

An aerial photograph of a golf course. A large, calm lake is in the upper left, with a concrete dock extending into it. A wide, light-brown dirt path winds through the green grass. Four people are standing on the path in the lower half of the image. In the background, there are trees and some buildings under a blue sky with light clouds.

12 Stocks for The Drone Revolution

By Cody Willard
and Lucy Bottrell

From the publishers of TradingWithCody.com
and [Scutify](http://Scutify.com)

Introduction

First, a note about Revolution Investing.

If you haven't been in the markets, but you're sick of getting 0% on your CDs, Treasuries, savings, checking, etc., while the markets have been continually hitting all-time highs this year, what should you do now?

First, step back and catch your breath before moving any money anywhere and make sure you're not about to make any emotional moves.

If you haven't yet read "Everything You Need to Know About Investing," (You can get it for free just by joining Scutify, the #1 financial social network and simply asking me for it on there), then spend a couple of hours doing so, please. It's a quick read, but chock full of important ideas, concepts and strategies that amateurs and pros alike should understand.

Then if you do decide you want to invest in some of the Wearables, Drones and Robotics Revolutions, you should consider slowly starting to scale into some of the ones you like best and/or the ones we have rated highest.

I wouldn't rush into a full position all at once in any of these stocks or any other position you'll ever buy. Patience and allowing the market and time to work to your advantage by buying in tranches is key. Maybe one-third or one-fifth of whatever you might consider to be a "full position" in any particular stock. And I wouldn't ever have more than 5%-15% of your portfolio in any one stock position at any given time. The younger you are and/or the higher the trajectory of your career income, the more concentrated and risky you can be with weighting in your portfolio. But spread your purchases and your risk out over time and over a several positions, no matter your age or risk-aversion level.

We're trying to find the most innovative companies in the most disruptive and revolutionary industries before the rest of Wall Street catches up to the trend. And more specifically, in today's markets with the Fed's endless money-printing and lending at 0%

rates to banks and all the other artificial help of QE, stimuli, targeted tax breaks for giant corporations, etc.

Some of our past successes have included getting into Google on its IPO day, Apple at \$7 a share, getting us positioned to profit in front of the ongoing bubble blowing bull market five years ago, loading up Facebook after it crashed post-IPO in 2012, and the booming App Revolution Bubble that is also still continuing.

But that doesn't mean we just blindly plow into the stocks in those Revolution Investing sectors. We have to be careful about who we're betting on individually, in addition to managing our portfolios with time, price and Fed ramifications.

One of the most depressing aspects of this ongoing bubble-blowing bull market is how retail investors are once again blindly plowing into what they think are Revolution Investing sectors, such as the current fuel-cell stock frenzy and the legalized marijuana penny stock frenzy. I've been loudly bashing many of the stocks in those sectors that are currently up 1,000% or more over the past few weeks as the frenzy has built up. I agree that fuel cells will someday be huge and profitable, but that's still probably a few years off before the technologies are truly competitive to the traditional gas and oil energy plays. And legalized marijuana is going to be Revolution Investing growth industries over the next decade or two.

And like I said that doesn't mean you just blindly go out and buy every stock you can find that says its going to be huge in those sectors. Much like I've spent and continue to spend endless amounts of time trying to make sure we're got the best and safest stocks in these Revolution Investing sectors like 3-D printing, each individual stock or fund you ever buy must be researched continuously.

It's easy to get lost in the back and forth of the near-term action of the markets. And I, for one, do think it's wise for even long-term investors to take some stock exposure off the table when markets are at all-time highs (as I was suggesting and doing myself back when the markets were at all-time highs a couple months ago).

But in the end, the key to long-term outperformance and making big money in the stock market is find and own the best and most revolutionary companies who are disrupting or

creating new marketplaces that will have huge growth ahead. Say, like Apple and Google were positioned to do back when the smartphone/tablet and search markets were just being created. Indeed, were you aware that as of this week, Apple and Google, respectively, are the two most valuable companies in the U. S.? That means, I've owned the two largest market-cap stocks in the U.S. for more than a decade, having first bought Apple at \$7 and Google the day it came public at \$95 in the open market after it started trading.

With this Revolution Investing approach, we're trying to find the next Apple and Google like I did the first Apple and Google.

The Drone Revolution

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When you're looking at long-term, revolutionary-type investments, you're obviously trying to find markets and companies that are growing quickly and with huge potential in front of them.

There are two types of growth, secular and cyclical. Cyclical growth happens when a company and/or a market see upside along with the broader economic cycle. Energy companies, metals markets, chemicals, housing and many commodities fall into this type of category. That is, when times are good, so too will their businesses likely be good and when times are bad, all the boats sink together.

Secular growth, on the other hand, happens when a nascent industry is taking off, about to grow into revolutionary proportions as it displaces old business models and technologies. Two factors contribute to an industry's secular growth: Entirely new demand is created and demand from other industries is taken. Netflix, YouTube and

other web/app video sites, for example, are contributing to more people consuming more video than ever before. But people are also spending some of the time that they used to spend watching network and cable television on Netflix and YouTube. That's a double shot of growth for the web/app video industry.

Likewise, wearables, robots and drones are going to be secularly-growing, eventually reaching new revolutionary proportions, creating new end-markets, consumption habits and prosperity for our economy as well as our society at large.

How many wearable computing devices do you own right now? None, is the most likely answer. How many times a day do you interact with a drone right now? Unless you're in Afghanistan, Syria or somewhere like that being targeted by the Republican/Democrat regime or a [hobbyist with a quadcopter camera](#), your answer is most likely, never.

And robots? Factories are filled with robots, but our day to day consumer doesn't interact with robots much just yet.

Meanwhile, over the next five to 10 years, billions of new wearable gadgets in hundreds of new form factors with millions of new applications will be sold to consumers and enterprises around the world. Drones — from Google's and other's driverless cars to pilotless aircraft to quadcopter package delivery — will be everywhere in our daily lives within the next decade too. Facebook and Google will be using Drones to deliver Internet access. Robots, which, if they're fully mobile, would also be known as drones, are going to sell us routine tickets, provide safety checks and who knows what else over the next decade.

The wearable/drone/robot revolutions get even better for investors who are willing to do their homework because each and every one of those wearables, drones and robots needs ever more computing power and sensors.

The first iteration of the iPhones and Android smartphones had about three sensors each, including accelerometer, proximity and light sensors. Today's smartphones and

tablets have 10 to 15 sensors each, including the three already mentioned along with 3- or 6-axis gyroscopes, fingerprint, gesture and even heart-rate sensors.

Each wearable, drone and robot will likewise have 10 times or more as many sensors as these early versions of wearables, drones and robots that we see coming out today.

So if you can find a market that will grow from almost nothing currently to selling billions of units a year in the next decade, you're probably onto some good investments. But if you can find component plays in that industry that will sell 10 or 20 or 100 components into each one of those units, you're probably onto the kind of investment that Intel was when PCs were nascent and before it went up 1,000-fold from 1970s to the 1990s.

Forget the word drone and all the negative, violent, military-related connotations that go along with it. Think of the phrase "unmanned vehicle" instead.

That's what the coming Drone Revolution is going to be all about. Unmanned or pilotless vehicles — aerial, hover, road, submarine, outer-space, microscopic and any other form of travel that man has before or will someday accomplish will be safer and more efficient and more cost-effective when done with drones.

As the cost of building and using drones continues to drop and as the capabilities and safety features of drones continue to grow, the vast majority of any routine-based "drivers" or "pilots" will be replaced with drones. I mentioned before that [Google's unmanned-cars](#) that they use to build their Google Maps street views have logged nearly a million miles of travel without one citation or accident. No person or group of persons driving those cars, no matter how good and safe a driver they've been, could accomplish such a spotless performance record.

You'll have two primary types of drones then — those that are programmed ahead of time like the Google Map cars. And those that are controlled by an individual such as we're already seeing in the search-and-rescue field.

By far, the bigger market will be the programmable drones. Drones that are programmed to deliver routine packages for UPS, Amazon, FedEx and the [Postal Service](#) or that are programmed to drive city buses and trains or even that are programmed to fly aircraft full of people as they fly around the world.

Obviously, the routine local delivery and transportation industries will be the first to be impacted by the drone revolution. Flying drones that deliver packages and driverless local buses will be showing up in wealthy developed cities in the next three to five years. And within the next decade or so, we'll see driverless buses and subways and trains, much like you already see at major airport like DFW or LAX; terminal trains that are, indeed, drones. And soon therein or thereafter, we'll also see semi-trucks pulling three or four trailer fulls of cargo on the highways as we ride in our driverless car or bus to our own destination on the same highway. Within another 20 years or so, we then approach the pilotless jumbo jets hitting the commercial market with robot flight attendants on board.

To properly get positioned for profiting on the Drone Revolution, we'll need to highlight and then dig into some of the components that will go into most every kind of unmanned, driverless, pilotless, robotic vehicle of the future.

When you introduce movement on command into any computer-based system to make a drone, you'll almost always have to include an IMU, or inertial measurement unit, to keep the unit controlled and balanced. Read up on [IMUs here on Wikipedia](#) . The IMU is the main component of [inertial navigation systems](#) (INS) used in aircraft, spacecraft, watercraft, and guided missiles among others. In this capacity, the data collected from the IMU's sensors allows a computer to track a craft's position, using a method known as dead reckoning.

IMU's and INS's are increasingly intelligent and better chipsets to control the IMUs which in turn control and monitor a system's altitude, location, balance, movement and so on. Most IMU's will include:

1. GPS Antennas
2. Digital magnetic compasses
3. Barometric altimeters
4. Six-axis accelerometers
5. MEMS gyroscopes

By pinpointing the common components in the drone and robotic movement world and by realizing just how all-encompassing the drone/pilotless/driverless vehicle markets are going to become, we can find some great investment ideas to ride the multi-decade revolution to fruition.

Obviously, if we're talking about a multi-trillion dollar marketplace for drones and unmanned vehicles that will build over the next two decades, we've got a little more time to do our homework before committing much capital.

Nobody's got their arms around just how big the drone market is actually going to get.

I've seen estimates ranging from a few billion dollar potential market to over a nearly \$100 billion over the next few years. [Here's one report](#), from Darryl Jenkins, a longtime airline analyst, and Bijan Vasigh, a professor of economics at Embry-Riddle Aeronautical University in Daytona Beach. It's a bullish report paid for by the Association of Unmanned Vehicle Systems International, an industry trade group. They say the market for commercial and nonmilitary drones will top \$13.5 billion within three years, and will grow to more than \$80 billion between 2015 and 2025, during which more than 100,000 well-paying jobs will be created.

Big deal. The biggest problem that all these predictions and models for the coming Drone Revolution have is that they can't account for the brilliant, innovative and ever new uses that unmanned aircraft and smaller remotely- or automatically-controlled devices will be used for in the future.

Imagine how much extra bandwidth, especially upload bandwidth, is going to be required to stream and send all the video and data and mapping and pictures and who knows what else from the drones to the cloud and onto people and enterprises as the end users.

How many camera components, how many geolocation components, how many gyroscopic components, how many communications components (and will we be using 5G or 6G wireless broadband to deliver that bandwidth in five years or 10 years)?

How much solar paneling is going to be sold and how much more efficient will solar and water-based hydrogen fuel technologies be in another decade as these ever more mainstream drone applications and drone markets are created over the years?

Do you remember how often I used to tell you that the App Revolution was going to create “the largest market in the history of the planet?” I even [headlined one of my columns as such](#) , where I explained the burgeoning opportunity in smartphone and tablet apps:

“Billions of people, trillions of apps, and un-count-able app transactions, interactions, and entertainments and games played ... there are going to be a lot of winners and a lot of money to be made by those winners. The app revolution is an opportunity I’m taking very seriously with my time and money and I think any serious investor should be too.”

Well, drones too, will literally be interacting with billions of people every day and will have billions of different uses, accounting for trillions of annual interactions with drone technology in every facet of our lives. I expect that the broader drone economy will reach a trillion dollars annually in a decade. And that we’ll see at least a trillion dollars of market cap valuation created by that drone economy over the next 10 years too.

See, the most obvious applications for drones are agricultural, law enforcement and search and rescue missions. But drones (and to a further extent, robots) will also be patrolling campuses, driving buses, delivering packages and who knows what else. The

cost of the components, technologies as well as the platforms that drones and robots run on are dropping to price points that make mainstream adoption inevitable.

I personally have had many hours of enjoyment as well as [incredible high definition video footage](#) from the DJI Phantom 2 quadcopter drone I recently purchased from Amazon.

A friend of mine asked me about other possible applications for drones so I reminded him of the times we felt lost in the wilderness in upstate New York while camping and hiking. [Will lost hikers become mostly be a thing of the past?](#) In a few years, campers and hikers will throw a drone up in the air to get a visual on their surroundings and routes. The cost will be less than \$100 for a cheap aerial hiking drone that takes snapshots and you'll be able to get a really advanced one from Garmin and others in a few years for \$1,000 or more if you want all the features they'll have by then.

Drones, as I've found out since I recently started writing about the "Drone Revolution," are most often associated with the military. When people hear the word, "drone," they often think of stealthy, high-tech unmanned aircraft running missions and firing missiles in remote areas of the world.

If you actually look up the word drone, it means any type of pilotless aircraft, car, gadget or object. I'm going to pull out the remote-controlled dune buggy I have in storage to put a \$29 WiFi camera on it that I can control from an app on my iPhone. Boom — I've got a drone. I can drive it as I hike around my 40-acre ranch to make some killer footage of my property as it recovers from the Little Bear forest fire that whipped through here two years ago.

The average Joe is starting to see more articles about newer flying versions of my little remote-controlled dune buggy drone, the quad-copter. Speaking of which, we have our first good drone stock coming public soon: GoPro. As [Marketwatch's The Tell put it](#), "GoPro cameras also tend to be the "cameraman" on many drones." Ambarella, which

makes some of the chips that go into GoPro is another name I'm digging into as a Drone Revolution play.

As I researched the pros and cons of the potential consumer and commercial markets for drones, the potential for invasion of privacy concerns repeatedly came up. There are many new laws coming to address this issue, but the truth is that there are plenty of laws already on the books at both federal and state levels that will have to be enforced when people break them using drones. For instance, if taking pictures of somebody's house and property with a telescopic camera is already illegal, then doing it with a drone is also illegal.

Another example; the Google driver-less cars, also drones of course, have logged over 700,000 miles while filming and taking pictures of the nation's streets and addresses. Google, which was operating the drones, was invading people's right to privacy by putting those images directly up onto Google Maps. Google still operates those drones and Google is still accountable for any invasion of privacy or other laws that the drones might break while they're doing their thing — but Google now blurs out people's faces and license plates and other identifiable individual traits on the images it publishes on Google Maps.

As for drones breaking other laws, did you know that in the course of those 700,000 miles that Google's drone cars have logged, they've gotten a total of ... wait for it ... zero traffic violation citations?

Which leads me to today's close which is simply a Deep Thought of the Day. How many lives and how much time will be saved (not to mention money) because drones are so much safer on the road than people-driven cars? See below for other ramifications:

You can't stop a revolution that will impact our lives so dramatically on safety, efficiency and prosperity — which is exactly what the Drone Revolution really is.

Trends, companies, developments, politics change over time and you must stay on top of all of this if you're going to be a successful long-term investor. And just plain hype, along

with fraud and theft, are always rampant on Wall Street — and we also must do our best to avoid such losses along the way.

Long-time readers will recall [my repeated predictions from 2008-2011](#) about a coming App Revolution that would lead to a huge app stock market bubble. In the years since, with the gains in Priceline, Amazon, Google, Netflix and other stocks that I repeatedly highlighted in those articles and on TV, plus with the more than 20 app stocks like Facebook, Yelp, Zillow, King and others that came public, there's been nearly a trillion dollars of stock market valuation created for those of us who positioned ourselves for the App Revolution.

Is it possible that the Drone Revolution will create as much value for those who get in front of it as the App Revolution did? Of course. Is now the time to start investing for the Drone Revolution? Now is the time to do as much homework and learn as much about the potential markets and applications for the Drone Revolution so that you can indeed *start* to get ready to invest in its coming growth.

So without any further ado, let's jump in and look at 12 of the best positioned stocks to invest in the Drone Revolution.

Table of Contents

Part I. Components, chips, processors, etc.

1. IXYS Corp
2. Ambarella
3. Freescale Semiconductor
4. Invensense
5. JDS Uniphase

Part II. OEMs

1. AeroVironment
2. Boeing
3. Northrup Grumman
4. Lockheed Martin
5. John Deere

Part III. Commercial applications

1. FedEx
2. Amazon

IXYS Corporation- IXYS

[Overview](#) / [Financials](#) / [Scuttles](#) / [Tweets](#) / [News](#) / [Sentiment](#) / [Price Targets](#)



[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$13.06 (Market cap \$375.92M)

Net cash per share: \$3.14

2014 Revenue: \$336.3 million

Revolution Investing revenue growth rate estimates for next three years: 30-50 %

2014 Earnings per share (consensus): \$0.19

Revolution Investing EPS estimates for the next three years:: \$.80, \$1.01, \$1.35

We're talking about a company that supplies power controllers and other power chipsets that every robot, drone and wearable sold will need. The common denominator of all electronic devices, drones and robots is that they need power. Controlling that power efficiently is obviously going to be a huge factor in making drones, robots and wearables cheap enough to operate in a power-starved world. Solar-powered units that don't need recharging still need power chips.

The company's growing its top line at 15% per year and earnings growth will be much bigger than that if management executes. IXYS is currently valued at less than 1x sales and is seeing huge demand from industrial power and communications markets. With \$3 per share in net cash as well as \$0 debt, there's some financial flexibility here.

The company should report at least a \$1 per share in earnings next year, giving it a 10 forward price to earnings ratio. If the company's management delivers on margins and topline growth, we're looking at up to \$2 per share in earnings in two to three years. I first highlighted IXYS a couple years ago when I turned from long-time alt-energy bear to bull as the market finally bottomed about the same time I published my book "100 Stocks for the Clean Tech Revolution" and I recently started buying some for myself.

Revolution Investing Rating: 8/10

Ambarella Inc- AMBA

[Overview](#) / [Financials](#) / [Scuttles](#) / [Tweets](#) / [News](#) / [Sentiment](#) / [Price Targets](#)



[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$32 (Market cap \$

Net cash per share: \$7

2014 Revenue: \$183 million

Revolution Investing revenue growth rate estimates for next three years: 20-30%

2014 Earnings per share (consensus): \$1.17

Revolution Investing EPS estimates for the next three years:: \$1.50, \$1.80, \$2.20

Ambarella makes chipsets and software that record and transmit/upload HD video. The company's system-on-a-chip designs integrated HD video, image, and audio processing onto a single chip for delivering video and image quality, differentiated functionality, features, etc.

AMBA is trading at 4x sales and at 25x forward P/E. With topline growth of 20%-30% a year for the last few and for the next few years. Investors are paying up a bit for this name as video capture and sharing is likely to become a bigger part of just about every connected device we use and own. The company does have nearly \$7 a share in net cash, which gives management some financial flexibility. To be clear though, it's a long way down to "cheap" if the company doesn't deliver more topline growth in coming years.

AMBA's chips (which GoPro GPRO cameras use) are less of a commodity than GoPro's cameras and the other devices you'll find Ambarella's chips in. Picture Ambarella as the Intel of HD video recording. Look at the gross margins of Ambarella vs. GoPro to garner an idea of how commoditized their product is. The more commoditized, the lower the gross margins. Ambarella's gross margins are steady at nearly 70%, while GoPro's own gross margins have been falling: 52% in 2011, 43% in 2012, and 37% in 2013.

Revolution Investing Rating: 8/10

Freescale Semiconductor Ltd- FSL

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Price: \$23.53 (Market cap \$7.09B)

Net cash per share: \$2.34

2014 Revenue: \$4.33 Billion

Revolution Investing revenue growth rate estimates for next three years: 15-30%

2014 Earnings per share (consensus): \$-0.70

Revolution Investing EPS estimates for the next three years:: \$1.46, \$1.95, \$2.45

Freescale is a leader in microcontrollers (MCUs) and digital networking processors for the automotive, networking, industrial and consumer markets. Freescale technology makes the things you use every day smarter, from e-readers and tablets, to medical equipment and cars, to home appliances, computer networks and beyond.

Freescale is itself already positioning the company to enable the whole “Internet of Things” – what they call “a new world in which everyday objects not only connect but cooperate with each other, humans, environments and infrastructures” and what I’d call the WRD Revolutions. The company used to be part of Motorola and actually came to market with the first radio receiver/transmitter (ie, the "walkie-talkie") and continues to drive human ability to interact with electronics and each other via electronics, robots, drones and someday, wearables.

Revolution Investing Rating: 7/10

Ambarella Inc- AMBA

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[Overview](#) / [Financials](#) / [Scuttles](#) / [Tweets](#) / [News](#) / [Sentiment](#) / [Price Targets](#)



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Revolution Investing Rating: 7/10

InvenSense Inc- INVN

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[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$23.59 (Market cap \$2.04B)

Net cash per share: \$1.33

2014 Revenue: \$208.6 million

Revolution Investing revenue growth rate estimates for next three years: 25-40%

2014 Earnings per share (consensus): \$0.07

Revolution Investing EPS estimates for the next three years:: \$0.71, \$0.97, \$1.15

InvenSense, which, makes and sells micro-electro-mechanical system (MEMS) gyroscopes for motion tracking devices for all kinds of applications including smartphones, tablets...and drones. Drone growth, again, will be huge over the next five to ten years, and this is a company that is likely to have a component or two in many of the drones that will be sold and developed. The company's got a \$1.9BB market cap and there's a lot of potential upside from there, but with \$150MM cash along with \$125 million in long-term debt, this stock isn't as clean as the prior two picks. On the other hand, I'm looking at long-term revenue growth of at least 30% per year and potentially \$3 earnings per share by 2017.

The company's near-term business is being fueled primarily by their gyroscopic motion sensor technologies that they sell into consumer hand-held devices like smartphones and tablets. I think they'll be a huge direct beneficiary from the Drone Revolution, which is quietly becoming the most important investible trend for Revolution Investors like us.

Revolution Investing Rating: 8/10

JDS Uniphase Corp- JDSU

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Price: \$12.08 (Market cap \$2.84B)

Net cash per share: \$3.81

2014 Revenue: \$1.72B

Revolution Investing revenue growth rate estimates for next three years: 15-25%

2014 Earnings per share (consensus): \$0.42

Revolution Investing EPS estimates for the next three years:: \$0.55, \$0.73, \$0.91

The second part of our early Drone Basket, JDSU has been trying to break out and head above \$15 a share and we've got some gains in it already. This company's near-term business is being driven primarily by their fiber-optic-laser components, which they sell into equipment that Ciena, Cisco and Alcatel use to make their optical switches work. The business has long suffered from price wars with their competitors, but over the last couple of years, the industry finally consolidated to a point where margins are back on the rise, just as demand from carriers for optical switches is back and climbing. I'm less convinced that JDSU has a clear path to dominance in supplying drones with geolocation components in a meaningful manner as I am in some of the other pure-ish plays. But in addition to the telecom of the business, the main reason JDSU is actually going to be a big player in the future of drones. That is, the company has positioned itself as a leader in next-generation geolocation-component-for-drones. Read this for example, [MTS Selects JDSU to Launch Canada's First 3G-LTE Geolocation Solution](#) .

You know that [Amazon's going to be delivering packages](#) using drones in a few more years. You know that you see remote-control drones on TV — I even saw one on Modern Family, not exactly a tech-centric show, as my wife watched it last night. There are military and police enforcement applications for drones already spiking in use around the U.S. and the world. JDSU is likely going to have a component or two in many of those future drones and nobody knows it yet. The stock is down about 25% from its 52-week highs and is down — I'm not kidding 99% plus from its all-time bubble highs back in 2000.

JDSU is a "stealthy" way to play drones (hahah!) and the optical component business is finally rationalized and in a serious upswing cycle as carriers work to upgrade their networks. (I am long JDSU from recent buys.)

Revolution Investing Rating: 8/10

Part II. Original Equipment Manufacturers



AeroVironment, Inc.- AVAV

[Overview](#) / [Financials](#) / [Scuttles](#) / [Tweets](#) / [News](#) / [Sentiment](#) / [Price Targets](#)



[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$35.10 (Market cap \$792.16M)

Net cash per share: \$7.51

2014 Revenue: \$240.2 million

Revolution Investing revenue growth rate estimates for next three years: 40-60%

2014 Earnings per share (consensus): \$0.22

Revolution Investing EPS estimates for the next three years: \$0.56, \$0.81, \$1.12

AeroVironment is a technology solutions provider that designs, develops, produces, operates and supports an advanced portfolio of electric transportation solutions and electric-powered Unmanned Aircraft Systems (UAS). AeroVironment's comprehensive electric vehicle (EV) charging solutions include EV home charging, public charging, fast charging, data collection, grid-integrated communications and complete installation, training and support services for consumers, automakers, utilities, government agencies and businesses. AeroVironment's industrial electric vehicle charging systems support thousands of electric materials handling vehicles in mission-critical supply chains for Fortune 500 enterprises. AeroVironment's power cycling and test systems provide EV developers and EV battery manufacturers with market-leading simulation and cycling capabilities. Agencies of the U.S. Department of Defense and allied military services use the company's electric-powered, hand-launched unmanned aircraft systems to provide situational awareness to tactical operating units through real-time, airborne reconnaissance, surveillance and communication.

Most exciting is the company's prospects in bringing its growing drone businesses into the consumer and commercial markets from the military markets.

Revolution Investing Rating: 8/10

The Boeing Company- BA

[Overview](#) / [Financials](#) / [Scuttles](#) / [Tweets](#) / [News](#) / [Sentiment](#) / [Price Targets](#)



[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$126.79 (Market cap \$94.03B)

Net cash per share: \$16.70

2014 Revenue: \$88.20 Billion

Revolution Investing revenue growth rate estimates for next three years: 9-12%

2014 Earnings per share (consensus): \$5.80

Revolution Investing EPS estimates for the next three years: \$7.65, \$8.36, \$8.99

Boeing's probably the cleanest play on the Drone Revolution, though its certainly not the purest of Drone Revolution plays. That is, the company's main business has been manned aircraft and that business isn't going to go into secular decline anytime soon. The business and economic cycles will come and go, but even as drones and specifically unmanned aircrafts proliferate, it will drive the costs of all aircraft down, driving unit and even revenue growth for Boeing and the other manned aircraft manufacturers in decades ahead. Another blue chip way to play the WRD Revolutions, and one that will benefit in more ways than one.

Revolution Investing Rating: 7/10

Northrop Grumman Corp- NOC

[Overview](#) / [Financials](#) / [Scuttles](#) / [Tweets](#) / [News](#) / [Sentiment](#) / [Price Targets](#)



[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$119.83 (Market cap \$26.20B)

Net cash per share: \$18.14

2014 Revenue: \$24.40 Billion

Revolution Investing revenue growth rate estimates for next three years: 7-12 %

2014 Earnings per share (consensus): \$8.93

Revolution Investing EPS estimates for the next three years:: \$9.22, \$9.87, \$10.42

Northrop Grumman is one of the leaders in drones, especially for military purposes. The depth and breadth of the company's platforms and technologies portfolio is impressive, and will find a lot of search & rescue, along with domestic law enforcement and surveillance markets. The company's own PR explains that their drones "operate in areas where manned vehicles can't, allow for extended missions which are not limited by human endurance, and help to reduce risk to both national security, and human lives," which is a pretty darn good explanation of the upside of drones. Too bad their drones are pretty much used for military, ie targeted bombing in Arab nations.

Revolution Investing Rating: 5/10

Lockheed Martin Corporation- LMT

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[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$157.98 (Market cap \$50.97B)

Net cash per share: \$10.36

2014 Revenue: \$44.94 Billion

Revolution Investing revenue growth rate estimates for next three years: 8-10%

2014 Earnings per share (consensus): \$9.67

Revolution Investing EPS estimates for the next three years:: \$10.93, \$11.55, \$12.21

Lockheed Martin's one of the most aggressive of the military drone vendors in moving toward other markets before they've even developed – from disaster response to deep space exploration. Lockheed's own PR materials mix their drone technologies with their "robotic technologies." They're positioning their drones and robotics products for more mainstream applications and will find many commercial and consumer applications for their with real-time data, information and imagery if they actually move towards those markets successfully. Their Atlas robot could work without break to provide vital support in the aftermath of disaster as well as collect and provide real-time data for emergency crews. Their K-Max unmanned helicopter could be used for taxiing people mid-distances. And their unmanned aerial systems will provide eyes and ears in urban environments.

Revolution Investing Rating: 6/10

Deere and Company- DE

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Price: \$89.16 (Market cap \$32.22B)

Net cash per share: \$9.05

2014 Revenue: \$37.06 Billion

Revolution Investing revenue growth rate estimates for next three years: 10-15%

2014 Earnings per share (consensus): \$9.15

Revolution Investing EPS estimates for the next three years:: \$8.51, \$7.70, \$8.47

Drones are quickly moving from the battlefield to the farmer's field — on the verge of helping growers oversee millions of acres throughout rural America and saving them big money in the process. the data they collect — from identifying insect problems, watering issues, assessing crop yields or tracking down cattle that have wandered off — help farmers recover the investment, often within a year.

Farmers also can use drones to tailor their use of pesticides, herbicides, fertilizer and other applications based on how much is needed at a specific point in a field — a process known as precision agriculture

RoboFlight, which opened a facility in Des Moines this month to house data it collects from surveying land for farmers, has positioned itself to sell drones in much the same way as General Motors works with its dealers to peddle cars. The company has pacts in place throughout nearly a third of the United States with John Deere dealers who will showcase the devices and sell services like training and hardware right next to the big green tractors and combines displayed in their showrooms. As federal regulators struggle to define how drones can be used for commercial purposes, many countries around the world have loose guidelines for how these devices can be used. Drones are being used for agriculture in a slew of countries including Canada, Australia, Japan and Brazil. Riesterer & Schnell, Inc., announced recently that it has entered into an agreement with Precision Drone.

Officials of the multi-site John Deere dealer said they are very excited to be partnering with Precision Drone, which is based in Noblesville, Ind. Together, they will be offering the helicopter-style drones (hexacopters) to agriculture customers through their Wisconsin retail locations.

Putting drones to work

Aerial agriculture takes on a whole new meaning as unmanned aircraft join the farm workforce.

Part III. Commercial Applications



FedEx Corporation- FDX

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[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$151.32 (Market cap \$44.88B)

Net cash per share: \$9.82

2014 Revenue: \$45.57 Billion

Revolution Investing revenue growth rate estimates for next three years: 15-25%

2014 Earnings per share (consensus): \$5.28

Revolution Investing EPS estimates for the next three years: \$8.81, \$10.66, \$12.59

By far the biggest market for commercial drone applications will be the programmable drones, that are programmed to deliver routine packages for UPS, Amazon, FedEx and the Postal Service or that are programmed to drive a city's buses and trains and public transportation or even that are programmed to fly aircraft full of people as they fly around the world.

Obviously, the routine local delivery and transportation industries will be the first to be impacted by the drone revolution. Flying drones that deliver packages and driverless local buses will be showing up in wealthy developed cities in the next three to five years.

To be clear, it's not like all FedEx and UPS drivers will be gone in 3-5 years. Drones will be delivering 1-5% of the packages in wealthy big cities, but it'll take 10 years or so before delivery drones are taking jobs away from human drivers. The margins at both FedEx and UPS will expand as their costs of delivery drop. It's cheaper to pay a drone than a person to deliver packages.

Revolution Investing Rating: 7/10

Amazon.com, Inc.- AMZN

[Overview](#) / [Financials](#) / [Scuttles](#) / [Tweets](#) / [News](#) / [Sentiment](#) / [Price Targets](#)



[Price](#) / [Balance Sheet](#) / [Cash Flow Statement](#) / [Income Statement](#)

Price: \$337.49 (Market cap \$162.33B)

Net cash per share: \$18.83

2014 Revenue: \$78.12 Billion

Revolution Investing revenue growth rate estimates for next three years: 42-100%

2014 Earnings per share (consensus): \$.64

Revolution Investing EPS estimates for the next three years:: \$1.05, \$3.07, \$3.89

Amazon's the world's largest retailer and a large part of their success has been their free two-day and very cheap overnight delivery services. The company spends billions of dollars and untold resources every year paying UPS and FedEx to deliver all those packages to people's houses, apartments, offices and even campsites. Amazon's Jeff Bezos has famously stated his intention to start using drone delivery systems and that will cut their costs and result in immediate higher margins and profits for shareholders. Likewise, Bezos has long invested heavily in technology including robotics in his warehouses. There's much more cost-savings to be created using drones and robots and wearables at company's willing to make the investments now. Knowing Bezos and Amazon's consumer-oriented approach to everything they do, I wouldn't be surprised to see some Amazon branded wearables selling hot off the presses a few years out too.

Revolution Investing Rating: 8/10

The Drone-Dex Drone Stock Index

Go to [#DroneDex on Scutify.com](#) to see the latest charts and performance numbers of the Drone-Dex Drone Stock Index.

DRONE-DEX \$11,942

Edit | Rename \$30 (0.3%)

All Holdings: \$11,727 Today: \$51 • 0.4%

ANALYTICS 1w 1m 3m 1y YTD

Performance vs benchmarks

■ You ■ DJIA ■ S&P 500

+19.8% **+7.2%** **+14.1%**

Account value over time

Gainners

■ AMBA ■ INVN ■ LMT

Portfolio Breakdown

Gains	+\$1,968.76
Deposits	\$0.00
Dividends	\$0.00
Interest	\$0.00
Fees	\$0.00
Other	\$0.00
Total	+\$1,968.76

Portfolio Stats & Ratios

Stat	Value
P/E	25.5
P/B	3.1
ROA	5.0%
ROE	25.9%
PEG	1.2
EV/EBITDA	11.8
Beta	1.3
Dividend Yield	1.1%

Ticker	Shares	\$ Basis	\$ Basis / Share	Mkt Cap	52 Wk Range	1d 5d 1m Chart
AVAV AeroVironmen...	30	990.00	33.00	718M	\$21 - \$42	
NOC Northrop Gru...	8	992.00	124.00	26B	\$90 - \$128	
JDSU JDS Uniphase...	83	996.00	12.00	2.5B	\$10 - \$17	
AMBA Ambarella, Inc.	33	990.00	30.00	862M	\$13 - \$36	
LMT Lockheed Mar...	6	978.00	163.00	53.4B	\$117 - \$171	
BA BOEING CO/THE	8	1,016.00	127.00	87.9B	\$100 - \$142	
IXYS IXYS Corp.	83	996.00	12.00	370M	\$9.02 - \$14.87	
FSL Freescale Se...	50	1,000.00	20.00	6B	\$14 - \$26	
INVN InvenSense, ...	45	990.00	22.00	2.2B	\$15 - \$27	
DE Deere & Company	12	1,068.00	89.00	31.2B	\$79 - \$94	
FDX FedEx Corpor...	7	1,057.00	151.00	42.7B	\$106 - \$155	
AMZN Amazon.com Inc.	3	1,011.00	337.00	151.6B	\$279 - \$408	

* mutual funds quotes as of previous day

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