

# The Maintenance Paradox

**A**merican manufacturers have been reducing labor and increasing automation for many years. This has resulted in high productivity and an increasing complexity of automation equipment, which requires higher levels of maintenance and training to operate efficiently.

At the same time, many manufacturers, particularly the Fortune 500 companies, have re-engineered themselves into leaner operations with fewer people. Many are having trouble keeping up with preventive maintenance, which eventually leads to emergency and downtime situations.

Improving maintenance is a complicated issue because:

- Every year, new equipment gets more complicated because of new technologies.
- Most manufacturing plants have been “leaned out” and operate with fewer people and smaller maintenance budgets.
- Skill levels of workers have been dropping and have not kept up with equipment complexity.
- Training programs have been cut back.
- Companies do not carry as many repair parts as they used to.
- The increasing emphasis on lean and just-in-time operations has made machine availability strategically important. In the absence of big inventories, machine downtime becomes a catastrophic event.

## The Maintenance Paradox

These trends tend to lead to a maintenance paradox. Capital equipment that saves labor is continuing to become more complex as skill levels and maintenance decline. At the same time buyers of capital equipment want guaranteed 98 percent uptime in their contracts, yet they can’t or won’t do all of the maintenance to ensure the uptime. This can be a problem because downtime on some production lines can cost more than the original investment of the capital equipment.

OEMs have tried to solve this problem by offering more thorough maintenance and operations manuals, new software, and fancy operator interfaces that tell the operator what has to be maintained and when. But none of this solves the problem if the customer does not have the people or the time to do it.

## Challenging Traditional OEM Services

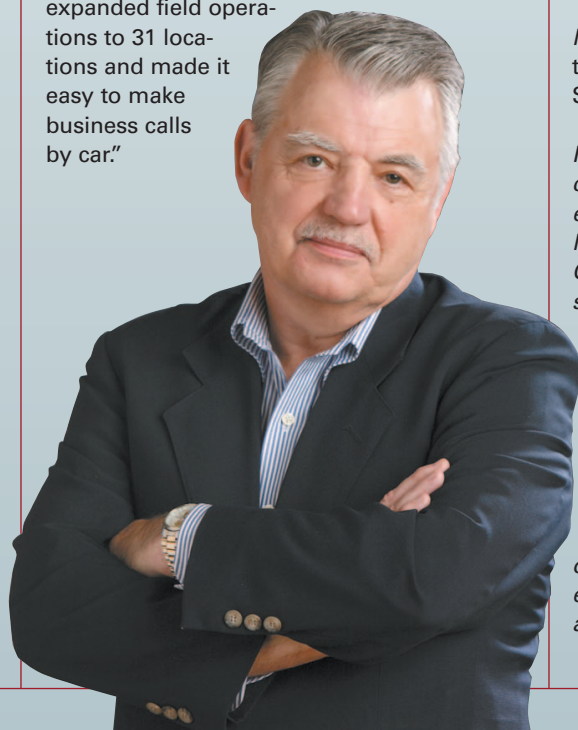
Yet, what appears to be a growing problem can become an opportunity for those

OEMs who can offer the hands-on services needed by today’s buyers of capital equipment— they’ve created additional profits by addressing issues that were problems for customers. These manufacturers have expanded their approach from product innovation, to the addition of service innovation.

The biggest problem with offering all services needed by these customers is that manufacturers don’t have enough service engineers to do all of the work. A second problem is that customers resist the idea of paying long distance travel costs. Another limitation is that too much time on the road can lead to the eventual turnover of highly trained servicepeople.

A good example of a manufacturer who recognized these problems and the need to expand services for his customers is Harry C. Moser, Chairman, Agie Charmilles Corp., Lincolnshire, IL. Agie Charmilles, a Swiss firm, is a North American supplier of wire EDM, CNC die sinking and HSM (high speed milling) systems.

Moser explains that travel expenses like hotel, airfare, and rental cars are the basis of a justification for more service people. By adding more people in territories where they can do most of the calls in their own cars, a manufacturer can reduce these costs. From the late 1990s to 2003, Charmilles hired 20 additional service engineers at a cost of about \$1 million annually. According to Moser, “by having them, we were able to cut our travel expenses by \$500,000. Instead of having people flying [to see customers], we expanded field operations to 31 locations and made it easy to make business calls by car.”



## The Prevention Cure

Harry’s goal was to do the preventive maintenance for the customers by having the service engineers make courtesy calls on customers and audit their machines in operation. Moser says the overall impact of Charmilles’ service strategy was to help the customer maintain very high machine uptimes and to make the customers more competitive and more responsive to their customer’s needs.

Localized service also reduced turnover since service engineers were not continually away from home, Moser adds. “That cut attrition costs by approximately \$500,000 per year. Those two cost savings wiped out the cost of hiring for the service expansion,” he says. “And because those people increased our capacity, we increased our sales of service and preventive maintenance to our existing customer base by \$2 million annually.

## Customer Benefits

Moser’s customers report substantial performance gains from the company’s preventive maintenance programs. Moser says it is not unusual for customers to experience machine speed increases of 15 percent and machine accuracy gains of 40 percent or more. The result: the customer gets a more accurate, more productive machine. Depending on how machines are used— for more work because of that additional speed— customers can experience paybacks of 200 percent to 4,000 percent ROI on the preventive maintenance cost, Moser says.

In my new book *Saving American Manufacturing*, I outline other ways to tackle this topic in a chapter entitled “Adding Specialized Services.”

*In his 35 years in manufacturing— including corporate positions from salesman to VP, and extensive consulting with the NIST Manufacturing Extension Partnership— Mike Collins has helped companies make the transition from being “Defender” organizations, focused internally on process change and cost-cutting, to “Prospector” companies, focused externally on finding new markets and profitable growth. His new book, Saving American Manufacturing, is a comprehensive step-by-step strategy that demonstrates how to ultimately become an organization that will continuously find new opportunities in today’s fast-changing global economy. Email your comments to IMPO: anna.wells@advantagemedia.com. IMPO*