

## Uptime: Emerging Standard Sets The Stage For A Work-Culture Revolution

Written by Bob Williamson, Contributing Editor  
Monday, 13 June 2011 13:55

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Quality experts of 40, 50 and 60 years ago were told to go elsewhere. The big U.S. industries had quality under control with QA and QC labs, inspectors and defect-sorting processes. So, those experts went to Japan. We all know how that worked out...

Despite some recent hiccoughs, since World War II, Japan's quality improvement has been nothing short of phenomenal. It wasn't until the 1980s that the rest of the industrialized world caught the "quality-improvement" bug and began aggressively pursuing statistical process control (SPC) and "building quality in" rather than inspecting defects out.

Unfortunately, many top-level U.S. decision-makers assumed that merely indoctrinating everyone in their companies on SPC would help them catch up to growing consumer demand for quality and value. What they learned, for the most part, was that continuously improving product quality is much more than teaching SPC and empowering work groups on factory floors. A serious "work-culture revolution" was needed—*not just at the highest levels of companies, but all the way from the plant floor to the outer reaches of the supply chain.*

As the methods of the Toyota Production System became more familiar to the Western industrialized world, new—*and proven*—continuous improvement strategies emerged. In 1986, U.S.-based Motorola developed and embraced "Six Sigma" quality-improvement methods.

About the same time, global quality standards came on the scene. Known as ISO 9000, these new internationally recognized standards spread like wildfire among companies wishing to compete on the world stage. The Big Three U.S. auto companies even launched their own version called "QS-9000."

Again, a work-culture revolution was needed to make the tools of the Toyota Production System, Six Sigma and ISO 9000 work in sustainable manners. Some succeeded in this cultural revolution. Others failed miserably. Some didn't even try.

### **With regard to maintenance**

Maintenance and reliability improvement methods have been around for decades—*some would say generations*

. Not much is new in maintenance methods except for pricing, accuracy and degree of technological sophistication. The principles are much the same as in the 1950s and 1960s:

Take good care of your

equipment with proper preventive maintenance; analyze and correct the root causes of failures; see that it lasts longer and performs better.

Then, in the 1970s, the airline industry taught us the value of Reliability Centered Maintenance (RCM). Later, preventive maintenance (PM) became more introspective via the use of better analytical tools associated with condition monitoring—including *vibration analysis, infrared and ultrasonic inspection and oil analysis, among others*

. Still, many company leaders failed to grasp the true value that modern maintenance strategies and methods could add to the bottom line.

In many cases, for a company to seriously benefit from modern maintenance and reliability tools and practices, a work-culture revolution was needed throughout ALL levels of the organizations. In many cases, however, this culture change did NOT happen.

### **PAS 55: the back story**

Today, as this month's magazine cover and cover feature by Mincom's John Bender note ( [click here for more](#)

), the international industrial community is on the verge of yet another improvement strategy...

PAS 55 was published in 2004 by the Institute of Asset Management (IAM), in association with the British Standards Institution (BSI), with the purpose of defining a logical "Asset Management System." By 2008, organizations and individuals around the industrialized world had enhanced the specifications to finally address how to properly manage a company's physical assets, equipment and facilities.

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In July 2010, the International Standards Organization (ISO) voted to commence work on a new standard for asset management, using the updated PAS 55 (2008) as a starting point. Committees are now in the process of developing this ISO Asset Management Standard—*which is expected to take shape over the next 12-18 months.*

**The bad news...** At its core, PAS 55 is about “maintenance and reliability” of equipment and facilities. Historically, many business leaders, boards of directors, stock holders and owners have turned a deaf ear to proven improvement methodologies promoted by their maintenance departments and leaders.

**The good news...** At its core, PAS 55 is about “maintenance and reliability” of equipment and facilities. As it moves toward becoming an ISO standard, it’s bound to grab the attention of business leaders who are not only looking for the recognition associated with another ISO certification, but also of those who wish to significantly improve the bottom line of their businesses. Here are some potential benefits of PAS 55 that might grab the attention of top-level industry leaders:

- Enhances shareholder value, improves company reputation and provides international recognition of achieving and sustaining a physical-asset management milestone.
- Establishes a common language among financial officers, equipment and facilities (asset) managers, shareholders and stakeholders.
- Assures investors (and would-be investors) in physical- asset-intensive companies that they have achieved specified levels of competence when it comes to equipment and facilities life-cycle performance.
- Provides a structure for continuously improving the entire life cycle of physical assets from design, build and install to operate, maintain and disposal (much the same as with product- and process-quality management).
- Addresses the increasingly obvious connection between poorly managed assets and increased safety and environmental incidents and profitability decline.

**The challenge...** To quote the PAS 55: 2008 Introduction, “Although human factors such as leadership, motivation, and culture are not directly addressed within the scope of this PAS, they are critical to the successful achievement of optimized and sustainable asset management and require due consideration.” In other words, another work-culture revolution will be required in many operations.

### Proven methodologies

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Here's a comforting thought: Much of PAS 55's asset-management improvement structure embraces three basic and proven Lean methods common to the Toyota Production System: Policy Deployment (or "hoshin kanri"); the A3 proposal formats (business case/goals, current state, future state, action plan & schedule); and W. Edwards Deming's historically proven continuous improvement process of Plan, Do, Check, Act.

Furthermore, when we look at PAS 55's system and structure, we find it to be consistent with the principles of Total Productive Maintenance (TPM) as they were intended to be (rather than the myth that "autonomous maintenance" is TPM). Again, countless companies missed the mark with TPM as it was intended when developed and refined by Seiichi Nakajima and the JIPM (Japan Institute of Plant Maintenance) consultants in the 1980s and 1990s. Sadly, many of their visionary TPM books in my library are no longer in print. These landmark works, however, captured the premise of "improving equipment effectiveness by engaging the entire company"—*a concept that was not completely understood/embraced by the business leaders of the era.*

Contrary to popular belief, TPM is NOT a maintenance program: It's a company-wide way of life that abhors equipment-related business losses. To promote sustainability, the earliest TPM books featured the proven principles of "life-cycle equipment management," as professed by Ben Blanchard of Virginia Tech. In the end, what was lost was the understanding that, in many cases, TPM principles and structures required a work culture revolution—*a culture change that many businesses were unable to realize.*

### My hope for PAS 55

I've learned a number of useful things about industrial operations, having spent nearly four decades working in and teaching on the people-side of manufacturing and maintenance—from *executive suites to plant floors, in the utility, mining, petrochemical, pharmaceutical, pulp & paper, food-production and automotive sectors, to name but a few.*

A key take-away: Equipment and facilities maintenance and reliability methods are NOT rocket science. They're straightforward, easy to understand and show results when deployed properly.

The biggest difficulty in properly deploying these proven maintenance and reliability methodologies is not the tools, nor the talent. Rather, it is—*pure and simple*—executive-level management's inability to understand/recognize the value that good maintenance and reliability practices bring to a business. Closing this senior-leadership gap will be essential for the ISO version of PAS 55 to thrive in individual organizations.

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PAS 55: 2008 clearly speaks the language that senior leadership can understand. Our mission is to step up to the plate and show why proven maintenance and reliability best practices—*that many have been preaching and using for years*—are crucial in achieving new levels of international recognition. When we follow the evolution of quality improvement and the impact of ISO 9001, we can see what it takes to make the soon-to-be ISO version of PAS 55 Asset Management succeed in any business. Just as ISO 9001 led to improving product quality, PAS 55 is considered by many to be an important first step on the road to good asset management practices. It's not a destination or a goal: It's a foundation upon which to build a globally competitive equipment-intensive business.

### Setting the stage

The stage is now being set for a work- culture revolution that will assure our people, equipment and facilities are able to perform as intended. Sustainability, though, requires more than developing and following a new asset-management manual. A compelling business case must be made for changing the way things get done throughout all departments—*and at all levels*—of an organization. This is when and where the “people-side” of an equipment-intensive business gets interesting. Stay tuned for more.

**MT**

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