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Calling All UAVs

7-Eleven recently completed its first regular drone delivery experiment in the U.S. The convenience store completed deliveries in Reno, Nev., to seventy-seven customers. The items delivered may have been unremarkable (food, drinks, and over-the-counter medications), but the deliveries were significant because they were made using small drones. Flights lasted an average of ten minutes after the customer placed an order. Pilots directed the deliveries within the pilot's line of sight.

Rules Take Flight

The Federal Aviation Administration (FAA) recently approved rules for the operation of unmanned aerial vehicles (or UAVs) weighing 0.55 pounds or more. Owners of these drones must register their drones. The registration requirement applies to all drone owners in that class, even owners operating the drones solely for entertainment purposes. Commercial drone operators also must get a pilot certificate and pass a TSA background check. They must fly the drones within the pilot's line of sight. The FAA has issued almost 23,000 licenses to commercial drone pilots since the new rules became effective in summer of 2016.

The FAA has asserted comprehensive authority over the commercial airspace in which drones may travel. It asserts it has "intensive and exclusive" authority over national airspace, and "no state or local UAS registration law may relieve a [drone] owner or operator from complying with the federal [drone] registration requirements." However, an exception remains for state and local governments to regulate drones' use in some circumstances, "including land use, zoning, privacy, trespass, and law enforcement operations."

State and Local Priorities

States that have enacted laws include Maryland, Oregon, and Virginia. The new laws specify that the states reserve to themselves all such non-federal authority. "[O]nly the state can enact laws to prohibit, restrict, or regulate testing or operation of [drones in those states]," according to a September report from the National Conference of State Legislatures.

The next big experiment may not be commercial. States and localities are exploring the utility of sending drones to survey road conditions, including road conditions following an accident or casualty. Fire response teams will use drones to analyze the extent of fire spread during building and wildfire responses.

Operation safety rules are not the only restraints that drone operators must accommodate as they seek to run more experiments like the 7-Eleven test. According to *Route Fifty*: "Since 2013, 22 states have passed drone-related privacy legislation concerning when law enforcement needs a warrant before using a drone for surveillance or how to corral peeping toms from buzzing above houses. (A Mississippi law makes it a felony offense with a possible five years in prison for any nosy neighbor caught sneaking a drone-enabled peek.) Some cities, like Chicago, have explicitly banned drone flights 'directly over' people and private property without consent. But as the National League of Cities points out, cities have been slow to act in taking up privacy considerations for drone use, and it's a topic that remains fraught, especially when it comes to homeowners with concerns about drones hovering in the airspace directly above their houses." <http://www.routeifty.com/2016/12/urban-drone-invasion-nigh/134160/?oref=rf-today-nl>.

Turf disputes between the FAA, states, local law enforcement personnel, and property owners have yet to be resolved. It is unclear whether drones are aircraft for all purposes. If so, then it may be that only federal rules may dictate when it is legal to shoot down a drone that operates either in an unsafe or an invasive manner. Many a locality has deployed its police and emergency personnel to clean up after local citizens have shot guns or fireworks in the air in a populated area. They may take the position that they can enact rules establishing or limiting a property owner's self-defense against drones. It is unclear how the FAA will respond when the target of the flyover is a private property owner and the property is distant from an airport, a sports arena, or some other location in which substantial safety issues arise.

In the event a governmental unit operates a drone, some states already have enacted rules that require law

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Short Takes

The online marketplace runs on speed. When systems fail, customers move away. In the aftermath of the 2016 holidays, one retailer with online snafus was Macy's Inc. Black Friday shoppers experienced an unresponsive screen on the company's home page starting Friday morning and from time-to-time during the day. The screen, whether on desktop or mobile, would count down to one from ten and then try to reload the home page. The problem appears to have resulted from a heavy load. In an effort to reduce delays, Macy's put visitors in a queue to manage traffic, according to digital performance analytics company Catchpoint Systems Inc.

Website issues also prevented some customers from processing purchases. Some shoppers reported they received a "Hmm ... something went wrong" message as they tried to check out. The server encouraged shoppers to try again or to "check back in a little while" or order by phone via an 800 number.

Victoria's Secret also saw its website slow down during a peak demand period. Visitors to Victoria's Secret, faced Black Friday slowdowns, led by its desktop site taking about thirty seconds to load. The company leaked its special black tote and sales early, creating a cascade of interest and demand for the day. Indeed, two customers were caught on video fighting with a seventeen-year-old at a store in Ann Arundel County, Md. The video went viral, reports *The Huffington Post*. http://www.huffingtonpost.com/2013/12/04/victorias-secret-fight-black-friday_n_4385038.html. Also, CNN called Victoria's Secret and Pink stores some of the day's hottest stores. <http://money.cnn.com/gallery/pf/2012/11/23/black-friday-stores/>.

Blue Triangle Technologies ranked the Victoria Secret website slowdown one of the holiday's worst. "Macy's, Express, Victoria's Secret, Williams-Sonoma, Guess, and Newegg were among the retailers that experienced major performance issues on Black Friday—issues that could have been avoided with further preparation and capacity planning. While most websites avoided downtime, many slowed down significantly on Black Friday, resulting in customer abandonment and lost revenue. Just a 0.4 second

slow-down during last year's holiday weekend (Black Friday through Cyber Monday) cost one of our customers over \$1.3M," it said. <https://www.blue-triangletech.com/performance-insider/black-friday-2016-fastest-slowest-ecommerce-sites/>.

In a new whitepaper from Soasta entitled *2016 Holiday Retail Insights Report*, the website consultant company states: "Just a 1-second slowdown (from 2 to 3 seconds) resulted in an almost 8% increase in bounce rate, while a 5-second slowdown (from 2 to 7 seconds) resulted in a 42% increase in bounce rate."

Amazon seeks "patents for hitchhiking drones, mini-drones that can sit on shoulders, drones that assemble themselves like Lego toys – and now drones that flip their wings to go from vertical to horizontal flight." *Geek Wire* reports that the foldable wing drone would be able to fly vertically like a helicopter or horizontally like a plane, as needed. <http://www.geekwire.com/2017/amazons-latest-drone-patent-features-foldable-wings-flippable-flight/>.

The National Retail Federation has elected Mindy Grossman, the CEO of HSNi, to serve as elected chairman of the trade association's board of directors. Her two-year term begins at the conclusion of the term of outgoing chairman Kip Tindell, co-founder and chairman of the Container Store. *POLITICO Influence Newsletter* (Jan. 17, 2017).

POLITICO's Influence Newsletter (Jan. 17, 2017) also reports that United Parcel Service, Inc. joined Chevron, JPMorgan Chase, Bank of America, Deloitte and AT&T in making a "six- and seven-figure contribution[] to the inauguration. It cited a report from *The New York Times'* Nicholas Fandos. Donors bought event packages ranging from \$25,000 to \$1 million to attend events like a lunchtime reception hosted by incoming White House chief of staff Reince Priebus, a public concert featuring artists like Toby Keith and 3 Doors Down and a VIP ticketed inaugural ball. "'This is nothing short of selling access to the president, the vice president and the cabinet,' said Craig Holman, a registered lobbyist for Public Citizen."

Calling All UAVs... (cont. from page 1)

enforcement officials to obtain a search warrant before using a drone to conduct air surveillance. *Route Fifty* also reports that “18 states have passed laws requiring police to obtain a search warrant before using a drone for surveillance.”

Raising Big Bucks

The incentive to work out these open questions seems pressing. Flirtey, the drone contractor behind the 7-Eleven is raising funds to develop its expertise in drone delivery. Already it has raised \$16 million. Menlo Ventures is one of the new investors in Flirtey. Its Managing Director Mark A. Siegel said that his firm invested because Flirtey is “already leading the drone delivery sector and has thus far successfully navigated emerging drone regulatory requirements. ‘People will be very surprised when they find out real this is,’ he told *TechCrunch*. ‘The regulatory environment will benefit those companies with most flight hours and safest track records.’” <http://www.retaildive.com/news/flirtey-lands-16m-in-new-funding-to-feed-drone-delivery-ambitions/434386/>. *TechCrunch* already calls Flirtey “the next-gen UPS.” <https://techcrunch.com/2017/01/18/drone-delivery-startup-flirtey-raises-16-million-to-become-a-next-gen-ups/>.

The future’s fast delivery service already has a place in history, too. *TechCrunch* reports that Flirtey has already “land[ed] one of its drones in the Smithsonian’s National Air and Space Museum, a milestone that CEO Matthew Sweeny calls a ‘kittyhawk’ moment for the startup.”

Neurala a software and services company that

helps bring artificial intelligence (AI) to drones, robots, cars, and consumer electronics, has announced a \$14 million series A funding round led by Pelion Ventures, with participation from others, reports *VentureBeat.com*. <http://venturebeat.com/2017/01/17/brains-for-bots-deep-learning-startup-neurala-raises-14-million/>.

Neurala works on software that enables autonomous machines to function without a human driver, whether the vehicle is a toy or a car. Such self-directed technologies need to be able to inspect their environment, make decisions, navigate obstacles, and return to where they are supposed to be. Neurala hopes to stand out in precisely this manner. It currently claims customers across a broad range of applications, and counts U.S. Air Force, Motorola Solutions, Parrot, and Teal Drones as clients.

Neurala has constructed an AI neural network that mimics the human brain with computer vision capabilities, too. The network works offline, without internet or server access. Unlike Flirtey, which has been running tests with 7-Eleven, Neurala has been running tests with NASA. Neurala won a \$250,000 grant from NASA to “commercialize autonomous navigation, object recognition, and obstacle avoidance technology in ground robots and drones.” If a highly maneuverable drone can respond in real time to obstacles in the air and on the ground, it will move automation from the pushing of one package from one place to another to managing a fleet of its own. How long will it be before UAVs answer consumers’ calls?

U.S. Jobs Going to Robots

Driverless cars and pilotless drones could soon become the U.S. worker’s chief competition for well paid jobs. People and technology will have to learn to work together once that begins, according to a new McKinsey Global Institute report. The report, which used scenario modeling, predicts physical tasks “in highly structured and predictable environments, as well as data collection and processing” will lead in the adoption of new automation technologies. That may seem like a narrowly focused transition, but McKinsey points out that those jobs make up a little over half of activities in the economy, accounting for almost \$2.7 trillion in wages. Moreover, that surge in automation is just the start of task replacement. Instead of creating a ripple in

U.S. employment, automation is likely to have a tremendous effect on employment and wages as parts of human jobs are assigned to machines.

Task Reassignment

McKinsey expects automation to make an increasing number of incursions in the short-term. Based on the company’s scenario modeling, it expects automation to raise productivity growth globally by 0.8 to 1.4% annually. Automation has the potential for making blue collar *and* white collar workers redundant. While only about 5% of jobs could be performed entirely by automation, portions of many other occupations could be performed by machines. Automation that replaces human effort for some, but not all, daily

activities could result in a savings of about another \$16 trillion in wages.

Skill Acquisition

To keep their incomes when their jobs disappear, U.S. workers will have to develop new and more sophisticated skills to work alongside their AI, machine, and robotic replacements. Those who fail to learn more complex skills will, in effect, be replaced instead of learning to work with the machines. This challenge means that most people will have to work with smart machines to continue in employment. As McKinsey explains on its website, “Automation will change the daily work activities of everyone, from miners and landscapers to commercial bankers, fashion designers, welders, and CEOs.”

Projected Timeline

The timeline for such significant change has yet to be pinned down by McKinsey’s scenario analysis. Its

Fast is a Moving Target

Fast is a moving target in a world in which consumers want what they want when they want it. “Less than half of consumers now deem three-day delivery ‘fast,’” explains Rob Taylor, CEO of Convey, in a new commentary posted on *Internet Retailer*.

As one octogenarian recently complained after watching airline passengers crowd around an outlet where they could recharge their devices, “In my day, we went to the airport *and we waited!*”

Taylor explains that no one waits if he or she can help it. “As fast as you can tap a finger on a Buy button, any item can now be yours. Shoppers’ definition of ‘fast’ is rapidly changing. We now live in a mobile, one-click world where shoppers expect immediacy, great service, fast delivery, responsiveness and transparency.”

Taylor blames Amazon.com Inc. for the latest ratcheting up of impatience for gratification. “Amazon trail-blazed through delivery expectations, setting the norm for shoppers to grow more accustomed to two-day delivery. This has left shoppers less and less impressed by shipments that take any longer to arrive on their doorsteps. In fact, according to a recent consumer survey by Deloitte, just 42 percent of consumers characterize three- to four-day shipping as ‘fast’—down 21 percentage points in just one year,” he says.

Keeping up with an Amazon can be costly and, for some ecommerce businesses, it is impossible. As Taylor explains it: “There are tens of millions of packages in transit today across parcel, LTL and white glove. Based on Convey’s analysis, approximately 10 percent of those packages are in some form of distress at any given time.

“scenarios suggest that half of today’s work activities could be automated by 2055, but this could happen up to 20 years earlier or later depending on various factors, in addition to other economic conditions.” <http://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works>.

Automation already is online in fields relating to the postal industry. Machines stock shelves and draw merchandise from inventory. They assemble packages for shipping. They sort packages for delivery to consumers. Driverless and self-driving vehicles are being tested to convey packages on our roads. Drones and squat robots are being tested for delivery to consumers’ doors. Bots respond to consumer questions and concerns. Computer software calculates the metrics of success. Workers are increasingly finding themselves in need of new skills to maintain their value and relevance in a modern workplace.

This distress most often comes in the form of package delays, damages, address issues or missed delivery attempts. The fact that a shipment is in distress is mostly unknown to both the retailer and customer. That’s multiple millions of shipments, per day, that are leading to poor customer experiences and churn for the retailer.”

By the time the packages’ distress is brought to the attention of its seller, the sale may be unravelling—a result that frustrates the retailer and the consumer. According to Taylor (who is *not* an unbiased observer of the phenomenon), “Starting with Thanksgiving, we’ve seen the percentage of shipments with carrier-reported issues steadily creep up from 7.6 percent the week of Thanksgiving to a peak of 12.5 percent on December 11th. As of December 22nd, on-time rates hit an all-season low, with only 74.3% of parcel shipments being delivered on time (meaning delivery occurs either on or before the carrier-provided estimated delivery date) with only a few days to go before Christmas. Based on carrier data missed delivery attempts were the largest contributor to this spike followed by delays, both weather-related and otherwise.”

“An increase in negative delivery feedback only validates that these missed expectations are indeed disappointing shoppers and affecting loyalty. In fact, the number one customer complaint, representing 40% of all negative feedback in the final week before Christmas, was delays,” Taylor said

Taylor recommends various strategies for retailers struggling to maintain customers’ loyalty

during times when fast is not fast enough. As he explains it, “the most important thing retailers can do to appease speed-hungry shoppers is to ensure they set the right delivery time expectations and offer a variety of delivery

Growing the EMV Adoption Rate

In its November 2016 monthly EMV update, Visa stated that chip-enabled merchants now account for 46% of the company’s in-store payment volume. Visa had over 800 million chip-on-chip transactions in November, up 359% over the same period last year (SPLY).

EMV chip cards—developed to lower in-store credit card fraud—have been adopted at a slow rate as merchants have had to acquire new equipment for processing them, customers have responded poorly at times because the cards are slower to process at check-out, and because merchants and customers seemed slow to see the cards’ utility.

The new data suggests that resistance may have abated and EMV rollout penetration in the US may have improved. Some also speculate that the trends for Visa may be indicative of penetration for the other major card issuers.

- A Visa survey found that 35% of consumers, the highest percentage in the survey, believe chip cards are the safest way to pay for goods. This suggests that the slowness of inserting cards instead of swiping them has become less significant.
- While only 38% of U.S. storefronts now accept the EMV chip card, most merchants accept it. One market segment in which adoption rates remain quite low is the gas station. The banks have extended their deadlines for adoption, reducing the pressure for these storefronts to change out their credit card processing equipment.

EMV cards are being rolled out with an embedded microchip for added security. The microchip carries out

Disappointment with BOPIS

More than half (57.5%) of all shoppers buy online and pick up in a store (BOPIS). Sadly, only 31.6% describe it as being a smooth process, according to a new report from omnichannel retail management software vendor iVend Retail.

North American shoppers want to see improvements when it comes to fulfilling online orders in-store. iVend Retail’s Great Omnichannel Expectations 2016-2017 Shopper Survey Report details answers collected in October from 1000 shoppers throughout North America—75% in the United States and 25% in Canada—and found 31.6% of those shoppers find picking up online orders in-store to be a smooth process.

options.” Read Taylor’s tips for managing consumers’ expectations at <https://www.internetretailer.com/commentary/2017/01/03/4-delivery-tips-satisfying-impatient-online-shoppers>.

real-time risk assessments on a person’s card purchase activity based on the card user’s profile. The chip also generates dynamic cryptograms when the card is inserted into a payment terminal. Because these cryptograms change with every purchase, it makes it difficult for fraudsters to make counterfeit cards that can be used for in-store transactions.

Until adoption is completed, in-store purchases remain vulnerable to counterfeiting of cards and other fraud.

Meanwhile, card-not-present fraud continues to grow. ACI Worldwide, an electronic payments services company, reports that the 2016 holiday shopping season saw a 31% year-over-year increase in global fraudulent purchase attempts. The rate of fraudulent transaction attempts spiked on Christmas Eve and express shipping cutoff days. A spokesperson for ACI said the data came most heavily from the U.S. market.

According to ACI, the fraud-attempt rate was calculated by identifying several scenarios, including when transaction data was confirmed as fraudulent by a merchant, when the transaction data matched a record in ACI’s database that tracks reports of chargebacks (where a payment card provider requires a merchant to refund a criminal transaction), credit card numbers sold online in underground criminal forums or reports of fraud by an issuer.

Analysts predict the card-not-present fraud will continue to grow as the EMV cards reduce opportunities for fraud from counterfeiting of cards.

Of the shoppers using BOPIS, 65.3% of those consumers said they did so to avoid shipping costs. Other incentives included convenience (29.2%) and ease of returning the product instantly if it fails to meet their expectations (23.5%).

iVend found that shoppers hope retailers will offer a more digitally connected in-store shopping experience, with nearly half (46.4%) saying they want retailers to offer free in-store Wi-Fi and 33.5% saying they want personalized promotions delivered on their phones as soon as they walk into a store.

The survey also found:

- 36.9% of consumers say kiosks or digital help desks

would improve in-store experiences.

- 36.5% research a product after purchase to determine if they got the best price.

Trump Could Affect Global Commerce

New U.S. President Donald Trump has withdrawn the U.S. from participation in the U.S.-led twelve-nation Trans-Pacific Partnership (TPP) trade agreement that was set to cover 40% of the world's economic output. The TPP had as its purpose deepening economic ties between its member countries, which were Japan, Malaysia, Vietnam, Singapore, Brunei, Australia, New Zealand, Canada, Mexico, Chile, and Peru. Member nations are now looking at the possibility of a "Minus One Agreement."

China could offer itself as a participant in such a revised trade agreement. China was left out of the original TPP deal. Whether or not it joins the Minus One Agreement, analysts expect it to negotiate its own regional trade pacts. China already has suggested a Free Trade Area of the Asia Pacific and is supportive of the Regional Comprehensive Economic Partnership, which could see a free trade deal between countries including Australia, China, India, Japan, South Korea, and New Zealand.

The BBC reported that Chinese president Xi Jinping defended free trade at the World Economic Forum in Davos last week, saying "protectionism was akin to 'locking oneself in a dark room.'" <http://www.bbc.com/news/business-3872580>.

POLITICO Pro's Doug Palmer said in the *POLITICO* Jan. 24, 2017 *Money Newsletter* that: "Withdrawing from TPP - which includes a dozen countries on the Pacific Rim - means giving up potential agricultural export gains in Japan, Vietnam and other markets that the American Farm Bureau Federation has estimated to be worth more than \$5 billion annually. It also threatens current U.S. exports because many of the TPP members are already in

- 50.5%, feel equally rewarded with loyalty rewards online and in-store compared with 40.3% who felt that way last year.

talks with China on a rival agreement known as the Regional Comprehensive Economic Partnership. Those countries could achieve tariff advantages that make it harder for U.S. manufacturers and farmers to compete."

Internet Retailer recently reported that China was in the process of relaxing certain government restrictions on imported goods bought online to meet the growing demand among Chinese consumers for foreign goods.

The article explains that, in April of 2016, China lowered the import tax for goods purchased in small quantities from foreign websites, in most cases making such goods more affordable for China's middle-class consumers. "According to research firm iResearch, cross-border e-commerce imports into China grew about 30% to 1.25 trillion yuan (\$182 billion) in 2016 and will grow at a similar pace in 2017, with retail purchases accounting for most of those transactions." <https://www.internetretailer.com/2017/01/19/foreign-brands-enter-china-through-e-commerce>.

The Chinese experience could preview the effects of protectionism in the U.S. Middle income consumers may want others to buy American, but, when that preference is effectuated by imposition of tariffs on imports, those same middle-income consumers find themselves unable to buy items that cost too dearly when built at home or abroad. The Chinese reaction to the U.S.'s withdrawal from the TPP could create a vacuum that the country will happily fill in enhancing markets for its goods in the Pacific region.

Holiday Hangovers

A negative campaign, a surprise election result, and the continuation of political turmoil did not depress holiday spending. Instead, consumers expressed their optimism by shopping—especially online. As a result, ecommerce revenues increased by 11% over 2015, according to Adobe Digital Insights. First Data Corp's Holiday 2016 SpendTrend report showed online transactions grew by 12% year-over-year. Retailers were less pleased with their results.

Here is a tally of holiday data showing the various metrics for the holiday season:

Spending Rose

- First Data Corp's Holiday 2016 SpendTrend report showed an overall 4.7% year-over-year increase in combined online and brick-and-mortar consumer purchasing for the 2016 holiday season, up from a 1.8% increase in 2015. These percentages apply to credit card transactions only.

Online Spending Up

- A total of 21.3% of all holiday spending was conducted online in 2016, compared to 15.4% in 2015, according to First Data Corp.
- Between Nov. 1 and Dec. 31 shoppers spent \$91.7 billion online, according to Adobe Digital Insights.

Eighty-six percent of the revenues came between November 1 and December 20. Slice Intelligence reported that consumers spent 48% of their total holiday spending in the month of November.

- During November and December, 57 out of 61 days produced over \$1 billion in ecommerce sales.
- From November 1 through Cyber Monday, Amazon commanded 33% of ecommerce. It represented 44% of ecommerce Dec. 15 through Dec. 25. Its share of the season was 38%, roughly the same as in 2015.

Amazon's Deliveries

- The number of merchants using Fulfillment by Amazon increased by 70% in 2016 and Amazon delivered more than 2 billion packages for independent merchants, more than double its 2015 deliveries.
- Over 1 billion Prime and Fulfillment by Amazon items shipped globally during the 2016 holiday season.

Desktops Led Mobile

- Fifty percent of website visits during November to December came from desktop computers and the desktop share of sales was 69%.
- Fifty percent of holiday website visits came from mobile devices—41% from smartphones and nine percent from tablets.

- Thirty-one percent of total holiday purchases came from mobile devices, mostly smartphones.
- Mobile ecommerce accounted for \$28.4 billion in sales, a 23% increase over 2015.
- Smartphones contributed \$19.3 billion, while tablets drove only \$9.2 billion in sales.

Department Stores Lag

- Overall, brick-and-mortar stores saw sales growth of 1.6% year-over-year but department stores suffered a 4.8% decline from 2015. Only the western states showed growth in physical stores sales with a 4.8% increase.
 - At the beginning of 2017, women's apparel chain The Limited announced that it will close all of its 250 stores.
 - Sears Holdings Corp., owner of Sears and Kmart stores, reported a 12% drop in same-store holiday sales and will close 150 stores. Analysts predict that the Sears brand faces serious challenges in 2017, including a possible bankruptcy filing.
 - Macy's reported a 2.1% drop in holiday same-store sales year-over-year and announced over 10,000 employee layoffs and sixty-eight store closures.
 - Kohl's saw a 2% drop year-over-year.
- <http://www.practicalecommerce.com/articles/132707-2016-Holiday-Ecommerce-Wrap-up>.

Fulfilling its Amazonian Dreams

Amazon.com Inc. will expand its U.S. fulfillment center network in 2017 to 2018 by adding 100,000 full-time employee by mid-2018 and opening more fulfillment centers.

Amazon will build a 1.2 million square-foot facility in North East, Md., close to both Philadelphia and Baltimore. It will build a 1 million square-foot facility in Coppell, Tex., a Dallas suburb that will be the third such facility in the area. This third Coppell facility is expected to be one of Amazon's latest-generation fulfillment centers where robots, vision systems, and other high-end technologies speed up order deliveries. A 1 million square-foot facility is planned for Jacksonville, Fla. The company also will open a 1 million-square-foot fulfillment center in Aurora, Colo.

Already underway is a third fulfillment center in Houston. The first opened in 2013, and the second in the fourth quarter of 2016. The newest fulfillment center in Houston is in construction now.

Amazon added twenty-six fulfillment centers in 2016, according to Brian Olsavsky, Amazon's chief financial officer. <https://www.internetretailer.com/2017/01/19/amazon-adds-more-fulfillment>.

The company hopes to one day be in position to expand its network without a land grab. In December, reports surfaced of an Amazon plan to float massive airborne warehouses over our cities and deploy a network of delivery drones to make deliveries from those warehouses.

USA Today reports that Amazon received a patent for an "airborne fulfillment center." The application was submitted to the U.S. Patent and Trademark Office in 2014 and approved in April, but it was first revealed by CB Insights analyst Zoe Leavitt.

Illustrations in the filing show a warehouse carried by a large airship, which would remain at high altitudes as drones fly back and forth between the warehouse and nearby shipping destinations.

According to *Manufacturing Business Technology Magazine*: "The system could also be deployed at sporting events or other large gatherings to help meet similar demands from thousands of people, or it could transport cargo or even people between Amazon's ground-level distribution centers. At lower altitudes, the airship could also serve as a floating billboard." <https://www.mbtmag.com/news/2017/01/amazon-patent-shows-airborne-fulfillment-center>.

Briefs

FedEx Corporation will promote David Bronczek to the role of the president and chief operating officer nearly a year earlier than anticipated. He will take the new role on Feb. 1. Bronczek has been president and CEO of FedEx Express, the air cargo subsidiary of FedEx, since 2000. His promotion was first announced in September, to be effective Jan. 1, 2018. The chief operating officer is a new position at FedEx and analysts have said this promotion puts Bronczek in competition to succeed founder and CEO Fred Smith.

Smith announced the change in a public statement: "While this was announced last September, substantial progress in integrating the TNT acquisition into FedEx Express now allows us to accelerate Dave's promotion by 11 months in advance of fiscal year 2018. He is uniquely qualified to take on the position of president and chief operating officer." Bronczek's current position at FedEx Express goes to David Cunningham, previously the regional president of the Asia Pacific Region and most recently executive vice president and chief operating officer of FedEx Express.

Data breaches involving hospitals have been the latest hot topic in data security. A "cybersecurity breach" at a third-party vendor is being described as having compromised the information of over 5450 vascular and thoracic patients at Virginia-located Sentara Martha Jefferson Hospital, The Associated Press (AP) reported. The breach may include names, medical record numbers, dates of birth, Social Security numbers, procedure information, demographic information, and medications, AP said. [http://www.nextgov.com/cybersecurity/threatwatch/2017/01/misplaced-data-accidentally-](http://www.nextgov.com/cybersecurity/threatwatch/2017/01/misplaced-data-accidentally-leaked-credentials/2778/?oref=threatwatch_nl)

[leaked-credentials/2778/?oref=threatwatch_nl](http://www.nextgov.com/cybersecurity/threatwatch/2017/01/misplaced-data-accidentally-leaked-credentials/2778/?oref=threatwatch_nl).

On Jan. 20—a "huge" news day for other reasons—news broke of more breaches involving hospitals. Catholic Charities of Baltimore, Complete Wellness (also in Baltimore), The Center for Mental Health in Montana, Wonderful Center for Health Innovation in California, and American Urgent Care Center, PSC in Kentucky made announcements of failures in data protection. Read more at <https://www.databreaches.net/five-breaches-involving-health-data-disclosed-in-one-day/>.

On-demand delivery companies Postmates and DoorDash are set to start pilot tests of driverless delivery robots from startup Starship Technologies in Redwood City, Cal. and Washington D.C., according to *TechCrunch*. The robots are squat six-wheel delivery robots that can carry up to a forty pound load and travel at up to four miles per hour over short distances along sidewalks or streets. Humans pilot the Starship robots through a fleet management application, supported by computer vision and street map data to travel their delivery routes. According to *Retail Dive*: "Starship's small, relatively slow-moving vehicles present an interesting counterpoint to airborne delivery drones. These robots still need regulatory permission to operate, but wouldn't be subject to more restrictive air transport regulations, and they would appear to be an overall safer alternative to drones." <http://www.retaildive.com/news/postmates-doordash-testing-starships-squat-delivery-robot/434281/>.

The United States Postal Service 2017 price changes took effect Sunday, Jan. 22, 2017. Little was said about the increase.

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