FIND YOUR WAY THROUGH AUTOMATION

Manufacturing Automation and the 5 Things to Consider First
There are a lot of options out there when considering automation for your assembly and production processes. Those "innovative automation" solutions once only reserved for large automotive plants, are now being deployed in a variety of industries and by small or medium sized businesses. And like so many other industries, the manufacturing and production sectors have experienced a rapid rate of customized consumer demands and more complex challenges. This has many organizations wondering how they can become more agile, and more productive. Factors like scarce or dwindling labor resources can send an otherwise successful manufacturing plant into a trajectory of instability and overwhelming productivity. Manufacturing and processing plants are left with the challenge of how to do more, with less.

As we know, successful manufacturers look for opportunities of growth and stability. And chief among those opportunities are improved and scalable automation solutions that combine current day applications with forward-thinking advantage. Automation has now become the solution of choice for small to medium sized manufacturers looking to boost productivity, improve quality in their operations, and to help maintain competitiveness. Production Managers are finding that mounting costs associated with high employee turnover, fewer skilled labor resources and complex consumer demands, are resolved with automation solutions.

If you’re thinking about automation and looking to learn more about how you can improve your processes, offset labor inconsistencies and increase productivity, there are several important factors to think about. The list below includes the five most crucial elements that are considered by manufacturers when evaluating automation solutions.

"Automation has now become the solution of choice for small to medium sized manufacturers"
1. LABOR

AVAILABILITY AND SKILL IN A MODERN MARKETPLACE

A common myth about automation is that it replaces work that humans can do, displacing many from economic prosperity. On the contrary, automation allows humans to fulfill jobs and tasks that require human reasoning and logic, while removing them from hazardous, unsafe or repetitive tasks. Manufacturing jobs that demand repetitive, precise and monotonous work are often impossible to fill as the negative physical or psychological impact on humans is far too costly or risky for the average employee. In economies that are doing well, the struggle to fill these roles with qualified workers can be a crippling blow to a business’ production time and quality. Automation tools offer manufacturers the opportunity to recruit, train and retain a more skilled and satisfied workforce while at the same time, increasing and improving production output realized by automated solutions.

An automation platform with an easy learning curve makes it possible to re-scope a traditional line position with minimal investment. Strategically repurposing unskilled workers to more skilled tasks not only enhance the manufacturer’s bottom line, but also improves the workers’ skill sets. This is a win-win situation - the employee gains added skills, expertise, and job satisfaction, and the manufacturer gains the benefit of profiting in a competitive marketplace.

"Automation tools offer manufacturers the opportunity to recruit, train and retain a more skilled and satisfied workforce"
Consider what an automated solution can mean to your company’s bottom line. What value can automation provide over time and how long will it take to achieve a return on the total investment? When calculating costs, be mindful of all the components required, some expenses that often increase the project budget, are more than the price tag of the manufacturing automation tool itself. You’ll want to consider hardware and software cost, programming time, work cell integrations, employee training, usage (hours) and other customization costs.

Before researching automation solutions, make a list of the tasks that have potential for automation in your factory, then document the goals you hope to achieve.

Look beyond ROI – consider cost savings beyond the hardware solution:

- Increase productivity
- Use of factory space
- Improve process/product quality
- Mitigate labor fluctuations & availability
- Reduce ergonomic hazards
- Increase your competitiveness and grow your business

### Example: Business Case

#### Current Situation

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<tr>
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<tbody>
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#### Automation Investment

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<td>Additional Hardware and Services</td>
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<td>Total Investment</td>
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#### Yearly Running Costs $108,000

#### Automation Investment $45,000

#### Annual Savings $103,000
3. FLEXIBILITY

RAPID AND FLEXIBLE RESPONSE TO CUSTOMER DEMANDS

Automation should be flexible enough to meet existing and new challenges without significant investment in specialized and time-consuming reprogramming.

The advantage of automating with collaborative robots is the speed with which you can get a system into production at your factory.

Automation shouldn't require extensive programming in order to deliver value to your business and your customers. When evaluating automation for your factory, keep in mind the following:

• How quickly the automation can be up and running “out of the box”
• If it comes complete with everything you need to get started
• How easy it is for staff to begin using it
• Availability of pre-programmed tasks
• Already integrated – the hardware, software, ease of having an integrated solution ecosystem

When researching collaborative robots, it’s beneficial to review customer case studies as they provide great insight into the many possibilities and applications. During your research, pay close attention to the following items:

• The types of applications you need: machine tending, palletizing, inspection, testing, loading/unloading, kit packing, etc.
• How long a production line will be down while implementation is taking place
• The versatility of your automation and if it can address short run operations
Automation is no longer just for the auto industry. As a matter of fact, smaller manufacturers around the world are rapidly increasing their use of automated solutions. The perfect automation tools are those that don’t require a lot of time to use, engineering degrees or even a technical background. Production line employees should be able to program and deploy automation in a fraction of the time that it takes to hire and train a new factory employee.

Automation tools should be designed for people, simple and intuitive to use with minimal training required. They should be easy to use by anyone on the production floor with no special technical skills or programming required. One key principle in finding the right automation solution is that it easily integrates into existing production lines and has the flexibility to be utilized in more than one application. Collaborative robots offer flexibility, easy integration and can be up and running quickly.

The manufacturing world is at a cross-roads and technologies are reshaping how factories operate, learn and connect. With complex challenges in the production and quality of goods, the automation tool you ultimately choose should include:

- An intuitive platform that anyone can understand
- The ability to be used for different applications
- The integration of and coordination within work cells
- Software updates that increase the value of the hardware as well as the addition of new features and capabilities

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5. STRATEGIC ADAPTABILITY

WHAT DOES THE COMPETITIVE LANDSCAPE LOOK LIKE?

Today, automation is inexpensive enough to provide a rapid return on investment – even for small and medium sized manufacturers with changing product lines. It’s been shown time and time again that small to medium sized businesses benefit greatly from thinking outside the box of human limitations to a world where automation provides limitless functionality and value. For manufacturers that are challenged by shrinking employee availability, skilled labor shortages and high consumer demands, automation serves to propel production forward into the future.

As manufacturing processes evolve to become smarter and more connected, less agile competitors that are too slow to adapt will be left behind. Manufacturers around the world are realizing that automation - and specifically collaborative robots - offers not only the potential to re-define operational efficiency and output, but also the potential to reduce rising labor costs in increasingly competitive markets.

Learn even more about automation using collaborative robots with Universal Robots.
ABOUT UNIVERSAL ROBOTS

Universal Robots was co-founded in 2005 by the company’s CTO, Esben Østergaard – the 2018 Engelberger Award Winner – who wanted to make robot technology accessible to all by developing small, user-friendly, reasonably priced, flexible industrial robots that are safe to work with. Since the first collaborative robot (cobot) was launched in 2008, the company has experienced considerable growth with the user-friendly cobot now sold worldwide. The company, which is a part of Teradyne Inc., is headquartered in Odense, Denmark, and has subsidiaries and regional offices in the United States, Germany, France, Spain, Italy, Czech Republic, Poland, Turkey, China, India, Singapore, Japan, South Korea, Taiwan and Mexico. In 2017, Universal Robots had a revenue of USD 170 million.

For more information, please visit www.universal-robots.com or read our blog at blog.universal-robots.com.