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FUNCTION REQUIREMENTS

Smart farming is a management concept focused on providing the agricultural industry with the infrastructure to leverage advanced technology – including big data, the cloud and the internet of things (IoT) – for tracking, monitoring, automating and analyzing operations. Also known as precision agriculture, smart farming is software-managed and sensor-monitored. Smart farming is growing in importance due to the combination of the expanding global population, the increasing demand for higher crop yield, the need to use natural resources efficiently, the rising use and sophistication of information and communication technology and the increasing need for climate-smart agriculture.

Smart farming technologies

The intelligent farm includes the use of technology such as:

Sensors for soil scanning and water, light, humidity and temperature management.

Telecommunications technologies such as advanced networking and GPS.

Hardware and software for specialized applications and for enabling IoT-based solutions, robotics and automation.

Data analytics tools for decision making and prediction. Data collection is a significant part of smart farming as the quantity of data available from crop yields, soil-mapping, climate change, fertilizer applications, weather data, machinery and animal health continues to escalate.

Cloud service for store the all input datas from the sensors and users,we store limited datas only and access whenever we need ..

IBM Watson platform connect the iot device and moblie application

The combination of these technologies facilitates machine-to-machine (M2M) derived data. This data feeds into a decision support system so that farmers can see what is happening at a more granular level than in the past. For example, by precisely measuring variations within a field and adapting the strategy accordingly, farmers can greatly increase the effectiveness of pesticides and fertilizers and use them more judiciously. Similarly, smart farming techniques, help farmers better monitor the needs of individual animals and adjust their nutrition to prevent disease and enhance herd health.

Using the IoT Watson Platform, we link IoT devices and mobile applications. Connecting a device is straightforward and just requires a few clicks.

Benefits of smart farming

By making farming more connected and intelligent, precision agriculture helps reduce overall costs and improve the quality and quantity of products, the sustainability of agriculture and the experience for the consumer. Increasing control over production leads to better cost management and waste reduction. The

ability to trace anomalies in crop growth or livestock health, for instance, helps eliminate the risk of losing yields. Additionally, automation boosts efficiency. With smart devices, multiple processes can be activated at the same time, and automated services enhance product quality and volume by better controlling production processes.

Smart farming systems also enable careful management of the demand forecast and delivery of goods to market just in time to reduce waste. Precision agriculture is focused on managing the supply of land and, based on its condition, concentrating on the right growing parameters – for example, moisture, fertilizer or material content – to provide production for the right crop that is in demand. The types of precision farming systems implemented depend on the use of software for the management of the business. Control systems manage sensor input, delivering remote information for supply and decision support, in addition to the automation of machines and equipment for responding to emerging issues and production support.

Is smart farming the future of agriculture?

Smart farming and IoT-driven agriculture are laying the groundwork for a "third green revolution," which refers to the combined application of information and communications technologies. This includes devices such as precision equipment, IoT sensors and actuators, geo-positioning systems, unmanned aerial vehicles (UAVs) and robots.

IoT technology helps better control agricultural processes to reduce production risks and enhances the ability to foresee production results, which helps farmers better plan and distribute product. Data about exact batches of crops and the quantity of crops to harvest can help farmers cut down on labor and waste, for example. Additionally, in a number of sectors, including agriculture, service providers and mobile operators are modernizing their network infrastructure, bringing network resources to the edge and integrating far distances through technologies such as small cells and massive MIMO to get ready for the 5G roll-out.