

## Weapons Experts Help Solve Business Problems

By ANN KEETON  
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CHICAGO — Some problems in business — such as running a good customer-service department in a department store, installing telecom equipment on schedule, or reducing waste in a factory — are so complex that it seems it would take a rocket scientist to figure them out.

That's where **QualPro**, a Knoxville, Tenn., consultancy founded by two former nuclear-weapons experts, comes in.

"Over the years, we've developed a proprietary multivariable testing system that uses more complex mathematics than what's used in a Polaris missile," said Art Hammer, the company's co-founder.

Mr. Hammer said the multivariable system can quickly and efficiently find the best ways for a company to make major improvements: increasing sales by 25%, for example, or cutting costs by one-third. He said many businesses today are so complex that managers don't really know why they aren't getting the results they want.

In as short a time as a few weeks, QualPro can get results that, by traditional means, could take a year or two. The usual way of evaluating any activity is to use the "Scientific Method," which changes only a single variable at a time.

QualPro's co-founders, Mr. Hammer and Charles Holland, worked together in the 1970s at a government nuclear-weapons facility in Oak Ridge, Tenn. Even then, Mr. Hammer said, Dr. Holland had thought of

a way to use the multivariable concept in a wide range of business settings.

The two men founded QualPro in 1982, and with help from business-consulting legend W. Edwards Deming, began consulting for corporations such as Ford Motor Co. and Monsanto Corp. Since then, they have worked with more than 1,000 corporations and organizations.

The first step in working with a client, Mr. Hammer said, is to make a complete analysis of the company's business, understanding what they do and how they do it. After that, consultants sit down with employees and ask them what they would do to improve their business. They compile a comprehensive list of possible changes that could be made. The list could include as many as 8,000 different items, although 30 to 50 is more typical of what QualPro uses for testing.

Mr. Hammer said employees provide all the ideas. "Our consultants aren't allowed to suggest changes, and we can't use information about one client when we work with another." He said ideas come from all levels of the organization, from the rank and file right up to the chief executive's office.

At a retail store, for example, the test could simultaneously evaluate whether to change the store's hours of business, pay employees on commission rather than salary, or sell a different brand of television sets. All the ideas are put into a matrix that compares performances under the status quo and the changed models. "Just

20 combinations of improvement ideas can result in over a million unique combinations of those ideas," Mr. Hammer said.

Those 20 ideas are tested in the real world with the company's customers. Then QualPro consultants plug the results into the matrix. On average, they find that 25% of ideas are helpful, 25% are harmful and 50% make no difference.

Mr. Hammer said looking at a range of possible changes helps companies to think creatively. "People often think that mathematics stifles creativity. That's not true at all," he said.

Results calculated on the matrix can be surprising, Mr. Hammer said, because synergies can occur when unrelated activities are changed. "You might find that if you make three particular changes, you get better results than if you change one or two or four things."

Over the years, QualPro has expanded the scope of its operations. Initially, the company worked with manufacturing businesses. Today, Mr. Hammer said, consulting business is expanding in the retail and financial-services sector.

"In manufacturing, speed isn't as important. But for some service businesses, changes can add up to millions of dollars in a few months. They're often willing to pay us more money for faster results," according to Mr. Hammer. He said while manufacturers looked for cost savings, service businesses tend to use QualPro to help them increase sales.



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