

Robotics Integration Solutions for the Metal Manufacturing Industrial Companies in the United States, Canada and Mexico



Kent Lorenz
Chairman & CEO

CEOCFO: Mr. Lorenz, would you tell us about Acieta?

Mr. Lorenz: Acieta is an industrial robotics integration company. We primarily serve the metal manufacturing industrial segment. Whether a company is welding, pouring, bending or machining metal, they are a candidate to have robotics integrated into their manufacturing processes. Acieta's goal is simple; reducing our customer's manufacturing costs while their improving quality and increasing their production by integrating robotic automation. We have two locations: one in Milwaukee and one near Omaha serving Canada, the US, and Mexico.

CEOCFO: Are most companies in the industries working with robotics?

Mr. Lorenz: The Robotic Industry Association (RIA) tracks robotic adoption throughout the world. Right now, the RIA is reporting that the US is currently at 150 robots per 10,000 workers in the manufacturing sector. Japan is over 300 and Germany is just under 300. RIA's projection through 2025 is that robotic adoption in the US will double to 300 robots to per 10,000 workers. That may seem like a large increase, but frankly speaking, it merely gets us caught up to where Japan and Germany are today.

CEOCFO: Would you give us an example of where robotics is helpful?

Mr. Lorenz: In North America, most industrial robots are installed in one of two areas; the first is Material Handling and the second is in Welding. Material Handling applications tend to be rather straight forward as the robot does not have any direct responsibility in the manufacturing process, but rather is moving a part from point to point. A typical application for us it to load and unload a line of CNC machine tools. These are computer controlled milling machines or turning lathes where a traditional lower skilled operator would simply stand in front of each machine tool, open the door, put the part in and close the door and press the button, wait a minute and take out a finished part. This generally is an excellent job for a robot for a number of reasons. The largest benefit being the increase productivity from the machine tools. Because automation is always there waiting with the next part at the end of each cycle, our customers often see an increase in productivity from 25% to more than 50% per shift. There is also a Direct Labor savings due to the reduction of the cost of the operator, but this often times secondary to the increase in daily production.

A more complex application is when the robot actually is responsible for a manufacturing process, like arc welding. In robotic arc welding systems, the robot is actually welding the parts together and as a result, must take in to account multiple variables in real time as it welds in order to insure that high quality welds are made. The welding process itself controls the speed that the robot welds, however, robots can move weld to weld very quickly and the result is that robotic welding is four to eight times faster than manual welding with highly consistent weld quality. Production volume is significantly increased while costs are reduced and weld consistency improves significantly. All of this help make our customers more competitive on a global basis.

CEOCFO: When a company comes to you, do they typically know what they want?

Mr. Lorenz: Many times we are called into a facility where the Manager of Manufacturing or VP of Engineering would like us to look at a very difficult application. It may be a very difficult job, or it may dangerous. We will look at the application and give them an estimate of what we think it might take to automate the job. We also explain the level of risk we believe the application represents.

As part of this visit, we always ask if we can walk the entire shop together. The reason we do this is we have sold and installed now over 4,000 robots in the history of the company and as such, we have seen just about every industrial application out there. Often times we asked to look at one application but at the end of the visit, we will have identified three or four other applications of much lower risk and many cases even a better payback and we tend to recommend starting with the lower risk applications first. We generally do not recommend putting the first robot in a customer's facility directly in to the most difficult application in the plant. It is a crawl before you walk type "strategy" that helps insure a successful cultural shift to robotics in a facility.

CEOCFO: *What are some of the challenges or concerns about working with robots?*

Mr. Lorenz: Of course, Safety is first in everyone's mind and we design redundant safety systems in to every system we provide. As an industry, we have created a very defined set of safety standards that most integration companies follow as well.

Probably the largest challenge is automating older equipment that does not utilize today's more sophisticated controls and sensors. As a result, we must take in to account all of the activities an operator is performing and in most cases, it involves, the operator's five senses. As an example, an operator may hear when a cutting tool is getting dull and replace it as needed. We need to automate this activity as part of the automation of the process.

Finally, some people jump to the conclusion that robots are eliminating everybody's jobs. The truth is that the data it suggests just the opposite. Adding robots in a factory tends to create jobs. As manufacturing production returns to the U.S., new job are being created not just directly related to the robots being used but also in the new (or updated) factory in general.

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Progressive manufacturers are telling us that they want to start with a clean sheet of paper as they bring work back from China, Mexico and Eastern Europe. They prefer to build their new factories with state of the art machinery and automation. This changes the complexion of the manufacturing process significantly in that we are no longer trying to embed human capabilities as part of the process. Rather, the goal is to create manufacturing processes that do not require human intervention.

Finally, sensor technology has improved significantly over the last ten years. We hear about the "Internet of Things", which now is being implemented on the factory floor with new sensors and better controls and process monitoring. As an example, robots have had two-dimensional vision for almost 20 years but today; we now have 3-D vision available for robots. Using this new vision capability, robots can pick raw parts randomly out of a bin or a tub. We also now have tactical sensing where the robots can actually "feel" the part it is holding. We are able to use technology today in places where literally just five years ago, it didn't even exist.

CEOCFO: *How does robotics fit in with green manufacturing?*

Mr. Lorenz: When we talk about robots being green, it is the productivity that a company gains when it uses automation over manual labor. As we discussed earlier the plant typically ends up producing more product with the same physical footprint. The net effect is a customer is actually able to produce more product per unit of energy consumed and per unit of greenhouse gas emissions per unit of product produced. In addition, we look at the power that the robot actually uses on a day-to-day basis. There is a significant reduction in the carbon emissions just from the worker(s) no longer driving to and from the factory (per shift) versus what the robot consumers for in electricity each day.

CEOCFO: *What is involved in maintenance?*

Mr. Lorenz: Robots consist of primarily electric motors, gears and castings. There is not a lot of maintenance beyond the typical things you would do to any piece of machinery on a factory floor. You have to change the oil and grease certain areas, update software from time to time. That is about it. They are not maintenance-free by any stretch but they certainly are low-maintenance relative to other equipment on a factory floor.

CEOCFO: *What is new in robotics?*

Mr. Lorenz: I mentioned earlier that 3-D vision which is something where we are really starting to gain some traction. Five years ago it was really an experiment and today it is something that we are doing a lot more of with customers. It changes

the dynamic a lot for automation in the sense that we do not have to spend a lot of money in expensive fixturing on inbound parts. We do not have to have somebody unload a big tub and put them in dedicated bins or drawers or fixtures.

The other thing we are starting to see are the introduction of Collaborative Robots. Collaborative Robots are generally referred to as robots that do not require any safety systems because they can sense when they come into contact with a fixed object or a person and they stop. They are relative slow so there is not a danger to the operator of being caught or pinched somewhere. They are not particularly powerful and tend to lift 15-20 lbs. at the most. They are designed to work side-by-side with people. We bought two collaborative robots earlier this year to better understand their capabilities and how we would want to apply them in the future. When I look five years from now, I'd estimate that 30% of our business will be in what I would call today the collaborative robot space.

CEOCFO: *How do potential customers find you?*

Mr. Lorenz: We have a website and we receive a significant volume of leads from people finding us on the internet. We also attend a number of tradeshow that are specific to the industries we serve and we get good leads from there. We have fourteen salespeople located across the country that call on specific geographic areas. We also work with channel partners who bring us leads from their customer base as well.

CEOCFO: *Why choose Acieta?*

Mr. Lorenz: We have a segment on our website that helps users better understand what to look at when choosing a robotic integrator. Robots can do many things. However, an integration company will generally have a specialty or at least an area of expertise. When you are looking for a robot integrator make sure that this is not the first time they are doing an application that is outside of their normal core business. You want to make sure you are leveraging years of wisdom that the integrator has gained over the years. We've installed over four thousand robots and we have not done them in painting, pharmaceutical, or food. We have standardized or specialized in the metal manufacturing in industrial segment.

Just as important to the integrator's expertise, you also need to look at the financial strength of the integrator. Acieta is owned by a very large Japanese company called Mitsui & Co. What that gives me as the CEO is access to working capital very quickly as I need it. So as the business grows, I am not hampered by a lack of access to capital. We see integrators from time to time go out of business because they were undercapitalized and they were not able to take on the work that they wanted to because they simply could not finance it. It is not unheard of for a small integrator to have one major project go bad and have to file for bankruptcy. They did not do necessarily do anything technically wrong, they simply ran out of cash to run the business. Two things that I always recommend is to make sure you are talking to somebody in their area of expertise and make sure they are financially strong and can withstand a storm or two.

CEOCFO: *And Acieta can do both?*

Mr. Lorenz: Yes we can do both!

Interview conducted by: Lynn Fosse, Senior Editor, CEOCFO Magazine



Acieta LLC.

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