Business Solutions

Your Profit Improvement Partner

Manufacturing Automation

In an effort to become more competitive, increase profitability, improve quality and meet or exceed customer's schedules, companies are turning to automated manufacturing processes. These processes are based on increasing production throughput, improving quality, work consistency and increasing profitability. By focusing on automation, companies have experienced profit increases of 50 percent or more while shortening lead times, improving quality and customer satisfaction.

Most companies do not have the time, in-house expertise or experience to evaluate the needs for the automated processing of their products. This could have significant drawback on the potential to increase the financial status of the business. By focusing on this area, huge paybacks can be obtained in many areas of manufacturing such as, labor requirements, inventory requirements, profitability, SPC analysis, data collection, reduction of rejects, decrease in rework, etc.

All businesses have the opportunity to automate many of their processes to provide increased throughput and better financial performance of the business. The automation of a process can be as simple as providing pneumatic tools verses hand tools for the assembly of the product or can be changed from manually controlled equipment to fully automated PLC (Program Logic Controlled) systems by the modification of existing equipment to add automation. Careful consideration must be given to the evaluation of the best methods to provide this change to the process when analyzing the production capability.

The Process-

In an effort to start to evaluate the needs of a manufacturing business, CEO's executives will be involved in the day-to-day business of manufacturing your products. This is done initially to obtain a full understanding of the manufacturing process that is presently in place and the costs associated with the present process. This in-depth study is performed with your manufacturing employees and leads to a full and complete understanding of the process as well as, the

employee view of how improvements can be accomplished. Once this has been completed, an analysis is performed as to where the best opportunities for automation exist in the manufacturing process.

Upon completion of the analysis, a proposal is rendered to management with a suggested course to take for the automation process. Once the review is completed and accepted by management a full cost and capital payback analysis is performed. Since the process automation could include some capital investment on the part of the company the payback analysis will help to guide management on the best course to follow for this project.

Approval to proceed-

Once we have the approval of management to proceed CEO will evaluate both the hardware and software needs to implement the planned automation.

Let's use the example of a piece of machinery that is producing plastic labels that are individually bar coded.

> -The existing process provides for operators who need to feed raw plastic pellets into the machine, wait until it is molten and then start the process of making the plastic labels. Each step of the existing process is labor intensive and requires constant monitoring. At the end of the process a quality inspector samples the output of the system and makes a decision whether the batch can be sent to the customer.

The recommended **automated** changes to this exact process that was developed by the CEO executive provides the customer with many advantages to reduce the labor intensity and provide automated quality inspection as well.

> -The existing system is fitted with PLC hardware, which is programmed to control the entire process. The raw plastic pellets are staged and inserted by a robotic arm with ample time to melt to the correct temperature (which is monitored by the PLC device) to allow the process to flow unimpeded. The entire process of the plate manufacturing is controlled and orchestrated by the automated control system. The plastic plates are inspected to a specific criterion that has been agreed to between the company and the customer. This inspection is performed by a Vision System that is programmed to view each piece that is completed (not just a sample) and open gates to allow for acceptable product to ship to the customer and other gates are for rejects that can be classified by defect type. Some that can be repaired will flow to a repair section while other non-repairable rejects are sent to have the material recycled if the process allows this to occur. The gates are automatic controlled by the PLC and Vision system software. The Vision System will also interrogate the bar code labeling of the plastic pieces and guarantee the quality of the code.

If each piece has a unique bar code label, the Vision System will not allow duplicates to flow through. The system can also package the product, provide outer box delivery labeling and inventory control.

The example is just for the purpose of describing the process that could be controlled. The equipment exists and CEO has actual hands on experience with this type of automation.

-Other processes can be as simple as the mixing of various chemicals in the manufacturing process such as, paint manufacturing where certain chemicals need to be precisely mixed to develop the correct consistency for the paint and its color. This is accomplished with solenoids controlled by liquid level detection devices that turn the flow of material on and off at specific process levels. Once again automation taking the guesswork and errors out of the manufacturing process.

The investment and pay back-

Once the process is in place the value of these steps can be immediately captured. The payback comes in to the formula not only from a monetary point of view but more importantly from a process control point of view. The system collects the process data, SPC information and provides reports for analysis that will allow further improvements in margin and profitability when the rework and reject rates have been properly dealt with by the manufacturing engineering team. The speed of the manufacture of the product can also be tuned to meet the ultimate efficiency needed to process the material.

The Automated Manufacturing process is not new but it is a tool that needs to be used by business more often to help to increase profitability and reduce all costs.

Contact CEO Business Solutions for a no obligation consultation on improving your bottom line.

COOPERATING EXECUTIVES ORGANIZATION, LLC
P.O. BOX 290 GREENLAWN, NY 11740
PHONE: 631-261-1507 FAX: 631-754-0342
E-mail: CEO-1@MSN.COM
www.ceoadvice.com