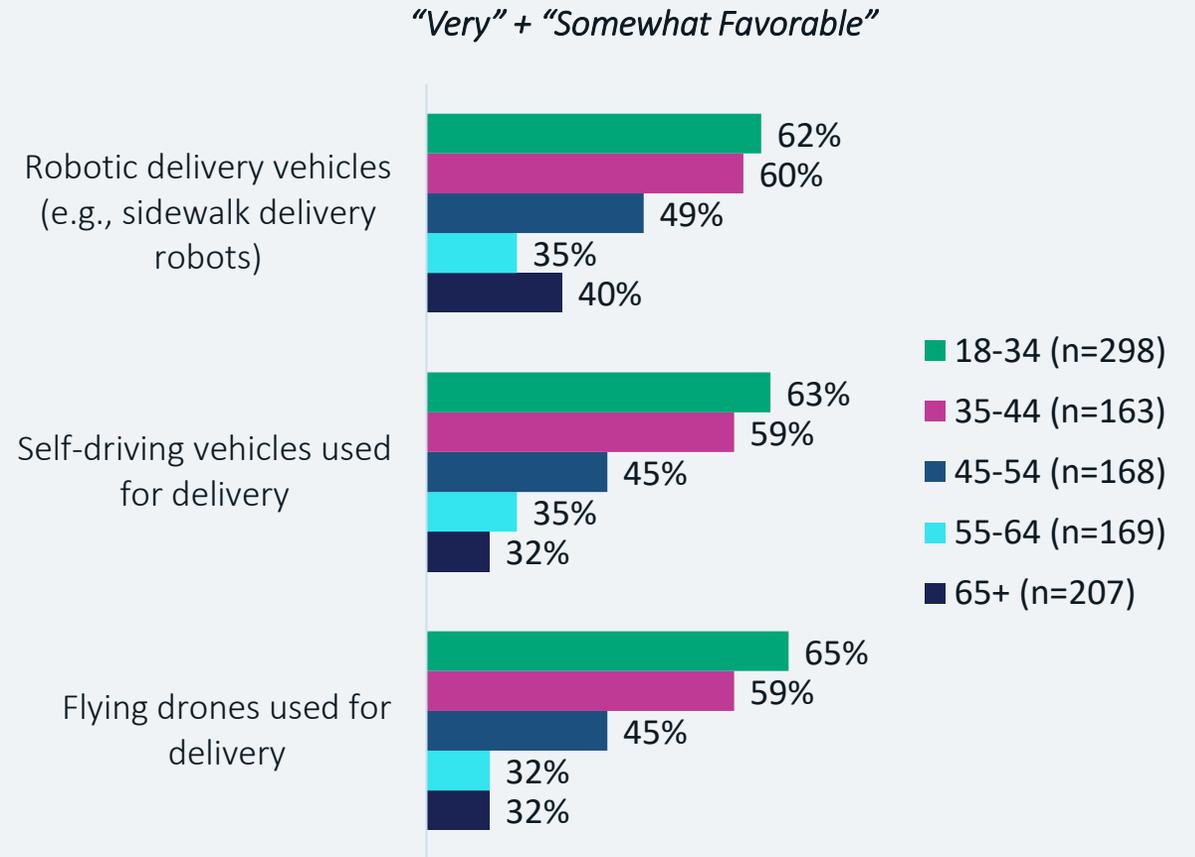
Q. If you were to have food or other goods delivered, how favorable, or not favorable, would you be to delivery via the following technologies?

Base: Total respondents (n=1004)

# Favorability Toward Autonomous Delivery Systems by Age

Consumer favorability toward autonomous delivery systems such as drones, robots or self-driving vehicles varies drastically by age.

Notably, 63% of those in the 18-34 age group indicate favorability toward the autonomous delivery systems. Moreover, 30% of this age group say they're "very favorable" toward the technologies surveyed. The tendency for younger age cohorts to indicate higher favorability is consistent across industry sectors. Those who grew up around technology are more inclined to welcome new technology.



Q. If you were to have food or other goods delivered, how favorable, or not favorable, would you be to delivery via the following technologies?  
 Base: Total respondents (n=1004)

# Changes in Favorability Toward Autonomous Delivery Systems Since the Beginning of the Coronavirus Pandemic

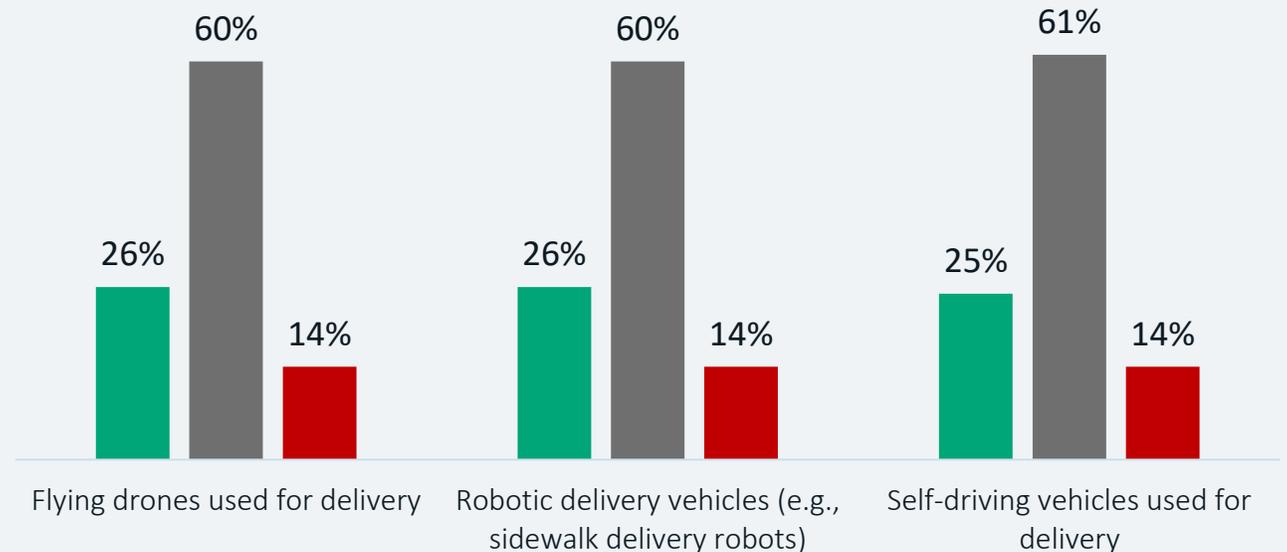
Consumer familiarity and favorability toward autonomous delivery systems such as drones, robots or self-driving vehicles is due to increased deployment and adoption in more areas. The coronavirus health crisis has accelerated this deployment and adoption due to the increased demand for contactless delivery options.

One-quarter (26%) of respondents indicate the autonomous delivery technologies surveyed are now more favorable than they were when comparing their favorability toward the technologies before the coronavirus health crisis and now.

One-third (34%) of respondents ages 18-44 indicate increased favorability toward any of the technologies surveyed. This is a significantly larger shift compared to their older counterparts, 19% of whom indicated increased favorability since the coronavirus pandemic. This difference in favorability represents a business opportunity in the autonomous delivery space.

Interestingly, 32% of respondents in households with children under 18 indicate increased favorability toward the delivery technologies surveyed. This is significantly more than respondents in households without children (23%).

- Autonomous delivery technology is now **more** favorable than it was
- My level of favorability toward autonomous delivery technology has **stayed the same**
- Autonomous delivery technology is now **less** favorable than it was

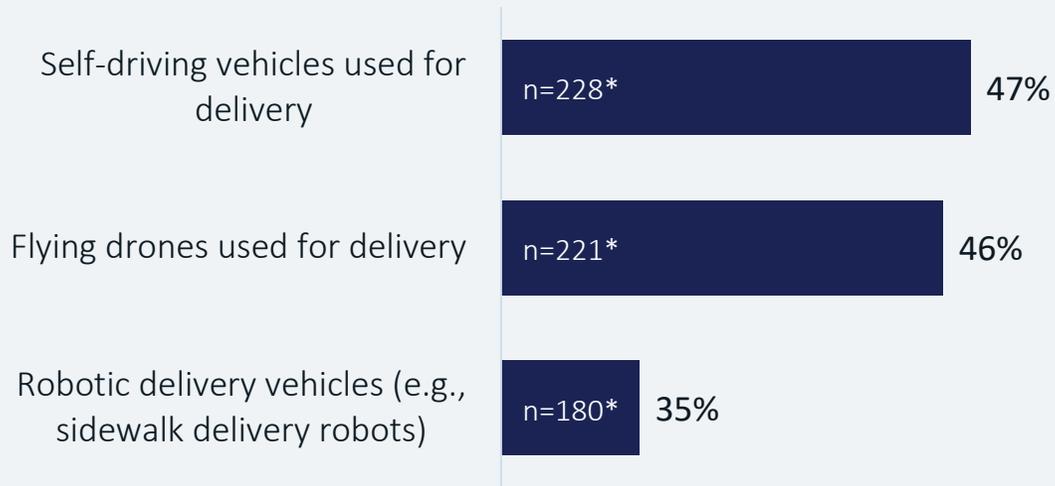


Q. Thinking about your favorability toward autonomous delivery systems before the coronavirus health crisis and your current level of favorability toward these technologies, please indicate how your favorability has changed, if at all.  
Base: Total respondents (n=1004)

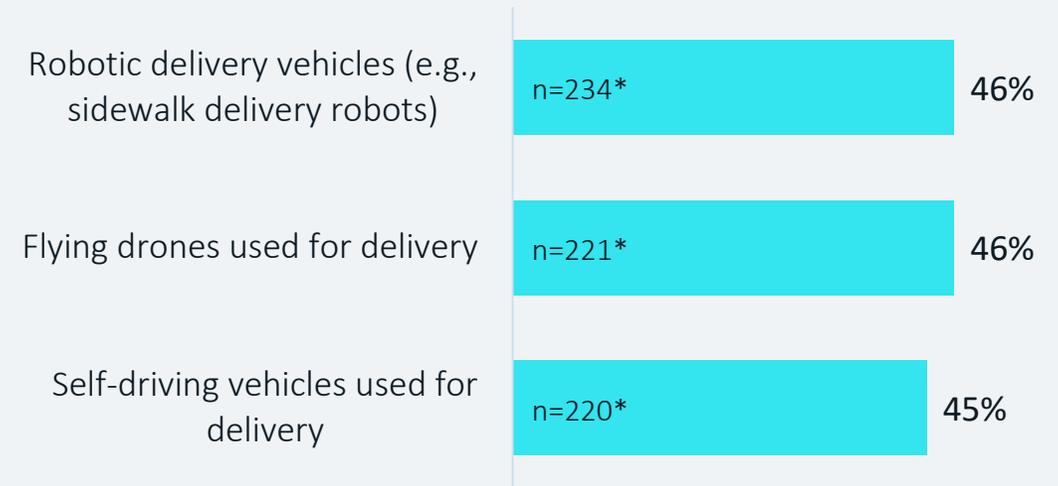
# Familiarity and Favorability Breeds Increased Favorability During Coronavirus Health Crisis

Generally, consumers who are familiar with these autonomous delivery systems also view them favorably. What’s more, those who indicated high levels of favorability toward autonomous delivery technology are significantly more likely to indicate the technologies are now more favorable than they were before the coronavirus health crisis.

*The more familiar a person is, the higher their favorability will be toward the technology*  
 (“Very” + “Somewhat favorable”)



*Among those already favorable before the health crisis, most show increased favorability post-crisis*



Q. The current coronavirus health crisis has generated interest and uptake in contactless delivery. How familiar are you with the following autonomous delivery systems for contactless delivery of food and other goods?

Base: Respondents who are “very” or “somewhat familiar” (n=varies)

Q. If you were to have food or other goods delivered, how favorable, or not favorable, would you be to delivery via the following technologies?

Q. If you were to have food or other goods delivered, how favorable, or not favorable, would you be to delivery via the following technologies?

Base: Respondents who are “very” or “somewhat favorable” (n=varies)

Q. Thinking about your favorability toward autonomous delivery systems before the coronavirus health crisis and your current level of favorability toward these technologies, please indicate how your favorability has changed, if at all.

\*Caution, low base size

# 3

## Case Studies

# Case Studies

While the coronavirus health crisis has brought attention to autonomous delivery technologies, several companies have already been working to establish these innovations as everyday delivery fixtures.

- Amazon and UPS in partnership with CVS are diligently working on delivery drones to deliver goods safely and efficiently to customers and communities;
- Ford and Starship Technologies are developing and using sidewalk delivery robots to transport packages; and
- General Motors is piloting contactless delivery self-driving vehicles during the pandemic as they pivot their focus from on-road testing in the San Francisco area.



Sources:

[Amazon Prime Air](#), *Amazon*

[UPS drones: Delivery's next frontier](#), *Tech Republic*

[CVS and UPS will use drones to deliver prescriptions in a retirement community amid coronavirus outbreak](#), *CNBC*

[Robots delivery restaurant food in Fairfax City](#), *WTOP*

[CES 2020: Ford wants this two-legged robot to delivery packages to your door](#), *ZDNet*

[Self-Driving Vehicles, Robots Showing What They Can Do in Contactless Deliveries](#), *Insurance Journal*



# Delivery Drones

Amazon's Prime Air, a future drone delivery system is "designed to safely get packages to customers in 30 minutes" (Amazon). The rapid delivery of goods to customers not only shortens the already quick delivery times, but also "increases the overall safety and efficiency of the transportation system" (Amazon). Applications of these delivery drones are far-reaching. Whether they carry groceries, products or medical supplies, this mode of delivery will bring reduced package delivery times for customers.

In fact, UPS drones are already used to transport "samples around a medical campus in North Carolina" (Tech Republic); fly "prescription supplies from mainland Massachusetts to an island off the coast" (Tech Republic); and deliver packages in residential areas.

Amid the coronavirus health crisis, CVS and UPS partnered to use drones "to deliver prescription medications to residents in a Florida retirement community to maintain social distancing measures. Starting early May, the 135,000 residents in The Villages can receive their medication via Matternet's M2 drone system, in cooperation with the Federal Aviation Administration" (CNBC). The use of drones for contactless delivery illustrates how the pandemic has expanded the need for this technology.

Sources:

[Amazon Prime Air, Amazon](#)

[UPS drones: Delivery's next frontier, Tech Republic](#)

[CVS and UPS will use drones to delivery prescriptions in a retirement community amid coronavirus outbreak, CNBC](#)



## Robotic Grocery and Parcel Delivery

Since January 2019, George Mason University (GMU) has used small, cooler-sized delivery robots to deliver food and snacks to students and faculty. These robots are part of Starship Technologies fleet of autonomous delivery robots that are summoned, tracked and unlocked through a mobile app. “The robots are outfitted with multiple cameras, two-way audio to communicate with people they interact with” (WTOP), and they “can navigate hurdles like curbs, and can travel in rain and snow. What’s more, they are monitored by humans who can take control at any time” (WTOP).

Amid the coronavirus health crisis, Starship Technologies partnered with Fairfax City, Virginia, “to allow restaurants to use its sidewalk drones for contactless deliveries in a limited area” (WTOP). The need for contactless delivery has widened the use of autonomous delivery robots beyond the GMU campus and has facilitated connections between business and residents during the pandemic.

What’s more, Ford purchased “a new two-legged, two-armed robot produced by Agility Robotics, which the car-maker hopes will soon be walking around neighborhoods carrying parcels from the delivery vehicle” (ZDNet). to your door. These autonomous delivery robots solve the “last 50 feet problem” (ZDNet). These last “50 feet are the final steps between the autonomous vehicle carrying a customer’s order, and that customer’s doorstep” (ZDNet). This bipedal robot solves not just that problem but fills the demand for contactless delivery amid the coronavirus health crisis.

Sources:

[Robots delivery restaurant food in Fairfax City, WTOP](#)

[CES 2020: Ford wants this two-legged robot to delivery packages to your door, ZDNet](#)



## Self-Driving Vehicle Food Delivery in San Francisco, CA

Several self-driving car companies have temporarily pivoted from on-road testing in the United States to deployment as contactless delivery vehicles. These companies are putting their self-driving vehicles to work delivering food and other goods to customers in response to a rise in demand for contactless delivery.

For example, the cars of General Motors' "self-driving unit Cruise have flashed a 'SF COVID-19 Response' sign on their windshields as they deliver food from SF-Marin Food Bank and SF New Deal to seniors in need." Additionally, Softbank-backed Nuro has put its "latest R2 vehicles to work delivering medical supplies to a temporary COVID-19 hospital in Sacramento and a temporary medical facility in San Mateo County."

The coronavirus health crisis has helped speed up commercial contracts and partnerships and offers self-driving vehicles a new use-case opportunity as they help communities stay safe, healthy and contactless.

Source:  
[Self-Driving Vehicles, Robots Showing What They Can Do in Contactless Deliveries](#), *Insurance Journal*

# Final Thoughts

# Final Thoughts

The coronavirus health crisis is spurring innovation and new technologies and changing consumer behaviors and sentiment. Autonomous delivery systems including self-driving vehicles, flying drones and delivery robots are no exception. In fact, these technologies have exhibited a surge in favorability as they answer the call for contactless delivery and social distancing amid uncertain times.

Increased deployment of autonomous delivery technologies as a result of the coronavirus health crisis has bred favorability, especially among those who were already familiar and/or already favorable.

Though these technologies existed and had use-cases before the coronavirus health crisis, the pandemic has highlighted the dynamic applications of autonomous systems to support the health and wellness of the community they serve.



# About CTA Research

# CTA Research

- CTA Research provides a valuable benefit to the technology industry by researching and reporting on **consumer behavioral and technology purchasing trends**, which are available to member companies for free.
- CTA Research also releases comprehensive **forecast reports** that discuss the health and growth of specific technology product categories.
- Forecasts and reports are available at [cta.tech/research](https://cta.tech/research).



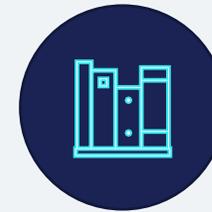
## Sales & Forecasts

CTA quantifies the size and momentum of the industry through a variety of reports, tracking sales volume and revenues for hundreds of tech products. Our reports include three-year forecasts and quarterly outlook reports.



## Research Studies

CTA Research publishes B2C and B2B studies addressing the U.S. and international markets using the full spectrum of quantitative and qualitative techniques. Topics range from emerging technologies to in-depth examinations of consumer behavior related to tech.



## Research Library

CTA's dedicated staff of experienced, professional librarians is one of the premier sources for industry information. The Research Library works with you on the most challenging requests and fields questions on every imaginable topic in the industry.

# COVID-19 Research Updates

CTA Research has produced several reports and products related to COVID-19 with more in the pipeline. Available reports as of June 18, 2020, include:

- COVID-19 Impact: Telework & the New Home Office (CTA Members Only)
- Coronavirus Member Impact Study (CTA Members Only)
- COVID-19 Impact Study: Canadian Use of Technology at Home (CTA Members Only)
- Special 2020 Industry Forecast Update: Assessing COVID-19 Impact
- COVID-19 Impact Study: Use of Technology at Home (CTA Members Only)
- Coronavirus Member Impact Study (CTA Members Only)
- Bi-Weekly CTA Tech Use and Purchase Tracker: COVID-19 Impact

For additional coverage of COVID-19, please access our resources and ongoing research at [cta.tech COVID-19](https://cta.tech/COVID-19). Additionally, look for further forecast updates and research reports at [cta.tech/research](https://cta.tech/research)



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