



Advanced Statistical Quality Improvement Techniques

**Learn to Improve Your
Business Processes from
QualPro's Expert Consultants!**

(865) 927-0491, Ext. 307 • www.qualproinc.com

About Us

Faced with tougher competition and a more demanding customer, businesses recognize the need for process improvement. Many of the methods that can improve processes, however, are overlooked or misunderstood. Perhaps the least understood of these methods is design of experiments (DOE). QualPro's 12-Step MVT® Process is a logical, easy-to-follow improvement methodology that uses DOE to identify the specific changes in a process that enable breakthrough performance improvement.

Over the years, QualPro consultants have taught hundreds of professionals how to effectively use DOE within the framework of QualPro's 12-Step MVT® Process. In QualPro's Advanced Statistical Quality Improvement Techniques seminar, attendees learn how to utilize DOE to enhance their ongoing improvement efforts. QualPro consultants teach attendees how to test numerous improvement ideas — more than a dozen in some scenarios — simultaneously without disrupting operations or increasing capital expenditure.

QualPro's instructors know your processes. Our instructors average over twenty-five years of industry experience before joining QualPro. Their backgrounds include previous employment experience in corporate quality management, manufacturing, chemical manufacturing, research and development, and marketing and global supply chain management.

QualPro's instructors understand the practical applications of the concepts they teach, and they clearly communicate these concepts to all levels of understanding. QualPro's instructors maintain an average seminar-participant satisfaction rating of 9.2/10.

Many publications have featured QualPro's instructors, including *Forbes*, *Fortune*, the *Wall Street Journal*, *The Economist*, the *New York Times*, *Industry Week*, *Convenience Store News*, *American Medical News*, the *Chronicle of Higher Education*, and the *Chronicle of Philanthropy*.

"QualPro's application of statistics is not an academic and arcane science. It is practical. It is useful, and it's useful because it's simple. It's direct, and it's used in an appropriate way to drive truth into the data."

Sauder Woodworking, Chuck Lawrence, Vice President of Purchasing & Information Services

"QualPro's MVT Process to design, execute, analyze, and implement results uses a cross-functional team approach. Before we started using MVT, implementing team concepts with different management structures was difficult. QualPro's MVT approach quickly brought together cross-functional team members, and it worked seamlessly. QualPro recommended we get shop floor, technical, mechanical, and supervision involved in the same MVT. This really boosted our efforts to use cross-functional teams. I would recommend their process for cross-functional teams in any organizational structure."

DuPont, Jerry Russell, Six Sigma Champion and Lean Master Black Belt

To request more information about this seminar, please contact QualPro by phone at (865) 927-0491, Ext. 307 or by email at seminars@qualproinc.com.

Advanced Statistical Quality Improvement Techniques

This four-day seminar will enhance your understanding of basic statistical quality control techniques and will teach you how to apply specialized techniques to real-world processes. Real industry applications are emphasized so that you can easily apply what you learn at your home company.

Our Advanced Statistical Quality Improvement Techniques Seminar is designed especially for internal resource personnel. Participants should also include engineers, facilitators, statisticians, and managers. This course is ideal for professionals who use statistical quality control methods and would like to learn about more advanced techniques and the underlying principles of SQC.

Attendees will leave this seminar with the tools necessary to manage even the most complex statistical process control issues. Upon completing this seminar, participants will receive QualPro's Quality Improvement Specialist Certification.

Course Topics

Establishing Control Chart Limits

- Choosing the right control chart
- Three-sigma limits
- How to tell if process data are normally distributed
- Effects of non-normality

Evaluating Process Mean and Variability

- Comparison of methods for estimating standard deviation
- Confidence interval on the mean
- Confidence interval on the standard deviation

Comparison of Means and Standard Deviation

- Testing for the difference between two means
- Testing for the difference between two standard deviations
- Analysis of variance (ANOVA)
- Tests for differences among several means
- Deciding which means are different

Evaluating Errors Associated with Control Chart Decisions

- Basic probability theory
- Type I and Type II errors
- Average run length (ARL) to real signal
- ARL to false signal

Investigating the Precisions of Measurements

- Variables data
- Attributes data

Special Charting Techniques

- Control charts for custom or special processes
- Multivariate charts for controlling two or more characteristics measured on one item

Process Adjustment

- Benefits of process adjustment
- Alternative approaches

"I have been through Six Sigma Green Belt and Black Belt training. The QualPro course was a great addition to my previous training."

GAF, Beth Miller, Quality Manager

Industry Expertise

With more than three decades of experience, QualPro is uniquely qualified to help you dramatically improve your business processes through the power of experimental design. Our 12-step MVT™ Process has been proven effective time and again in industries as diverse as healthcare, chemical processing, and retail sales. We have worked with more than a thousand clients over the years, and together they have saved billions.

Still not convinced? Hear from just a few of our manufacturing clients on how the MVT Process changed their businesses for the better.

Client Testimonials:



"QualPro's application of statistics is not an academic and arcane science. It is practical. It is pragmatic. It is useful, and it's useful because it's simple. It's direct, and it's used in an appropriate way to drive truth into the data."

-Chuck Lawrence, Vice President of Purchasing

"We did all of this in less than six months. . .Average change over time was reduced 44%. [We had] savings up to \$15 million in downtime. . .we freed up 33,000 line hours of production time across three plants. We didn't have to make that \$2 million in capital investment. We reduced inventory by \$800,000. We produced no off-quality material due to the MVT during the process."

-Adam Johnstone



"Our effective capacity continues to grow. Our market share's up 20%. And our stock price has doubled. MVT has been a big part of that impact."

-Bill Jasper, CEO

"We . . . have a tremendous sense of excitement about what all of the teaching [QualPro has] done with our company can bring about in the form of terrific accomplishments."

-Roger Milliken, Founder



"We are delighted with QualPro. They have helped us create the vision, methodology, and implementation necessary to achieve our mission of becoming the leading worldwide supplier of quality touch components and systems."

-Bob Roeser, President & CEO



Client Profile: Elo Touch Solutions

Background:

Elo Touch Solutions is a producer of quality touchscreen products, which has completed over 20 million touchscreen installations in more than 80 countries. Their clients include L'Oréal, Best Buy, and Walgreens Pharmacies.

At one time, the company faced significant losses due to part coating and painting rejects. In addition to financial losses caused by the high reject rate, the company also struggled to meet customer delivery expectations. The primary cause of rejects was the paint not sticking to the coating. The company occasionally detected rejects before shipment; in most cases, however, the paint would not begin to peel off in “flecks” until several weeks after delivery to the customer. Facing substantial competition, the company could no longer tolerate high return rates.

A team of technical experts had worked on the problem for six months and were unable to find a solution. Seeking an answer, Elo Touch Systems contracted QualPro to help determine a cure for the “flecking” dilemma.

Approach:

A QualPro consultant worked with operators, line supervisors, engineers, and managers to solve the company's paint problem. The objective was clear—the project participants must find a solution to the “flecking” issue for the company to survive. Due to critical time constraints, project participants proceeded directly to experimentation, knowing the process was out of statistical control. The danger of not finding an effective solution far outweighed the prospect of being led astray by process fluctuations during experimentation.

A brainstorming team identified more than 35 ideas to reduce the occurrence of “flecking.” QualPro then worked with project participants to narrow the list to nine practical, fast, and cost-free ideas, which were included as factors in the MVT® experiment.

Results:

The analysis of the experiment revealed that rejects from “flecking” could be substantially reduced by limiting the source of the coating material to a single supplier. Additionally, the analysis showed that a new surface cleaning procedure actually increased paint failure. The company immediately implemented the single-supplier coating material and saw defects drop from 25% to 2%. Additional experiments completely eliminated the occurrence of paint and coating defects.

“[MVT was] a big tool to get our operators really involved in the process . . . People got involved, and they were able to see results quickly.”

-Oil-Dri Corporation, Michel Bastien

Contact

For more information on the seminar or QualPro please visit our website or call the number below.

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“The QualPro consultants have an innate ability to communicate, teach, and instruct advanced concepts. The seminar is led in such a way that practical applications can easily and readily be understood. The statistical models, training materials and their genuine passion for the subject matter combined with personable and direct instructive techniques left me pleasantly surprised given the subject matter. I recall returning to work with a plethora of ideas that resulted in the application of tangible process improvements.”

– Seminar Participant, Quality Engineer



RESULTS ARE EVERYTHING.

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