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Heartening news about Canada’s (Ontario’s) advanced manufacturing sector

Although Ontario lost many factory jobs in the past decade, the sector is doing better than what the narrative says

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Workers make glasses frames at North Inc. (then known as Thalmic Labs) in Waterloo, Ont., in 2018. The company, which produces glasses that use innovative human-computer control technology, was acquired by Google parent Alphabet Inc. last week.

Mass layoffs and factory closings fail to capture the full picture of a transforming sector Former Globe and Mail columnist and author of the Innovation Economy Council’s new white paper, *Factory Forward: How Advanced Manufacturing is Retooling Ontario’s Industrial Heartland*



There are two ways to look at last week’s sale of smart eyewear maker North Inc. to Google parent Alphabet Inc. Some see it as another example of a foreign giant swooping in and acquiring promising Canadian technology. But others consider it a sign of a much more positive and powerful trend under way in manufacturing here: The business of making things is rapidly moving up the evolutionary ladder.

North, based in Kitchener, Ont., produces glasses that use innovative human-computer control technology, which allows wearers to do much of what they do now on smartphones without using their hands. And it’s been making the devices in a place where many experts fear manufacturing is going extinct.

In Ontario, a quarter of a million factory jobs disappeared in the Great Recession. In the decade since, factory job growth has stagnated. Labour-intensive, high-volume manufacturing has continued to migrate to lower-cost locations such as Mexico. But the layoffs and plant closings aren’t telling the whole story. We need to shift the current narrative about manufacturing to align with reality.

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That's because, despite the lost jobs, gross domestic product from manufacturing has continued to rise at a steady clip. We are producing more with fewer workers. And much of the factory activity that remains is, by definition, advanced manufacturing. Robots, 3-D printers, sensors and powerful software are part of the new tool kits being used by today's manufacturers.

North is not an outlier. A report released this week by the Innovation Economy Council shows that a clutch of advanced manufacturing sectors are contributing an outsize share of factory job creation and economic growth in Canada.

These sectors – identified as advanced because they invest more in research and development and employ more high-skilled workers than other manufacturers – accounted for half of the roughly 45,000 factory jobs created in Ontario since 2010. Over that period, employment is up 98 per cent in agricultural chemicals, 45 percent in aerospace, 42 per cent in industrial machinery, 22 per cent in auto parts, 17 per cent in electronic components and 17 per cent in medical devices.

That compares with job growth of 7 per cent across all manufacturing industries.

In 2020, advanced manufacturing is often less about what companies make than how they make them and what knowledge gets embedded in their products. The trend is expanding the traditional supply chains of established manufacturers to include makers of software, clean technology and sophisticated medical devices.

NGen, the federal government's Ontario-based advanced manufacturing supercluster, recently surveyed its 2,500 member organizations, asking whether they identified themselves as manufacturers, technology companies or service providers. More than half checked all three boxes.

“That is reflective of the state of advanced manufacturing,” NGen chief executive Jayson Myers said. “You have to think of yourself as a technology company.”

The good news is that Canada has a flourishing network of tech suppliers that are helping to make people and companies more productive.

BlackBerry's Ottawa-based QNX division is part of a growing stable of suppliers digitizing cars and trucks. The newest vehicles built in Canada contain as many as 150 million lines of computer code and dozens of electronic control units. Electronics and software now comprise almost a third of a vehicle's value – a share that's likely to rise as vehicles become more electric, autonomous and connected.

Acerta Analytics Solutions Inc., which like North grew out of research and talent from the University of Waterloo, is using artificial intelligence to help automakers and vehicle parts makers detect early defects and wear. Clear path Robotics Inc. of Waterloo, Ont., makes powerful battery powered autonomous vehicles that shuttle loads of as much as 1,500 kilograms around factory floors.

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Manufacturers are packing more technology, software and services into their products, turning the ordinary into the innovative. Toronto-based Myant Inc., for example, is reimagining the functionality of textiles. The company weaves tiny sensors and actuators into fabric, creating wearable and interactive electronic devices. And there is Smarter Alloys, also of Waterloo, which uses lasers and advanced metallurgical science to program products such as orthodontic wire and energy saving generators to react in predictable ways when exposed to heat.

The pandemic is a powerful reminder that manufacturing matters – but today’s manufacturing, not yesterdays. Canada needs to raise the profile of our new advanced manufacturers and celebrate the established firms that are using technology to be more productive. We need to meet the future by expanding our pool of tech-savvy talent, by providing incentives for more companies to invest in R&D and by encouraging Canadian firms to work together to build supply-chain resiliency.

It’s not just about having the capacity to make our own personal protective gear and vaccines when global supplies are scarce, although that’s critical. The broader lesson is that making things is an essential part of a thriving innovation economy. If we do it right, we can cement Canada’s role as a global manufacturing leader for decades to come.