

# DRONES 101

THE FUTURE OF DRONES FOR CONSUMERS,  
BUSINESSES, AND THE MILITARY

---

April 2018

---

Business Insider Intelligence



BI INTELLIGENCE

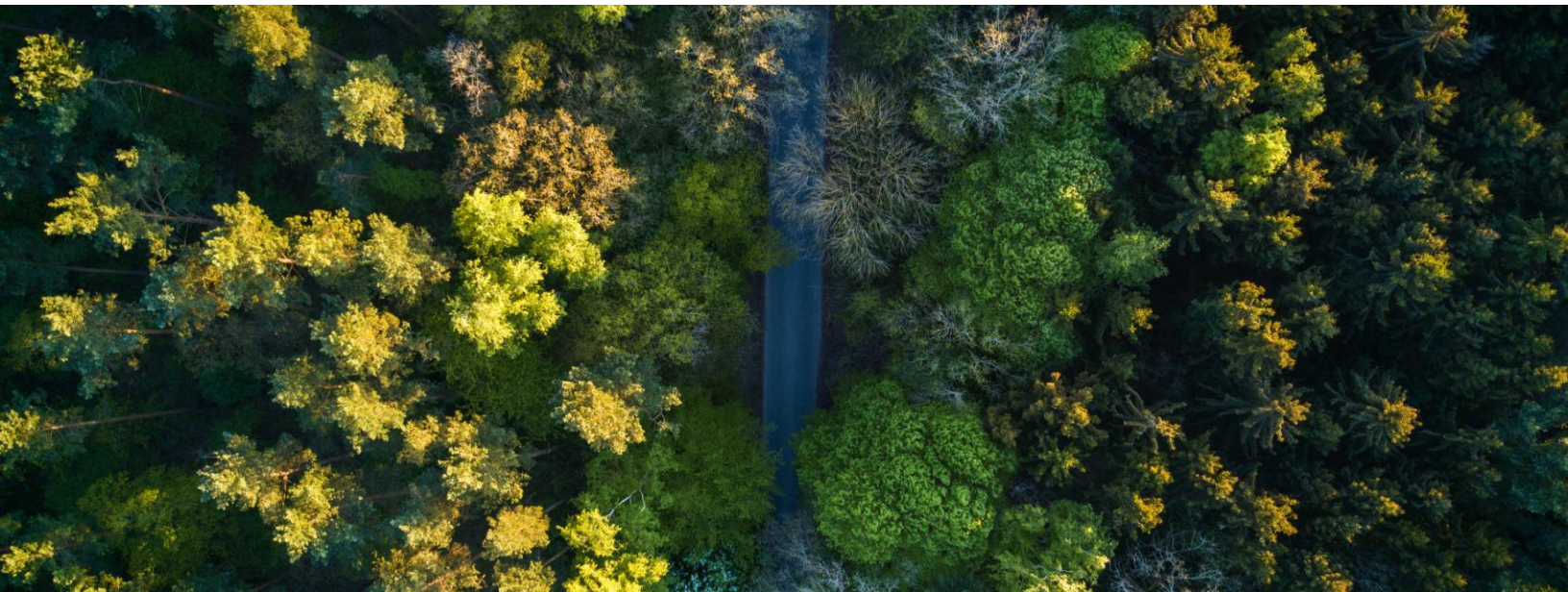
# WHAT IS A DRONE?

Drones are taking off! Beyond the novelty of consumers models, drones promise to help cut costs and improve operations for the enterprises that adopt them. It's a massive opportunity for all stakeholders involved.

For our purposes, we define a drone as any aerial vehicle that can either fly on its own or be piloted remotely. This encompasses a wide variety of unmanned aerial vehicles, from relatively inexpensive children's toys to sleek models with high-definition cameras that cost thousands of dollars. Here are a few examples of how drones are being used today:

- Farmers use them to keep an eye on their crops.
- Insurance companies are using them to assess damage to their clients' property.
- The military uses them for tactical operations.
- And retailers hope to use them for delivery.

Next let's look at just how big the drone market is going to get!



# DRONE MARKET FORECASTS

Business Insider Intelligence, Business Insider's premium research service, defines drones as aerial vehicles that can fly autonomously or be piloted remotely. Business Insider Intelligence expects sales of drones to surpass \$12 billion in 2021, growing at a compound annual growth rate (CAGR) of 7.6% from \$8.5 billion in 2016.

This growth will occur across the three main segments of the drone industry: consumer drones, enterprise drones (also known as commercial drones), and government drones.

- Consumer drones are drones purchased by individuals for noncommercial and nonprofessional purposes. Business Insider Intelligence expects consumer drone shipments to hit 29 million in 2021 — a CAGR of 31.3%.
- For enterprise drones, Business Insider Intelligence expects shipments to reach 805,000 in 2021 with a five-year CAGR of 51% from 102,600 in 2016.
- Finally, government drones fall into two categories: military and public safety. Of the two the military drone market is the most mature. The U.S. military has been using drones for combat since 2001, and it rapidly expanded its drone fleet to more than 7,000 by 2012. The Department of Defense budget in 2016 allocated \$2.9 billion for more than 50 new drones for combat and surveillance, according to the Bard Center for the Study of Drones.



# WHAT'S DRIVING THE DRONE MARKET

For years, the drone market was in a nascent phase and had yet to break into the mainstream. This was in large part due to the technology being underdeveloped as well as unclear regulations. Then, in 2015, the drone industry took a major step forward when the Federal Aviation Administration (FAA) granted hundreds of new exemptions for companies to operate drones in the US.

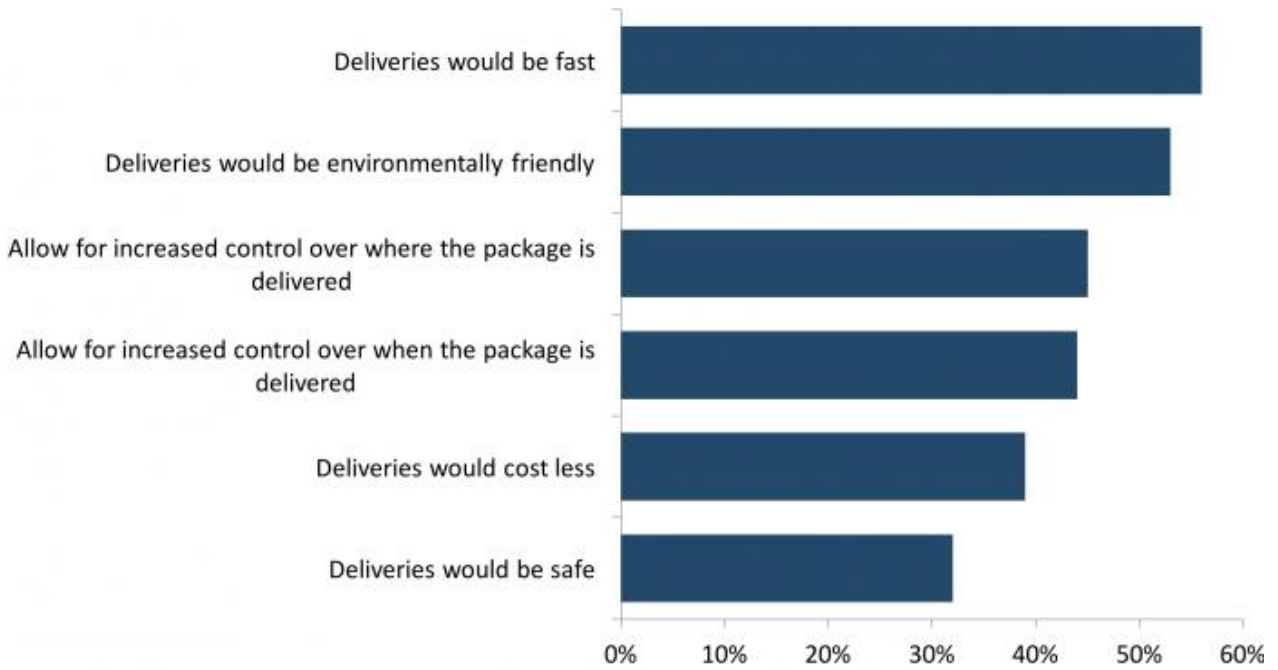
These exemptions included several new use cases in multiple industries, such as insurance, construction, and agriculture. Each of these scenarios demonstrate the broad range of commercial applications for drones.

The FAA helped push drone market growth forward by formulating a regulatory framework with its consumer drone registry. [Drone manufacturers](#) and tech suppliers are doing all they can to capitalize on this and turn drones into a full-fledged industry.

This growth will occur across the three main segments of the drone industry: Consumer Drones, Enterprise Drones (also known as Commercial Drones), and Government Drones.



## US Consumers' Perception Of Drone Deliveries



N=1,207

Source: United States Postal Service Public Perception of Drone Deliveries Report

BI INTELLIGENCE

# DRONE INDUSTRY STATISTICS AND OUTLOOK

Consumer drones which had been held back by high price tags, are now finding their stride as inexpensive toy drones proliferate for recreational use. Increasing competition among [drone manufacturers](#) is further pushing down costs, particularly among higher-end models that can shoot photos and live stream video.

The drone market is expanding with new models that target different segments of the consumer and commercial market, which often overlap. In 2015, consultancy Frost & Sullivan estimated that China-based DJI owned 70% of the market for consumer and commercial drones. Its Phantom drones are the most popular in the world for both consumer and commercial purposes thanks to their reliability and superior photo and video capture capabilities.

But several smaller companies, such as 3D Robotics, Lilo, Yuneec, and Parrot are all trying to chip away at DJI's market share.

As for [military drones](#), Israel and the U.S. make up more than 80% of all military drone exports worldwide, [according to](#) the Stockholm International Peace Research Institute. Most of these drones are for surveillance only, but at least 10 countries have military drones capable of carrying out combat missions. That number should rise quickly, however, in the next few years.

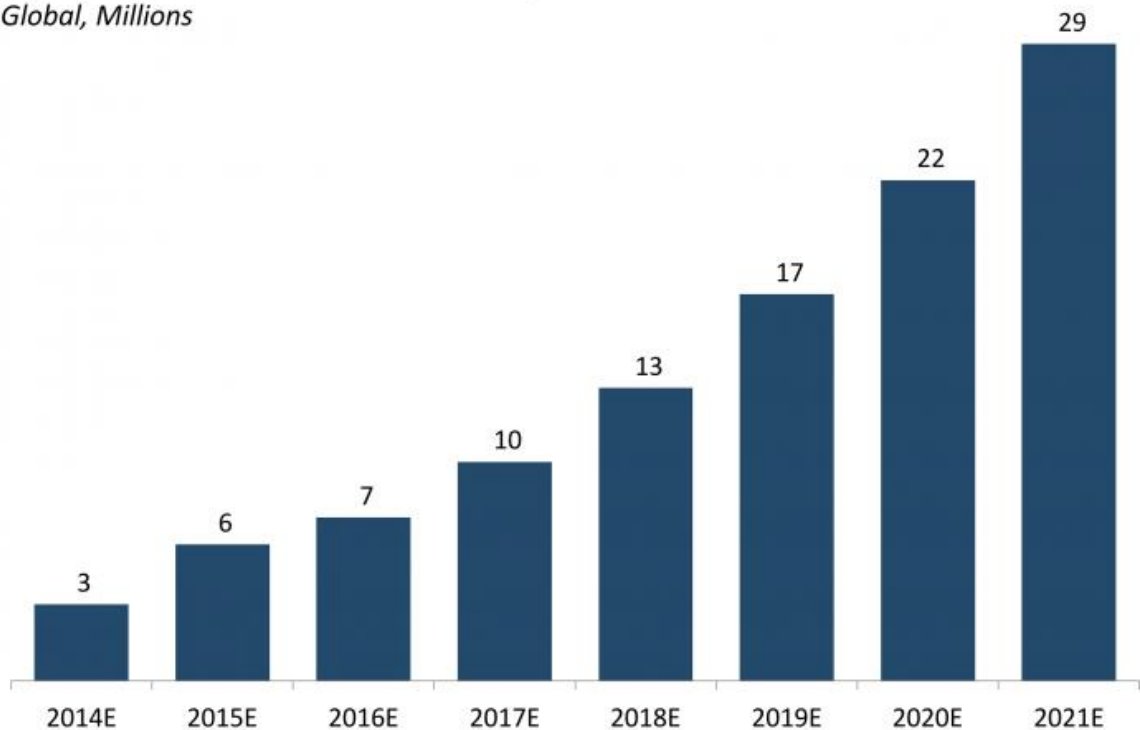
While consumer and military drones currently rule the skies, it's the enterprise drone market that has the greatest market potential in terms of units and sales. It's also the fastest-growing drone market by revenue.

The FAA has line-of-sight requirements and a ban on drones flying over humans, which has limited many commercial drone applications; however, the FAA grants businesses exemptions to these rules under [Section 333](#) and has [issued](#) 1,100 waivers in total as of November 2017.

Furthermore, The Trump Administration recently [began](#) a program designed to iron out how state, local, and federal governments should divide regulatory responsibilities for drones. In particular, the initiative will grant approval for operations beyond current regulatory limits that involve drones flying at night, over people, and beyond operators' lines of sight. The tests aim to determine how various agencies can best cooperate on regulating commercial drones. They should also help the FAA gather considerably more information before it considers revising regulations around the line-of-sight rules and autonomous drones.

## Estimated Consumer Drone Shipments

*Global, Millions*



Source: BI Intelligence Estimates, 2016

BI INTELLIGENCE

# AHEAD OF DIGITAL DISRUPTION

You can start taking advantage of all the knowledge and insight Business Insider Intelligence has to offer with a **full membership – at a \$2,000 discount**. With this [level of membership](#), you will gain immediate access to over \$150,000 worth of annual research when you get...

- ▶ Every research report we release during your subscription term
- ▶ Access to our research center and extensive archive of more than 250 reports
- ▶ All 7 of our insightful newsletters
- ▶ Exclusive proprietary data from our Insiders panel
- ▶ Forecasts of the new and emerging technologies that are disrupting your industry





If you're a professional who wants daily downloads of the most important news and the analysis and context of game-changing trends behind that news, our membership is perfect for you.

You'll have access to everything Business Insider Intelligence produces: ALL of our latest research reports, ALL of our newsletters, complete access to our archive of past reports, plus a steady stream of extra data and research you won't find anywhere else.



## Expertly Researched Reports

The research team at Business Insider Intelligence, Business Insider's premium research service, has spent thousands of hours analyzing key themes that matter most to our subscribers—the topics that experience rapid digital disruption.

As a Business Insider Intelligence subscriber, you get complete access to the scores of reports we research and write each year, including popular titles like: *The Payments Ecosystem*, *The Fintech Ecosystem*, *The Internet of Things Ecosystem*, *The Chatbots Explainer*, *The Future of Shipping Report*, *The Blockchain Report*, *The Drones Report*, *The AI in Logistics Report*, and more.

## Carefully Curated Newsletters

With access to all 7 of our newsletters, you'll know about all the important developments that are impacting your company, your bottom line, and even your career.

Our newsletters give you the context around critical new developments so that you can run your business more efficiently, more profitably and more successfully.



BI INTELLIGENCE

## Here's how self-driving cars will impact companies' bottom lines and consumers' pockets

Jonathan Camhi | Nov. 9 2017, 3:30 PM

**Estimated Cost Per Mile Savings Enabled By Autonomous, Electric Vehicles**

Vehicle Type	With autonomous, electric vehicles	With current vehicles
Personally owned car	\$0.63	\$0.97
Car-sharing	\$0.31	\$0.46
Semi-truck	\$0.23	\$0.58
Last-mile delivery truck	\$0.90	\$1.50

Source: Deloitte, KPMG, Morgan Stanley, Deloitte, McKinsey, BI Intelligence Estimates

BI INTELLIGENCE

Autonomous and semi-autonomous vehicles are poised to transform the economics of transportation and logistics. With this transformation will

## Data You Can't Get Anywhere Else

We continually survey our exclusive panel of over 18,000 hand-picked digital professionals and early-adopters. Designed to be a leading edge indicator of what's next in digital, this allows us to deliver insights from powerful and targeted segments, from CEOs to Millennials to people who bank on their mobile devices.

Other organizations attempt to capture digital trends and perceptions accurately, but no one does as many different surveys as we do, analyzes them so quickly, and makes sure cutting-edge insights get into clients' hands as fast as possible.

We also forecast out the newest and disruptive trends in digital. Our exclusive panel data gives us the first look at consumers' future habits and provides insight for our customers that they simply can't get anywhere else.

# STAY AHEAD OF YOUR COMPETITION FOR LESS THAN \$210/MONTH

Don't be left in the dark while your competition gets ahead each morning with this critical industry news and analysis. Subscribe risk-free, and get all the valuable research reports, daily newsletters, and supplemental data that Business Insider Intelligence has to offer.

And if you order today, you pay just a fraction of what it would cost if you bought it all separately.

**For less than \$210 a month, you will have access to over \$150,000 worth of new annual research.**

## Your Satisfaction Is 100% Guaranteed

Try the ALL-ACCESS level membership for 14 days—if you are not completely satisfied, you may cancel before the end of your money-back guarantee period and we will refund the full amount you've paid. Any complimentary bonus reports you receive are yours to keep.



[Click Here and Get Started Now, Risk-Free](#)

# BI INTELLIGENCE

Business Insider Intelligence, Business Insider's premium research service, provides in-depth insight, data, and analysis of everything digital. Our research is fast and nimble, reflecting the speed of change in today's business. We give you actionable insights that enable smarter and better-informed decision-making. We publish in-depth reports, news, and an exhaustive library of charts and data focusing on key areas of tech: mobile, e-commerce, digital media, payments, the Internet of Things, transportation and logistics and more.

**If your organization would like to learn more about our research, including a license to republish our charts, please contact: [intelligence@businessinsider.com](mailto:intelligence@businessinsider.com)**

**Copyright © 2018 Insider Inc. All Rights Reserved.**

**Proprietary and Confidential Property of Insider Inc.**

**Licensed for Use by Business Insider Intelligence Subscribers Only.**

Access to and use of this proprietary and confidential information is limited by the terms and conditions.