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# Plant Services

SPECIAL REPORT

## How to Master Data Management



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## Can You Trust Your Data?

Data integrity is crucial to more proactive asset management.

□ The whole point of connecting disparate assets and systems to one another and to a central asset management system via intelligent tools and devices in the field is to allow them to generate real-time performance and operating conditions data, allowing for a more holistic view of asset health. Having more and better data should let managers and technicians make better decisions sooner. These decisions – about whether, when, and how to service an asset or otherwise intervene in its operation – are critical from the perspectives of not only preserving/extending an asset’s lifecycle and avoiding unnecessary downtime but also preventing a major safety incident.

But decisions are only as good as the data they’re based on. And if the data available to the decision-maker (whether a plant manager, a reliability engineer in a control room, or a technician in the field) isn’t the most recent data available because data from the field doesn’t match the central database, there

can be serious consequences.

To move toward optimized decision-making based on real-time data, you need to combat data lag throughout your organization, and doing so means first identifying where and why data lag emerges. Here’s a look at three factors that may be contributing to a data gap in your facilities.

**1. Some of your people still have a preference for paper.** It may be hard to believe, but pen-and-paper still predominates as a data-collection method—65% of respondents to Plant Services’ 2016 Predictive Maintenance Survey said pen-and-paper is in use in their organization, ahead of the 56% who said handheld data collectors are in use. Old habits are hard to break, and when even one department or a handful of individuals default to recording measurements or job actions on paper, the best-laid proactive maintenance plans can derail.

Pen-and-paper data can be difficult to read, jeopardizing its integrity, and difficult to track. If any notes or measurements are recorded by hand in the field, there’s a risk that the person who entered them won’t get a chance or won’t remember to enter these later into a central online asset management database – or that the data can be accidentally entered incorrectly. If one technician’s data isn’t easily and quickly

made available to all team members – or if entered data is inaccurate, decisions about a given asset might be made without a full and accurate picture of that asset’s health.

The solution? Laying down specific expectations for data collection/reporting and holding people accountable when they don’t follow protocol. At the 2016 Smart Factory World Symposium at Chicago’s Digital Manufacturing & Design Innovation Institute, Bob Luthy, continuous improvement manager at valve manufacturer Richards Industries, recounted the challenges he faced when a new software system was implemented. The company had to make clear that “participation is not voluntary,” Luthy said.

“We had one operator who went to management and said, ‘Are you giving me an ultimatum?’” Luthy said. The answer was yes. “You need to put your foot down when it needs to be put down,” he said.

**2. Data in your handheld devices doesn’t make it into your master database.** Do you have fugitive data? Here’s the problem: Your technicians go out and make changes in the field and record them to a handheld device. But until a manual update is performed with the master database, the changes won’t be reflected in

the database—meaning that anyone else who goes out in the field doesn't have the most up-to-date information about that asset on hand or the operators are running the process with potentially incorrect configuration data. There's also the risk that the data may not get synchronized at all. And in a strict regulatory environment such as a chemical or pharmaceutical manufacturing facility, this can put compliance with federal regulations at risk.

Requiring technicians to hand over their handheld devices after use so that manual synchronizations can be performed means productive time is wasted. So what's the solution? An automated synchronization solution that allows for updates to a master database while the technician is in the field can prevent critical data from going MIA. Emerson's Auto Sync technology on its AMS Trex handheld, for example, uploads cached asset data from the handheld to the

master asset management database as soon as a WiFi signal is detected or a USB cable connection is made. This ensures not only that data transfer is timely but also that it's free of human error.

**3. Field services management doesn't get the respect it deserves in your organization.** Does your organization have far-flung assets? Is it a cultural/institutional priority to make sure that these assets get the same attention – in terms of regular inspections, testing, condition monitoring, and data analysis – that more-visible assets on the production floor do? Or is it a case of “out of sight, out of mind”?

If data for these field assets isn't being gathered at regular intervals or uploaded to a master database because it always seems that attending to some more visible production issue takes precedence, then you're setting yourself up for a data gap that can have important implications throughout your

lines of business. To optimize use of limited budgets (financial and time) for maintenance and reliability initiatives, you need a holistic view of how all of your assets, wherever they may be, are performing. Field service management tools that make data collection easier and data synchronizing automatic for vital assets outside your plant's walls can help streamline this effort.

We've all encountered data-gap frustrations in our professional and personal lives. The phone message that never made it to us because someone forgot to pass it along or the half-hour-old traffic report that doesn't note the backup that built in the last 20 minutes on the route you take home – are two examples. How much more critical is the data-gap issue when you lack accurate information about assets driving your business's bottom line? Avoid data gap by knowing where it exists and tackling the problem head-on. ■

# Four Steps to Truth in Real Time

Reduce time spent on the production line while driving faster, smarter action

by Bob Argyle, *Leading2Lean*

□ Have you ever attended a football or basketball game where the coaches are missing – where no one, not even an assistant coach, is on the sidelines giving direction, instruction, and encouragement, and the players on the field are merely told to play hard and win? Hopefully, you've never witnessed a game like this. It's chaos.

Just as the physical presence of a coach is vital to a successful sporting match, the presence and oversight of maintenance, operations, and plant management on the production floor is vital to successful plant operations. It ensures that equipment is functioning properly, employees are able to effectively do their jobs, and production goals are being met.

Realistically, we know that not all plant managers can spend their entire time walking the produc-

tion line. But thanks to advances in technology, there are ways for those managers to virtually know exactly what is happening in their plant in real time. That way, their trips to the factory floor are more focused and productive.

With a simple text alert, pop-up message, or ping on a smartphone, tablet, or computer, bottlenecks or downed machines on a busy production line can be identified immediately. Issues that need to be addressed also can be escalated based on severity and impact. This helps ensure that problems are not just visible but that they are actually seen.

Looking for immediate solutions? Here are four things to consider implementing immediately that will get you closer to actively responding to real-time problems.

## 1. LET GO OF PAPER

Most employees own a smartphone, so it's time your industrial plant embraced similar technology. Pull down all the whiteboards and the clipboards that have paper tracking sheets. Start thinking of ways to utilize the technology you already hold in your hand. If that smartphone technology can help you navigate your way in an unknown city, it can certainly be harnessed to track problems on your plant floor.

Think of it this way: 30 years ago, if you were driving home from work and someone wanted to get a hold of you on the phone, he or she couldn't, right? Now, however, it doesn't matter if you're home – people can still reach you.

The same is true of real-time manufacturing technology. When a problem strikes and you aren't able to see that problem in real time, it's like you never knew it happened. But by combining real-time and mobile technologies, no matter where you are – on the plant floor, in your manager's office, out to lunch, or home in bed – you can easily be alerted to immediate problems in your plant. Thus, opportunities for real improvement can be acted upon instead of getting lost or buried in the past.

## 2. USE THE TECHNOLOGY YOU HAVE, WITH AN UPGRADE

Find some sort of application, system, or software-as-a-service (SaaS) for your mobile and desktop computers that will allow you to identify, capture, and instantly record problems as they happen on the plant floor. This technology must be able to track data in real time, as opposed to doing a manual data dump at the end of each night.

Maybe you've tried some simple apps or cobbled together your own system, but now you're looking for a more-comprehensive playbook.

Both large and small plants are embracing manufacturing-specific cloud-based software. Whatever technology you implement, realize that you need a method that is visibly displaying problems as they are happening.

### 3. EMBRACE TRANSPARENCY

Back in our coaching scenario, the entire team and every individual teammate knows exactly what to do during a specific play based on the previous results of the game. The coach has given everyone a specific assignment, task, or goal – sack the quarterback, use man-to-man defense, or even punt the ball.

Similarly, for data to truly be actionable on the plant floor, it must be visible to everyone in real time (from the production line to the boardroom) so that problems or inefficiencies can be tackled immediately.

Transparency is also how you will find truth on the assembly line. If data are presented in a visual manner, problems can be easily identified while also providing an

irrefutable case when you need to rally support for directing resources to specific problems. Collecting this real-time data also provides more accurate historical data, surfacing the chronic issues so they can be addressed. It's amazing what I see during my factory visits. I find that there are many creative ways of getting production through the process and out the door. I like to refer to it as jumping through hoops. What if we just eliminated the obstacles, which would eliminate the need for the expert hoop-jumpers?

### 4. IDENTIFY ROOT PROBLEMS

When similar problems persist day in and day out, it's time to put effort into digging deeper to discover the root of the problem.

For example, if you continually have to restart your computer throughout the day because it freezes up, it might seem normal and become part of your daily routine. But that is the problem. Why has rebooting your computer daily become routine? It's time to research the problem and find out

exactly why the computer stops working. Once you find and fix the issue, you might be surprised at how much more productive you become.

Sure, major breakdowns happen on a production line from time to time, but chronic, daily issues should ultimately become your biggest concern.

As a coach, if your game plan is to improve processes, increase productivity, reduce downtime, and better maintain equipment, but you're not even at the ballgame, it's time to embrace smart manufacturing with an eye to real-time analytics. These four quick ideas will help initiate the process, but now is the time to get all your coaches, players, and support staff at the same game, too, so everyone can react immediately and change the game plan for a winning outcome.



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# Additional Resources

**VIDEO: AMS TREX IMPROVES RELIABILITY**

With AMS Trex, you can do more in the field than ever before. Watch how Monsanto used the Trex unit to improve their maintenance practices.



**VIDEO: MAINTAIN DATA INTEGRITY WITH AMS TREX AUTO SYNC**

Improve response time to operational changes through better visibility of field changes. See how Auto Sync technology in AMS Trex automatically synchronizes field data with your AMS Device Manager database.



**WHITE PAPER: IMPROVE DATA INTEGRITY WITH AUTO SYCE**

Simplify the day-to-day efforts of managing data from the field. Discover how your asset management database can be easily kept up-to-date while you and your team focus on driving your business goals.

