

Making reliability sustainable

A long-term solution for process and equipment reliability

Andy Ginder



“Make our reliability process self-sustaining!” How often has that request been heard from executives over the years? The answer is, “too often.”

With competitive pressures surging in recent years, corporate leaders now recognize that equipment and process reliability is critical to operational excellence. Companies depend on their ability to start up equipment on demand, complete scheduled production runs without failure and shut down production without incident. And they need to do it in a cost-effective manner. That requires excellence and consistency in applying reliability and maintenance practices.

ABB Reliability Consulting has been working with companies for more than 40 years to build sustainable reliability and maintenance processes. Building a solid reliability process is a major undertaking, and making it sustainable is no less challenging. The idea that a best-practice reliability process is going to take off and sustain itself (like perpetual motion) is a fallacy.

In a consulting career spanning 30 years, the author has witnessed numerous companies undertake initiatives with the intention of dramatically improving their reliability and maintenance practices. In many instances, they attempted this solely with their own internal resources. In other cases, they drew on the capabilities of consultancies like ABB. Post-analysis of their endeavors shows that the results achieved fall into one of four categories:

1. A percentage of the companies' programs implode before they ever get off the ground. Due to organizational difficulties and lack of commitment, no significant changes are ever achieved.
2. Another group of companies achieves changes during a defined period of time, but as soon as the formal phase of the process ends, things quickly revert to their historical norm. It is equivalent to filling a bathtub with water, then watching the water disappear after the plug is removed.
3. The third group of companies makes changes during the formal project phase and actually maintains the gains thereafter before leveling out onto a plateau. Too frequently, when discussing reliability best practices with employees, the author has been told that they used to do the right things in the past but for some reason – personnel changes or cutbacks – those practices were not maintained.
4. And finally, the fourth group not only makes gains that are sustained, but improves upon them in coming years. The formal project phase lays a strong foundation for future, additional improvement. Even in this fourth group, the reliability gains are not self-sustaining. A structured series of elements,

activities and interventions is a necessity for sustaining continuous improvement.

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Executives are perplexed that once employees are introduced to best-in-class practices, they don't automatically embed them in their daily routines. When the benefits of applying proactive reliability practices are so clear, why don't people grab onto them?

Escaping the comfort zone

When speaking recently at a conference about sustainable reliability, the author asked a simple question of the audience: How many of them were aware that if they exercised four to five times a week for 60 minutes, they would improve the probability of their living longer, healthier lives? There was a unanimous show of hands. The follow-up question was: Knowing the benefits of regular exercise, how many of you religiously work out four or five times a week? What a surprise! Only five percent or less of the attendees raised their hands. Even knowing the benefits accruing to our

personal lives, few of us embark on or apply best practices for healthy living. In fact, medical studies show that the vast majority of people who lose weight through diet or exercise regain those lost pounds within two years. So aren't we a bit naive to expect that people are going to embrace over the long term best practices in reliability without a formal support structure?

Just as we know that daily exercise promotes good health, the vast majority of personnel in manufacturing sites know that certain practices (ie, reliability-centered maintenance, planning and scheduling, preventive and predictive maintenance, etc.) promote equipment reliability and the attainment of production goals. Most companies do not apply these reliability practices in a high-quality and consistent manner, despite numerous initiatives intended to embed them in the organizational culture. Improvements are made in the short term but are not sustained.

What lies behind this regression? People have a natural tendency to revert to their norm. And the norm is the comfort zone they have evolved and settled into over the years. Despite their best intentions, people easily fall back into their past practices. Even though we know that we should apply good maintenance planning and scheduling or preventive/predictive



Reliability

maintenance practices, we relapse into the comforting routines of the past.

One of the conference attendees responded with an appropriate question: If people know what good practices are, whether they relate to our lifestyle or the life cycle of our plants, how do you motivate them to apply those practices? Unfortunately there is no silver bullet, but there are a number of things that can be done to encourage people to take the first step and continue on that path. The reality is that the majority of people want to improve their health and personal appearance, just as the majority of people want to excel at their jobs. The underlying desire or motivation already exists. People just need ongoing support and reinforcement. ABB Reliability Consulting has identified and applies a significant number of tools and activities that help companies achieve sustainable changes in reliability processes. Among them are the following.

Benchmarking

It is generally recommended that people seek guidance from their physician or other qualified personnel prior to starting an aggressive diet and exercising regimen. This provides them with an intelligent, objective opinion on what it is possible to achieve and where they should focus their efforts. Similarly, companies should critically evaluate and benchmark their reliabil-

ity practices to determine what they want to achieve and what they should do to get there. ABB Reliability Consulting has benchmarked hundreds of manufacturing companies across multiple industries to obtain an objective overview of reliability performance levels. This initial benchmarking supports ABB's work with the customer in developing and implementing a strategy that drives practices and performance metrics in the desired direction.

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Leadership structure

To drive processes forward in a sustainable manner, companies need to develop a reliability leadership structure. This typically mirrors the traditional management structure, but supports reliability activities with designated sponsors and/or champions, facilitators, subject matter experts, and consultants. **1** shows a sample leadership structure that has been applied to sustain the change process of many of ABB's customers. The structure identifies reliability-oriented roles, responsibilities and accountabilities,

with ABB providing the external consulting staff.

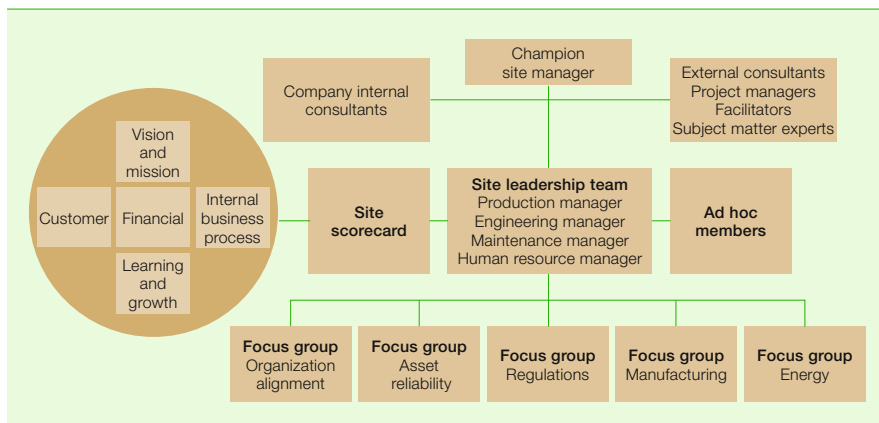
Champion succession plan

Too often reliability processes lose their impetus due to a change in personnel. Frequently the plant, production, or maintenance managers who championed reliability are either transferred or promoted. Their replacements, wanting to make their own mark on the organization, promote new initiatives without ensuring that they are integrated with the established reliability best practices. Companies overlook the need to proactively identify people who can step forward to become the new reliability champions when others depart.

Best practices

Many companies are overambitious or overzealous in their objectives. How many people quit exercising because they overdo it in their first training sessions, leaving their bodies so sore that their resolve to continue falls by the wayside? Companies need to define a core group of best practices on which they are going to focus initially. They can expand the group later. The practices need to be well defined and supported with appropriate procedures, process maps, and training of personnel. A company doesn't have to be the best at everything. If it excels in a few reliability practice areas and is a good, solid performer in others, it will be among the leaders in reliability. ABB Reliability Consulting has developed theoretical models of reliability business processes. By analyzing and contrasting those models with customers' current practices, the change process is accelerated and documented in a manner that supports sustainability after implementation.

1 ABB employs a leadership structure that mirrors the customer's work teams. The ABB consultants play a dual role of process facilitators and subject matter experts. This enables site personnel to gain ownership of the improvement process, while avoiding possible barriers and roadblocks to change.



Metrics

The benchmarking activity mentioned earlier identifies potential metrics against which companies can track performance. Studies have shown that people who weigh themselves daily are more likely to control their weight successfully. Plants are similar. Tracking specific indicators sends a message to employees regarding what is important. The most successful organizations, though, establish an environment that requires cross-functional teams to regu-

larly review the indicators and implement actions to drive them in the proper direction. ABB Reliability Consulting applies a methodical trademarked process (Reliability Balanced Scorecard™) to ensure that customers have an integrated performance system that ties together strategies, metrics and practices, and implements them throughout the organization vertically and horizontally. Just as importantly, ABB aids the customer in implementing a structure and assigning roles that ensure indicators are analyzed and acted on.

Communications

Organizations must continuously communicate what they are doing, why

they are doing it, and the successes they are achieving. This communication must be formal (newsletters, town meetings, etc.) and informal (MBWA – management by walking around). Employees base their actions on what they believe is important. And what they consider important is influenced greatly by what their supervisors and managers discuss with them. Regular, consistent communications on the value of reliability are critical to sustain gains.

Periodic audits/interventions

Whether companies use outside or internal consultants, or a combination of the two, regular audits need to be

performed to assess the health of the reliability process. Just like an annual physical, these audits identify a company's strengths and areas of opportunity, thereby keeping employees focused on what is important. Slippages are identified along with new areas of opportunity.

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Continuous education

Finally, a company needs to establish an educational process that reinforces consistent, quality application of best practices for long-term employees, while introducing new employees to the company's reliability culture. That education needs to be reinforced by supervisors and managers in on-the-job situations.

Yes, reliability improvements are sustainable, but they don't just happen by themselves. The proper building blocks need to be put in place, and continuous support and reinforcement is necessary. It takes effort and discipline to rise early every morning for that three-mile run or to push yourself away from the table before dessert. That same discipline and effort is required in our reliability endeavors. Whoever claims it is easy (or self-sustaining) is selling you something you really don't want to buy.

Factbox ABB Reliability Consulting

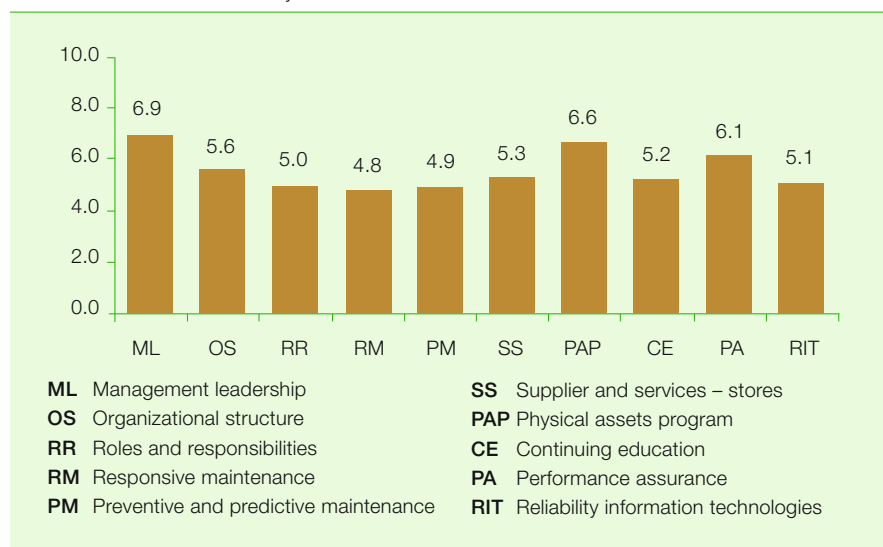
ABB Reliability Consulting has been helping major corporations drive sustainable improvements in reliability and maintenance for more than 40 years. Companies typically achieve a return on investment in excess of 5:1, as measured in improved equipment performance (availability, run rate and quality) and optimized costs. ABB Reliability Consulting helps customers in all industries, from oil and gas, pulp and paper, and steel to food processing and automotive components.

In a typical project, ABB Reliability Consulting initially conducts a detailed assessment of the client organization using its proprietary World Class Reliability audit ². Based on the

assessment findings, a structured improvement plan is then created and implemented with the support of ABB.

ABB Reliability Consulting provides a multitude of products and services to drive customer performance. These include assisting customers with the implementation and use of maintenance management systems such as SAP PM or MAXIMO, helping to develop or implement performance measures or scorecards, aiding in the application of RCM2 (reliability-centered maintenance) or RCFA (root cause failure analysis), and improving the management of maintenance parts.

² ABB's World Class Reliability audit: 10 criteria



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