

Tools for Managing and Executing a PdM Program with a Geographically Diverse Team
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Traditionally PdM programs have been plant centric and the tools for executing these programs have resided in the office of someone one on maintenance reliability team. These tools consist of computer workstations and software, vibration analyzers, other measurement and recording devices, and supporting paraphernalia. Information and data generated by the program may never exit the walls of this office except in the form of reports distributed to others within the plant. Typically, the entire PdM team is located at one site, if not in adjacent offices, and all necessary communications can take place face-to-face. As a result of this close proximity of team members and the focus on a single geographic site, the need for moving data and transferring information is often handled in a rather ad hoc manner. Since 1985 the vendors which developed these PdM tools have designed their systems with this use case in mind.

The advent of the internet has shrunk many aspects of our world and has revolutionized the expectation how we can and should be able to access data and information with the click of a mouse. However, to date, there has been little change in how we execute PdM programs or in the design of the tools that we have available. The new paradigm shouts that we do not have to be there, we can bring the data and information to the people who need it when they need it. This is particularly important in cases where detailed expertise is needed but there are a limited number of experts available. This situation combined with greater efficiency of use has made cloud computing appealing and created the need to perform PdM programs with teams of people who are in diverse geographic locations. There may be one or more plant sites which have their own data collection and maintenance staff, one or more analysts who should have access to the plant data, and corporate or plant managers who want their hand on the pulse of their manufacturing assets.

PdM programs which are executed by a geographically diverse staff need tools which have been designed with these factors in mind. This paper will discuss using cloud computing strategies and the use of a web portal to transfer data and to present current asset health information. It will also address changes to the design of analysis software, portable instruments, and online monitoring equipment which facilitate or optimize the execution of a geographically distributed program. This includes mechanisms for creating closed looped, electronic communication between the data collection technician and a remote analyst. There is a similar need to create closed loop communication mechanism between the analysts and a distant reliability program administrator or maintenance planner. Additionally, there will be discussion of how data can be readily accessed from installed online monitoring equipment and how an analyst can babysit a remote troubled machine. Case histories will be used to illustrate the advantages of these concepts.

Smaller Abstract

Many of today's most successful PdM programs are taking reliability to the global arena. Self-contained, plant-centric programs are being replaced with new technology and geographically diverse teams that are more efficient, cost effective, and easier to maintain. While many industries have embraced this new paradigm and its supporting technologies, predictive maintenance programs have been slow to adapt. Many PdM programs at leading companies are still plant-centric, with maintenance teams and their computers, software, vibration analyzers, and other measuring/recording devices residing on the premises. Information from these programs never leaves the site, except in the form of periodic reports to others in the plant. However, this mindset is changing as new reliability concepts are taking the focus off of the self-contained plant and putting it on the delivery of data to the expert. The use of cloud computing and other Web-based technologies makes data from multiple plants accessible to geographically diverse experts. This paper will discuss cloud computing strategies, as well as the use of a web portal for data transfer and as a means to share asset health information. It will also cover the new portable instruments and online monitoring equipment emerging to support this new paradigm and how analysis software is evolving to optimize geographically distributed programs. Case studies will be presented to illustrate the advantages of this new global reliability concept, including examples of highly successful PdM programs that operate with geographically diverse teams.