

EmTech Perspectives

Emerging Technologies in a Time of Pandemic

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LAST MILE LOGISTICS

The Coronavirus pandemic has shined a spotlight on last-mile delivery, with demand for food, medicine, and other deliveries skyrocketing due to social distancing requirements. While pandemic-driven demand has unquestionably strained existing last-mile delivery resources, retail suppliers that never before relied on delivery have developed their own solutions, provided by a number of companies with technology-based delivery systems and logistics platforms to demonstrate how emerging technologies can be employed to safely and efficiently bridge gaps between suppliers and their customers.

A sharp increase in [food delivery](#) orders from homebound individuals combined with the need to limit person-to-person contact creates an opportunity that [delivery robots](#) are uniquely positioned to fill. Previously confined almost exclusively to college campuses, robots like those developed and operated by the startup Starship have been successfully deployed in cities in England, Estonia, Virginia, Arizona, and California, as well as in the District of Columbia. Starship and similar companies are taking steps to expand their services even as they ramp up robot production for a growing number of interested customers.

[Delivery drones](#) are another last-mile delivery technology that may be poised to “take off.” While drones face more regulatory hurdles than their sidewalk-bound counterparts, deep-pocketed players, such as Alphabet’s Wing, UPS’s Flight Forward, and Amazon’s Prime Air, are actively pursuing FAA approvals that could change the way customers receive goods—today and after the Coronavirus recedes. UPS recently announced a partnership with CVS [to deliver prescription medicines via drone](#) to residents of a retirement village in Florida. After the Coronavirus pandemic struck, UPS and CVS expanded drone prescription medicine deliveries to assist people who are sheltering in place. Wing, currently in testing in Finland, Australia, and Virginia in

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the U.S., reports that it has seen a significant increase in demand for its drone delivery services. Both companies emphasize that delivery drones significantly reduce the chance of person-to-person viral transmission by reducing the opportunity for physical contacts.

Perhaps the most significant drone-delivery accomplishments have been achieved by the U.S. health-care logistics company Zipline, founded in 2014. [Zipline uses drones to deliver blood products and medicines to rural clinics in Rwanda and Ghana](#), and recently began using the drones to deliver Coronavirus test samples from rural clinics to labs in urban areas for analysis. With this capacity under its belt, Zipline has accelerated its plan to initiate operations in the U.S. and is actively seeking FAA approval to begin flights as soon as possible. The company intends to initially focus its U.S. operations on delivery of virus test kits and personal protective equipment.

Sidewalk delivery robot and delivery drone companies are but two examples of creative solutions to solving last mile delivery challenges posed by the Coronavirus. In doing so, these technologies could disrupt the traditional last mile delivery system, changing the playing field long after the people return to work.

All indicators suggest that, irrespective of the pandemic, the FAA is moving forward with defining the regulatory landscape to enable these activities. On May 5th, the FAA announced its partnership with technology developers Airbus, AirMap, Amazon, Intel, One Sky, Skyward, T-Mobile, and Wing to collaboratively establish requirements for [Remote Identification \(Remote ID\)](#), which would provide real time identification and location information on drone operations conducted in the nation’s airspace. Remote ID is seen as a critical path in authorizing widescale “beyond visual line of sight” (BVLOS) and cargo delivery drone operations.



Opportunities: Leveraging Technology to Meet New Demands

Most of the world is staying home, but businesses must still pay their bills. In late April the federal government estimated the [U.S. economy contracted by 4.8 percent in the first quarter of 2020](#), mostly due to the Coronavirus pandemic. Because the real economic consequences of social distancing occurred in April, future numbers will likely be as bleak, if not worse.

Yet, some businesses are taking bold steps, innovating in communications with their customers, and leveraging pre-existing tools to retool how their customers interact with the company and its product. Companies that never before offered delivery are experimenting with last mile logistics. Farms whose regular restaurant or hotel customers are closed due to public health orders are retooling their supply chains to supply local households. And companies that previously relied on face-to-face interactions are turning to virtual solutions to bring their product to market, even in a field like wine production—where taste is an essential part of the purchasing decision. These companies described here provide just a few examples of how creatively leveraging existing technologies can allow a company to maintain operations.

This article is the first in Babst Calland’s three-part series “Emerging Technologies In a Time of Pandemic.” Keep an eye out for our next article discussing regulatory challenges in deploying new technologies that, if solved, would smooth businesses’ ability to weather this storm. The following article will highlight how businesses are leveraging technology to maintain a semblance of business normalcy in these unprecedented times.

SUPPLY CHAIN AGILITY

In a similar manner, albeit using lower-tech assistance, the flow of farm products to consumers is finding new paths. Farmers traditionally enter into contracts with restaurants, their wholesale suppliers, and other eateries, such as hotels and school cafeterias. When the pandemic disrupted these long-standing orders for farm fresh products, it left farmers with excess supply. Meanwhile, households filled with consumers working from home need groceries, yet prefer to limit the health risk of visiting a public place such as a grocery store. Farmers' markets provide a small outlet for this extra produce, but, in the local jurisdictions where they are allowed to continue operating, they are now subject to strict distancing and contact rules. Yet again, the supply is present and demand exists, but the challenge is connecting the two.

The fractured food supply chain is hitting the northern hemisphere just as abundant spring produce begins to emerge from the fields. Established farm-to-table delivery companies such as Imperfect Foods and Hungry Harvest have experienced such a rapid and large uptick in membership demand that they have temporarily suspended acceptance of new members or delayed deliveries while building staff to support demand. Similarly, existing [Community Supported Agriculture](#) farms have accepted multiple new members seeking to receive farm-fresh local foods. Despite this, large volumes of farm products remain available.

Enter the solution from the grass-roots: building makeshift supply chains between the farms and households in nearby cities by setting up delivery directly from area farms.

One such service is a D.C.-area program, established by a chef, his spouse and neighbors, to distribute produce from [Earth N Eats](#), an Amish family farm co-op that, before the pandemic, supplied high-end D.C. restaurants with heirloom produce. The farm lost roughly 90 percent of its business when restaurants were shut down, and this program has nearly restored their sales to pre-Coronavirus levels – only now the produce is boxed and sold to individuals. Subscribers receive weekly boxes containing free-range eggs, milk, salad and other greens, apples, and potatoes. In addition, one can purchase prize-winning artisan sheep's milk cheeses and small batch corn meal, as well as other seasonal produce.

Word of the program and the farm co-op's diverse and delectable offerings spread via local community list-servs and lower-tech word-of-mouth. Within

days, Earth N Eats sold enough subscriptions to make boxed shipments a viable business. All orders are submitted online, and boxes are distributed locally for pickup. The entire program is conducted without direct contact – not in person, not by phone – exclusively via the internet.

REMOTE LEARNING AND COMMUNICATIONS

Remote learning is not only for school-age children. Adults are also looking for opportunities to learn, and businesses are connecting with customers virtually to meet demand. Wineries, with their tasting rooms closed to the public, have started offering virtual wine tastings.

The Napa Wine Company's vineyard is in Oakville, Calif., the heart of Napa Valley. From there, the family-owned and operated company produces and markets the Ghost Block, Oakville Winery and Elizabeth Rose wines. In normal conditions, close to four million people visit Napa Valley's famous wineries each year. Social distancing has shut down the winery's tasting room, but wine enthusiasts can still enjoy the Napa experience from home. "People cannot come to us right now, but I can show them the property where the wines come from," said [Morgaen Hoxsey](#), the Napa Wine Company's Director of Sales and Marketing, who hosts virtual tastings from the vineyard. Hoxsey admits there has been a technology glitch or two along the way, including a poor WiFi connection when broadcasting directly from among the vines, but integrating technology has provided a welcome boost to the winery's sales.

Hoxsey manages five employees who process orders and man the company's tasting room. California's stay home order meant shutting down the tasting room in March, but rather than laying off a single employee, Hoxsey refocused her team's efforts on direct-to-consumer sales, breaking records by utilizing technology to bring the wine tasting experience directly to clients' homes.

What started as a request for a video presentation for a local social club blossomed into new ways to connect directly with customers. [The Ghost Block Estate Tasting Room](#) now offers "virtual tastings" by appointment to wine club members. Tasters order a pre-set selection of wines. Once they arrive, wine club members tune in virtually via Zoom for an intimate—but distant—session with their favorite vintners.

Remote communication, a bonus before COVID-19, has become an essential element to keep the winery in business. Remember Hoxsey's five employees? She still hasn't let a single one go.



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