How Should-Cost Modelling Can Be Used To Optimize Procurement

Should-Cost modeling, also known as cost breakdown analysis or clean sheet analysis, is an exercise to determine what a product or service has to cost based on a number of factors such as cost drivers like raw materials cost, manufacturing cost, labor rates, overhead costs, and the addition of a fair markup for profit.

Understanding what things should cost is a crucial part of finding cost savings opportunities. If there is a significant change in demand, inflation, or a lack of resources, production costs, and procurement costs rise.

This makes it more difficult to establish and sustain a market presence. Procurement organizations that don't have full visibility into cost drives and production processes will struggle due to incorrectly pricing components. It weakens their bargaining power and makes it harder to find ways to cut costs.

The should-cost analysis helps estimate costs, but more than that provides evidence to suppliers that can be used in negotiation efforts. With it, skilled procurement professionals can achieve costs that are much closer to the desired target price.

New product development is an essential part of keeping a business up and

running, but it can only keep the business sustained if the cost and technological impact is different from the rest of the market competition. Should-cost analysis ensures the difference is there.

How to Conduct Should-Cost Analysis

Before getting started, it's important to have a solid understanding of the product and the processes that are necessary to produce it from the raw material stage, while also adhering to compliance and quality requirements.

Its accuracy depends on the knowledge and skill of the person or team building the cost model. It's more difficult for the procurement team to address than it is for the engineering team.

The engineering team is the one behind the product's design and thereby is familiar with nuances that procurement may not be aware of.

That said, the engineering team isn't likely to have detailed costing information related to various processes such as welding, plating, heat treatment, which are likely to be outsourced.

This is where cost-modeling software comes in to assist product designers and engineers in estimating the final cost of products with end-to-end costing. Failure to properly conduct the analysis will affect the final cost estimate's accuracy.

Step 1: Input Study

This stage uses drawings, 3D models, engineering specifications, assembly procedures, and testing and qualifications to set the stage for the parts and processes that are required to produce a product.

Should-costing should be based on product features, and be completed as early as possible within the product lifecycle so that if any changes to the design are needed to make the product more profitable, they can be done before a full production run occurs.

Step 2: Process Requirements

In this stage, the team sets out to analyze the primary and secondary processes, plan the processes, look closely at compliance requirements, and gather material costs.

They also explore machinery and other equipment requirements, along with manufacturing locations, the cost of labor, processes, and overheads, and annual usage.

Step 3: Cost Modeling

At the cost modeling stage, they outline annual volumes, batch quantities, and unit of measure.

This is also where part geometry is defined and processes and material are selected. Cost parameters are defined with respect to geographical locations.

Step 4: Outputs

The outputs are:

- Cost driver models
- Cost graphs representing the key cost drivers
- Cost parameters with respect to the breakdown of processes
- Process time for each individual process
- Breakeven cost with respect to volumes

Step 5: Reporting

In the final stage, there is a cost summary, typically presented in Excel format. Reporting also includes:

- Break down of processes, material, setup, rejects, and process time
- Piece part cost
- Non-Recurring Engineering (NRE) cost estimate
- Amortization cost

Benefits for Procurement

A should-cost analysis gives the procurement team insights to better identify supplier profit margins, to gain purchasing power from suppliers. It also helps to identify the key cost drivers, so they can better decide which components they should make, and which components they should buy.

Beyond this, it helps with inferring price comparison on parts and assembly if they are outsourced in various geographical locations.

For example, procurement will learn whether it is cheaper to have the product manufactured in the United States or in China – and how the difference in cost will affect profit margins.

In procurement organizations aiming to shift to a more strategic sourcing approach, the should-costing is a valuable tool in ensuring supplier negotiations go well and are as profitable as possible.

The should-cost analysis also helps in understanding supplier strengths and quotients, to make sure they can appropriately fulfill both current and future needs at scale.

Procurement can also use the information to find viable alternative materials to use and how those affect the cost, to determine if making the switch to another material option is a worthy tradeoff.

Just because the material is cheaper, however, may not be enough to justify the cost of the switch.

Ultimately, the procurement function aims to source quality materials and services at the best possible cost, to keep business running as smoothly as possible.

This means balancing cost and quality with things like total cost of ownership, lead time, supplier location, etc.

A cheaper supplier who takes longer to deliver raw materials may not be the best option if it leaves production without the things they need to create products that are in high demand with customers.

Great sourcing is about keeping the total cost of ownership as low as possible. It's not just about getting the cheapest unit cost, but making sure the taxes, delivery, shipping times, and storage costs are optimized, too.

It's only when the product and the logistics costs are optimized that a company gets the best deal.

Accurate cost estimations are vital to a company's success. If the cost of the product differs significantly from the estimate, there may no longer be room for any profit.

When this happens, the bottom line takes a hit and depending on how well they are established within the market, it may cause the company to go under.

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