

THE EFFICIENT FIFTY

THE LEADING PRIVATE COMPANIES IN INDUSTRIAL AND ENERGY TECHNOLOGY



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INTRODUCING THE THIRD ANNUAL EFFICIENT FIFTY

Another year has passed, and this latest edition of the Efficient Fifty finds us seeing robust investment and growth in some places, and slower progress elsewhere. Since the inauguration of the Efficient Fifty three years ago we have focused our company selection process on the concept of making things work more efficiently. This way of thinking is not new – the people who oversaw provisioning of the British Royal Navy more than 200 years ago cared about efficiency. So too did Roman road builders and Egyptian architects. What's new is the impact that human activity is having on everything from waste in the ocean to reduced freshwater availability to a warmer climate. It has never been more important for the enterprises that make power, manufacture products, and transport goods to undertake those activities as efficiently as possible. This year's companies are focused on addressing that goal.

The evolution of efficiency technology has been both rapid and uneven. Investment in transportation technology continues, with considerable activity in vehicle electrification, charging infrastructure, and vehicle intelligence. Vehicle intelligence has been the focus of some especially substantial fundraising. Adjacent to transportation is logistics and mapping, with investments in sensor technology and imaging. On the other hand, the pace of technological progress associated with the production and transmission of electricity has been slower, even as declining prices drive growing deployments of wind and solar generation. Our exposure to that area in the Efficient Fifty has declined. Progress in industrial markets is steady, with the best success coming from highly-focused business models.

The 2019 Efficient Fifty reflects all of these developments, as Figure 1 illustrates. Transportation Technology is now its own sector, featuring 11 best-in-class companies addressing a wide range of challenges. The amount of activity here is enormous, and we could fill a book with only transportation-focused companies, but we have endeavored to include only the most differentiated firms. There are a total of 16 companies in Energy Management and Technology, which we have consolidated from two sectors to one. We have seen a lot of progress here but also some challenges. Our Industrial Efficiency exposure at 9 companies is down slightly from last year, while we have added one company to our Food, Water, and Air subsector. Adding sensors to our existing logistics and mapping sector drove some growth, and the new Logistics, Mapping, and Sensor sector includes a total of 11 companies.

Looking at our Transportation Technology sector in a little more detail, we highlight several of the most interesting electric vehicle platforms, including transit bus competitor Proterra, truck developer XOS (previously Thor), and pickup/SUV manufacturer Rivian. We are particularly interested in what we see happening in commercial vehicles. Top vehicle autonomy competitors including Aurora Innovation, Nuro, and Zoox all make the cut, and we once again highlight the fascinating truck platooning platform that Peloton Technology has created. Creating a viable economic model that supports the deployment of charging infrastructure is critical if vehicle electrification is to progress, and we highlight ChargePoint and Volta Charging.

Humanity's impact on the environment is growing – becoming more efficient is existential.

Continued investment in transportation, while the pace of progress on energy management is slower.

Redefined sectors reflect ongoing change and a shift in investment focus.

In Transportation Technology we highlight several commercial EV platforms, autonomous vehicle technology, and charging infrastructure.

We see a great deal of activity in our broadened Logistics, Mapping, and Sensor category. Investment in sensor technologies has driven growth in LiDAR (Laser Detection And Ranging) and we highlight competitors from Ouster to Innoviz to AEye. To be honest we would expect to see some consolidation, but we believe that large-scale deployment of autonomous vehicles cannot happen without LiDAR. The intersection of orbital and terrestrial imaging technology draws us to firms including Orbital Insight, Planet and Kespry. This year a new addition is flexible warehousing competitor Flexe, which we regard as an innovative solution in a field much in need of efficiency.

Substantial investments in sensor technology and imaging

Slow change has been a challenge in Energy Management and Technology, and we have made substantial alterations to our selected companies as a result. Gone are many of the distributed energy management companies. We have added several new competitors operating innovative platforms, including LevelTen Energy in commercial energy procurement, Redaptive in efficiency services, Gridium in building energy management and Arcadia Power in consumer engagement. Generate Capital's infrastructure-as-a-service model has provided an innovative path to financing renewable infrastructure and earns Generate a place on our list. New this year is Uplight, which is the result of a consolidation effort that pulled in Tendril, EnergySavvy, and FirstFuel among others. We continue to include best-in-class technology and service providers in storage and grid sensor technology.

A slower rate of change in Energy Management and Technology, but some interesting new platforms.

Last year we added an agriculture-focused category, with the objective of identifying efficiency opportunities within food production and distribution. This year we have refined our approach with a broader definition, and our Food, Water, and Air category adds BreezoMeter in air quality measurement. As we did last year, we are featuring Farmers Business Network's unique farmer-centered information and commerce platform, and Apeel Sciences' technology that enables efficient transportation of produce.

We add air quality to our Food, Water and Air category.

Steady progress is the theme in our Industrial Efficiency category, which includes 9 companies, down from 13 last year. Some broader and more ambitious business models have not worked out, and we've pared our selections accordingly. More focused businesses seem to be doing better, and we highlight Element Analytics' data readiness model, Falconry's predictive analytics, and AutoGrid's power grid expertise. We also include the two industry leaders in smart glass – View and Kinestral – based on our belief that there are huge opportunities for further efficiency gains in commercial buildings.

Steady progress in Industrial Efficiency, with focused business models doing better.

Each year that we assemble the Efficient Fifty we find ourselves talking to a relatively small group of well-informed investors, and this is reflected in our ranking. DBL Partners and Energy Impact Partners are particularly active, and each are invested in 5 companies within the Efficient Fifty, in line with far larger firms including GE Ventures and Mitsui. We also note a great deal of focus from efficiency-oriented investors including Activate Capital, Obvious Ventures, and G2VP. Given the importance of reducing the impact of human activity on our environment, it is remarkable how much expertise exists within a small group of companies.

A lot of expertise from a limited number of investors, such as DBL Partners, Energy Impact Partners.

This year's Efficient Fifty companies have raised a total of \$9.9 billion since the beginning of 2010, with the biggest year being 2019 at \$3.9 billion. Including capital-hungry vehicle technology companies like Zoox and Nuro has had an impact, as have major EV platforms like Proterra and Rivian. Looking at funding activity marketwide, it appears that 2019 may end up showing a decline from 2018, and we think certain sectors, such as LiDAR, may be entering a period of consolidation. We continue to see an appetite for investment in autonomous vehicle platforms as well as platforms in energy procurement.

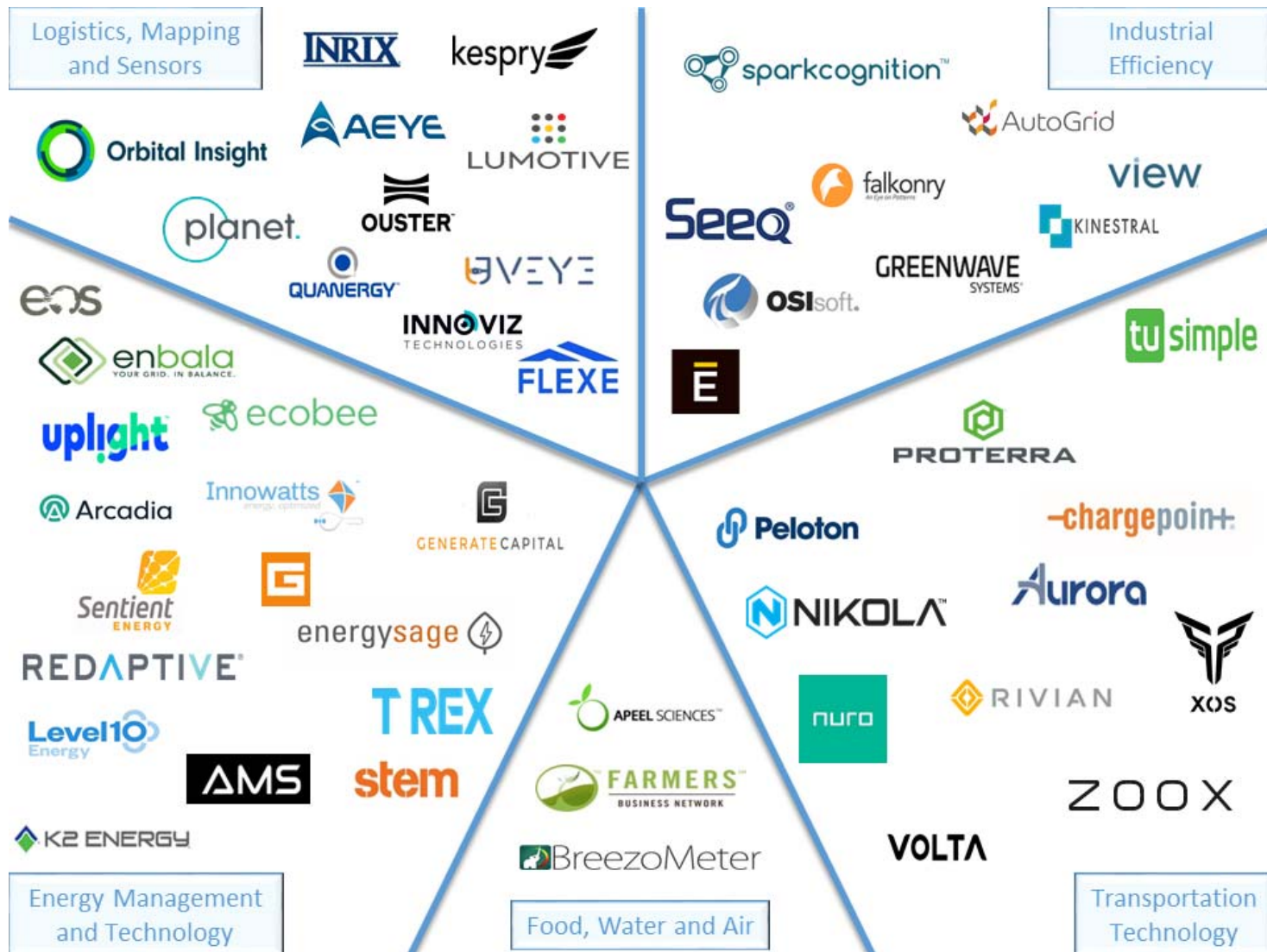
The mix of larger and smaller companies in this year's book is comparable to last year, although the number of companies at over \$100 million has declined as a result of exits and other factors. We believe that identifying small, high-growth companies is important, which is why we include a few companies just getting to revenue. As a rule, however, we continue to focus the Efficient Fifty on companies that are well into generating revenue, and we note that nine of our highlighted companies are at \$50 million or higher.

On the following pages are profiles for each of our Efficient Fifty companies. We hope you enjoy this third edition of the Efficient Fifty. Feel free to contact us, or to request copies of the 2019 Efficient Fifty, at josha@jmpsecurities.com or hcauley@jmpsecurities.com.

Almost \$10 billion raised since 2010, with \$3.8 billion of that in 2019.

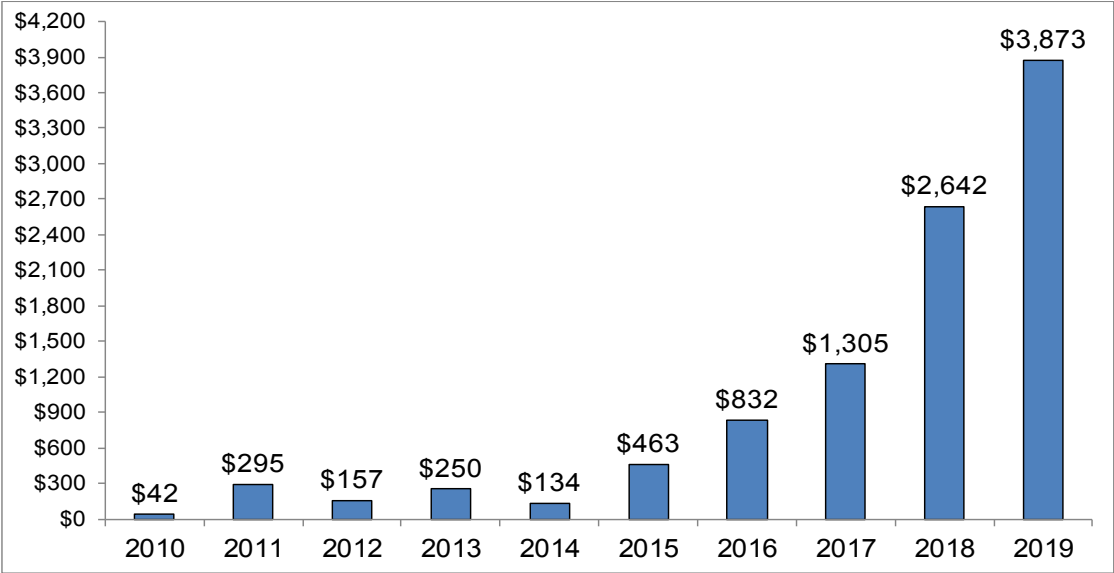
Nine of The Efficiency Fifty are at \$50 million in revenue or more.

FIGURE 1. The Efficient Fifty – Top Private Companies in Industrial and Energy Technology



Source: JMP Securities LLC, Company Disclosures

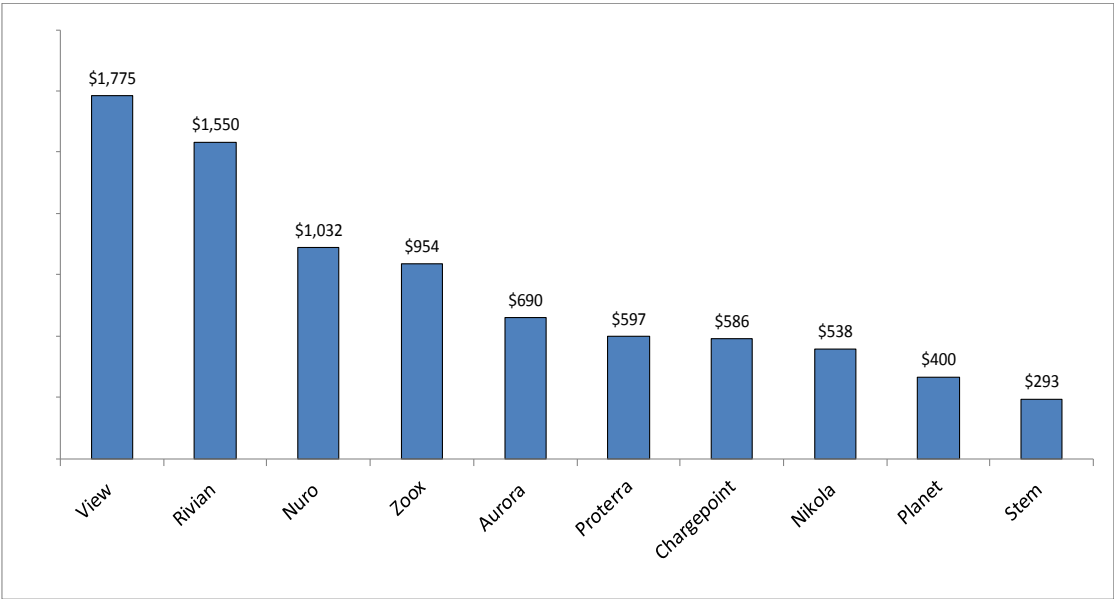
FIGURE 2. Private Funds Raised by The Efficient Fifty (\$m)



Propelled mostly by investments in transportation, 2019 was another big year.

Source: JMP Securities LLC, Company Disclosures

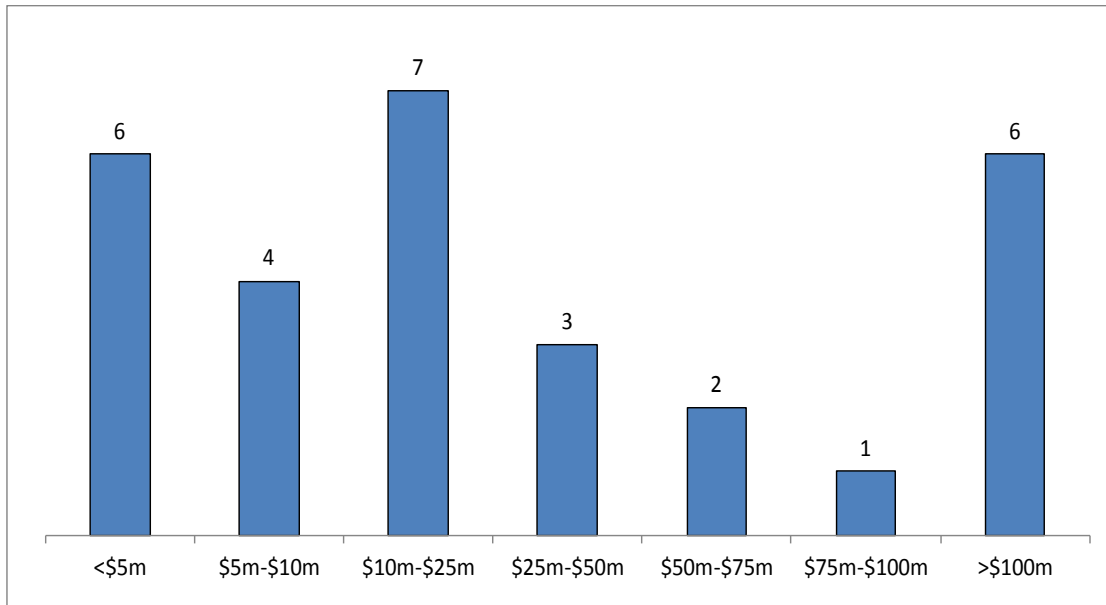
FIGURE 3. Top Funding Activity to Date Within The Efficient Fifty (\$m)



View still leads in terms of funds raised, although seven of the top ten companies are transportation-related.

Source: JMP Securities LLC, Company Disclosures

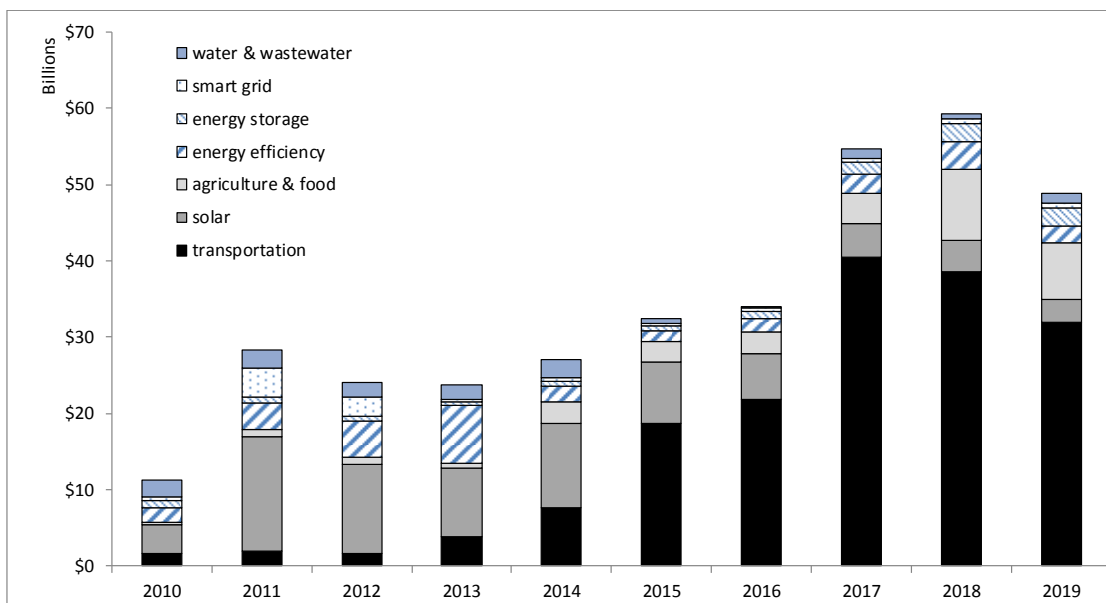
FIGURE 4. Annual Revenue Range for Companies in The Efficient Fifty (\$m)



Source: JMP Securities LLC, Company Disclosures

Nine companies are at \$50 million or greater revenue, although we note that some profiled companies aren't disclosing revenue.

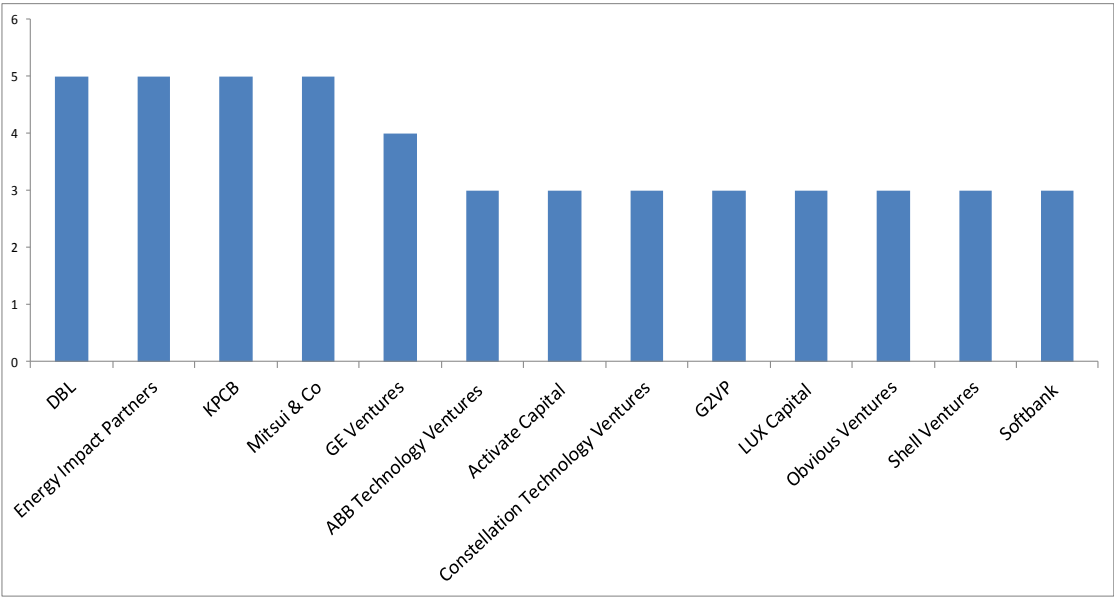
FIGURE 5. Global Private Funding For Key Efficiency Initiatives



Source: JMP Securities LLC, Company Disclosures

Funding has decelerated a bit from last year, although the mix continues to be transportation-heavy.

FIGURE 6. The Most Important Efficient Fifty Investors



DBL Partners, Energy Impact Partners, and Kleiner Perkins lead the field.

Source: JMP Securities LLC, Company Disclosures

AEye



Management

Luis Dussan (Founder, CEO)
 Blair LaCorte (President)
 Dr. Barry Behnken (Founder, SVP of Engineering)
 Ransom Wuller (Founder, CFO)
 Dr. Allan Steinhardt (Chief Scientist)
 John Stockton (SVP of Operations and Tech Strategy)
 Jordan Greene (Founder, Head of Partnerships)

Location Pleasanton, California
Founded 2013
Revenues \$8M-\$10M
Employees 100

Funding Rounds

Series A - \$21m
 Series B - \$40m

Key Investors

KPCB	Taiwania
Intel Capital	Hella Ventures
Airbus Ventures	LG
Aisin	SK Hynix
Subaru-SBI	Tyche Partners

Board Members and Advisors

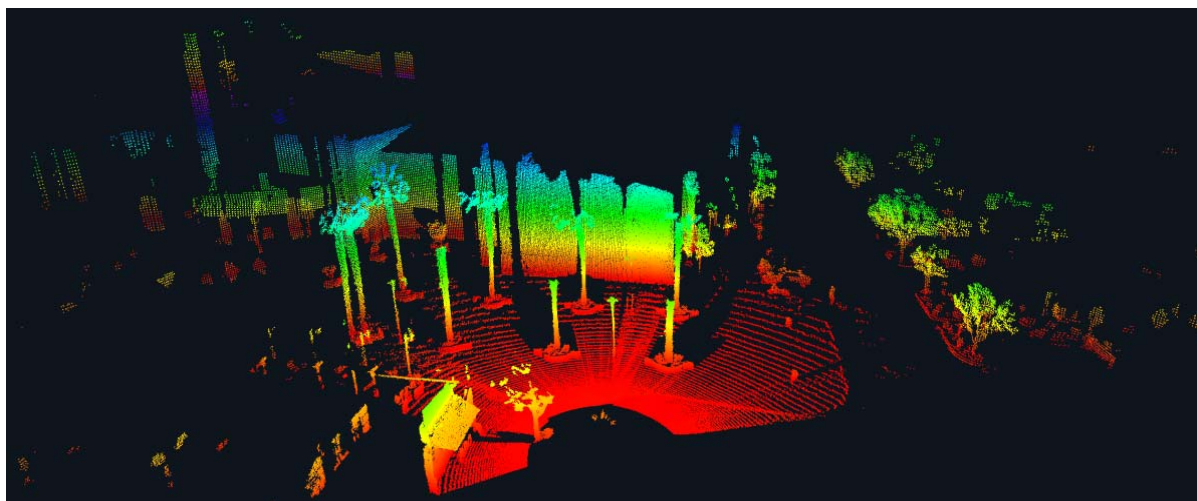
Wen Hsieh
 Huang Lee

Company Description

AEye is the creator of iDAR, a perception system that acts as the eyes and visual cortex for autonomous vehicles. With the use of Dynamic Vixels, an innovative sensor data type that combines pixels from 2D cameras with voxels from LiDAR, AEye is able to give autonomous vehicles the ability to see and perceive like a human driver. This real-time integration allows data to be handled more quickly, efficiently, and accurately at the sensor level rather than being processed at a later point in time. The resulting context allows artificial intelligence to evaluate a scene using 2D, 3D, and 4D information to identify location, track objects, and deliver insights with less latency, bandwidth, and computer power.

Leveraging the unique capabilities of Dynamic Vixel data, AEye's LiDAR can target and identify objects within 300 meters, 10x to 20x more accurately than a LiDAR-only product at 10x the speed.

Source: Company discussions, I3 connect



AMS



Management

Seyed Madaeni (CEO)
Mark Tholke (Chief Development Officer)
Carlo Woods (CFO)
Jesse Bryson (Global SVP of Market Development)

Location

San Francisco, California

Founded

2012

Revenues

[not disclosed]

Employees

80

Funding Rounds

July 2017 - \$34M Series B
July 2016 - \$200M Project Financing
July 2015 - \$18M Series A

Key Investors

Southern Company	Energy Impact Partners
Macquarie Capital	GE Ventures
ENGIE	DBL Partners
AGL Energy	

Board Members and Advisors

Susan Kennedy (Former CEO)
Nancy Pfund
Kevin G. Fitzgerald
Toby Corey
Kelly Warner

Company Description

AMS was formed by a team of energy industry veterans with experience in every aspect of the energy industry, from regulation and finance to technology and analytics. AMS is a SaaS company with a software platform that uses deep learning algorithms to optimize and transact complex energy assets in wholesale markets. AMS's industry-leading Transactive Energy Management software platform provides its partners with innovative economic optimization services to end-use customers, utilities, asset owners, energy developers, and grid operators.

AMS provides services for developers and owners of behind-the-meter distributed energy resources, front-of-the-meter energy assets, and full portfolios of energy resources. The AMS platform enhances financial returns on all energy asset types by co-optimizing amongst all available value streams, including end-use customer energy bill savings, grid and utility services, and wholesale market participation.

Source: Company discussions



Apeel Sciences



Management

James Rogers (Founder, CEO)
 Bill Strong (CFO)
 Megan Opp (Chief People Officer)
 Jordan Hudson (VP of Strategy)
 Louis Perez (Co-Founder, VP of Technology)
 Jenny Du (Co-Founder, VP of Operations)
 Erich Klawuhn (VP of Product)
 Jason De Turris (VP of Brand & Marketing)
 Matt Alexander (General Counsel)

Location Goleta, California
Founded 2012
Revenues [not disclosed]
Employees 200

Funding Rounds

Series A - \$5.8M
 Series B - \$33M
 Series C - \$70M

Key Investors

Andreessen Horowitz
 Viking Global Investors
 Upfront Ventures

Board Members and Advisors

Vijay Pande
 Walter Robb
 Brian Kaufmann
 Yves Sisteron
 Jason Spievak
 James Rogers

Company Description

Apeel Sciences is a company that is fighting the global food waste crisis by utilizing nature's tools to prevent waste in the first place — a sustainable approach to the world's growing food demands. The company's plant-derived technology helps USDA Organic Certified and conventional fresh food growers, suppliers, and retailers improve produce quality and extend shelf life, which minimizes food waste from the farm to the retail shelf to the kitchen table. Apeel formulations have been proven effective at reducing the rate of spoilage for dozens of USDA Organic Certified and conventional produce categories, and the company works with partners ranging from smallholder farmers and local organic growers to the world's largest food brands and retailers.

Founded by CEO James Rogers, Ph.D., Apeel Sciences' investors include Andreessen Horowitz, Viking Global Investors, Upfront Ventures, S2G Ventures, PowerPlant Ventures, DBL Partners, The Bill & Melinda Gates Foundation, UK Department for International Development, and The Rockefeller Foundation.

Source: Company discussions



Arcadia Power



Management

Kiran Bhatraju (Founder, CEO)
Kate Henningsen (COO)
Chris Haines (Head of Product)
Jake Lear (VP, Engineering)

Location

Washington, D.C.

Founded

2014

Revenues

\$15M-\$25M

Employees

95

Funding Rounds

Series A - \$6M

Series B - \$25M

Key Investors

G2VP
Energy Impact Partners
ValueAct Capital
Wonder Ventures

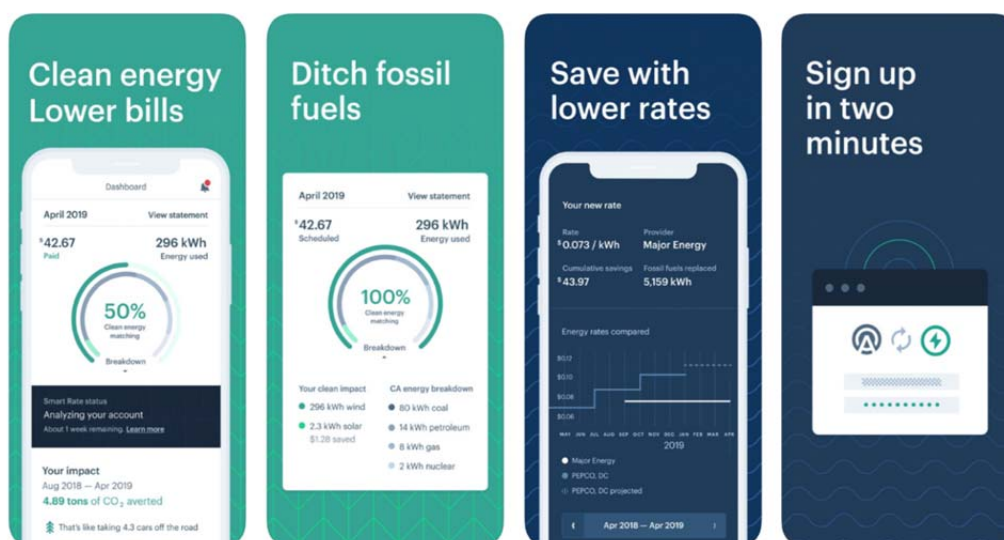
Board Members and Advisors

Alex Laskey
Ben Kortlang
Dan Leff
Sameer Reddy

Company Description

Arcadia Power gives both renters and homeowners easy access to renewable energy. The platform integrates with a user's utility account to monitor how much energy is used, and then matches the customer to more affordable renewable power. The platform is also capable of purchasing renewable energy certificates on the customer's behalf as necessary. Although Arcadia Power manages the utility account, including payments and transfers, customers are able to monitor energy usage, the billed amount, as well as savings and environmental impact on the company's dashboard or app. Currently serving over 250K members, Arcadia Power strives not only to drive the transition to clean energy, but to save its customers money in the process. In fact, Smart Rates save households on supply contracts an average of 20% on their energy.

Source: Company discussions



Aurora Innovation



Management

Chris Urmson (Co-founder, CEO)
Drew Bagnell (Co-founder, CTO)
Sterling Anderson (Co-founder, CPO)

Location

Palo Alto, California

Founded

2017

Revenues

[not disclosed]

Employees

500+

Funding Rounds

2019 - \$600M

2018 - \$90M

Key Investors

Amazon
Greylock Partners
Hyundai
Index Ventures
Sequoia Capital
Shell Ventures
T. Rowe Price

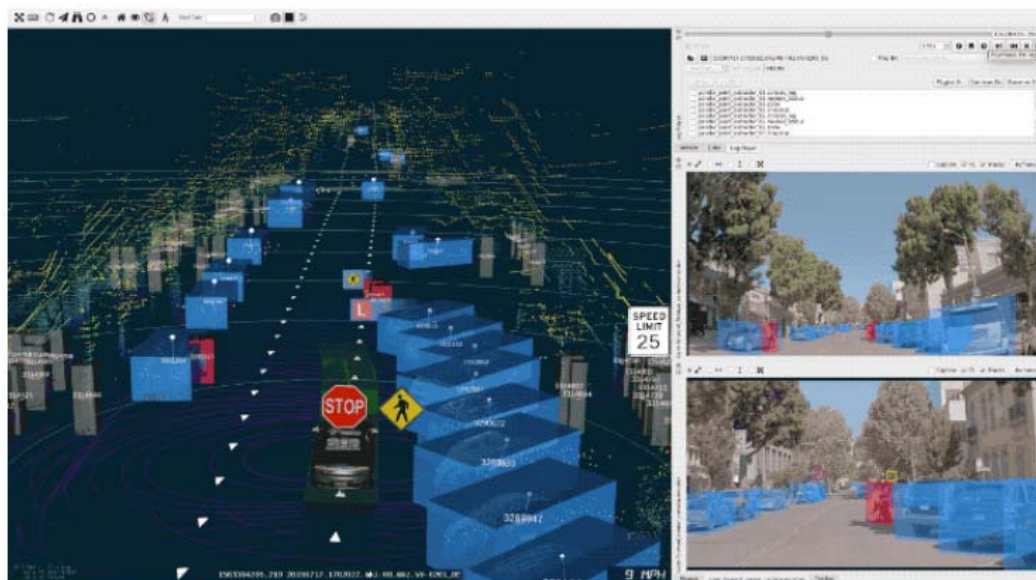
Board Members and Advisors

Chris Urmson
Carl Eschenbach
Ian Smith
Michelangelo Volpi
Reid Hoffman

Company Description

Aurora Innovation is developing a self-driving platform, dubbed the Aurora Driver, which combines hardware, software, and data services to allow vehicles to transport people and goods more safely and efficiently. The Aurora Cloud provides a common interface integrating vehicles powered by the Aurora Driver with passengers and goods, the transportation network, and the fleet-management apparatus that supports the system. Logistic services communicate with the cloud to dispatch and route vehicles between destinations and are able to serve a range of vehicles, including larger platforms, such as delivery trucks. Mobility services request rides from the Aurora Driver over a common API, which is then monitored by the cloud to support the vehicles and occupants once en route.

Source: Company website, i3 Connect, LinkedIn



AutoGrid



Management

Amit Narayan (CEO)
 Matthew Lee (CFO)
 Quique Schwarz (Chief Data Scientist)
 Rajeev Singh (VP of Engineering/Chief Software Architect)
 Om Moolchandani (CSO)
 Vish Ganti (General Manager, India)

Location Redwood City, California

Founded 2011

Revenues \$10M-\$20M

Employees 115

Funding Rounds

Sept. 2018 - \$32M Oct. 2012 - \$9M
 May 2016 - \$20M May 2012 - \$2.8M
 Jan. 2014 - \$12.8M

Key Investors

Energy Impact Partners	CLP
Envision Ventures	innogy
E.ON	Tenaska
ClearSky Power & Technology	National Grid Ventures
Foundation Capital	Orsted
Stanford University	Total SA

Board Members and Advisors

Amit Narayan
 Austin Bryan
 Dan Ahn
 Grant Allen
 Konrad Augustin
 Michael Donnelly

Company Description

AutoGrid's distributed energy resource (DER) flexibility management software allows utilities, electricity retailers, energy service providers, and owners of large asset portfolios to deliver clean, affordable, and reliable energy. The company's patented predictive controls technology leverages advanced data science, machine learning, and high-performance computing to predict, control, and optimize all DERs at scale and in real time. AutoGrid has nearly 5,000 megawatts of flexible capacity from distributed generation, storage, and demand response resources under contract. Its solutions help more than 30-35 global energy companies, including National Grid, Florida Power & Light, Eneco, CPS Energy, and NextEra Energy to balance supply and demand, increase grid reliability, integrate renewables, and deliver value-added services to customers. AutoGrid is one of the larger providers of DER flexibility management software in the industry.

Source: Company discussions

Flexibility management supports new utility business models



BreezoMeter



Management

Ran Korber (CEO & Co-founder)
Emil Fisher (CTO & Co-founder)
Ziv Lautman (Co-founder)
Ayana Hirt (CFO)

Location

San Francisco, California

Founded

2014

Revenues

\$1M - \$5M

Employees

50

Funding Rounds

Sept. 2018 - \$7.8M

July 2016 - \$3.2M

June 2015 - \$1.8M

Key Investors

Entrée Capital
Idinvest Partners
Phi Square Holdings
Jumpspeed Ventures
Launchpad Digital Health

Hella Ventures
Axess Ventures
Goldacre Ventures

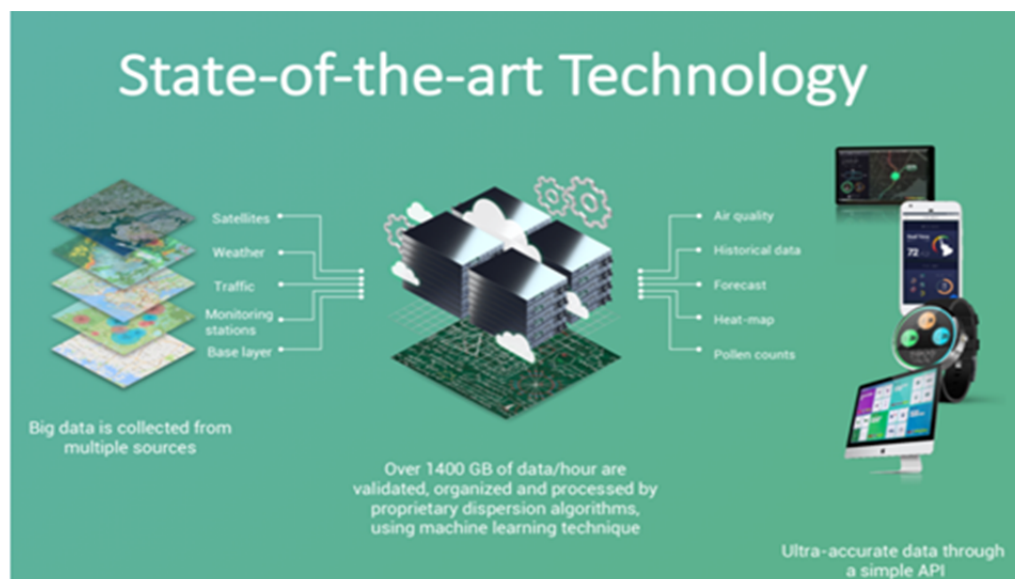
Board Members and Advisors

Aviad Eyal, Entrée Capital
Martin Rosenbaum, Phi Square
Ran Korber, BreezoMeter
Emil Fisher, BreezoMeter
David Bloom, Goldacre Ventures

Company Description

BreezoMeter provides relevant air quality and pollen data and actionable health recommendations, and is currently available in more than 30 countries, including most of Europe. BreezoMeter has increased the global coverage of air quality data, now available in 83 countries, and added data sources to enrich the coverage already offered. BreezoMeter's impact is far reaching. Via its partners and customers, BreezoMeter shows people what is in the air they breathe. While some air pollution at high concentrations is visible to the naked eye, many harmful pollutants we are exposed to daily are invisible. A major project undertaken this year has been focused on democratizing air quality data. Via a partnership with search giant Google, BreezoMeter was the source data for its new air quality card, displayed for searches of air quality/pollution in a given location. Air pollution awareness is growing, and BreezoMeter is proud to be at the forefront of progress, helping businesses and cities better engage with their customers and citizens.

Source: Company discussions and website



ChargePoint



Management

Pasquale Romano (CEO & President)
 Dave Baxter (Co-founder, VP of Engineering)
 Michael Hughes (Chief Commercial & Revenue Officer)
 Rex Jackson (CFO)
 Colleen Jansen (CMO, SVP - North America Policy)
 Christopher Burghardt (Managing Director, Europe)
 Eric Sidle (SVP, Engineering)
 Lawrence Lee (SVP, Operations and Services)
 Bill Loewenthal (SVP, Product)
 Jonathan Kaplan (General Counsel)

Location

Campbell, California

Founded

2007

Revenues

[not disclosed]

Employees

[not disclosed]

Funding Rounds

Nov. 2018 - \$240M	June 2017 - \$43M
Oct. 2013 - \$100M	Mar. 2017 - \$82M
May 2012 - \$47.5M	May 2016 - \$50M
Sept. 2010 - \$15M	May 2014 - \$22.6M
Feb. 2010 - \$14M	

Key Investors

BMW Ventures	Braemar Energy Ventures
Linse Capital	Pho Ventures
Siemens	Quantum Energy Partners
Canada Pension Plan	Clearvision
Daimler	GIC
Chevron Technology Ventures	

Board Members and Advisors

Axel Harries	Bruce Chizen
Jeffrey Harris	Mark Leschly
Michael Linse	Neil S. Suslak
Pasquale Romano	Richard Lowenthal
Rick Wagoner	Roxanne Bowman

Company Description

ChargePoint is the largest electric vehicle (EV) charging network in the world, with charging solutions in locations that EV drivers are likely to use at home, at work or while traveling. With more than 102,200 total charging spots and more than 1,554 Express DC fast spots, ChargePoint is the only charging technology company on the market that provides hardware and software solutions across every use case. Leading EV hardware makers and other partners rely on the ChargePoint network to make charging station details available in mobile apps, online and in navigation systems for popular EVs.

Source: Company discussion and I3 Connect



ecobee



Management

Stuart Lombard (President & CEO)
Scott Cleaver (COO)
David Brennan (CFO)
Jackie Poriadjian-Asch (CMO, CRO)

Location Toronto, Canada
Founded 2007
Revenues \$100M+
Employees 110

Funding Rounds

May 2018 - \$36M
Mar 2018 - \$62M
Aug 2016 - \$35M

Key Investors

Amazon Alexa Fund	BDC Capital
Energy Impact Partners	Northleaf Capital
GXP Investments	Relay Ventures
Thomvest Ventures	Tech Capital Partners
Ontario Capital Growth Corp.	
Export Development Canada	
Caisse de dépôt et placement du Québec	

Board Members and Advisors

[not disclosed]

Company Description

ecobee is a home automation company focused on saving consumers money, conserving energy, and seamlessly bringing home automation into consumers' lives. ecobee makes Wi-Fi enabled smart thermostats for residential and commercial applications that save customers in the U.S. up to 23% on their heating and cooling costs. The system is able to pair up to 32 sensors within the home and uses a low-power radio frequency (915Hz) to communicate with the ecobee thermostat for up to two years of battery life. The next-generation smart thermostat ecobee4 comes with Amazon Alexa and far-field voice recognition built in, allowing for hands-free control anywhere in the home.

Source: Company reports and website



Element Analytics



Management

Andy Bane (CEO)
Sameer Kalwani (Founder, VP of Product)
Stephen Walsh (EVP, Sales)
Sean McCormick (VP, Engineering)
Cara Hollis (Senior Director of Marketing)

Location

San Francisco, California

Founded

2015

Revenues

\$2M - \$10M

Employees

35

Funding Rounds

Jan 2018 - \$15M

Aug 2016 - \$4.5M

Nov 2015 - \$2.5M

Key Investors

Kleiner Perkins Caufield & Byers
Honeywell Ventures
GE Ventures
ABB Technology Ventures

Mitsui & Co.
Aster Capital
Blue Bear Capital

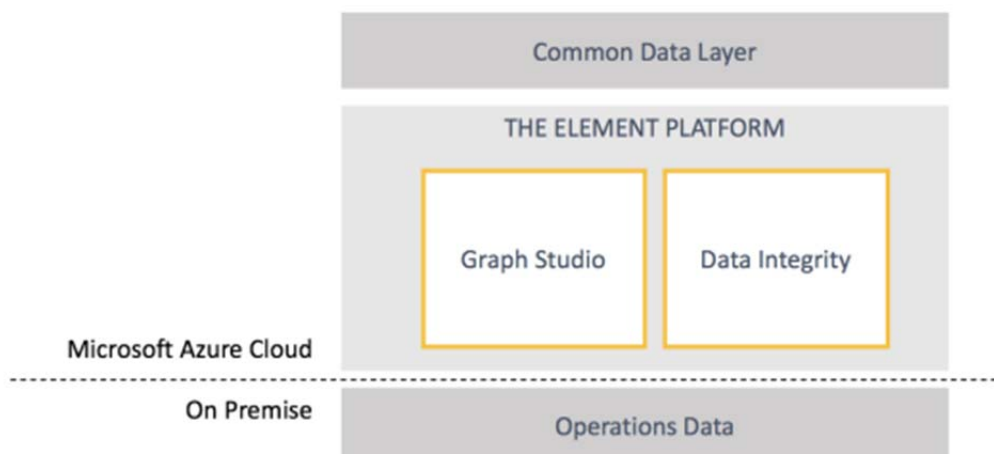
Board Members and Advisors

Andy Bane
David Mount
Veery Maxwell

Company Description

Element Analytics wants to unlock industrial data. The company's technology enables modern analytics systems to find insights that transform operational performance, which in turn can create hundreds of millions of dollars of value for customers. The Element Platform pulls data from thousands of enterprise sources and automates the creation of millions of data relationships to rapidly build, continuously update, and manage asset twins of industrial equipment. With Element, any person or system can access every reliable data point in the enterprise. The company has invested in building that knowledge in its initial base of energy and industrial customers. Founded in 2015, Element is based in the SoMa district of San Francisco.

Source: Company discussions



Enbala



Management

Bud Vos (President & CEO)
James Carr (CFO)
Malcolm Metcalfe (Founder & Chief Research Officer)
Jeff MacAulay (COO)
Trent Bowers (CCO & EVP of Sales)

Location

Vancouver, British Columbia

Founded

2003

Revenues

\$5M - \$10M

Employees

60

Funding Rounds

April 2019 - \$8.8M
May 2017 - \$17.5M
Sept. 2015 - \$3M
Mar 2015 - \$11M

Key Investors

ABB Technology Ventures
National Grid
GE Ventures
Obvious Ventures
EnerTech Capital
Edison Energy Holdings
Export Development Canada (EDC)
Chrysalix Venture Capital

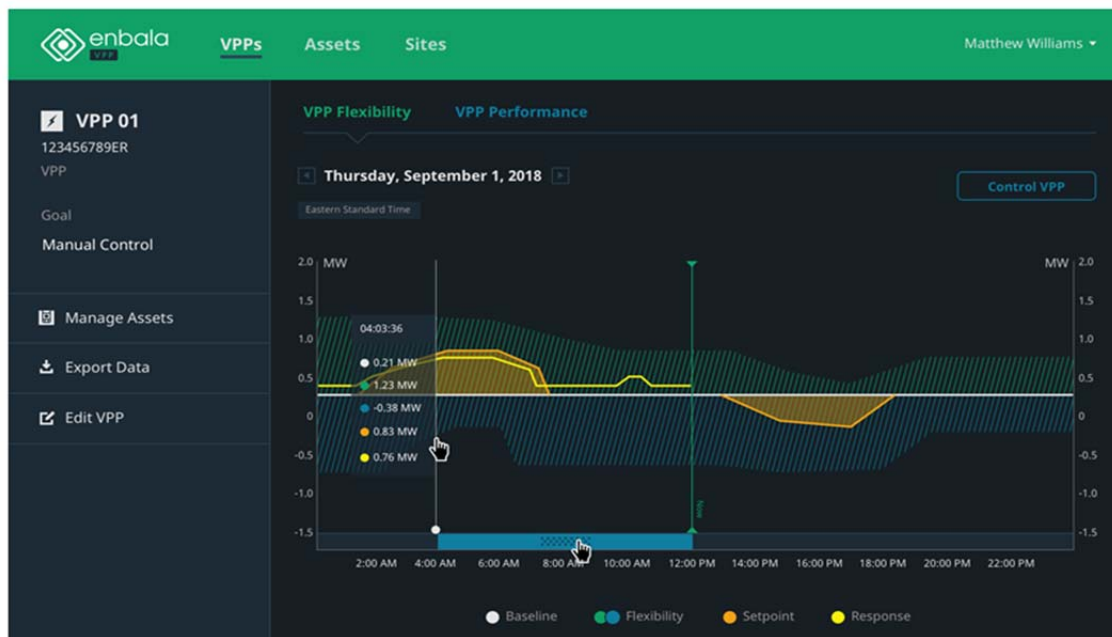
Board Members and Advisors

Bud Vos (President & CEO)
Robert Chiste (Chair, Independent)
Thomas Brady (Independent)
Dr. Cheryl Martin (Independent)
Scott Ungerer (EnerTech Capital)
Andrew Beebe (Obvious Ventures)
Daniel Westerman (National Grid)

Company Description

Enbala Power Networks is focused on making the world's power grids more reliable, efficient and predictable by harnessing the power of distributed energy. Enbala's real-time, energy-balancing platform is transforming energy system operations using a highly flexible approach for creating controllable and dispatchable energy resources. Enbala's platform captures and aggregates available customer loads, energy storage and renewable energy sources to form a network of continuously controlled energy resources. The platform dynamically optimizes and dispatches these resources to respond to the real-time needs of the power system – all without impacting customer operations.

Source: Company discussions



EnergySage



Management

Vikram Aggarwal (Founder and CEO)
 Jamie Biggar (CTO, VP Engineering)
 John Gingrich (SVP, New Business Development)
 Georg Bettenhauser (VP, Sales & Supplier Partnerships)
 Tess O'Brien (VP, Strategic Partnerships)
 Philip Gross (VP, Product)

Location Boston, Massachusetts
Founded 2012
Revenues \$250M [GMV]
Employees 35

Funding Rounds

Apr 2018 - \$2.7M
 May 2016 - \$1.4M
 Sept 2014 - \$1.5M
 July 2013 - \$0.4M

Key Investors

Clean Energy Venture Group
 Launchpad Venture Group
 Massachusetts Clean Energy Center

Board Members and Advisors

Gail Greenwald
 Kathryn Elmes
 Robert Gervis
 Vikram Aggarwal





Company Description

EnergySage is focused on providing a straightforward online marketplace for prospective residential solar customers to understand and compare different offerings. The company's platform allows users to research different offerings and receive quotes from EnergySage's network of pre-screened installers. Given the numerous considerations surrounding not only the solar power equipment itself, but also the available financing options, there is considerable value in being able to compare different proposals in a uniform way.

As a result of its unique position, EnergySage collects 2 to 3 million data points per day regarding the market dynamics of the U.S. solar industry. The data, available on the company's website, is frequently used by government agencies, non-profits, journalists, universities, and investors and offers insights into the broader U.S. solar market.

CEO and founder Vikram Aggarwal founded EnergySage following a 15-year career at Fidelity Investments, where he specialized in private equity investments. He brings a substantial breadth of experience in financial markets to EnergySage.

Source: Company discussions

My Marketplace	My Quotes	Messages	How It Works	Promotions
« BACK TO MY QUOTES <div>  </div>				
Summary	Installer	Equipment	Costs & Benefits	
	Lechmere Solar ★  Accept Offer Contact Installer My Notes	Broadway Solar ★  Accept Offer Contact Installer My Notes	Main Solar ★  Accept Offer Contact Installer My Notes	
Ratings & Reviews	★★★★★ (1)	★★★★★ (6)	★★★★★ (20)	
Labor Warranty	7 years	5 years	10 years	
Electricity Need Met	99%	99%	95%	
Equipment Package Quality	E S P	E S P	E S P	
Price per Watt	\$4.96 / W	\$3.80 / W	\$4.25 / W	
Net Upfront Price	\$15,100	\$9,472	\$11,950	

Eos Energy Storage



Management

Joe Mastrangelo (CEO)
 Mack Treece (CFO)
 Jeff Nelson, PhD (Director of R&D)
 Daniel Friberg (SVP -- Engineering)
 Parth Day, PhD (SVP -- Supply Chain)
 Philippe Bouchard (SVP, Development & Marketing)
 Jeffrey Wiener (SVP, Sales)

Location

Edison, New Jersey

Founded

2007

Revenues

[not disclosed]

Employees

60

Funding Rounds

Oct. 2016 - \$52M
 May 2015 - \$23M
 Jan. 2015 - \$15M
 Dec. 2014 - 2.1M
 Nov. 2014 - \$2.5M

Key Investors

AltEnergy LLC
 NRG Energy
 Fisher Brothers
 Yorktown Partners

Board Members and Advisors

Russell Stidolph (Chairman)
 Jim Hughes

Company Description

Eos Energy Storage is focused on providing safe, reliable, and cost-effective energy storage solutions. The company's energy storage technology uses zinc hybrid cathode materials and a water-based electrolyte to deliver cost-effective energy storage and reliability that Eos believes can compete with lithium-ion based solutions. Products are focused on grid-scale storage, and the company reports that it has been able to hit a \$160/kWh cost point with its DC battery system. Having recently announced a multi-gigawatt manufacturing JV in Pittsburgh, EOS has secured the necessary footprint to scale.

Source: Company discussions



Falconry



falconry
An Eye on Patterns

Management

Nikunj Mehta (Founder & CEO)
Dan Kearns (CTO)
Greg Olsen, Ph.D. (SVP, Product)
Crick Waters (SVP, Customer Success)
Sanket Amberkar (SVP, Marketing & Partnerships)

Location

Sunnyvale, California

Founded

2012

Revenues

(not disclosed)

Employees

50

Funding Rounds

June 2018 - \$5.5M

Feb. 2017 - \$5.3M

Key Investors

Polaris Ventures
Zetta Venture Partners
Presidio Ventures
Start Smart Labs
Basis Set Ventures
Fortive Corporation

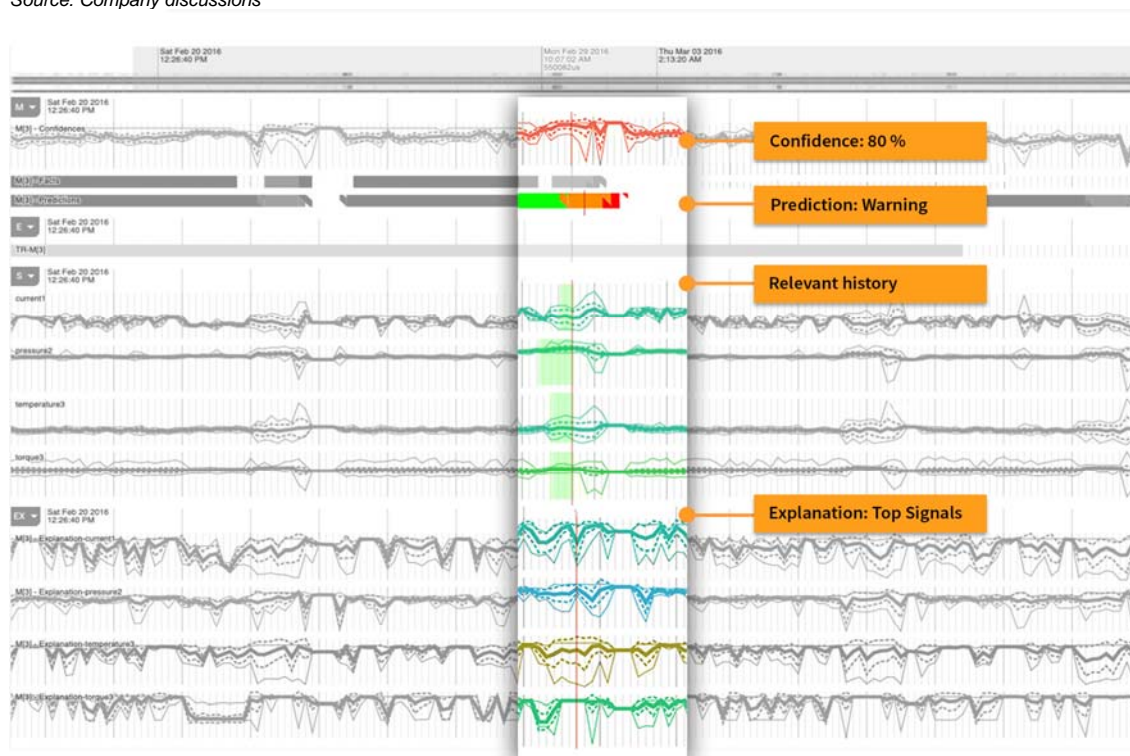
Board Members and Advisors

Nikunj Mehta (Founder & CEO)
Parveen Jain
Mark Gorenberg

Company Description

Falconry's technology is enabling process engineers to identify early indications of potential downtime, quality problems, and yield declines by recognizing patterns in real-time data. Using Falconry, industrial leaders are improving their operations by utilizing predictive analytics at commercial scale. The company has invested heavily in its user-ready AI interface for condition discovery and recognition. Falconry's interface can use any existing time series data, automatically extract pattern features from the data, and learn to distinguish unique patterns. It then presents its findings as an intuitive timeline to business users and obtains user-defined condition labels, resulting in millions of dollars in saved operating costs.

Source: Company discussions



Farmers Business Network



Management

Amol Deshpande (CEO, Co-founder)
Charles Baron (VP of Product, Co-founder)
David Delaney (CCO)
Ed Rowe (VP of Engineering)
Eric Carnell (General Counsel)
Kelby Kleinsasser (VP of Operations)
Maria Olide (CFO)

Location

San Carlos, California

Founded

2014

Revenues

\$100M-\$200M

Employees

450+

Funding Rounds

Nov. 2017 - \$110M	May 2015 - \$15M
Mar. 2017 - \$40M	Apr. 2014 - \$4.6M
Oct. 2016 - \$20M	

Key Investors

Kleiner Perkins Caufield & Byers
DBL
Google Ventures
T. Rowe Price
Temasek

Board Members and Advisors

Andy Wheeler
Nancy Pfund
Randy Komisar
Eric Kelle
John Vaske
Kathleen Ligocki

Company Description

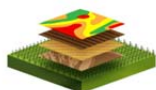
Farmers Business Network, Inc. is an independent farmer-to-farmer network. The company's mission is to connect the world's farmers in order to make them profitable for generations to come. FBN makes on-farm decisions easier with unbiased data-driven insights and brings the best value products and services directly to the farm. FBN members receive access to comprehensive farm benchmarking, real-world seed performance analysis and field-seed matching, data mapping, and pricing analytics based on over 250+ million acre-events of real-world precision agronomic data. The FBN Direct ag inputs commerce platform redefines the customer journey for ag inputs purchasing by providing farmers with unbiased product selection, easy product discovery, and transparent pricing. FBN Crop Marketing and risk management provides advisory and execution services to make marketing easier for farmers. The FBN network spans the U.S. and Canada with over 9,700 members and 35M acres on the platform.

FBN blends the best of midwestern agricultural roots and Silicon Valley technology as a completely independent company representing farmers first. The FBN mission to democratize farm information has earned the support of world-class investors such as GV, DBL Partners LLP, Kleiner Perkins Caufield Byers LLP, T. Rowe Price, and Temasek.

Source: Company discussions

How It Works

Farmers Business NetworkSM is an independent network of thousands of America's most advanced farmers.



Agronomic Intelligence

Access farming's most advanced analytics driven by the combined intelligence of millions of acres.



Smarter Buying

Cut the bull. Save thousands of dollars with FBNSM Direct's manufacturer-direct input prices & radical price transparency.



Profitable Marketing

Get new opportunities to sell your crop and always know when you are in the money.

FLEXE



Management

Karl Siebrecht (Co-founder, CEO)
David Glick (CTO)
Deirdre Runnette (Chief People Officer & General Counsel)

Location	Seattle, Washington
Founded	2013
Revenues	[not disclosed]
Employees	135

Funding Rounds

Series A - \$15M
Series B - \$43M

Key Investors

Redpoint Ventures
Madrona Venture Group
Prologis Ventures
Tiger Global Management
Activate Capital

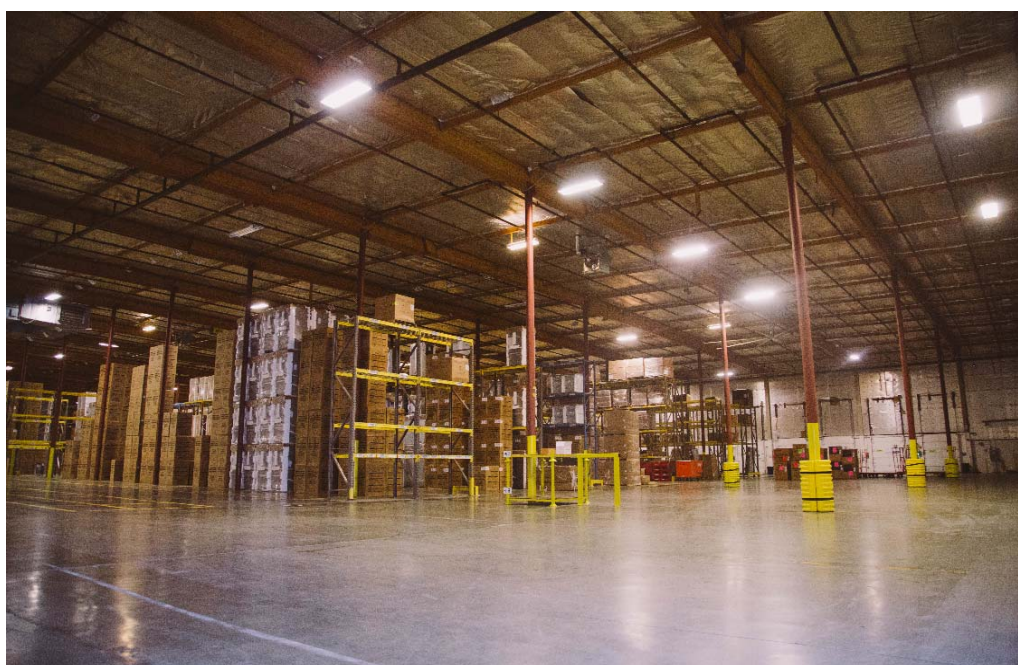
Board Members and Advisors

Karl Siebrecht (Co-founder, CEO)
Edmond Yue (Co-founder)
Francis Duong (Co-founder)
Raj Atluru
Ryan Sarver

Company Description

FLEXE is a leader in on-demand warehousing, helping forward-looking brands create structural flexibility across their warehouse and fulfillment networks. With the use of the FLEXE platform, which spans across 1,100+ warehouses, and a team of logistic experts, retailers and brands use FLEXE to create dynamic e-commerce fulfillment networks and resolve warehouse capability constraints while paying only for the capacity and services used. As a result, customers benefit from lower transportation and logistic costs and greater product distribution. Serving household names such as Walmart, Ace Hardware and Staples, FLEXE's scalable solution is also uniquely tailored to serving earlier-stage, venture-backed e-commerce companies, with examples including Casper and Cargo.

Source: Company discussions



Generate Capital



GENERATE CAPITAL

Management

Scott Jacobs (Co-founder, CEO)
Jigar Shah (Co-founder, President)
Matan Friedman (Co-founder, CIO)
Jack Stark (CFO)
Jeff Ross (Managing Director)

Location San Francisco, California
Founded 2014
Revenues \$1B in Total Asset Value
Employees 50

Funding Rounds

2017 - \$200M

Key Investors

Alaska Permanent Fund Corporation

Board Members

Scott Jacobs (Co-founder, CEO)
Jigar Shah (Co-founder, President)
Matan Friedman (Co-founder, CIO)
Richard Kauffman (Chairman)
Raj Atluru
Jared Brimberry
Jeff Colin
Jason Fish
Lynn Jurich

Company Description

Generate Capital is an investment and operating platform leading the nation's infrastructure transition, and the only one-stop shop for sustainable infrastructure pioneers. Partnering with leading project developers and technology companies, Generate has established market leadership in many emerging infrastructure classes, including behind-the-meter battery storage, residential community solar, organic waste management, and alternative powered transportation and material handling fleets. As a diversified infrastructure company with operations in power, waste & water, and transport, Generate is built from the ground up to help its partners succeed and scale by providing different types of capital and services to grow emerging asset classes in infrastructure. The company has more than 20 origination partners and \$1 billion of assets.

Source: Company discussions



Greenwave Systems

GREENWAVE
SYSTEMS®

Management

Martin Manniche (Co-founder, CEO)
Christos Lagomichos (COO)
Siddhartha Dattagupta (CTO)
Peter Wilmar Christensen (Co-founder, CFO, GM EMEA)
Eskild Hansen (Chief Design Officer)

Location Irving, California
Founded 2008
Revenues \$100M+
Employees 325

Funding Rounds

Series C - \$45M
Series B - \$19M
Series A - \$12M

Key Investors

EDBI
The Westly Group
E.ON
Singapore Technologies Telemedia
Craton Equity Partners

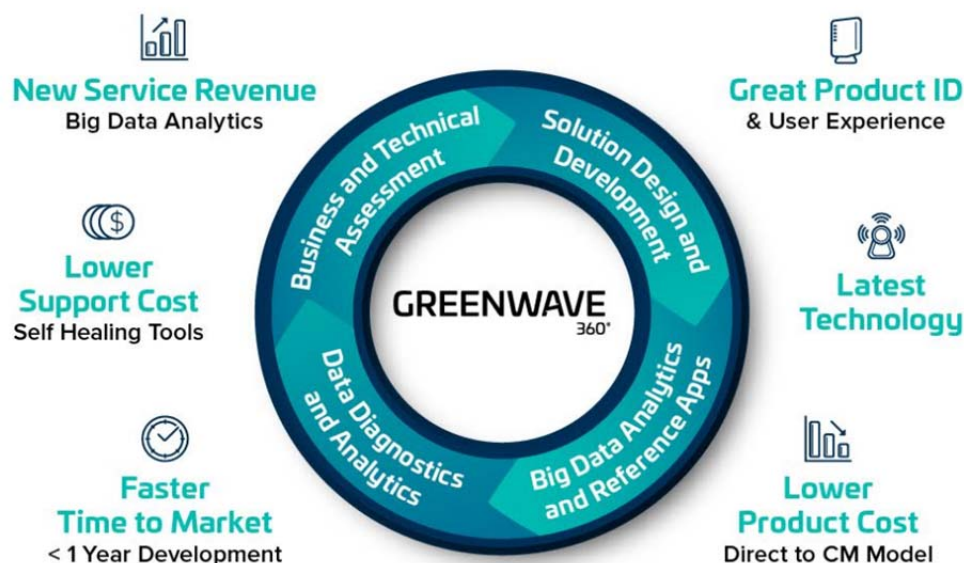
Board Members and Advisors

Martin Manniche
Peter Wilmar Christensen
Stephen Miller
Nikhil Eapen
Paul Ng
Romulo Pontual
Kevin Wall
Steve Westly

Company Description

Greenwave Systems has created a solution that allows people and the machines they use to connect easily, quickly, and safely. The company's AXON platform supports a wide range of Internet-of-Things and Machine-to-Machine architectures, with a particular focus on eliminating the challenges that arise from working with different hardware protocols and services. Modular in design and built with security in mind, the AXON platform can be scaled and adapted as the number of connected devices and standards continues to proliferate. Greenwave has established relationships with major OEMs and component suppliers including Qualcomm, IBM, Broadcom and Verizon.

Source: Company discussions



Gridium



Management

Adam Stein (President, Co-founder)
Tom Arnold (CEO, Co-founder)

Location

Menlo Park, California

Founded

2012

Revenues

\$2M-\$5M

Employees

20

Funding Rounds

Series A - \$3.9M

Key Investors

Navitas Capital
Arafura Ventures

Board Members and Advisors

Adam Stein
Tom Arnold
Travis Putnam
Sheeraz Haji (Advisor)

Company Description

Gridium has developed a software solution that can improve building operations, lower energy use and costs, and streamline maintenance communication via an easy-to-use mobile and desktop application. Currently serving over 1,500 commercial buildings spanning 200 million square feet, Gridium works with staff, occupants, and vendors to boost service levels and transparency with the use of its market-leading software for operational analytics and data-driven sustainability. More recently, Gridium announced its new Gridium Alpha unit that is intended to bring costless upgrades to Gridium buildings.

Source: Company discussions



Innoviz



Management

Omer Keilaf (Co-founder, CEO)
 Oren Rosenzweig (Co-founder, CBO)
 Oren Buskila (Co-founder, Chief R&D Officer)
 Amit Steinberg (Co-founder, CTO)
 David Elooz (Chief Photonics Officer)
 Eldar Cegla (CFO)
 Ronnen Lovinger (COO)

Key Investors

SoftBank
 Samsung Ventures
 SK
 China Merchants Capital
 Shenzhen Capital Group
 New Alliance Capital

Location Rosh Ha'Ayin, Israel
Founded 2016
Revenues \$10M-\$25M
Employees 280+

Funding Rounds

2019 - \$170M
 2017 - \$73M
 2016 - \$9M

Board Members and Advisors

Zohar Zisapel (Co-founder, Chairman)
 Emanuel Timor
 Ran Achituv

Company Description

Innoviz is a leading manufacturer of high-performance, solid-state LiDAR sensors and perception software that enable mass deployment of autonomous vehicles. The company is supported by tier-one strategic partners, including Magna and Samsung, and plans to introduce its products in BMW vehicles beginning in 2021. Launched in 2017, InnovizPro is a solid-state LIDAR that offers outstanding performance and value for automotive and other applications. InnovizOne is an automotive-grade LiDAR sensor that provides superior 3D sensing for Level 3 to Level 5 autonomous driving.

Source: Company reports, i3connect, Crunchbase



Innowatts



Management

Siddhartha Sachdeva (Co-founder, CEO)
 Akhlak Ahmed (Co-founder)
 Krishnan Kasiviswanathan (COO)
 Eric Danziger (CRO)
 Jason Davis (CFO)
 David Boundy (CTO, GM - Europe)

Location

Houston, Texas

Founded

2013

Revenues

\$20M

Employees

70

Funding Rounds

2019 - \$38M

2017 - \$6M

Key Investors

Energy Impact Partners
 Shell Ventures
 Iberdrola Ventures
 Energy & Environment Investment
 PERSEO
 Veronorte

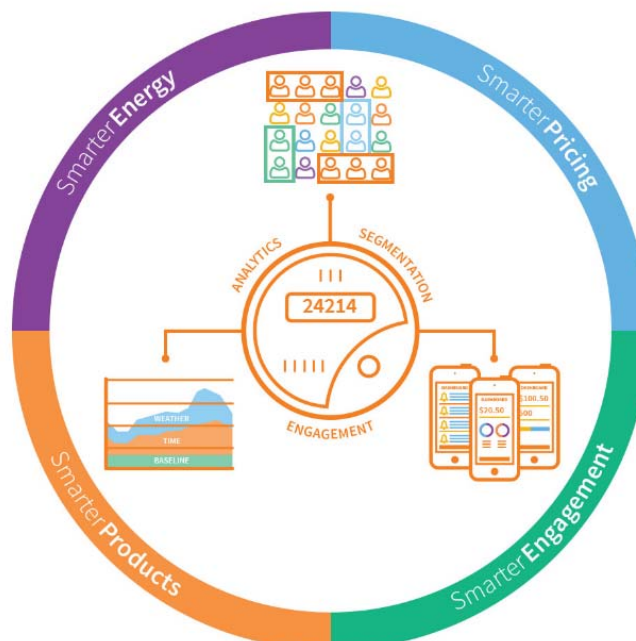
Board Members and Advisors

Siddhartha Sachdeva
 Diego Diaz
 Rebecca Klein, JD

Company Description

Innowatts is a leading provider of AMI-enabled, predictive analytics and AI-based solutions for utilities, energy retailers and smart energy communities. With the combination of active data from utility smart meters and a wide array of internal and external variables, Innowatts is able to create disaggregated views of customer consumption without the need for additional investments in sub-metering or device-level monitoring. As a result, the system is able to produce highly accurate and time-tested predictive models that can be applied across a wide range of geographic, climatic, operating and regulatory environments. The system currently spans over 21+ million energy consumers and results in up to a 30% reduction in the cost of energy across the energy value chain, while also providing a more reliable and personalized energy experience.

Source: Company reports, i3connect, Crunchbase



INRIX



Management

Bryan Mistele (Founder & CEO)
Joseph Berry (CRO, Automotive)
Madhu Jagannathan (CFO)
Mark Daymond (CTO)
Rose Fechko (CMO)
Scott Sedlik (CRO, Public Sector)
Kristin Lindsay (General Counsel)

Location

Kirkland, Washington

Founded

2005

Revenues

\$80M - \$120M

Employees

350

Funding Rounds

2005 - \$6.1M	2011 - \$37M
2006 - \$10M	2015 - \$36M
2007 - \$15M	

Key Investors

August Capital
Bain Capital
Venrock
Kleiner Perkins Caufield & Byers
Porsche SE
Intel Capital

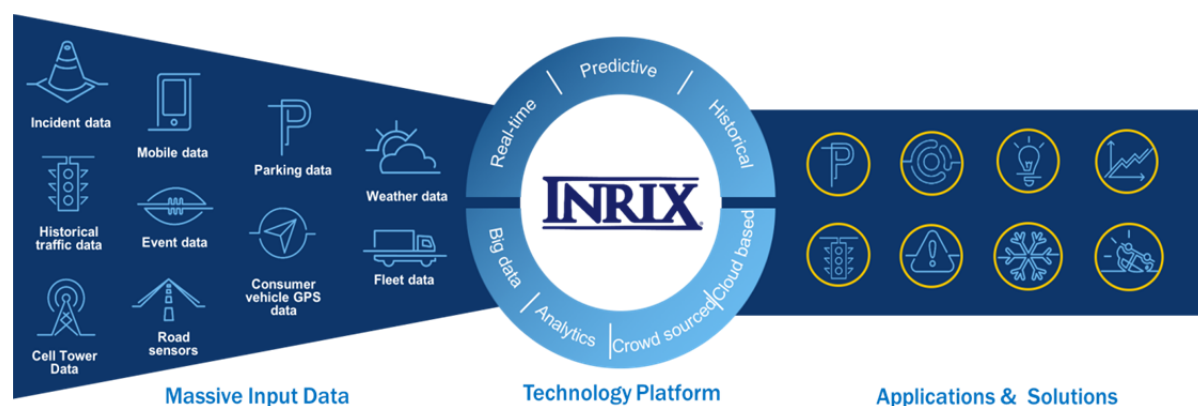
Board Members and Advisors

Ajay Agarwal
Brian Ascher
Bryan Mistele
Diane Irvine
John Johnston
Philip Von Hoggen
Kendra Vandermeulen
Mike Gerling
Tony Posawatz

Company Description

INRIX is a provider of connected car services and transportation analytics. The company leverages data from a wide variety of public and private sources in order to enable services including connected vehicles, parking management, dynamic data for city planning and traffic flow optimization. Of particular interest is the ability the INRIX platform offers to identify and alleviate traffic hotspots, a growing problem in urban environments. More recently, INRIX expanded its offering to include solutions for automakers and transportation agencies to aid in the successful deployment of autonomous vehicles. The company's customers include automakers, governments, mobile communications network operators, and a variety of other enterprises.

Source: Company discussions



K2 Energy



Management

Robert Horito (CEO & President)
 Dr. James Hodge (Co-founder, CTO)
 David Hu (CFO)
 Eric Villarreal (VP, Operations and Technical Sales)
 Arsen Khouznoutdinov (BDO)

Location

Henderson, Nevada

Founded

2006

Revenues

\$25M - \$50M

Employees

41-50

Funding Rounds

2018 - \$1.2M

Key Investors

[not applicable]

Board Members and Advisors

[not disclosed]

Company Description

K2 Energy's lithium-ion battery technology delivers high power and energy density without compromising safety. K2's cell technology experiences no thermal runaway, has low capacity loss and impedance growth, is lightweight and up to a third of the size of conventional lead acid batteries. It can be cycled to 100% depth of discharge allowing cells, batteries and systems to meet, or often exceed, energy needs and potentially avoid the need for redundant capacity. K2's battery technology improves power and energy at extreme temperatures and can exceed the performance of other traditional lithium chemistries by up to 2-3x, potentially reducing or eliminating the need for thermal management while reducing total cost of ownership with improved calendar and cycle life.

Source: Company website and reports, i3 Connect



Kespry



Management

George Mathew (Chairman and CEO)
 Jeff Palmer (President)
 Kirk Marple (CTO)
 Langley Eide (COO, CFO)

Location Menlo Park, California
Founded 2013
Revenues \$10M - \$15M
Employees 70

Funding Rounds

Nov. 2017 - \$33M
 June 2016 - \$16M
 Oct. 2014 - \$10M

Key Investors

DCM Ventures
 Lightspeed Venture Partners
 G2VP
 Shell Technology Ventures
 Cisco Investments
 ABB Ventures

Board Members and Advisors

David Mount
 Jason Krikorian
 John Vrionis
 Langley Eide

Company Description

Kespry's drone-based aerial intelligence platform provides critical information and analytics to customers under a 'bring-your-own-drone' model as the company transitions to being more of a processing platform than a drone manufacturer. The fully-integrated, end-to-end, cloud-enabled platform delivers highly accurate imaging to customers at a fraction of the cost and time required by traditional solutions. Important target markets include mining and resource management, as well as catastrophe response and insurance claim processing. Customers include Farmers Insurance, Hancock Claims Consultants, Catastrophe Response Unit (CRU), Fluor, Lehigh Hanson/Heidelberg, Sully-Miller/Colas USA, and Webcor.

Source: Company discussions



Kinestral



Management

S.B. Cha, Ph.D. (CEO)
Howard Turner, Ph.D. (Co-founder, CTO)
Sam Bergh, Ph.D. (Co-founder, COO)
Ian Chao (President, Kinestral Taiwan)
Anna Brunelle (CFO)
Alok Gupta (Chief Strategy Officer)
Paul Nagel (Chief Product Development Officer)

Location Hayward, California
Founded 2010
Revenues [not disclosed]
Employees 400+

Funding Rounds

Series A \$23M
Series B \$30M
Series C \$94M
Series D \$118M

Key Investors

5AM Ventures
AGC
Alexandria Venture Investments, LLC
Capricorn Investment Group
Katerra, Inc.
SK Holdings Co., Ltd.
Versant Ventures

Board Members and Advisors

Samuel Colella
Dipender Saluja
Scott Rocklage
Bruce Sohn
Moohwan Kim
Jung Hoon Lee

Company Description

Kinestral is a leader in smart glass tinting technology, offering superior functionality, appearance, and user experience. Currently focused on commercial windows, the technology is broadly applicable across materials and has strong use cases spanning across numerous end markets, including construction, transportation, and wearables. Rather than looking to deliver complete windows, Kinestral is focused on integrating with building product manufacturing and distribution ecosystems. Currently installed in 14 countries around the world, Kinestral's solution has positioned itself to scale rapidly. The company's proprietary manufacturing process supports best-in-class yields and a powerful go-to-market strategy via strategic partnerships with large, global industry participants that should facilitate rapid adoption around the globe.

Source: Company discussions



LevelTen Energy



Management

Bryce Smith (Founder, CEO)
 Eric Snyder (CTO)
 Vicky Eriksson (Chief of Staff)
 Rob Collier (VP, Developer Relations)
 Chris Watmore (VP, Analytics)
 Andrew Bishop (Product Director)
 Jason Tundermann (VP, Business Development)
 Jason Mortimer (VP, Sales)

Location Seattle, Washington
Founded 2016
Revenues [not disclosed]
Employees 30+

Funding Rounds

2019 - \$20.5M
 2017 - \$6.8M

Key Investors

Prelude Ventures
 Techstars 2014 Ventures

Board Members and Advisors

Bryce Smith (Founder & CEO)
 Tim Woodward
 David Cohen
 Satbir Khanuja

Company Description

LevelTen Energy is the leading global renewable energy marketplace and procurement platform. The company's mission is to expand the market for renewable energy by facilitating frictionless clean energy procurement for corporate and other large energy buyers. The LevelTen Marketplace, a comprehensive database of nearly every clean energy project under development in North America, makes it easier for companies of all sizes to meet their renewable energy goals through power purchase agreements (PPAs). The company has also developed the LevelTen Dynamic Matching Engine, which uses proprietary algorithms to process all of that information to match buyers and sellers in optimal ways. In addition, the company has re-engineered the procurement process from end to end, using software to make components like RFP solicitation and PPA performance monitoring more efficient.

To date, Fortune 500 companies have procured more than \$1 billion of renewable energy through the LevelTen Energy platform. LevelTen also facilitated a groundbreaking aggregated procurement deal with Bloomberg, Cox Enterprises, Gap Inc., Salesforce and Workday. Founded in 2016, LevelTen is located in Seattle, Washington, USA.

Source: Company discussions



Lumotive



LUMOTIVE

Management

Bill Colleran, Ph.D. (Founder & CEO)
Gleb Akselrod, Ph.D. (Founder, CTO)
Axel Fuchs (VP - Business Development)

Location

Bellevue, Washington

Founded

2018

Revenues

Pre-revenue

Employees

18

Funding Rounds

[not disclosed]

Key Investors

Bill Gates
Intellectual Ventures

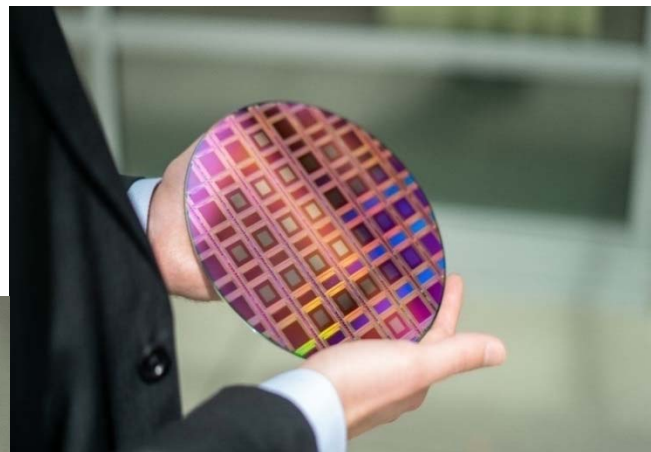
Board Members and Advisors

Bill Colleran
Gleb Akselrod
Conrad Burke

Company Description

Lumotive is developing a solid-state LiDAR device for the automotive industry based on beam-steering technology. By leveraging semiconductor devices designed using metamaterials principles, the LiDAR unit is able to achieve an unprecedented combination of high performance and low cost. Unlike a traditional LiDAR system, Lumotive has developed a revolutionary beam steering technology called a liquid crystal metasurface, as opposed to a mechanical device, which enables a truly solid-state system. The approach should allow for rapid and precise beam steering at a commercially viable price point.

Source: Company reports and discussions



Nikola

**Management**

Trevor Milton (Founder, CEO)
Mark Russell (President)
Kim Brady (CFO)

Location

Pheoniz, Arizona

Founded

2015

Revenues

[Not disclosed]

Employees

200

Funding Rounds

Series D - \$265M

Series C - \$214M

Series B - \$44.0M

Series A - \$14.7M

Key Investors

CNH Industrial
Bosch
Hanwha
Worthington Industries
ValueAct

Board Members and Advisors

[not disclosed]

Company Description

Nikola Motor Co. is a pioneer in electrified powertrain solutions for the heavy-duty truck market. Nikola's product offering includes battery-electric ("BEV") and hydrogen-electric ("FCEV") solutions. In addition to manufacturing zero-emission class 8 trucks, the company is also developing a network of hydrogen fueling stations in order to meet hydrogen fuel demand for its FCEV customers.

Nikola's BEV trucks will be sold directly to customers. However, in regard to FCEV trucks, Nikola plans to offer an industry-first "bundle lease" where customers receive the FCEV truck, H2 fuel, and maintenance based on a fixed rate per mile, allowing operators to have excellent insight into total cost of ownership. To date, the company's existing order book reflects more than 14,000 FCEV truck pre-orders, representing approximately \$10B of revenue.

Source: Company reports and discussion



Nuro



Management

Dave Ferguson (Co-founder, CEO)
Jiajun Zhu (Co-founder)

Location

Mountain View, California

Founded

2016

Revenues

[not disclosed]

Employees

350+

Funding Rounds

2019 -\$940M

2018 -\$92M

Key Investors

SoftBank
Greylock Partners

Board Members and Advisors

[not disclosed]

Company Description

Nuro is working to develop and operate a fleet of self-driving vehicles that deliver local goods, helping merchants get products to their customers quickly, affordably, and safely. Led by world-renowned experts in robotics, artificial intelligence, computer vision, and product design, Nuro has been providing driverless deliveries to the general public since 2018. Currently partnered with Kroger in Houston, Texas, following a successful pilot program in Scottsdale, Arizona, Nuro allows customers are able to shop for groceries from any computer or smartphone, and have them delivered the same day for just a small fee.

Source: Company Website, I3 Connect, LinkedIn



Orbital Insight



Management

Dr. James Crawford (Founder & CEO)
Kevin O'Brien (CBO)
AJ DeRosa (CRO)
Jim Cook (CFO)

Location Palo Alto, California
Founded 2013
Revenues [not disclosed]
Employees 130

Funding Rounds

May 2017 - \$50M
June 2016 - \$15M
March 2015 - \$8.7M
February 2014 - \$1.5M

Key Investors

Sequoia Capital ITOCHU Corporation
Intellectus Partners, LLC CME Ventures
Lux Capital GV
Clearvision Ventures Envision Ventures
Geodesic Capital
Balyasny Asset Management

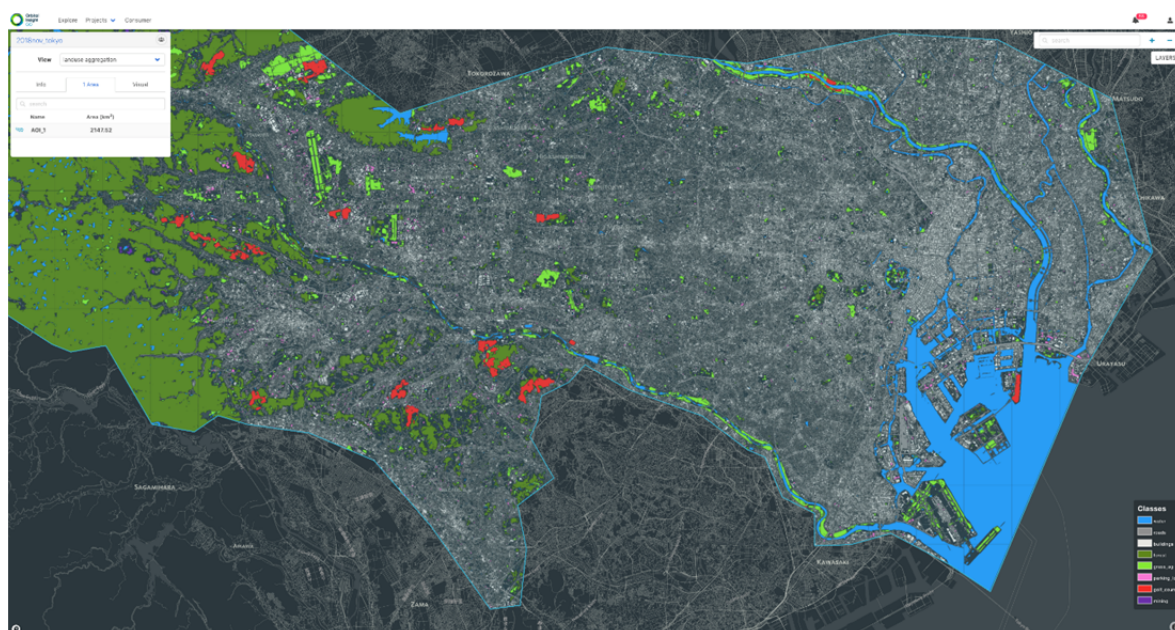
Board Members and Advisors

Michael Coles
George Hoyem
William Coughran
David J. La Placa

Company Description

Orbital Insight leverages artificial intelligence and computer vision to analyze petabytes of multi-source geospatial data, including satellite and synthetic aperture radar (SAR) imagery, location intelligence, and vessel traffic (AIS) data, in order to help clients understand what is happening on and to the Earth. By monitoring the world's geopolitical and economic activities with unprecedented timeliness, Orbital Insight provides the best possible information to inform an organization's revenue, operations, and policies.

Source: Company Discussion



OSIsoft



Management

Dr. J. Patrick Kennedy (Founder & CEO)
 Bob Guilbault (COO)
 Michael Siemer (President)
 Richard Beeson (CTO)

Location

San Leandro, California

Founded

1980

Revenues

\$450M-\$500M

Employees

1,350

Funding Rounds

Oct. 2011 - \$3.3M

Jan. 2011 - \$135M

Key Investors

SoftBank Vision Fund
 Mitsui & Co.

Board Members and Advisors

Jenny Linton Dr. J. Patrick Kennedy
 Eric Streed Virginia Smith
 Patricia Kennedy

Company Description

OSIsoft has developed and marketed a broad-based solution for aggregating and managing data from a wide variety of operating environments and application-specific software providers. The platform, dubbed the PI System, captures and structures data from operational equipment— sensors, power supplies, manufacturing tools, even large structures like ships— and serves it up in a coherent manner that allows customers to boost production, save money, improve safety, or conduct analytics. Importantly, PI provides an interface between the highly fragmented operating environment and the more limited number of large data management environments that customers often want to work with. The platform's value extends from simple data aggregation to more powerful uses, including predictive failure analytics and operational modeling.

Source: Company discussions



Ouster



Management

Angus Pacala (Co-founder, CEO)
Mark Frichtl (Co-founder, CTO)
Darien Spencer (VP, Operations)
Myra Pasek (General Counsel)

Location	San Francisco, California
Founded	2016
Revenues	\$10M - \$25M
Employees	150+

Funding Rounds

2017 - \$27M
2019 - \$60M

Key Investors

Amity Ventures
Carthona Capital
Cox Enterprises
Fontinalis Partners
Tao Capital Partners

Board Members

Angus Pacala (Co-founder, CEO)
Mark Frichtl (Co-founder, CTO)
Susan Heystee
Zach Frankel
Isaac Pritzker
David Blau

Company Description

Ouster is developing a spinning LiDAR technology that utilizes a high level of integration, which allows for smaller, less expensive, more robust sensors. The company's OS-1 sensor is intended for robotic and industrial applications and the OS-2 sensor is intended for the automotive market. The OS-2 sensor offers 240m range and is designed to withstand the stress of real-world shocks, vibrations, and ingress that supporting highway-speed, autonomous driving will entail. In targeting roughly 50% of its business at non-automotive applications, Ouster's differentiated go-to-market strategy should help the company gain share as those applications involve a shorter time to market as compared to automotive. In recent months, Ouster has signed contracts with NVIDIA and for Postmates' delivery rover.

Source: Company discussions



Peloton Technology



Management

Steve Boyd (Co-founder, CEO)
Dr. Josh Switkes (Co-founder, Chief Architect)
Dave Lyons (Co-founder, CIO)
Chris Gerdes (Co-founder, Board Member)

Location Mountain View, California
Founded 2011
Revenues < \$1M
Employees 67

Funding Rounds

Series B - \$60M
Series A - \$17M

Key Investors

Omnitracs	Intel Capital
DENSO	Mitsui USA
Volvo Group	B37 Ventures
Schlumberger	Lockheed Martin
Nokia Growth Partners	Birchmere Ventures
BP Ventures	UPS Strategic Enterprise Fund

Board Members and Advisors

Dr. Lawrence Burns
Imran Kizilbash
Mark Lydon
Ken Arnold
Chris Gerdes

Company Description

Peloton Technology is a connected and automated vehicle technology company dedicated to improving the safety and efficiency of U.S. and global freight transportation. Peloton offers its technology in cooperation with truck manufacturers, and the requisite hardware and software will be installed on new trucks and integrated with the trucks' existing throttle, braking and other vehicle control systems. The company works closely with Bendix, a large supplier of braking systems to class 8 truck manufacturers. Peloton is also working with several North American truck OEMs, including close collaboration with Peterbilt, Kenworth and Volvo Trucks.

Peloton's driver-assisting truck platooning technology, PlatoonPro, integrates throttle and braking control, radar, external sensors, active truck safety systems, and vehicle-to-vehicle communication to allow two Peloton-equipped trucks to travel closer together in order to boost fuel efficiency. PlatoonPro enables safe aerodynamic drafting resulting in ~7% fuel savings across the pair of trucks while maintaining a constant gap between the trucks. Peloton's new highly-automated trucking solution, AutoFollow, connects a fully-automated follow truck with a driver-controlled lead truck to platoon. Robust electronic vehicle-to-vehicle (V2V) communications between the trucks allow the human-driven lead truck to guide the steering, acceleration, and braking of the follow truck. AutoFollow will leverage the skills and experience of a professional driver to reduce many of the technical challenges associated with designing and deploying standalone highly automated trucking technologies.

Source: Company discussion and website



Planet



Management

Will Marshall (Co-founder & CEO)
 Robbie Schingler (Co-founder & CSO)
 Nathan Dickerman (CCO)
 Laura Malinasky (Chief Legal and People Officer)

Location

San Francisco, California

Founded

2010

Revenues

[not disclosed]

Employees

450

Funding Rounds

~\$400M Raised to date

Key Investors

Founders Fund	Yuri Milner
First Round Capital	Data Collective
Innovation Endeavors	Draper Fisher Jurvetson
AME Cloud Ventures	Capricorn Investment Group
Industry Ventures	O'Reilly AlphaTech Ventures
Felicis Ventures	Lux Capital
Obvious Ventures	Western Technology Investment
Google	
International Finance Corporation (IFC)	

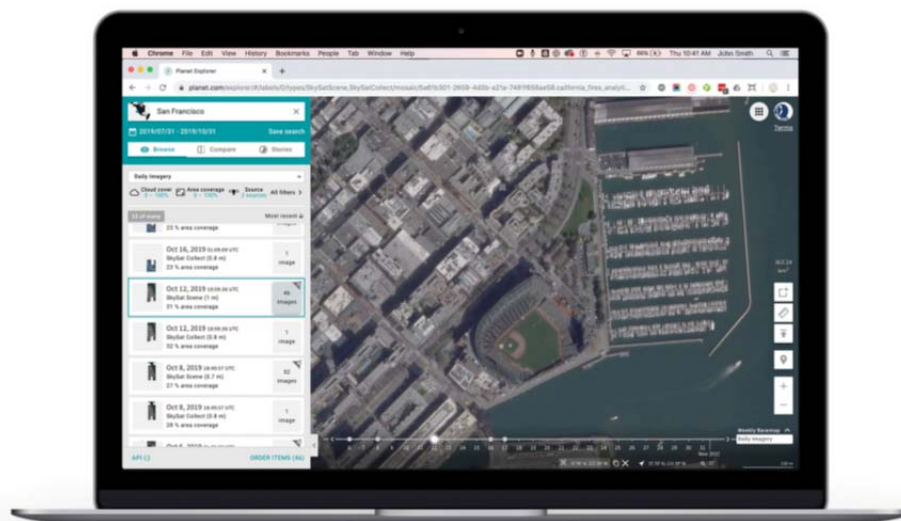
Board Members and Advisors

Will Marshall (Co-founder, CEO)
 Robbie Schingler (Co-founder, CSO)
 Heidi Roizen
 Zachary Bogue
 Ann Mather
 Carl Bass

Company Description

Planet is the leading provider of global, near-daily satellite imagery data and insights. Planet is driven by a mission to image all of Earth's landmass every day, and make global change visible, accessible and actionable. Founded in 2010 by three NASA scientists, Planet designs, builds, and operates the largest fleet of satellites, as well as online software, tools and analytics needed to deliver data to users. Decision makers in business, government, and within organizations can use Planet's data and machine learning-powered analytics to develop new technologies, drive revenue, power research, and make informed, timely decisions to solve the world's toughest challenges.

Source: Company discussions



Proterra



PROTERRA

Management

Ryan Popple (President & Chief Executive Officer)
Amy Ard (Chief Financial Officer)
Josh Ensign (Chief Operating Officer)
Matt Horton (Chief Commercial Officer)
JoAnn Covington (Chief Legal Officer)

Location

Burlingame, California

Founded

2004

Revenues

\$150M - \$250M

Employees

~500

Funding Rounds

Aug. 2019 - \$75M	Oct. 2013 - \$36M
Sep. 2018 - \$155M	Nov. 2012 - \$25M
June 2017 - \$55M	June 2011 - \$80M
Jan. 2017 - \$140M	

Key Investors

Kleiner Perkins Caufield & Byers
G2VP
Daimler
General Motors Ventures
Generation Investment Management
Constellation Technology Ventures
Edison International
BMW i Ventures
Tao Capital
88 Green Ventures
Mitsui
Obvious Ventures

Board Members

Jack Allen (Chairman)
Ryan Popple
Michael Smith
Jennifer Granholm
Brook Porter
Jochen Götz
Jeannine Sargent
Constance Skidmore

Company Description

Proterra designs and manufactures zero-emission, heavy-duty vehicles, enabling bus fleet operators to significantly reduce operating costs while delivering clean, quiet transportation to local communities across the U.S. The company has sold over 700 vehicles to 90 different municipal, university, airport, and federal and commercial transit agencies in 41 U.S. states and Canadian provinces. Proterra's configurable Catalyst platform is capable of serving the full daily mileage needs of nearly every U.S. transit route on a single charge. With unmatched durability and energy efficiency based on rigorous U.S. certification testing, Proterra's products are designed, engineered, and manufactured in America, with offices in Silicon Valley, South Carolina, and Los Angeles.

Source: Company discussions and website



Quanergy



Management

Louay Eldada (Co-founder, CEO)
Tianyue Yu (Co-founder, CTO)
Patrick Archambault (CFO)
Enzo Signore (CMO)
Gary Saunders (CRO)

Location

Sunnyvale, California

Founded

2012

Revenues

[not disclosed]

Employees

120

Funding Rounds

2018 - \$45M

2016 - \$90M

2014 - \$34.5M

Key Investors

Rising Tide Fund
Samsung Ventures
Motus Ventures
GP Capital
Delphi Automotive
Sensata Technologies

Board Members

Kevin Kennedy (Chairman)
Karen Francis

Company Description

Quanergy is a leading provider of LiDAR sensors and perception software for real-time capture and processing of 3D spatial data and object detection, identification, classification, and tracking. Differentiated relative to its peers, Quanergy is focused on using optical phased-array technology to create the same scanning effect that mechanically steered lasers do and has successfully established key partnerships with automotive OEMs including Mercedes-Benz and Jaguar. In addition to the automotive market, Quanergy's offering is applicable across several other use cases including security, industrial automation, 3D mapping, mining, agriculture, drones and robotics, among others, resulting in improved safety, efficiency, and quality of life.

Source: Company website, i3 Connect



Redaptive

Management

Arvin Vohra (Co-founder, Co-CEO)
John Rhow (Co-founder, Co-CEO)
Joel Ullmann (CMO)
Matt Gembrin (CFO)
Ricky Singh (COO)
Ron Westhauser (Chief Engineering & Data Officer)
Ryan Martineau (Co-founder, EVP - Sales)
John Schinter (EVP, Client Solutions)

Location

San Francisco, California

Founded

2013

Revenues

[not disclosed]

Employees

80+

Funding Rounds

Series A - \$25M

Key Investors

CBRE
ENGIE New Ventures
Evergry Ventures
Linse Capital

Board Members

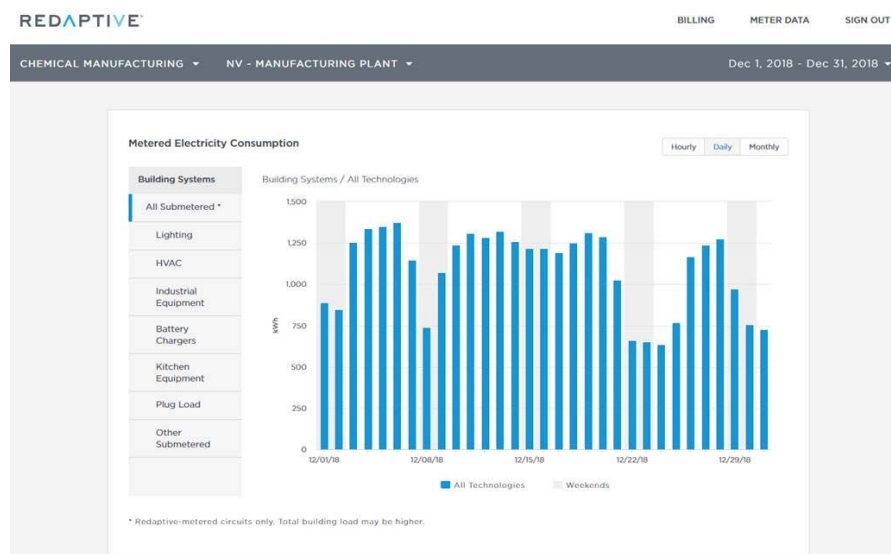
Matt Werner
Michael Linse
Arvin Vohra
John Rhow

Company Description

Redaptive offers a flexible, efficiency-as-a-service program that manages all aspects of a commercial building upgrade and offers several unique advantages to the customer. Redaptive makes the upfront investment in the customer's facility, assumes all of the project execution and technology performance risk, and covers maintenance cost. Upgrades can cover various systems, including energy, HVAC, and LED lighting, among others. Once the project is complete, a customer is billed for actual metered savings at a level that ensures a customer sees the immediate operating savings from the system's efficiency upgrade.

With the goal of aligning its interests with its customers, Redaptive's metering platform enables ongoing savings that extend well past the term of the shared saving model. While energy savings translate to dollars as soon as the project is rolled out, contract flexibility gives the customer options in how to manage timing of capital investments which can be made up front or at any point throughout the term of the contract. This gives the customer the ability to either buy down the project term (accelerating the contract until it retains 100% of the savings) or increasing customer-retained savings within the term of the contract.

Source: Company discussions and website



Rivian



Management

R.J. Scaringe, Ph.D. (Founder, CEO)
Ryan Green (CFO)
Michael Bell (CTO)
Jiten Behl (CSO)
Christopher Brown (CCO)

Location Plymouth, Michigan
Founded 2009
Revenues \$0-\$500K
Employees 400

Funding Rounds

Feb 2019 - \$700M
Apr 2019 - \$500M
Sep 2019 - \$350M

Key Investors

Amazon
Ford
Cox Automotive

Board Members

Joseph Hinrichs

Company Description

Rivian's EAVs (Electric Adventure Vehicles) are set to hit the market at the end of 2020 and will offer an unmatched combination of performance, capability, utility, and efficiency that will be designed to go anywhere, including over steeper grades, water, and other tough terrain. At the core of every Rivian is a flexible skateboard chassis that houses its quad-motor drivetrain, independent air suspension, intelligent battery management system, hydraulic roll control system, and thermal systems.

The electric drivetrain delivers instant power and torque where it is needed through four independent motors, each with up to 200 hp available to each wheel. As a result, the vehicle is able to achieve active torque vectoring and maximized performance in every situation, be it high-speed cornering or low-speed rock crawling. With up to 180 kWh in battery capacity, the vehicles' maximum range comes in at 400+ miles.

Source: Company website, I3 Database



Seeq



Management

Steve Sliwa (Co-founder, CEO)
 Brian Parsonnet (Co-founder, CTO)
 Michael Risse (CMO)
 Tammy Martin (CFO)
 Mark Derbecker (VP, Engineering)
 Jon Peterson (VP, Product & Customers)
 Dr. Lisa Graham (VP, Analytics Engineering)

Location Seattle, Washington
Founded 2013
Revenues \$5M - \$15M
Employees 120

Funding Rounds

Series A - \$11M
 Series B - \$23M

Key Investors

Second Avenue Partners
 Altira Group
 next47
 Chevron Technology Ventures

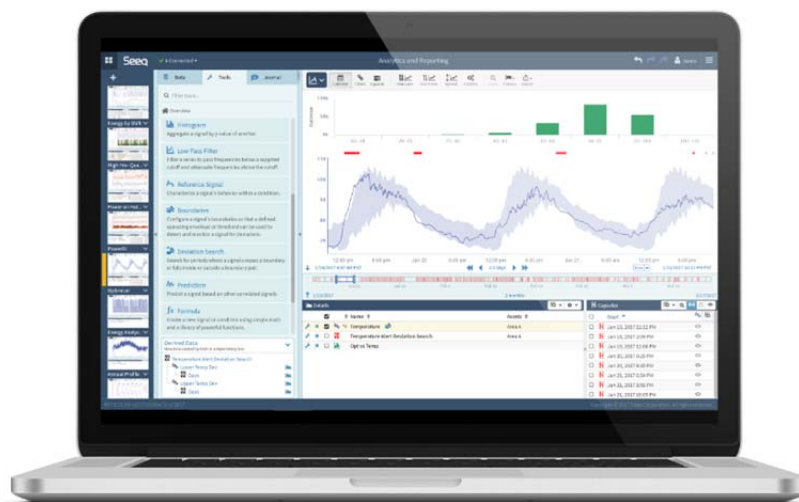
Board Members

Pete Higgins
 Cameron Myhrvold
 J.P. Bauman
 Steve Sliwa
 Brian Parsonnet

Company Description

Seeq provides insight to process manufacturing companies in a variety of industries. The company uses agile software development techniques which rely on frequent customer touches, demonstrations, and reviews. As a result, Seeq customers enjoy a short time to useful features with a rapid response cycle to customer input and requests. Seeq is supported by a broad set of process automation vendor partnerships, including OSIsoft, Honeywell, and Siemens, and by system integrators for sale licensing and services around the globe. In support of the industry's transition to cloud-based platforms, Seeq recently expanded its offerings to include solutions delivered via software as a SaaS offering on Microsoft Azure to address customer interest in cloud-based analytic solutions.

Source: Company discussions and website



Sentient Energy



Management

Michael Bauer (Founder, President)
James Keener (CEO)
Venkat Bahl (CRO)
Konda Ankireddyapalli (SVP Engineering)
Mark Sloan (EVP Engineering)

Location

Burlingame, California

Founded

2009

Revenues

\$40M - \$60M

Employees

80

Funding Rounds

Apr. 2013 - \$15M

Apr. 2015 - \$7.5M

Key Investors

Foundation Capital
Clear Sky Power and Technology Fund
GE Ventures
KCK Group

Board Members and Advisors

Steve Vassallo

Company Description

Sentient Energy helps to make power delivery safe, reliable, and solar-ready. The company's main offering is the Grid Analytics System, which allows customers to cover their power distribution networks with easily deployable intelligent sensors for the entire distribution grid, overhead feeders, laterals, and underground, and is supported by powerful analytics. The result is a much-improved ability to identify and analyze potential faults, failures, and other distribution grid events. Sentient Energy partners with leading utility network providers including Silver Spring Networks, Landis + Gyr, Cisco, and AT&T to deploy its RF mesh-based line sensor network. Founder and president Michael Bauer brings a background in both power distribution and broadband communications technology to Sentient.

Source: Company discussions



SparkCognition



Management

Amir Husain (Founder, CEO)
Dr. Bruce Porter (CSO)
Usman Shuja (CCO)
Sridhar Sudarsan (CTO)
Vijay Doradla (CBO)

Location Austin, Texas
Founded 2013
Revenues >\$30M
Employees 275

Funding Rounds

Series A - \$16M
Series B - \$56.5M
Series C - \$100M

Key Investors

March Capital
Temasek
Kerogen Digital Solutions
Hearst Ventures
Dalus Capital
Andrew Liveris
Sustainable Technology Ventures
Blue Horizon e^x Ventures
Paul & Ann-Kristin Achleitner
Founders Equity Partners
Richard and Laetitia Garriott de Cayeux

Malcolm Turnbull
Boeing HorizonX
John Chambers
John Thornton
MSD Capital
Pankaj Patel
Alameda Ventures

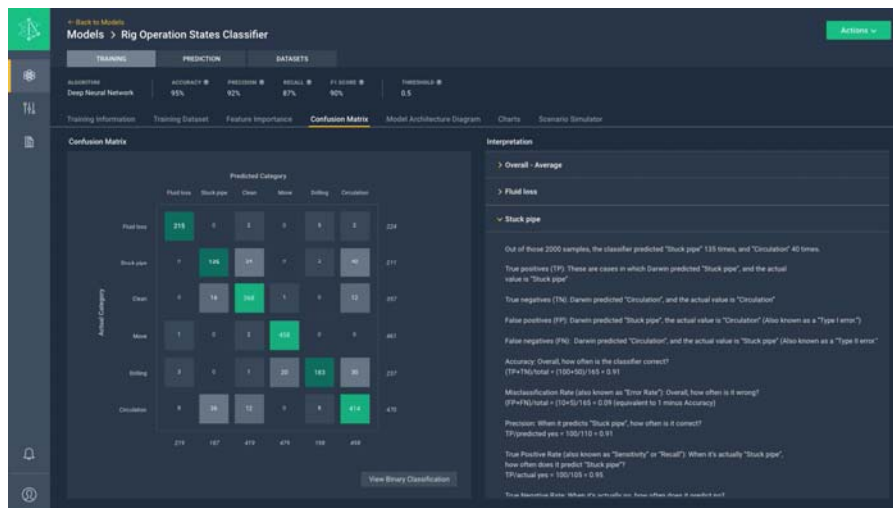
Board Members and Advisors

John R. Allen
Steve Nordlund
Pankaj Patel
John Thornton
John Chambers
Michael Humphrey
Mike Frost
Secretary Robert O. Work
Bob Stearns
Dr. Tom Bradicich

Company Description

With award-winning machine learning technology, a multinational footprint, and expert teams focused on defense, IIoT, and finance, SparkCognition builds artificial intelligence systems to advance the most important interests of society. Its customers are trusted with protecting and improving lives, managing infrastructure, and helping to oversee financial systems across the globe. They turn to SparkCognition for help in analyzing complex data, empowering decision-making, and transforming human and industrial productivity. SparkCognition offers four main products: DarwinTM, DeepArmor®, SparkPredict®, and DeepNLPTM.

Source: Company discussions



Stem



Management

John Carrington (CEO)
 Alan Russo (CRO)
 Bill Bush (CFO)
 Larsh Johnson (CTO)
 Mark Triplett (COO)
 Prakesh Patel (VP, Capital Markets & Strategy)

Location Millbrae, California
Founded 2009
Revenues [not disclosed]
Employees 160

Funding Rounds

Series A: \$10.2M (2012)
 Series B: \$15M (2013)
 Series C: \$68M (2015 and 2016)
 Series D: \$200M (2018)

Key Investors

Angeleno Group	Greener Capital
Iberdrola	Constellation
GE Ventures	Mitsui & Co.
Mithril Capital Management	RWE AG
Total Energy Ventures	Activate Capital
BNP Paribas	Magnesium Capital
Temasek	
Ontario Teachers' Pension Plan	

Board Members and Advisors

David Buzby
 Paul Leggett
 Jorge Acevedo
 Anup Jacob
 Anil Tammineedi
 Eiji Kurihara
 Brad Leufkens

Company Description

Stem markets services focused on how energy is distributed and consumed, utilizing digitally connected energy storage technology. The company's analytics platform optimizes the value of customers' energy assets and facilitates participation in energy markets, yielding economic and societal benefits while decarbonizing the grid. The company provides energy storage services with no upfront cost and without disruption to existing services for commercial and industrial customers. Stem's customer-sited energy storage network also provides utilities and grid operators with a fast-acting virtual power plant when it is needed most.

Source: Company reports and website



T-REX



Management

Benjamin Cohen (Chairman & CEO)
 Arad Shaiber (CTO)
 Scott Miller (CBDO)
 Tricia San Cristobal (CPO)

Location

New York, New York

Founded

2012

Revenues

<\$5M

Employees

45

Funding Rounds

Sep. 2019 - \$15M

Nov. 2016 - \$10M

Jan. 2014 - \$4M

Key Investors

Citi
 The Westly Group
 Viola Fintech
 Innogy Venture Capital
 Macquarie Capital
 Partnership Fund for New York City
 Ecosystem Integrity Fund
 Safeguard Scientifics

Board Members and Advisors

Benjamin Cohen
 Sasha Brown
 Prof. Daniel Tsiddon
 Timothy Wang
 Michele Trogni
 Andy Brown (Advisor)
 Jill Denham (Advisor)

Company Description

T-REX is a leading provider of managed data services and enterprise software for structured and project finance. Focused on renewable energy and clean infrastructure and built to empower responsible finance, the company's SaaS-based solutions fill a critical technology gap across these alternative markets. T-REX's tech-enabled transparency and efficiency helps unlock liquidity, lowering capital costs (an average of 100bps savings per deal) and mitigating risk associated with complex investments. T-REX's client base includes a global set of investors, bankers, and financial professionals.

T-REX's solutions bridge the gap between asset originators and end investors, automating workflow and enhancing transparency, efficiency, collaboration, compliance, and security across the entire investment cycle. T-REX creates significant investment opportunities for the hundreds of billions of dollars of capital across various complex, non-commoditized asset classes and has been used to facilitate \$7 billion in issuance since 2016.

Source: Company discussions



TuSimple



Management

Mo Chen (Co-founder, CEO)
Xiaodi Hou (Co-founder, President, CTO)
Cheng Lu (CFO)
Chuck Price (CPO)

Location

San Diego, California

Founded

2015

Revenues

[Not disclosed]

Employees

500

Funding Rounds

Series D - \$215
Series C - \$55M
Series B - \$20M
Series A - \$8M

Key Investors

CDH Investments
Composite Capital
Lavender Hill Capital
Mando Corp.
NVIDIA
Sina
UPS Ventures

Board Members and Advisors

[not disclosed]

Company Description

TuSimple is developing commercial-ready Level 4 fully autonomous driving solutions for the logistics industry's depot-to-depot routes. With the use of its proprietary AI capabilities, TuSimple's perception system is able to identify objects and obstacles, even in adverse weather conditions, to achieve full autonomy over long distance highway driving. The truck is fully integrated with a full suite of sensors and cameras, including two LiDAR units that provide up to 1,000 meters of visibility. When traveling at highway speeds, this translates to 35 seconds of time to react, enabling the system to make the safest and most efficient driving decisions. The company is currently operating self-driving trucks in Arizona.

Source: Company website and discussions



Uplight



Management

Adrian Tuck (CEO)
Yoav Lurie (President, COO)
Jaylene Kunze (CFO)
Justin Segall (CSO)
Jake Meier (CTO)
Jennifer Kinney (CPO)

Location

Boulder, Colorado

Founded

2004

Revenues

\$100M+

Employees

~300

Funding Rounds

[not applicable]

Key Investors

Rubicon Technology Partners (RTP), formerly Tendril's majority shareholder, and AES Corporation (AES), formerly Simple Energy's largest shareholder; both key investors are strategic partners.

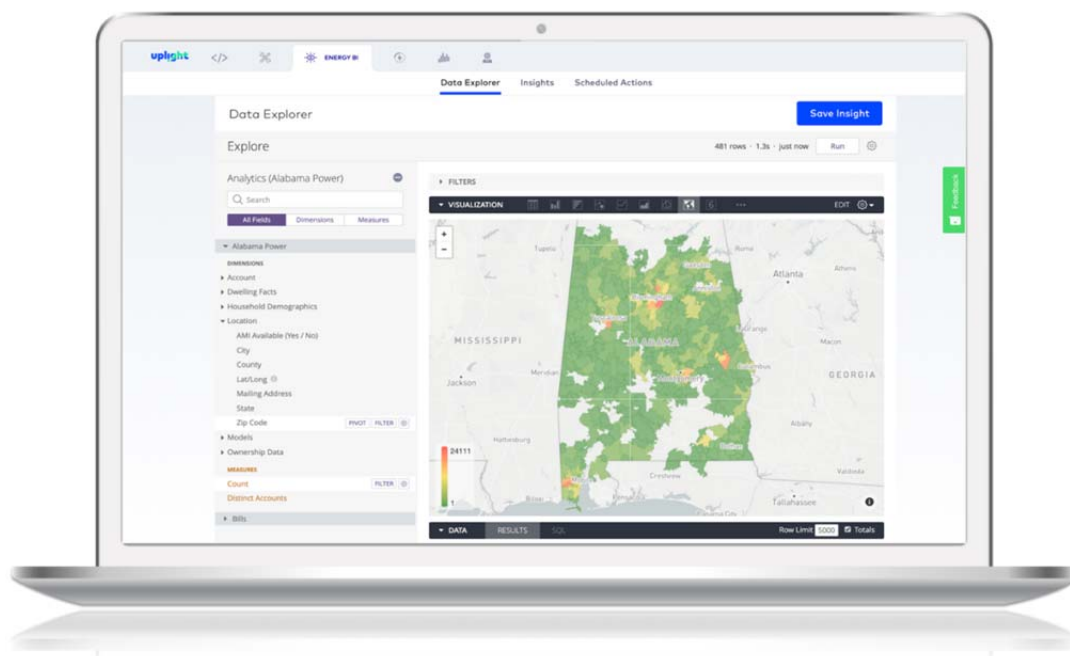
Board Members and Advisors

[not disclosed]

Company Description

Uplight is the result of the merger of Tendril and Simple Energy, combined with the acquisition of FirstFuel, EEme, and EnergySavvy. The company has established itself as the leading provider of end-to-end customer-centric technology solutions dedicated to serving the energy ecosystem. Uplight provides software and services to more than 80 of the world's leading electric and gas utilities with a goal of accelerating the clean energy ecosystem. The leader in demand side management, energy analytics, utility marketplaces, utility personalization and home energy management, Uplight is able to offer a solution that is a unified, end-to-end offering for its customers. Proven at enterprise scale, and yet nimble enough to deliver innovative solutions quickly, utility leaders at all levels have come to rely on Uplight and its customer-focused digital energy experience.

Source: Company discussion



UVEye



Management

Amir Hever (Co-founder, CEO)
Ohad Hever (Co-founder, COO)
David Oren (CSO)

Location

Stamford, Connecticut

Founded

2016

Revenues

[not disclosed]

Employees

100+

Funding Rounds

2019 - \$31M

Key Investors

Toyota Tsusho
Volvo Group Venture Capital
W.R. Berkley Corp.

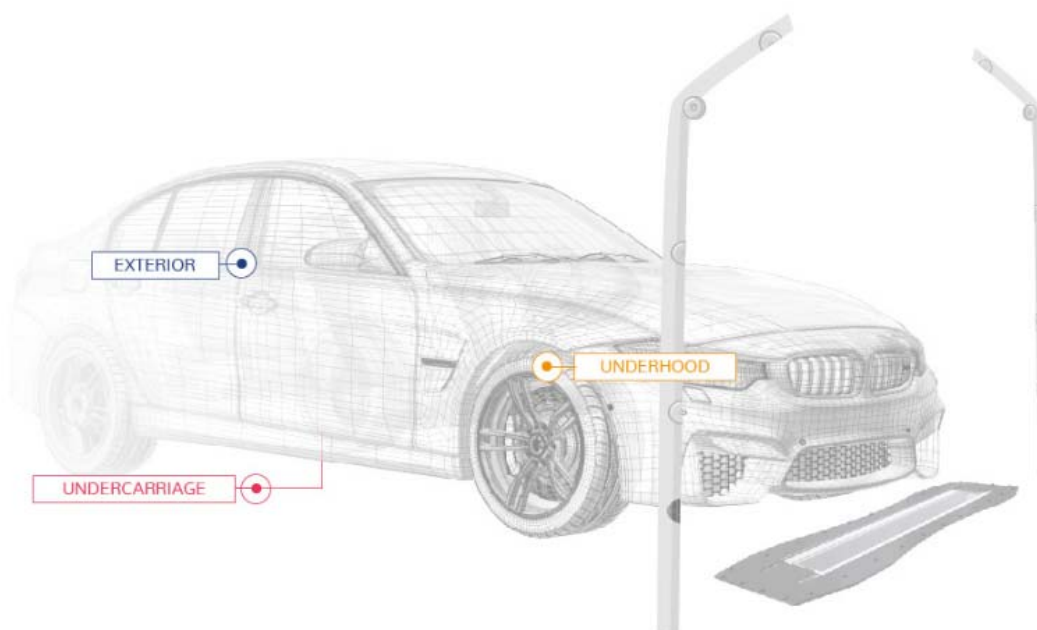
Board Members and Advisors

[not disclosed]

Company Description

UVEye's high-end solutions can be used for automatic inspection of vehicles and include a combination of proprietary hardware with machine learning and compute-vision algorithms. Initially developed for deployment within the security industry, UVEye expanded its product offering to address challenges within the automotive industry. The cloud-based system uses a 3D scan that captures a vivid 360-degree image of the vehicle to detect potentially hazardous mechanical issues. The company's product offerings now include its original undercarriage application (Helios), its 360 solution (Atlas), and its targeted tire application (Artemis).

Source: Company website, I3 Connect



View



Management

Dr. Rao Mulpuri (CEO)
 Rahul Bammi (CBO)
 Dr. Robert Rozbicki (CTO)
 Vidul Prakash (CFO)
 Martin Neumann (SVP, Operations)

Location

Milpitas, California

Founded

2006

Revenues

\$25M-\$100M

Employees

300

Funding Rounds

2018 - \$1,100M	2013 - \$100M
2017 - \$200M	2012 - \$55M
2017 - \$100M	2011 - \$40M
2015 - \$150M	2010 - \$30M

Key Investors

SoftBank Vision Fund
 BlackRock
 TIAA Investments
 NZ Super Fund
 Bain Capital
 Madrone Capital Partners

Board Members and Advisors

Dr. Rao Mulpuri
 Nigel Gormly
 Harold Hughes
 Thomas Leppert
 Tom Patterson
 Tom Cheung
 Bill Veghte

Company Description

View manufactures View Dynamic Glass, a new generation of dynamic glass windows that let in natural light and views while enhancing mental and physical well-being by reducing headaches, eyestrain, and drowsiness. In addition, View's windows reduce glare and heat, improving the energy efficiency of buildings by up to 20 percent. View's windows are digital, connected, and can be controlled from anywhere, including a smart phone – no blinds or shades required.

Source: Company discussions



Volta Charging

VOLTA

Management

Scott Mercer (Co-founder, CEO)
Chris Wendel (Co-founder, President)
Debra Crow (CFO)
Drew Lipsher (Chief Strategy & Revenue Officer)
Jim Degraw (General Counsel)

Location San Francisco, California
Founded 2010
Revenues \$25m-\$50m
Employees 140

Funding Rounds

Series C - \$45M
Series B - \$15M
Series A - \$4.5M

Key Investors

Virgo Investment Group	SK
Energize Ventures	Nautilus
Activate Capital	Ørsted
Walden International	Autotech Ventures
Schneider Electric Ventures	G E Ventures
Idinvest Partners	

Board Members and Advisors

Scott Mercer (CEO)
Chris Wendel (President)
Eli Aheto
John Tough
Anup Jacob
Kathy Savitt

Company Description

Volta is developing electric vehicle charging networks through partnerships with customer-centric businesses, offering a free-to-the-customer charging service that enhances the customer experience while on site. With the support of its brand partners, Volta delivers charging solutions to real estate owners, power to the EV community, and impactful brand stories to everyone. The network is currently able to deliver up to 175 miles of driving range in just 30 minutes and has already delivered over 50 million free electric miles. By providing a seamless, simple, and free charging experience, Volta is focused on accelerating EV adoption.

Source: Company website



Xos Trucks



Management

Dakota Semler (Co-founder, CEO)
Giordano Sordoni (Co-founder, COO)
Pri Balekai (CPO)
Rob Ferber (CTO)
Alex Coates (SVP, Finance)
Saleh Mirheidari (VP, Software)
Kevin Damoa (VP, Supply Chain & Operations)

Location

North Hollywood, CA

Founded

2016

Revenues

<\$5M

Employees

40

Funding Rounds

[self-funded to date]

Key Investors

[self-funded to date]

Board Members and Advisors

[not disclosed]

Company Description

Xos, previously Thor Trucks, is focused on the commercial electric vehicle market with operating prototypes in both the class 8 segment and class 6 delivery truck markets. The wide availability of key components has allowed Xos to assemble a drivetrain consisting entirely of third-party parts. This has allowed Xos to act as a systems integrator rather than a manufacturer, allowing XOS to focus on building intellectual property in the battery pack. While servicing and support can be complex, Xos is well positioned given its team's substantial background in truck fleet operations. When combined with fuel and maintenance savings, the TCO analysis works well for electric class 8 trucks being used for short-haul traffic, where Xos will compete directly with Tesla's 300-mile offering. In addition to its class 8 truck offering, Xos has announced several key partnerships within the medium-duty vehicle market including the most recent announcement of its partnership with Loomis Armored US, a cash-in-transit company, to deliver two all-electric armored vehicles.

Source: Company discussions



Zoox

ZOOX

Management

Aicha Evans (CEO)
Jon Foster (CFO)
Jesse Levinson (President, Co-founder, CTO)
Dr. Mark Rosekind (Chief Safety Innovation Officer)

Location	Foster, California
Founded	2014
Revenues	[Not disclosed]
Employees	1,000

Funding Rounds

2019 - \$200M (Convertible)
2018 - \$464M
2016 - \$250M
2015 - \$40M

Key Investors

Blackbird Ventures
Composite Capital
CPPIB
DFJ
Grok Ventures
Lux Capital
Primavera
Tencent

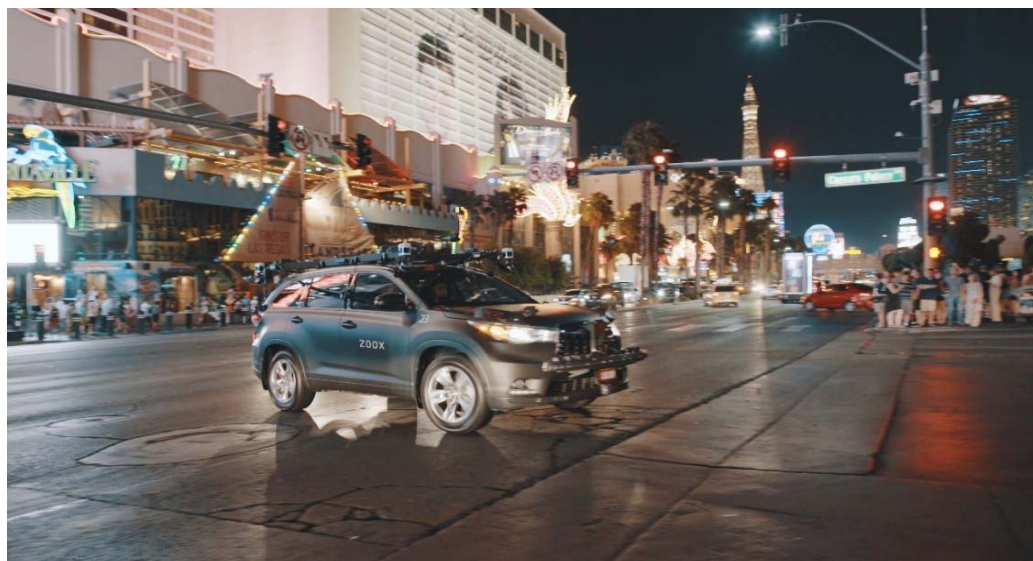
Board Members and Advisors

Carl Bass (Chairman)
Aicha Evans (CEO)
Dan Cooperman
Fred Hu
Heidi Roizen
Jesse Levinson (President, Co-founder, CTO)
Laurie Yoler
Mike Cannon-Brookes

Company Description

Zoox is developing a transportation service using fully autonomous electric vehicles that are purpose-built for ridesharing. Currently integrated in proof-of-concept vehicles, the company's proprietary algorithm is capable of mapping, localization, calibration, sensor fusion, motion planning, vehicle control, object segmentation and tracking, classification, teleoperation, simulation and validation, making Zoox's vehicles uniquely suited for navigating dense urban environments and highway driving. With ~94% of on-road deaths attributed to human error, Zoox not only intends to make roads safer, but to improve vehicle utilization by an order of magnitude under its ride-share model.

Source: Company discussions



ANALYST BIOGRAPHIES



Joseph A. Osha

Managing Director and Senior Research Analyst
josha@jmpsecurities.com
 415.835.8998

Joseph Osha joined JMP in May 2016 and serves as Managing Director and Senior Research Analyst providing research coverage for the Industrial & Energy Technology sectors.

Prior to joining JMP Securities, Mr. Osha served as chief financial officer of two alternative energy start-ups, Greenfire Energy and Gravity Renewables. Mr. Osha previously spent 18 years at Bank of America Merrill Lynch, where he was a senior semiconductor analyst for a decade, winning recognition in rankings produced by Institutional Investor, The Wall Street Journal, and Bloomberg. More recently, he served as the firm's Deputy Head of Americas Equity Research, Head of Alternative Energy Research, and Head of Asia ex-Japan Equity Research.

Mr. Osha started at Bank of America Merrill Lynch as a senior electronics analyst based in Tokyo after beginning his equity research career as an analyst at Baring Securities Japan. He holds an MBA and an MA in East Asian Studies from the University of Michigan and a BS from the University of Richmond. He is a Chartered Financial Analyst.



Hilary E. Cauley

Senior Research Associate
hcauley@jmpsecurities.com
 415.835.8996

Hilary Cauley joined JMP Securities in November 2017 and serves as a Senior Associate on the Industrial & Energy Technology team.

Prior to joining the firm, Hilary worked at Wolfe Research and Ladenburg Thalmann as an Equity Research Associate. Hilary holds a BS in Finance from John Carroll University and is a Chartered Financial Analyst.



COVERED COMPANIES MENTIONED

Company	Ticker	Rating	Price Target	Analyst
Tesla, Inc.	TSLA	MP	N/A	Joseph Osha

JMP FACTS AND DISCLOSURES

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The research analyst(s) who prepared this report does/do hereby certify that the views presented in this report are in accordance with my/our personal views on the securities and issuers discussed in this report. As mandated by SEC Regulation AC no part of my/our compensation was, is or will be directly or indirectly related to the specific views or recommendations expressed herein. This certification is made under the obligations set forth in SEC Regulation AC. Any other person or entity may not use it for any other purpose. This certification is made based on my/our analysis on the date of this report's publication. I/We assume no obligation to update this certification to reflect any facts, circumstances or events that may subsequently come to my/our attention. Signed Joseph Osha and Hilary Cauley

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JMP Securities expects to receive OR intends to seek compensation for investment banking services from Tesla, Inc. in the next 3 months

JMP Securities Investment Opinion Definitions:

Market Outperform (MO): JMP Securities expects the stock price to outperform relevant market indices over the next 12 months.

Market Perform (MP): JMP Securities expects the stock price to perform in line with relevant market indices over the next 12 months.

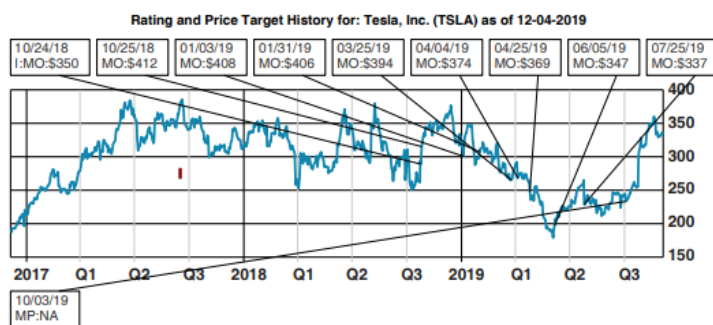
Market Underperform (MU): JMP Securities expects the stock price to underperform relevant market indices over the next 12 months.

JMP Securities Research Ratings and Investment Banking Services: (as of December 5, 2019)

JMP Rating	Regulatory Equivalent	# Co's Under Coverage	% of Total	Regulatory Equivalent	# Co's Under Coverage	% of Total	# Co's Receiving IB Services in Past 12 Months	% of Co's With This rating
MARKET OUTPERFORM	BUY	249	59.57%	BUY	249	59.57%	67	26.91%
MARKET PERFORM	HOLD	141	33.73%	HOLD	141	33.73%	19	13.48%
MARKET UNDERPERFORM	SELL	3	0.72%	SELL	3	0.72%	0	0%
COVERAGE IN TRANSITION		24	5.74%		24	5.74%	0	0%
RATING SUSPENDED		0	0.00%		0	0.00%	0	0%
TOTAL:		418	100%		418	100%	86	20.57%

Stock Price Chart of Rating and Target Price Changes:

Note: First annotation denotes initiation of coverage or 3 years, whichever is shorter. If no target price is listed, then the target price is N/A. In accordance with NASD Rule 2241, the chart(s) below reflect(s) price range and any changes to the rating or price target as of the end of the most recent calendar quarter. The action reflected in this note is not annotated in the stock price chart. Source: JMP Securities.



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