



# Sourcing Smart Manufacturing

Advisory services  
Consulting and assistance  
In-house training  
Project coaching  
"Smart Manufacturing" projects



## R&D impact on production

Significant improvements and cost savings

Knowledge transfer and education on projects

Firms invest in R&D and related activities to develop and introduce process and product innovations. By enhancing productivity these investments in knowledge create long-lived assets for firms, similar to their investments in physical capital. R&D is a major determinant of the differences in productivity across firms and the evolution of firm-level productivity over time. Investment in R&D, knowledge and new technologies indeed seems an important condition for firms to remain competitive at an international level.

Manufacturers in all industrial sectors continuously face major challenges regarding the improvement of product quality and early detection of process deviations. Multivariate Data Analysis (MVA) is well suited for designing quality into processes and provides the essential tools for monitoring Critical to Quality (CTQ) attributes, ensuring acceptable end product quality.

Working at the hub of a group of leading-edge companies, CAMO supplies an integrated approach to design, development and manufacturing. This approach has a proven track record enabling client companies to deliver products more quickly to the market place with substantial cost savings.

**your partner** for improving R&D impact  
and business competitiveness

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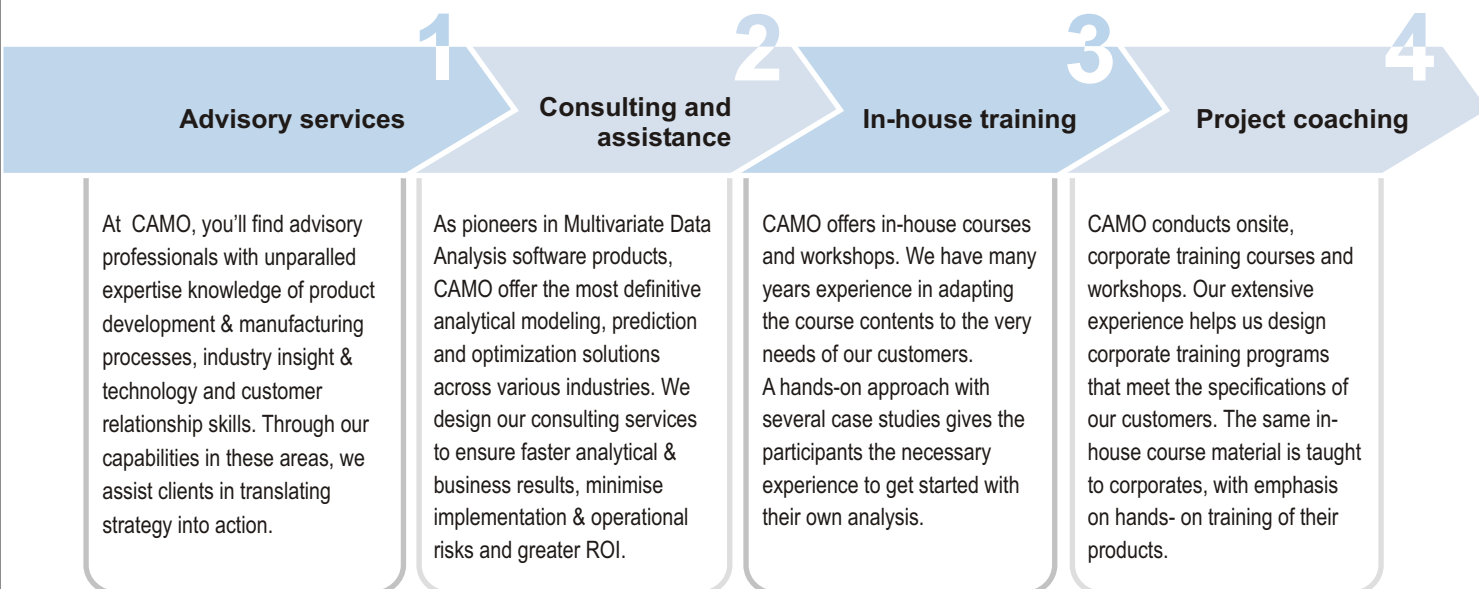
sales price - costs = profit

**Unwanted variations** may be  
(related to potential)

Yield  
Product quality  
Wreck/mistakes  
Energy consumption  
Production capacity (OEE)  
"Time-to-market"  
Contribution margin

## Steps

- Analysis/diagnostics
- Understanding/hypothesis
- Models
- Simulation/optimization
- Verify
- Implementation



## Project Examples

- PAT and QbD project management
- Implementation and improvement of process control with multivariate analysis
- At-line Process Control Using a NIR Spectrometer
- Chemometric Analysis of Imaging Data
- NIR Raw Material Identification
- Development of NIR Moisture Control
- Development of Novel Technology for Drug Evaluation on Medical Device
- Scientific Instrumentation Market Analysis
- Statistical and Chemometrics Training
- Spectroscopic and Chemometric Analysis of Raw Material, In-Process and Finished Drug Products and Medical Devices

With over one hundred years of combined experience in Multivariate analysis, Chemometrics and PAT solutions for the Pharmaceutical, Chemical, Energy and Food & Beverages sectors, our array of solutions stem from one-on-one listening of our client needs to providing the right consulting to solve their problems. We provide comprehensive consulting services including workshops, seminars, training, webinars and on-site technical support.



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