

Welding Automation: A Forum for Small and Medium Companies

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The Welding Automation Forum was held in Edmonton at the NAIT Shaw Theatre, Wednesday, January 24. I attended the forum to meet other small business owners and government industry people. Here are some of my thoughts and observations:

During James Cleland's (www.alberta-canada.com/manufacturing) speech I was struck with the seriousness of the labor shortage in Western Canada, we are actually at a point in history where there are more jobs created than qualified people to fill them. During the course of the Forum it was quite obvious that technology is providing a partial solution to the labor shortage. You simply do not need as many humans to produce the same or better quality product. The systems pay for themselves, particularly during this busy time for the petroleum industry. I paid close attention to James' speech because he is the Director, Metal Fabrication, Investment and Industry Development Alberta Employment, Immigration and Industry and the person responsible for the forum. I don't know James well, but what I do know is that he came from industry where he was vice president of a major Alberta manufacturer. James has also installed three ERP systems during his time in private industry.

Thought for TTC is that we should be able to help the metal fabrication industry with a specialized career website. We are doing that now for the NDT inspection industry and will investigate the viability of doing this for our metal fabrication industry in Western Canada.

Next up was Doug Schindel, President of Weldco-Beales Manufacturing (www.weldco-beales.com). Doug is an Engineer and has seen his fair share of automation and put together a compelling presentation. Doug is a bit of a visionary in the area of automation as he has forcefully discovered that automation is easy to install. The hard part is creating an automation culture. This culture is quite different from the old hand's on culture. This is more like a "technician in a lab coat". Doug also referred to his friend and colleague James M. Berge. Mr. Berge is a guru in the field of automation and robotics and has written a book on the subject, "Automating the Welding Process", and located at the website, www.saveyourfactory.com. Doug also mentioned a serious labor shortage in Western Canada, looks like we can help with our career website.

Mike Krolick and Aaron Crytes from Lincoln Electric (www.lincolnelectric.com) presented their systems, very impressive indeed. They basically have high voltage precision equipment that is fully integrated to ethernet protocols so the robots and welding equipment are all run over the network. The operator could literally be anywhere in the world and operating the equipment. This is unlikely in most instances, but possible. The other advantage is data capture. We have all learned now that information is worth something and information put into a database is worth many more times just raw data or information and a system to retrieve that data into meaningful reports and Key Performance Indicators (KPI) is the ultimate and coveted position for any company. Lincoln Electric is making this available today, this is very powerful business tools for any business. The old days only the big guys could have this, now companies like Lincoln Electric are making this available for the SMB market. I see a fit for TTC to provide an **ERP system** that uses this data to create reports on productivity, profitability, and efficiency.

Fanuc Robotics (www.fanucrobotics.com) was next up and they are specialists in the robot itself. They would be hard to beat by the looks of their solution. Tim Dolan and Mike Sharpe were the presenters. They have an outstanding product and they are proud and confident of the performance of the product. Mike was the main presenter and the Engineering Manager, Materials Joining, FANUC Robotics America, Inc. Mike has a cool job and obviously enjoys every second. They have an enormous amount of R&D going on right now and they use their robots all over their shop floor, they practice what they preach, good lesson for all of us. The robots are incredibly sophisticated, accurate, capable, and networked. The robots also produce a fair amount of data that is stored for later analysis, makes me think that we could help FANUC with some of that by integrating the data into our **Jobsite Toolbox** for creating specialized KPI reports. Mike was interesting in that he led off his presentation with the qualities of a skilled welder. Knowledge, Experience, Cautions, Accountable, and Productive. He then went on to make a very convincing case for robots possessing all of these attributes. Good speaker, easy to listen to, and believable, thanks Mike.

Darl Osborne from the Genesis Systems Group (www.genesis-systems.com) was next up. Darl provided a complete package for anyone trying to build a case for automation in their workplace. Not only did Darl provide all the benefits (by this time it was a rehash of all previous presenters) but he wasn't shy to lay it right on the line and show that we no longer need three welders we can get by with a \$30,000 Technician and an automated rig. The savings are staggering and pretty much obvious to even the casual observer.

It was Carl Heinrich of Roboweld Inc. (www.roboweld.com) that really got my attention. Carl was a long time employee before he had the gumption to go off on his own and start an automation integration and consulting business. Carl has nice business that helps SMB's to get setup. Carl lives by sales of his services, but he is very specific about what he sells and doesn't try to talk people into it. He even rents out his own robots for companies trying it on for size. Carl's practical approach is much like our approach at TTC, don't sell things to people that they don't need, they will not appreciate you for that.

Ian Reid is an amazing person. He is the President of Finning Canada (www.finning.ca). Finning Canada is part of Finning based in South America, UK, and Western Canada. Finning is the largest Caterpillar dealer in the world and Ian's unit does over \$2.5 Billion per year. Ian is also a volunteer in several charities and community organizations, I enjoyed his humble and visionary presentation. Ian is truly a leader in Finning and has led them through a period of high "lost day" incidents. They went from 168 lost days in 1996 to 12 lost days in 2006. Their goal is zero and it looks like they are going to get there through their "Getting to Zero" program. Ian was very accommodating as he shared their recipe for success. They found in 2002 that they needed to change and it was after this revelation that they instituted the "Incident Reporting and Review Protocol". The protocol is simple, there is a checklist that is gone through after each injury (no matter how serious) and present at each of these reviews is the vice president responsible for the person injured, the person's manager, and the person injured. This meeting is to take place within an hour of the injury, no matter what. They also instituted a stamp that is placed on each of their proposals. The stamp is as follows:

		Probability			
Severity		A	B	C	D
	4				✓
	3				
	2				
	1				

This simple idea has made them seriously consider risks to their company and makes them even rank the probability of an occurrence. I like this idea for including in our [Toolbox](#) for all future proposals that are created from the Toolbox. I think it is little gems like this that really help an SMB become successful and stay successful.

Don Schwemmer, President of AMET (www.ametinc.com). Don had several high-end solutions and made a good case for automation. AMET systems are also creating good data that can be used for business reporting, interesting company.

Don Bunch (www.bunch.ca) was next up. Don is a business owner with a shop in Rocky Mountain House. Don is also a keen supporter for Alberta Apprenticeship and Industry Training Board. He has certainly had a good run of fortune by investing in that program. He has several highly qualified people who have come from the apprenticeship program. Don is also a person who enjoys the high tech aspect of welding and is right into laser welding, automation, and robotics. I will be giving Don a call to discuss ways to get the apprentices signed up and their resumes available to Western Canada fabricators, manufacturers, and job shops. Don presented the Association of Science and Engineering Technology (ASET) program (www.aset.ab.ca/). The ASET program is a valuable source of producing certified wire process operators. There are also eight trades currently being considered for this program. The industry dictates their needs to the ASET and programs are created based on the needs (<http://www.advancededucation.gov.ab.ca/appren/>).

Mr. Anurag Pandey, Senior Director, Strategic Manufacturing Economic Strategy Implementation Branch Alberta Employment, Immigration, and Industry (www.alberta-canada.com/manufacturing) was next up to the podium. Mr. Pandey is a colleague of James Cleland and respected industry pundit and has experience with the business at all levels including management and has experience with ERP. The best piece of advice for the group regarding ERP came from Anurag, he warned that ERP does not replace project management and that for day to day project management Microsoft Project is hard to beat. I think Anurag would be pleased with our simple project scheduling system that is specially designed for SMB service and manufacturing businesses. Lean thinking was the theme of Anurag's presentation. He also outlined why automation projects sometimes fail, biggest reason is the failure to communicate with employees and stakeholders. So it is important to get the word out, get buy-in, balance the work load, train the people using the automation, and run a lean organization.

Of course I enjoyed Mr. Mave Dhariwai's presentation. Mave is just like some of my more outgoing Professors during my MBA studies. He has a clear understanding of project management and the process. I think we may have had some of the same Professors! Mave is the Chairman of the Mechanical Engineering Technology and Productivity Enhancement Services at NAIT (www.nait.ca). I left that presentation feeling that each of our young or new managers should go through the local NAIT or SAIT courses to get an understanding of project management. It is one of those jobs that looks easy and like something any "smart guy" can do. The fact is that there are tools, techniques, and processes that are tried and true and without training your staff to use these tried and true techniques you are setting them up to fail. It is important for SMB companies to think like the "Big Guys" if they are every going to break into the big leagues. Getting a Project Leadership Certificate is one of those powerful steps that a company can make to grow up, step up, and make a break through to the next level of business. I noticed that NAIT does teach about software tools that are available for Project Managers; I will have to give Mave a call to see if he would consider our [Jobsite Toolbox](#) and [MyCompany Toolbox](#) for his curriculum. Good luck with the new NAIT Centre for Manufacturing Solutions, they certainly have a good group of Project Managers to oversee the project.

My overall take on the Forum was excellent, good job James and Allison and all the others who put this together. I would like to see a forum for SMB's who want to improve their business process through using ERP systems and other collaborative systems that help management and executives to run their companies more efficiently and are looking to automate their business process. [Business Process Management](#) is a big deal today and rightfully so. For a fraction of the cost of automating welding, manufacturing, and physical processes we can improve our company's bottom line, well being, and credibility.

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