



# Three Roadblocks to World-Class Maintenance

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Maintenance used to be reactive, only done after a failure occurred. This run-to-failure approach used to suffice since the cost of maintenance exceeded the cost of failure. As failure costs increased, preventive maintenance was adopted, but today there is yet another promising approach.

## **World-class maintenance = predictive maintenance**

We are in the early stages of graduating from preventive maintenance protocols to a world-class method of maintenance: Predictive Maintenance (PdM). PdM can deliver great rewards: elimination of downtime, increased efficiency, a minimization of intrusive maintenance. What's more, PdM can positively impact costs: the McKinsey Global Institute estimates it could have a \$240 to \$627 billion dollar annual impact on factories by 2025, reducing annual costs by 10 to 40 percent.

Despite its advantages, PdM is very slowly being adopted because there are a number of significant barriers to adoption. Exactly what are those barriers and how can they be resolved to help manufacturers revolutionize their maintenance to world-class status, with all the rewards that brings? There are three main barriers, which can be broken down into the familiar categories of people, processes, and technology.

## **People**

The right people, or more importantly the lack thereof, figures prominently as a barrier to achieving world-class

maintenance through PdM. While manufacturing will need to fill 3.4 million jobs over the next decade, research indicates that 60% of these jobs may go unfilled due to the manufacturing "skills gap." This skills gap is driven by the retirement of Baby Boomers, an increased demand for products and services, and the lack of attractiveness manufacturing holds when viewed as a career option by young people. What's more, the manufacturing industry is not the only one trying to attract technical talent, so there is stiff competition for a very limited resource.



How can manufacturers overcome the skills gap to find and keep maintenance workers? To find them, they can avoid the outdated "post and pray" methods of filling positions, and employ innovative sourcing through social media outlets, military channels, technical school relationships, and even cold-calling techniques. To retain these workers, manufacturers can offer third-party training programs that ensure the performance, productivity and job satisfaction of workers in the present and as time goes on.

## Processes

Processes, or more specifically the reliance on old processes, can also be a barrier to achieving world-class maintenance. These process barriers take two forms: one physical and one intangible. The physical barrier takes the form of factories that still run processes on industrial equipment designed before the computer era. Others run processes on newer machinery that has the capability to generate maintenance monitoring data, but not necessarily data that will work with today's PdM software. The solution to these barriers comes in the form of new equipment investment, with an eye to PdM compatibility.



The intangible process barrier comes in the form of how workers (and not just maintenance workers) interact within the context of the manufacturing process. Traditionally, maintenance workers/operational technology (OT) and IT staff have been fairly separate entities. To achieve world-class maintenance, these two disciplines must cooperate to fully realize the benefits of PdM, especially as it relates to IoT. It's about getting the right data to the right worker at the right time; two rarely-paired, disparate entities must work very closely together. That's a big change that requires skilled management -- and even third-party resources -- to establish smooth new, acceptable interpersonal processes. Other considerations that are imperative to a successful transition are related to work order control, maintenance scheduling, inventory control and the need for accurate equipment data.

## Technology

Finally, technology, or rather the reluctance to adopt and use technology fully, can be a barrier to achieving world-class maintenance operations. The adoption of new technology and the understanding of how to use it is at the core of achieving success in today's industrial arena, and will continue to be for some time. In an age when, however, most maintenance-related data is collected, stored and only used locally, with a significant amount of this data still being maintained on paper if at all, manufacturing obviously has a long way to go. Working with a third-party maintenance vendor can help significantly with the introduction, adoption and success of new technology implementation, whether a manufacturer has one facility or many.

In the end, it all comes down to flexibility: in the way one looks at people, processes and today's valuable new technologies. Most importantly, achieving world-class maintenance through the adoption of PdM and the technologies that drive it requires a shift in thinking about maintenance itself: in the past, maintenance was viewed as simply a cost center. But with enough flexibility, maintenance can become a truly value-driven aspect of the overall business. One that can put a manufacturer at the top of their industry if one acts sooner rather than later.

