

# EXPERT INSIGHTS ADVANCED MANUFACTURING TECHNOLOGIES

Car retailers aren't the only organizations contending with sweeping changes in the automotive industry. Manufacturers and their suppliers also face significant challenges – as well as great opportunities – as they embrace Industry 4.0. How will this burgeoning emphasis on “smart” manufacturing, which will leverage things such as digital interconnectivity, machine learning, artificial intelligence and real-time data, affect the industry? Experts David Linton from BDO Canada and Greta Cutulenco from Acerta Analytics Solutions Inc. offer an inside look as this revolution unfolds.



Greta Cutulenco and David Linton

**Q: How will Industry 4.0 change the way auto manufacturers and parts suppliers operate and what can they leverage from the data?**

**Greta Cutulenco, Acerta:** Automakers and parts suppliers that embrace Industry 4.0 and commit to digital transformation will become more data-driven in their decision-making. This will help them improve both efficiency and profitability. Leveraging data helps manufacturers anticipate problems, solve issues that occur during production and contain problems on the line. Canadian companies that adopt these technologies will become far more competitive and they'll set themselves up to combat some of the current workforce issues such as higher turnover and the limited availability of experienced personnel. Manufacturers cannot operate the “old way” anymore. Industry 4.0 will help them leverage automation and technology while supporting these new workforce realities.

**David Linton, BDO Canada:** Auto manufacturers will glean unprecedented insights to help them with decision-making in the production and sale of goods. By having near real-time access to integrated data, spanning from the plant floor to the C-Suite and throughout their supply chain, these companies will be able to adapt to changes long before they become a threat to production. They'll leverage data to get reliable forecasts and instant, up-to-the-minute key performance indicators. This will allow them to make investments with confidence to maximize the full value of their operations.

**Q: Can you cite an automaker that's already using digital manufacturing technologies? Any concrete examples of process or efficiency improvements?**

**Linton:** All automakers and many small-and medium-sized suppliers already use digital manufacturing technologies to some extent. The use of sensors and the Internet of Things (IoT) to collect production and equipment data is becoming mainstream, although many businesses still are determining how to maximize the use of the data collected. Larger organizations are adopting machine learning for automation of repetitive tasks, such as accounts-payable invoice processing and predictive analytics in areas such as demand-planning and maintenance. Most uses are related to driving operational efficiencies, which in many cases also reduce waste and/or energy consumption.

**Cutulenco:** In general, many manufacturers leverage our machine-learning and artificial-intelligence (AI) capabilities to combine data from their operations,

which provides them with a more efficient way to identify root causes of issues that impact their quality. For example, if products fail during typical end-of-line testing, they can use our root-cause analysis capability to identify early problem indicators. We also help them monitor every signal on the line and we alert their engineers ahead of time if we see something trending out of bounds or if we detect performance issues during any production step.

**Q: What challenges or obstacles stand in the way?**

**Cutulenco:** Digitalization of existing operations often is perceived as a large investment. Adding sensors to every piece of equipment or replacing equipment with connected industrial machinery is an even bigger barrier. However, with the industrywide shift towards electrification, manufacturers already are investing in new production lines and facilities, so it's a great time for them to also invest in digitalized technologies that will facilitate the real benefits of Industry 4.0. For those who cannot make a huge commitment immediately, we encourage them to start with the data they're already collecting and using in their day-to-day operations because our machine learning/AI solutions can add value out of the box.

**Linton:** Three obstacles come to mind. First, you must have buy-in from leadership. An effective change-management strategy must be in place to build a culture that embraces data and believes that there's untapped potential at stake. Secondly, investing in the right infrastructure to collect, clean and extract insights from the data can be quite daunting. Thankfully, the era of cloud computing has enabled the pay-for-use model, which makes this barrier much easier to overcome for businesses of all sizes. Lastly, it's challenging to recruit and develop a skilled workforce in this space. A multi-pronged approach that utilizes up-skilling, tooling and partnerships can provide all you need to succeed.

**Q: Is it expensive to integrate these technologies into existing processes? Are there any tax credit or financial-assistance programs available for small- and medium-sized suppliers?**

**Linton:** Software, compute power and data storage are all provided by cloud services providers and available via short-term subscriptions, which makes adoption much more affordable even for small and medium sized suppliers. Cost depends on scope and complexity; BDO recommends that organizations start with small projects and assess the potential return on investment for each initiative as their digital journey progresses. The landscape for funding is ever-evolving, but the government does want to invest in Industry 4.0 projects. Planning is key here, it's important to consider how the money is spent

(and make sure you haven't spent it yet!) and what's the benefit to small- and medium-sized businesses as well as to Canada and Canadians.

**Cutulenco:** If a company has not yet invested in any digitalization yet, it can be expensive to start from scratch. However, many new technologies are becoming less expensive and easier to adopt. For example, Acerta recently released the next generation of our core product, LinePulse 3.0, with an intuitive, configurable user experience. In the past, integration could take weeks.

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— Greta Cutulenco, Acerta

But now, customers can on-board their manufacturing data in less than an hour. Innovations like this drive down the cost of adoption and implementation of Industry 4.0 technologies. We're grateful that the province of Ontario supports this kind of technological innovation through programs like Next Generation Manufacturing Canada and the Ontario Automotive Modernization Program, which supports smaller automotive manufacturers. Across Canada, the Scientific Research and Experimental Development program also helps companies offset costs.

**Q: What factors will separate the winners from the losers as digital manufacturing technologies progress?**

**Cutulenco:** I believe that implementing innovative technologies will create the winners of tomorrow. With these technologies in place on their lines, automotive manufacturers and parts suppliers can achieve leaner operations and higher profit margins.

**Linton:** As digital manufacturing technologies become more widely adopted, the winners will be the organizations that execute a holistic digital roadmap. They'll use technology to drive operational efficiencies, both in production/assembly and throughout their supply chains; reduce waste and energy usage; design innovative products while at the same time reducing time to market; and collect, analyze and drive revenue from data and create new revenue streams. The winners will be the businesses that take advantage of technology in all aspects of their operations.

**Q: Do you expect automakers to form partnerships with tech companies to jump-start their digital-manufacturing journeys?**

**Linton:** Absolutely. While recognizing that no one knows the business as well as the small- and medium-sized enterprises inside it, partnering with tech companies will greatly accelerate the time to value creation. In fact, tech companies that focus on industry will be best positioned to break through the technology barriers with accelerator programs and internet protocols in order to design and execute a manufacturer's digital-strategy roadmap.

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**Cutulenco:** Yes and no. Although some partnerships exist, Industry 4.0 technology is serviced by many different suppliers, so I don't see many opportunities for defining exclusive partnerships where one supplier provides all digital functionality an automaker requires. For example, different companies supply automated equipment, digital work software, and advanced AI technology like Acerta's, which focuses on quality. Because of the diversity in solutions and possibilities, each manufacturer needs to decide on a business strategy and then work with best-in-class suppliers across the broad Industry 4.0 ecosystem to achieve it.

## ABOUT THE PANELISTS

### DAVID LINTON

**Partner and the national manufacturing and distribution leader, BDO Canada**

David Linton is a partner and the national manufacturing and distribution leader at BDO Canada, a leading global provider of professional services, including assurance and accounting, tax and advisory services. David has more than 25 years of experience working with mid-market and enterprise-level manufacturing

and distribution clients, advising them on technology, management consulting and risk-advisory services. [www.bdo.ca/en-ca](http://www.bdo.ca/en-ca)



### GRETA CUTULENCO

**CEO and Co-founder, Acerta**

Greta Cutulenco co-founded Acerta in 2017 to help automakers and suppliers make sense of their data. She was named to *Forbes* magazine's 30-Under-30 list for Manufacturing & Industry as well as a Canadian to Watch by *Automotive News Canada*. Greta is an Automotive Parts Manufacturers' Association board member and holds a bachelor's degree in software engineering from the University of Waterloo. [www.acerta.ai](http://www.acerta.ai)

