AGRICULTURE

"We need to give our customers tools and applications that help them maximize their yield and support planning, planting, growing, and harvesting operations. The things we have offered in the past need to change in order to handle the new farming landscape. Every inefficiency ends up having a direct impact on the yield of their harvests."

– Agriculture Equipment Company, Product Manager

IMPROVING YIELD THROUGH SMART APPLICATION OF TECHNOLOGY

The planet will need to feed 10 billion people by 2025, while the land available for farming remains constant. Water availability is on the decline and environmental concerns are on the rise. Faced with these challenges, the application of technology becomes paramount in managing every square inch of available land and producing the best yields possible. Equipment manufacturers need to help their customers operate and maintain the complex equipment needed for the precision farming that will keep the future fed.

Agriculture equipment is used intensely several times a year, primarily during planting and harvest. During those moments, where minutes matter, the equipment cannot fail. Every day a field sits unplanted, the potential for crops is diminished. When an equipment breakdown happens in the field and planting or harvesting comes to a halt, it's critical that repairs happen as quickly a possible. Since service technicians are often not near the work that needs to get done, accessing the equipment to make those repairs is difficult and time-consuming.

Even when the equipment is running properly, being able to get the best performance to match the conditions present on the ground is complicated. Growers need to be able to maximize their yield and optimize for real-time conditions, but the equipment can be tricky to adjust and tweak on the fly.

DISCOVER THE SOLUTION AND ITS IMPACT →

THE SOLUTION
TOOLS TO AVOID YIELD LOSS BY REDUCING HUMAN ERROR

Advanced tools that help to avoid yield loss by reducing human error or by decreasing machine downtime address these problems. These include more capable service, monitoring, and analytical tools for the grower and their support network, along with real-time operational information for improved decision-making. A robust IoT infrastructure receives information from each machine and provides a control mechanism for influencing how the machines operates. Incoming information is continuously pushed to a digital twin which is exposed to an application architecture for data processing, analytics, and real-time decision making. Subsequent adjustments to improve machine performance, resolve an issue, or optimize tasks are then sometimes made automatically. In other cases, useful information is exposed to the grower or service technician through a user experience tailored to the job they're performing and delivered to them on the platforms where they are: mobile, tablet, or desktop.

- **An IoT hub that captures and processes data** across all stages of the crop lifecycle, identifying failing equipment, machines that need service, or necessary adjustments needed to improve performance. Control mechanisms in place facilitate on-the-fly remote maintenance.
- **Enterprise portal experience** where service technicians can see what the equipment is doing remotely, how it's performing, and how it's configured, so they can securely diagnose and repair software-based issues without a trip to the location. Likewise, an experience tailored for growers lets them plan, manage, analyze, and optimize crop lifecycles.
- **Straightforward applications for operators, growers, and technicians** to make informed changes and optimization tweaks on the fly, in the field, and on the ground by phone and tablet.
- **Robust alerting and notification of potential issues or necessary adjustments** based on operational analysis and predictive analytics of real-time machine data.
- **Tools for the request and purchase of appropriate software upgrades** for the machine configuration in near-real-time, enabling the configurations required for that upgrade.

THE IMPACT: MORE EFFICIENT, HIGHER PERFORMING, SMARTER FLEET OF MACHINES PRODUCING A SUBSTANTIALLY IMPROVED CROP YIELD

Confidence in improved yield

- Improved confidence in the output of planting and harvesting efforts and increased yield due to optimization of equipment and operations.
- Growers have more opportunity to apply their experience to real-time, as-applied data for rapid decision-making, thereby improving yield.

Connection to equipment in the field

- Ability to monitor the activity from all of the connected equipment, ensure proper configurations, and perform last-minute tweaks to operations in real time.

Improvements through data

- Insights from collected data to identify a looming problem with enough warning for preventative action.
- Fewer mistakes and fewer mechanical issues during critical operations as a result of increased data accuracy in planning and preparation.

Optimized operations

- Stronger collaboration between growers and their support staff
- The ability to grow at a new level of output that even the best growers couldn't access before.
- Improved operations and yield for struggling growers who now have access to new, easier to use tools.

CONNECTED CAPABILITIES

SMART AUTONOMOUS PRODUCTS
BIG DATA & ANALYTICS
ECOSYSTEMS
INTEGRATION
PORTALS
IoT