

case 1-429-370  
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## Switchco (B): Implementing Tools and Analytics for Manufacturing Improvements

A Tauber student intern team worked on-site in an Eestron factory. Their project was sponsored and supported by Switchco, whose new Picard product was in the early stages of ramp-up in the Eestron factory. They found that bottlenecks in the testing area and low yields in the press fit area were the major capacity constraints that threatened the pace of ramp-up for the new product line being built there.

### Project Team's Accomplishments

At the end of the Tauber team's summer engagement, they reported on their findings to Eestron and Switchco managers and engineers. They were able to report a number of successful process improvements in the press fit and testing areas.

### Test and Press Fit Improvements

The most severe bottleneck identified by the team was in the testing area. What follows is a summary of answers to the team's brainstorm questions listed in the (A) case.

1. The test area is the bottleneck. We can see that. How can we prove it? How can we help it?
  - a. Add capacity? Is there room?
  - b. Decrease demand? How?

Proof that testing was the bottleneck came from analysis of lead time and quantity of work in process (WIP) inventory in the area, applying the insights of Little's Law that  $I = RT$ . Detail level analysis showed that the overall capacity of the testing area should have been sufficient, but that it was not aligned with demand for the printed circuit board assemblies (PCBAs). The dedication of test chambers to run only one test script per chamber made the capacity inflexible, and furthermore the assignment of individual chambers to particular PCBAs did not match the demand profile for the different PCBAs.

The team gathered a cross-company working group to explore the possibility of making the test chambers flexible to accommodate multiple PCBAs per chamber. Due to the pattern of arrivals of PCBA batches to the test area, the distribution of time between arrivals of PCBAs to be tested exhibited a high degree of variability as measured by the Coefficient of Variability, defined as standard deviation divided by mean. The bursty arrival pattern meant that PCBAs often sat waiting for testing, even though overall utilization



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