

## Business Performance

### MULTIVARIABLE TESTING

## Optimizing process performance is all in the math

Once a company has pooled all of its process improvement ideas, determining which ones actually will drive improvement is tricky.

“Everyone wants to implement changes that reduce costs, improve production, and boost customer satisfaction,” says David Cochran, VP of operations at QualPro, a process-improvement firm. “The reality is that making changes can be costly and time-consuming, and sometimes it even makes the problems worse.”

A growing number of manufacturers and business analysts say the solution can be found in a business tool called multivariable testing—or MVT—created by Charles Holland, principal and founder of QualPro. MVT is an advanced mathematical method that allows simultaneous testing of up to 40 variables, the goal being efficiency improvements and subsequent profit.

The methodology determines which factors will have a positive impact on any business decision or process, which would have a negative impact, and which would have no impact at all. Consequently, users quickly identify the best ways to make major improvements—e.g., reduce waste, increase production, enhance advertising strategies, or optimize service levels, among others.

“It’s a fast, practical, and cost-effective way to test ideas—usually 20 or 30 at once—and get individual results, as well as the outcome

of implementing the top seven or eight ideas simultaneously,” says Cochran. “MVT also shows what not to do. For example, of 30 ideas, maybe six or seven could actually hinder performance.”

MVT is in use by DuPont, Sun Chemical, Ford, Union Carbide, and Boise Cascade. One of the reasons it works so well, explains Cochran, is that the ideas are tested in real-world settings.

“What works in one operation won’t work in others,” Cochran says. “That’s why MVT testing is done in actual plants so the tests can take into account different processes, procedures, and environmental factors.”

That real-world approach to involving a company’s knowledge base is one reason MVT works so well, adds C. William McBee, VP and general manager at Hexacomb, a Trenton, Ill.-based packaging materials company.

“MVT enables a company to improve a process—whether to speed production, reduce costs, or solve quality problems,” McBee says. “You aren’t going to increase the running cost.”

The results can be significant. Florham Park, N.J.-based BASF used MVT at its Cyclohexanone I plant in Freeport, Texas, on four production shifts to make process improvements without capital investment. The result was a manufacturing savings of more than \$600,000 annually while avoiding a potential \$750,000 capital expense.