

Food & Beverage Manufacturer Achieves “Plant at a Glance” With New MES System

Ignition & Kanoa Deliver Perfect Blend of Customization & Immediate Value

It can be hypnotizing standing on Tree Top’s plant floor, looking out at its grand orchestration of custom robotics. But between all the automated box folders, spinning packet distributors, and conveyors ferrying jars from one machine to the next, one question vexed upper management: How efficient was all of this?

For [Tree Top](#) — a farmer-owned co-op that provides consumer-packaged fruit goods and ingredients all over the world — this had been a complicated and time-consuming question to answer.

Partially, it was an issue of scale. As Drew Dixon, Selah Plant Manufacturing Manager at Tree Top put it, “We’re running these massive facilities. Hundreds of employees. It’s very complex. We’re not just running one big line. We’re running 10 big lines at one time, and there’s parts and pieces moving all over.” Spread throughout Washington, Oregon, and California, Tree Top runs six facilities, each with their own production responsibilities.

For over 10 years, Tree Top has been using [Ignition](#) — the enterprise industrial integration platform for SCADA, HMI, IIoT, and more — to control, record, and interact with their manufacturing equipment, all from a central location. With Ignition’s historian,



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Tree Top can view important data such as historical records, temperature, and flow rates. “The amount of information is just astounding when you start digging,” said Dixon. “Felt like, hey, there’s a whole world of possibilities with this platform.”

Tree Top recognized a gap between their ability to collect data and gain actionable insight from it. They needed a unified, real-time operational view that could empower them to make decisions quickly, confidently, and consistently across all six sites.

They needed MES.

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– Drew Dixon
Selah Plant Manufacturing Manager at
Tree Top

The Search for MES

Tree Top turned to [CedarTech](#) — a systems integrator based in Roseville, California who had originally implemented Ignition for them — to expand the system to incorporate MES. After a brief dalliance with the idea of building the solution from scratch, Tree Top decided to use [Kanoa MES](#), a modular manufacturing execution system built on the Ignition platform.

“They're using Ignition for pretty much all of their MES operations,” said Samuel Leonetti, Automation Systems Engineer at CedarTech. CedarTech started with an enterprise-first architecture, defining a standardized data model for all of Tree Top's plants before customizing for each facility's specialized needs. With a secure endpoint created using Ignition's [Web Development Module](#), Tree Top's ERP system sends production order data to Ignition via MQTT, where the information can be validated, and then passed into Kanoa's database schema, including custom end-of-shift reports.

All of this is accomplished using Kanoa's standard scripting libraries, which are included in the foundational [Kanoa Ops Module](#). “Everything is very well documented,” said Ethan Thomason,

Automation Engineer at CedarTech, “which makes it easy to get data in and out of the system without ever touching SQL.”

The combination of Ignition and Kanoa proved an ideal match for Tree Top due to the balance of immediate functionality and customization. “We deploy Kanoa and within a very, very short amount of time, they're already getting value,” said Leonetti. “It also allows you to describe your operations in the system exactly as they are, and it allows you to build your entire organizational structure one-to-one.”

“Kind of the best of both worlds, because it's an out-of-the-box, but I can also talk to them and say, ‘Well, this is good, but let's add a new feature.’ And because it's Ignition, they're always like, ‘Oh yeah, we can do that,’” said Nathan Walden, Controls Engineer at Tree Top.

“The project with Tree Top has been a project where I've kind of been able to see their Digital Transformation take place from start to finish,” said Leonetti. “It's been a process where I've been able to see them go from completely manual entry to a full-fledged MES system in a remarkably short amount of time.”

Plant Floor Feedback

Tree Top's engineering team played a central role in this implementation, stepping in as a true integration partner. To gather feedback during beta testing, Tree Top excelled with a top-to-bottom approach. “Really, a lot of that beta testing feedback came once we rolled it out to the production floor and had our production employees

working side by side with both our legacy system and the new MES system,” said Dixon.

To efficiently address bugs associated with rolling out MES, Tree Top’s engineering team developed an internal help desk system that integrates the MES system with Asana, which Tree Top already used to track capital projects throughout the company. “It’s a great solution, having one source to actually target the problem,” said Jake Clark, Project Engineer at Tree Top. “We can keep a complete record of any bugs we had or issues we had with MES, so we can work through that as a project backlog.”

As intuitive as Kanoa’s take on MES is, any new implementation will inevitably have a learning curve. To ease this transition, Clark created a training series to introduce current and future employees to MES. The series consists of interactive videos with varying degrees of depth, applicable to different roles. “I did screen capture as well as narrated so I can walk through the steps to do it,” said Clark. “So they get a semi-hands-on experience where they can kind of see how to use the software.” Importantly, Clark collaborated directly with Kanoa to ensure that the information was accurate.

Which is not to say the system is static. “Ignition gave us a flexible, centralized platform to put in core requirements first and then expand out as the needs changed,” said Thomason. Tree Top has a production environment, while CedarTech has a separate development environment,

allowing Tree Top staff to see features before they are pushed out into production.

“In food and beverage, with the pace of change, Ignition’s [unlimited] licensing model is very helpful because we can add lines or add features and parts to our lines and upgrade those to Ignition and not have to add anything to the server,” said Walden.

This level of flexibility also means that improvements can happen quickly. “I think that with Ignition, things go from the meeting to the plant floor faster than you could probably have with any other platform,” said Leonetti.

OEE: What Does it Mean to be Running?

With Kanoa Ops implemented on top of Ignition, Tree Top can easily manage production schedules, track KPIs like OEE, downtime, and performance vs. schedule, and get a clear view of plant floor efficiency.

“I think visibility is one of the first steps to fixing anything or improving production, because you have to be able to measure it and then have people who are actually doing the work have a target to try to hit,” said Walden.

To give everyone at Tree Top, from the production floor up to the C-suite, real-time visibility, Tree Top is tracking Overall Equipment Effectiveness (OEE). “Part of the advantage of OEE is that OEE breaks out the availability and the performance into separate metrics,” said Walden. “Sometimes in the past we would have a good availability number cover over a performance number.”

Importantly, Tree Top has reached a critical milestone: They now trust their data.

This has allowed them to shift to true data-driven decision-making. As Dixon said, “Moving away from emotional decisions, gut feelings, to really saying, ‘Okay, hey, look, here’s this hard data. This is hard information. This is truth.’”

The MES gives Tree Top the ability to deep dive into the analytics, allowing them to identify weak points in their production lines and make more targeted capital investments. “Now we can actually put numbers to the dollars,” said Dixon.

One example was a recent project comparing Tree Top’s current inkjet coders against a new option. Leveraging the OEE metrics, Tree Top was able to easily deduce that the new inkjets would deliver ROI over a short period of time. Previously, this decision would have taken four to five times the amount of time and effort, and with a lower level of confidence.

“Plant at a Glance”

Tree Top’s ultimate goal for the MES implementation was to achieve what they describe as a “plant at a glance.”

“I think ‘plant at a glance’ really came from trying to deal with the scope that Tree Top has,” said Dixon. “I think what MES solves for that is being able to bring all that information together and to get a simplistic overview.”

“All of the data exists in the system. It’s just a matter of displaying it at the appropriate time,” said Thomason. CedarTech created custom views for everyone — operators,

engineers, and maintenance personnel all the way up to decision-makers and management — to have custom real-time data that was applicable specifically to them.

This customization can be at the individual level as well. “It’s also a system of widgets,” said Leonetti. “All of your data is only ever a couple clicks away. You can have your ‘plant at a glance,’ but they’re interactive dashboards.”

Tree Top also put dashboards on TVs in the break room so that employees can see how the lines are running currently, in addition to previous shifts. That way staff can easily recognize performance trends over the previous 24 hours. “They’re able to analyze that and be able to adjust quickly to potential issues,” said Clark.

Additionally, CedarTech built reports for Tree Top management in particular so they could dig into the types of deep operational data that ensure efficiency. “I can’t imagine, as a leader, not having this information anymore,” said Dixon.

A Foundation for the Future

“Tree Top’s MES journey has been more than a decade in the making. When we deployed our first Ignition server in 2013 to run an entire facility, we knew we were laying the foundation for something much bigger,” said Jason Gaudet, Director of Engineering at Tree Top.

Tree Top has implemented Kanoa Ops at two facilities, with two more planned for 2026. They are also establishing a company-wide MES Forum to align all six plants on shared

metrics, terminology, and expectations. “I think it's going to be really exciting as the other plants get on using their systems,” said Dixon. “I'm excited to see what they figure out. Methods and opportunities that we can bring together and really be innovative with the system in ways that I can't even imagine right now.”

Today, Tree Top operates 11 Ignition servers, all centrally monitored and backed up through the [Enterprise Administration Module](#). With the success of the MES implementation, Ignition will continue to be a cornerstone of Tree Top's controls strategy and a driving force behind their Digital Transformation.

Project Scope

- Start Date: 2013
- Deploy Date: 2013 (Ongoing)
- Number of Tags: 250,000+
- Number of Screens: 250+
- Number of Clients: 110+
- Number of Devices: 140+
- Architecture: 9 servers plus a development server connected with EAM
- Databases: MSSQL
- Historical Data Logged: 16,000+ tags
- Number of People on Team: 3

Tree Top is proud to be a farmer-grown, farmer-owned cooperative. Founded in 1960 in the heart of Washington's apple country, Tree Top brings generations of dedication and care to every harvest. They make wholesome and delicious fruit juice and apple sauce that parents trust and kids love, using simple, quality ingredients. Each day they come to work with a purpose: to provide trusted food products that people feel good about feeding their family. Whether it's a lunchbox treat, an after-school snack, or part of a healthy breakfast, Tree Top is here to share the goodness of real fruit.

Learn more: <https://treetop.com/>

Specializing in MES and business systems integrations, CedarTech has the expertise needed to bring operations to modern standards and build a framework for the future. CedarTech is shaping the future of ERP, MES, and SCADA systems by creating unprecedented value and opportunity for their customers, employees, investors, and ecosystem partners. CedarTech strives to be the leaders and catalysts in automation technology while maintaining standards of implementing high quality, robust, and efficient solutions to be used worldwide.

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