

Acorn Assembly

www.acornassembly.com

Industry



Electronics

Employees

65

Headquarters

Wisconsin, USA

SUCCESS IN THE MIDDLE OF SUPPLY CHAIN CHAOS

Implementing LYNQ MES helped Acorn Assembly transform operational visibility and performance even in the depths of the Covid-19 pandemic.

LYNQ MES helped the Wisconsin-based company mitigate COVID's impact through improved on-time delivery to customers, better communication on delivery schedules and boosted employee morale with an easy-to-use software and a visible and reliable production schedule. LYNQ MES has been a game changer for Acorn as the company has increased the efficiency of production and eliminated unnecessary time spent on fire fighting.

John Cherry, Director of Engineering and Technology at Acorn Assembly, and the company's Production Planning team recognised the need to change from a paper and excel based shop floor process that was prone to disruption and provided nothing in terms of automated continuous improvement analytics. The concern was that an MES implementation would be too costly and time consuming while the team was also dealing with the massive global supply chain crisis. With LYNQ's plug and play integration to Acorn's ERP solution, the tool was an excellent fit.

Challenges: inventory sourcing and control, scheduling, visibility, machine and personnel management.

Acorn assemblies are used in some very advanced and sophisticated projects, yet the company had been running its shopfloor operations, production, and delivery management manually, using a basic ERP system and spreadsheets, for years. PCBs (printed circuit boards) are populated and assembled by Acorn to customer specifications and shipped to their facilities. John Cherry, Director of Engineering and Technology, was the first employee of the start-up that grew into Acorn Assembly and has seen the company grow to its current position as a successful, specialist contract supplier, able to deliver PCB assembly projects of any size, from start to finish.

When asked why Acorn chose LYNQ MES and the benefits they have gained from the solution, he said:

"Prior to Covid, we ran off spreadsheets but the factory pretty much hummed along," said John. "We had good track records with our customers, but we recognised that the way we managed the factory floor was slowly becoming outdated. We were hitting our shipping targets but, in honesty, the factory floor operation was somewhat chaotic, and the staff were constantly being micromanaged, switched from one task to another even before it had been finished. Their days were constantly being interrupted; they were having to switch gears and move to the next thing, to try and keep all the various products moving."

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The company recognised that it needed to modernise and upgrade its management, control and production systems. The entire industry ecosystem changed in a moment when the COVID pandemic hit and threw everything into uncertainty. Even as the world normalised around regional shutdowns and the economies began to rebound, electronic manufacturing was blindsided by an unprecedented shortage of the components used to assemble PCBs. Acorn, and every other company in the industry, struggled on the open market to find supplies to enable it to service customer orders.

“Things got out of control. With the supply chain for the components disrupted for multiple years, we had a backlog of orders that was continuing to grow, but got held up because we could not get certain components. Parts were delayed, de-allocated, or cancelled at the last moment. We were in a tight spot where we were trying to make changes and get things running well.”

As the mainstream supply channels had collapsed into near total unreliability, Acorn had to turn to the world of brokers, which is something of a jungle. The procurement team got whatever it could; the production team had to then identify what it could make with the inventory available. The manual, spreadsheet solution simply could not cope. A business system built on predictability of material flow faced complete unpredictability.

“We have an ERP system where we can enter the routing times and what the expected throughput should be. The challenge was to manipulate the purchase orders, schedule and estimated ship dates as a whole – not a line-by-line adjustment that we had been used to. Under normal circumstances we may need to adjust a handful of items a day, but with such a disrupted supply chain we were seeing hundreds, if not thousands of adjustments needed. We had to get this information in a way where a system could do proper analysis,” he continued.

Visibility leads to clarity and control

Acorn came to suspect that a MES solution would help it to stabilise and LYNQ emerged as a potential solution to help bring order out of the chaos.

“LYNQ will be the first to say that their material availability solution will not and isn’t intended to replace an ERP system. What we have been able to do is to look at all the orders in our backlog, which was a massive number by then, then look at material availability and put together a structured schedule based on the constantly changing commitments from suppliers.”

The results were quite phenomenal. When the company first implemented LYNQ, it spent 30 days – all of October 2021 – purely working on re-building the schedule. Its visibility of inventory, orders, and capacity improved hugely.

In just one month, Acorn went from below 20% on-time deliveries to over 85%, with the same number of people on the shopfloor! The transformation was little short of miraculous, and it fed into improvements in other areas, too.

“Seeing something work that well is great, LYNQ completely changed the game and we wanted to see how far we could push it. We are now over 95% on-time shipping. Our revenue per person in direct labour is better than it has been in years!”

John Cherry, Director of
Engineering and Technology

“Over the next two months, we implemented the factory floor feedback with the workstations, along with the equipment and employee analysis – and we just continued to have successful months,” continued Cherry.

It is not just management that is delighted with what LYNQ has helped the company do. The morale of the shopfloor workforce has greatly improved because they know what they are and will be doing. They arrive in the morning, their schedule is at their workstation, and they know it is not going to be changed at a moment's notice. They know what their day will look like, and they can set up for that. The scheduling meeting, which used to take an hour or so every day, is now a 10-minute standup chat.

Positive feedback to customers

Supplies are still tricky and not entirely reliable, but LYNQ has also helped Acorn with that. By knowing well in advance that a particular component is a problem, the company can go to customers and have an informed, constructive discussion.

"What we have been able to do is to say to customers that, for example, an impending order is still missing a part, it's high risk, we do not realistically think we will get it for two, three or even 10 months. We need to work proactively on an alternate component or even engineer it out," he said. "Our largest customer has been working on designing out these really difficult to find processors. The visibility that LYNQ has given us has really helped us and our customers to have constructive, informed discussions."

The post-sales co-operation and support from LYNQ has helped Acorn to manage operations much more effectively, through improving visibility and understanding. Capacity scheduling is much more efficient, with choices on how to fulfil particular orders offered clearly.

Automation and capacity planning

"Take automated soldering, for example. We may have eight people there. LYNQ will show us the effect of having all eight in one work cell or splitting activity up between two or three workstations. This allows the automated equipment to run much better. There is less downtime and we've pretty much eliminated surprise bottlenecks," Cherry explained.

Higher level automation using LYNQ MES continues as a research project but its capability has enabled automation of functions like backup work centers and – almost unnoticed, now that they are used to it – automatically pushing work over to other centers to relieve overloads.

“LYNQ has been helping the company in ways that have been a joy.”

John Cherry, Director of
Engineering and Technology

Company Background

The company that is now Acorn Assembly was founded in Denver, Colorado, as SlingShot Assembly, in 2015. Three years later it acquired BEI Electronics' long-established facility in Franksville, Wisconsin, which increased the company's size and operations significantly. Operations are now centralised in Franksville. SlingShot itself was acquired by Acorn Assembly LLC early in 2022 and the name was subsequently changed.

Acorn Assembly specialises in high-mix medium production assembly of PCBs (printed circuit boards) and components, under contract, for a portfolio of companies ranging from military, medical and aerospace to consumer electronics, drones and 3D imaging applications. A significant proportion of its work is sensitive and commercially very confidential. All its customer companies are located in the USA.