

KEYS TO DFA SUCCESS



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In our work over the past decade helping North American manufacturers of all types implement Design for Assembly (DFA) strategies, we have discovered that the companies truly successful at it share five factors.

First, the company's leadership has acquired an intimate, detailed knowledge of all the tools and has "hands-on" experience on project teams. They also have a long-term commitment to DFA. At companies where there's only half-hearted commitment or cursory participation by key executives, the entire DFA program is in peril.

Second, they have developed and implemented a strategy and an all-inclusive action plan to immerse the entire organization in the DFA process. The plan also nurtures the team-oriented culture so crucial to its success. The plan includes the scope of knowledge, timing, tools, methodology, and resources which will be required.

Third, the action plan is "owned" by everyone in the company. It isn't enough to just distribute the plan within an organization. To succeed, the plan must be understood and accepted by those involved. And workers need to agree with the objectives, know how they fit in, what is expected of them, and that risk taking will not be penalized. They must also make their own personal commitment.

Fourth, successful companies use outside organizations for what Deming calls profound knowledge. Most companies and industries become myopic because of shared paradigms. They need outsiders to shake up their thinking, get them to question the old ways, and inject new ideas, approaches and technologies that have worked in other companies and industries.

And fifth, most successful companies admit they enjoyed some luck in achieving that success. Strategic managers, however, can make their own luck by keeping a four-pronged approach in mind: true top management commitment, not just contribution; early involvement at the concept stage; a multidisciplinary team that includes shop-floor operators, the most knowledgeable about products but often an underutilized resource; and analytical approaches so that decisions are based on data, not emotions.

Of course, a second four-pronged approach never hurts, and a second set of reminders emphasizes the key considerations for DFA success:

◆ **Teamwork:** A focused, committed

team will outperform a team with more technology but less focus every time.

◆ **Timing:** Extra time must be allotted at the design stage. In the end, you will save time by doing things right the first time, and probably gain a product-generation advance over the competition.

◆ **Training:** People will not think of new ways to do their jobs or use new rules without training. It helps people discover the limitations they have put on their own creativity. And it helps teams see products and processes in the new and different perspectives needed to create breakthrough designs.

◆ **Tools:** Several analytical tools can provide CE/DFA teams with the data needed to make wise choices.

These tools include such various approaches as Quality Function Deployment (QFD), Concept Convergence (Con Con), DFA, Failure Modes Effects Analysis (FMEA), and Design to Target Cost (DTC). Teams should benchmark their tools rather than just use the most readily available. For maximum advantage, they should pick tools and approaches which best fit their specific needs. They should also consider integrated software packages that move data easily and quickly between applications. Tools are important, but they are just tools. Thinking they will solve all your problems is like starting up a chain saw, throwing it into the woods, and expecting finished 2 × 4s to come out.

If done properly, teams using DFA not only cut investment costs and lead times, but also improve product quality and customer satisfaction by reducing variation. DFA can yield additional patent benefits as well. Hundreds of such patents have been generated by teams we've counseled. And patents provide a payback by giving you a cost advantage over competitors and a second income stream from selling the rights.

DFA, when successful, helps manufacturers become more profitable and competitive. It can also help address other societal issues. By considering factory-floor operators in the initial design, for example, ergonomic workplace injuries and related health costs can be contained. And by considering servicing and recycling issues early in the product development cycle, manufacturers can make their products easier to service for their consumers and easier to recycle for the environment. ■