

Innovate

Two Technologies that Help Industrial Metal-Cutting Companies Improve Maintenance

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While a full economic recovery is still uncertain, manufacturers are finding ways to gain a competitive edge and improve productivity. New advancements and technologies, including “smart” manufacturing and the Internet of Things (IoT), are helping the manufacturing industry do just that.

One way metal-cutting companies are optimizing their overall operations is by using technology to improve maintenance programs. As cited in this eBook, *5 Performance-Boosting Best Practices for Your Industrial Metal-Cutting Organization*, machine breakdowns are one of the top causes of lost productivity, and when productivity suffers, so does the bottom line. While many manufacturers have realized success with tried and true preventative maintenance initiatives, which ward-off an inevitable breakdown, two technologies—predictive maintenance (PdM) and CMMS— are helping manufacturers improve overall maintenance even more accurately.

Predictive Maintenance

According to Deloitte’s *2016 Global Manufacturing Competitiveness Index*, predictive technology, specifically, holds the most potential for manufacturers. According to the study, more than 500 executives from around the world ranked predictive analytics as the number one future advanced manufacturing technology. IoT, smart products and smart factories, and advanced materials were also considered critical to future competitiveness.

Unlike preventative maintenance, which uses anticipated and planned downtime to prevent unplanned breakdowns and minimize cost impacts, predictive maintenance (PdM) aims to predict breakdowns before they even occur. Software and sensors collect data, and algorithms identify not only the anticipated failure, but also calculate the probable time that failure will occur.

In fact, several metals leaders are already reaping the rewards of predictive maintenance to repair or replace parts before failure and eliminate both planned and unplanned downtime, as reported in *this blog post*.

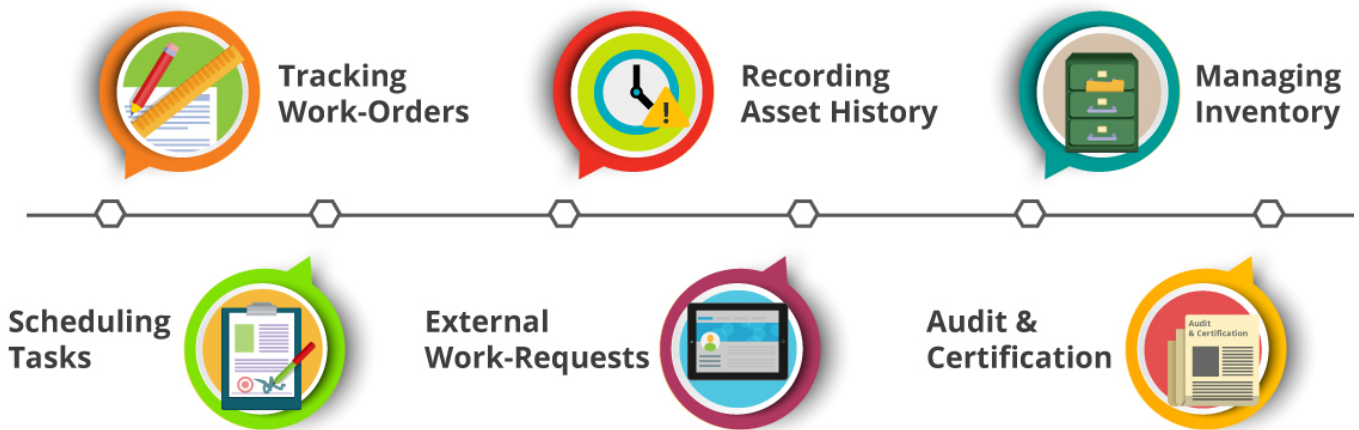
CMMS

Another technology helping industrial metal-cutting companies improve maintenance is CMMS, or a computerized maintenance management system. While PdM tools provide powerful data, most experts agree its information’s value is limited without the context provided by CMMS software. CMMS software tracks and schedules maintenance tasks by analyzing data to identify bottlenecks before they even take place.

According to an article from *MRO Magazine*, CMMS can improve maintenance on the production line as it reduces downtime and repairs, improves the lifecycle of equipment and forecasts replacement, and reduces rework and manufacturing scrap—all while providing crucial data for future decisions and improving scheduling and planning.

What does this look like in practice? As described *here* in an article from Better Buys, one CMMS solution included data-entry fields for technicians to input degradation values manually. The system would provide a graph indicating how many months were left until failure and then give a plan for replacement on a set date if the equipment continued being used excessively.

CMMS is used for



Making the Switch

In most cases, larger manufacturers have been the only ones looking into PdM and CMMS-based maintenance programs. However, as technology advances and competition intensifies, many smaller companies are starting to invest in the technology as well.

There is no question that making the transition from a paper-based maintenance system to a digital one can be overwhelming, especially for smaller metal-cutting organizations. An article from *IndustryWeek* provides a few tips for simplifying the transition over to CMMS:

1. **Form a team.** Make sure a small team oversees the transition. Designate a lead planner and scheduler to define the processes (such as what equipment and data to collect). The team should understand how the company processes information, how it organizes workflows and analyzes key data.
2. **Data download.** A CMMS system is only as good as the data in it. Determine how accessible that data is and establish a baseline of how much to collect before making the switch. Once up and running, don't stress over every data point. Add as you go to bulk-up your data inputs.
3. **Tech knowledge.** Consider how comfortable your team may or may not be with technology. Some may not have any computer experience. A basic computer training course can quickly ease worries.
4. **Tech training.** In addition to basic training, the entire maintenance team should be trained on CMMS best practices. Develop step-by-step guides with screen shots at each workstation to help with the transition.
5. **Codes.** To help track performance and maintenance trends, start with 10-15 industry-standard codes when setting up maintenance activities. Consistent problem and failure codes can provide valuable information when it comes time to replace equipment before failure.

Technology is no doubt changing the manufacturing landscape, and today's industrial metal-cutting companies need to ask themselves if they're willing to do what it takes to prepare for the future. Investing in new technologies and maintenance programs may be one way to keep the competition at bay while optimizing production for future demand.

What technology investments is your organization using to optimize your maintenance department?

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