

## **Why PdM Programs Fail: Personnel Issues**

*By Alan Friedman*

Many facilities and enterprises have failed to achieve the 10:1, 20:1 or even 30:1 Return on Investment (ROI) often promised with the introduction of a Predictive Maintenance (PdM) program. Investments have been made in monitoring equipment and training but, unfortunately in many instances, data collectors are now collecting dust on a shelf in some storeroom waiting for someone to rediscover them. And perhaps the discoverer will wonder what these artifacts may have been used for. Meanwhile, on the factory floor, it is back to business as usual with unplanned outages as the norm, with everyone too busy fighting fires to get a handle on the situation. Well, at least it's an exciting place to work!

This article will focus primarily on the personnel aspects of how a PdM program could potentially fail. Let's start from scratch, pretending that we have no PdM program and we want to start one now. This brings us to the first problem: how many times have we had to pretend that we had no program and now we are starting from scratch all over again - maybe with new equipment this time around - because the guy who used to run the program left for greener pastures and took everything with him except for a squarish-looking electronic device with some cables and a sensor hanging off of it? If we are honest, most companies have probably given the PdM program thing at least one try.

### **Retention**

Retention of highly trained personnel can be a problem. While many are retiring, others are either promoted or make lateral moves to other companies. The impact of these moves is especially devastating when individuals do not formalize their work into processes and procedures that other people can be trained to follow when they leave. Unfortunately, many workers like to be "experts" and protect their position by shrouding their work in mystery, holding onto the secrets of their expertise to ensure that the company remains dependent on them. Others may be less devious or insecure, but simply don't think ahead. In other words, they don't establish procedures so the company can keep the program running in their eventual absence. In either case, we can say for certain that the loss of the resident expert is often enough to doom a PdM program, and banish its high tech equipment to the unreachable parts of the highest shelves.

The lesson here is that you should catalog work procedures and processes now. Formalizing procedures is one of the best steps you can take to not only enhance the effectiveness of your program, but also to institutionalize it, so that the program becomes bigger than one person, or even a handful of people. It can then survive the loss of key personnel.

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### **Training**

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Let's say that we are going to give it another try. How long will it take to train the new resident expert, or experts, to the point where they have a handle on the technology and can effectively manage a PdM program? One year? Two? Five years? <!--[endif]-->

Here is another very important question to ponder. Will we view PdM responsibilities as a full-time position or just something "extra" that has to be done after the "real" work is complete? Will this person's manager give them the time, training and equipment necessary to make them successful, or will the PdM program be seen as just another responsibility added to an already busy schedule? Remember, when a plant is operating without an effective PdM program, unplanned failures and a general lack of knowledge about the condition of the plants' assets are a given. Therefore, maintenance people are constantly operating in "firefighter" mode to fix the next emerging fire.

In this situation, it is difficult to step back and put together a strategy to move up the maintenance evolutionary ladder to the rung of PdM. In order to step back and do this, the person we appoint to help with this process (a.k.a. our new PdM expert-in-training), needs to be given the time, space and support to make the transition happen, which shouldn't be expected to happen overnight.

## <!--[if !supportEmptyParas]--> **Basic Direction**

This leads us to the next potential problem, which is that this person, or people, may not actually have the expertise to help the plant evolve into high quality PdM practices. Even if we assume the plant is ready to offer time and resources to support the PdM program moving forward, they still need someone in place who knows which direction forward really is!

A lack of technical skills and vision has been another thorn in the side of many an in-house PdM program. Running an effective PdM program requires a good deal of contextual knowledge that helps engineers make the right choices about the appropriate technology to use within a myriad of variables - industries, sites, processes and circumstances both environmental and technological. And gathering the data correctly is only the first, and many might agree the easiest step. Correctly analyzing the data gathered is at least equally as important, and deciding the proper actions to take from looking at the data requires a good deal of practice and experience.

Often, PdM managers can spend too much time looking at vibration spectra and not enough time assessing the PdM program as a whole. But this is not necessarily the fault of the person or people chosen to do this work. I believe it is simply a failure to realize the level of expertise in these matters that exists out there in the marketplace, compared to the level of expertise we may be able to develop within our facility - especially when companies keep losing our their experts.

So, the bottom line here is that it is essential to provide adequate training and time for personnel to gain the knowledge and experience required to run an effective in-house PdM program. It can be done, and can be done well. However, if companies aren't willing or able to provide the time and resources to develop this expertise in-house, they should not be considering an in-house program.

## <!--[endif-->**Strategic Direction**

One last item worth mentioning is the problem of abrupt changes in strategic direction. I have seen successful programs uprooted by managers who, when initially hired, appear on the scene with no knowledge of PdM and do one of two things. They either fire their staff that is responsible for these tasks or they don't give the staff the time or permission to continue working on their programs. To be sure, this problem is more common in circumstances where the people running the PdM program have not adequately documented the efficacy of their work (i.e. they do not have the evidence handy to make a case for why the plant is better off keeping these programs in place).

## **Trends**

In recent years, we have seen a shift in the PdM industry towards outsourcing PdM activities to companies who have a long track record of successfully managing these sorts of programs as well as the technical expertise to solve difficult problems. Some reasons for this shift has been touched on in this article; namely the difficulty a facility can have in hiring, training and retaining individuals who have the depth of experience needed to turn the advertised potential ROI PdM can provide into real results and real money. Even those facilities that have seen substantial gains in evolving their maintenance efforts from Reactive Maintenance to PdM may abruptly devolve back into firefighter maintenance mode with the loss of a key expert or because of a change in direction taken by a manager unfamiliar with the benefits of PdM.

One solution to these common problems is to team up with a well-established service provider who takes on the responsibility for keeping the program consistent year after year. A quality strategic partner will have the necessary expertise, not only with the PdM technologies, but also in knowing how to strategically deploy them so that they positively affect the company's bottom line.

*Alan Friedman is a senior technical advisor for Azima DLI ([www.AzimaDLI.com](http://www.AzimaDLI.com)). With more than 18 years of engineering experience, Friedman has worked with hundreds of industrial facilities worldwide and developed proven best practices for sustainable condition monitoring and predictive maintenance programs. Friedman contributed to the development of Azima DLI's automated diagnostic system and has produced and taught global CAT II and*

*CAT III equivalent vibration analysis courses. Friedman is a senior instructor at the Mobius Institute, an independent provider of vibration training and certification, and an instructor for the Instituto Mexicano de Mantenimiento Predictivo (Predictive Maintenance Institute of Mexico). He is also the founder of ZenCo, a positive vibrations company. You can contact Alan at 206-327-3332 or at [friedmanalan1@gmail.com](mailto:friedmanalan1@gmail.com)*