

# U.S. Engineer's Work Transformed Japanese

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It sprang from the mind of an American engineer, but was made famous in Japan.

"Value analysis," a system for cutting manufacturing costs while maintaining or even improving quality, was devised by Lawrence D. Miles in the 1940s when he worked as an engineer for General Electric.



Lawrence Miles

The system worked for GE, as Miles was able to save the company millions of dollars by employing the technique. He eventually taught the theory to 10,000 people in this country, but value analysis failed to gain wide currency among America's industrial thinkers.

That wasn't the case with the Japanese, who embraced the theory after World War II and used it as one of the cornerstones in their country's post-war, industrial success. And last November, the Japanese honored three of its country's largest companies by bestowing the first Miles Awards for their work in the field of value analysis.

Hitachi Ltd., the giant computer and electrical company, received one of the awards. Hitachi employs 250 value analysis engineers and its executives claim they save the company \$430 million a year.

Some American companies — GE, Westinghouse and Boeing, to name a few — do maintain sizable value-analysis operations, but not on the scale of the Japanese.

"We hadn't recognized in this country that we had a problem," Miles said during a recent visit to Lancaster. "When management lost business, it found some excuse for it.

"Now the Japanese are different. They can't eat excuses. We can. We had such an abundance of everything in this country that waste often didn't seem important."

Simply put, Miles' system asks an engineer to analyze the function of each part of a product and then find the minimum cost needed to perform that task without sacrificing quality.

For example, when Miles was an engineer at GE, he turned his attention to the thermostat used on the company's refrigerator. The thermostat

was protected by a black box and a plastic top was attached by a bronze wire clip.

Miles discovered that the clip could be opened and closed thousands of times without breaking. However, the average box would only be opened about six times a year, so the bronze clip was replaced with one of brass and the company saved \$3,000 a year through the replacement.

That was just the start. When Miles was through examining the other parts of the thermostat and improving them, Miles had saved the company \$1.25 million a year.

"Value analysis is a different method of thinking, where we think about functions instead of parts or materials," Miles said. "No one wants a pencil or a pen, they want something to make marks. No one needs any material, they always want some function performed.

"And then we relate cost to function, not to materials. When cost is related to function, very often we see other ways to accomplish the function better and for less cost."

Miles was in Lancaster Tuesday at the Treadway Resort Inn to preach his system of value analysis to a meeting of the Purchasing Management Association of Central Pennsylvania. The association, which has 200 members locally and 30,000 nationwide, also held a seminar on value analysis during its meeting.

Miles, 79, and his wife, Eleanor, live along the Chesapeake Bay in Easton, Md. He retired from GE in 1964.

"It's a good life," he said. "I don't have to do anything unless I want to. And retirement is the freedom to decide."

Although value analysis has seemingly been put to the best use by the Japanese, there has been a surge of interest in the system in this country.

"It's making more of a splash in this country than you would think," Miles said. "Folks are saying, 'What is this?'"

But the Japanese apparently realized the worth of value analysis all along.

"The Japanese realize they must do a good quality and a good cost-effective job or they're out of business," Miles said. "I would say the Japanese know they have to think smart and manufacture smart and make good decisions to survive."

"And they listen. The difference is they listen. If something is good, they pick it up and use it and improve. But we can do the same and I think we're starting to."