

Design-to-Cost (DTC)

Design-to-cost is a strategic management commitment to invest in the present for a significantly greater reward in the future. Design-to-cost is one of the strongest levers in the cost improvement toolbox.

Design-to-cost simply means designing a product from scratch to meet the “target cost” or the market price which customers are willing to pay, for a particular (or specified) level of functionality and quality, while returning a profit to the enterprise

In many industries the pressure of competition and price productivity means that the price of a product may be less tomorrow than it is today. This is particularly evident in the automotive, semiconductor, defence and electronics industries. However, it takes great commitment and resilience to embrace design-to-cost, and to refocus the enterprise to the way of doing business, which it requires.

Design-to-cost starts at the product concept stage, and covers the entire lifecycle of the product (cradle-to-grave) until it goes out of service. It is a cross-functional exercise requiring close coordination between sales, engineering, manufacturing, purchasing, quality and finance.

The design-to-cost process focuses on three main levers. These are the material, labour and manufacturing process. The design of the product must take all factors into account, and should seek not to adversely trade-off one factor against another. In other words, it makes no sense to reduce the labour content in favour of automation, when the investment costs exceed the labour costs. Additionally, there cannot be trade-offs between the design and the quality or basic functionality.

The main driver of the design-to-cost process is the product target cost. This is derived from the target costing process, which looks at the market and defines the maximum price which customers are willing to pay for the products functionality.

Critical in design-to-cost is to design all aspects of the product, not just how it operates and looks, but also the materials, purchased components and the actual manufacturing process. In other words, it is important to take the holistic view (look

at all aspects). In fact, it can be critical to look down the supply chain, particularly at sub-components or systems coming from suppliers to see how these are designed.

The product design goes through a number of iterations, until the enterprise is satisfied that the “target cost” has been achieved.

Risks to design-to-cost are plentiful. Price creep and over-engineering are the enemies of design-to-cost. On the first, tough policies or hedging must be included in the purchasing strategy to deal with supplier price increases, or commodity increases (i.e. steel price). On the second, extreme discipline is required to ensure that the specification does not expand beyond the functionality, which the customer is willing to pay and accept.

One area, which can be difficult, but manageable, is customer directed changes. Here, the process can be disrupted. However, with a consequent change management process, this issue can be brought under control. The rule of thumb is that the customer should get what it is willing to pay for, but also the customer should pay for what it requires.

Design-to-cost is a business function. It can be a department, team or a responsible person. Important is that this is a company philosophy which is communicated (well understood), monitored and reviewed.

Design-to-cost is an important part of Cost Improvement. To save you the effort and expense of developing your own design-to-cost methodologies, for a reasonable fee*, we will provide you with our standard detailed design-to-cost procedure, which can be easily adapted to your organization. Should you need additional support, we can also provide you with a design-to-cost expert to get you up and running. Just let us know how we can help.