

Manufacturing Audits

Perhaps your costs are rising, but your prices must not and you are being challenged by new competition, often from cities and provinces you've never heard of, let alone know how to pronounce. One tool North American producers, facing these issues, turn to is the manufacturing audit---the practice of collecting and analyzing the data associated with your operational processes.

Typically, manufacturing audits are performed for three reasons. First a new product or process is being implemented within a business. Second, goals for the next year, or period of time are being developed. Third, there is a sense that a more thorough understanding of specific manufacturing parameters will help improve the production process. Manufacturing audits are performed for a wide range of business sizes. While multi-billion dollar organizations may have precisely specified and staffed their continual improvement commitment, much smaller organizations, without that degree of infrastructure, also benefit from capturing precise data about their manufacturing operations.

Setting the table

When conducting a manufacturing audit, it is often helpful to have someone outside the organization conduct it. An external perspective can bring the experience of other manufacturing environments, as well as knowledge of the basic processes and the areas for improvement normally targeted. One choice is to pay an outside consultant with industry experience to perform the audit. Another option is to work with a supplier or multiple suppliers to complete the review of manufacturing processes.



It is also important to make certain that the audit process has management buy-in. Not just senior management, but also buy in from line managers and supervisors who interact with manufacturing employees. Another way to maximize the value of an audit is to make certain that the event is announced in advance of being performed and described as a way to improve a process or to plan for the future. Any worker perceptions that audits are being done to catch mistakes, interferes with successfully capturing the actual day-to-day activities and measurements.

Conducting the audit

Key issues that are normally included in an audit cover:

- A breakdown of the production process into key steps and measurement of the time for each process, the common issues or problems occurring in each element of the processes steps, as well as common remediation efforts
- Documenting the various types of machines or equipment being used, whether it's the specific type of spray gun, the granularity of the filtering mesh, the type of machine used for injection molding, the style of rubber manufacturing or the order of application for composites
- Capturing the precise timing of each step for that particular manufacturing process
- Manufacturing audits also note the type of materials in use, both raw and processed, the pressure, speed, volume and temperature at which each material is being used

- Manual steps -- like demolding or quality inspection are also a highlighted area
- Observing multiple shifts throughout the day when possible and over a period of time greater than for a single day -- noting human variations in the process may also be helpful in gathering and assessing results.
- Finally, any special items like cleaning, mold conditioning, health and safety issues are also reviewed and documented.

With the data, one can recognize anomalies, understand how actual performance tracks to the expectations originally held by management and use the newly established baseline to track future improvements.

Mining the data

Once the data from the audit has been compiled, that data can be analyzed to suggest priority steps for process improvement. This is true whether the goals or areas for improvement are known prior to the audit or if those areas for improvement are to be set based on opportunities the audit data reveals. While smoking guns and silver bullets are much in demand, most often the areas of focus after a manufacturing audit are more subtle. Improving existing performance or setting up for effective initial performance on a new process tends to focus on day-to-day issues, setting goals, then managing small variations in process, materials or volumes rather than dramatic shifts. Providing training and retraining is can also be critical to achieving the manufacturing goals. This type of change isn't easy because it requires ongoing attention to detail, but it is impactful.

Taking action!

Once there has been a review of the data, staff may recognize a correlation between the process measurements and the production output---whether there is performance excellence or a performance problem. Once the analyses yield conclusions; there is agreement on areas of improvement to be targeted and the identification of the implementation steps, it's time for action! It is also time for communication to all parts of the organization involved in implementation. To play their part in addressing the issues for improvement, supervisors, line workers, engineers and managers all need the information to participate effectively. Tracking and reporting on progress helps reinforce the necessary changes. Success in responding to a manufacturing audit, builds a culture of confidence--being able to execute on performance goals.

If you have a new process that needs a manufacturing audit or as you head into the new year, if performance improvements are on your agenda, don't forget to call the professionals at Huron Technologies, Inc. Our chemists, operations staff and engineers are happy to help you gather and analyze data on your manufacturing processes. With that information in hand, your efforts to streamline performance will be on a solid foundation. Call **1-800-275-4902** to schedule your manufacturing audit today.

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