



**New approaches to maintenance challenges are helping companies get the job done and letting them be more proactive to boot!**

Outsourcing continues to be a contentious issue for the public. Even government officials are feeling the pressure as they try to cut bottom-line costs by outsourcing jobs overseas.

Plant managers have been feeling similar pressures. Caught at the mercy of a tight market for skilled field technicians and stuck in the crosshairs of management directives to boost the bottom line, many of them are turning to alternative approaches to manage operations, maintenance and asset management needs.

These new and alternative approaches go well beyond the use of sophisticated asset/equipment management systems. They also include the formation of nontraditional vendor partnerships to outsource non-core processes and build costcutting applications. With the goal of lowering costs and improving efficiencies and reducing downtimes, maintenance and production managers across the operational spectrum find themselves integrating these new approaches as a vital part of their plant management arsenal.

**Maintenance outsourcing grows** A big part of the outsourcing equation, particularly for managers facing hiring freezes, cuts in training budgets, aging maintenance workforces and hard-to-find skilled labor pools, is maintenance outsourcing. Today, maintenance outsourcing provided by outside vendors is taking on ever-increasing numbers of maintenance tasks once handled by in-house staff.

Maintenance support for specialized valves and actuators has long been outsourced. But these days, routine maintenance for other control and automation processes also is being handled by outside service providers.

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**Advantages** Outsourcing enables budget flexibility. It lets organizations pay for only the services they need and when they need them. It also reduces the need to hire and train specialized staff, brings in engineering expertise from the outside and reduces capital expense, yielding better control of operating costs. When maintenance needs change, so can the outsourcing arrangement.

Doug Schuler is the instrument reliability coordinator with BP Amoco Texas City—and an outsourcing contractor. He also is a control valve specialist.

"There's a clear trend to using more and more contractors all the time," Schuler says. "Using a contractor to focus 100% on a particular area lets you better manage existing assets. Because I focus 100% on control valves, I not only better manage that area, but I provide a resource for other engineers."

Advances in technology are making such expertise not just desirable, but increasingly essential. In Schuler's experience, it's the OEM who has the know-how to provide that type of value-added expertise.

"Control valves are highly engineered products. You cannot expect a third party to appreciate or fully understand engineering designs perfected over a period of years. The OEM has intimate knowledge of how such things as changes in trim or operating conditions affect their products," he notes.

**Vendor-customer partnerships** Just because plants are getting help from the outside doesn't mean that managers are removed from the process. To the contrary, close partnerships are developing between manufacturers and end users. The free exchange of information and resources helps all parties concerned in their pursuit of common goals: cutting costs, increasing efficiency, and extending product life.

Larry Linzer, senior maintenance engineer with Celanese Chemical, got his group together with a vendor to redesign a control valve based on observed failure points.

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"We actually spent time in one of Flowserve's engineering offices, re-engineering an indexing seat design in a ball valve we use," says Linzer.

"It was a very positive experience. We don't have new mean time between failure data yet, because our new design has yet to fail. Reliability is our number one concern, so it was a win-win from our perspective."

It's more cost-effective to fix faults before they occur and to manage an intelligent predictive and preventive maintenance program instead of a reactive program.

David Durham, business development manager, aftermarket, Flowserve Flow Control, believes such partnerships play a key role in reducing maintenance costs.

"Flexibility is paramount," Durham says. "Metrics may be needed for anything from a single loop to multiple plants."

Apparently it's paying off for the end user. According to Durham, his use of software and consulting to assist his customers in reducing MRO costs is helping them do a number of things, including identifying critical valves and bad actors, optimizing inventory, prioritizing turnarounds and shutdowns and increasing their all-important mean time between repairs.

**Reducing MRO costs & improving ROA** Craig Resnick, research director of the ARC Advisory Group, a leader in providing strategic planning and technology assessment services to manufacturing companies, says his organization's clients are specifically looking to the prediction and prevention of failures as the key to reducing MRO costs, and to increasing their return on assets.

"It's not just the equipment cost and number of valves and controls, but the financial impact of failure on production," Resnick explains. "that's why improving maintenance practices deserves so much attention."

Given the type of business climate and operating mindset Resnick describes here, is it any wonder that growing numbers of "lean" companies look on the outsourcing of maintenance and adoption of asset management applications as an attractive way to get the job done?

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### Asset management

Today's asset management applications are a far cry from the paper files and rudimentary databases of yesterday. Closely related to computer maintenance management software and enterprise resource planning applications, the next generation of systems provides the ability to synchronize operational and maintenance activities.

The best asset management programs give insight into the future—they give maintenance managers the tools and the knowledge to set priorities and tackle potential problems that would have the most effect on business. They provide a window on the overall status of equipment, warning of weak links, tracking and archiving equipment performance measurements, highlighting failure points and helping schedule predictive, planned maintenance.

The potential cost reduction and increased reliability are the most attractive benefits of asset management, says Durham.

"Our response has been to combine a software tool, Flowstar.net, with an active partnering process to help plant personnel formalize a cost-reduction program," Durham says.

Many customers are still reacting to equipment problems, he points out, and they seem to have little in the way of any documented repair-event history.

Asset management programs like the one Durham uses with his customers, seek to change that. They take advantage of existing open-standard communications protocols—such as HART and FOUNDATION Fieldbus—to collect diagnostics from equipment and give operators a superior way to monitor their facilities. Open standards eliminate the need for multiple, proprietary maintenance terminals. Ultimately, advanced diagnostics, partnered with smart transmitters and open digital protocols, consolidate data into one asset management application, giving operators the information they need to predict—and prevent—failures. That paves the way for better decision-making and, ultimately, leads to reduced MRO costs.

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The process begins with information a plant already has.

"We start by importing data from historical files and loop file folders," Durham says. "We also perform an actual physical assessment and recording of valve and control condition and operation."

Once that information has been absorbed, the system gives operators the tools to be proactive instead of reactive. The result is a substantial increase in reliability, as operators move from fighting fires to performing highly planned PM and PdM. The benefits increase over time—as the software gathers more data, efficiency grows.

Asset management applications also can cut inventory costs for the supplier. As inventory control responsibility moves from the end user to the manufacturer, an asset management program can help the manufacturer make intelligent inventory decisions.

"You can predict what parts and equipment needs what stock levels, based on repair and failure history," says Resnick.

Dean Teglia, industrial equipment managing partner at Accenture NA, points to a slow evolution in the industrial sector toward more sophisticated maintenance practices.

"We see clear benefits from both an end user and the OEM side," says Teglia. "For the end user, it's more cost-effective to fix faults before they occur and to manage an intelligent predictive and preventive maintenance program instead of a reactive program. For the OEM, smarter equipment and automated management provides data points that can decrease life cycle costs and help to refine a product based on real-world activity."

### **Leveraging these new approaches**

With more and more plants using asset management systems and outsourcing vendors to help with maintenance needs, efficiency increases and diminished downtime are being realized in a variety of industries.

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Operators and managers are getting a fresh view of the workings of their equipment and systems as better data (and better access to it) becomes more available. This leads to better analysis, prioritization and scheduling of maintenance— before systems actually fail. With the aid of OEM engineering expertise, they can turn that intelligence into cost savings.

"As our customers gain knowledge and baseline metrics, we see a slow migration to condition performance monitoring, for even higher maintenance accuracy," says Durham.

ARC's Resnick sums up the benefits of proactive maintenance simply: "You can have a valve or part on its way, with a service person if needed, before the part has failed." **MT**

Delivering Lower Total Costs Of Ownership Flowserve, headquartered in Dallas, TX, is an industry leader in equipment management programs for the process industries. According to company literature, it has more than 250 agreements worldwide based on its Life Cycle Advantage methodology.