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AUTOMOTIVE INDUSTRIES

THE PEOPLE — THE PRODUCT — THE PROCESS



NAFTA **math**

Does the Free Trade Agreement mean a loss of jobs to Mexico?



Mar de Cortez

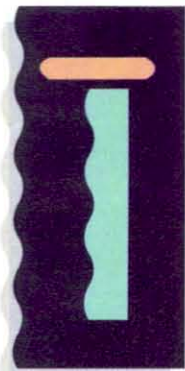
Golfo de Mexico

Oceano Pacifico

by GERRY KOBE

Better Benchmarking

The less you "know" the more you'll benefit.



he success of Chrysler's minivan is an example of benchmarking at its finest. A bullseye on the day it was introduced, and still the segment's runaway best-seller, the minivan is evidence that successful benchmarking produces a new way of thinking and positive change. As simple as that sounds, very few companies ever achieve the results that Chrysler did, and admittedly, Chrysler achieved them almost by accident.

"Benchmarking is learning," says Glenn Gardner, General Manager—Large Car Platform Engineering and former Program Manager for the minivan. "We came close to perfection on the minivan because we didn't try to influence anything—we just learned. Now look at what Ford and GM did and you can see they didn't let the information they gained enlighten them enough to do the right thing.

"But," Gardner emphasizes, "I could almost guarantee you that if Chrysler had a small pickup truck at the time, with small engines, small axles and small transmissions already tooled, we might have made the same mistake. GM and Ford benchmarked the segment, but they had decided on their answers before they asked their questions."

Similarly, throughout the 1970s and

1980s, Japan did a masterful job of benchmarking products and processes for the US market. At the time, Japanese companies had only a rudimentary understanding of wants and preferences in this country. But they used that lack of knowledge to their advantage. They asked, they listened, they copied, they improved, they learned. Today the US concedes the small electronics



Lexus LS400 is the most highly benchmarked vehicle in existence.

industry to Japanese-owned companies, and the domestic auto industry is only now starting to regain share lost to Japan.

One of the reasons the US auto industry is on the rebound is that we are learning the benefits of benchmarking analysis, and applying them with predictable results. In fact, GM has issued a corporate mandate that every new vehicle program must be benchmarked from a program investment and product cost standpoint, prior to concept initiation.

James Trask is GM's Director of Worldwide Benchmarking and Business

Analysis. He heads a 10-person team at NAO headquarters. "GM corporate-level benchmarking is a small group of people facilitating the process," Trask says. "We're working with every major program including powertrain programs worldwide. So we're not doing a lot of the benchmarking—ten people can't do that. We do make sure those teams are sharing information and using the same basic resources to make sure they know how to do this.

"In addition, there is a teardown group that has a team of experts, but they rely on people from the platform to do most of the work. That way the people who implement the results are the people who did the study," he says.

To many engineers, a teardown is benchmarking, because it is the most effective way to learn about the competition. However, because teardowns are expensive, time-consuming and redundant between companies, the Big Three are considering some joint efforts.

Dr. John McTague, Ford Vice President—Technical Affairs, says "Teardowns are very costly, and while we will always do our own teardowns of our most important competitor products, we recently began doing joint teardowns.... Thus far, we have done one. That pilot was performed by Chrysler, which also supplied the vehicle—a Renault Espace.

"The purpose," McTague continues, "was to determine how many different or unique parts Renault had to design for right-hand drive as opposed to left-

hand drive on the same platform.” He offers that Ford may be next to do a comparative teardown later this year.

GM, although involved in the first teardown, may be having second thoughts about the agreement. At the very least, it is more conservative than Ford and Chrysler. “We may have some things we can share,” says Trask, “but we look at this as a fundamental investment in people. Benchmarking is a way to make people think about what they do. It helps us break out of our traditional way of thinking so we need to do it ourselves, and we want the information to stay in the heads of the people who work here.”

Trask also expresses concern that while some joint teardowns are in their infancy, he foresees legal problems if there is any sharing of the

GM has teardown facility for disassembly and examination of competitive cars. Though the Big Three have shared teardown information GM may opt out of further participation.

implications of what is found. “We can share access to parts without any problem,” he says. “There may be value in that, although there seems very little. But the actual information you learn, that is, what will make you do things differently, *that* needs to be kept proprietary.”

Part of what Trask wants to protect is the science of how to conduct a bench-

marking session. And the degree of information that can be gleaned by a trained eye. For example, weight analysis is easily measured since parts can be disassembled and weighed. There is no secret there. But skilled teardown experts look at the condition of screw heads to determine installation angle and therefore assembly line ergonomics. They measure and record torque at



“Profound knowledge can only come from the outside.”

Dr. E.W. Deming

which fasteners are installed. Even sheet metal is dusted with “fingerprint kits” to reveal clamp locations.

If all of this seems fanatical, it’s only going to get more

intense. Companies are finally realizing that benchmarking is one of the biggest tools Japan used to drive their time-to-market times down. “As the Japanese showed us, we are going to have to do things more analytically and with prior knowledge,” says Gardner. “No more cut-and-try, put it in a car, see what people think and then change. We don’t have the time.

“Japan copied us for years,” he continues. “We have to just take that as a compliment and copy them right back. If we go out and identify a design that is the lightest, highest quality and satisfies the most customers, and it doesn’t happen to be ours—copy it. The important thing is that we give the customer a great car. That doesn’t

mean you have to invent everything to do it.”

Where benchmark information really becomes clouded is in highly subjective areas such as steering

response. But that is where science marries the voice-of-the-customer. With subjective matters, the preference of the testing engineer takes a back seat to the information provided by marketing. Careful studies of the target customer help decide the correct “feel, sound or appearance.” And in those situations, engineering decisions are usually done by team consensus.

Surprisingly, the real growth of benchmarking is now taking place more in internal operations and manufacturing than in product. Major business operations like compensation, accounts payable and vehicle ordering are being compared—particularly against non-competing businesses—for new ideas. According to Trask,

Baldrige Award-winning companies are being deluged with requests to review their operations.

Sandy Munro, President of Troy, MI-based Munro & Associates, says the industry needs to recognize the common threads that make benchmarking—product or internal—a success. “First you need an enlightened leadership, committed to the goal of the company,” he says. “That is, make money for the shareholders. Second, that leadership must understand that people make the organization. Finally, it must recognize that engineering controls profitability.”

Munro says that identifying transferable technologies and the inventing of revolutionary ideas is the easy part. The hard part lies in the acceptance of these new ideas and paradigm shifts. To that end he suggests that a company’s first benchmarking trip focus on the changes that are bound to happen within the company. “Remember,” Munro says, “change favors the prepared mind.” AI