

Chapter 26: Process 6—Synthesize Ideas to Continuously Improve

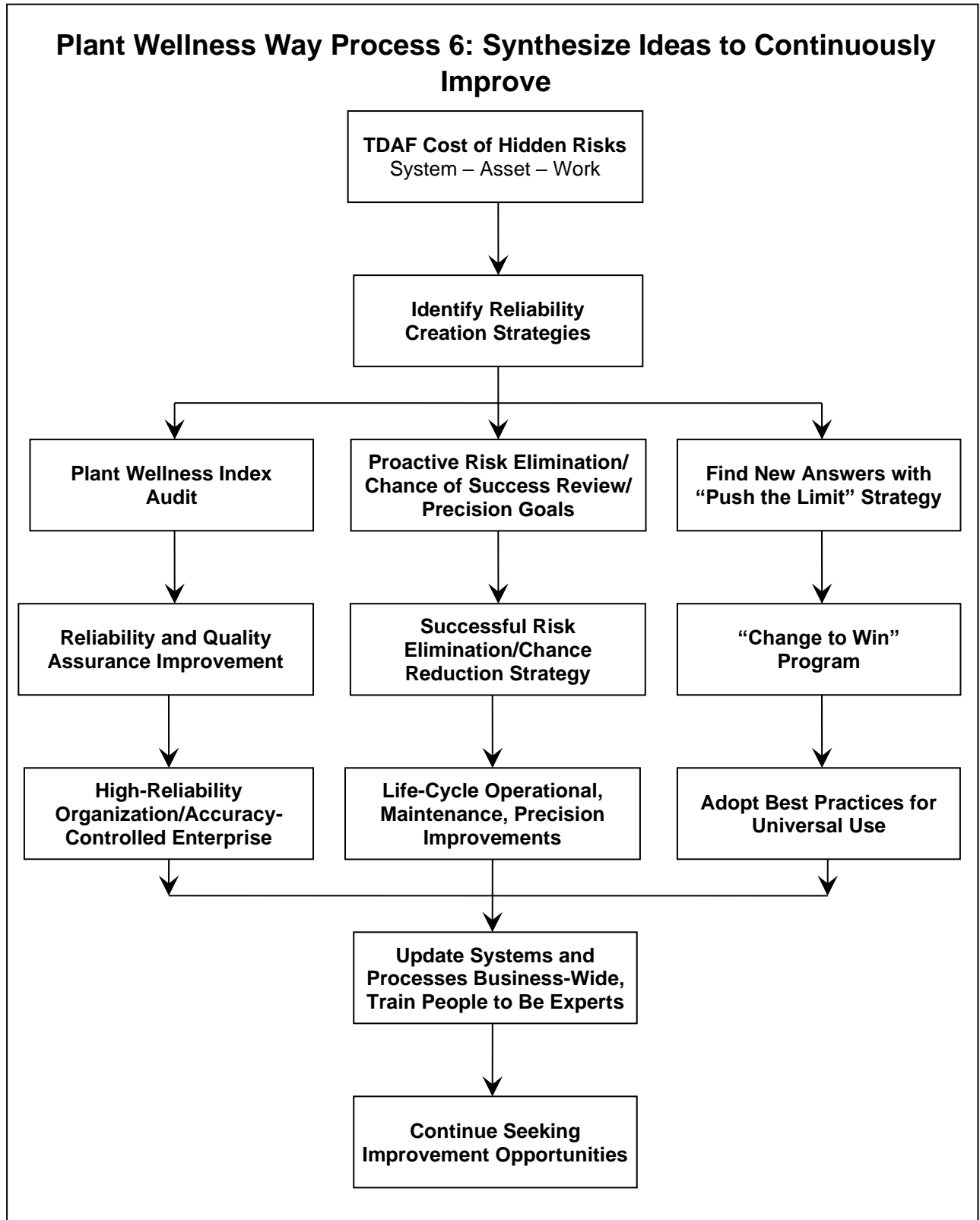


Figure 26.1—IONICS Process 6 Steps

Summary Description of Process 6—Continuous Risk Elimination

Bad business risks bring ruin. The causes of problems must never again enter your operation. No risk elimination secured must ever be lost. As quickly as possible, remove all remaining operating risks and drastically reduce those you cannot eliminate. Reaching the heights of reliability excellence and being a high-reliability organization is a tremendously profitable place for a company to be.

Quantify and Prioritize Remaining Risk

Find the ticking “time bombs” hiding in your business before they explode. To spot the risks you have already got in your plant and equipment, look at each equipment’s critical components. Use TDAF costing of the potential business-wide losses from critical parts failure and check the odds of their failure to assess the operating risks you still carry. Use the Plant Wellness Index to clarify business system and process inadequacies. Find and fix the weaknesses in your asset management, operating, and maintenance processes using Chance of Success Mapping to discover the steps that will cause your future disasters.

Identify More Successful Risk Reduction Strategies

The best answers are those that bring sure success by design, such that the design itself protects you from having risks. For at-risk components, use Physics of Failure Factors Analysis combined with Three-Factor Analysis to generate new solutions for reliability improvements. For each asset’s critical parts, embed effective ways into the appropriate procedures that make them failure-free for exceptionally long times. Create lasting world-class reliability by setting “precision goals” for your equipment parts’ health that your people need to achieve. Do Reliability Growth Cause Analysis when to financially justify the risk reduction strategy.

“Push the Limit” Projects

To get world-class performance, you need to use world-class practices. Higher reliability needs higher quality standards and precision methods. Research better solutions and bring them into your operation. Make them “the way we do things around here.” Don’t wait for problems to justify improvements; make improvements so that there won’t be any problems.

Permanent change requires the combined support and commitment of senior management, the people doing the work, and their supervisors. Introduce a never-ending Change to Win program and let your people improve their own work. They’ll find better ways and simpler solutions to lift process and equipment reliability with continuous improvements.

Update Systems and Processes Business-Wide

Use your business systems to trap world-class practices in your organization so that they are always used and are never lost. Take every new success across the whole organization so that each improvement gained generates compounding benefits by using it many times. Make a change and its success permanent by putting it into your business process maps and all relevant documents. Embed the requirements and new ways into work procedures and performance measures. Make necessary information easily available to everyone so that they can make decisions right the first time. Train and retrain your people to perform the new methods and practices masterfully.

Monitor to Prove Reliability Growth

Use process Key Performance Indicators, step Performance Indicators, and frequency distributions to track the trend and speed of progress. Address and improve those activities that are not yet performing well enough.

Find the Hidden Risks and Eliminate All of Them

You know that equipment failures are caused by component failures. To climb to the heights of world-class reliability, your organization and its people need the education, skills, and processes for doing the correct quality practices and precision methods that deliver microstructure reliability.

Find All Remaining Asset Life-Cycle Risks

The causes leading to component failure can arise anywhere during the life cycle. It is necessary to remove opportunities for all defects damaging to any critical part's materials of construction throughout the asset life cycle. Use the eight life-cycle questions of the Physics of Failure Factors Analysis (Chapter 11) to regularly review your company processes and proactively eliminate the causes of the causes of failure.

Do an Equipment Criticality Analysis at component level to discover the size of the risks you have still got in your operation.

Audit your organization's capability to have outstanding reliability against the Plant Wellness Index. You will most likely miserably fail the audit and find that you can never have great asset management success using your current business processes. Be grateful that you have the truth and that you know the direction you must take to create a world-class reliable operation.

Identify More Successful Risk Reduction Strategies

For each unacceptable risk identified, seek to eliminate the risk, and make reliability improvements to prevent it. Chance reduction strategies change the design of a process to make it more robust

and reliable. Altering a process design to remove the possibility of defects error-proofs your business. To prove the effectiveness of chosen improvements and confirm their financial value, assess the proposed mitigations using Reliability Growth Cause Analysis so that you build a powerful business case to make the change. At the very least, plot the before and after risk on a calibrated risk matrix to show people what will be gained by the process improvement.

Keep consequence management options as a last resort because they add costs and complexity to your business. They require you to add another process that will surely fail from time to time, opening you up to the full risk that you wanted to prevent. Include consequence management methods for a complete a risk management solution, but don't use them as your only risk management strategy.

"Push the Limit" Projects

Put continuous improvement in everyone's duty statement. Every day, you could find better ways to do your job if you were asked to suggest them. This natural human inclination to want things to be simpler, easier, and faster needs to be intentionally harnessed and put into useful service.

Apply Series Reliability Property 1 and get the people who are directly working in a process to improve it. They work with the process and its problems all the time. They are best placed to understand its details and to know what changes to make to get each step to perform better and better every day in every way.

Apply Series Reliability Property 3 and get the managers of a process to find and implement system-wide improvements. System-wide changes make easy fortunes.

Where problems persist and need to be addressed in revolutionary ways, dedicate an improvement team of subject matter experts to design and implement a solution. Where problems can be addressed in an evolutionary way, allocate them to a workplace team using Change to Win and set a deadline for their first-cut implementation.

When putting in place actions to solve problems, past experience with change management tells us that it's important to have:

- Leadership and supervisory support, as both are vital to any program or effort being continued
- Presentation of a successful business case is vital in an environment of scarce resources, since the business case justifies both the leadership commitment and resource allocation necessary to successfully implement the program
- Education and involvement of people gives them a sense of ownership and understanding in the program, which are vital to reduce their innate resistance to change
- An effective communication plan to proactively inform people, and to ensure no one feels left out because they got no news

Make the Best Way the Only Way

Within your process documents, explain exactly how your company is run for greatest success. Keep your process documents current and accurate and train their users if they are not following the designed process. If the process is lousy, let those who use it fix it.

Unless something positive and concrete comes out of a bad event to prevent its occurrence in future, there has been no learning and the problem will reoccur. It cannot be otherwise because nothing has been corrected and nothing has been improved. Until action is taken to make necessary enhancements permanent practice, there has been no change. When you introduce improvements and changes, they must become the new way of doing the work. Only when better ways are documented, and people are trained to do them right can higher performance result. You already know that if it's not written, it's not real! No new change will ever become a workplace practice until the improvement is documented in standard operating procedures, people are trained to do it right, and it is actively supported by their immediate supervisor.

Confirm Reliability Growth in Your Processes

Use trends to prove that your processes and process steps are becoming ever more successful, ever more effective, and ever more efficient. Use distribution curves to prove that they are continuously becoming optimal.