

AGTECH





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Advancing the Future of Food and Agriculture Through Innovation

About SVG Ventures-THRIVE



CORPORATE INNOVATION

We work with leading agriculture, food, and technology companies to define and address industry and organization challenges, leveraging innovation from both early-stage and growth-stage startups.



ACCELERATOR

THRIVE Accelerator supports seed-stage startups from all areas of the value chain whose technologies drive towards a more efficient, sustainable, and secure agriculture future.



SCALE WITH THRIVE

On an ongoing basis and as a part of the THRIVE Accelerator, SVG Ventures invests in emerging AgriFood technologies companies.



EVENTS

THRIVE hosts marquee events throughout the year including the THRIVE Innovation Summit, the Forbes Demo-Day, Forbes Indianapolis, and the Farmers Technology Roundtable.

Our Ecosystem























































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USDA:	Innovation Imperative	5	has published an annual ranking of the top TOP 50 growth stage AgTech companies in the industry. New this year we have
Robots	s on the Rise?	6	expanded our focus to include the TOP 50 FoodTech Companies. These are some of
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o 50 Companies	Complete Farm Cycle Management	45	Congratulations to all of the TOP 50
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Team



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HELEN HARTNETTCHIEF OPERATING OFFICER



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THRIVE STARTUP MENTOR



RACHELLE GALVIN
MIDWEST PROGRAM MANAGER





SVG Ventures-THRIVE Platform

THRIVE is a global AgriFood innovation platform in Silicon Valley that accelerates, invests, and works with entrepreneurs, investors, and Fortune 500 corporations to advance the future of food and agriculture through innovation. Our unparalleled ecosystem includes a corporate partner network of 40+ corporations, including pioneers such as Driscoll's, Land O'Lakes, Taylor Farms, E&J Gallo, Wilbur-Ellis, Corteva, Trimble, EY, and Elanco, among many others. We have made 51 total investments, have developed a database of over 2,500 agrifood startups from around the world, and have access to 6,000+ farmers through various partnerships and co-ops. We also have a propensity to pick incredible startups with a strong track record of growth and success - our accelerator portfolio has raised over \$250M at a collective post-money valuation of nearly \$750M since graduating from the program.





2,500+ Global Startups



40+ Global Partners







6,000+ Global Farmers



The Innovation IMPERATIVE Shaping the Future of Agriculture

By: Kalyn Simon

Secretary of Agriculture opened the USDA's 96th Agriculture Outlook Forum with a mission. The USDA is committed to stimulate innovation in order to achieve the goal of increasing U.S. agricultural production by 40% while cutting the environmental footprint of U.S. agriculture in half by 2050. During the opening fireside chat at the Outlook Forum, Secretary Perdue challenged John Hartnett, Founder and CEO of SVG Ventures - THRIVE to help the USDA achieve this mission through innovation. Hartnett

describes the goals as "bold and ambitious," but the

"most important mission" for the country.

On February 20th, Sonny Perdue, United States

Perdue and Hartnett outlined that entrepreneurs and innovation in agriculture are fundamental to addressing the problems and finding solutions for farmers, consumers, and the environment. In Hartnett's experience, "entrepreneurs can really change the world, they provide new technologies and innovations to disrupt industries" and the USDA is actively searching for transformative solutions to meet the future demands. Hartnett proposed a new

idea to create regional "Smart Farms" as demonstration plots where entrepreneurs have a unique opportunity to showcase their technology. They will highlight the best of innovation to light up the farms and provide avenues for massive adoption and integration. Perdue and Hartnett are steadfast towards taking the first strides in aligning the public and private sectors.

In partnership, both sectors are on the cusp of the next era of agriculture productivity and environmental conservation while reducing food waste, improving carbon sequestration, improving water quality, and increasing renewable energy. We are confident that the companies ranked in this year's TOP 50 list will be the pioneers in shaping the future of agriculture and creating the solutions to tackle the challenges facing the agricultural sector.

Innovation is imperative. Together, the USDA and SVG-THRIVE are on a mission to advance the future of food and agriculture through innovation.



The cost and availability of harvest labor continue to cause challenges for agriculture globally. The hourly cost of labor for specialty crops like strawberries grew by over 30% from 2010-2016 and current projections are that it could grow by another 70% in the next five years. The increase is driven by new regulations related to minimum wage, overtime, and heat break requirements along with market forces related to the massive demographic shift where future generations of agricultural harvest laborers are no longer chasing the same career option as their parents. With regulation and demographic changes happening at the same time, the need for robot harvesting technologies has never been greater.

The good news is that many harvest automation startups are already working on solutions. In addition, the number of robot harvest companies with funding is increasing, and some are beginning to show early traction. For wine grapes, Pellenc makes state-of-the-art harvesters and many vineyards are picked with no manual labor at all. Abundant Robotics has spun out of SRI and is the current leader in apple picking. For strawberries, there are startups that can harvest strawberries in dirt (Traptic, Harvest Croo, Advanced Farm) or in tabletop (Tortuga, Dogtooth, Octinion, AgRobot) growing formats. All of the startups above have received investments from corporate venture investors and are working with customers. One of the most recent investments was the \$7.5M A round in Advanced Farm Technologies that was led by Yamaha Motor Ventures with participation by Kubota Corporation (also an equipment manufacturer). A team at Cambridge University is building the Vegebot, a prototype lettuce harvester.

Even with all of the startups in the space and increased funding, harvest robotics is a difficult space for a few reasons. First, each crop type requires a different harvest mechanism and different AI software based on what the plant looks like and what weeds or other foreign objects that should not be picked look like. This means there is likely to be one winner per crop type, which makes investment harder to get (because the total addressable market ties to a single crop type in many cases) and scale harder to achieve (because

once you achieve scale in that single crop type, you have to develop a new solution, roughly from scratch). Second, visioning technologies have high resolution limitations that negatively impact the performance capabilities of the robots. Third, and this is related to the second, it's hard to write an algorithm with a robot behind it doing the harvesting that can make all of the decisions a manual harvest employee makes in real time (or at least close enough to real time to compete with humans). Current harvest robots have a difficult time performing as fast as human pickers. As a result, only wine grape harvesters have significant market presence while the rest of the harvester crops get a very limited amount of product picked up by robot harvesters.

So what can accelerate the progress of robot harvesters? First, higher-resolution visioning technologies and better AI algorithms will make it easier for the harvest mechanism to select and pick the right plants (and leave the wrong plants or plants not yet ready to harvest). This will impact efficiency and make robots more competitive with human pickers. Second, if labor costs continue to increase at the projected rates, agriculture companies will be increasingly motivated to partner with or more aggressively test automation solutions. Third, partnerships with local equipment dealers can help startups gain credibility with local farmers and accelerate both testing and farmer comfort with roll out. Fourth, if startups can figure out how to leverage their visioning, AI, or harvest-picking mechanism to work on multiple crop types, that could accelerate their ability to get to scale. It's worth noting that two of these rely on improving the underlying technology and the other two are go-to market or business challenges.



WALT DUFLOCK
THRIVE STARTUP MENTOR

Walt Duflock identifies, mentors, and accelerates the THRIVE entrepreneurs. Walt has over 30 years of experience as Partner at San Bernardo Rancho, a 10,000 acre family ranch in Monterey County that operates cattle, row crops, and vineyards and over 25 years of experience in marketing roles at highgrowth Silicon Valley startups including eBay.



Tiny Microbes—Big Health

The Mighty Organisms Disrupting Disease

By Rachelle Galvin

Trillions of microbes (bacteria, fungi, protozoa, and viruses) live on or inside living animals. This community of microbes makes up what scientists have come to refer to as the microbiota. Further, the genetic material within these trillions of microbes is collectively referred to as the microbiome. Can these microbes solve the challenges faced by livestock farmers today?

The microbiota is considered a virtual organ

As you might suspect, within the microbiota, there are both harmful organisms (pathogens) and beneficial microorganisms. An amazing, mutually beneficial relationship exists between the microbiota and the host. The microbiota can protect the host from infection, break down nutrients, and modulate the host immune system. The host provides nutrients and supportive environments for microbial growth. This crosstalk or "relationship" between the microbiota and host is associated with disease and well-being.

In the scientific community, the challenge we now face relates to translating the disease association to mechanisms that can inform the development of microbiome-based therapies to prevent or treat disease.

It is important to remember that the microbiota is not limited to the gut and includes the skin, vaginal, respiratory, and oral tissues. Additionally, the microbiota represents a living system that changes due to numerous factors such as the environment, diet, host immune function, stress, and drugs, including antibiotics.

Before addressing how to harness the power of the microbiome, let's review some terminology. Prebiotics are substances such as fiber that the microbes use to support bacterial growth. Probiotics are live beneficial microbes, usually bacteria, administered to the gastrointestinal tract of animals. They are also called direct-fed microbials. Postbiotics are the metabolic byproducts of the prebiotic fermentation that have biologic effects on the host. In summary, postbiotics are the byproducts of fermentation by probiotics acting on prebiotics.

In the gastrointestinal tract, microbes and host interact through three mechanisms to maintain gut health and nutrient absorption. Some beneficial bacteria metabolize gut components that the host cannot and release metabolites that support tissue health and nutrient absorption. Improved nutrition leads to enhanced growth or production.

Secondly, some beneficial microbes support the development and function of the host immune system. The stimulated immune system fights infection. Thirdly, some beneficial microbes inhibit the growth of pathogens through direct actions on the bacteria or competitive exclusion by impacting availability the nutrient or niches Products that act via any of these growth. mechanisms have the potential to prevent or treat disease.

Nutritional Supplements

Prebiotics, probiotics, and postbiotics have been on the market for many years. They are available in various countries for swine, poultry, and aquaculture gut health and are administered in the feed. These nutritional supplements make various claims, which include improvement of gut health and function and prevention of infectious disease. The product claims are country-specific are typically regulated under food laws, and not as medicines. These products have varied effectiveness.

Alternatives to antibiotics

With the growth of antibiotic resistance and the need to reduce antibiotic use in food animals, new methods to prevent and treat infections are needed. The microbiota has the potential to destroy or limit the growth of pathogenic microbes. The effects on pathogens can be direct or mediated through modulation of the host immune system. The microbiome and its interaction with the host are complex. Still, companies are developing treatments to modulate the microbiota to fight disease with the ultimate goal of replacing or limiting the need for antibiotics. Currently, companies are developing or marketing treatments for poultry and swine gut health and disease prevention and scours and respiratory disease in cattle. Probiotics are also marketed to maintain the microflora during calving. The majority of these products are being developed or marketed as nutritional supplements, but some companies are developing therapeutics.

Company trends

Microbiome-based nutritional supplements were initially developed by yeast fermentation companies or feed companies that have been in business for decades. These companies continue to expand their Over the past decade, a rise in product lines. startup companies that focus on microbiome-based for animal health has therapies observed. About half of these companies focus on nutritional health. The remaining companies are developing animal health-specific products to replace antibiotics.

Future of microbiome-based therapies

The microbiome holds tremendous potential to improve animal health and reduce antibiotic use. The greatest obstacle is understanding the complex interaction between the microbiome and the host and leveraging this information to prevent or treat disease. Although challenging, current nextgeneration sequencing, bioinformatics, and data analytics provide the tools to characterize the microbiota and host responses. The data-driven approach will lead to novel therapies. To replace antibiotics, new products must receive regulatory approval to support disease claims. In the coming years, it will be exciting to see novel microbiomebased therapies added to the infection treatment and prevention arsenal.

The future will not be limited to infectious In humans, the gut microbiota is diseases. associated with chronic diseases such as immunediseases, gastrointestinal conditions, related neurological, cardiovascular. and respiratory illnesses. As our understanding of the impact of the microbiota in livestock and companion animal health expands, we will likely see treatment for other chronic disorders emerge.



RACHELLE GALVIN THRIVE MIDWEST PROGRAM DIRECTOR

Rachelle worked at Eli Lilly and Company for 25 years holding numerous scientific and leadership positions including two years in the animal health division at Elanco. Rachelle obtained her PhD from the University of Louisville and completed postdoctoral training at Washington University in St. Louis. She brings a unique mix of deep technical expertise, business strategy acumen and breakthrough solution delivery to scientific problems and business challenges.

THRIVE:50

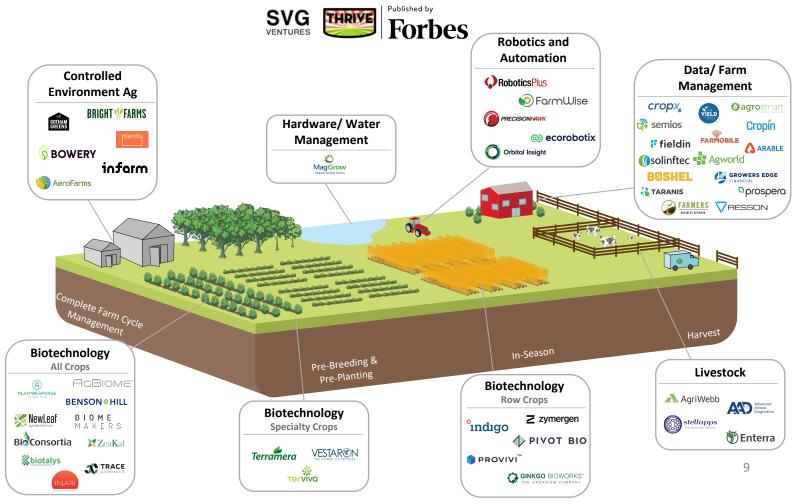
The SVG Ventures-THRIVE Top 50 is an annual ranking of leading global AgTech and FoodTech companies exemplifying the best in agriculture and food-focused innovation. This annual ranking showcases these exceptional companies who are pushing the boundaries of innovation and technology.

Top 50 companies are scouted for their exemplary leadership teams, technology, and traction and are selected following months of rigorous research by the SVG Ventures-THRIVE team in collaboration with our Corporate Partners. To qualify for a coveted spot on THRIVE's Top 50 listing a company must have a product in market, have received a minimum of series A funding & be ready to scale.

TOP 50 CRITERIA

- Stage: Series A and beyond
- Sector: AgTech scale-ups (value chain: prebreeding to harvest)
- Proven technology with product in market
- B2B company
- Demonstrated traction at scale (proven technology, customer/ farmer engagement, revenue)
- Established founding team with track record

2020 THRIVE TOP 50 AgTech Landscape Map









For the past two years SVG Ventures-THRIVE has been compiling a list of the TOP 50 growth-stage companies in AgTech. This year, we will also be introducing the TOP 50 FoodTech companies. The AgTech and FoodTech Landscape map below represents the combined listing of top 100 scaling AgriFood companies driving innovation in the industry. SVG Ventures' categorization is designed to capture the broadest themes across the entire AgriFood landscape. The AgTech growth-stage companies are organized according to their respective technology as well as along the value chain from pre-season through harvest, including complete farm cycle management (i.e. indoor farming). The FoodTech scale-ups are categorized by applicable technology category along the value chain after the farm gates including supply chain, post-harvest, food processing, novel food ingredients, food safety, and waste.

This publication provides information on each of the TOP 50 AgTech growth-stage companies. For further information on the FoodTech growth stage companies on the landscape map, check out the TOP 50 FoodTech edition.

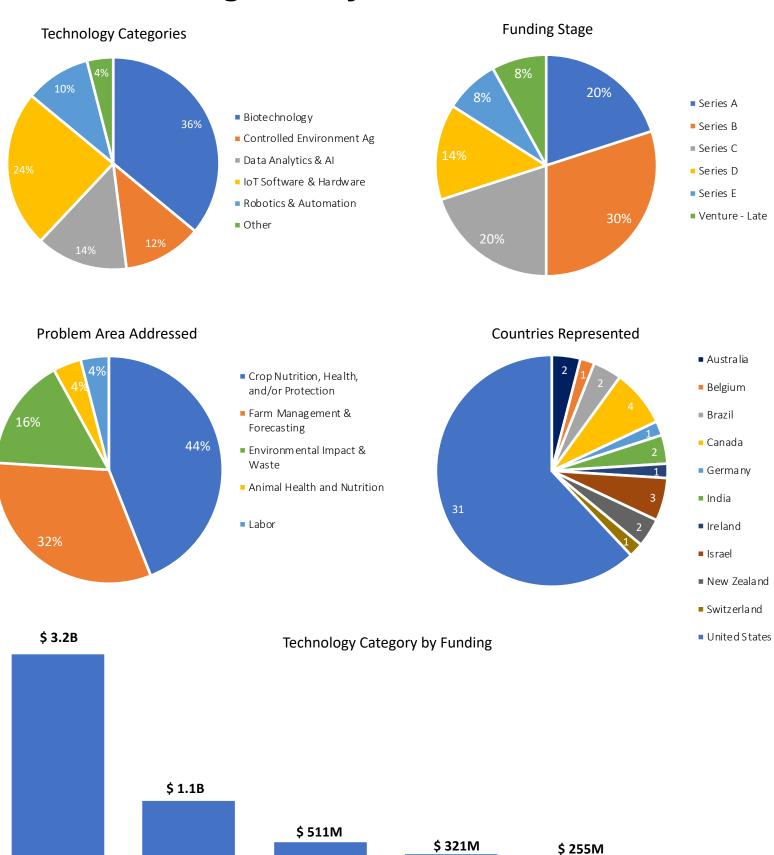
TOP 50 AGTECH & FOODTECH SUPPLY CHAIN LANDSCAPE MAP





THRIVE 50 AgTech by the Numbers





\$ 28M

Other



Icon Key



Below are the icons used to categorize each company: Technology Category, Problem Addressed, Value Chain Position, and Farming Type.

Technology Category:











Biotechnology

Data Analytics & Al

IoT Software & Hardware Controlled Environment Ag

Robotics & Automation

Problem Area Addressed:



Crop Nutrition, Heath & Protection



Animal Health and Nutrition



Farm Management & **Forecasting**



Environmental Impact & Waste



Traceability



Water



Food Safety



Labor

Value Chain Position:







In Season



Harvesting



Complete Farm Cycle Management



Livestock



Specialty Crops



Permanent Crops

Farming Type:



Dairy



Livestock



Commodity Crops



All Crops

PLANT BREEDING & PRE-PLANTING

Companies:

AgBiome	14
Benson Hill Biosystems	15
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Biome Makers, Inc	17
Ginkgo Bioworks	18
Inari	
Pivot Bio	20
Trace Genomics	21
ZeaKal Inc	22









Biotechnology

Problem Addressed:



Crop Nutrition, Heath & Protection

Value Chain Position:



Plant Breeding and Pre-Planting

Farming Type:



All Crops

Website: agbiome.com Country: United States Year Founded: 2012

Business Description

AgBiome is a biotechnology company using new knowledge of the plant-associated microbiome to create innovative products for agriculture. AgBiome's products will help farmers combat many of the most important unsolved problems in agriculture, including insects, nematodes, and diseases.

Products and Services

AgBiome's products include the most diverse and unique microbial collection for agriculturally relevant applications, coupled to screen for insect, disease, and nematode control. This enables farmers to get biological fungicide for disease control in a broad variety of crops and the turf and ornamental markets.

Genesis™: Gene and Strain Identification System is AgBiome's innovative platform allowing them to efficiently capture and screen the most diverse and unique microbial collection for agriculturally relevant applications.

Employees:	Post Valuation:	Total Raised to Date:	
87	Undisclosed	\$119M	
February 2017	September 2019	September 2019	

Leadership Team

- Eric Ward: Co-Founder, Co-Chief Executive Officer
- Scott Uknes: Co-Founder, Co-Chief Executive Officer
- Andrew Graham: Chief Financial Officer
- Natarajan Balachander: Director, Business Development
- Kelly Smith: Director of Microbial Development
- Philip Hammer: Research Director
- Daniel Tomso: Chief Science Officer
- Ted Platt: Executive Sales

- December 2019: Genective and AgBiome announced strategic partnership
- September 2019: AgBiome awarded phase II grant to combat major pest of African subsistence crops







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Plant Breeding and Pre-Planting

Farming Type:



All Crops

Website: bensonhill.com Country: United States Year Founded: 2012

Business Description

Benson Hill Biosystems operates a platform designed to develop healthier and more sustainable food and ingredients. The company's platform combines machine learning and big data with genome editing and plant biology to drastically accelerate and simplify the product development process, enabling farmers to grow the next generation of crops and food producers turn them into healthier, tastier ingredients.

Products and Services

CropOS™ computational platform leverages recent advances in cloud computing, big data analytics, and plant biology to drive crop performance improvements across the spectrum of trait discovery from breeding to genome editing to transgenics. CropOS allows researchers to quickly predict, select, and develop desirable traits, bypassing generations of experimentation to bring crop, food, and ingredient improvements to market faster.

Employees:	Post Valuation:	Total Raised to Date:	
170	\$297.6M	\$173M	
February 2020	August 2019	August 2019	

Leadership Team

- Matthew Crisp: Co-Founder, President, and Chief Executive Officer
- Michael Wainscott: Chief Financial Officer
- Chris Wilkins: Chief Operating Officer
- Natalie DiNicola: Chief Communications Officer
- Murray Spruill: Vice President, Intellectual Property
- Paul Skroch: Vice President of Data Science and Platform Engineering
- Michael Thompson: Vice President, Partner Development
- Mohammed Oufattole: Vice President, Research and Development
- Adam Javan: Vice President, Strategy and Innovation
- Kathy Flores: Vice President, Supply Chain

- July 2019: Benson Hill and Brownseed Genetics forges a partnership to expand corn hybrid choices
- June 2019: RiceTec and Benson Hill collaborate to explore new technologies for rice improvement







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Plant Breeding and Pre-Planting Farming Type:



All Crops

Website: bioconsortia.com Country: New Zealand Year Founded: 2014

Business Description

BioConsortia Inc. is a developer of microbial consortia built for increasing agricultural yields. The company discovers, develops, and commercializes microbial consortia seed treatment and soil additive products, enabling customers to enhance plant phenotype and increase crop yields.

Products and Services

BioConsortia developed a revolutionary Advanced Microbial Selection (AMS) process, which uses directed selection to discover beneficial teams of microbes. This novel, patented model works by controlling the seed genetics and the environment while changing the microbial community in order to shift trait performance in the crop toward improved targeted phenotypes.

Employees:	Post Valuation:	Total Raised to Date:
11	\$50M	\$49M
October 2016	March 2019	March 2019

Leadership Team

- · Marcus Meadows-Smith: Chief Executive Officer
- Christina Huben: Senior Vice President, Operations and Administration
- Hong Zhu: Senior Vice President, Research and Development
- Joe Schmidt: Vice President, Business Development and Strategy

- October 2019: BioConsortia added new wheat seed treatment to growing list of products moving to registration
- August 2019: BioConsortia moved multiple products into registration phase







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Plant Breeding and Pre-Planting Farming Type:



All Crops

Website: biomemakers.com Country: United States Year Founded: 2015

Business Description

Biome Makers is a biotech company born in Silicon Valley specializing in the identification and understanding of the microbiome. The company uses DNA Sequencing technologies and proprietary Intelligent Computing systems to provide detailed information and recommendations that allow customers to improve their agricultural production and quality.

Products and Services

WineSeq[™] is a medical-grade diagnostic for vineyard disease prediction that provides insights and actionable recommendations based on microbiome analysis and coupled with an intelligent database to provide insight and actionable recommendations. It provides a comprehensive soil analysis service, including disease prediction, terroir characterization, and the determination of the wine microbiome.

Employees:	Post Valuation:	Total Raised to Date:
20	\$9M	\$6.3M
November 2019	June 2019	June 2019

Leadership Team

- Adrian Fernandez: Co-Founder and Chief Executive Officer
- Héctor Ortega: Chief Technology Officer
- John Matthesen: General Manager
- Alberto Acedo: Co-Founder and Chief Scientific Officer

- June 2018: Biome Maker Inc. was chosen as the best AgTech start up by Nikkei in Japan
- April 2018: Biome Maker joined Bayer Crop Science to lead the future of agriculture







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Plant Breeding and Pre-Planting

Farming Type:



Commodity Crops

Website: ginkgobioworks.com Country: United States Year Founded: 2008

Business Description

Ginkgo Bioworks develops biological engineering products designed to create custom microbes across multiple markets. The company's products provide probiotic bacteria to protect the body from dangerous infections, generate libraries of molecules, and also discovers molecules in flavors, sweeteners, cosmetic ingredients, crop treatments, and pharmaceuticals. This enables clients to scale the process of organism engineering using software and hardware automation.

Products and Services

Gingko Bioworks enables customers to better make use of existing microbiome research they have conducted by accessing key pathways for the production of molecules relevant for agriculture. Using an automated fermentation process in a 40,000 square foot facility, Gingko Bioworks genetically engineers microbes to produce natural product pesticides at a rate that far exceeds traditional scientists working by-hand at the lab bench.

Employees:	Post Valuation:	Total Raised to Date:	
264	\$4.79B	\$727.4M	
September 2019	September 2019	January 2019	

Leadership Team

· Jason Kelly: Co-Founder and Chief Executive Officer

Reshma Shetty: Co-Founder and President

Heidi Buser: ControllerBarry Canton: Co-Founder

Ena Cratsenburg: Chief Business Officer

- Peter Boynton: Chief Commercial Officer
- Kevin Madden: Head of Product
- Austin Che: Co-FounderTom Knight: Co-Founder

- October 2019: Ginkgo Bioworks raised \$350M fund for biotech spinouts
- October 2019: Worth of Ginkgo Bioworks' dev shop for genetic programming reached \$4B







Biotechnology

Problem Addressed:



Crop Nutrition, Heath & Protection

Value Chain Position:



Plant Breeding and Pre-Planting

Farming Type:



Commodity Crops

Website: inari.com Country: United States Year Founded: 2016

Business Description

Inari is using genetic technologies and data science to transform plant breeding and tackle the environmental and climate impacts of agriculture. Inari's Seed Foundry cuts the time it takes to bring a new seed to market to just three years and reduce development costs by 90%. More importantly, it unlocks the possibility to tackle the most complex problems in plant biology — precisely improving how a plant grows and uses nutrients, water, and sunlight.

Products and Services

Inari is addressing the biggest problems in some of the world's most important crops—corn, soybeans, and wheat. The company is advancing the next generation of highly productive seeds that require less land, fertilizer and water to grow. In this way, Inari hopes to radically reduce the amount of natural resources needed to grow our food while also unlocking new value to farmers.

Employees:	Post Valuation:	Total Raised to Date:
120	\$165M	\$147M
August 2019	August 2019	July 2019

Leadership Team

- Ponsi Trivisvavet: Chief Executive Officer and Director
- Julie Borlaug: Vice President, Communications and PR
- Dr. Catherine Feuillet: Chief Science Officer
- Dr. Mark Stowers: Chief Operations Officer, President, North America

Key Achievements/ Partnerships

• November 2019: Silicon Republic named Inari as 1 of 7 startups transforming energy and the environment







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Plant Breeding and Pre-Planting

Farming Type:



Commodity Crops

Website: pivotbio.com Country: United States Year Founded: 2010

Business Description

Pivot Bio develops a crop nutrition product for farmers designed to replace synthetic nitrogen fertilizer. The company develops crops that can capture and metabolize nitrogen from the atmosphere, reducing the need for petrochemical fertilizers, and enabling farmers to reduce the cost of farming and improve crop health.

Products and Services

Pivot Bio PROVEN™ microbes are applied in-furrow during planting. The microbes create a symbiotic relationship with the corn plant, produce nitrogen, and deliver it directly to the roots of the corn plant. Pivot Bio PROVEN™ microbes continually feed nitrogen to the corn plant throughout the growing season with peak nitrogen production during the crops' most critical growth stages. Pivot Bio PROVEN™ microbes adhere to the roots of the corn plant and will not run off during weather events. This supports a more reliable and consistent method for delivering plant nutrition.

Employees:	Post Valuation:	Total Raised to Date:
100	\$200M	\$86.75M
January 2020	September 2018	September 2018

Leadership Team

- · Richard Broglie: Chief Technology Officer
- Natalie Hubbard: Vice President, Regulatory and Government Affairs
- Allen Kuo: Associate Legal Counsel
- Christa Peren: Vice President, Finance
- Mark Reisinger: Vice President, Commercial Operations
- Ernie Sanders: Vice President, Product Development
- Brenda Stone: Organization and Talent Development Director
- Alvin Tamsir: Chief Security Officer and Co-Founder
- Karsten Temme: Chief Executive Officer and Co-Founder
- Tracy Willits: Vice President, Communications

- October 2019: Pivot Bio joined the International Phytobiomes Alliance
- February 2019: Pivot Bio made the World's Most Innovative Companies list







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Plant Breeding and Pre-Planting

Farming Type:



All Crops

Website: tracegenomics.com Country: United States Year Founded: 2015

Business Description

Trace Genomics has developed the first analytics engine that learns as it maps the living soil. Founded in 2015 to serve the farming community, Trace Genomics helps growers and their agronomists maximize the value of every acre. The company is building the largest, most actionable body of soil intelligence, making thousands of growers and agronomists experts on what is underground. Trace Genomics is headquartered in Silicon Valley and has raised \$22.5M in funding.

Products and Services

Trace Genomics digitalizes the living soil, applying a proprietary soil DNA extraction and sequencing process to index and quantify millions of microbes in the soil. Then they decode that data, conducting high speed, and cost efficient data analysis to compare against a large and growing set of soil data. Lastly, Trace's team works with their growers and their agronomists to interpret results and take action on their fields.

Employees:	Post Valuation:	Total Raised to Date:	
8	\$60.72M	\$22.5M	
July 2016	December 2018	January 2019	

Leadership Team

- Dan Vradenburg: Chief Executive Officer
- Dr. Diane Wu: Co-Founder and Chief Technology Officer
- Dr. Poornima Parameswaran: Co-Founder and Chief Customer Experience Officer

Key Achievements/ Partnerships

• June 2017: Named one of Forbes 25 Most Innovative AgTech Startups







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Plant Breeding and Pre-Planting Farming Type:



All Crops

Website: zeakal.com Country: United States Year Founded: 2010

Business Description

ZeaKal, Inc. is a next-generation trait technology company. ZeaKal focuses is on increasing the photosynthetic capacity of plants — allowing crops to harvest more sunlight and carbon dioxide, and translating it into more nutritious grains, seeds, and fiber.

Products and Services

PhotoSeed™ is a next generation trait technology that sustainably increases photosynthesis while also improving compositional quality in seed crops.

Employees:	Latest Funding:	Total Raised to Date:	
20	\$115M	\$24.82M	
July 2019	June 2019	June 2019	

Leadership Team

Han Chen: Chief Executive Officer
 Jerry Caulder: Executive Chairman
 Amy Curran: Chief Operating Officer

Greg Bryan: Chief Technology Officer
Nick Roberts: Chief Science Officer
Ann Whitley: Chief Financial Officer

Key Achievements/ Partnerships

• February 2019: Collaborationed with Corteva in major row crops and Canopy Rivers for Hemp



IN SEASON

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IOT Software &/or Hardware Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Year Founded: 2013

Farming Type:



All Crops

Business Description

Website: arable.com

Arable Labs is a data company that powers better decisions in agriculture through an integrated approach to hardware, software, and data science. The result is a simple, reliable, and holistic solution that helps growers to manage decisions more precisely around irrigation, spraying, and fertilizing, and helps large agriculture enterprises gain visibility and insight into their operations. Arable makes accurate measurements of the full crop system—weather, plant, soil, and farmer practice—in a low maintenance, easy to implement, and scalable way. The company turns these measurements into crop insights that power intuitive decision tools, which they deliver in collaboration with their partners to create a real-time network of predictive analytics across the agriculture-food system.

Country: United States

Products and Services

Arable's *Mark 2* is a crop and weather-sensing device that measures over 40 elements of the crop system in one simple, compact, and reliable device. It installs in minutes, and requires near-zero maintenance. It can stand up to the toughest conditions on the farm and also creates a platform in the field to connect and power other sensors that simplifies the farmer's operation by keeping all their data in one place. The data and insights from the *Mark 2* power Arable's intuitive web and mobile tools, which provide real-time visibility into crop and field conditions. Recommendations on decisions such as when and how much to irrigate, combined with predictive models that provide insight into crop timing, yield, and quality, result in positive ROI for the grower.

Employees:	Post Valuation:	Total Raised to Date:	
40	\$21M	\$18.8M	
January 2019	April 2019	April 2019	

Leadership Team

Jim Ethington: Chief Executive Officer Joakim Wiklund: Chief Technology Officer

- 2020: Arable deployed over 1,500 devices across 37 countries and 35 crops
- Partnered with xarvio, BASF's digital farming platform, and Netafim, the leader in precision irrigation
- Partnered with the US Department of Energy, the US Department of Agriculture, the University of Nebraska Lincoln, the University of California Davis, NASA, and the Nature Conservancy







IOT Software &/or Hardware

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Farming Type:



All Crops

Website: agrosmart.com.br/en/ Country: Brazil Year Founded: 2014

Business Description

Agrosmart generates market intelligence and creates agronomic models based on seed genetics, soil type, and microclimate. The company combines ground truth data and best-in-class analytical capabilities to provide actionable insights for a more productive and sustainable agriculture.

Products and Services

Agrosmart monitors crops using sensors to collect ground truth data and satellite imaging to generate recommendations regarding irrigation, climate, and diseases to help farmers make better decisions: increasing yield, saving water and energy to achieve sustainability and climate resilience. Agrosmart generates data for orienting genetic development and supporting seed placement strategies, evaluates hybrids and crop protection products performance in different microclimates, and creates more efficient product protocols so input companies can increase their offer value. The company brings transparency, sustainability and traceability to food and beverage industries, making their value chain more transparent and climate resilient. Additionally, they are integrating the digital strategy of important input distributors in Brazil and developing partnerships with financial institutions and insurance companies.

Employees:	Post Valuation:	Total Raised to Date:	
18	Undisclosed	\$8.8M	
January 2017	January 2019	December 2019	

Leadership Team

Mariana Vasconcelos: Co-Founder and Chief Executive Officer

Cristiano Camargo: Chief Operating Officer

Guilherme Raucci: Director of New Business

Raphael Garcez Pizzi: Chief Product Officer

• Thales Nicoletti: Hardware Manager







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



All Crops

Website: biotalys.com Country: Belgium Year Founded: 2013

Business Description

While most biological crop protection products are based on the use of micro-organisms, such as viruses, bacteria, or fungi, Biotalys is discovering a new generation of biological molecules to tackle pests and diseases. Biotalys' unique protein-based biocontrols are directed against pests' and pathogens' essential molecules, and thus have the advantage of acting directly and uniquely on the target organisms. As such, Biotalys' protein-based bioctontrols combine a highly effective, specific, and consistent mode of action with a minimized risk of effects on wildlife, bees, growers, and consumers. The biocontrols can be produced in a cost-effective manner by industrial-scale fermentation.

Products and Services

Biotalys' products are a new generation of protein-based biocontrols that effectively and selectively target pests and pathogens with new modes of action. The company's pipeline currently includes four programs targeted against fungal diseases, a bioinsecticide, and a biobactericide. The first biofungicide is expected to enter the U.S. market in 2022, followed by global market introductions.

Biotalys is also exploring partnering opportunities to further address the need for more sustainable food and agricultural practices.

Employees:	Post Valuation:	Total Raised to Date:
35	\$77M	\$60.52M
June 2019	July 2019	July 2019

Leadership Team

• Patrice Sellès: Chief Executive Officer

· Hilde Revets: Chief Science Officer

Luc Maertens: Chief Operations Officer

Mark Chadwick: Head of Intellectual Property

• Mike Stepan: Head of Business Development

Key Achievements/ Partnerships

• Based on its unique ground-breaking technology platform, Biotalys has built a versatile pipeline of products with novel modes of action against key pests and diseases. Their first product, a biofungicide, is expected to enter the U.S. market in 2022







IOT Software &/or Hardware

Website: cropx.com

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



All Crops

Year Founded: 2013

Business Description

CropX is an innovative AgAnalytics company that aims to revolutionize and automate the farm and the decision-making process. This is done by combining above-ground data sets with real-time soil data measured by proprietary inhouse-developed soil sensors that transmit the data to a cloud-based platform to be integrated with imaging, weather data, topography and soil texture maps, crop models and many other data sets. Analyzed by Al-based algorithms, this provides insights and automations via the CropX app. Backed by a world-class syndicate of strategic partners and investors and having raised over \$20M in funding rounds including a recent B-round, CropX is determined to continue its global expansion, acting as the Big Data North Star for the entire global AgFood value chain.

Country: Israel

Products and Services

CropX provides the first fully DIY farm management platform that offers, a scalable, user friendly, cloud-based, integrated hardware and software system. This system includes easy to install sensors with IoT connectivity and a patent-pending unique spiral design for unmatched accuracy that measure soil moisture, temperature, and electrical conductivity (EC). The CropX software integrates additional field data such as location, soil type, topography, and crop models with remote sensing data such as precise weather and satellite imaging.

Employees:	Post Valuation:	Total Raised to Date:
33	\$2.15M	\$30M
August 2019	June 2014	August 2019

Leadership Team

Tomer Tzach: Chief Executive Officer

John Vikupitz: President and Chief Risk Officer

- CropX acquired CropMetrics to expand U.S. market presence
- Growers Edge and CropX Partner to incent farmers to adopt
- Developed soil-sensing technology to optimize farm management
- CropX teamed with FarmAgro to offer Latin American farmers accurate predictive power based on soil







Robotics & Automation

Problem Addressed:



Labor

Value Chain Position:



In Season

Farming Type:



All Crops

Website: ecorobotix.com Country: Switzerland Year Founded: 2011

Business Description

Based in Switzerland, ecoRobotix is developing a revolutionary, fully-automatic, and solar-powered weed-killer robot. It detects weeds among crops and destroys them using 95% less chemicals. No driver, no tractor, no energy, few herbicides: weeding costs are heavily reduced as well, up to 50%. Robotic weeding has a potential market of millions of machines worldwide. The demand is here; the technology is ready. This is the moment to switch to clever weeding.

Products and Services

Only 5% of pesticides reaches its target, i.e. the weeds we want to destroy. This waste generates huge costs for the farmers, as chemicals are the most important cost of weeding (50% - 70% depending on the crop). ecoRobotix's solution to this problem is to use smart and precise weed killer robots, which sprays herbicides only on weeds, reducing by the quantity of herbicides needed 95%. As a result, weeding costs can pontetially be cut in half. This allows the famer to concentrate on more added value tasks, as the robot works completely autonomously (no supervision and no recharge needed as it is a solar-powered robot).

Employees:	Post Valuation:	Total Raised to Date:	
20	Undisclosed	\$13.88M	
January 2019	January 2019	January 2019	

Leadership Team

- Steve Tanner: Chief Technology Officer and Co-Founder
- Aurelien G. Demaurex: Chief Executive Officer and Co-Founder
- Claude Juriens: Chief Brand Officer
- Cyril Halter: Chief Operations Officer

- 2019: Achieved working prototypes, 15+ pilot projects in Europe (including BASF and major cooperatives in Europe), 1000+ leads, 2 patents
- September 2019: Ecorobotix obtained B Corp Certification







Robotics & Automation

Problem Addressed:



Labor

Value Chain Position:



In Season

Farming Type:



Specialty Crops

Website: farmwise.io Country: United States Year Founded: 2016

Business Description

FarmWise Labs is a developer of farming robots designed to facilitate autonomous cultivation and organic farming. The company is developing the future of vegetable farming with machines that can adapt to different tasks to meet the needs of each farmer and each plant, at any time.

Products and Services

FarmWise Labs robots leverage machine learning and artificial intelligence for taking on cultivation tasks including weeding, planting, sowing, and soil-tilling using adaptable machinery and its autonomous vegetable weeder helps to get rid of herbicides, enabling farmers to nurture each plant, grow healthier crops, and enjoy better profits.

Employees:	Post Valuation:	Total Raised to Date:
25	\$45M	\$24.05M
September 2019	June 2019	June 2019

Leadership Team

- Sebastien Boyer: Co-Founder and Chief Executive Officer
- Thomas Palomares: Co-Founder and Chief Technology Officer

- September 2019: FarmWise Labs raised \$15.5 million to farm crops sustainably using robots
- March 2019: Farmwise Labs collaborated with Rousch in Michigan







IOT Software &/or Hardware

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



Specialty Crops

Website: fieldin.com Country: Israel Year Founded: 2013

Business Description

Founded in 2013, Fieldin's Control Center for specialty crops helps growers manage and optimize pesticide applications, harvest activities, and manage critical field operations in real-time. Fieldin's smart farming platform seamlessly connects tractors, machinery and in-field sensors to provide managers with actionable data that improves production, transparency and efficiency in the field. Leveraging Fieldin's customizable dashboards, some of the largest specialty crop growers in the Central Valley have been able to cut operational expenses by 10-20%.

Products and Services

Smart Spraying Service: removes the blindfold when it comes to your spraying activities with real-time spray data that ensures optimal timing and execution of spray events, as well as alerts for application errors such as missed rows, double sprays, or unsuitable weather conditions. Smart Harvesting Service: optimizes harvest activities with real-time data for shakers (such as seconds per tree), sweepers, harvesters, and other equipment, allowing managers to compare machines, operators, shaking patterns as well as yield data from various locations. Smart Cultural Practices Service: provide transparency into other key cultural practices, comparing operators, analyzing shifts, refilling operations, and more, leveraging industry benchmarks and insights from the largest specialty crop data set in the industry.

Employees:	Post Valuation:	Total Raised to Date:	
80	Undisclosed	\$18.2M	
January 2019	January 2019	January 2019	

Leadership Team

Boaz Bachar: Co-Founder and Chief Executive Officer
 Iftach Birger: Co-Founder and Chief Operations Officer

- January 2020: Accepted to John Deere Startup collaborator program
- March 2019: Won AgFunder Innovation Award winner in the Farm Tech category







Other

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Farming Type:



All Crops

Website: growersedge.com Country: United States Year Founded: 2017

Business Description

Growers Edge Financial provides crop insurance products and services intended to help growers and farmers manage risk and obtain access to capital for their operations.

Products and Services

Growers Edge's data platform specializes in federal and private crop insurance, enabling agents and growers to capitalize on new technologies and increase revenues without sacrificing the reassurance that comes with traditional crop insurance policies.

Employees:	Post Valuation:	Total Raised to Date:
40	\$33.3M	\$18.3M
August 2019	June 2018	June 2018

Leadership Team

- Billy Rose: Chief Executive Officer and Founder
- · Joe Young: President and Co-Founder
- Dan Cosgrove: Chief Strategy Officer
- Doug May: Vice President of Sales
- Brian Donaghy: Chief Technology Officer

- December 2019: Growers Edge and CropX partnered in soil-sensing
- October 2019: Growers Edge and Growmark partnered







Biotechnology

Website: indigoag.com

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Year Founded: 2014

Farming Type:



Commodity Crops

Business Description

Indigo Agriculture is furthering its mission of harnessing nature to help farmers sustainably feed the planet by developing natural microbiology and digital technologies to improve grower profitability, environmental sustainability, and consumer health. Their systems approach creates new value from soil to sale, benefiting tens of thousands of growers across millions of acres. Indigo is headquartered in Boston, MA, with additional offices in Memphis, TN; Research Triangle Park, NC; Buenos Aires, Argentina; São Paulo, Brazil; and Switzerland.

Country: United States

Products and Services

Indigo Marketplace is a digital platform that directly connects buyers and growers, helping growers earn more for high-quality, sustainably-grown grain and giving buyers the opportunity to purchase grain outside of their typical draw areas and access crops that meet unique specifications. Indigo Transport is a technology-enabled platform that connects carriers to a network of growers and dry bulk commodity shippers across the U.S. to move grain more efficiently. Indigo Carbon allows growers to earn additional income for increasing the carbon content of their soil and reducing overall on-farm emissions. Indigo Carbon underpins The Terraton Initiative, a global effort to remove carbon dioxide in agricultural soils. Indigo Acres is a comprehensive package of agronomic tools and services to support growers transitioning to regenerative farming practices, which help improve the profitability of U.S. farmers and a farm's resilience to extreme weather.

Employees:	Post Valuation:	Total Raised to Date:	
350	\$3.45B	\$850M	
September 2019	December 2018	January 2020	

Leadership Team

- David Perry: President, Chief Executive Officer and Director
- Geoffrey von Maltzahn: Co-Founder, Chief Innovation Officer and Director

- 2019: Ranked #1 on CNBC's Disruptor 50 list and #35 on Fast Company's 50 Most Innovative Companies list
- 2019: Launched the Terraton Initiative a global effort to draw down atmospheric carbon dioxide through agricultural soils receiving over 15 million acres of expressed interest from growers in the first six months
- Partnered with Anhauser-Busch, the U.S. leading brewer, to deliver 2.2 million bushels of sustainably-grown rice







IOT Software &/or Hardware

Problem Addressed:



Environmental Impact & Waste

Value Chain Position:



In Season

Farming Type:



All Crops

Website: maggrow.com Country: Ireland Year Founded: 2013

Business Description

MagGrow is a patented, proprietary technology for droplet formation that yields superior drift reduction of over 70% and increased spray coverage performance ranging from 36% to over 100% compared to conventional spraying. As well as the two core benefits of drift control and superior coverage, MagGrow also reduces water usage by up to 50%, extends spray windows and reduces labour requirements. The MagGrow system has no moving parts, is easy to install and maintain, and can be fitted to a new or existing crop sprayer.

Products and Services

The flagship *MagGrow Tractor Boom* is designed for retrofit onto a tractor boom, regardless of the make or model. This product is designed to fit any sprayer make or size. The MagGrow Backpack Sprayer is mainly used in greenhouses but can also be used outdoors. It features MagGrow's pioneering technology and unique application technique.

Employees:	Post Valuation:	Total Raised to Date:	
34	Undisclosed	\$8.64M	
December 2018	November 2018	November 2018	

Leadership Team

- Gary Wickham: Founding Member and Chief Executive Officer
- David Moore: Founding Member and Director of Strategic Business Development

- 2019: MagGrow announced a major strategic partnership with Trimble Inc, a world leading multinational precision agri company
- Partnered with AMBER (Advanced Materials and BioEngineering Research)
- Partnered with the SFI Research Centre for materials science based at Trinity College Dublin around pure research of the MagGrow technology
- Partnered with the engineering and research center at Harper Adams University in England, UK
- Established its own crop science center at Farm 491 in the Royal Agricultural University in the UK







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



All Crops

Website: newleafsym.com Country: United States Year Founded: 2012

Business Description

NewLeaf Symbiotics has discovered in nature and optimized an important part of the plant's microbiome. Found on all plants, Methylotrophs, M-trophs are very special micro-organisms with unique features. Over many years of scientific study, development, and trials, NewLeaf has created a technology platform to deliver natural tools that farmers natural tools to improve crop yield, protect against insect and disease pressures, while improving crop quality, and reduce impact on the environment.

Products and Services

Operator of an agricultural biotechnology company created to discover and develop sustainable agricultural products based on PPFM bacteria and related microbes. The company's services mainly focus on engaging in the research, development, and commercialization of symbiotic bacteria that is a beneficial plant bacteria, enabling farmers to fight plant disease and increase crop yields.

Employees:	Post Valuation:	Total Raised to Date:
40	\$80M	\$74.62M
February 2020	September 2017	February 2020

Leadership Team

- Steve Kahn: Chief Executive Officer
- Desmond Jimenez: Chief Product Officer
- · Janne Kerovuo: Chief Technology Officer
- Matt Helms: Chief Commercial Officer
- Aaron Kelley: Vice President Manufacturing
- Molly Edwards: General Counsel, Vice President, Human Resources
- Natalie Breakfield: Vice President, Research and Development

- September 2019: Named "Company of the Year" by Startup City
- August 2019: New product from NewLeaf Symbiotics launched first corn product that improves corn yield







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



All Crops

Website: plantresponse.com Country: United States Year Founded: 2008

Business Description

Plant Response was formed by combining the former Plant Response Biotech, with expertise in screening plant responses to biologicals at the cellular level, and Koch Biological Solutions, which offers deep scientific capability relating to biological modes of action at the genetic and whole-plant levels. Plant Response has industry-leading fermentation capabilities, robust manufacturing and commercial product skills. Plant Response intends to create value for channel partners and farmers in multiple categories, including intrinsic yield improvement, abiotic stress tolerance, increased nutrient use efficiency and enhanced plant innate immunity. Plant Response provides unparalleled expertise in the discovery, formulation and commercialization of a broad array of science-backed products within the ag biologicals space. The company offers multiple technology platforms such as live microbes, extracts and biosimilar molecules to solve growers' targeted issues. Plant Response recently acquired applied microbial science company Pathway BioLogic to expand its portfolio of robust biological products offered to the agricultural industry..

Products and Services

Plant Response plans to commercialize 12 science-based products designed to mitigate abiotic stress, provide intrinsic yield improvement, enhance plant innate immunity and increase nutrient use efficiency.

Employees:	Post Valuation:	Total Raised to Date:	
20	Undisclosed	\$17.9M	
January 2019	January 2019	November 2019	

Leadership Team

Tom Snipes: Chief Executive Officer
 Frédéric Brunner: Chief Scientific Officer
 John Kruse: Chief Technology Officer
 Rad Page: Chief Commercial Officer

Key Achievements/ Partnerships

January 2020: Plant Response Acquires Pathway BioLogic







Robotics & Automation

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Farming Type:





Website: precisionhawk.com Country: United States Year Founded: 2002

Business Description

PrecisionHawk develops commercial drone technology intended for asset and resource management. The company's offerings include drones and aerial vehicle technology that supports both multi-rotor and fixed-wing drones from top vendors, allowing them to select the technology that meets specific needs and enables businesses to fly and analyze data using advanced drone technology.

Products and Services

Precision Hawk offers an integrated platform of drone and sensor hardware, flight and analytics software, and services for business.

Employees: Post Valuation: Total Raised to Date:

140 \$210.12M \$138.75M

December 2019 January 2018 December 2019

Leadership Team

- Jim Norrod: Chief Executive Officer
- Brian Bharwani: Chief Financial Officer
- Diana Cooper: Senior Vice President, Policy and Strategy
- Erin Miller: Vice President, Human Resources
- Krishnan Hariharan: Vice President, Product

- Irina Denisenko: General Manager, Telecom
- David Culler: General Manager, Energy-Utilities
- Kevin Lang: General Manager, Agriculture
- Rick Statile: General Counsel

Key Achievements/ Partnerships

• December 2019: Raised \$32M to build the next generation of drone software and services







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



All Crops

Website: provivi.com Country: United States Year Founded: 2012

Business Description

Provivi has developed technologies to produce insect pheremones at greatly reduced costs, thereby enabling the practical use of pheremones in row crop agriculture which can reduce insect pressure. In Latin America in particular, where year-round growing conditions lead to the rapid buildup of trait and chemistry resistance, pheremones can prolong the useful lifetime of crop protection products.

Products and Services

Provivi's formulations transferase enzymes that activate diazo and azide compounds to generate iron-carbenoids and iron-nitrenoids through a mode of activation for efficient synthesis of biopesticides. This enables clients to reduces pest populations and minimizes crop damage.

Employees:	Post Valuation:	Total Raised to Date:
45	\$85M	\$136.65M
November 2017	September 2019	September 2019

Leadership Team

- Pedro Coelho: Co-Founder and Chief Executive Officer
- Paul Kuc: Chief Financial Officer
- Peter Meinhold: Co-Founder and Chief Technology Officer
- David Rozzell: Senior Vice President, Product Chemistry
- Phillip Rollinson: Executive Vice President of Sales and Business Develop
- Frances Arnold: Co-Founder

- January 2020: Provivi and Syngenta announced product development agreement
- October 2019: Provivi raised \$85M to fight pests with pheromones







Data Analytics & AI

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Farming Type:



All Crops

Website: resson.com Country: Canada Year Founded: 2013

Business Description

Resson is leading the technology evolution currently underway from precision agriculture to decision agriculture by equipping growers with productivity enhancement tools that make data driven farming a reality. By combining data from multiple sources, recent breakthroughs in artificial intelligence (AI), and the power of cloud computing. Resson's revolutionary solution integrates data from satellite, drones, close-proximity cameras, and in-field sensors to provide a comprehensive picture of exactly what is happening in every part of the farm.

Products and Services

The predictive analytics solution from Resson goes beyond NDVI maps derived from satellite and drone imagery to virtually detect, classify, and geo-locate specific anomalies, pests and diseases in every part of the field. The key differentiation that Resson's technology brings is the unparalleled level of granularity to monitor and isolate specific issues based on the crop, and the region, or all the way down to individual plants.

Employees:	Post Valuation:	Total Raised to Date:
43	\$30.28M	\$30.04M
April 2019	April 2016	May 2018

Leadership Team

- Jeffrey Grammer: Chief Executive Officer and Chairman
- Rishin Behl: Co-Founder and Chief Technology Officer
- Dirk Wierema: Director, Finance and Accounting
- Peter Goggin: Co-Founder and Vice President, Operations
- Ben Howard: Vice President, Engineering
- Giri Baleri: Vice President, Product Marketing

Key Achievements/ Partnerships

 May 2018: Mahindra and Mahindra joined McCain Foods and Monsanto Growth Ventures in a strategic partnership with New Brunswick-based Resson







Data Analytics & AI

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



Permanent Crops

Website: semios.com Country: Canada Year Founded: 2010

Business Description

The Semios platform is a powerful tool in yield improvement that enables growers to assess and respond to insect, disease and plant health conditions in real-time. Semios is the leader in on-site sensing, big data, and predictive analytics solutions for perennial agricultural crops.

Products and Services

Semios produces an automated platform that remotely controlr climate, and monitors insect and disease treatment platform. The Semios network of sensors tracks and reports the real time, in-canopy conditions of your orchard or vineyard.

Employees:	Post Valuation:	Total Raised to Date:
69	Undisclosed	\$126.57M
August 2019	August 2018	March 2020

Leadership Team

- Michael Gilbert: Founder and Chief Executive Officer
- Ben Ownes: Director of Field Services, USA
- James Watson: Director of Sales and Marketing
- · Ron Hasting: Director of Finance

- · Michael Burton: Director of Engineering
- Tessa Trethewey: Director of Strategic Partnerships
- Heather McKay: Director of Talent
- Chris Loge: Director of Product Management

Key Achievements/ Partnerships

• January 2020: Semios ranked on the 2020 Global Cleantech 100







IOT Software &/or Hardware

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Farming Type:



Commodity Crops

Website: solinftec.com Country: Brazil Year Founded: 2007

Business Description

Solinftec is a digital agriculture technology company that is unyielding in its long-term commitment to improve the worldwide food chain. Its mission to continuously leverage and invest in cutting-edge technology to increase farm efficiency while subsequently contributing to longer-term sustainability.

Products and Services

From soil preparation to harvesting, Solinftec solutions are part of the day-to-day agricultural production. The company uses platform-agnostic software to connect people, machines, and weather information, creating an intelligent ecosystem that provides insights for optimizing mechanized operations, streamlining inputs, and increasing productivity.

Employees:	Post Valuation:	Total Raised to Date:
500	Undisclosed	\$40M
February 2020	February 2018	February 2020

Leadership Team

· Daniel Padrão: Chief Operating Officer

Rodrigo dos Santos: Chief Executive Officer

• Britaldo Hernandez: Co-Founder and Chief Information Officer

Fernando Santa: Chief Scientific Officer







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



Specialty Crops & Permanent Crops

Website: terramera.com Country: Canada Year Founded: 2010

Business Description

Terramera is a Vancouver-based AgTech leader fusing science, nature, and artificial intelligence to transform how food is grown and the economics of agriculture in the next decade. With its revolutionary Actigate™ technology, Terramera is committed to reducing the global synthetic pesticide load by 80% by 2030 to protect plant and human health and ensure an earth that thrives and provides for everyone. The privately held company was founded in 2010 and has grown to include a world-class bench of engineers, scientists, advisors, and investors. Terramera has integrated operations that include research labs, greenhouse and farm, and has more than 195 patents in its IP portfolio.

Products and Services

Terramera has a Consumer/Professional Products Business, an Agriculture Products Business, and a Licensing Business to scale its Actigate™ technology and achieve its 2030 goal to reduce the global synthetic pesticide load by 80%.

Employees:	Post Valuation:	Total Raised to Date:
17	Undisclosed	\$90.5M
January 2019	January 2019	January 2020

Leadership Team

- Karn Manhas: Founder and Chief Executive Officer
- Craig Hughes: President
- Mike Scott: Chief Financial Officer
- Annett Rozek: Chief Scientific Officer

- Steve Slater: Vice President, Strategic Initiatives
- Graeme Herring: Vice President P, Intellectual Property Strategy
- Joe Sobek: Vice Presedent, Agriculture Innovation and Licensing
- Travis Good: Chief Technology Officer
- Lynel Barrow: Corporate Counsel

- January 2020: Named on the Global Cleantech 100 List (three years in a row)
- October 2019: Won the Nutrien Radicle Challenge Canada
- November 2019: Won the C.L.I.C. Challenge
- Achieved IP portfolio of over 195 patents







Data Analytics & AI

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Farming Type:



Specialty Crops

Website: theyield.com Country: Australia Year Founded: 2014

Business Description

The Yield is an Australian Al-driven, microclimate sensing, analytics and prescription platform for intensive irrigated crops. The Yield's focus is to help improve their customers' yield, reduce risks, and optimize their supply chains. The Yield holds global patent rights for using Al to predict weather variables right down to the hotspot level. It combines the predictions from its microclimate sensing system with the customers' own data in its analytics platform, to power solutions for use on-farm and across supply chains. The Yield is targeting corporate growers in high-value irrigated crops. The blend of high-quality, accurate, and reliable sensing hardware with meaningful analytics positions The Yield as the premier player in the microclimate space.

Products and Services

Sensing+ is an end-to-end solution for large-scale growing operations, combining sensors, data analytics, and apps (mobile and web). By enabling commercial growers to manage the microclimate of their irrigated crops, Sensing+ can: improve yields and reduce crop variability; mitigate risk of damage from frost, extreme heat, and disease events; increase operational efficiency and reduce costs by optimizing on farm management practices; provide insight across multiple sites to improve performance and accountability; and enable historical performance reviews to drive continuous improvement data and analytics.

Employees:	Post Valuation:	Total Raised to Date:	
8	\$8.77M	\$10.15M	
April 2016	January 2017	January 2019	

Leadership Team

Ros Harvey: Founder and Managing Director
 Chris Mendes: Chief Technology Officer

Darren Clarke: Chief Operations Officer

- 2018: Won New Product Award Irrigation Australia International Conference & Exhibition
- 2018: Received a merit at the TechDiversity Awards (Merit)
- 2018: Won IoTA Australia IoT Industry Award
- Partnered with Food Agility Cooperative Research Centre, Bosch, and Microsoft







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



Specialty Crops

Website: vestaron.com Country: United States Year Founded: 2001

Business Description

Developer of bio-insecticides intended to improve the safety, efficacy, and sustainability of crop protection. Vestaron's fermentation-based peptide production and insect resistant crop platform develops a wide variety of biologic crop protection and trait products that kill insect pests efficiently, but are still safe for humans, birds, fish, and the environment.

Vestaron produces insecticides for agriculture, animal health, non-crop, and commercial pest control applications.

Products and Services

Vestaron Corporation believes its responsibility is to develop and commercialize biological insecticides to help the world's farmers produce safer and better food, ornamentals, and fiber in a more environmentally responsible manner. Instead of fighting crop pests with harmful chemicals, their insect resistance derives from spider venom, which safely and effectively targets new metabolic pathways of pests. This venom is harmless to mammals (including humans), birds, fish, honeybees, and other beneficial insects.

Employees:	Post Valuation:	Total Raised to Date:	
20	\$97.2M	\$105.8M	
July 2018	July 2016	January 2019	

Leadership Team

- Anna Rath: Chief Executive Officer and President
- Robert Kennedy: Chief Scientific Officer
- Andreas Renz: Vice President of Business Development

Key Achievements/ Partnerships

January 2020: Vestaron named 2020 Global Cleantech 100 Company







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



In Season

Farming Type:



Commodity Crops

Website: zymergen.com Country: United States Year Founded: 2013

Business Description

Zymergen researches, develops, and manufactures, microbes for Fortune 500 companies. It develops molecules for agriculture, chemicals, materials, pharmaceuticals, electronics, personal care, and more applications.

Products and Services

Zymergen's platform integrates automation, machine learning, and genomics to rapidly accelerate the pace of scientific advancement. This atheoretic approach leverages machine learning to navigate the genomic search space to make discoveries far beyond the capacity of human intuition.

Employees:	Latest Funding:	Total Raised to Date:	
774	\$975M	\$592.44M	
January 2020	December 2018	January 2019	

Leadership Team

- Joshua Hoffman: Co-Founder and Chief Executive Officer
- Aaron Kimball: Chief Technical Officer
- Zach Serber: Co-Founder, Chief Science Officer and Vice
 President
- Tom Stephenson: Chief Commercial Officer
- Judith Gilbert: Chief People Officer

- Duane Vaiz: Vice President and General Counsel
- Anna Osterlind: Corporate Communications Manager
- Jed Dean: Co- Founder and Vice President
- · Adam Safir: Vice President, Development
- Enakshi Singh: Vice President, Finance

Key Achievements/ Partnerships

· April 2019: Zymergen and Sumitomo Chemical announced partnership to develop renewable specialty materials



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Controlled Environment Ag

Problem Addressed:



Labor

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Specialty Crops

Website: aerofarms.com Country: United States Year Founded: 2004

Business Description

AeroFarms is a mission-driven company that builds and operates advanced vertical farms in urban environments. They are a certified B Corporation that has been named one of Fast Company's Most Innovative Companies and TIME Magazine's 2019 Best Inventions. AeroFarms' patented aeroponic technology allows them to use up to 95% less water and to be up to 390 times as productive as conventional field farms. You can enjoy AeroFarms' locally grown product all year round through their retail brand, Dream Greens.

Products and Services

AeroFarms builds and operates advanced vertical farms using its patented aeroponic technology. These systems use no sun or soil. Rather, the plants grow on a patented, recyclable growing medium that is itself made out of 100% recycled materials. Instead of sun, AeroFarms uses LED lights that give plants the specific light source required to grow. AeroFarms is able to grow its high-quality, delicious produce all while using zero herbicides, pesticides, and fungicides.

Employees:	Post Valuation:	Total Raised to Date:	
120	\$500M	Undisclosed	
May 2017	July 2019	July 2019	

Leadership Team

- David Rosenberg: Co-Founder and Chief Executive Officer
- Marc Oshima: Co-Founder and Chief Marketing Officer
- Edward Harwood: Co-Founder and Chief Science Officer
- Guy Blanchard: Chief Financial Officer
- Roger Buelow: Chief Technology Officer

- December 2019: Named one of TIME's Best Inventions of 2019
- March 2019: Won the Global SDG Awards 2018 Sustainability Leadership Award
- Partnered with Singapore Airlines







IOT Software &/or Hardware

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



Complete Farm Cycle Management Farming Type:



All Crops

Website: agworld.com Country: Australia Year Founded: 2009

Business Description

Agworld, founded in 2009, is a global leader in collaborative farm management. The Agworld platform enables farmers, advisors, and third parties to collaborate and work together as one. Agworld's industry-leading platform provides a whole farm ERP that creates seamless collaboration between farmers and their trusted advisors. With over 50,000 farms and more than 30,000 users across their five main markets, Agworld has the experience, capacity, and market presence to support the delivery of innovation to farmers as well as their agronomists, financial advisors, and everyone that helps them succeed.

Products and Services

Agworld provides a Collaborative Farming System to enable the world's growers and their advisors to work as one. By equipping the world's ag professionals with the tools they need to scale their businesses in production and profitability, Agworld enables them to continue to be economically and environmentally sustainable in an everchanging technological world. The Agworld technology improves workflow communication, increases production efficiencies, and responds to verification requirements across the entire value chain. The ability to connect and share important farming activities in real time means retailers are in a better position to help growers succeed—and growers are better prepared for the future.

Employees:	Post Valuation:	Total Raised to Date:	
50	Undisclosed	\$14.15M	
May 2016	January 2019	January 2019	

Leadership Team

Doug Fitch: Chief Executive Officer and Co-Founder

· Zach Sheely: President, USA

• Simon Foley: General Manager, Australia / New Zealand / South Africa

Key Achievements/ Partnerships

Agworld and K-Coe Ison announced a strategic partnership in 2018. The two companies have joined together to
provide a farm management system that will allow farmers to make better agronomic and financial decisions in
today's increasingly complex, data-driven agriculture. The companies are integrating business advisory and
technology to deliver enriched farm management experiences for both growth and profitability, which will
ultimately help farmers manage both their risk and reward.







Controlled Environment Ag

Problem Addressed:



Environmental Impact & Waste

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Specialty Crops

Website: boweryfarming.com Country: United States Year Founded: 2014

Business Description

Bowery is growing food for a better future by revolutionizing agriculture. Their modern farming company combines the benefits of the best local farms with advances made possible by technology, to grow produce you can feel good about eating.

Products and Services

Bowery produce is the next evolution in farming. Every crop planted in a Bowery farm is precisely cared for, without any pesticides. By controlling the entire process, they ensure quality and traceability at every step from seed to store. BoweryOS, their proprietary software system, uses vision systems, automation technology, and machine learning to monitor plants and all the variables that drive their growth 24/7.

Employees:	Post Valuation:	Total Raised to Date:
125	\$500M	\$210.5M
November 2019	October 2019	October 2019

Leadership Team

• Irving Fain: Chief Executive Officer and Co-Founder

Katie Seawell: Marketing

Darren Thompson: Finance and Legal

Carmela Cugini: SalesBrian Donta: Operations

Caralyn Cooley: People

Henry Sztul: Science and Technology

David Golden: Co-Founder, Strategic Finance

• Brian Falther: Co-Founder

Key Achievements/ Partnerships

2019 Press Recognitions: Bloomberg, Business Insider, Fast Company, Food & Wine, National Geographic, and Well
 & Good







Controlled Environment Ag

Problem Addressed:



Environmental Impact & Waste

Value Chain Position:



Complete Farm Cycle Management Farming Type:



Specialty Crops

Website: brightfarms.com Country: United States Year Founded: 2011

Business Description

BrightFarms grows local produce nationwide. BrightFarms eliminates time, distance, and costs from the food supply chain by financing, building, and operating local greenhouse farms in partnership with supermarkets, cities, capital sources, and vendors. BrightFarms has created a scalable model for the future of sustainable, local farming using far less energy, land, and water than long distance, centralized, and field grown agriculture. BrightFarms employs local, community farmers and makes pesticide-free produce accessible to all.

Products and Services

BrightFarms is a model for the future of local, low-impact farming. Its greenhouses provide sustainable local produce at scale on a year-round basis (spinach, arugula, asian greens, spring mix, kale, baby green blends, basil, and tomatoes). With each BrightFarms greenhouse that is built, permanent green collar jobs are created, food miles are significantly reduced (as compared to long distance produce) and the environmental impact of the food supply chain is vastly improved. Each greenhouse uses significantly less energy and on average 80% less water, 90% less land, and 95% less shipping fuel than conventional produce companies. All produce is always pesticide-and GMO-free.

Employees:	Post Valuation	Total Raised to Date:	
120	\$155M	\$125.2M	
June 2018	June 2018	June 2018	

Leadership Team

- Paul Lightfoot: Founder and Chief Executive Officer
- Abby Prior: Senior Vice President and Sales and Marketing
- Erik Lallum: Vice President of Construction
- Dean Martel: Vice President of Sales
- Joshua Norbury: Vice President, Operations

- BrightFarms has developed close partnerships with key national retailers such as Ahold-Delhaize, Albertsons, Kroger, and Walmart
- Fast Company recognizes BrightFarms as "One of World's 50 Most Innovative Companies" and one of the "Top 10 Most Innovative Companies in Food" in the world







IoT Software/Hardware

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Commodity Crops

Website: bushelpowered.com Country: United States Year Founded: 2017

Business Description

Bushel develops a software platform designed to offer producers with accurate real-time information right from the accounting system. The company's platform provides real-time account information directly to growers by integrating into a grain elevator's accounting system and powers real-time scale tickets, contracts, commodity balances, futures, prepaid, cash bids, settlements, e-sign, and contract management. This enables users to save time and get the information they need at the touch of a button.

Products and Services

Bushel powers apps and websites that facilitate clear and simple business between grain companies and growers. Bushel-Powered Apps: a subscription-based software powering apps for grain facilities. Bushel-Powered Websites: a website building and hosting platform for grain facilities

Employees:	Post Valuation:	Total Raised to Date:
150	Undisclosed	\$28.8M
October 2019	October 2019	October 2019

Leadership Team

- Mark Hempel: President
- Jake Joraanstad: Chief Executive Officer and Co-Founder
- Ryan Raguse: Executive Chairman and Co-Founder
- Eston Taylor: Chief Operating Officer
- Camille Grade: Vice President of Marketing
- Dan Olson: Vice President of Sales

- Afdam Wendorf: Vice President of Finance
- Dane Braun: Vice President of Product
- Luke Swenson: Investment Services Managing Partner
- · Chris Roemmich: Vice President of Engineering
- Jodi Satkunam: Vice President of Connect

- August 2019: Ranked on Inc. 5,000's fastest growing companies
- · January 2020: Bushel collaborated with Granular







IOT Software &/or Hardware

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



Complete Farm Cycle Management Farming Type:



All Crops

Website: cropin.com

Country: India Year Founded: 2010

Business Description

Founded in 2010, CropIn is a leading full-stack agri-tech organization that provides SaaS solutions to agribusinesses globally. CropIn's unique suite of products enable various stakeholders in the agri- ecosystem to adopt and drive digital strategy across their operations. Using cutting-edge technology like big data analytics, artificial intelligence, machine learning, and remote sensing. Businesses can thus leverage technology to effectively drive their initiatives around Digitization, Compliance, Sustainability and Traceability.

With the vision to 'maximize per acre value' and the mission to 'make every farm traceable. CropIn has digitized over 5.5 million acres of farmland and enriched the lives of nearly 2.1 million farmers, while gathering data on 384 crops and 3,662 crop varieties.

Products and Services

SmartRisk: A predictive and prescriptive AI and ML powered business intelligence solution that leverages agrialternate data for effective credit risk assessment

SmartFarm: An award winning, robust digital farming technology that drives digital strategy and provides complete visibility of resources, processes and performance on the field

mWarehouse: A comprehensive pack house solution that enables farm-to-fork traceability, and compliance *SmartSales:* A CRM and input channel management solution to forecast and improve sales

Employees:	Post Valuation:	Total Raised to Date:	
90	Undisclosed	\$13.5M	
September 2017	January 2019	January 2019	

Leadership Team

Krishna Kumar: Chief Executive Officer

- 2019: CropIn has recently received a spot in the prestigious list of 'Top 15 Agritech Start-ups of 2019' in a challenge organized by Rabobank, San Francisco
- 2019: CropIn ranked the fastest growing AgTech company in Deloitte Tech Fast 50 India
- 2019: CropIn Infotechnologies Private Limited made it to the 2019 Technology Fast 500 Asia Pacific rankings of the 500 fastest growing technology companies in Asia Pacific
- 2018: SmartRisk is a winner of the 'HDFC Digital Innovation Summit 2018' for leveraging artificial intelligence and machine learning for agri-risk assessment







Data Analytics & AI

Website: fbn.com

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



Complete Farm Cycle Management

Year Founded: 2014

Farming Type:



All Crops

Business Description

Farmer's Business Network is on a mission to create a future of farming that puts farmers first by democratizing information, providing unbiased analytics, and creating competition for farmers' business.

Country: United States

Products and Services

The Farmer's Business Network platform allows farmers to upload, store, and analyze data coming out of the "AgTech" systems increasingly used to monitor weather, crop health, soil quality, and irrigation levels in the field. These systems include drones and satellites overhead, mobile apps, sensors, and cameras on the ground. The company also empowers growers to analyze their own crop data in one report and compare their results with others' helping the industry as a whole to understand what's working in terms of new techniques or alternative products on the market.

Employees:	Post Valuation:	Total Raised to Date:	
450	\$1.08B	\$369.3M	
December 2019	January 2019	January 2019	

Leadership Team

- Amol Deshpande: Co-Founder, President, and Chief Executive Officer
- Marla Olide: Chief Financial Officer
- Tom Staples: General Manager, Canada
- Eric Carnell: Chief Legal Officer and Vice President of Corporate
- David Delaney: Chief Commercial Officer

- Charles Baron: Co-Founder and Vice President
- Olga Ballard: Head of Strategic Finance and Investor Relations
- Daniel Zook: Community Manager
- Lucas Strom: Vice President, Business Development
- Michael Snyder: Vice President, Inputs

- January 2020: Farmer's Business Network welcomed 10,000 farms to their network
- January 2019: Farmer's Business Network announced partnership with Amazon Business







IoT Software &/or Hardware

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



Complete Farm Cycle Management

Year Founded: 2013

Farming Type:



Commodity Crops

Business Description

Website: farmobile.com

Farmobile — The Independent Farm Data Company^{5M} — is a world-leader in collecting raw data across farm equipment brands and creating a new standard for interoperable, portable data. With a mission to be the industry's trusted data source across the North America agriculture-food supply chain, Farmobile's digital technology enables farmers and channel partners to collect, share, and monetize agronomic and machine data. Farmobile is the first company to certify under the American Farm Bureau Federation Ag Data Transparency Evaluator, which outlines their transparent data ownership program. Farmobile's data collection device, known as the PUC™, tracks fertilizing, planting, spraying, and harvesting activity layers in real-time, acting as a "Fitbit for farm equipment." The Farmobile DataEngine⁵™ platform turns PUC-collected data into standardized data sets that can be imported into software and portable visual Electronic Field Records (EFRs) that enable farmers to gain insights, share with trusted advisors, and power decision-making. Subscribers also have the option to monetize their data through the Farmobile DataStore⁵™, the first exchange to digitally connect farmers with data buyers.

Country: United States

Products and Services

Via cellular Farmobile's PUC™ automatically streams point-by-point raw agronomic and machine data —in real-time—directly from farm equipment sensors to the cloud where it is processed and stored. It works across equipment types and manufacturers, and can stream data in low- or no-connectivity environments. The Farmobile DataEngine™ is a powerful platform that ingests and processes data for easy viewing and sharing. The raw data is transformed into standardized, visual Electronic Field Records (EFRs) that make data portable, shareable, viewable and useful for powering analytics or streaming into other systems and software. Subscribers can view, access, export and share their data 24/7 via any smart device via Farmobile DataEngine dashboard. Farmobile DataStore™ is the first exchange that connects farmers with approved third-party data buyers. The DataStore allows subscribers to license single-use copies of their data to third-party buyers for a recurring revenue source.

Employees:	Post Valuation:	Total Raised to Date:	
64	\$40M	\$40.6M	
December 2019	November 2019	November 2019	

Leadership Team

- Jason Tatge: Chief Executive Officer and Founder
- Randy Nuss: Co-Founder and Director of Engineering
- Chris Schibi: Chief Technology Officer







Controlled Environment Ag

Problem Addressed:



Controlled Environment Agriculture

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Specialty Crops

Website: gothamgreens.com Country: United States Year Founded: 2009

Business Description

Gotham Greens is a pioneer in urban indoor agriculture and a leading fresh produce and food company. The company is on a mission to transform how and where fresh produce is grown. Through its national network of local high-tech farms, Gotham Greens delivers fresh, long-lasting, and delicious produce all year round to retail, restaurant, and foodservice customers. Today, Gotham Greens operates 500,000 square feet of high-tech greenhouses across five U.S. states with more than 300 employees.

Products and Services

Gotham Greens offers a line of locally-grown, pesticide-free, and long-lasting leafy greens, herbs, salad dressings, and pesto dips for retailers, restaurants, and foodservice customers. Gotham Greens produce is grown using hydroponic systems in 100 percent renewable electricity-powered greenhouses that use 95% less water and 97% less land than conventional farming. Gotham Greens products are available at a variety of retailers across the Northeast, New England, Mid-Atlantic, Midwest, and Mountain West regions, including Whole Foods Market, Jewel-Osco, Target, Shaw's Supermarkets, Amazon, FreshDirect, and Peapod.

Employees:	Post Valuation:	Total Raised to Date:	
300	\$117.58M	\$60M	
June 2018	January 2013	December 2019	

Leadership Team

- Viraj Puri: Co-Founder and Chief Executive Officer
- Eric Haley: Co-Founder and Chief Financial Officer
- Jenn Frymark: Chief Greenhouse Officer

- 2011: First Commercial Scale Urban Greenhouse Facility in the U.S., Brooklyn, NY
- 2014: First Commercial Scale Greenhouse Farm Integrated into a Supermarket, Brooklyn, NY
- 2015: World's Largest Rooftop Farm, Chicago







Controlled Environment Ag

Problem Addressed:



Environmental Impact & Waste

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Specialty Crops

Website: infarm.com Country: Germany Year Founded: 2013

Business Description

Infarm is a developers indoor vertical farming system with IoT technologies and data science designed to offer an alternative food system. The company's farming system consists of a compact growing kit for simplifying the process of farming. This helps cities become self-sufficient in their food production while significantly improving the safety, quality, and environmental footprint of food. Indoor Urban Farming develops indoor vertical farming system to grow anything from herbs, lettuce, vegetables, and fruits. Erez and Gy Galonska founded it in 2012, with its headquarters in Berlin in Germany.

Products and Services

Infarm farming system consists of a compact growing kit for simplifying the process of farming, helping cities become self-sufficient in their food production while significantly improving the safety, quality, and environmental footprint of food.

Employ	rees: Post Valuat	tion: Total Raised to	Date:
250	\$433.94	IM \$134.11	VI
June 20	019 June 201	19 February 20	020

Leadership Team

- Guy Galonska: Founder and Chief Technology Officer
- Erez Galonska: Founder and Chief Executive Officer
- Martin Weber: Chief Financial Officer
- Daniel Kats: Vice President of Corporate Sales
- Osnat Michaeli: Co-Founder and Chief Marketing Officer







Robotics & Automation

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



All Crops

Website: orbitalinsight.com Country: United States Year Founded: 2013

Business Description

Orbital Insight helps its clients understand what happens on and to the Earth with objective, transparent, and timely geospatial data. This is done through our cloud-based SaaS platform, Orbital Insight GO, which pulls in multiple sources of raw data from the world's sensors—including millions of daily satellite images and connected device pings—and proprietary AI to analyze economic, social, and environmental trends at scale. By making the Earth "searchable" our customers have been able to illuminate supply chains, track global commodities, monitor illegal deforestation, and further national security. Get the clearest and most recent view on a global scale, driving better business and policy decisions for your organization.

Products and Services

Orbital Insight's agribusiness traceability and sustainability solutions are helping the world's largest consumer packaged goods companies pioneer new ways to meet their sustainable sourcing and zero-deforestation pledges. By digitally tracing the logistical relationships between farms, ports, silos, and refineries, Orbital Insight's technology-based approach is providing an empirical real-time understanding of agribusiness supply chains, including opaque problem centers such as first-mile visibility. These analytics can be paired with satellite imagery analysis to persistently monitor for deforestation and drive more sustainable sourcing relationships.

Employees:	Post Valuation:	Total Raised to Date:	
84	\$480M	\$130.45M	
October 2017	November 2019	November 2019	

Leadership Team

Dr. James Crawford: Chief Executive Officer

• AJ DeRosa: Chief Research Officer

- Kevin O'Brien: Chief Operations Officer
- · Jim Cook: Chief Financial Officer

- The most capitalized geospatial analytics company, raising over \$125M from leading AI venture capital firms and strategic investors including Bunge
- Launch of our geospatial self-service platform, Orbital Insight GO, used by the U.S. Department of Defense, RBC Capital Markets, Airbus and more
- Partnerships with the world's largest Consumer Packaged Goods companies as well as NGOs including the World Resources Institute







Controlled Environment Ag

Problem Addressed:



Environmental Impact & Waste

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Specialty Crops

Website: plenty.ag Country: United States Year Founded: 2013

Business Description

Plenty is an indoor vertical farming company that uses less space and fewer resources to grow fresh, flavorful, healthy, and clean produce year-round.

Products and Services

Plenty developed proprietary vertical farming systems combining engineering, software and crop science to deliver crops which require less water with no pesticides or GMOs. This enables farmers to increase the crop yield. Plenty Farms is located in close proximity to city centers, where they harvest and deliver fresh-picked produce to local restaurants and stores. As a result, Plenty ensures fresher, more flavorful greens with a longer shelf life.

Employees:	Post Valuation:	Total Raised to Date:
450	\$1.05B	\$401M
February 2019	January 2020	January 2020

Leadership Team

- Matt Barnard: Chief Executive Officer
- Nate Storey: Co-Founder and Chief Science Officer
- Casey Call: Head Grower
- Mike Gupta: Chief Financial Officer
- Michael Flynn: Director of Engineering

- Isabel Chamberlain: Manager, Compliance
- Arvind Chari: Senior Manager, Tigris Farm
- Tessa Pocock: Director of Lighting Optimization
- Matthew Arrington: Research Scientist

Key Achievements/ Partnerships

• January 2020: Plenty's vertically farmed produce became available at Safeway and Whole Foods







Data Analytics & AI

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Commodity & Specialty Crops

Website: prospera.ag Country: United States Year Founded: 2014

Business Description

Prospera Technologies is a developer of AI and machine vision technologies that continuously monitor and analyze plant development, health, and stress for both specialty and row crops. Prospera captures multiple layers of climate and visual data from the crop field and provides actionable, real-time insights to growers via intuitive mobile and web dashboards. This improves profits, yield, and sustainability. Its team of world-class computer scientists, physicists, and agronomists work with experienced agri-business leaders to meet growers where they are and revolutionize the way food is grown.

Products and Services

Prospera is working towards a future where artificial intelligence/machine learning will be fused with agronomy. Prospera is reorienting agronomists unaccustomed to crunching numbers towards identifying data-based solutions to optimize crop yields. Prospera enables farmers to deliver more food to market, produce less waste, and ensure produce is grown in a more sustainable way with the use of less water, pesticides, and fertilizers.

Employees:	Post Valuation:	Total Raised to Date:	
30	\$47.76M	\$22M	
July 2016	March 2017	March 2017	

Leadership Team

Daniel Koppel: Co-Founder and Chief Executive Officer

Raviv Itzhaky: Co-FounderSimeon Shpiz: Co-Founder

Key Achievements/ Partnerships

Prospera signed a three-year partnership with Valley Irrigation to turn Valley's center pivot irrigation
equipment into autonomous growing machines. The companies accomplished the first goal of the partnership (to
deploy aerial imagery to virtually scout for crop health concerns related to irrigation or other issues across a million
acres by 2020) and did a trial roll-out of the Al-enabled technology (called Valley Insights) with growers in
Washington State. The technology helped one WA grower save 5-6% of his crops that weren't being properly
irrigated, and helped others use between 10-25% less water to produce the same amount of crops.







Data Analytics & Al

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Complete Farm Cycle Management

Farming Type:



Commodity Crops

Website: taranis.ag Country: Israel Year Founded: 2014

Business Description

Taranis is a leading precision agriculture platform that combines high-resolution aerial imagery and AI to identify, analyze, and prescribe the best treatment to help farmers prevent crop yield loss due to insect infestation, disease, weeds, and nutrient deficiencies. Taranis's end-to-end platform helps growers, crop consultants, and producers monitor fields in real time, make informed data-based decisions, and act on them. The company works with 16 of the world's top 20 agricultural retailers and input companies and monitors more than 20 million acres of land in the United States, Argentina, Brazil, Russia, Ukraine, Israel, and Australia.

Products and Services

Taranis's comprehensive platform applies deep learning algorithms to proprietary imagery data sets that include sub-milimeter aerial imagery, field sensors, satellite imagery, weather forecasts, and other data streams to predict and prevent crop loss. Specific products that Taranis has launched to help farmers and crop consultants manage their fields and increase their yields include:

- 1. Crop threat detection including disease detection and insect detection
- 2. Stand count and emergence assessment for crops
- 3. Weeds and resistant weeds identification with prediction model for spraying

Em	ployees:	Post Valuation:	Total Raised to Date:
	100	Undisclosed	\$29.6M
Septe	mber 2019	January 2019	January 2019

Leadership Team

- Ofir Schlam: Chief Executive Officer
- Ayal Karmi: Chief Operations Officer
- Eli Bukchin: Chief Technology Officer

- Industry Partners include: Adama Global, Adama Australia, Landmark, Stratus Imaging, Climate Corp., Bayer Crop Science, BASF, John Deere, Nutrien, Wilbur Ellis, and 16 of the world's top 20 agricultural retailers and input companies
- Acquired Mavrx, a top computer vision startup, to bolster its aerial imagery offering
- Selected to be part of John Deere's Startup Collaborator program
- Named one of 'The Hottest Startups in Tel Aviv' by WIRED







Biotechnology

Problem Addressed:



Crop Nutrition, Heath &/or Protection

Value Chain Position:



Complete Farm Cycle Management Farming Type:



Commodity Crops

Website: terviva.com Country: United States Year Founded: 2010

Business Description

TerViva is revolutionizing the way we grow food and combat climate change. The company helps growers produce a bean crop from the resilient pongamia tree. Pongamia sustainably produces organically grown, non-GMO beans with as much as 10X the yield per acre as soybeans. Adapted over millennia to grow on land impacted by drought and storms, saline conditions, and sub-tropical pests, the hardy pongamia tree is inexpensive, low-maintenance, and environmentally friendly. It produces a legume related to soybean and pea that is high in protein and oil.

Products and Services

TerViva produces high-yielding, field-ready pongamia trees. It also harvests the crop to make food products from the protein and oil-rich beans. In 2019, Terviva announced major innovations in food production from a previously inedible bean: healthy pongamia vegetable oil that is high in oleic acid paired with a tasty, nutritious protein flour that they have made into protein concentrates and isolates. They are the first company to make the ancient pongamia tree's protein and vegetable oil yields accessible for food applications. Their proprietary processing techniques open new markets for pongamia to be used to feed people.

Employees:	Post Valuation:	Total Raised to Date:	
50	\$44.73M	\$40M	
January 2019	January 2018	October 2019	

Leadership Team

- Naveen Sikka: Founder and Chief Executive Officer
- Sudhir Rani: Founder and Chief Finance Officer
- Maggie Kavalaris: Founder and Chief Legal Officer
- Margaret Mackenzie: Senior Vice President, Corporate Operations
- Marc Diaz: Senior Vice President, Commercialization
- Jim Astwood: Senior Vice President, Product Development

- · 2020 Food Tech 500 presented by Future Fooding
- 2019 Future of Snacking Award presented by Mondelez International, Inc.
- 2019 Future Food Award presented by Food Innovation Australia Limited









Robotics & Automation

Problem Addressed:



Labor

Value Chain Position:



Harvesting

Farming Type:



Permanent Crops

Website: roboticsplus.co.nz Country: New Zealand Year Founded: 2000

Business Description

Robotics Plus (RPL) focuses on research, design, development, and commercial production of robotic automation, sensor, and software solutions for agricultural value chains globally. RPL has broad complimentary capabilities in Machine Vision & Machine Learning, Robotics and Automation, Software and Control systems, Web Connection, Control & Data Analytics, and Machine Safety. This breadth of capability has allowed us to develop a portfolio of commercial products for large global problems in agriculture and other value chains, addressing labor constrained industries; in particular those that are dirty, dull (repetitive), and dangerous. Our current product portfolio includes Fruit Packing, Log Automation, and Unmanned Ground Vehicles.

Products and Services

Robotics Plus' lead product is a robotic apple packer that can orientate fruit by stem calyx angle and blush side up in display trays. Robotics Plus has also developed a robot to measure the volume of export logs on trucks and trailers, creating a fully auditable trail. Robotics Plus' third area of development is in unmanned ground vehicles (UGV). The first commercial UGV product will be launched in 2020.

E	mployees:	Post Valuation:	Total Raised to Date:
	8	Undisclosed	\$11M
A	April 2017	January 2019	December 2019

Leadership Team

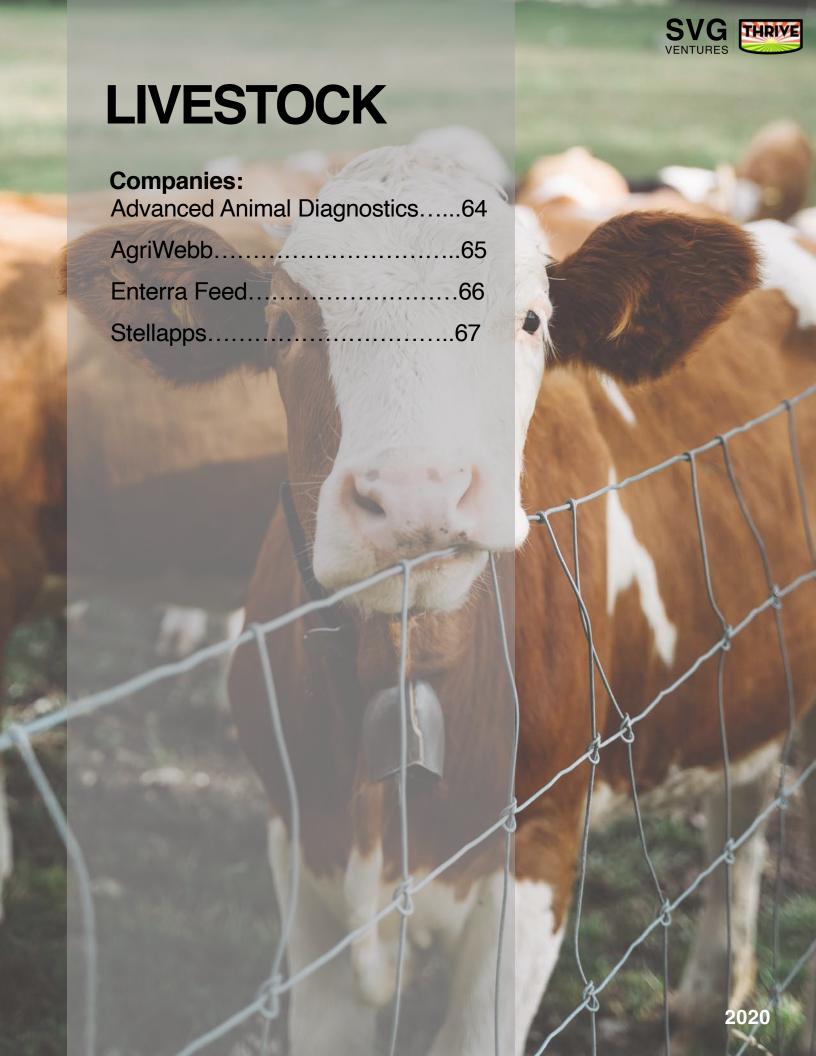
• Steven Saunders: Co Founder

Dr. Matt Glenn: Chief Executive Officer

• Dr. Alistair Scarfe: Chief Technical Officer and Co Founder

Dr. Andrew Dawson: Chief Operations OfficerChelan Burton-Brown: Chief Finance Officers

- · Callaghan Innovation Grant received
- New Zealand Innovator of the Year (Finalists), Hi-Tech Awards Most Innovative AgriTech Company & Most Innovative Maori Company of the Year, ANZLF Trans-Tasman Innovation and Growth Award, and Westpac Business Awards "Corporate Leadership Award"
- Completion of four years research automation project with Auckland & Waikato Universities, Plant & Food research









IOT Software &/or Hardware

Problem Addressed:



Animal Health and Nutrition Value Chain Position:



In Season

Farming Type:



Livestock

Website: qscoutlab.com Country: United States Year Founded: 2001

Business Description

Advanced Animal Diagnostics develops on-site diagnostic and information technology to rapidly assess the health of animals. The company's point-of-care technology detects diseases earlier and improves animal health and product quality. This enables farmers to increase profits and minimizes antibiotic use.

Products and Services

With powerful diagnostic technology, AAD can detect diseases earlier so producers can take action earlier – and prevent losses. In the dairy industry, their QScout® MLD test detects subclinical mastitis infections before losses occur. QScout® BLD helps beef producers decide when to use antibiotics, preventing losses and maximizing profits.

Employees:	Post Valuation:	Total Raised to Date:
30	\$39.45M	\$41.48M
September 2018	October 2018	October 2018

Leadership Team

- Joy Parr Drach: Chief Executive Officer and President
- Rudy Rodriguez: Co-Founder and Chief Scientific Officer
- Mitchell Hockett: Vice President of External Research and Technical Market
- Jasper Pollard: Vice President, Research and Development

- January 2019: Advanced Animal Diagnostics becomes proud founding participant for the International Consortium for Antimicrobial Stewardship in Agriculture (ICASA)
- October 2019: Recognized in Forbes"5 Innovations Changing the Future of Foods"
- November 2018: Advanced Animal Diagnostics enters agreement with Zoetis for International Markets







IOT Software &/or Hardware

Problem Addressed:



Farm Management & Forecasting

Value Chain Position:



In Season

Farming Type:



Livestock

Website: agriwebb.com/au/ Country: Australia Year Founded: 2014

Business Description

AgriWebb is a developer of a farm management software designed to track and record the actions of livestock. Their software helps farmers to collect all the necessary data in real-time even offline and assemble it with full transparency. It also offers paddock treatment and crop recording services, enabling farmers to track, keep, analyz,e and update farm inventories, pasture, and livestock data via a cloud-based record-keeping notebook.

Products and Services

Agriwebb is a cloud-based farm management software. AgriWebb aims to deliver a product that helps farmers digitize their business with a tool that drives efficiency through data driven decision making. The goal is that, with this increased digitization of the livestock industry, AgriWebb can be the platform that allows transparency, profitability, y and sustainability across the supply chain.

Employees:	Post Valuation:	Total Raised to Date:
13	Undisclosed	\$13.5M
June 2016	August 2018	August 2018

Leadership Team

- Philip Chan: Co-Founder and Chief Technology Officer
- John Fargher: Co-Founder and Company Secretary
- Kevin Baum: Co-Founder and Chief Executive Officer

- November 2019: Agriwebb highlighted on Australasia 50 Startups and Scale ups
- December 2018: Australian Government- Agriwebb: the rise of data-driven farming in Australia







Other

Problem Addressed:



Environmental Impact & Waste

Value Chain Position:



Livestock

Farming Type:



Harvesting

Website: enterrafeed.com Country: Canada Year Founded: 2007

Business Description

Enterra is a Vancouver-based company commercializing a natural system that uses a common beneficial insect to rapidly recover nutrients from recycled food waste from grocery stores, markets, food distributors, and food processors. They up-cycle the nutrients into and sustainable feed ingredients for aquaculture, animal feed and pet food, as well as a concentrated natural fertilizer product for use in agriculture.

Products and Services

Enterra has three main products. *Enterra GrubsTM*: whole dried larvae are the purest form and can be fed directly to chickens and birds and also mixed with other formulated feed pellets. We also separate out the protein and fat content of the larvae, both of which represent 40% each. The high protein meal — Enterra Meal is a high protein that can replace fishmeal. *Enterra Oil* is a fat extract that can replace coconut oil and palm kernel oil with a similar nutritional profile. It is a healthy source of crude fat for inclusion in feed for aquaculture, poultry, and pets.

Emplo	oyees: Post	Valuation: Total Ra	ised to Date:
į	5 Und	isclosed \$	10M
March	n 2014 Septe	mber 2019 Janua	ary 2019

Leadership Team

- Andrew Vickerson: Chief Technical Officer
- Brad Marchant: Founder and Chief Executive Officer







IOT Software &/or Hardware

Problem Addressed:



Animal Health and Nutrition

Value Chain Position:



Livestock

Farming Type:



Dairy

Website: stellapps.com Country: India Year Founded: 2011

Business Description

Stellapps develops a dairy management software applications designed to leverage the power of technology to improve dairy supply chain parameters. Stellapps applications leverage the Internet of Things (IoT), big data, cloud, mobility, and data analytics to improve agri-supply chain parameters, including milk production, milk procurement, cold chain animal insurance, and farmer payments. This enables dairy farms, dairy farmers and cooperatives to maximize profits while minimizing effort.

Products and Services

Stellapps' digitizes and optimizes milk production, Milk Procurement & coldchain management through SmartMoo™ platform (Full Stack IoT solution), which helps dairy farmers and cooperatives maximize profits while minimizing effort.

Employees:	Post Valuation:	Total Raised to Date:
Undisclosed	Undisclosed	\$14.20M
January 2019	September 2019	January 2019

Leadership Team

• Ranjith Mukundan: Chief Executive Officer

Ravishankar G. Shiroor: Head of Business Development

Praveen Nale: Chief Technical Officer
Ramakrishna Adukuri: Cloud Solutions
Venkatesh Seshasayee: Chief Architect

Key Achievements/ Partnerships

Kumar Keshave represented Stellapps at Agriculture CXO Roundtable 2019 by McKinsey and Company, Mumbai



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