

It is important to look at cost in the context of the Total Lifecycle Cost of the Product. This includes COGS, Logistics, Customer Support, Warranty / Returns (Quality) and Remanufacturing / Scrap. COGS will have the most immediate impact, but focusing on this aspect alone to provide short term results can create significant issues downstream which take considerably more time, effort and money to correct.

Below is the approach I take to cost reduction, broken down by the categories noted above:

### **COGS**

1. Attack aggressively now, as any delay is lost opportunity (and cash). The timing is even more important when a product is in the pre-production season before large quantities of materials have been ordered.
2. Reduce costs through negotiations with the OEM (detailed BOM review, margin, labor, component substitution, factory inspection, etc).
3. Reduce costs through design changes (DFMA, lower cost design alternatives for ME / EE / SW, etc.). This is a longer-term solution for high volume products. Changes will have a schedule impact (design, validate, order components, adjust assembly line, update procedures and docs, etc), and require working through existing inventory or scrapping, etc.
4. Reduce costs through pack-out and feature reduction. Question all components / features packed in the box - are they really necessary? Could they be sold as accessories?

### **LOGISTICS**

1. Review SKU count - are they all necessary?
2. Late stage customization - can a base unit be customized at the end of the assembly process for the specific SKU / market (i.e. face plates, etc).
3. Shipping Acceleration - can a flex packout in-market shorten the lead-time and provide greater inventory flexibility (i.e. there is not an excess of blue products and shortage of red ones)?
4. Box size - can the packout be reconfigured to allow greater containerization?

### **CUSTOMER SUPPORT**

1. CS Provider: Are lower cost / higher quality options available?
2. Mode of Support: Call, email, chat, web self help (FAQ, video, etc).
3. Cost of support: Mode, length of call, etc.
4. Quality of Support: Accuracy / effectiveness of documents, Monitoring and Feedback.
5. Customer Satisfaction: Is the sale saved, Word of Mouth, survey results, etc.
6. Product Supportability: Are the product model and serial number easy to find, quick to read, transferred accurately, is the product serviceable, etc.

7. Database: Customer contact info, reason for call, resolution. Monitor and enforce warranty.
8. Fulfillment: Link to shipping spare parts, reverse logistics, correct shipping address, ship before receive, etc.
9. Sales: Ability to upsell new products and accessories.

**WARRANTY / RETURNS**

1. Quality (Fitness for Use): Pareto of customer reasons for returns, Pareto of root causes for returns (defective / non-defective).
2. Corrective Action: Analyze data, create corrective action plan, implement solution, validate and verify, roll into production, update CSR, etc.
3. Reverse Logistics: RMA approval, batch shipments (channel dependant – does not apply to Direct).

**REMANUFACTURING / SCRAP**

1. Remanufacturability: Modularity, cost, vendor / location, replacement parts (logistics), quality, etc.
2. Scrap: Destroy in field, destroy at reman site, monitoring and enforcement.