

United States Digital Agriculture Market Assessment, By Technology [Peripheral Technology, Core Technology], By Type [Hardware, Software, Services], By Operation [Farming and Feeding, Marketing and Demand Generation, Monitoring and Scouting], By Offering [Financial Services, Advisory Services, Digital Procurement, Precision Agriculture and Farm Management, Quality Management and Traceability, Agri E-Commerce], By Region, Opportunities and Forecast, 2017-2031F

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Report description:

United States digital agriculture market is projected to witness a CAGR of 17.50% during the forecast period 2024-2031, growing from USD 1.86 billion in 2023 to USD 6.77 billion in 2031. The rapidly changing digital agriculture landscape in the United States results from the growing need for sustainable farming methods, better yield, and smarter farm management. Precision agriculture, the Internet of Things (IoT), data mining and analysis, unmanned aerial vehicles (UAVs), also known as drones, satellite imagery, and software for managing farms, are various technologies that are integrated into digital agriculture to optimize agricultural operations. These technologies provide real-time information on soil health, crops conditions, weather patterns, and equipment performance that allow farmers to make informed decisions based on data which drives a positive effect on their efficiency in operations.

Other reasons for the market growth include the increasing use of precision farming techniques by farmers, government action towards sustainable agriculture, along with the need to produce more in spite of global warming and dwindling agricultural land resources. Also, appliance of machine learning, artificial intelligence, and cloud computing will be driving development of advanced tools and platforms for agriculture.

Deere & Company, Trimble Inc., and Bayer AG, who are among the significant market players, are investing enormously into R&D

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with an intention to introduce advanced digital solutions. Moreover, farmers are becoming increasingly aware of the advantages of making use of digital agriculture solutions, including reduced costs, better yields, and effective utilization of resources, thereby boosting the growth of the market. Despite that, impediments such as high initial costs, privacy issues related to data and skilled labor to operate these digital devices exist, resulting in slowed growth. In general terms, huge growth is expected in the United States digital agriculture market, hence changing the conventional methods of agriculture into data-centered practices through application of modern technology.

In May 2024, the Inter-American Institute for Cooperation on Agriculture (IICA) officially launched Digital Agriculture Week (DAW), an initiative that brings together the most significant players in the AgTech ecosystem of the Americas. The launch event signaled the start of the Pre-Week of Digital Agriculture, covering pertinent digitalization topics over the course of four days, carrying forward the discussions and initiatives in earlier editions.

Rapid Technological Advancements to Fuel Market Growth

Innovations in technology are greatly reshaping the digital agriculture market in the United States by propelling new ideas and improving farm efficiency. Such changes are most evident in areas such as the Internet of Things (IoT), artificial intelligence (AI), machine learning, big data analytics, and cloud computing. For instance, IoT-enabled sensors are being utilized to gather real-time information on soil moisture levels, nutrient contents, and climatic conditions. This precision aids farmers in making choices around irrigation and fertilizer applications.

With the help of predictive insights generated by AI algorithms and machine learning algorithms, farmers are able to come up with more informed decisions regarding their crops and pest management. In addition, remote sensing technologies such as drones and satellite imaging provide images of high resolution about farmlands, allowing farmers to proactively identify crop stress and diseases. Furthermore, cloud-based farm management software gathers information from various sources creating a holistic understanding of the entire farming process thereby improving decision-making.

In August 2024, FieldView Drive 2.0, a portable plug-and-play gadget was launched by Bayer AG in the United States, that enables farmers to connect, track, and document operations and modeling of agricultural machinery. Farmers' engagement with digital solutions during planting, spraying, and harvesting is improved by the current iteration of the gadget, which offers more processing power, data storage, and connection stability in the field.

Increasing Adoption of Precision Farming Helps in Market Expansion

A significant driver for the growth of the United States digital agriculture market is an increase in demand for precision farming. To optimize field-level management of crops, precision farming utilizes advanced technologies, such as GPS guidance, variable rate technology (VRT), and automated machinery. As such, inputs such as water, fertilizers, and pesticides can be used more accurately, thereby minimizing waste while maximizing yield. This approach minimizes operational costs and enhances crop quality and sustainability through the efficient use of resources. In fact, in May 2022, in collaboration with Agricolus s.r.l., the global brand Yokohama TWS (Trelleborg) launched its new integrated platform to provide digital solutions for smart and sustainable farming. This platform brings together a single set of additional key data that assist farmers in increasing productivity and, at the same time, optimizing farm management via website and mobile application.

An increasing number of American farmers are recognizing the accuracy of modern farming. They are confronted with various problems, such as varied product prices at different places, weather pattern alterations, and stringent environmental conservation laws. Therefore, precision agriculture acts as an instrument that can help them remain profitable while conforming to legislative norms. Furthermore, precision agriculture is more accessible and easier to use due to improved digital technologies and machinery. It will lead to higher precision farming demands that would, in turn, fuel uptake for these technologies in the United States, thereby promoting effective and sustainable agricultural practices.

Robotics Holds a Substantial Market Share

In the United States digital agriculture market, huge robotics share is characterized by increased efficiency, precision, and labor optimization. Agricultural robots or robots are slowly becoming common in all farming processes, from planting to weeding, crop monitoring, and harvesting. Such robot machines have a high degree of accuracy and consistency and help to reduce dependence on manual labor, which is useful in a market that experiences labor shortages and rising wages of workers.

For instance, in November 2023, agritech business SeedSpider Inc. introduced its AI-enhanced robotic weeder, WeedSpider, in North America at the Agricultural Robotics Forum in California. With its ability to detect and eradicate weeds in a wide range of

crops, WeedSpider's technology offers commercial vegetable producers a way to overcome their acute labor shortage issues. Additionally, the technology reduces the need for weed killers, increasing the sustainability and consumer health of farming. Using robots in agriculture encourages sustainable methods of agriculture. The applications of robots in agriculture can aid in the reduction of soil compaction and increase plant health through targeted and accurate application of fertilizers and other inputs. Furthermore, robots are able to work at all hours and under different climatic conditions, thus ensuring uninterrupted production. There is an expected increase in their market share due to increased funding for agricultural robotics and the emergence of smarter and cheaper alternatives, making robotics a major pillar of the United States digital agri-business system.

Future Market Scenario (2024 - 2031F)

-□New innovative technologies such as artificial intelligence (AI), machine learning, blockchain, robotics, and Internet of Things (IoT) enabled gadgets that offer real-time data analysis, forecasting, and automatic functioning are expected to be embraced speedily.

-□Advancements in drone technology and satellite imagery will provide high-resolution field monitoring, thus minimizing losses and allowing for early detection of crop diseases and pest infestations.

Key Players Landscape and Outlook

The key players in the United States digital agriculture market are actively innovating to stay ahead of the competition and meet the evolving needs of modern farmers. These companies invest heavily in research and development to enhance their digital agriculture products, such as precision farming tools, farm management software, autonomous machinery, and advanced data analytics platforms. The market includes contributions from emerging startups that provide specialized solutions, such as drone technology, AI-driven analytics, and IoT-based farm monitoring systems, enhancing the technological landscape.

Strategic partnerships and mergers and acquisitions characterize the competitive environment as companies seek to broaden their technological capabilities and expand their market presence. The outlook for the digital agriculture sector is optimistic, with significant opportunities due to the growing demand for more sustainable and efficient farming practices. As digital tools and solutions become increasingly integral to agricultural operations, key players in the market are well-positioned to capitalize on increased investments in agricultural technology and the shift toward data-driven decision-making. This dynamic landscape will lead to continuous innovation and growth in the digital agriculture industry.

In October 2023, Deere & Company partnered with Sweden-based Delaval and Norway-based Yara on digital tools for precision agriculture that promote sustainability. Through the collaborations, farmers can collect data on livestock and fertilizer, enabling them to make more environmentally conscious business decisions.

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