How Washington Farmers Collaborated with Tech Companies to Remain Economically Viable

Improving economic viability and resiliency in agriculture

🟥 About

The Food Resiliency Project is an economic development initiative that successfully united Snohomish County, Washington farmers with Intel Corporation and members of the [5G Open Innovation Lab](#). The Project helped develop new applications that will improve the economic viability and resiliency of the Washington agriculture industry and will minimize future food service disruptions for consumer and regional agribusinesses. The Project, which launched in December 2020, was funded by a grant through the Coronavirus Aid, Relief and Economic Security Act (CARES Act).

🟥 Industry Background

Snohomish County is home to about 850,000 people. Located just north of Seattle County and King County, it's a geographically and economically diverse area of the country. The farming industry in Snohomish County is like that of many other parts of rural America, comprised of large-scale commercial farms, small boutique farms and everything in between. For decades, farmers like those in Snohomish County, have felt the pressure to grow more food with fewer acres. Widespread commercialization in the United States has meant that those farms which are unable to remain economically viable are purchased by developers and turned into strip malls, subdivisions or commercial office buildings.

🟥 Problem: To Be efficient is to survive

Farmers are one of the world's most innovative classes but are more times than not limited by poor access to data, applications and infrastructure. While the drive toward innovation and improved efficiency has been present for decades, the global COVID-19 pandemic accelerated the need for farmers to grow more food with fewer resources. Additionally, many farms experienced a drop in sales to restaurants and farmers' markets in 2020 and struggled to remain open. successfully.

there is no industry comparable to farming in terms of potential volume and effective use of data, there is also no industry that has been further disconnected than farming. In order to help rural farmers remain lucrative and be available for future generations, new technology needs to be created, trialed and deployed successfully.

OnGo alliance™

◼ Solution

The 5G Open Innovation Lab is an "ecosystem approach" for developers and start-ups to collaboratively explore innovation and outcomes in real, tangible settings. The Lab's mission was to connect application developers with Snohomish County farmers in order to improve their efficiency through the use of modern technology like data analytics and sensing software, farm robotics and drone-based monitoring. The Lab installed these technologies in two locations: [Swans Trail Farms](#), a retail farm and event venue featuring apple orchards and strawberry fields; and Albert's Hay, Inc., a commercial grower and supplier of premium feed for horses, cattle, livestock and seed crops. Specifically:

- Technologies that were deployed at the farm were: Soil sensors, lidar, hi-resolution imagery, weather sensors (via the WSU AgWeatherNet), and soil nutrient mapping.

- Data was combined from multiple sources to allow for robust data analytics via multi variate models - providing insights that drove improvements to irrigation practices, pruning labor guidance, and chemical application that are all critical to the bottom line of growers.

- And specific to water consumption on the Farm at Swans Trail, the growers were able to optimize watering practices. They used between 50-75% less water through the growing season while, at the same time, learning how watering practices directly influence chemical application to drive root tension that leads to yield optimization.

The Food Resiliency Project utilized a dynamic testing platform with dedicated access to a 5G-capable,

KEY VALUES DELIVERED

- The project in Washington developed commercial use cases to work with farmers on new 5G, edge and cloud technologies that can be used today.

- The project resulted in the first application development field lab for the agricultural industry.

Citizens Broadband Radio Service (CBRS) LTE private network made possible by the Founding Sponsors of The Lab: T-Mobile, Amdocs, Accenture, Avenade, Dell Technologies, Intel, Microsoft, VMware.

This allowed the developers to connect to an edge computing environment that gave them access to cloud computing capabilities essential for latency-sensitive and compute-intensive applications. Intel worked in close partnership with the other founders to architect the infrastructure. The Lab utilized a server based on Intel® Xeon® processors, which provided a cloud-native environment that ultimately allowed farmers to easily consume these new apps and services in areas previously underserved by cloud computing. It also utilized the Intel® Smart Edge platform to host multiple workloads, including 5G functions and third-party application.