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Saturday, 01 May 2004 11:45

It may seem like heresy to speak of slowing the expansion of technology within a technology magazine. However, sometimes a technology reality check is necessary.

All too often manufacturers turn to technology for answers while ignoring simple solutions for quality and quantity improvement. They miss essential clues that could help them in the decision process of automation—pro and con.

Some clues are obvious—quality and quantity should be improved. For example, automation that slows cycle time in order to enable the robot to be efficient is probably not an improvement even though cost is diminished by staffing reductions.

Some clues are subtle—robustness and obsolescence must be considered. Is the automatic equipment yesterday's technology? The shelf life of some of today's state-of-the-art technology could be very short. The possibility exists that even with the best planning, your equipment could become obsolete in a hurry, which would mean the investment in this particular automation may be short term, so the return on that investment may have to be extremely high. Be prepared for the possibility of continuous investment in automation once the choice is made.

Also, there is the training issue— without a commitment to training in programming, repair, and operation of automation, a company commits to headaches in the form of breakdowns, downtime, and reduced productivity.

Although these problems generally pertain to manufacturing automation, the maintenance department hears the siren's song of technology as well. Given the proper circumstances and application, advancements in technology can mean real improvement and cost savings in maintenance expenditures.

However, again a reality check should begin with the basics. For example, vibration monitoring for rotating elements can help diagnose problems, but it cannot prevent bearing damage caused by improper storage, handling, or installation. Similarly, you can sample oil for contamination, wear particles, and lubricant quality, but if you are experiencing

breakdowns due to lack of lubrication, obvious sources of contamination, the application of the wrong type of lubrication, or even over-lubrication, then it is time to review best maintenance practices.

Training assessment followed by the proper training to ensure that these best practices are followed can establish or regain control of work practices.

On the face of it these would seem to be simple and common sense means to not only improve and control your maintenance issues, but check-off items to analyze when considering automation. However, my experience would lead me to believe that many companies, if not bearing in mind these issues, are not granting them enough weight in the decision-making process.

Thoughtful preparation and analyzation are necessary for any project or cost-saving idea. This preparation should include contemplative study as to whether automation is the right choice for your application, as well as whether the automation will be robust enough to have longevity.

While robots don't take vacations or sick days or require ergonomic improvements, they also do not have suggestions as to how to improve the manufacturing process. Contemplative listening to your employees' suggestions may lead to enough process and quality improvement to forego the installation of automation, ultimately enhancing employee retention not to mention employee morale and productivity.

Manufacturing facilities that take care of the basics first usually are competitive. These basics include maintenance personnel who are true craftsmen by training and experience, who have the opportunity to practice these skills, and follow best mechanical practices. At these facilities, training on new automation and mechanical analysis tools is given as needed. Further, these facilities use participative management to enhance productivity and profitability.

Most of the time there are simple solutions to complex problems. As Jack Welsh (former CEO of General Electric) said: "Business is simple, don't make it overly complicated."

Take care of your equipment, train and listen to your employees, and promote best practices in maintenance and manufacturing. With these obvious common sense line items taken care of, some of your nagging manufacturing issues and problems may fade away. **MT**

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