

PART COST REDUCTION SERVICES

Providing Insight to Time, Costs and ROI

By Mike Gugger

Since its founding in 1982, TechSolve's expertise in machining systems has helped manufacturers improve efficiency and increase productivity with research such as that recorded in the *Machining Data Handbook*, a reference guide to metal removal parameters and technical information on various removal processes, training courses such as Practical Machining Principles, and consulting services.

TechSolve's ability to prove its recommendations in its machining laboratories differentiates it from other manufacturing consultants. Even with this ability, however, return on investment resulting from the implementation of TechSolve's recommendations proved difficult to unequivocally validate because the complexity of the manufacturing processes involved left some calculations open to interpretation or debate.

TechSolve's Part Cost Reduction Services has changed all that.

With its in-house experts and proprietary software, TechSolve can quickly provide manufacturers with detailed and accurate analyses of machining options. TechSolve's Part Cost Reduction (PCR) process helps manufacturers save time and money from the conception of a machined part to the end of its life cycle by:

- Providing insight into design decisions and their associated manufacturing costs
- Enabling purchasers to procure parts based on validated, detailed production costs rather than prices reflecting whatever the market will bear
- Supplying a foundation for machining operations to prepare accurate, competitive bids
- Exposing production methods that can be upgraded and areas where waste can be eliminated
- Capturing the information necessary to create permanent "recipes" for the future production of replacement parts

Using the PCR process, TechSolve's experts can assess the current state of process parameters, material parameters, machine and tooling information and other details as precise as the acceleration/deceleration rate of the machine. The collection of all the pertinent machining and cost data accurately establishes the "As-Is" machining conditions. Using TechSolve's proprietary software, various "What-If" scenarios can be tested against this current "As-Is" information. Different cutting tools, variations in the material or material conditions, machining parameters, even different machine tools or processing techniques can be developed and compared against the current state. Manufacturers can measure the cost to implement the new technology against the expected savings generated from the new process, quickly illustrating the return on investment and providing manufacturers with a clear indication of whether to implement that new approach.

TechSolve's PCR process enables purchasers, prior to soliciting any bids, to develop a "cost to produce" that accurately establishes a target price that suppliers should accept. The purchaser knows what it

should cost to make the part and offers that information to suppliers. It can evaluate ensuing bids based on a clearer understanding of achievable part production cost.

Part makers likewise benefit from improved knowledge. These suppliers can respond to requests for quotes with significantly higher levels of confidence. In the past, many suppliers would estimate a bid based on prior profit/loss experience. Based on this experience, suppliers often add padding in an effort to ensure an acceptable profit margin, further increasing the bid price. Yet even as they submit this cushioned bid, they remain unsure that they can actually produce the part for the cost they have quoted. Results, not surprisingly, vary greatly, leaving suppliers to simply hope that profits on some orders will more than offset not only losses on other jobs but also the revenue from contracts lost due to noncompetitive bids. By relying on TechSolve's PCR process, businesses can accurately determine a manufacturing approach that they know they can execute. Overhead and profit can now be precisely calculated, producing a bid that is accurate, competitive, achievable and profitable.

TechSolve's PCR process also provides insight into the viable applications of new machining technology. In today's fast paced operating environment, if a process seems to be working reasonably well, many companies will choose not to invest the cash and or personnel needed to identify ways to eliminate remaining process waste. Moreover, new manufacturing techniques and technology emerge daily, and it is virtually impossible for any machining organization to stay abreast of these new developments. While some of the new technology is effective, some of it is not. Similarly, some new technology might apply in one situation but not in another. Many original equipment manufacturers mandate year-on-year pricing reductions with which suppliers must comply if they wish to retain their contracts. Suppliers need to know which new technology will help keep them competitive and allow them to meet cost reduction mandates. Through the PCR process, technology comparisons can be quantified and manufacturers can determine which processes will provide the greatest return on their investment. With that knowledge, companies can confidently invest in the right new technology to generate targeted cost reductions.

A fifth area where TechSolve's PCR process can provide a significant advantage is in the production of replacement parts. This tool captures the manufacturing data and the manufacturing intention, providing a "recipe" on how to produce replacement parts, ensuring accurate part production into the future. For example, the B-52 bomber was commissioned in 1950, but its mission was recently extended to 2050. How long will the experts that helped to develop the manufacturing techniques for this system remain in the workforce? The PCR process enables successor organizations to (i) capture the information that only these experts know and (ii) develop a "Recipe to Produce" that will ensure accurate, cost effective production of replacement parts throughout the life of the program.

Faced with ever increasing global competitive pressures, purchasers and producers of engineered parts must constantly look to new technologies to maintain acceptable levels of profitability. TechSolve understands these pressures and has worked to support the machining industry for over twenty years. Whether you are designing a new part, sourcing a part, bidding on a part, producing a part or ensuring the capability to produce spare parts at some point in the future, TechSolve's Part Cost Reduction service can provide an informed basis on which to make the decisions that drive competitiveness, quality and profitability.

ABOUT THE AUTHOR

Mike Gugger has 28 years of experience in a variety of areas including shop operations, tooling, fixturing, high speed machining, procurement and facility management, process development, product development, Lean machining, and Lean manufacturing.

Since joining TechSolve, Mike has focused on providing services that improve client competitiveness. Mr. Gugger has been instrumental in the development of course material in Lean manufacturing, Lean leadership, and machining optimization. Mike has also led development of an assessment tool that will help manufacturers pinpoint areas for improvement and optimization in their machining processes. Mr. Gugger has also been an Adjunct Professor at the University of Dayton.