U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE

May 19, 2017

TO: Members, Subcommittee on Digital Commerce and Consumer Protection

FROM: Committee Majority Staff

RE: Hearing entitled "Disrupter Series: Delivering to Consumers"

I. INTRODUCTION

The Subcommittee on Digital Commerce and Consumer Protection will hold a hearing on Tuesday, May 23, 2017, at 10:15 a.m. in 2322 Rayburn House Office Building. The hearing is entitled "Disrupter Series: Delivering to Consumers."

II. WITNESSES

- Brian Wynne, President and CEO, Association for Unmanned Vehicle Systems International (AUVSI);
- Bastian Lehmann, Founder and CEO, Postmates;
- Shyam Chidamber, Chief Evangelist and Senior Advisory, Flirty; and
- Harry J. Holzer, Ph.D., Jo John LaFarge Jr. S.J. Professor of Public Policy, McCourt School of Public Policy, Georgetown University.

III. BACKGROUND

The U.S. e-commerce market is projected to reach $500 billion by 2018 and is expected to see double-digit growth each year through 2020.[1] The total food and grocery market in the U.S. is approximately $1.4 trillion, with less than 2 percent of customers shopping for groceries or ordering food on their mobile devices.[2] In an international survey, 80 percent of shoppers "said they went online to shop;" 61 percent "said they went online to shop for groceries;" and 43 percent "have had their grocery purchases delivered."[3] Consumer-to-business mobile payments are projected to grow from $50.92 billion in 2014 to $693.35 billion in 2019.[4] With continued growth

[1] https://www.emarketer.com/Article/Worldwide-Retail-Ecommerce-Sales-Will-Reach-1915-Trillion-This-Year/1014369
[2] https://www.forbes.com/sites/briansolomon/2017/03/09/with-1-billion-sales-run-rate-postmates-will-aim-for-profits-next/#729c20118f5b
[3] Accenture Consulting "Retail Consumer Research 2016" Executive Summary, p. 7 https://www.accenture.com/t20160728T162953__w__/us-en/_acnmedia/PDF-7/Accenture-Adaptive-Retail-Research-Executive-Summary-V2.pdf#zoom=50.
[4] "The Future of E-commerce: The Road to 2026" Ovum, 2016, p. 12, http://www.criteo.com/media/4094/ovum-the-future-of-e-commerce-the-road-to-2026.pdf

of shopping on mobile devices and the nature of the real-time on-demand economy, consumers have come to expect quick and flexible delivery options.

A 2016 survey revealed that most consumers value same-day delivery as well as the flexibility to shop in store and have items shipped to a location of the consumer's choice, such as their home, office, or other personalized pickup points.[5] In order of customer preference, home delivery, in-store pickup, drive-through pickup, and pickup at a third party location are the most typical delivery options chosen by consumers.[6] To address these expectations, e-commerce companies, traditional delivery players, and new entrants have focused on integrating innovative technological advancements into their delivery service process.

From algorithms and analytics to delivery drones and delivery robots,[7] disruptive technology is revolutionizing the way companies deliver products to consumers. The rapid growth of the e-commerce market impacts traditional delivery providers and, importantly, expands the market of product delivery for new entrants. This trend is reflected by private sector investment into this new space.[8] Investments range from startup companies focused on food delivery[9] to e-commerce companies allocating capital to their delivery service processes. Companies are utilizing drones, automated couriers, advanced algorithms to deliver everything from groceries and formal wear to food and packages. Advanced and emerging technology is reshaping current delivery services as well as creating a new product delivery market where consumers will enjoy faster, cheaper, and more flexible delivery options.

A. Drones

Unmanned aircraft systems (UAS), commonly known as "drones," offer a variety of commercial applications that have the potential to reshape product delivery. However, the current regulatory framework imposes a variety of hurdles for drone use[10] and make widespread commercial application illegal.[11] The Federal Aviation Administration (FAA) has made available a process by which those who are expected to fly the drone may obtain a special waiver.[12] But, to date, only one such waiver has been granted and, notably, its operational limitations will not permit delivery operations.[13] This is due primarily to the "line of sight" regulation that requires the drone

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[5] https://www.uspsoig.gov/sites/default/files/document-library-files/2016/RARC-WP-16-012.pdf; *see also* http://bko.upa.it/static/upload/sta/state_of_shipping_in_commerce_2016__us_.pdf
[6] *Id*. n. 3.
[7] https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/vcii-publication-technological-disruption-innovation-last-mile-delivery.pdf
[8] https://www.cbinsights.com/blog/top-vcs-food-delivery-startup-investment/
[9] *Id*.
[10] One of these regulatory hurdles was struck down by the Court of Appeals for the District of Columbia on May 19, 2017. In *Taylor v. Huerta*, the Court struck down the FFA's 2015 rule requiring a model aircraft to register like a manned aircraft. The Court found the "FAA's Registration Rule violates Section 336 of the FAA Modernization and Reform Act" which expressly states that the FAA is prohibited "from promulgating any rule or regulation regarding a model aircraft." *See http://www.wolfenstock.com/TaylorvFAA/TaylorFAAOpinion.pdf*
[11] https://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=20516
[12] *Id*.
[13] https://transportation.house.gov/uploadedfiles/2017-04-04_-_cassidy_testimony.pdf

remain in the visual line-of-sight of the remote pilot and visual observer.[14] Such regulations hamper the growth of consumer applications of drone technology. Yet, despite the current regulatory framework, companies are focused on integrating drones for product delivery.

Drone use for product and package delivery offers several advantages. One key advantage is speed. Because drones are not confined to road infrastructure, the natural congestion of traffic cannot slow delivery.[15] Additionally, drones can traverse difficult terrain and easily fly over bodies of water. These benefits are evident in many of the current areas of application being explored. Such areas focus on delivering emergency medication and other urgently needed items to remote locations.[16] Thus, because drones can deliver packages faster and more efficiently than cars, delivery trucks or other road-based couriers and because they have the ability to reach remote locations, many delivery providers, e-commerce companies, and new entrants into the space are exploring the use of drones.[17]

Flirtey, a commercial drone service provider, was the first to get clearance from the FAA for drone-borne deliveries.[18] In July 2015, Flirtey's F3.0 hexacopter flew a shipment of emergency medical supplies to Wise, Virginia's Remote Area Medical Clinic.[19] Additionally, since that groundbreaking delivery, Flirtey has partnered with 7-Eleven to conduct a delivery pilot program in Reno, Nevada. In November 2016, Flirtey successfully completed 77 deliveries to 12 customers located within one mile of the Reno convenience store who were selected for the specific pilot program.[20] Due to Flirtey's historic first delivery, the drone will be displayed at the Air and Space Museum.[21] Despite Flirtey's initial success, the current regulatory framework has resulted in many drone delivery programs taking place outside the U.S. For example, Amazon Prime Air conducted its first successful package delivery in the U.K.;[22] DHL launched a drone delivery service in Juist, an island in Germany's North Sea;[23] Matternet has been running drone deliveries of medical supplies and specimens in Switzerland;[24] and Google delivered supplies to farmers in Australia.[25]

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[14] https://www.faa.gov/uas/media/Part_107_Summary.pdf
[15] https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/vcii-publication-technological-disruption-innovation-last-mile-delivery.pdf
[16] *Id.* at 12.
[17] http://www.techworld.com/picture-gallery/personal-tech/best-uses-of-drones-in-business-3605145-3605145/
[18] http://www.smithsonianmag.com/smart-news/first-delivery-drone-united-states-lands-spot-smithsonian-180958964/
[19] http://www.airspacemag.com/daily-planet/rural-virginia-drone-makes-first-legal-us-package-delivery-180956053/?no-ist&webSyncID=6843d26a-3dbe-64d0-7e27-290d66373d1b&sessionGUID=b1592533-aed6-3e90-2233-be27d868c4e7
[20] https://www.recode.net/2016/12/20/14026396/7-eleven-drone-delivery-flirtey-first-retail-us-reno-nevada
[21] http://www.smithsonianmag.com/smart-news/first-delivery-drone-united-states-lands-spot-smithsonian-180958964/
[22] *Id.* at 2.
[23] https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/vcii-publication-technological-disruption-innovation-last-mile-delivery.pdf
[24] https://techcrunch.com/2017/03/31/matternet-cleared-to-fly-blood-samples-in-delivery-drones-over-swiss-cities/
[25] https://www.gsb.stanford.edu/sites/gsb/files/publication-pdf/vcii-publication-technological-disruption-innovation-last-mile-delivery.pdf

To address these regulatory concerns, the FAA is working to broaden rules to allow for commercial drone use. In May 2016, the FAA Administrator Michael Huerta announced the establishment of Drone Advisory Committee (DAC), which was formed primarily to focus on integrating drones into the National Airspace System.[26] The FAA, the DAC, and other stakeholders will continue to collaborate to create a regulatory framework that strikes the necessary balance between safety and commercial use. Drones offer benefits to consumers and businesses alike. Once a favorable regulatory framework is in place for widespread application of commercial drone use, those benefits will be realized.

B. Other emerging delivery technologies

With the convergence of increased internet access and platforms connecting consumers with goods and services, there has been significant interest in developing and funding both consumer-facing and business-to-business delivery services. Instacart, a grocery delivery service, recently raised $400 million in a Series D financing round.[27] Postmates, a five-year-old on-demand delivery service, is completing 2 million deliveries a month.[28] DoorDash, a competitor of Postmates, recently announced a partnership with BevMo! to expand their service offerings to include alcohol delivery in the Los Angeles and San Francisco Bay areas.[29] Postmates and DoorDash have partnered with Starship Technologies to test robotic deliveries in Redwood City, California and Washington, D.C.[30]

Rent the Runway (RTR), a high-fashion rental e-commerce company, has recently expanded to include physical stores in a number of cities, and raised $60 million in a funding round last December.[31] RTR allows customers to rent high-end fashions for 4 or 8 day periods, or purchase an unlimited rental monthly subscription.[32] Flexe launched in Seattle 5 years ago and has raised millions in multiple funding rounds creating a network of 550 warehouses to allow businesses to make same-day or next-day deliveries and as is generally referred to as the "Airbnb

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[26] https://www.rtca.org/content/drone-advisory-committee
[27] "We've raised $400M to Grow Instacart" instacart, March 8, 2017, https://news.instacart.com/weve-raised-400m-to-grow-instacart-2566e1adc9d5.
[28] Brian Solomon, "With $1 Billion Sales Run Rate, Postmates Will Aim For Profits Next." Forbes, March 9, 2017, https://www.forbes.com/sites/briansolomon/2017/03/09/with-1-billion-sales-run-rate-postmates-will-aim-for-profits-next/#37271c608f5b.
[29] "Skip the Barstool, We've Partnered with BevMo!" DoorDash Blog, March 7, 2017, https://blog.doordash.com/skip-the-barstool-weve-partnered-with-bevmo-3e8782254996.
[30] Lora Koldny, "Postmates and DoorDash are testing delivery by robot with Starship Technologies" TechCrunch, Jan. 18, 2017, https://techcrunch.com/2017/01/18/postmates-and-doordash-are-testing-delivery-by-robot-with-starship-technologies/.
[31] Katie Roof, "Rent the Runway raises $60 million" TechCrunch, Dec. 27, 2017, https://techcrunch.com/2016/12/27/rent-the-runway-raises-60-million/.
[32] https://www.renttherunway.com/

of warehousing."[33] While there have been companies that have survived the startup phase,[34] the number of companies entering this space and receiving multiple rounds of funding from investors demonstrates the increase in consumer choice in delivery options over the last 5 years.

IV. ISSUES

The following issues will be examined at the hearing:

- How have new technologies impacted delivery services available to consumers and businesses?
- What potential benefits does the commercial use of drones for package and product delivery offer consumers?
- What regulatory challenges exist at the federal, state, or local level to deploying new delivery services?
- How have incumbent stakeholders leveraged new delivery technology with customer-facing applications or supply chain applications to improve delivery services?

V. STAFF CONTACTS

If you have any questions regarding this hearing, please contact Melissa Froelich or Bijan Koohmaraie of the Committee Staff at (202) 225-2927.

[33] Spencer Soper, "This Startup is the Airbnb of Warehouses and Has Amazon in Its Sights" Bloomberg Technology, May 11, 2017, https://www.bloomberg.com/news/articles/2017-05-11/this-startup-is-the-airbnb-of-warehouses-and-has-amazon-in-its-sights.
[34] Jordan Crook, "Washio on-demand laundry service shuts down operations" TechCrunch, Aug. 30, 2016, https://techcrunch.com/2016/08/30/washio-on-demand-laundry-service-shuts-down-operations/.