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DJI is running away with the drone market

Better products at lower prices are helping China's drone giant take control of a fast-growing industry. [APRIL GLASER@APRILASER](mailto:APRILGLASER@APRILASER) APR 14, 2017



The nascent drone market is growing. And one company has been rising to the top in many industry categories, with few serious competitors: China's DJI.

DJI, known for its Phantom drones and increasingly for [its newer Mavic Pro](#) — both popular for aerial photography — has established itself as the market leader in many price categories.

For example, for drones that cost between \$500 and \$1,000 — primarily used for camera work — DJI represented 36 percent of the market by units sold in North America last year, according to Colin Snow, founder of Skylogic Research, a firm tracking the drone industry.

In a testament to DJI's dominance, the second-place firm — 3D Robotics, which had 19 percent of the market in that price range — stopped [making drones altogether](#) in 2016 and moved to focus only on software.

Other drone manufacturers are also having trouble keeping up. France-based Parrot and China's Yuneec each captured 7 percent of the market in the \$500-\$1,000 price range, according to Snow, and [both have](#) announced layoffs this year. Another attempt to build an inexpensive consumer camera drone, a startup called Lily, [recently imploded](#). And camera company GoPro had to [recall its Karma drone](#) only weeks after it was launched, following reports of malfunctions that caused it to lose power and fall from the sky. (The Karma is now [back on sale](#).)

DJI also fetched 66 percent of the North American market for drones priced between \$1,000 and \$2,000, and 67 percent of the market in the \$2,000-\$4,000 range, according to Snow.

Across all prices in North America, DJI represented 50 percent of the market, Snow says. The price range where DJI is not dominant is drones under \$500, which are mostly toys, and where there are hundreds of companies competing.

<https://www.recode.net/2017/4/14/14690576/drone-market-share-growth-charts-dji-forecast>

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‘Motley Crew’ Is The Unsettling Future Of Drone Warfare

The Navy will soon demonstrate robots that work together, developing their own collective strategy as they advance



Photo Illustration: R. A. Di Ieso By [Jennings Brown](#) Apr 12, 2017

The military appeal of swarming drones is clear. Now, every Predator and Reaper drone has to be controlled by a pilot, which is a job the United States military has had difficulty [filling](#) and [retaining](#). Drone swarms, on the other hand, could be overseen by one person. As a unit, they’re obviously more difficult to take down than a single drone. The Pentagon’s interest in drone swarms went public in January when it released a video of a Navy test of 104 micro-drones that flew together and completed assigned tasks.

Last week, at the Navy League’s Sea-Air-Space conference, Rear Admiral Mark Darrah, director of Unmanned Warfare Systems described the Navy’s vision for the future of drone warfare — masses of robots that work together, developing their own collective strategy as they advance. The Navy calls this concept “Motley Crew” and they expect to begin demonstrating it by 2018 or 2019, according to the military news site [Defense Tech](#).

“Imagine, if you would, different weapons flying in the same airspace, communicating with each other, leveraging a best of breed from each of the weapons and able to make decisions ... about which ship to go after, so they don’t target the same ship four times with four weapons,” Darrah said. “This is a breakthrough in my mind that we’ve got to get to.”

<http://www.vocativ.com/420170/motley-crew-drone-warfare/>

Report: American Cops are Buying Drones Like Crazy

[Graham Templeton](#) [Drones](#) April 11, 2017

Police officers, the stereotype goes, love coffee, donuts, and now perhaps drones. A new study from Bard College finds that an unprecedented number of law enforcement and emergency response departments purchased drones in 2016, a trend that doesn’t show any signs of slowing. The report lays out startling figures on drone purchases by police around the country, tracking the dramatic rise in police drone usage over the past few years.

According to [the study, published April 6](#), all but seven states have at least one UAV operated by police, sheriffs, emergency response, or fire departments. Without ruling out the possibility that it missed a significant number of drone purchases, the report says that “at least 347 state and local [agencies] in the U.S. have acquired drones.” In 2016, more of the departments studied acquired drones than in all previous years, combined.

The [federal government is also training local cops to use drones](#).
<https://www.inverse.com/article/30193-police-department-drone-bard-college>

Robots and drones built this spooky pavilion

It was inspired by moth larvae, eep! BY [BARBARAELDREDGE@BARBARAELDREDGE](#) APR 14, 2017

University of Stuttgart via [Dezeen](#)

Students at the University of Stuttgart in Germany already used robots to make a [sea-urchin-inspired pavilion](#), and now they're taking [drone-made architecture](#) to the next level with this new [pavilion inspired by moth larvae](#).

This year's ICD/ITKE Research Pavilion is a 39-foot-long cantilevered overhang made of 112 miles of carbon and resin fibers. The weaving technique teamed up two industrial robotic arms with a pair of drones. The giant robot arms stood on either end of the frame, periodically handing off the fiber thread to a drone who would fly it over to the other robot arm.

Apparently the process was inspired by the larvae of leaf-miner moths, which spin silk "hammocks." Hey, why not?



Get a better sense of the process in this video:

Via: [Dezeen](#) <http://www.curbed.com/2017/4/14/15296244/robot-drone-architecture-pavilion-stuttgart>

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Commercial UAV Boom Creates Opportunity For Mechanics.

The [AP](#) (4/15) reported that the boom in commercial UAVs is creating a rising demand for repairs, presenting an opportunity for mechanics looking to specialize in a growing market and existing shops open to adding another business line. Some community colleges are now offering programs specializing in UAV repair, and companies are establishing more dedicated repair stations. Robotic Skies already operates more than 120 service stations for higher-end UAVs and has plans for more, while the Grand Sky UAV business park is considering building a repair depot for medium and large UAVs, the latter of which currently can be repaired only on military bases.

FAA Issues Waivers For Small UAV Operators To Begin Beyond-Line-Of-Sight Testing.

[IEEE Spectrum](#) (4/15) reported that the FAA is “exploring how to relax” the visual line-of-sight rule currently in place for small UAVs, having already “waived it for a couple of companies,” including North Carolina-based PrecisionHawk. PrecisionHawk Director of Aerospace Research Allison Ferguson explains in embedded video how she and her partners are testing beyond-line-of-sight operation using the LATAS platform.

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This Drone Broadcasts 6k 360 VR Video Wirelessly up to 5 Miles

By [Paul James](#) Apr 17, 2017

360 Designs have revealed a new drone which carries the company’s 6k 360 VR video camera and a payload capable of broadcasting that imagery “over 5 miles” from a companion base station, which the company says means live-streamable, “broadcast quality” aerial 360 video is now a possibility.

Another example of how the rapid advance of video compression and transmission techniques continue to open surprising possibilities, the ‘Flying Eye’ from San Francisco and LA based company [360 Designs](#) is here and it can deliver high resolution VR video shot from 100s of metres up.



The specialised UAV drone is actually a [MATRICE 600 PRO](#) from DJI, but the device is well suited to carrying the company’s Flying Eye 3 Mini 360 video camera, a device capable of shooting at 6k/30FPS in 10bit colour, albeit monoscopic. The real USP however is when the above hear is paired with a dedicated ‘Breeze 6k’ ground station, which then allows the drone to roam 5 miles or more from lift off and still transmit a compressed HVEC (H.265) back for live spherical stitching and subsequent transmission.

<http://www.roadtovr.com/drone-broadcasts-6k-360-vr-video-wirelessly-5-miles/>

Cygnus Resupply Mission Slated For Launch Today From Cape Canaveral.

[Florida Today](#) (4/17) reports that an Atlas V rocket carrying an Orbital ATK Cygnus spacecraft is scheduled to launch Tuesday morning at 11:11 am EDT from Launch Complex 41 at Cape Canaveral. The Cygnus spacecraft holds more than 7,600 pounds of equipment for the ISS, including experiments, a new Advanced Plant Habitat, and **38 CubeSats**. Forecasts showed “a 90 percent chance of favorable weather” for the launch.

City Planners Turning To Aerial Technology.

The [Wall Street Journal](#) (4/16, Subscription Publication) reports that officials in major cities have begun using aerial techniques such as digital aerial photography, UAVs, and laser imaging to craft urban planning solutions. These new aerial technologies provide a higher level of detail than satellite imaging and are useful in addressing issues ranging from drainage to installing new renewable energy sources to fighting fires. In some cities, aerial technology is being used to combat crime; in others, it helps determine if abandoned buildings need to be razed.



The New York Fire Department uses a drone to detect hot spots in building fires that might not be visible otherwise. PHOTO: NYFD <https://www.wsj.com/articles/aerial-technology-gives-cities-new-perspectives-on-old-problems-1492395061>

Ligado Networks Demonstrates BVLOS Technology.

[Aviation Week](#) (4/18) reports that Ligado Networks showed last week that “it can provide persistent command, control and data connectivity to a small unmanned aircraft in a beyond-visual-line-of-sight (BVLOS) power-line inspection role over a fused space and terrestrial communications network.” The demonstration, using an AeroVironment Puma AE fixed-wing UAV, was part of a three-day test with **Dominion Virginia Power and the Virginia Tech Mid-Atlantic Aviation Partnership**. Dominion Virginia Power is interested in using UAVs to replace contracted helicopter services for power-line inspections.

“We are showcasing the power, availability, reliability and security when you **combine terrestrial and satellite links**,” says Tamara Casey, chief technology officer for Ligado. “Our goal is to have both networks available and connected as much as possible.” <http://aviationweek.com/technology/lightsquared-successor-fuses-space-and-ground-networks-uas>

<http://www.auvsi.org/blogs/auvsi-news/2017/04/13/satellite-connected-puma-uas-inspects-virginia-power-lines>

DOT IG Launches New Audit Of FAA’s UAV Waiver Process.

[Aviation International News](#) (4/17) reports that the US Department of Transportation Inspector General (IG) has announced the initiation of a second audit to examine the FAA’s process for granting waivers to UAV operators. In the previous audit, released in December, the IG concluded that the agency “lacks a risk-based oversight process” for UAV registration. In starting the new audit, the IG said, “It is still unclear what type of oversight the FAA will provide for this new technology, as we found that FAA lacks a robust data reporting and tracking system.” The FAA has processed almost 800,000 UAV registrations and granted 300 waivers from basic requirements out of 1,000 applications for exemptions.

Verizon Conducts Flight Tests of New Drone-Based 4G LTE Service

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[Verizon](#) has announced that it has conducted the latest engineering flight tests to determine how large an area of wireless coverage can be created aerially using a “flying cell site” aboard a long endurance drone piloted by [American Aerospace Technologies, Inc.](#) (AATI).

This latest technical test of Airborne LTE took place at Woodbine Municipal Airport in Woodbine, New Jersey and was designed to simulate an environment in which commercial power is knocked out indefinitely after a severe weather event or other disaster that interrupts traditional

The RS-20 unmanned aircraft system (UAS) used for the test has a 17-foot wing span.

David Yoel, AATI CEO, said the goal of the flight test was to simulate an environment in which a disaster such as a hurricane or flood had destroyed an area’s cell network while demonstrating the drone’s ability to provide first responders with communications to improve their safety and effectiveness.

Marty Pagliughi, Cape May County Office of Emergency Management coordinator, noted that the two biggest uses for UAS for emergency management would be communications and damage assessment. “They can provide live situation reports, live stream situation reports and damage assessments, and show access points for emergency service vehicles,” he said.

<http://www.unmannedsystemstechnology.com/2017/04/verizon-conducts-flight-tests-new-drone-based-4g-lte-service/>

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IAI To Update Design Of Hybrid Panther UAV Following Landing Mishap.

[FlightGlobal](#) (4/18) reports that Israel Aerospace Industries (IAI) plans to update the design of its hybrid Panther VTOL UAV to address problems revealed by a hard landing during the first demonstration flight last December. An investigation into that incident caused IAI to decide to alter the airframe and wing designs of the hybrid variant, which it is developing with South Korea’s Hankuk Carbon. According to South Korean sources, the current airframe cannot sufficiently support the weight of the hybrid propulsion system.

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Facebook Sets Radio Speed Record With Technology For Aquila UAV.

[CNET News](#) (4/19) reports that Facebook has announced that it set a new radio speed record earlier this month with its MMW radio technology that the company plans to use on its Internet-beaming Aquila UAV. The tests, conducted with a Cessna aircraft, showed MMW “effectively quadrupling the download speeds” of current technologies. Yael Maguire, director of Facebook’s connectivity

program, said, “This ground-to-air record modeled, for the first time, a real-life test of how this technology will be used.” Facebook plans to implement the technology onto Aquila UAVs to beam connections to 4.1 billion people not currently connected to the Internet.



Facebook's Aquila drone

Facebook built a helicopter-drone to provide wireless internet to disaster areas

The unmanned chopper will be tethered to the ground so it can stay airborne for days at a time.

BY [KURT WAGNER](#) AND [APRIL GLASER](#) APR 19, 2017

Facebook thinks it can do more to help in times of crisis. The social giant already offers a feature called Safety Check, which lets users mark themselves safe during a crisis or [connect with other users](#) who might have food, clothing or shelter on hand during a natural disaster.

But Facebook doesn't just want to connect people to each other during these disasters — it wants to connect people to the internet, too. The company announced on Wednesday what it's calling “Tether-tenna technology,” essentially a small, unmanned helicopter that will provide Wi-Fi access to crisis zones when existing Wi-Fi towers are down or damaged.

The helicopter-drone, which is roughly the size of a Volkswagen Beetle, is literally tethered to a fiber line and a power source on the ground, which enables the chopper to stay airborne for days at a time. (Facebook says its goal is to keep it up for weeks or months.)

The Tether-tenna technology is still in early testing, which means it isn't being deployed to actual disaster areas just yet, said Yael Maguire, head of Facebook's connectivity lab, in an interview with **Recode**.

Maguire — whose team also built [Facebook's internet-beaming drone, Aquila](#), and is laying [hundreds of miles of fiber cable](#) in Africa to increase access to the internet there — estimates that one helicopter could connect “in the neighborhood of thousands to tens of thousands of people.” The Aquila drone hasn't been deployed yet either; the aircraft was damaged [after it crashed upon landing](#) during a test flight last summer.

Facebook is not the only company taking this tethered approach. CyPhy Works, a Massachusetts-based drone maker, is also [working on a tethered Wi-Fi drone](#).

<https://www.recode.net/2017/4/19/15353688/facebook-drone-helicopter-wireless-internet-disaster>

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DHS Selects MSU To Operate UAV Training Range For Federal Agencies.

[Aviation Week](#) (4/20) reports that the US Department of Homeland Security (DHS) Science and Technology Directorate (S&T) has selected Mississippi State University (MSU) “to operate a small UAV demonstration range” supporting training exercises by federal entities including the US Coast Guard, Secret Service, Customs and Border Protection, and the Federal Emergency Management Agency. MSU “already leads the FAA’s UAV center of excellence, Assure,” an “FAA-funded consortium of universities that is conducting research in a number of areas related to small UAV safety to help guide regulation.” DHS is also cooperating with the FAA on evaluating counter-UAV systems to protect critical infrastructure.

Airbus Signs Agreement With Singapore Post For UAV Mail Delivery.

[Business Insider](#) (4/20) reports that Airbus has signed an agreement with the Singapore Post to operate a trial program delivering mail via UAVs starting early next year. The arrangement underscores that “the US is behind other countries when it comes to drone delivery,” with FAA regulations requiring companies to gain special permission from the agency for UAV deliveries. US-based companies considering UAV delivery options, such as Amazon and Walmart, “could use Singapore’s offering as a model for their own service if regulations change down the line.”

German-Based Lillium To Develop Five-Seat VTOL “Flying Taxi” Jet.

[Reuters](#) (4/20) reports that Munich-based start-up Lillium announced Thursday that it plans to develop a five-seat electric-powered “flying taxi” following successful test flights of a smaller, two-seat prototype. The company said that the vehicle will be designed for urban air taxi and ride-sharing services, and will be the first electric jet to have vertical take-off and landing (VTOL) capability. In a statement, co-founder and CEO Daniel Wiegand said, “We have solved some of the toughest engineering challenges in aviation to get to this point.” Lillium, which received \$11.4 million in funding last year, faces competition from much larger aerospace companies such as Airbus, which aims to test a single-seat “flying car” this year, as well as regulatory hurdles as governments grapple with establishing regulations for UAVs.

Clyde Space Paving Way For SmallSat Sector In Scotland.

The [Financial Times](#) (4/20, Subscription Publication) reports that Clyde Space, which recorded fast growth since building the UK Space Agency’s UKube-1 in 2014, is helping establish Scotland as a significant smallsat producer.



Thinking small: Clyde Space’s satellites are the size of a loaf of bread © Archibald Photography