



RELIABILITY'S FUTURE IS NOW

Effective remote data transfer and extensive mobile-device usage will play major roles in the success of future reliability programs.

Jane Alexander, Managing Editor

WITH PLANTS AND PROCESSES growing increasingly complex, it's essential to have a sustainable reliability program in place. The big question, though, is how does an organization go from having few or no reliability solutions to implementing a successful holistic asset-management plan? Nathan Pettus, vice president of Emerson Process Management's Reliability Solutions business (emersonprocess.com, Austin, TX), offered several tips:

- **Focus on the culture.** Make reliability a cultural institution. Ensure that every employee knows he or she plays a key role in keeping the organization safe and productive.
- **Rank asset criticality.** Know which assets matter most and prioritize equipment that the organization simply can't live without.
- **Don't be afraid to start small.** Even small changes in an organization's reliability culture can have

a large impact. Many companies that started with a simple reliability training initiative have found their way to sustainable reliability plans.

- **Take action.** Reliability and safety cannot wait. Identify areas that need improvement and start taking steps right away.

While many organizations have made the decision to move toward holistic asset management, the changing face of technology and multitude of available options can make the transition challenging. We asked Pettus to expand on the holistic trend and how sites can achieve sustainable reliability from this approach.

MT: As budgets get tighter, how does a plant justify improvements to asset reliability?

PETTUS: It's important to remember that reliability is a business strategy.

Plants are being forced to look at OPEX [operational expenditures] as a way to save money because they can't do it with CAPEX [capital expenditures] anymore. Improvements in safety and availability can have a big impact on reliability, which, in turn, reduces maintenance expenditures. The costs associated with maintenance expenditures are directly related to profitability and shareholder value.

This idea is highlighted quite well in a Solomon Associates (solomononline.com) study of the business impact of reliability from 2013. According to this research, a plant in the bottom reliability quartile has 3.5 times the maintenance spend of a plant in the top quartile. So, if a top-quartile plant is spending \$10 million on maintenance, the plants in the bottom quartile are spending \$35 million. That's a lot of lost revenue.

MT: How does the Industrial Internet of Things influence asset management and what does that impact mean for the future?

PETTUS: The cost of sensing equipment and infrastructure has dropped dramatically in the past few years. The question is no longer, “On what equipment can I afford to put sensors?” but rather, “What can I do to make the best use of the data I can collect from my multitude of connected devices?”

Now we need to focus on collecting data and filtering and routing it to the right people at the right time so they can act on it, no matter where they are. Although this might mean alerting a technician on the plant floor to an imminent problem, it more-frequently means delivering essential data to a subject-matter expert (SME) in a remote-operations center.

The situation can be complicated by the fact that we need to keep data flowing while not overwhelming technicians with too much of it. We have to focus on targeted alerting to maintain efficiency, even when there is a great deal of data available.

MT: What key barriers prevent companies from fully embracing emerging technologies?

PETTUS: There are a couple of key barriers that companies tend to mention when they’re evaluating an organization-wide rollout of emerging sensing technologies. One is cybersecurity. Many organizations are already partnering with cybersecurity experts, who are paving the way for advanced reliability data transmission.

Another is culture. The demographics of the plant are changing rapidly. We’re shifting from operators who have been in industry for a long time, and who are used to “fighting fires,” to a new generation who are data-driven and often expect things to

just work. The millennial generation comes to the workplace with a deep familiarity with mobile devices and are already prepared for emerging technologies. If we can provide them with a platform to take advantage of that familiarity, they’ll be able to do amazing things. Finding a balance between these two generations’ work philosophies can be difficult, but it’s becoming ever more crucial, given the numbers of baby boomers leaving the workforce.

MT: How can operations leverage these technologies to overcome challenges such as the skills shortage?

PETTUS: Numerous plants are toying with the idea of unmanned facilities and processes, particularly when sites are stranded in the middle of nowhere. Even plants that are in desirable areas are often finding skilled workers expensive and hard to find. As a result, we’ve seen many organizations working toward centralized remote-asset monitoring. They can take data output from an offshore oil platform or a mining operation in the Arctic Circle and push it to a centralized monitoring- and- analysis center where SMEs can work in an office environment yet effectively manage remote or short-staffed facilities.

Though this is mostly targeted, application-specific monitoring right now, we’re beginning to see operations bring more and more systems under this umbrella through private clouds, wide-area networks, and OPC UA (open platform communications—unified architecture) protocols.

MT: How are mobile devices changing the way sites manage their assets?

PETTUS: Getting data out to organizations isn’t the only key element in successful communication and monitoring. It is also vital to get the right data to the right people in relevant

time. By this, I mean delivering only essential data to the individuals who need it, exactly when it will be most useful.

Everybody in the plant has some stake in reliability. The vibration analyst may have a very visible role, but he or she is far from the only person exposed to or affected by reliability issues. Instrumentation engineers, production planners, safety officers, plant managers; every one of these people has some kind of stake in reliability.

The future that we see is that all of the plant assets send data to a central system that organizes and distributes the information to stakeholders, wherever they are. With the robust mobile devices available today, users can collaborate with messaging, image sharing, knowledgebase access, and equipment histories. The flexibility will only increase as technology improves.

MT: What trends are surfacing in asset management that will improve the human-machine interface?

PETTUS: Much of the value in reliability tools comes from ease of use. If a device or a piece of software is complicated and cumbersome, technicians simply aren’t going to use it, and the purchase will have been a waste.

Future diagnostic products will be even more focused on ease of use. We are going to see many more app-store-style interfaces because they are familiar to people. Data transfer and collaboration between personnel and devices will become increasingly intuitive and mirror many of the user-interface tools that are common in today’s mobile market. The ultimate goal is to make devices easier to use so that they will be used. **MT**

For more information, including details on Emerson’s recently released AMS ARES Asset Management Platform,