



SKYBLAZING STARTUPS

Delivering which drone startups (so many!) to watch wasn't easy, but these five soared to the top of the list.

By Lauren Sigfusson

Some you've heard of, some you haven't. Each of these five drone startups have two things in common, though: They offer something special to the drone industry, and their innovations might affect us all.

Due to the popularity of the phrase, there are many connotations of "startup." To you, startup might mean a tech company or a business in its first year. For others, the word is nothing more than a trendy buzzword that's lost all meaning. To us, a startup is a company less than five years old and poised to experience rapid growth. A startup can distribute or sell its products or services just about anywhere, and it's independently owned, not a subsidiary or division.

You'd do well to remember these five startups, because they might just make waves that will reach far beyond the drone industry.

1 FLIRTEY

FLIRTEY IS ON ITS WAY to becoming synonymous with drone delivery because of all its firsts, and definitely punches above its weight class, competing with the likes of Amazon.com, Google, UPS, and DHL to make drone deliveries a reality.

From the first FAA-approved drone delivery in 2015 to the first autonomous drone delivery in a U.S. urban environment in 2016, Flirtey is not just making drones — it's helping create an industry.

In November 2016, Flirtey and Domino's Pizza began the world's first pizza-by-drone commercial trials in New Zealand — but only to select people.

"To conduct these deliveries in an urban environment while delivering a hot, fresh pizza, is a validation of our delivery system that assures Flirtey is prepared for mass market deliveries around the globe," said Flirtey CEO and cofounder Matt Sweeney in a statement.

But Flirtey isn't accomplishing all these milestones on its own. The company constantly collaborates: delivering Slurpees with 7-Eleven and pizza with Domino's Pizza, making a ship-to-shore delivery with Johns Hopkins University and the UN. And the list goes on.

"Each of these achievements are stepping stones which are driving the industry forward toward regular commercial drone delivery to customer homes," says Sweeney.

Even Flirtey's technology and logistics systems were a team effort with NASA; the University of Nevada, Reno; The New Jersey UAS Test Site; and Virginia Tech.

Sweeney doesn't worry about larger competitors such as Amazon.com and UPS, which also have drone delivery plans.

"When we look back at the history of new technologies, it is rarely the incumbent who leads when game-changing technologies emerge," says Sweeney.



(L to R) Flirtey CEO Matt Sweeney, Domino's CEO Don Meij, and New Zealand Minister of Transport Simon Bridges with DRU Drone — the copter behind the deliveries.

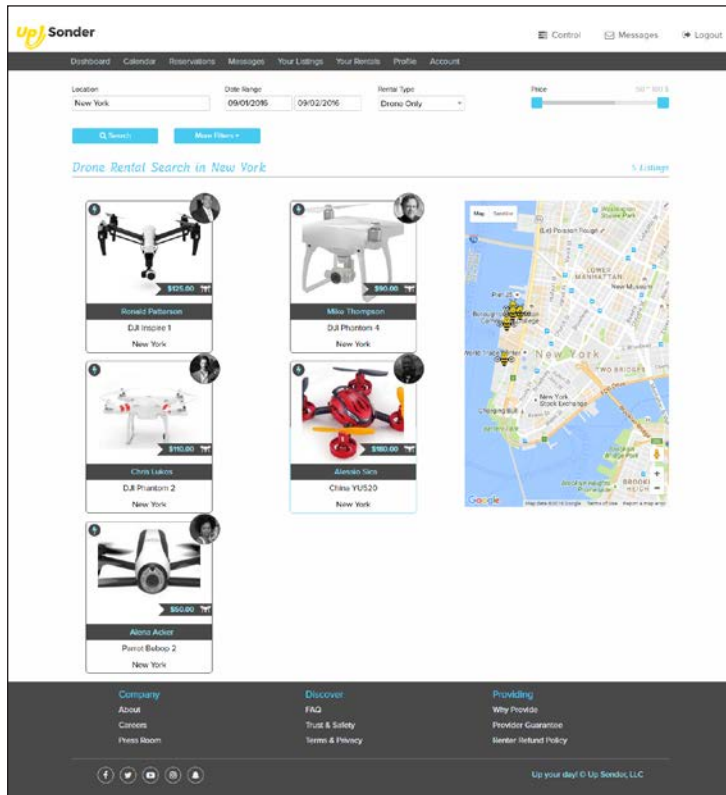
"Flirtey is the leading independent drone delivery service, and we are positioned to capture the market."

And Flirtey aims high. "Every day we're getting closer to Flirtey delivery drones in the sky being as familiar as delivery trucks on the road," explains Sweeney. "As we expand operations around the world in 2017, we hope to be delivering to your front door in the very near future."

DELIVERY

flirtey.com
Founded: 2013
Based: Reno, NV
Founders: Tom Bass, Matt Sweeney
Employees: Undisclosed

2 UP SONDER



HAVE A DRONE LYING AROUND collecting dust? Need a drone ASAP, but don't have one on hand? Fear no more, for Up Sonder is here.

Founded in 2015, this startup appears to be the first peer-to-peer drone rental marketplace. Customers can list their drones and/or rent out UAS via an app. The drone then arrives conveniently at a customer's doorstep in as little as 30 minutes.

Both commercial and consumer level drones of all price points are eligible for the service.

"We don't want to lock anyone out of the system," says Up Sonder CEO and cofounder Derek Waleko.

The startup is powered by UberRUSH — which connects

MARKETPLACE

upsonder.com

Founded: 2015

Based: Los Angeles, CA

Founders: (L to R) Derek Waleko, Keith Smith, A. Isaac Nabors

Employees: 3 + 29 contractors

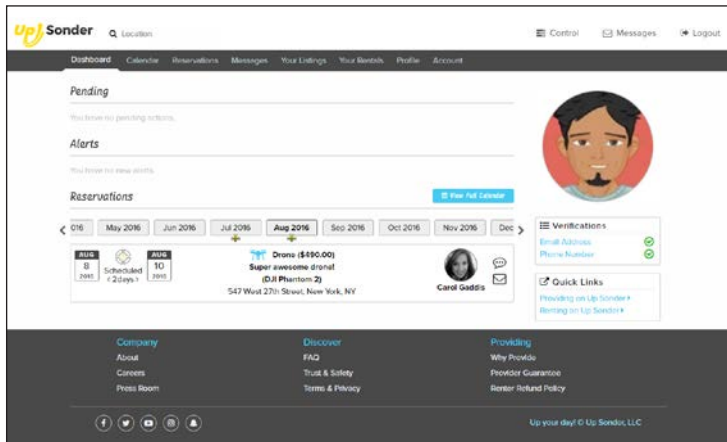
businesses with couriers — to deliver rentals. It's the first drone company partnering with Uber — you know, the tech company that's valued at over \$50 billion.

Up Sonder is available where UberRUSH operates, currently San Francisco, Chicago, and New York City. Waleko believes UberRUSH will grow quickly, which means a nationwide launch of Up Sonder might not far away.

For hobbyists and enthusiasts, COO and cofounder A. Isaac Nabors says listing a drone is a great way to have the "drone pay for itself." If someone wants to use a drone without dishing out big bucks, then renting might be the right fit.

Waleko explains that Up Sonder is another example of how a sharing economy can be beneficial.

"What Airbnb did for homeowners and Uber did for car owners, Up Sonder is doing for drone owners," he says.



Up Sonder allows people to fly drones without buying and drone owners to list drones on their app to make some quick cash — a win-win that spreads drone joy!

To ensure quality, renters and providers have ratings, similar to Uber's rating system. Providers can also question renters on their experience with drones and will ultimately have the authority to accept or decline a renter.

In addition to drone listings, providers can also list services. However, a drone pilot must have Part 107 certification to list a commercial service on the site (turn to Page 48 for lots more about Part 107).

While Up Sonder just rolled out its service a few months ago, it already has big plans for 2017. According to Keith Smith, CTO

and cofounder, the company expects to expand its service to more U.S. cities, increase marketing of its service and drones in general, and make changes to its policies and messaging based on user feedback.

"This is a brand new space and it would be a stretch to say that we know exactly how things will play out," Smith says.

Also, Nabors says the world can expect to see the company's nonprofit Up Sonder Life, which aims to provide people access to clean drinking water, take shape. Of course, this depends on Up Sonder making a profit, but the cofounders exude only positivity about the future of their company and drone technology.

More information online at Drone360mag.com/UpSonder.



3 SPEKTREWORKS



MORE THAN A DRONE COMPANY, SpektreWorks is an engineering services company. Founded in June 2015, it develops unmanned systems projects for the U.S. military, major U.S. railroads, and other commercial companies.

SpektreWorks doesn't boast about its achievements, but it probably should. One word: customization.

Major drone manufacturers like DJI, Yuneec, and 3D Robotics (3DR) make drones that try to encapsulate what's best for everyone, says Brad Golding, CEO and cofounder of SpektreWorks. But many companies need more than just flight stabilization and automatic takeoff and landing.

"There's a million other cases that aren't the 50-60% use case, so we kind of live in the custom solutions area," Golding says.

The company takes projects from concept to production, providing clients with software, hardware, and service. And it develops more than just flying quads — it creates both aerial and ground systems.

A U.S. railroad company, which cannot be disclosed, commissioned SpektreWorks to build a ground rover equipped with a dual sensor for security and observation. Got a problem on the tracks? The rover can roll

Are those all drones? You bet! Whether someone wants an unmanned system that flies or rolls, the SpektreWorks crew can make it a reality.

up, investigate, and let railroad police know whether or not a situation is safe to intervene.

SpektreWorks also designed and built a heavy-lift copter for a Houston, TX, oil and gas inspection company. The custom-designed UAS can autonomously carry an 8-pound optical gas sensor for up to 35 minutes.

Since SpektreWorks covers the whole gamut of unmanned systems, it's prepared to work with customers from a wide variety of industries. However, the company remains selective about the projects it accepts, because it wants to ensure each

one receives proper time, care, and customer service.

"We don't want to overpromise and under deliver," Golding says. "If anything, we deliver things that have more features and more capabilities than [customers] even asked or paid for, just because it's the pride we take in our work."

The company's core strength, according to the cofounders, comes from its founders' "triangle of complementary skills": Golding, aerospace; Jeremy Wagoner, mechanical; and Dan Laks, electronics and software.

"We like to think there's no engineering challenge we can't tackle," says Laks.

All three previously worked for Department of Defense (DOD) contractor STARA Technologies and drone manufacturer 3DR.

(They left 3DR in 2015 when the company chose to focus only on the consumer market with its Solo drone; 3DR notably pivoted its focus to software and the commercial market in 2016.)

Golding believes their industry background, along with their military and commercial contacts, helped SpektreWorks get off to a great start.

Laks says he's excited that "projects we're currently developing in our shop, now, may become industry-adopted technologies by next year."

Surely you want specifics on its current projects — we tried!



They see me rollin', they hatin' — this custom autonomous security rover has optical zoom and FLIR cameras, which surely catch even the sneakiest of thieves.

— but SpektreWorks respects its customers' privacy and keeps much of what it's developing hush-hush.

Be that as it may, the team says it has more DOD projects in the works, it will act as the North American repair and overhaul center for Germany-based commercial drone manufacturer AirRobot, and it might even run a program that involves automating vehicles to control a process that is currently manned.

"We have several potentially large projects that would catapult us into being a hardware and software company," says Wagoner.

When Golding and company have more to share, you can be sure we'll let you know.

CUSTOMIZATION

spektreworks.com

Founded: 2015

Based: Scottsdale, AZ

Founders: (L to R) Brad Golding, Jeremy Wagoner, Dan Laks

Employees: 5 + 3 contractors

OPPOSITE: UP SONDER (3); THIS PAGE: SPEKTREWORKS (3)



4 DEDRONE



DroneTracker is always looking for misbehaving drones.

IF YOU'RE READING THIS, chances are you believe drones are, for the most part, a beneficial technology. But you know that some people will unfortunately turn drones, like most technology, to criminal purposes.

San Francisco-based Dedrone addresses the market for what CEO Jörg Lamprecht calls the “misbehaving drones” — you know, the civilian drones that spy on companies, fly near airports, fly narcotics into prisons, and other potentially dangerous and illegal activities.

“Drones have the potential to create fear. You can’t ignore them, so you either love them or you fear them,” says Lamprecht. “We’re really in the market to eliminate that fear.”

The company’s main product is a software app called DroneTracker: When a drone enters a guarded perimeter, the software aggregates sensor data from cameras, scanners, radar, and microphones. DroneTracker notifies users of a drone detection, stores the drone’s characteristics (known as DroneDNA) in a central, cloud-based database, and even visually records detected drone flights to secure evidence.

Dedrone also sells the hardware and, if needed, a third-party drone jam-



mer (currently illegal in the U.S.) for drone countermeasures.

Dedrone technology helped secure the final 2016 U.S. presidential debate, and the company is working with a unit of Airbus to bring its anti-drone capabilities to airports, just as it’s done with stadiums, oil and gas refineries, coal mines, and manufacturers around the world.

According to Lamprecht, a small installation with two sensors costs about \$20,000, while large premises could cost upwards of \$150,000. Of course, he says the cost is worth it.

“One single drone that’s \$500 can cause massive, massive damage,” he says.

Based on the demand for Dedrone’s products, it seems companies realize the risk that drones can present. Dedrone has sold its product in over 80 countries around the world, and Lamprecht says it’s installing hundreds of systems at the time of this writing.

He says the company has seen an increase in customers looking to protect Wi-Fi connections from hackers using drones to steal data. Sounds like a futuristic movie plot, huh?

But the future is now. In 2015, researchers in Singapore proved how easy it is to hack a Wi-Fi connection using mobile phones and drones.

Shocker: Not all drones are used for good. Dedrone’s invisible shield helps make sure the ... troubled drones don’t cause too much harm to property.

This year, Lamprecht says Dedrone plans to release more sensors, integrate more hardware, and become more hardware agnostic.

While Dedrone currently focuses on safety, like most startups it has its eyes set on something larger — helping integrate drones into the national airspace. Lamprecht knows that in order for drone deliveries to become the norm, UAS must be managed 24/7.

“Since we’re monitoring airspace, we could deploy our sensors along the flight route of a drone and then monitor a drone flight 100%, all the time,” Lamprecht says.

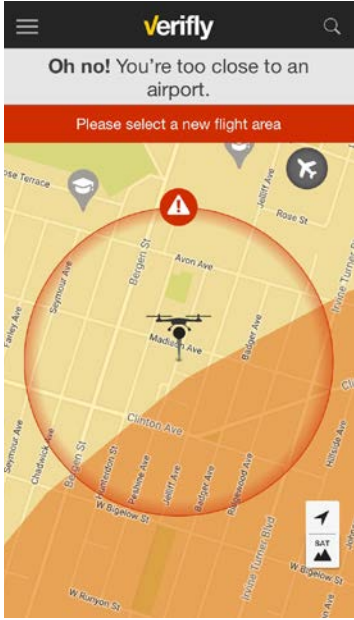
Thanks to Dedrone, companies and civilians can rest a little easier knowing unwanted drones can be tracked and possibly diverted before damage occurs.



DETECTION

dedrone.com
Founded: 2014
Based: San Francisco, CA
Founders: (L to R) Ingo Seebach, Jörg Lamprecht, Rene Seeber
Employees: 60

5 VERIFLY



Drone insurance? You might not need it, but it’s smart to have it. Verifly offers on-demand drone insurance up to \$1 million for people flying in acceptable areas — sorry, if you’re too close to an airport, no insurance for you. The app lets you know when your hour is up, and you can always buy another policy if needed.

WHILE WE ALL MAY LOVE to complain about insurance (blah, blah, insurance talk can be so boring, we know) it remains an important purchase for many aspects of our lives. Drone insurance is no different.

Verifly offers on-demand hourly drone insurance for civilian drone pilots in the U.S. The app combines a mapping tool and real-time flight conditions that help alert drone pilots of possible flying risks in their vicinity and tailoring policies to each user and flight scenario.

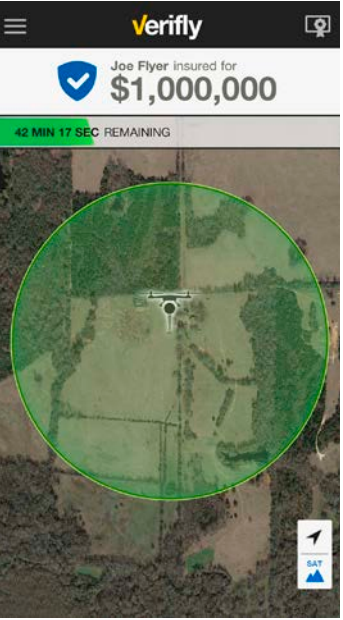
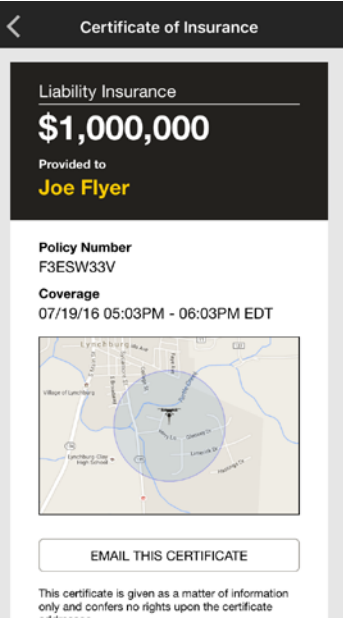
With Verifly, drone operators receive liability insurance and invasion-of-privacy coverage. The cost starts at just \$10 per

hour and goes up proportionately based on risk.

What’s really great is that drone operators are insured, not the vehicle itself, so users can switch out drones (so long as they weigh 15 pounds or less).

And it’s easy to get insured: Simply open the app and it automatically generates a quarter-mile coverage zone. Then, based on the surrounding environment, the app instantly computes a price for your policy based on the risk factors.

“In two taps, you’ve bought a \$1 million insurance policy [for] as little as \$10 an hour,” says Jay Bregman, founder and CEO of Verifly.



Weeks after launching in August 2016, Verifly sold policies in 45 states, including Alaska and Hawaii. As of mid-November, Bregman says it’s on track to being in all 50 states.

But what the heck does a startup know about insurance? Verifly’s underwriting partner is Global Aerospace, which has been providing aviation insurance for almost 90 years.

“We needed to be able to lend that credibility to the policies, but we also wanted to make sure we didn’t have to go through the process of becoming an insurance company,” Bregman says.

Insurance is not only helpful for drone pilots, Bregman thinks



INSURANCE

verifly.com
Founded: 2015
Based: New York, NY
Founder: Jay Bregman
Employees: 15

it’s needed to help the drone market grow, much like how the automobile market grew.

Thus far, Bregman says the responses to Verifly have been effusive.

“People are in love with our product,” he says. “And insurance is traditionally not a product people love.”

In 2017, the company plans to offer operators more options and platforms for integrating drone insurance into their workflow. It will also continue building solutions for the entire UAS market.

Is drone insurance now cool? Read more about Verifly online at Drone360mag.com/Verifly. 360

OPPOSITE: DEDRONE (3); VERIFLY (4)

Narrowing down this list was tough. Really tough. I could fill this entire issue with notable drone startups, but, alas, six pages is all that was allotted. (Blame our editor-in-chief.) Some other startups that deserve a shoutout: DroneDeploy, mapping and analytics software; PrecisionHawk, commercial drone manufacturer and data platforms; Hangar, automated ecosystem for drones; and Skyward, operations management software. Note: I’m not Nostradamus, so I can’t predict whether these startups will fail or be around for years. I just tell the story. — L.S.