WinterGreen Research, INC.

Agricultural Robots: Market Shares, Strategies, and Forecasts, Worldwide, 2014 to 2020

Mountains of Opportunity

Picture by Susan Eustis

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WINTERGREEN RESEARCH

WinterGreen Research, INC.

Lexington, Massachusetts

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CHECK OUT THESE KEY TOPICS

Agricultural Robots: Users Harness Robots to Plow, Plant, Spray, Prune, Milk, Pick, Shear, and Harvest

Agricultural Robots	New standards for agricultural robotics	Multiple Agents
Automated harvesting systems	Uav and rpas for agricultural applications	Robotic Agriculture
Autonomous navigation in the fields	Cooperative robots in agriculture	Artichoke harvesting
Robotics to automate agricultural operations such as mowing, pruning, seeding, spraying or thinning	Methods for agricultural robots management	Agricultural robotics
Impact of robots in the fields	Autonomous Plowing	Artificial vision
Innovative hmi for agricultural robotics	Automatic Harvesting	Outdoor autonomous robot
Robots in forestry	Adaptive Robots	Energy Harvesting
	Reinforcement Learning	Wireless Nodes
	Evolution Robotics	Microcontroller
		Robotic Harvesters
		Economies of Scale
		Powering Robotic Tractors

Robotic Harvesting: Economies of Scale Provide Growth Strategy

Agricultural Robots: Market Shares, Strategies, and Forecasts, Worldwide, 2014-2020

LEXINGTON, Massachusetts (January 28, 2014) – WinterGreen Research announces that it has published a new study Agricultural Robots Market Shares, Strategy, and Forecasts, Worldwide, 2014 to 2020. The 2014 study has 430 pages, 236 tables and figures. Worldwide markets are poised to achieve significant growth as the agricultural robots are used in every aspect of farming, milking, food production, and animal control to implement automated process for the industry.

Weed control is able to achieve crop-yield increases. Robot technology is deploying machines for weed control, promising to improve crop yields. Robots make the crops safer by eliminating or virtually eliminating herbicides. Downstream processing system solutions and robots achieve automation of process. Robots meet stringent hygiene and safety regulations, work tirelessly 24 hours a day, and relieve human workers of physically arduous tasks. Robots contribute to the freshness, variety and quality of food. Projects are ongoing.

High value crops are a target of agricultural robotic development. What could be tastier than a strawberry, perfectly formed, and perfectly ripened? New agricultural robots are able to improve the delivery of consistent quality food, and to implement efficiency in managing food production.

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Strawberries are a high profit crop. A new generation of machines has just been born. Strawberry Harvesters with the world's most advanced technology to give maximum performance to a farm. Harvesting robots can optimize the productivity of the farming business. Growers can get the best results in a berry farm using automated process. Automated picking collection systems improve labor productivity, give speed and agility to harvest operations.

The robotic platforms are capable of site-specific spraying. This is targeted spraying only on foliage and selected targets. It can be used for selective harvesting of fruit. The robots detect the fruit, sense its ripeness, then move to grasp and softly detach only ripe fruit.

Agricultural robots address automation of process for agribusiness. The challenge being addressed is to guide farmers towards a new economic model. The aim is to meet demands of a global market. Harvesting is one benefit. Crop-yield increases come from weed control. Robot technology is deploying its machines for weed control, promising to improve crop yields. Robots make the crops safer by eliminating or virtually eliminating herbicides.

Machinery manufacturers and downstream processing industries look for system solutions and robots to achieve automation of process. Robots meet stringent hygiene and safety regulations, work tirelessly 24 hours a day, and relieve human workers of physically arduous tasks. Robots contribute to the freshness, variety and quality of food.

According to Susan Eustis, principal author of the market research study, “Agricultural robotic projects are ongoing. The key to industrial farm robots is keeping costs down. Adapting existing commercial vehicles instead of building new ones is the best way to build viable agricultural robots.”

Agricultural robot market size at $817 million in 2013 are anticipated to reach $16.3 billion by 2020, a hefty growth for a nascent market. Agricultural robots are but part of an overall trend toward more automated process for every type of human endeavor. Robots are being used more widely than expected in a variety of sectors, and the trend is likely to continue with robotics becoming as ubiquitous as computer technology over the next 15 years.

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Companies Profiled

Market Leaders

Lely
Yaskawa / Motoman
Yamaha
Kuka

Market Participants

ABB Robotics
Agile Planet
AgRA: RAS Agricultural Robotics and Automation
Agrobot
Australian Centre for Field Robotics
Blue River Technology
Blue River / Khosla Ventures
CNH Industrial / Fiat / Case IH
cRops 312
Fanuc
Georgia Tech Agricultural Robots
Google / Boston Dynamics
Google / Motorola
Harvard Robobee
Harvest Automation
IBM
iRobot
Jaybridge Robotics
KumoTek
Kyoto University
Millennial Net
NARO, a Japanese Incorporated Administrative Agency
National Agriculture and Food Research Organization
Japanese National Agriculture and Food Research Organization
Ossian Agro Automation / Nano Ganesh
Precise Path Robotics
Robotic Harvesting
Sicily Tractor Harvesting
Shibuya Seiki
Shibuya Kogyo
Universidad Politécnica de Madrid
University of California, Davis
Wall-Ye V.I.N. Robot
Yamaha
Yaskawa / Motoman
Agricultural Robotic Research Labs

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Report Methodology

This is the 585th report in a series of primary market research reports that provide forecasts in communications, telecommunications, the Internet, computer, software, telephone equipment, health equipment, and energy. Automated process and significant growth potential are priorities in topic selection. The project leaders take direct responsibility for writing and preparing each report. They have significant experience preparing industry studies. Forecasts are based on primary research and proprietary data bases.

The primary research is conducted by talking to customers, distributors and companies. The survey data is not enough to make accurate assessment of market size, so WinterGreen Research looks at the value of shipments and the average price to achieve market assessments. Our track record in achieving accuracy is unsurpassed in the industry. We are known for being able to develop accurate market shares and projections. This is our specialty.

The analyst process is concentrated on getting good market numbers. This process involves looking at the markets from several different perspectives, including vendor shipments. The interview process is an essential aspect as well. We do have a lot of granular analysis of the different shipments by vendor in the study and addenda prepared after the study was published if that is appropriate.

Forecasts reflect analysis of the market trends in the segment and related segments. Unit and dollar shipments are analyzed through consideration of dollar volume of each market participant in the segment. Installed base analysis and unit analysis is based on interviews and an information search. Market share analysis includes conversations with key customers of products, industry segment leaders, marketing directors, distributors, leading market participants, opinion leaders, and companies seeking to develop measurable market share.

Over 200 in depth interviews are conducted for each report with a broad range of key participants and industry leaders in the market segment. We establish accurate market forecasts based on economic and market conditions as a base. Use input/output ratios, flow charts, and other economic methods to quantify data. Use in-house analysts who meet stringent quality standards.

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Interviewing key industry participants, experts and end-users is a central part of the study. Our research includes access to large proprietary databases. Literature search includes analysis of trade publications, government reports, and corporate literature.

Findings and conclusions of this report are based on information gathered from industry sources, including manufacturers, distributors, partners, opinion leaders, and users. Interview data was combined with information gathered through an extensive review of internet and printed sources such as trade publications, trade associations, company literature, and online databases. The projections contained in this report are checked from top down and bottom up analysis to be sure there is congruence from that perspective.

The base year for analysis and projection is 2010. With 2010 and several years prior to that as a baseline, market projections were developed for 2011 through 2017. These projections are based on a combination of a consensus among the opinion leader contacts interviewed combined with understanding of the key market drivers and their impact from a historical and analytical perspective. The analytical methodologies used to generate the market estimates are based on penetration analyses, similar market analyses, and delta calculations to supplement independent and dependent variable analysis. All analyses are displaying selected descriptions of products and services.

This research includes reference to an ROI model that is part of a series that provides IT systems financial planners access to information that supports analysis of all the numbers that impact management of a product launch or large and complex data center. The methodology used in the models relates to having a sophisticated analytical technique for understanding the impact of workload on processor consumption and cost.

WinterGreen Research has looked at the metrics and independent research to develop assumptions that reflect the actual anticipated usage and cost of systems. Comparative analyses reflect the input of these values into models.

The variables and assumptions provided in the market research study and the ROI models are based on extensive experience in providing research to large enterprise organizations and data centers. The ROI models have lists of servers from different manufacturers, Systems z models from IBM, and labor costs by category around the world. This information has been developed from WinterGreen research proprietary data bases constructed as a result of preparing market research studies that address the software, energy, healthcare, telecommunicatons, and hardware businesses.

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Agricultural Robots: Market Shares, Strategies, and Forecasts, Worldwide, 2014-2020

Table of Contents

Agricultural Robots devices create efficiency for farmers from automated process that can be used to manage repetitive processes including milking, seeding, harvesting, pruning. The systems have become very sophisticated in the manner in which they use sensors and cameras to leverage cognitive computing decision making software systems. Technologies that make Agricultural Robots feasible are closely associated with new materials for tractor building and with smaller, lighter, more feature loaded electronics and sensors for steering and for decision making.

Agricultural Robots Market Shares, Strategies, and Forecasts, Worldwide, 2014-2020

Table of Contents

Agricultural Robots Executive Summary

The study is designed to give a comprehensive overview of the Agricultural Robots equipment market segment. Research represents a selection from the mountains of data available of the most relevant and cogent market materials, with selections made by the most senior analysts. Commentary on every aspect of the market from independent analysts creates an independent perspective in the evaluation of the market. In this manner the study presents a comprehensive overview of what is going on in this market, assisting managers with designing market strategies likely to succeed.

Agricultural Robots Market Description and Market Dynamics

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Agricultural Robots Market Shares and Market Forecasts

This section selectively describes market shares, forecasts, segments, and regional revenue. Numbers are the result of primary research in all cases. Selected companies are described from an independent analyst perspective with a thumbnail sketch or analysis of their market numbers or commentary on their strengths and weaknesses. Some of the analysis is focused on looking at the topic segment by segment, including company descriptive analyses by segment and subsegment.

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Agricultural Robots Product Description

This section describes selected companies and selected products. Products for this market segment are described with attention to the most significant aspect of features and functions in this category of product. The juxtaposition of a range of different product descriptions from a single market category provides a really good way to access market directions and achieve market competitive analysis. This section is arranged in three pieces: immersive products, conference room products, and end point products. Company products are described in the appropriate sections, meaning a company is mentioned several times in the chapter in different places.

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Agricultural Robots Technology

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Agricultural Robots Company Profiles

This section selectively describes company strategies, partners, acquisitions, and revenue by segment and regional revenue when available. Companies are described by looking at what is most interesting about that company. The descriptions collectively give a sense of market directions within the industry segment. The alphabetical listing of company thumbnail sketches provides an accessible way to find out what is going on in any particular company.

List of Tables and Figures

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Agricultural Robots Market Description and Market Dynamics

Agricultural Robots Market Shares and Market Forecasts

Agricultural Robots Product Description

Japan; Autonomous tractor

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Agricultural Robots Company Profiles

About The Company

WinterGreen Research, research strategy relates to identifying market trends through reading and interviewing opinion leaders. By using analysis of published materials, interview material, private research, detailed research, social network materials, blogs, and electronic analytics, the market size, shares, and trends are identified. Analysis of the published materials and interviews permits WinterGreen Research senior analysts to learn a lot more about markets. Discovering, tracking, and thinking about market trends is a high priority at WinterGreen Research. As with all research, the value proposition for competitive analysis comes from intellectual input.

WinterGreen Research, founded in 1985, provides strategic market assessments in telecommunications, communications equipment, health care, Software, Internet, Energy Generation, Energy Storage, Renewable energy, and advanced computer technology.

Industry reports focus on opportunities that expand existing markets or develop major new markets. The reports access new product and service positioning strategies, new and evolving technologies, and technological impact on products, services, and markets. Innovation that drives markets is explored. Market shares are provided. Leading market participants are profiled, and their marketing strategies, acquisitions, and strategic alliances are discussed. The principals of WinterGreen Research have been involved in analysis and forecasting of international business opportunities in telecommunications and advanced computer technology markets for over 30 years.

The studies provide primary analytical insight about the market participants. By publishing material relevant to the positioning of each company, readers can look at the basis for analysis. By providing descriptions of each major participant in the market, the reader is not dependent on analyst assumptions, the information backing the assumptions is provided, permitting readers to examine the basis for the conclusions.

About The Principal Authors

Ellen T. Curtiss, Technical Director, co-founder of WinterGreen Research, conducts strategic and market assessments in technology-based industries. Previously she was a member of the staff of Arthur D. Little, Inc., for 23 years, most recently as Vice President of Arthur D. Little Decision Resources, specializing in strategic planning and market development services. She is a graduate of Boston University and the Program for Management Development at Harvard Graduate School of Business Administration. She is the author of recent studies on worldwide telecommunications markets, the top ten internet equipment companies, the top ten contract manufacturing companies, and the Top Ten Telecommunications market analysis and forecasts.

Susan Eustis, President, co-founder of WinterGreen Research is a senior analyst. She has done research in communications and computer markets and applications. She holds several patents in microcomputing and parallel processing. She has the original patents in electronic voting machines where she was featured in People Magazine in 1976. She has new patent applications in format varying, mulitprocessing, and electronic voting. She is the author of recent studies of the Solar Renewable Energy, Wind Energy, Thin Film Batteries, Business Process Management marketing strategies, Internet equipment, biometrics, a study of Internet Equipment, Worldwide Telecommunications Equipment, Top Ten Telecommunications, Digital Loop Carrier, Web Hosting, Web Services, and Application Integration markets. Ms. Eustis is a graduate of Barnard College. Susan Eustis was named as top female executive of the year by Who's Who Worldwide in 2012. She was named page one of the top 100 Industry leaders in Who's Who Worldwide in 2013.

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