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Driving cost consciousness in product development with a light design-to-cost approach

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Companies often face limited cost visibility and late procurement involvement, making savings hard to achieve. A lighter design-to-cost approach offers quick wins, builds awareness, and paves the way to the full process adoption.

Executive Summary

Problem	**Why it happens?**	**Why it happens?**
Limited visibility and control over product level costs, which hinders systematic product / material cost reduction efforts. Profitability suffers from over-engineering and exposure to external factors, such as material price fluctuations and volatility of customer demand.	Product decisions are driven by R&D organization, with focus only on maximizing product performance. Limited attention is put into product costs due to organizational silos, often amplified by good financial performance and lack of urgency towards cost control.	Establish cross-functional cost management framework and processes to improve cost control. Leverage a light version of design-to-cost process to gain quick wins and build momentum for longer-term developments towards full design-to-cost process implementation.

Companies often struggle with limited visibility and control over product-level costs, making systematic cost reduction difficult and leaving them exposed to external shocks such as raw material price fluctuations and unpredictable customer demand. When R&D-driven product development focuses mainly on performance, cost implications remain an afterthought, and procurement often joins too late to influence the critical design choices.

A full design-to-cost (DTC) process can correct this imbalance, but the implementation is often challenging due to required cultural changes and capability development. A lighter version provides a pragmatic entry point: it enables immediate savings, builds cross-functional cost awareness, and prepares the organization for the eventual transition to a full DTC model.

Building a cross-functional cost management framework

A common pitfall is allowing product development to remain the exclusive domain of R&D. In these cases, product targets are defined largely by technical ambition, with cost implications treated as secondary. Procurement enters too late, often limited to finding suppliers who can support an already costly design. Product management may raise questions about customer needs or price points, but without a structured forum, these concerns carry little weight against engineering-driven decisions. The result is a cycle of performance-focused products whose cost structures are fragile and vulnerable to external shocks. When overall company profitability remains on good level, for instance due to high customer demand or low material prices, the cost impact of design choices typically does not get sufficient attention – only when the profitability decreases during market decline or price increases, the underlying issues start emerging.

The solution lies in establishing a cross-functional cost management framework that brings transparency and accountability across departments. Instead of sequential handovers, decision-making becomes cost-conscious from the start. Product management ensures that customer value and willingness to pay are built into the product specification, not retrofitted later. R&D maintains its focus on performance but does so while avoiding over-engineering with a fuller picture of commercial implications. Procurement provides input on material costs and supply chain risks before designs are finalized.

By embedding these perspectives into a shared framework, companies move from siloed optimization to integrated decision-making. This not only improves cost control but also creates resilience, as trade-offs are considered holistically and risks are mitigated before they impact margins. In our experience, it can be beneficial to start with a simpler framework, such as a light version of design-to-cost, to create initial momentum. Still, longer-term perspective should be taken to set the targets for continuous improvement of the ways of working towards more rigorous design-to-cost approach.

Design-to-cost as the gold standard

Organizations often fall into the trap of treating costs as negotiable details rather than as central to product development. Without explicit cost targets, designs become bloated, with unnecessary features, intricate manufacturing tolerances or premium materials justified in the name of performance. When profitability later comes under pressure, leadership is forced into reactive cost-cutting exercises that undermine product integrity and staff morale. Worse still, the organization may attempt to implement design-to-cost without being ready for it, reducing it to a paper exercise; committees track theoretical cost targets while real design decisions proceed unchanged.

The true strength of design-to-cost lies in its discipline. Under this model, cost is not a byproduct of design but a key design parameter. Product features and performance are based on customers' requirements and expected willingness to pay for different features, which together with required margins determine the cost target (figure 1). During product development, every design choice is evaluated against this benchmark. Gap-to-target

analyses surface deviations, while value engineering provides systematic methods to eliminate over-engineering, simplify production, or substitute materials. For further insights and case examples of traditional design-to-cost approach, please refer to our earlier paper "Pushing innovation and cost effectiveness through Design-to-cost".

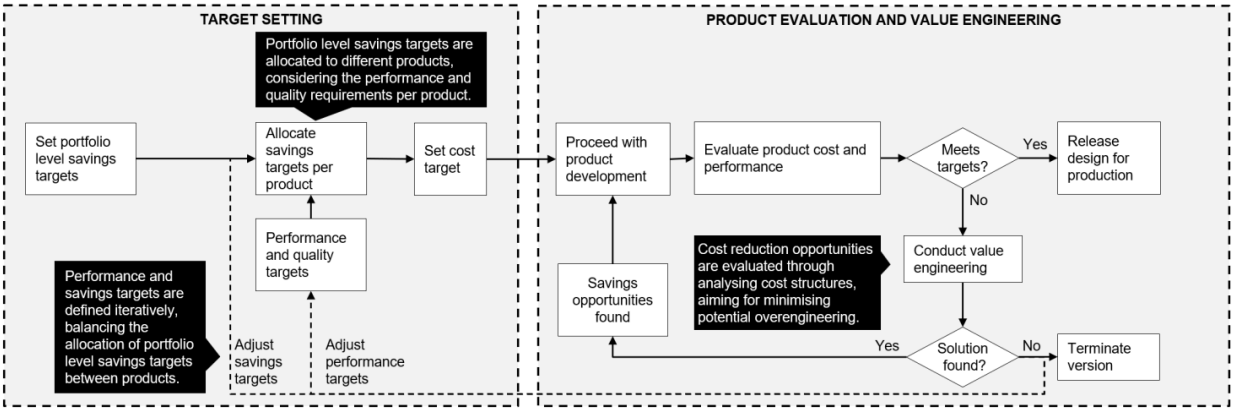

Figure 1. Design-to-cost process

However, successful design-to-cost demands more than tools. It requires cultural alignment, leadership commitment, and readiness across functions. R&D must balance technical ambition with cost discipline. Procurement must shift from being a negotiator at the end of the chain to a proactive partner in shaping designs. Product management must anchor the process in customer value rather than solely optimizing performance. Without this holistic readiness, attempts to implement design-to-cost risk failure. With it, however, the process becomes the gold standard for aligning performance, quality, and cost.

The case for a light design-to-cost approach

The danger for many organizations is either ignoring cost altogether or attempting to leap directly into a full design-to-cost transformation without the necessary foundations. In the first scenario, companies continue to produce products whose margins erode at the mercy of market conditions. In the second, enthusiasm turns to frustration as teams resist cultural change, lack the data to define meaningful targets, or fail to see tangible results in the short term. Both paths create cynicism, reinforcing the belief that cost management is either irrelevant or impractical.

A light design-to-cost approach avoids these pitfalls by providing a pragmatic middle ground. Rather than requiring perfect readiness, it adapts the principles of design-to-cost to the organization’s current capabilities. Management defines cost reduction objectives at the portfolio level rather than through detailed willingness-to-pay analyses. These targets are then distributed across products, with flagship products allowed greater flexibility while lower-tier products carry the burden of cost savings (figure 2).

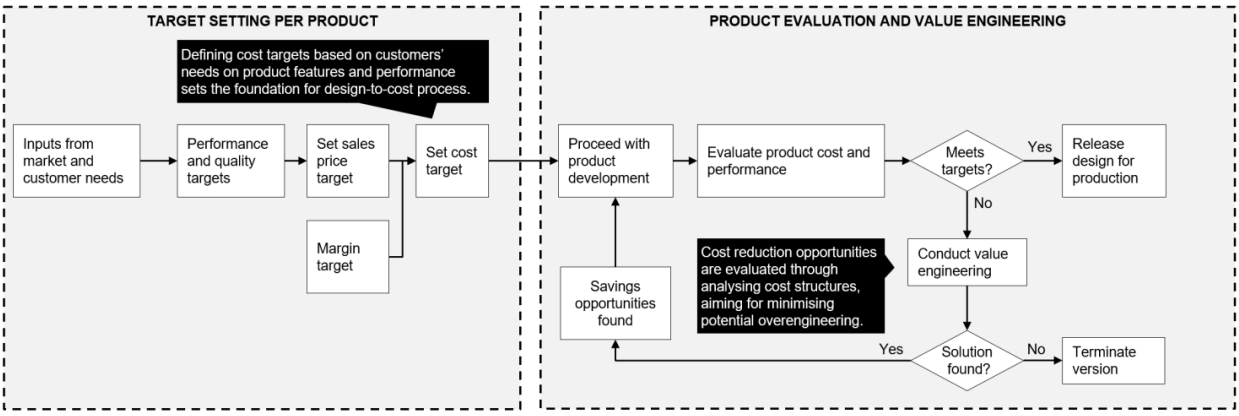

Figure 2. Light design-to-cost process

The process is deliberately iterative. Instead of rigidly enforcing unrealistic targets, the organization tests assumptions, adjusts goals, and redistributes savings across the portfolio. This flexibility ensures continued progress, even when some products cannot deliver their initial targets. Most importantly, the light approach integrates cost awareness into early decision-making. By involving procurement and product management alongside R&D from the outset, it builds habits of cross-functional collaboration and ensures that cost is considered with every design choice.

Over time, this approach delivers both quick wins and cultural change. Tangible savings from pilot projects demonstrate value and build credibility, while the gradual embedding of cost consciousness prepares the organization for a future transition to full design-to-cost. In this way, the light approach is not a compromise but a bridge: it delivers immediate results while laying the foundation for long-term transformation.

Governance, tracking, and the importance of pilots

For light design-to-cost to succeed, it must be supported by clear governance, rigorous tracking, and a disciplined pilot-first approach.

A governance model ensures accountability and ownership. Cross-functional teams should be formed to drive cost savings at the operational level. In organizations where R&D has historically held decision-making authority, it can be advantageous to position ownership within R&D to reduce resistance. However, ownership must be accompanied by a strong commitment to the program’s goals.

Impact tracking is equally important. Establishing a baseline, for instance the cost level at the beginning of the project, allows organizations to measure genuine savings rather than mistaking external factors, such as currency movements or supplier price changes, for success. Oftentimes the effort needs to start from creating visibility in current cost structures, when cost monitoring is not on sufficient level at the start of the project. However, there are easy-to-use solutions available for improving cost transparency and getting the transformation started; for instance, modern business intelligence tools, such as Power BI, provide sophisticated cost modeling capabilities without requiring heavy investments in bespoke systems.

Starting with a small pilot builds confidence and creates proof of concept. Selecting a representative set of products ensures lessons are learned across both flagship and cost-sensitive products. These pilots should not remain academic exercises; they must deliver tangible quick wins that demonstrate value and energize the broader organization. Once momentum is established, the process can be scaled across the portfolio with confidence.

From light to full design-to-cost

The message is clear – relying on market conditions to secure profitability is risky and short-sighted. Cost must become a conscious and managed element of product development, not an afterthought.

A full design-to-cost process may be the ultimate goal, but most organizations are not ready to leap into it immediately. By adopting a light approach, companies can achieve meaningful cost savings, foster cross-functional collaboration, and embed cost consciousness into their culture. This not only reduces exposure to external risks but also builds the organizational capabilities needed for a successful transition to a full design-to-cost framework in the future.

Light design-to-cost is therefore not a compromise. It is a deliberate and pragmatic first step toward long-term resilience, profitability, and competitiveness in product development.

References

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