

Design to value at scale: why capabilities matter

As companies scale up, roll out, and embed design to value in their product-related processes, dedicated capability building efforts will be increasingly important.

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Design-to-value (DTV) techniques have proved to be an immensely powerful way to improve product and service margins across industries. DTV takes superior consumer insight using the latest qualitative and quantitative market research techniques and combines it with advanced engineering, supply chain, manufacturing, and procurement tools to reduce product cost. It helps companies find “sweet spot” designs that balance customer value with minimum implementation cost to maximize margins and boost sales volumes.

The impact of the DTV approach is significant. Typical gross margin improvements gained through these techniques range from 10 to 25 percent for packaged food, consumer electronics, telecommunications, and medical products, for example. Even in the automotive space, where companies have focused for years on product cost reduction, DTV has been able to deliver margin improvements of 12 to 15 percent. The improvements can be quick too: around one-third of product cost savings are achieved through relatively simple and rapidly implemented design changes, component substitutions, or sourcing renegotiations.

The call for new capabilities

While many companies have demonstrated impressive results on single products or individual service categories, improving product margins across an entire portfolio is significantly more challenging.

In particular, DTV requires new workforce capabilities that must be both deep and broad. Organizations will need staff with expertise in the tools of DTV analysis. These include the ability to conduct conjoint studies to determine customer willingness to pay for particular product features, perform competitive teardowns to identify cost reduction ideas, and develop “clean sheet” cost-modeling tools and databases to develop the most cost-effective design and manufacturing options for key components or subassemblies.

DTV cannot be implemented by specialists alone, however. Successful programs require an understanding of the principles and potential of the approach throughout the organization, from senior management down. These are essential for identifying improvement ideas and removing potential roadblocks to their implementation. In our experience, a successful DTV implementation builds on three pillars.

First, DTV must be embedded in the complete product life cycle, from concept development through prototyping and design freeze, then extending on to continuous improvement after launch. Targets must be set and performance tracked and managed at every stage.

Second, DTV requires dedicated staff such as value engineers, cost calculators, supplier development experts, and integrated cross-functional teams for fast and efficient idea generation and evaluation.

Third, capturing margin improvement opportunities—increased revenues from better prices, higher sales, greater aftersales revenues, or less cost—calls for a thorough understanding of customers' value perception and buying criteria. This requires investment in customer insight resources and close collaboration with the DTV team.

In their first forays into DTV methodology, some companies use informal methods to develop these capabilities. These can include drawing on external sources of expertise or recruiting specialists in particular areas of analysis who pass on their knowledge to colleagues during the execution of projects. Often the novelty of early DTV projects, together with the influence of visible interest in the process by senior management, is enough to overcome organizational or cultural barriers and deliver a successful conclusion.

A systematic approach

As programs increase in scale, companies typically face two main challenges in building these essential pillars across their organizations. First, they may not have access to enough expertise in key DTV tools; second, senior leaders do not have the time to give every project the hands-on, day-to-day support they devoted to pilot efforts. To successfully expand their programs in these conditions, leading companies are now adopting a more systematic approach to their capability building efforts.

Such an approach entails integrating structured capability building activities into the overall rollout of the DTV effort, so that the right people in the organization, from senior management to technical specialists, receive training on the right topics—from an overall understanding of the business case for DTV to in-depth training on specific tools—at the right time, when they can apply and reinforce their new knowledge while working directly on projects. In addition, the best companies deliver their capability building programs in the right way, using a mixture of classroom training, self-directed learning, and on-the-job coaching and mentoring.

One company in the medical-device industry made use of just such an approach when it decided to roll out a DTV program across its portfolio of products. The company selected a group of specialists from within its marketing, purchasing, engineering, and manufacturing functions to receive in-depth training on advanced DTV tools like customer insights, competitive teardowns, clean sheet cost modeling, and supplier negotiation techniques. This group participated in an intensive three-day boot camp that involved classroom training and a series of practical exercises, using the same tools they would be using on real programs.

At the completion of their initial training, the new DTV specialists were assigned to “live” projects under the supervision of an experienced colleague, allowing them to apply their new skills straight away and to begin refining and consolidating their knowledge.

At the same time, the company took a larger group of senior and product managers and gave them a shorter introduction to DTV principles, which included similar practical exercises, albeit at a higher level.

When the executive group returned from their initial training, they had the opportunity to participate in the DTV program, both managing and steering the efforts as they related to their own areas of the business and participating directly in hands-on activities like comparative product teardowns and idea generation sessions.

While the engineers and purchasers focused on cost reduction, marketing personnel generated value-enhancing ideas and senior management prioritized them. The company’s product managers evaluated the trade-offs involved in implementing the ideas, asking, for example, whether an incremental feature generated additional margin or if they should despecify a cost-driving performance parameter down to the level offered by competitors and invest the savings in a unique selling proposition. The training for senior management ensured that these key members of the organization understood the DTV approach, the objectives of the program,

and the techniques and language used, greatly assisting the adoption of it and helping to overcome roadblocks in its implementation. For one medical-consumable product, this approach resulted in a 20 percent higher gross margin, achieved through a reduction in cost of goods sold (COGS) and higher sales volumes thanks to added customer value.

Scaling up

In large-scale DTV efforts, a number of elements are necessary to succeed; many cultural and organizational factors can delay or even destroy opportunities for capturing value. A common stumbling block in bigger DTV programs, for example, is difficulty in gaining the cross-functional buy-in and collaboration required to ensure that improvement ideas are executed.

Leading companies now recognize these issues and are taking steps to overcome them in the design and execution of their DTV programs. The organizations with the most effective large-scale DTV programs share four common factors.

Top-management vision. First, these companies have a clear vision of their expectations from the program, which is set and communicated by senior management. They make that vision tangible and actionable with demanding targets for both the program's outputs (for example, margin improvements of ten percentage points across the portfolio) and the actions required to achieve them (for instance, analysis of 80 percent of core products within 18 months). Beyond setting the ambition for the program, senior-management input continues through its life, for example, in the form of monthly meetings to review progress and make strategically important decisions.

But leading companies do not just rely on top-down targets to drive their DTV vision. They also work hard to demonstrate the benefits of the approach to their people, for instance, by conducting cross-functional "product conventions" to accelerate the capture of improvements in new product lines while spurring cross-unit collaboration or displaying improved designs with the associated price savings clearly marked on them.

Effective governance. Leading companies ensure that governance is effective by establishing cross-functional decision making bodies that continuously follow up on a portfolio of DTV initiatives as well as other improvement efforts, in various

stages of the idea generation and product life cycle. In this way, companies ensure that the right products, customer segments, ingredients, or packaging materials are prioritized, that enough ideas are generated in priority areas, that initiatives have access to sufficient resources, that their progress is rigorously and continuously tracked, and that the hoped-for revenues and savings are ultimately achieved. Typically, these bodies are closely linked to the normal cross-functional purchasing or product development decision making forums, with representatives from all key areas in the organization, including purchasing, marketing and sales, product development, manufacturing, and controlling. They will also involve product and business unit representatives when relevant.

In addition to their monitoring and decision making activities, cross-functional forums also play a vital role by creating ambassadors for DTV in each of the functions and business areas. Creating the pull for implementation and further initiatives is another critical success factor for DTV, as a “not invented here” mind-set can kill early pilot successes and be lethal for broader rollout.

Standardized processes and tools. Another important element is establishing a standardized process and comprehensive set of tools to set up and conduct a DTV initiative on a product or product line as well as to monitor and evaluate the results. These tools include the systematic analysis of competitor products in teardowns, together with clean sheet cost modeling to build a detailed understanding of product cost structures. For customer needs analysis, companies may use a combination of interviews, surveys, focus groups, and conjoint analysis. The results of these analyses should also be used in target setting for new products in early stages of product development.

Many of these tools also require investment in essential equipment, including labs in which to conduct teardown analyses and collaborative spaces to facilitate the critical cross-functional interactions required to make difficult design trade-offs and ensure that ideas are carried to fruition. DTV pioneers often manage a standing infrastructure of teardown labs and customer insight tools that allow them to analyze competitive products and test new ideas for their own products on an ongoing basis.

Sufficient resources. Finally, leading players give their DTV programs ample resources: enough sufficiently qualified and motivated staff to run their programs effectively at the desired scale. Staffing a DTV program requires a core team for each product category, including senior staff from sales and marketing, R&D, purchasing, man-

ufacturing, quality, and finance who are collocated for ease of communication and who are able to devote the majority of their time to DTV work.

Case example: DTV at scale

A medical-technology company used a large-scale DTV approach to dramatically improve margins across its full portfolio of monitoring devices and associated consumables. Downward price pressure was eroding margins across the product range, but the company's product teams lacked the tools, skills, and data they needed to conduct effective cost-cutting efforts.

At the start of the program, there was no clear understanding in the organization of what its products actually cost to produce. The organization's product development function, meanwhile, had traditionally focused on time to market and had little experience in competitive teardowns or design-to-cost techniques. Likewise, its procurement function was used to traditional "adversarial" purchasing tools, like competitive requests for quotations, and had little experience with collaborative techniques or the use of suppliers as sources of product improvement ideas.

After successfully piloting the DTV approach on emergency health-monitoring devices, the company embarked on a systematic effort to scale up and roll out the program in its complete portfolio. It introduced a standard set of DTV tools and processes, including a structured, cross-functional teardown process and a pre-populated clean sheet target-costing tool that allowed a large part of its sourcing organization to conduct clean sheet analyses.

It then modified its core product development processes to integrate the insights and ideas generated by DTV tools. For example, ideas generated in the teardown were used to create firm COGS targets for both new and existing products. To monitor the progress of improvement ideas, it introduced a new performance management system, with meetings every two weeks. At these meetings, idea implementation was tracked, risk mitigation was initiated, and resource issues were solved or escalated.

Finally, it took steps to change the culture of the organization and introduce a DTV mind-set of cross-functional collaboration and continuous improvement among its employees. It did this by, for example, organizing regular product conventions at which representatives from sourcing, R&D, marketing, and senior management would meet to discuss and evaluate ideas for a specific product line.

Three years after introducing the DTV program, the company was well on its way to achieving its target of reducing COGS by 19 percent across its entire portfolio. In addition, its DTV efforts had identified numerous opportunities to modify its products to increase their usability, reliability, and customer appeal, usually without adding to their cost.

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