



Creating a Culture Focused on Cost Reduction: Burton Industries' Approach

Helping Your Bottom Line Series

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There is no question that supply chain costs are increasing across the board in 2021. That said, electronics manufacturing services (EMS) providers who focus on working smarter can help balance out those increases. The team at Burton Industries has always had a culture focused on finding ways to reduce cost by working smarter. Its approach focuses on four areas:

- Identifying cost improvement opportunities at project start
- Periodic review of material costs during the project
- Redesign for cost reduction
- Operational improvements.

Identifying Cost Improvement Opportunities at Project Start

The team at Burton Industries begins its risk mitigation and cost analysis process at the quote stage, reviewing the bill of materials (BOM) for components with obsolescence risk or known constraints. Additionally, if there are sole-sourced parts, equivalent alternates are suggested. The goal is to begin any business relationship with a clear understanding of potential materials issues that could drive cost increases or availability issues, and options for addressing them. Design for manufacturability (DFM) is also considered at that point and recommendations for improvements that improve quality or reduce unnecessary cost may be made at that time, as well.

In new product development, the team can also identify cost reduction opportunities when involved early in the process. As part of component lifecycle analysis and BOM and approved material list (AML) development, the team at Burton Industries considers a number of factors including:

- Obsolescence risk based on the stage of each component's lifecycle
- Best packaging styles for availability within the current market constraints
- Availability of alternate components
- Most cost effective options
- Product family component commonality considerations
- Quality/delivery track record of specified suppliers.

The team also looks at the anticipated volumes and likely demand patterns because that can influence component selection. This differs from DFM or design for testability (DFT) analysis because these analysis processes don't analyze whether or not the AML and component specifications are optimized for likely demand patterns. This analysis is best done through a design for procurement (DFP) process. DFP focuses on minimizing the number of unique parts required, minimizing the amount of customization required and broadening the range of supplier choices. The result is fewer inventory line items to manage, reduced costs and better component availability.

The team's DFP process includes:

- Reviewing the bill of material to ensure choices that provide as much component commonality with related products as possible
- Specifying at least two sources for every line item on the BOM
- A focus on minimizing "over-specifying" tolerances, values or finishes on parts where less precision could provide a greater range of available materials

- Limiting use of mixed technology parts or difficult to procure packages
- Evaluating stage of lifecycle for specified components to minimize use of components with high obsolescence risk
- Evaluating likely product lifecycle against the lifecycle of any “off-the-shelf” subassemblies designed into the product.

Periodic Review of Material Costs During the Project

Burton Industries’ Purchasing team reviews its contract material pricing once a year and looks for cost reductions that can be passed on to our customers. In addition to that, team members are continuously on the lookout for cost reduction opportunities.

For example, the senior materials buyer recently identified a cost reduction opportunity associated with a sole-sourced fastener. The pricing seemed high and she was able to find a lower cost part. The engineering team validated that this was a drop-in replacement, requested samples from the supplier and worked with the customer to get the new part approved.

The result was a \$4,000 a year annualized cost savings plus elimination of a sole-sourced item that could have caused availability issues at a later date.

Redesign for Cost Reduction

Burton Industries’ team can also support redesign for cost reduction activities either by redesigning existing products or making recommendations for cost improvements to be included in the next product generation.

For example, a senior program manager recently helped a building controls customer improve component availability and reduce cost. The existing design utilized 0603 packages and a crystal which were constrained. Burton Industries’ manufacturing equipment easily places 0402 packages which had better availability and were lower cost. The engineering team recommended a redesign and that timing aligned with a need the customer had to improve the product and reduce cost for their end customer.

The product involves three printed circuit board assemblies (PCBAs) that feed into three higher level assemblies (HLAs). Due to the size of the annual savings, the cost to implement will be paid back within 1.5 months.

Operational Improvements

Burton Industries’ team is always looking for ways to work smarter. A Learn 2 Earn program cross trains associates so that they can move around the factory as demand changes in various work cells. Operators in the surface mount device (SMD) area are being cross-trained to operate all machines, handle any set-up, do programming and routine maintenance. This enables a leaner team to work nimbly.

Newer technology is also being adapted to help reduce costs. At Burton Industries, 3D printing on a plastic vinyl product is used to make tooling for conformal coating and wave solder. 3D printed tooling runs 10-50 percent of the cost of standard tooling. While the suitability of this option depends on the board size and panelization, it is used wherever possible to help reduce tooling cost.

Maximum printed object size is 8.4 inches on a side and 11.8 inches tall. The largest size printed circuit board assembly (PCBA) this can accommodate is 8.4 inches x 8.4 inches. Either PLA or ABS ESD-safe

plastic is used. The engineering team develops the tool design utilizing their CAD program and then the design is loaded into the 3D printer.

While supply chain and logistics cost increases will be part of the challenges in 2021, Burton Industries' culture of achieving cost reductions by working smarter will continue to help identify opportunities to save money.

About Burton Industries

For more than 40 years, Burton Industries, Inc. has provided customized manufacturing solutions to OEMs in the medical, industrial, motor control, specialized consumer, security, building controls, defense and professional tool markets. We support the full product lifecycle from product development through end market support services.

We've built our business by listening to customer needs and efficiently supporting high mix, variable demand projects at both PCBA and higher level assembly (HLA) stages. Our manufacturing strategy includes:

- *Extraordinary communication with customers*
- *Teaming with suppliers*
- *Optimizing test*
- *Eliminating hidden cost drivers.*

Our primary manufacturing location is in Ironwood, MI and additional HLA manufacturing capability is located in Hazelhurst, Wisconsin.