Harness the power of the Internet to Improve Yield

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Abstract. It's rare to find a fertile farm or ranch that has complete cellular coverage across the entirety of its property. Because networking options like Wi-Fi are limited by restricted infrastructure in these areas, maintaining a reliable flow of connectivity is difficult. Yet, even if consistent cellular coverage is available, it's frequently cost prohibitive for farm monitoring. Similarly, alternate wireless devices that require batteries aren't practical because of high maintenance and replacement rates. This doesn't mean that your land can't embrace Internet of Things (IoT) technology. From irrigation and soil management to optimizing horticulture and livestock yields, LoRa technology provides farms and ranches an unprecedented opportunity to improve operations.

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Main Body

It's rare to find a fertile farm or ranch that has complete cellular coverage across the entirety of its property. Because networking options like Wi-Fi are limited by restricted infrastructure in these areas, maintaining a reliable flow of connectivity is difficult. Yet, even if consistent cellular coverage is available, it's frequently cost prohibitive for farm monitoring. Similarly, alternate wireless devices that require batteries aren't practical because of high maintenance and replacement rates. This doesn't mean that your land can't embrace Internet of Things (IoT) technology. From irrigation and soil management to optimizing horticulture and livestock yields, LoRa technology provides farms and ranches an unprecedented opportunity to improve operations.

Both emergencies and quarterly yield goals require quick and efficient networking paths. Establishing a LoRaWAN network allows farmers to connect to endpoints within a ten-mile radius to monitor animals, barns, generators, feeders, soil content, irrigation systems and waste water. In turn, farmers can make better decisions to optimize crop yields and response efficiency. By improving your network capabilities, producing a maximum crop yield will require less effort than ever before. This means ending each quarter with a higher bottom line, better quality products, and a safer environment for both your product and your employees. While this isn't for everyone, LoRa might as well have been designed with farmers in mind.

LoRa is best applied in long-range communication environments between many devices that have minimal power demands and which collect small amounts of data. The LoRa Alliance™ initially developed LoRaWAN™ as a standard for IoT networks. By leveraging unlicensed ISM spectrum reserved for industrial, scientific and medical applications, LoRaWAN delivers affordable connectivity unmatched by cellular and WiFi. Its sub-GHz spectrum allows signals to pierce obstacles like concrete easier and quicker, which allows it to travel farther while also consuming less power than other networking devices. While its urban range peaks at 2-5km, LoRa's range soars to 15km in rural environments.

LoRa's most enticing benefit, however, is the diversity of equipment and objects it can monitor. From water use and feed systems to soil moisture and nutrient content, MultiTech devices work to ensure a broad range of monitoring capabilities. By monitoring variables like an animal's activity and location to something as specific as a building's temperature, humidity, and air quality, being connected to your assets and environment has never been easier or more fluid.

The combination of its sensible price, impressive battery endurance and broad coverage of monitor points on your land makes LoRa an excellent choice for those struggling with network breadth and quality. It's a tool designed around a preventative maintenance philosophy. Because remote monitoring allows you to tackle potential issues before they mature into more expensive and serious situations, you're in control of your equipment, land, crops, and livestock. The spread-spectrum technology that conveys information over several frequencies to end nodes enables LoRa gateways to optimize the means through which data is exchanged between devices by remaining flexible. This is ideal if unreliable connections from rough weather are impacting your daily operations.

Paul Moore with MultiTech notes, "From local growers and livestock farmers, to heavy equipment manufacturers to irrigation systems suppliers, MultiTech devices can be found on farms around the world, improving both yield and efficiency. Better information about farm operations enables better decision making."

Whether you're a farmer or a corporate agribusiness, everyone wants to streamline operations by increasing efficiency and boosting their product yields. Just as important is tending to injured animals and workers quickly, which is easier via the precise monitoring methods of LoRaWAN.

In sum, urban devices like Wi-Fi just aren't powerful enough to support the kind of speed and distance encountered in the agriculture industry. However, cellular coverage isn't the answer either due to the cost-restrictive barriers associated with the major telecommunication giants. LoRaWAN is the answer for affordable and reliable agricultural network devices. If you're ready to find out more about how you can boost your network with groundbreaking technology like LoRaWAN.