Environment

Agricultural Internet of Things technology applications

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Technological development follows no physical or invisible boundaries and expands its roots in all dire Things has its applications in fields of home security, Industry (as Industrial Internet of Things) and sm development within the Internet of Things has even sown its seeds in the agricultural sector, leading to

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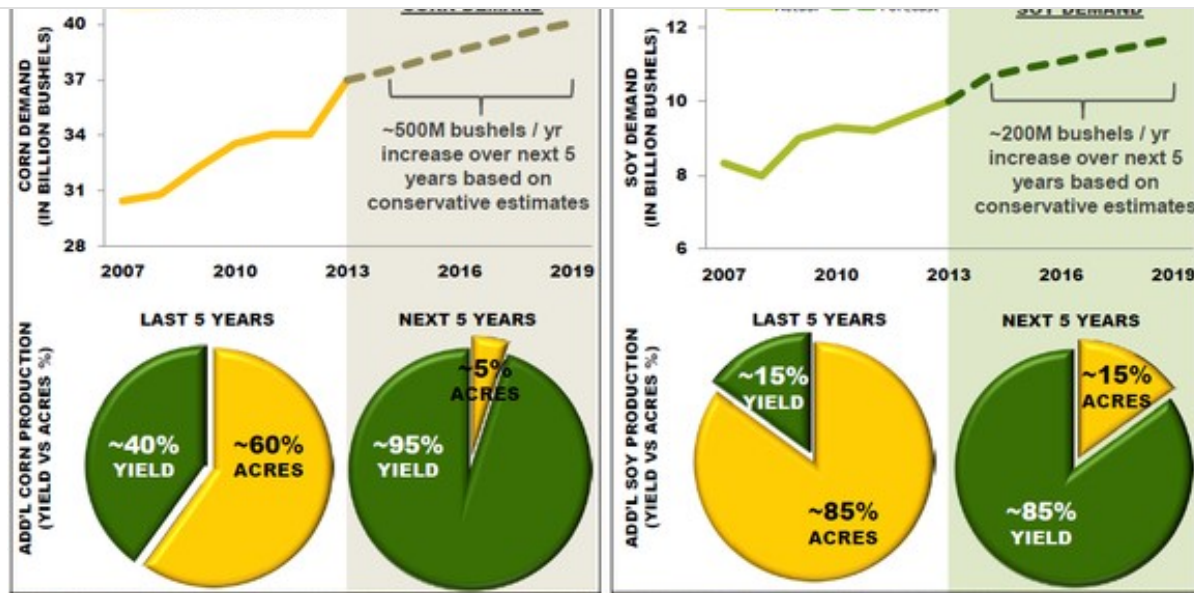
Agriculture Internet of Things in the near future

Agricultural IoT future (2050) and market size

It is forecasted that by the year 2050, the Agricultural Internet of Things will increase food production b
billion people.

Therese Cory, Beecham Research analyst and author of Towards Smart Farming, stated: "The deman
against the challenges of rising climate change and more extreme weather conditions, along with the e
from intensive farming practices."

Global shift timeline

Considering the growth of IoT since 2000, the use of sensors presents a major shift in agriculture.

- Year 2000 – Globally, there were 525 million farms on record, out of which not a single farm was c
  Things.

- Year 2025 – With same base of 525 million farms, there will be 600 million sensors in use at these
  shift towards technological advancements being applied to agriculture to support the Agricultural Ir

- Year 2035 – With 525 million farms globally, there will be a more than threefold growth in sensor u:
  By 2050, there will be two billion sensors used in 525 million farms.

Electronic agricultural devices

Product quality, higher crop productivity, resource conservation and cost control – these are just a few
Internet of Things promises to transform farming and food production in the future. It helps increase cr
controlling such activities in the following ways:

Water supply management

Purportedly, it has the potential to conserve 50 billion gallons of fresh water in a year. Adequate water
crops can be damaged by either water excess or shortage. The Agricultural IoT, integrated with Web N
Observation Service (SOS) provides a solution to managing water requirements or supply for crop irrig
crop water requirements and uses water supply resources available to reduce waste.

In areas of drought, the crop water management function of Agricultural IoT can be of great value, as i
water supply by calculating the valve operation timing and building optimum irrigation strategy, resultin
water resources.

Precision agriculture

Weather forecasting accuracy and other dynamic data inputs can affects crop productivity to a great ex
accuracy, the lower the chances of crops being damaged; thus, more accurate weather forecasts can I
productivity levels.

important real-time information available to them can better plan their course of activities beforehand a measures in advance for the future.

Integrated Pest Management or Control (IPM/C)

A farmers' hard work is often destroyed by pests, causing significant monetary losses. To prevent such IoT (Internet of Things) has a system to monitor and scan the environmental parameters and plant gro from pest control sensors which are capable of predicting pest behavior. This information can be used done by pests on a large scale. Pest Management and Control works on the following fundamental ba

- Observation
- Inspection
- Identification
- Record Tracking

Food production and safety

Along with attaining optimum, quality food production, the Agricultural IoT aims to ensure food safety a transportation, etc. To do so, it has a monitoring system over various factors like shipping time, storage record keeping.

Livestock management

Supporting livestock health fortified with monitoring tools like as ear tags for cattle, capable of detectin disease is detected, it sends an alert so the animal can be separated from the herd, preventing the dis

Examples of new applications

1. The Phenonet Project by Open IoT **–** The Phenonet enables plant breeders to evaluate the perform varieties with the help of measurements taken from remote sensors. These sensors are capable o soil temperature, humidity, air temperature, etc.

   - This helps to improve quality and helps the plant breeders to monitor and promote plant growth conditions.

   - The Phenonet Project is a step ahead in the Agricultural IoT, driving improved quality by meas plant physiology parameters resulting in improved quality.

and reduce grain losses.

CLAAS agricultural equipment

- CLASS has entered a partnership venture with 365FarmNet to facilitate the service to farmers, in v
  control their agricultural plotting via a computer or smartphone;

- It collects important pieces of information for further analysis. This information may be used in field
  programs like fertilization and nutrient planning.

  3. Precisionhawk's UAV Sensor platform – Unmanned Aerial Vehicle (UAV) Sensors efficiently coll
  analyze it to give farmers relevant information like wind speed, air pressure, etc. This platform can
  surveying, mapping and imaging of agricultural plots.

Unmanned Aerial Vehicle (UAV)

- Precisionhawk UAV uses a drone to carry out its operational data collection and monitoring. It is th
  over the fields to be surveyed, while also deciding from what altitude.

  4. Cleangrow's Carbon Nanotube Probe – CleanGrow Ltd., founded 2009, and facilitates making c
  concentrations in a given liquid. In other words, the firm measures the various nutrient levels prese

- Cleangrow Ltd. uses the Carbon Nanotube Probe as a transducing layer in the sensors, enabling t
  multiple ions in a solo device. This meter provides instant feedback to the user.

Temputech's Wireless Sensor Monitoring

Venture investment

From 2014 until recently, there was a total venture capital investment of $269 million in more than 40 o
food startups, with some of the leading IT giants investing as much as $15 Billion in Farmers Business

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- - To learn more about how IBM Watson IoT can help you obtain greater efficiency through smart
    read our white paper, Understanding the Value of Enterprise Asset Management or contact a r
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This article originally appeared on IoT Worm.

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