

Managing Complexity with 80/20

“Product line proliferation and complexity are everywhere and, if not controlled, they will destroy value. Our experience suggests a 3-5% EBIT improvement is a conservative expectation to achieve by driving an intelligent portfolio strategy for products or services.”

Background

A large Tier 1 OEM supplier of undercarriage components designs and manufactures a variety of suspension components. This includes steering arms, which are the final part of a steering set up for a truck. Steering arms are the last component addressed by the OEM before the suspension design is completed. As a result, the company has high complexity in terms of new designs and part number variety. In most cases, new designs are variants of existing designs or entirely new components to accommodate new customer requests.

Challenges

The manufacturer did not have modular designs which could reuse existing components for all customers while meeting cost targets. At one point, the company had 110,000 different part numbers released and produced in their system, with virtually every symptom of complexity present.

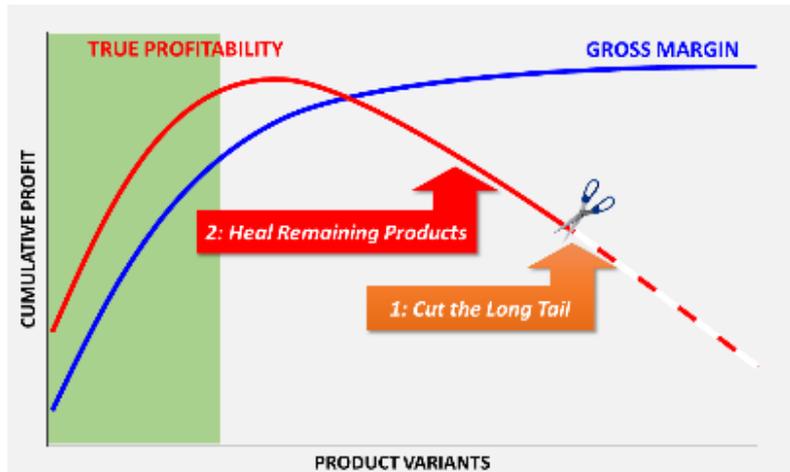
- New parts;
 - Entered the system daily with little oversight through new releases and product change requests.
 - Low-volume items interfered daily with production of high-volume parts.
 - Unfiltered variety required more engineers to design, release, produce, and maintain parts.
- Manufacturing;
 - High number of low-volume items required most production to be done in small batches, leading to many line setups and changeovers.
 - Tooling maintenance costs were excessive.
 - Feeding the line with raw materials increasingly more complex, and more indirect people needed at the shop floor.
- The company's profitability;
 - Profits were at the mercy of the mix of products being produced and sold. Had they produced more high-volume parts, there was greater production cost absorption and profits would be up.
 - When production mix was unfavorable, with more low-volume parts, the results were impacted by lower absorption from additional changeovers, indirect manufacturing costs, and increased burden rates.

These challenges were tolerated by the supplier for several years, to retain other business lines with the OEMs. Over time customers came to rely on the supplier for low-cost / high-variety components and revenues grew faster than profits. Eventually, the company was having its profitability impacted by complexity in this business unit.

Approach

We used 80/20 product line simplification methodology to reduce complexity and regain profitability. We worked with sales, engineering and finance to make complexity visible through 80/20 analytics. With transactional data from the company's ERP system, we created a detailed product and customer matrix based on contribution margin dollars to determine complexity cost and true profitability for each part number associated with each customer. A true profitability curve was created by allocating a portion of the overhead to each SKU, based on complexity level and economic value.

After identifying low-profit contributors, we created customer-centric strategies with the team to "cut the long tail" of the curve and fix profitability issues with the remaining products. By studying the 80/20 customer distribution we identified core, supporting and strategic customers to develop or protect. Then, using a decision-tree alongside analytics we dealt with low-profitability SKU's to raise prices, lower costs with direct material optimization (DMO), substitutes for a profitable product or phasing-out products altogether.



The leadership team established a complexity management forum for cross-functional decision-making that addressed complexity effectively. Gate review meetings ensured that no new products were introduced without truly understanding profitability and complexity costs. Product managers coordinated the complexity management process using tools and metrics based on 80/20 analytics.

Three of their largest OEM customers were driving a large amount of complexity cost. Although they were buying large quantities of high-volume SKUs, they were also demanding many low-volume and unique parts. We applied 80/20 analytics to the core area of the business and designed a modularization strategy to maximize reuse of existing parts. Individual approaches to discuss simplification alternatives with each OEM were devised also providing application alternatives.

Project Outcomes

The new decision-making process and tools resulted in improved profitability (ROS / EBIT dollars grew faster than revenue) and significantly reduced number of discrete parts in the offering, reducing complexity cost. After 2 years, the SKU offering was reduced to a little more than thirty thousand-part numbers, a reduction of more than 72 percent. Customers were given the choice to use a standard part or a special one, with the caveat that special parts have special prices, which are adjusted for complexity. The company is making a lot more money with a lot less effort.

Want to know more?

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