

Maintain the bottom line

An ounce of preventive maintenance is worth more than a pound of cure.

By Randy Zagar

Imagine this: Up to \$2 million worth of opportunity exists within nearly every food processing plant's maintenance operation, depending on its size. That's \$2 million that could drop directly to a company's bottom line.

And that could be a conservative estimate because most food processing companies are lacking even the fundamental elements of a "Best of Class" maintenance operating system.

Poor maintenance practices account for nearly 60 percent of all downtime in the food processing industry. That's because maintenance is generally a reactive activity; little planning or scheduling occurs in most maintenance operations. So, as the proverb goes, an ounce of prevention is worth more than a pound of cure. And many food processors are coming to that realization.

In fact, a majority of them either are using a computerized maintenance management system (CMMS) currently or are planning to install one in the near future as a core element in improving their maintenance operations. That's good, but it's only a starting point because CMMS is not the end-all answer to achieving a solid maintenance practice.

CMMS programs are touted as tools that provide work, materi-

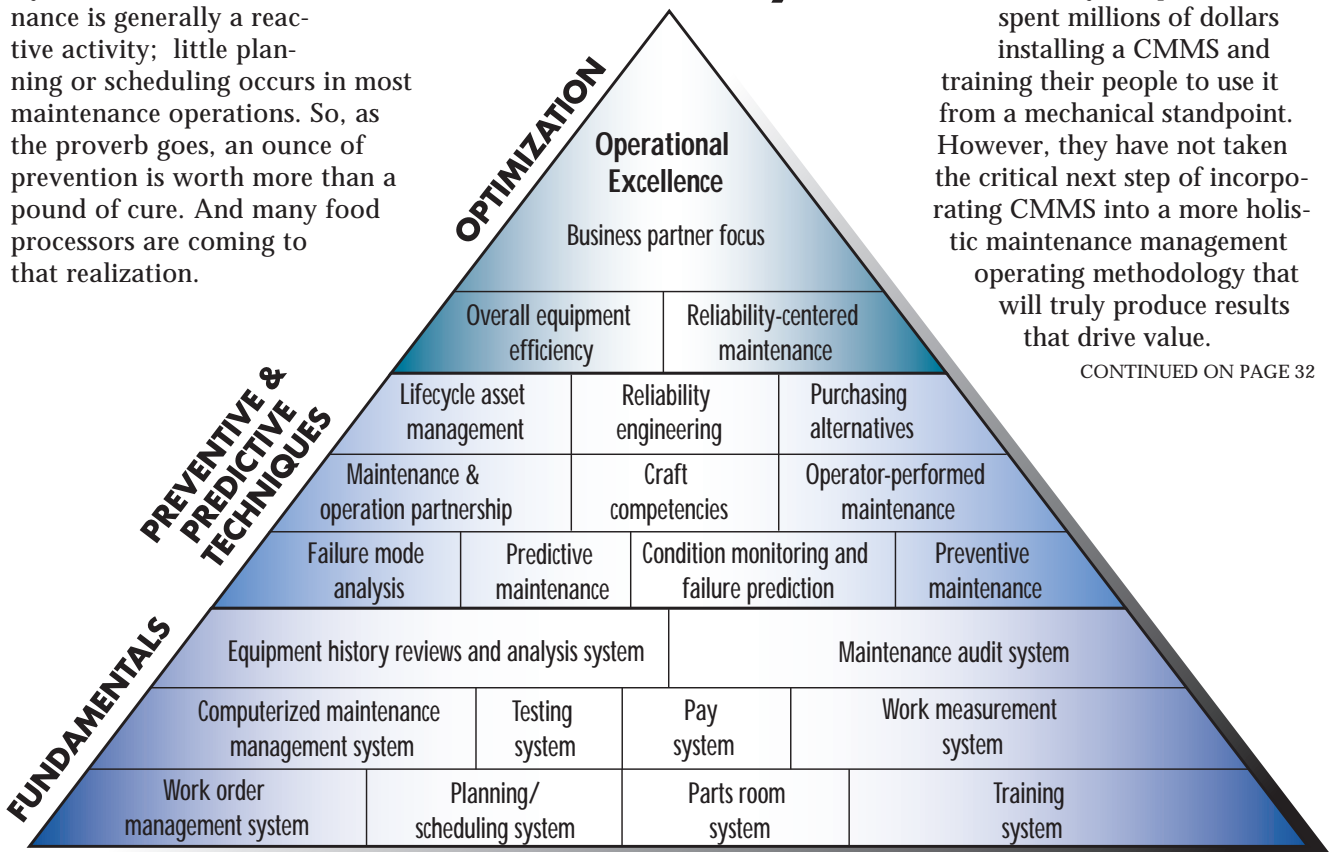
als and asset management, along with reporting capabilities to help maximize productivity and service levels, optimize performance and extend the life of company assets. Yet "help" is the key word in this statement. What most executives and maintenance organizations fail to realize is that CMMS alone will not improve overall performance.

CMMS is simply an enabling tool that, when combined with other elements of a well-rounded maintenance operation, will help achieve the desired levels of performance.

Many companies have spent millions of dollars installing a CMMS and training their people to use it from a mechanical standpoint. However, they have not taken the critical next step of incorporating CMMS into a more holistic maintenance management operating methodology that will truly produce results that drive value.

CONTINUED ON PAGE 32

Maintenance Best of Class Pyramid



Best of Class Maintenance Assessment

Section	Title	Possible Score	Actual Score (sample)	% Attainment
1	Maintenance organization	40	25	63
2	Training programs in maintenance	40	26	65
3	Maintenance work orders	40	35	88
4	Maintenance planning and scheduling	40	29	73
5	Preventive maintenance	40	26	65
6	Maintenance inventory and purchasing	40	31	78
7	Maintenance reporting	40	17	43
8	Maintenance automation	40	30	75
Total Score		320	219	68

288-320 points	Excellent	Best in class. Continue migration toward "maintenance optimization."
256-287 points	Above average	Develop six-month or less improvement plans for sections scoring below 90 percent.
224-255 points	Average	Develop three-month or less improvement plan for the lowest scorer in Sections 1-7.
0-223 points	Needs work	Take immediate action on fundamental deficiencies within Sections 1, 3, 4, 5 and 7.

The accompanying "Best of Class" pyramid illustrates the components required to attain maintenance operational excellence. These components are: Fundamentals, which include basic maintenance processes; Preventive and Predictive Techniques, which focus on the interface among departments, training, asset management and assessments; and Optimization, which is the ideal operational state.

Three big steps

A company must do three things to optimize its maintenance operations. First, leaders should conduct a true self-evaluation of where the company's maintenance operation is in relation to where they want or need it to be.

Next, they should implement a maintenance management operating methodology that optimizes available tools and systems to provide good planning, good work assignment, good follow-up and good reporting. Third, processors should enhance their CMMS to make it user-friendly and enable it to be a better tool that supports the overall maintenance

management methodology.

Let's go back to Step One for a moment. A thorough evaluation process covers as many as eight areas. They include:

- Maintenance organization
- Maintenance training programs
- Work order management
- Planning and scheduling
- Predictive and preventive maintenance
- Maintenance inventory and purchasing
- Maintenance reporting
- Maintenance automation

The maintenance assessment uses a series of questions, observations and values to evaluate each of eight critical elements of maintenance. Once completed, the evaluation highlights strengths and weaknesses of a company's maintenance practices, pinpointing exactly where deficiencies exist. The knowledge gained through this process then is used to determine what needs to be done differently and what tools — in addition to a CMMS — must be brought into the mix to make the operation more effective.

Ready for Step Two? The key

element in a "Best of Class" maintenance system is an effective closed-loop maintenance management operating methodology that causes companies to do four things:

- Plan and prioritize the work for optimal results.
- Assign the work properly to make sure the right skill sets to execute the work properly are in the right place at the right time.
- Follow up to ensure work is being done at the right quality level to achieve a good outcome and review for real-time analysis and timely corrective action.
- Generate reporting that includes Pareto analysis of equipment downtime and mean-time-to-failure, breakdown analyses and cost analyses that demonstrate how the maintenance operation is performing against the plan.

The process then begins again as operations leadership plans the work. Keep in mind that this kind of dedication to process improvement can be a tough transition for maintenance personnel, who often relish their roles as "white knights" saving the day through crisis intervention.

However, just as a good pilot runs through his checklist before every single take-off, leaders who pay meticulous attention to the maintenance management operation methodology will keep a plant running smoothly and efficiently for a much better return on investment.

Step Three is built on the premise that without an effective work management system, there is no good work order history. Without a CMMS to capture the right equipment history, a good analysis is not possible, which means accurate mean-time-to-failure benchmarks do not exist for use in catapulting a maintenance organization to the second tier of the pyramid: effective predictive versus reactive maintenance.

CONTINUED ON PAGE 34

Why try? Take a look at the benefits

Companies willing to make the investment required to reach best-in-class maintenance practices will realize a number of benefits, including:

- Increased asset utilization
- Increased asset life
- Lower operating costs
- Increased throughput
- Increased quality
- Reduced process variation
- Standardized processes, practices and methods
- Standardized information
- Increased labor utilization and effectiveness
- Reduced outsourcing
- Reduced materials costs
- Strategic sourcing/procurement
- Improved inventory management

Those results add up quickly — to \$2 million or more in annualized savings. The accompanying chart illustrates typical improvements on key maintenance performance indicators.

Maintenance Improvement Case Study

Key Performance Indicator	% Improvement
Equipment breakdown minutes	31
Maintenance and repair cost	12
Contractor services cost	79
Pounds processed per maintenance labor hour	23
Total labor hours	9
Overtime hours	16
Preventive maintenance completion	29
Average hours per work order	72
Maintenance cost per pound	17

So, the third step toward maintenance improvement is enhancing the company’s CMMS to better support the maintenance management operation methodology.

Ensuring that the CMMS is properly configured and populated with accurate, meaningful information is a critical requirement of this step. For example, every CMMS contains or should contain a full library of required preventive maintenance steps (PMs). Often, these PMs are not well written, accurately timed or properly linked to bills of material and parts planning. Therefore, the PM effort provides little or no real value to maintenance and operations.

One of the more tedious elements within this step involves making the CMMS more user-friendly. Many of the more robust CMMS packages are often so cumbersome to operate in their off-the-shelf form that most people will go to great lengths to avoid using them. Because of this, it is not unusual for a company to be utilizing only 10 to 15 percent of their CMMS’s true functionality. This is

the classic example of a company using a multi-million-dollar CMMS as a glorified work order system.

In one company, for example, mechanics became so frustrated with the basic task of entering a work order that they refused to use the system. The process required them to toggle among five screens and enter an average of 241 keystrokes. To make matters worse, the process took nearly 12 minutes to complete. Just think: If a mechanic took 12 minutes to write a work order every time there was a breakdown or a PM, he’d be spending more time trying to get the CMMS to function properly than actually doing his job, which is to keep the equipment running.

When the system is customized to become more user-friendly, the work order process now requires the use of only one screen and takes merely one minute to input. This is a win-win situation; mechanics are no longer frustrated with the process, and more time is spent on productive maintenance activities.

In the “Best of Class” world, a company’s maintenance team would rarely be seen running to

emergencies or crisis situations. Instead, they would be completing planned work orders or engaging in preventive and predictive maintenance activities. They would be doing their work on a designated schedule of downtime that might occur on an off shift or a weekend or, where deemed best practice, completing PMs during production run time. The point is that maintenance is planned activity, not reactive activity. And done right, it can be a valuable activity — worth as much as \$2 million or more a year. RFF

Randy F. Zagar is a senior project manager with USC Consulting Group (USCCG) and head of its maintenance practice. USCCG is an independent management consulting firm with offices in Chicago, Tampa and Toronto. The firm specializes in operational effectiveness and has worked with 60 percent of the top international food companies worldwide and nearly 45 percent of the top 50 food companies in North America. For more information, contact USCCG at 800-888-8872, or visit the company’s web site at www.usccg.com.

