



Lean Product Launch with 3P Event Reduces Risk & Compresses Timeline for Energy-Based Device

CUSTOMER SITUATION

A small startup had a prototype for a system to treat the symptoms of benign prostatic hyperplasia (BPH) and was looking for a partner to help it take the next step. The customer had completed clinical trials with the prototype but needed help to scale up assembly and manufacturing.

The system included an RF generator and a complex, handheld, energy-based delivery device requiring sophisticated assembly technology.

The customer was looking for a highly experienced contract manufacturer that could take full ownership of developing and launching the assembly and manufacturing process for the delivery device, essentially maintaining production with a focus on operational excellence and supply chain excellence.

VARIANT SOLUTION

The team began this Lean product launch with a cross-functional **Production Preparation Process (3P)** event for this customer. 3P brings stakeholders together to identify and reduce waste in every step of a process, thereby increasing efficiency, de-risking the manufacturing process, and compressing the timeline.

3P team members included Viant manufacturing, quality, and packaging engineers, as well as senior equipment operators; 4 representatives from the customer company; and representatives from Viant's automation partners, which would be designing and performing the full integration of the assembly equipment.

The team was trained on Lean principles including 3P, then the customer explained details of the device components, use, and critical functions. The goals for this 3P event were:

- To develop a scalable assembly process, manufacturing line layout, and flow capable of producing the device at the forecasted volumes
- To minimize and justify the necessary capital expenditure

The group split into 4 teams that worked independently and concurrently to map the macro process flow, or the “big picture” of how the assembly process works conceptually. Next, the teams presented their concepts for innovative process solutions. The teams then reconvened to modify their concepts based on the ideas shared, and developed more detailed sketches of the actual assembly equipment. After another round of sharing, the teams narrowed their focus to the micro process flow, the actual equipment. Finally, the teams voted on the best process solution using a ranking method based on Lean criteria.

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Once the concept was in place, the teams built a mock-up of the equipment stations out of cardboard boxes and other material. The teams simulated more than 20 stations involved in assembly, testing, and packaging (kitting and sealing), to assess safety, ergonomics, material flow, and operator envelope. Team members were able to identify opportunities to reduce waste and alleviate bottlenecks that could affect flow.

One of the challenges of this 3P event was the scope of work. The handheld delivery device was extremely complex, comprising more than 100 diverse components. It also required sophisticated assembly processes including laser cutting, resistance welding, and precision fluid dispensing and UV curing, as well as HD vision inspection, leak tests, and electrical checks.

After the 3P event, it took the team about 12 months to build the assembly and manufacturing lines for this complex device and scale up. Including Viant's local automation partner on the 3P team significantly streamlined the design phase, as all stakeholders were aligned on the equipment concepts. Viant took an active role in designing the equipment, acting as the voice of the customer and performing all equipment validation.

RESULTS

As a result of the Lean 3P process, the team was able to:

- Decrease cycle time by 10% of the quoted target
- Balance the line within +/- 4%, ensuring that material flowed at a consistent cadence to avoid bottlenecks
- Decrease net labor by 48% of quoted target
- Achieve necessary capacity with no additional capital expenditure

Working together on the 3P team put Viant and the customer on the same side of the table, building camaraderie and strengthening their relationship. It also inspired customer confidence in Viant as a trustworthy steward of the customer's resources. Viant successfully scaled up production and continues to manufacture this device.

