

A close-up photograph of a human hand in a black jacket sleeve holding a grey and blue robotic gripper. The background is a blurred industrial setting with blue and grey tones.

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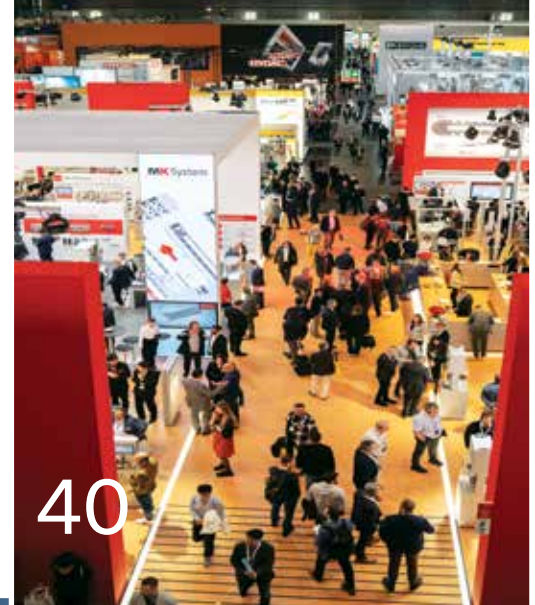
Meet manufacturers who are keeping the business in the family and seeing things transition between or within generations

Northern horizons

Manufacturing happens everywhere, so we'll introduce you to companies getting down to business from over the northern horizon.

Booking deadline: October 13, 2023

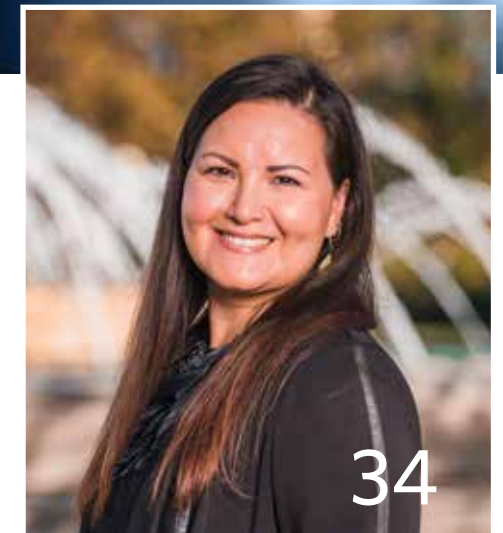
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Thank you!

Recognized by our peers, supported and driven by you

By Jeff Baker

Last evening (May 11, 2023), *Prairie Manufacturer Magazine* was named 2023 Manitoba Magazine of the Year at the Alberta Magazine Awards. This is our second time winning the award in three years, and it feels bloody amazing! But we truly couldn't do it without you.

Thank you to the readers who keep turning to *Prairie Manufacturer* as a trusted source of information, insight, and analysis of the region's manufacturing sector.

Thank you to the contributors and interviewees who offer their experiences, expertise, and good humour in sharing stories and intelligence with our community of readers.

Thank you to the advertisers who support the magazine by purchasing space within the pages and on the website.

Thank you to the Alberta Magazine Publishers Association for producing the Alberta Magazine Awards and extending the opportunity for out-of-province publications to participate in the program. This is why the business of magazine feels like a community, not just an industry – there's really no such thing as an 'outsider.'

And last but definitely not least, a massive 'high five' to my *Prairie Manufacturer* colleagues for your time, energy, and support as we continue this journey together. Each of us works to our strengths to deliver a great product with great content for each issue. We push each other to be better, and we do so with the aim of making a better magazine for a community who regularly focuses on continuous improvement!

We meet great folks, share their interesting stories, and put them into a fantastic product made by a great team who has some fun while doing so. It's nothing fancy – it's a variation on what your companies do everyday – but it just works.

The magazine industry continues to reinvent and renew itself, and it does so with a strengthened focus on service to the readers and the community. *Prairie Manufacturer* is living that renewal. We started out with more of a technical and process focus, looking primarily at what happens on the shop floor or in the executive office. In the ensuing years, we've shifted – based on the feedback from our readers – to focus more on the people

We meet great folks, share their interesting stories, and put them into a fantastic product made by a great team who has some fun while doing so.

and the personal stories behind the process and equipment. After all, there wouldn't be a Prairie manufacturing industry without Prairie people!

In that vein, we want to hear from you – our readers – about the accomplishments of your companies and your colleagues that can be celebrated far and wide. We want to tell more great stories from the amazing companies who call the Prairies home, and we want to help you thank those who support your own journeys. After all, industry is just another form of community.

Tech adoption (or the lack thereof)

In the Economic Roundup, Jay Myers uncovers some concerning statistics about why some manufacturers aren't embracing advanced technology and big data. More than half of manufacturers surveyed across the region say that they don't believe that advanced technology applies to their business activities; that it's irrelevant!

In today's world of the Internet of Things, where everything and everyone is interconnected and terabytes of information and data is being generated every second of every day, where you can use artificial intelligence to dive deeper than ever before into the workings of your business, not adopting these technologies could be seen like hanging a 'going out of business' sign on your front door.

Taking the bull(y) by the horns

On the human side, I had the opportunity to sit down with Dr. Maggie Penfold to talk about a topic that is probably all too

familiar for most of our readers: bullying. We chatted about what bullying is and isn't, what it can look like in the workplace, what we can do as individuals and as teams, and how workplaces and employers can support the targets and mitigate the damage bullying can inflict. We learn that bullying doesn't get left behind in childhood, why it happens, and if a bully can ever really be reformed. The answers might surprise you.

Keep your friends close, and the AI closer

In this issue's feature article, we explore the reality created by the meeting of manufacturing and artificial intelligence (AI) and extended reality. You'll meet a craft brewing company that left everything up to the AI brains-trust for their newest beer creation – including the recipe, the packaging, and the description on the cans!

Plus, you'll meet an engineering professor who is working to open up the field for Black students in Alberta and across Canada, all the while finding new uses for artificial intelligence and technology-integrated smart coatings for machine parts.

Looking ahead

Over the summer, we'll be working on content for the fall issue, and I'm looking for your help, dear reader!

We're looking to meet manufacturers who are keeping it in the family and seeing the business transition between or within

generations, and even those where everyone in the family is involved in the business in operations and/or leadership. If you know of a great manufacturing family story, please send it my way.

You'll also meet some manufacturers who are getting down to business from over the northern horizon. After all, manufacturing isn't just a southern story – the northern reaches of the Prairies and the territories are also home to some innovative and inspiring companies and folks.

Prairie Manufacturer continues to be a magazine for and of this region's manufacturers and their supporting partners, so it's only right that your voices are heard and stories are shared in the pages you hold before you. If there's a concern keeping you up at night, or if there's a manufacturing story that you think we need to know about, please get in touch.

And if you're on social media, be sure to follow and like our pages on Facebook, Twitter, and LinkedIn. Those are also great ways to keep in touch with us!

So, until we chat again, I hope you enjoy the read.



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You've got to adapt!

Being adaptable in the face of change and adversity is smart for you and your business

By Kara Finney

More than ever, the feeling is that ongoing challenges are becoming not just part of every day's events but are becoming defined as 'just another day.' Many folks in industry are at the point of 'how do we survive this one?' Those experiencing this sense of never-ending pressure and being overwhelmed all the time may find comfort in knowing that they are not alone in facing these challenges.

Leaders in every sector are dealing with a level of change and unknown that is, and can be, overwhelming. These challenges include:

Remote working (or not): The constant deluge of hiring competition where it appears that every other sector can offer work-from-home, when in manufacturing, it is impossible for most positions to be offered as remote-work opportunities. According to Statistics Canada in their 2021 report, *Working from home in Canada: What have we learned so far?*, 60 per cent of jobs in Canada cannot be done from home. Even though that number may be surprising from the constant conversation of working from home, it does tell you that it is real. Still, that 40 per cent of positions in Canada are working remotely at least part-time provides additional competition for your hiring process.

You know what it is and how hard it is, but with that said, it sometimes helps for someone to say to you, 'Yes, you're right. It is hard.'



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Workforce shortages: Beyond the constant competition for hiring people, there simply appears to be not enough people available to hire. The increasingly common question of ‘Where did everyone go?’ tells of an unfortunate reality that creates ongoing challenges. According to a report from CBC News, *Where have all the workers gone? Don’t blame COVID*, “While those 55 and older have been steadily exiting the Canadian workforce — an exodus that some economists believe was accelerated by the pandemic, as many older workers opted for early retirement — there simply aren’t enough younger workers to replace them. In fact, participation in the workforce among those aged 25-54 approached 88 per cent in May, up more than one percentage point from February 2020, before the pandemic had taken hold in Canada.”

Constant supply chain challenges: This is an ongoing and exhausting conversation for many, and it isn’t looking much better in the short term. According to Statistics Canada’s Analysis on supply chain challenges and conditions in Canada, first quarter 2023, “among businesses that expected maintaining inventory levels to be a challenge over the next three months, over two-fifths (45.5 per cent) expected these difficulties to continue for six months or more, a significant decrease from the previous quarter (56.3 per cent). Businesses in...manufacturing (58.2 per cent) were most likely to expect maintaining inventory levels to be a challenge for six months or more.”

Moreover, there is the growing crisis in managing or supporting both the team and possibly your own increasing concern for mental health. Not to mention the additional stress for parents that have a sick child at home with nowhere to go.

While it may not seem helpful to have someone give you statistics to prove what you’re seeing everyday, it might help validate your perspective. You know what it is and how hard it is, but with that said,

it sometimes helps for someone to say to you, ‘Yes, you’re right. It is hard.’

It isn’t like the challenges that we dealt with prior to the start of the pandemic have gone away – safety, productivity, quality, and team dynamics. Layer all of these things together, and the real picture of the day-to-day in manufacturing becomes overwhelming.

What does working smarter look like in this new world? How do we move forward?

The word that comes to mind is adaptability. In fact, adaptability is a skill that can be learned and is a part of the Government of Canada’s Skills for Success framework. Their definition of adaptability is showing openness to change and altering behaviours to work effectively when faced with new information or a changing situation or environment. While it won’t reduce the number of changes coming, adapting to change allows for a response that will provide for a calm and appropriately responsive workforce.

What does adaptability look like? It’s defined through several sub-skills, including:

- Self-management
- Innovation
- Setting goals
- Exercising restraint
- Exhibiting courage
- Assessing costs, benefits, and consequences
- Being positive

This list, I find, gives a picture of what adaptability looks like. All of these can be self-assessed and training responses provided. Working together to build adaptability within ourselves, our teams, and our workplaces is the starting point for moving forward in the best way possible.

It is also something that becomes important when hiring. Many companies or HR departments have focused on teamwork, problem solving, and communication, and all of those are important when hiring for a team. But, if a person is not able to adapt to change – to be resilient –

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According to Statistics Canada in their 2021 report, Working from home in Canada: What have we learned so far?, 60 per cent of jobs in Canada cannot be done from home.

and begins to break down the team with the inability to function within the stress, it puts pressure on the whole team. However, if you have someone who can be calm, ask questions, assess their own ideas without bias, and continue positivity throughout, it will support the forward momentum for everyone.

Adaptability provides increased resilience and the opportunity for the day to feel a bit more manageable. There will still be everything going on around us, but being more adaptable will give each of us something on which to build a plan for ourselves, our teams, and our workplaces.

Kara Finney is Chief Executive Officer of three partnering organizations: Workplace Education Manitoba (WEM), Essential Skills Manitoba (ESM), and Workplace Prior Learning Assessment and Recognition (WPLAR) – organizations that directly support both Skills for Success and Recognition of Prior Learning (RPL) across Manitoba and Canada. With extensive experience in manufacturing and supply chain, Kara understands the benefits and opportunities of integrating Skills for Success and RPL into the workplace and beyond. [†]



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Clarity from the Messe

It's time to pick up the pace, not the pieces

By Jayson Myers

Anyone who has attended Hannover Messe – the world's largest advanced manufacturing show – can't help but be impressed. The sheer scope of the show is astounding. This year, over a quarter-million people visited 17 halls full of exhibits of the latest digital, production, and energy technologies from around the world, each hall the size of two or three football fields. The fair dwarfs any trade show in North America. It's a good workout for those who can get to every hall! It's all a bit overwhelming, but it's a great place to see the latest technology solutions for manufacturing and to meet executives from around the world scouting out potential innovation and business opportunities.

Canada will headline as the partner country at the fair in 2025. It will be a chance to showcase our leading technology capabilities in advanced manufacturing. We have a terrific record when it comes to research and tech development in advanced manufacturing. However, the adoption and deployment of advanced technologies by Canadian

manufacturers is a different story. When it comes to the use of leading-edge technologies to improve productivity, increase agility, connect supply chains, or enhance customer value, we not only lag behind other developed economies; we are falling further and further behind them each year.

Our largest companies are keeping pace with the rest of the world. Over 87 per cent have invested in some sort of advanced technology related to materials handling, supply chain management, design and control, processing or fabrication, business intelligence, environmental sustainability, or cybersecurity over the past three years. Nearly half have invested in some sort of emerging technology like artificial intelligence (AI), Industrial Internet of Things (IIoT), Blockchain, 3D printing, or in nano- or biotechnologies, as well.

However, Canada's small and medium-sized enterprises (SMEs) – manufacturers with fewer than 500 employees – are trailing badly behind. SMEs are investing at only about two-thirds the rate of larger companies in

advanced technologies and less than half the rate of larger companies in emerging technologies. That's significant because SMEs account for about 92 per cent of all manufacturers in Canada. If they can't keep up with larger companies, they are putting their own competitiveness and growth potential at risk, as well as that of their customers and their suppliers.

The reasons most frequently given by smaller manufacturers for not adopting new technologies, digital technologies in particular, are surprising. When surveyed by Statistics Canada, 22 per cent cite the high cost of technology, 11 per cent a lack of technical skills, 10 per cent difficulties integrating new technologies into existing production systems, and just under two per cent cite problems obtaining financing. Only 10 per cent say they don't see any economic value in advanced technologies. But worryingly, most companies just don't think new technologies are relevant to their operations: 55 per cent say that digital technologies don't apply to their business activities, while 18 per cent report that investments are not necessary to sustain operations.

Worryingly, most companies just don't think new technologies are relevant to their operations: 55 per cent say that digital technologies don't apply to their business activities, while 18 per cent report that investments are not necessary to sustain operations.

Those companies need to think again. The ability to track and trace materials, measure quality, and report greenhouse gas emissions within facilities and across supply chains is rapidly becoming an essential requirement for doing business. It's not just a matter of operating efficiency, online payments, and rapid customer response. A wide variety of stakeholders, from customers and regulators to investors and insurance companies, expect data to be used to improve visibility, supplier response times, and overall operating performance.

The use of data, AI, and other digital tools to design, monitor, test, control, and predict the performance of products, processes, and entire production systems has become vital for manufacturers to keep pace with customer demand, pivot into new lines of products and services to mitigate market risks or take advantage of new business opportunities, compensate for labour shortages, and simply keep ahead of competitors. While they may not see the relevance today, SMEs that fail to digitize are likely to lose business in the very near future.

Prairie manufacturers at risk

Across the Prairies, SMEs are slightly more at risk than the average Canadian company. They lag behind when it comes to connectivity through the Internet of Things and the adoption of digital technologies for business intelligence, design and information control, cybersecurity, fabrication and processing, online payments, and e-commerce. On the other hand, adoption rates are slightly higher than the national average with respect to their use of clean technologies, digital technologies for materials handling, supply chain management, and logistics, and digital marketing.

Prairie manufacturers are also more likely to say that they don't have to adopt advanced technologies. Over 56 per cent do not believe the technologies apply to their business activities, while 27 per cent say that they are too expensive, and 19 per cent report that they are not required for continuing operations.

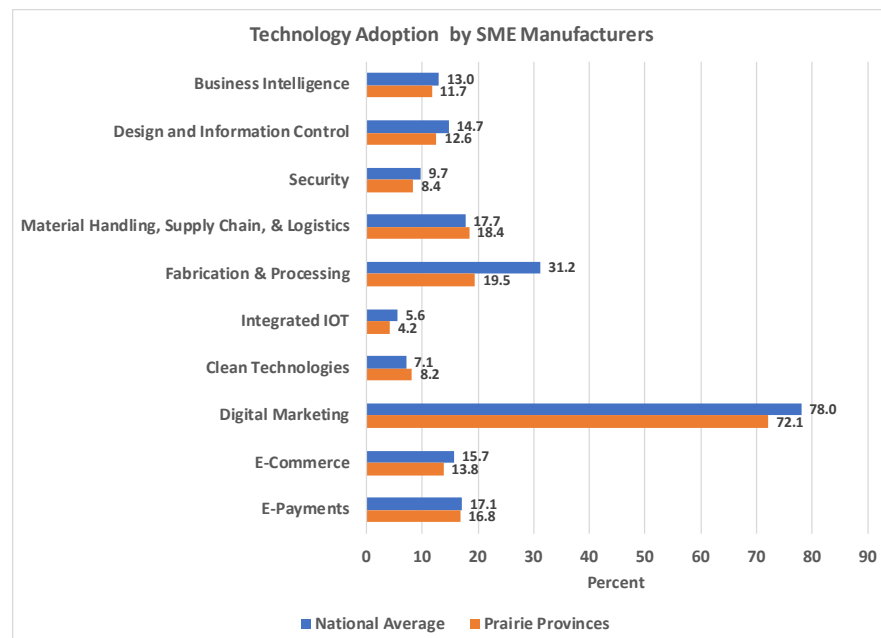
Fewer than 10 per cent of Prairie manufacturing companies say that a lack of technical skills, difficulties in sourcing financing, or problems integrating new

technologies into existing production systems are barriers to adoption.

Manitoba faces the biggest challenge

SME adoption rates are significantly lower in Manitoba than the Canadian average. They are 62 per cent below the national average with respect to the use of business intelligence technologies, 60 per cent lower for design and information control technologies, 49 per cent for cybersecurity, 38 per cent lower for fabrication and processing applications, and 33 per cent for material handling, supply chain, and logistics technologies.

While the percentage of SMEs with an online presence or conducting e-commerce and e-payments is fairly close to the national average, 54 per cent fewer have adopted integrated IIoT systems and 13 per cent fewer have adopted online solutions for digital marketing. When it comes to clean tech though, the adoption rate by smaller Manitoba manufacturers, while still small at 6.2 per cent, is almost 22 per cent higher than the Canadian average.



The most common reason cited by Manitoba SME manufacturers for not adopting technology is that it is irrelevant for their business. Over 57 per cent say that. Surprisingly, the percentages of SME manufacturers in Manitoba that cite other factors, that technologies are not necessary for their continued operations, too expensive, or that companies don't have the skills or financing in place to support their adoption, are all much lower than the national average.

Saskatchewan shines in supply chain, and e-commerce

Adoption rates by SME manufacturers in Saskatchewan are 42 per cent higher than the Canadian average when it comes to material handling, supply chain, and

logistics technologies, seven per cent higher for digital marketing, and a full 54 per cent higher for e-commerce payment systems.

However, adoption rates for other applications lag seriously behind. They are 19 per cent lower for business intelligence, 31 per cent lower when it comes to design and information control, 46 per cent lower with respect to security systems, 40 per cent lower for automated processing and fabrication, and 38 per cent lower in terms of the use of IOT systems. While the adoption rate for clean tech is a full 53 percent above the national average, only 7.8 percent of Saskatchewan SMEs have adopted advanced technologies in that field.

Again, the major reasons for not adopting advanced technologies cited by Saskatchewan manufacturers are that

they are not applicable to their business (48 per cent), too costly (26 per cent), or unnecessary to sustain operations (21 per cent). The percentage reporting other barriers to adoption are lower than the national average.

Alberta manufacturers report the most constraints

Ironically, Alberta's SME manufacturers have a higher-than-average adoption rate for many technologies but report the greatest number of barriers to investment. The use of advanced technologies for business intelligence, design and information control, security, material handling, supply chain management, logistics, and environmental management purposes is either at or within three percentage points ahead of the national average.

Almost 18 per cent more SMEs in Alberta use digital media technologies than their counterparts across Canada. There are, however, some notable exceptions. Adoption rates are 38 per cent lower for advanced processing and fabrication systems, 15 per cent lower for IOT systems, 20 per cent lower for e-commerce, and 10 per cent lower for e-payments systems than the national average.

Challenges appear to be more daunting for Alberta SMEs than in the

We have a terrific record when it comes to research and tech development in advanced manufacturing. However, the adoption and deployment of advanced technologies by Canadian manufacturers is a different story.

A wide variety of stakeholders, from customers and regulators to investors and insurance companies, expect data to be used to improve visibility, supplier response times, and overall operating performance.

rest of Canada. Just under 57 per cent of small Alberta manufacturers say that that advanced technologies are irrelevant for their business, 31 per cent that they are too costly, 20 per cent that they are not required for current operations, 15 per cent that they don't see any value in adopting them, 13 per cent that they lack technical skills required for implementation, and eight per cent that they are experiencing difficulties obtaining financing.

Where to from here?

It's pretty much guaranteed that more SME manufacturers across the Prairies and across Canada will come to see digitally enabled communications, control, design, production, material handling, logistics, and supply chain technologies as critical for their business as customers, investors, insurers, and regulators demand greater supply chain visibility, higher levels of quality control, and faster response times from their suppliers. Digital adoption will become a matter of business survival, not simply an issue of competitiveness and growth.

When it comes to the technologies themselves, three trends stood out from Hannover this year. The first is the growing importance of environmental sustainability. Everything from GHG emission tracking solutions to new systems for battery and EV design, testing, and manufacturing, to hydrogen and alternative energy systems were on display.

The second was evident from the nature of the exhibits at the fair. Even five years ago, it was all about equipment. This year most of the exhibits were still about equipment, but they were virtual. And the presence of IOT, 5G, cybersecurity, additive manufacturing, automation software, blockchain, and even quantum solution providers has grown significantly.

The third trend was evident in the nature of the digital solutions at the show. The future will be plug-and-play fully interoperable systems using standardized data platforms and protocols. Manufacturing processes are going the way of smartphone apps.

Canadian companies have a great opportunity to leverage these emerging trends, as technology suppliers and as manufacturers looking to adopt emerging solutions. But the time is now to capitalize on first-mover advantages. Don't wait down the road because your customers will pass you by.

See you in Hannover next year!

Jayson Myers is CEO of Next Generation Manufacturing Canada – the country's advanced manufacturing supercluster. An award-winning business economist and leading authority on technological change, Myers has counselled Canadian prime ministers and premiers, as well as senior corporate executives and policymakers around the world.



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Whose business is it anyway?

When personal use meets company-owned technology, situations can be complex

By Simon Garfinkel & Alex Lam

As lawyers, we understand the challenges that come with carrying only one device for both business and personal use. There are certain considerations that individuals should take into account to protect their privacy and ensure they do not infringe on any ownership rights.

In this article, we will outline several key points that individuals should consider when using a company device for personal business, including phone calls and messaging, and how it affects privacy and ownership of content.

Company Policies

The first consideration for individuals using a company device for personal business is to review the company policies on device usage. Many companies have strict policies in place that prohibit or limit personal use of company devices. Employees should ensure that they are familiar with these policies and understand the potential consequences of violating them. If personal use is allowed, employees should make sure they are following any guidelines or restrictions set out in the policy.

Separating Personal and Business Matters

When using a company device for personal business, individuals should be careful to keep personal matters separate from business matters. This means keeping personal contacts and messages separate from work contacts and messages. One way to achieve this is by using separate apps or folders for personal and business use. This will help to prevent any accidental sharing of sensitive or confidential information.

Protecting Sensitive Information

When using a company device for personal business, individuals should be aware of the potential risks of storing sensitive information on the device. This includes personal information such as passwords, credit card numbers, and personal identification information. Individuals should take steps to protect this information by using strong passwords and enabling two-factor authentication where possible.

When using a company device for personal business, individuals should be careful to keep personal matters separate from business matters.

Device Inspections

It is important to note that individuals who carry a device for both personal and business use may be subject to device inspections at border crossings or by security personnel. These inspections could potentially compromise the privacy and security of personal and business data stored on the device. As such, individuals may want to consider taking steps to protect their data before travelling, including backing up important data and removing any sensitive or confidential information from the device. Additionally, individuals may want to consider using a separate device for personal use while travelling to minimize the risk of any personal data being accessed or compromised during an inspection.

Privacy Considerations

Individuals using a company device for personal business should also consider the potential privacy implications. This includes the potential for the employer to monitor the device and the information stored on it. Employers may have the right to monitor company devices to ensure compliance with company policies and to protect against data breaches. However, employees still have a reasonable expectation of privacy when using the device for personal matters. As such, it is important for employees to understand the extent of their privacy rights and to ensure they are not infringing on the privacy rights of others.

Expectation of Privacy in Context of a Criminal Investigation

During a criminal investigation, generally, law enforcement must obtain a court-approved search warrant to seize and search the contents of an individual's device to further their investigation. The search warrant is prepared by an investigating officer and sets out reasonable and probable grounds that 1) a criminal offence has been committed, and 2) the search of the device will yield evidence of the offence. In some cases, authorities can proceed without a search warrant only where "exigent circumstances" exist, meaning that delaying the search or seizure any longer would result in the imminent danger of the loss, removal, destruction, or disappearance of the evidence in the device.

Expectation of Privacy in Context of Employment

In the course of employment, however, employees still retain a reasonable expectation of privacy in the devices they use regardless of who owns those devices. In one leading case, the Supreme Court of Canada was tasked

with determining what, if any, privacy rights attached to an employee found to have engaged in criminal activity on his employer-provided device. There, the Court accepted the proposition that computers are reasonably used for personal purposes, even in the workplace. As such, Canadians may reasonably expect privacy in the information contained on the devices they use where personal use is permitted or reasonably expected, whether in the workplace or at home.

That's not to say that employees should expect complete privacy in the employer-owned devices they use. Whether privacy is a reasonable expectation in a given situation will depend on the totality of the circumstances. A factor that weighs against and reduces an employee's expectation of privacy is the existence of internal workplace policies governing the use of these devices. However, the Court is clear about one thing: even though an employer's internal workplace policies may reduce an employee's expectation of privacy in their use of its device, it won't remove this expectation completely. As the Court put it, a reasonable though diminished expectation of privacy is nonetheless a reasonable expectation of privacy.

Ownership of Content

Finally, individuals should consider the issue of ownership of content when using a company device for personal business. The company may claim ownership of any data or information stored on the device, including personal information. Employees should be aware of their rights to ownership of personal information and take steps to protect it. This includes using personal accounts for personal use and ensuring that personal information is not commingled with business information.

In Summary

To summarize, individuals who use a company device for personal business should be aware of the potential risks and take steps to protect their privacy and ensure they are not infringing on any ownership rights. This includes reviewing company policies, separating personal and business matters, protecting sensitive information, considering privacy implications, and understanding ownership of content.

By following these guidelines, individuals can help to ensure their personal information remains private and protected while using a company device for personal business.

Simon Garfinkel and Alex Lam are lawyers at Taylor McCaffrey LLP in Winnipeg.

FCC Food and Beverage Industry Report 2023

The report reviews last year's economic environment and highlights opportunities and risks for Canadian food and beverage manufacturers for 2023. It includes projections of annual industry sales and new gross margin index forecasts by sector.

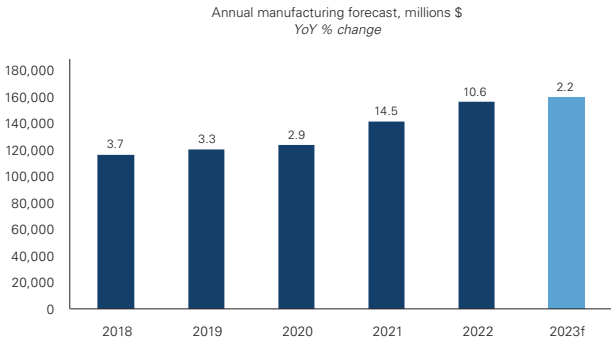
Here are three key observations from this year's report.

Sales growth was strong in 2022; projected to grow modestly in 2023

Food and beverage manufacturing sales rose by 10.6% to \$156 billion in 2022. Growth was largely the result of selling price inflation in the face of higher costs, but we saw healthy volume trends in certain industries.

FCC Economics is forecasting food manufacturing sales to increase 2.2% YoY in 2023. Sales growth decelerated in Q4 2022 with several categories reporting sales declines YoY in December. Any rebound in the deceleration observed at the end of 2022 could lift these projections.

Figure 1: Food and beverage manufacturing sales projected to increase 2.2% in 2023

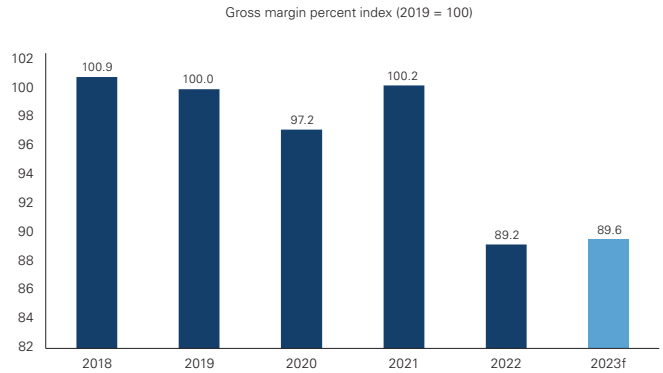


Source: FCC Economics, Barchart, Statistics Canada, Moody's Analytics

Margins have deteriorated in the face of higher input and labour costs

Higher costs pressured food and beverage manufacturing margins. Gross margins as a percent of sales fell to their lowest level in over 20 years in 2022. FCC Economics is forecasting gross margins to improve slightly in 2023. It's important to note that trends in margins differ widely across the different industries.

Figure 2: Gross margins declined to record lows in 2022; small gain projected in 2023



Source: Statistics Canada, FCC Economics

Food imports gain market share in Canada in 2022

As the year progressed, higher food prices and declining savings led consumers to cut back on discretionary spending. This meant fewer purchases of premium-priced foods, including smaller-batch and locally made foods for which manufacturers couldn't lower costs and control prices. Consumption of Canadian-made food in 2022 (measured in dollars relative to total consumption) reverted to the trend observed before the pandemic. A larger percentage of food dollars spent in Canada was allocated toward imported foods.

The bottom line: let's not lose sight of opportunities

In spite of these recent challenges and weaker margins, the food and beverage manufacturing sector remains healthy and has a positive long-term outlook. We are seeing promising innovation and technology being implemented in food manufacturing plants along with a global demand for Canadian-produced food growing rapidly. Canada is uniquely positioned to expand its reach into new, growing and very profitable food industries.

For the full report, including additional forecasts and commentary, go to fcc.ca/FoodBevReport

Kyle Burak, Senior Economist

Optek Solutions offers new approach to IT

By Pat Rediger



The middle of a pandemic is probably a less than ideal time to be starting a new business venture, but the timing was right for Kevin Aebig. He had been doing a little consulting work in the IT sector in addition to his regular job, and it wasn't long before he captured the attention of Athabasca Basin Development (ABD), an Indigenous-owned investment company.

Aebig enjoyed helping companies with their IT issues, but he didn't have a team or enough hours available to take his consulting practice to the next level. But ABD was on the lookout for business opportunities and IT services was an area that offered possibilities. The field was a new one for ABD, which has investments in a range of different sectors, part of a continuing trend of Indigenous companies and investors finding new niches and opportunities across the province.

After developing a business case together, ABD brought in Peter Ballantyne Group of Companies, and the two organizations decided to invest in Optek Solutions with Aebig as CEO.

"We put together a case that included our methodology of moving our clients to cloud solutions, which was a little different

More growth, means more opportunity and jobs for the people of Saskatchewan.

than what the industry would consider normal," recalled Aebig. "There's a lot of similarities, but we're a little disruptive on how we approach things."

Traditionally, IT firms establish a large headquarter with consultants who are on-call to deal with different clients' needs, often visiting them on-site to solve problems. With the pandemic and the growth of remote working, Aebig realized there was an opportunity to create a different approach. He set about finding the best IT support staff in the province and make them available to clients as required from their remote locations.

"We learned and used some of the tools that came out of the pandemic, so our model is primarily remote based. We have people from across Saskatchewan and we can provide better coverage to our clients. They don't need to be in a specific office building to provide support and being this flexible provides us



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It's not easy to combine two companies that operate in different industries, but it's coming along. Aside from the nuts and bolts of consolidating systems such as accounting and phones, there is a need to find ways to share and collaborate.

with the opportunity to operate in diverse environments from drilling sites in the far north to large office complexes in the south," explained Aebig.

This approach focuses on finding the best people available no matter where they are located. He's looking for people who are engaged and passionate about the industry. These are the people who have the perseverance to work through the toughest problems to find the right solutions.

Today Optek handles a wide variety of IT needs including strategic direction, risk management, process improvement and continuity planning to day-to-day helpdesk support requirements. The company is also focussed on making technology less intimidating to clients and helping them leverage tools they already use more efficiently.

The company has seen significant growth since forming in 2021 with most of it occurring through word-of-mouth advertising. The company meets with their clients to discuss requirements and then switches to remote service offerings after the initial review and deployment is completed. It's rare for Optek's consultants to work on-site since most of their clients now use cloud-based computing solutions.

One of the projects that Aebig is particularly proud is a mentorship program that was initiated in Athabasca communities in conjunction with Prince Albert Grand Council (PAGC). Local communities promoted the mentorship program and encouraged those interested in IT to meet with Aebig to discuss potential job opportunities.

"We would go to the economic development office, sit down, and have a chat with people to see if this program was a fit. We didn't ask for resumes, we just wanted to sit down and have a conversation. It was good to see the communities and it was good to meet people face-to-face. We eventually settled on an initial cohort of five," explained Aebig.

Those selected were given coursework they could work on at home and they had access to an experienced member of the Optek team to ask questions and discuss ideas. The company was able to offer full-time employment to a resident of Black Lake, who spends much of his time working for clients in the south.

After about a year in operation, Aebig said the board notified him of another opportunity for the company to consider. The owners of Prince Albert Photocopier (PAP), a printing

company that also offered managed services, wanted to retire, and was seeking a potential buy-out. It was an established company with a long history of serving Prince Albert.

The purchase is part of a growing trend among Indigenous investors, moving into new markets by acquiring established companies whose owners are retiring. The low risk profile, proven financials and established markets allow them to expand and diversify, while also giving businesses and employees a way to stay in business and continue serving their market.

Aebig said they identified potential synergies between the two companies right away. Although the company specialized in printing and hardware services (it's 1 of 3 authorized Ricoh Canada dealers in the province), it also provided some services for companies in the north. This was a chance to expand the company's business offerings and get a better foothold to serve businesses in the north. Within the acquisition, Kitsaki Management Limited Partnership, the economic development arm of the Lac La Ronge Indian Band, joined the partnership.

The acquisition brought total staffing for the company to 19. Aebig said it's not easy to combine two companies that operate in different industries, but it's coming along. Aside from the nuts and bolts of consolidating systems such as accounting and phones, there is a need to find ways to share and collaborate. For now, Optek manages all IT services, and PAP continues to operate under its own identity to provide print services.

Although the company has been a bit of a whirlwind since its inception roughly a year-and-a-half ago, Aebig said Optek still has plans to grow. With an increasing client base in the south, he is looking to add more consultants in that area. More growth, means more opportunity and jobs for the people of Saskatchewan.

"When we started, we didn't advertise. Nobody knew about us outside of word of mouth. I continue to receive messages from people I've never met, saying "I've heard about you and can you help me". Then they proceed to tell me about their issues, and I explain to them what I think we should do and how Optek can implement that plan. By being very transparent and explaining each aspect of our solution, we typically begin working with them immediately to solve their worst pain points and follow-up with a comprehensive plan to optimize the rest of their deployment."

Technology is the backbone of modern business and companies like Optek are a vital part of Saskatchewan's economic landscape. Their growth and success is an example of growth that works for everyone and ensures the province's economy can continue thriving. ¶

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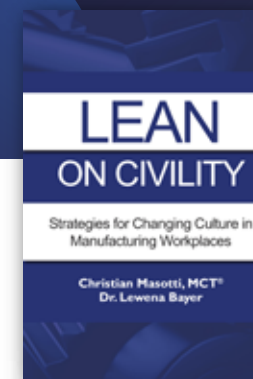
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THE FUTURE REALITY OF MANUFACTURING

Artificial, virtual, augmented, extended are now the realities for Prairie manufacturers

By Tyler Schmidt

Jason Tate, CEO and Managing Partner of Adocera, has always been on the forefront of new technologies in both his professional and personal lives. In February 2023, Tate hosted a session where he gave a demonstration of Jasper.ai, which in function is like the widely publicized ChatGPT.

Attendees were blown away by how user friendly and accessible it was, never mind that in a matter of seconds, Jasper could come up with “10 catchy slogans for my company,” “10 social media post ideas,” and “A professionally written out-of-office reply” just to name a few.

While this is merely scratching the surface, on a broader scale, artificial intelligence (AI) is a hot topic, with McKinsey estimating the economic impact of AI will be \$13 trillion (USD) annually by 2030, increasing global GDP by 1.2 per cent.

In addition to AI, Tate also explored topics including automation, virtual reality, extended reality, and additive manufacturing (3D printing). With all these emerging technologies, Tate emphasized their importance, saying “As we move into 2023 and beyond, AI will undoubtedly continue to shape the business landscape in new and exciting ways. As a business leader, it’s crucial to stay up to date with these trends or risk falling behind.”

While this might be stress-inducing for those less technologically inclined, it should, at the same time, inspire curiosity in those who are bold enough to explore and learn. And what might this application look like in the real world?

Let go, and let AI

One of the most fascinating cases of implementing AI can be found in Grande Prairie’s Grain Bin Brewing Company. Head Brewer Dalen Landis and his team at Grain Bin recently started to produce a beer made completely by AI.

“We are constantly looking for new, innovative ways to do things, and this idea was primarily formed from the discussion surrounding AI and the future of employment, craft, artistry, etc,” explained Landis. “We

figured it would be a good trial to see how relying fully on AI for our job would be disrupted, if at all, as well as the use of implementing this technology for the creation of a craft good.”

Grain Bin consulted ChatGPT with the goal of creating an entirely new beer from scratch. ChatGPT has access to everything on the internet regarding craft beer recipes, packaging artwork, as well as what consumers post online about what they like - or don’t like - when it comes to craft beer.

Armed with this information, ChatGPT formulated Amber Waves of Grain, featuring the tagline “American Amber Beer Designed by Artificial Intelligence.”

With a beer in hand

When hearing about the application of AI and Grain Bin’s experience, many see the potential of leveraging similar technologies in their own business processes. However, Landis says, “AI overall is a polarizing subject, and it’s easy to blow some ideas off as irrelevant or non-craft.”

In addition to defying convention, to some, technologies such as AI, automation, and robotics cause significant worry about the future of employment, with many individuals worried about being replaced by a machine. Landis doesn’t deny the polarization around this topic, but he emphasizes curiosity instead of quick dismissal of new ways of thinking.

“We try to remain open to trying new processes and not being limited by convention,” says Landis. “Our goal wasn’t to save money or time, or remove ourselves from the process, but to create a product that encourages discussion. The technology is improving quickly, and we feel it’s important to have candid conversations about our goals and fears for the future, and the best way to do that is with a beer in hand.”

Advancing the field, embracing the future

While the future of the workforce will be undeniably changed by new technologies, whenever there is a shift or interruption, there is also an opportunity for

“As we move into 2023 and beyond, AI will undoubtedly continue to shape the business landscape in new and exciting ways. As a business leader, it’s crucial to stay up to date with these trends or risk falling behind.”

growth and success. One such field effected by advancements and changes in technology is engineering. Technological advancements in areas such as automation and robotics have had similar disruptive effects to those anticipated by AI and machine learning.

Dr. Andre McDonald at the University of Alberta is one voice helping to inform the conversation around the positive impacts that new technology can have on the workforce. As Professor of Mechanical Engineering, and Director of the ELITE Program for Black Youth, Dr McDonald explains that there will be different skills needed, and jobs will tend to be of better quality.

The ELITE Program, officially launched in late 2020, was started with the overarching goal of providing Black youth in Canada with access to the latest advancements in science, technology, engineering, mathematics, and medicine (STEMM) fields. This program is offered in collaboration with government, academia through the U of A, and various industry internship hosts.

Through Dr. McDonald’s own secondary research, he set a few main areas of focus for the ELITE Program, including AI, machine learning, additive manufacturing, and regenerative medicine, all of which are projected to be vitally important both in academia and in the workforce by 2030.

Let go of the mundane

Dr. McDonald reframes how we should look at the issue of employment by saying that technology isn’t a threat to employment, but an improvement.

“While routine, transactional, ‘pick-and-place’ labour is something that can be easily automated, it provides the perfect opportunity to up-skill and re-skill these employees and empower them to use more of their skills and abilities which until now have laid dormant,” says McDonald. “These people will be able to



PHOTO COURTESY: GRAIN BIN BREWING COMPANY

fly above their station and work in tandem with these technologies. Most menial tasks will be offloaded to automated machines, but there will always be a need for quality assessment of both the manufactured products and the machines themselves. This is what leads to the up-skilling and re-skilling of employees.”

Putting AI learning to the task

In another focus area of Dr. McDonald’s research, the Advanced Heat Transfer and Surface Technologies Laboratory produces a conductive coating which allows an electrical current to be passed through the coating applied to different machine parts.

Because the coating can and does produce heat when current is passed through it, components such as wind turbine blades or oil pipelines can use the heat to ensure they stay at a safe and consistent temperature to avoid freezing or ice accumulation. The current can also be used to identify if there is any structural damage to the machine, such as a pipeline rupture, by examining the resistance measured in the current which can point to both quantitative and qualitative evidence of disruption or damage in the structure.

While this technology is being developed and implemented by Dr. McDonald and his team, there are ways to implement AI and machine learning to assess the performance of coatings for wear resistance, heating, and damage detection on structures.

Diving into the new reality

Another area with growing interest is Extended Reality, which includes the more commonly recognized terms Virtual Reality (VR) and Augmented & Mixed Reality. While all have some degree of overlap, they are quite distinct fields.

Virtual reality is by far the most popular with video game developers and media companies taking advantage of its immersive nature. Through a headset, you’re transported to and enveloped in a completely different world.

Through augmented reality, the world still mostly is as it appears with different videos or images enhanced with technology. Filters on many social media platforms are an example of mixed reality, and popular apps like Pokémon GO have at least some degree of augmented reality integration.

The uses of AR expand far beyond consumer technology. Tours of ancient ruins in Athens now feature the ability to re-create structures before your eyes using a tablet and AR software. Instead of seeing 2D blueprints of buildings, construction companies can create 3D renderings of what buildings will look like when completed.

Tina Kingstree, Founder and Digital Strategist at Torch7, understands that VR’s applications are truly limitless.

“The manufacturing industry is one of the sectors most affected by these emerging technologies,” explains Kingstree. “With VR and similar technologies, manufacturers can improve efficiency, reduce costs, and improve safety. VR is also being used to improve the overall quality of products and reduce waste.”

Not only can VR be used in a wide range of sectors, but it can be used with other technologies to unlock additional benefits.

Kingstree says, “Using AI for predictive maintenance allows data to be analyzed from sensors and machines. AI could predict when maintenance will be required and alert the maintenance team before a breakdown occurs.”

“AI could even be used at preliminary stages to predict or identify potential issues by analyzing blueprints and building specifications to ensure there aren’t any potential structural failures due to improper design,” Kingstree explains.

For more widespread use, companies are developing VR/AR glasses as a successor for the bulkier VR headsets. This would allow for images or video to be projected in your field of view, without needing to put on cumbersome headgear.

“The technology is improving quickly, and we feel it’s important to have candid conversations about our goals and fears for the future, and the best way to do that is with a beer in hand.”

“While routine, transactional, ‘pick-and-place’ labour is something that can be easily automated, it provides the perfect opportunity to up-skill and re-skill these employees and empower them to use more of their skills and abilities which until now have laid dormant.”

If the future is now, what’s still in store?

When asked about the future for VR developers and digital manufacturers, Kingstree says, “We can now create applications compatible with multiple platforms, so smaller studios can create high-quality VR applications on par with those developed by larger companies, giving them a competitive edge in the industry and making VR/AR more accessible to businesses with smaller budgets.”

The technologies being developed and implemented across Canada is nothing short of

spectacular, whether it’s leveraging the power of AI and machine learning, creating solutions to manufacturing and engineering problems with new technology, using the latest in AR and VR and their near boundless applications, or preparing the next generation of the workforce and equipping them with the skills they need to be successful.

Whenever there’s disruptive change, there will always be skepticism and avoidance, but for those folks able to explore their curiosity, and develop and tap into the potential of these new technologies, there is always room to grow and thrive. ☞

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It’s not often you can say you literally reinvented the wheel, but Matt Waldner of Cascade Manufacturing has that distinction.

With ongoing support from RRC Polytech’s Technology Access Centre for Aerospace and Manufacturing (TACAM), Waldner is set to bring a low-maintenance, all-steel bolted wheel for irrigation systems to market this year.

A MacGregor-based company that designs and fabricates irrigation products for agriculture, Cascade has been working on the bolted wheel since 2018. Typical irrigation systems use wheels with steel rims and air-filled rubber tires, but as Waldner points out, those are prone to losing pressure, wearing out and cracking over time.

“It might be three or 15 years, but within that time, the rubber will degrade and start to go flat in the middle of the field,” he says. “With steel, we wanted to eliminate that integrity factor.”

After partnering with TACAM on a design review of his prototype, Waldner was able to identify and address stress areas and potential points of failure. He then used TACAM’s recommendations to redesign the wheel, both in terms of workability and cost reduction. His original failed under 10,000 load cycles. After the redesign, it’s expected to last for more than 200,000.

LEARN MORE rrc.ca/ReinventingtheWheel

Board Governance:

Principles versus Models

You can't just buy a board governance model off the shelf; it takes some principled work

By Linda Wood Edwards

Many of us – companies and not-for-profits – work with boards of directors. All of us, at one time or another, have been frustrated by a board that either was completely disengaged or was meddling in operations. So, it begs the question: How can we tap into a board's knowledge, expertise, and wisdom but keep them out of the way of the management hired to run the enterprise?

Many enterprises answer that question by saying, "We need a better governance model." Well, I prefer to talk about the governance principles. The world of board governance is emergent and exciting, but some things have held true for me.

At the risk of over-simplifying, I think governance is a continuum. At one end I put the operational board with no staff (volunteers handle all roles), and at the other end I put the policy governance board with a strong CEO, a robust staff, and a board focused on giving direction through policy creation. Policy Governance (e.g., Carver) is my extreme, because in 30 years of board work, I have not found anything that goes further.

Neither end of the governance continuum is perfect and neither end is broken. They are merely two extremes, both of which rely on people and, therefore, both of which can get screwed up.

In my experience, boards move back and forth along the continuum looking for their sweet spot. That sweet spot can change as the players in both board and senior management change.

Knowing the role

Boards govern, managers manage, staff implement. More specifically, governance is about vision/purpose/goals & translating those into policy, management is about making decisions (i.e., programs, projects, targets) needed to implement policy, and operations are about implementing managerial decisions (i.e., activity, performance).

Here is how those three functions play out. If you have an operational board, then the same people are doing all three things. If you have a policy governance board, then three different sets of people (one being the CEO) accomplish the same things.

On an operational board, the same people need to wear different hats to ensure that all three things get done. However, they are often so darn busy they forget to change hats. The two most common scenarios are: 1) they exhaust themselves doing day-to-day stuff to survive but have no real direction; or 2) they create a direction, but no one has time to do the stuff to get them there.

On a pure policy governance board, the division of responsibilities between board and CEO is very clear on paper but it becomes such a major focus, that: 1) the board is afraid to ask questions of the CEO for fear of treading on toes; 2) the CEO feels isolated because the board isn't providing feedback in a way that is

Over the course of a year the board should ensure its agendas have about 1/3 dedicated to the oversight (fiduciary) responsibility, 1/3 to the strategic responsibility, and 1/3 on generative work.

easily understood; or 3) board members disengage because policy-writing and policy-thinking is not their go-to way of doing things.

So, you see, both have their value, and both have their pitfalls. In my experience, boards move back and forth along the continuum looking for their sweet spot. That sweet spot can change as the players in both board and senior management change.

Figure out what's important

To arrive at a “made by us, for us” governance solution, we need to identify what’s important (i.e., principles). Using the term “models” with respect to governance implies you can buy one off the rack, or that they are “plug and play.” This is simply not true. So instead of “models,” let’s talk “principles.”

How a board governs has everything to do with its approach to the distribution of powers and authorities in the organization. In short, “it’s political,” says consultant Lyn McDonell. In a corporation, directors must oversee and be legally responsible for the organization no matter the politics. This tells us what the board needs to do, and next we determine how. How do we ensure the functions of governance (organizational direction, overseeing finance and risk, selecting/evaluating/compensating CEO, etc.) are performed well? How will we structure the board to carry out the core accountabilities?

McDonell framed a series of questions to help boards explore culture, structure, information and decision flows, and the desired locus

of expertise and leadership in an organization. I blended my favourites of hers with some of my own. After the first one, there is no special order. If you take the time to answer all the questions, or even just a few, you’ll already be better off with your board.

Models aren’t always models

Despite what I’ve just shared, you still want to search “governance models?” Really?! Okay, well, you’ll get 148,000,000 hits and only a bit of excellent information. Terms like “policy governance”, “results-based”, “knowledge-based”, “strategic”, “competency-based”, and “complementary” might lure you in, but let’s be clear: most of what turns up are not “models,” but rather descriptions of “things that boards should do” (i.e., principles). They are all variations on a theme.

Carver may have trademarked “Policy Governance,” but policy governance is just a generic action that every board needs to do at least some of. We support the concepts in almost all the “models” that will turn up in a search, but we do not ascribe to the limited meanings that the proponents have attached to good words (traditional, policy, outcomes-based, competency-based, legislative, operational, ...), to meet their own ends. They all have something to offer but each is insufficient in and of itself.

Build the foundation

For a solid foundation, I recommend reading *Governance as Leadership* by Richard Chait. His three-pronged approach to board responsibilities (control, direction, sense making) makes sense for any board.

Control: Legal/fiduciary responsibilities of the board in guiding the organization

Direction: Strategic responsibility to set the direction and decide on the use of resources, programs, and services

Sense Making: Generative conversations to develop new ideas in line with the organization’s core values

Over the course of a year the board should ensure its agendas have about 1/3 dedicated to the oversight (fiduciary) responsibility, 1/3 to the strategic responsibility, and 1/3 on generative work. Currently most boards spend most of their time on oversight; a smaller number also have strategic plans – fewer still monitor those plans; and very few exercise their generative muscles in support of the enterprise.

In doing those three things, using the principles you have agreed upon by asking the questions, we are confident that your people will do the jobs they are intended to do, your board will add value, and you will drive your organization forward.

Linda Wood Edwards, owner of LUE-42 Enterprises, is a Certified Association Executive and a Fellow of the Chartered Governance Institute of Canada (CGIC). She holds a Bachelor of Administration degree, a certificate in human resources management, and the Accredited Director designation. Linda consults on board governance to organizations across Canada, serving as Corporate Secretary to several. She is CGIC’s Chief Examiner for Corporate Governance and a facilitator in the Directors Education and Accreditation Program. ¶

McDonell / Wood Edwards Questions for the Board

- What is required by legislation and our current by-laws? Are there limitations in these documents, or do we have room to manoeuvre?
- How do we ensure that the board is making decisions in the best interest of the entire organization and not constituent parts?
- What kind of board do we need now and in the future?
- What must the board focus on and what can be handled by the CEO and staff?
- How much leeway or authority in getting the job done do we want to give our CEO?
- How nimble do we need our decision-making to be?
- How do we help dialogue between the board and CEO to be fluid and respectful?
 - The CEO is obligated to share significant operational matters with the Board. The board brings knowledge, skills, and expertise to the governance table that are likely not present in the organization's staffing complement. The CEO should tap into those.
 - By the same token, the CEO works in a realm that will not be familiar to all directors. It is reasonable to expect that directors will have questions of the CEO that relate to operations.
 - Both the board and the CEO should be able to ask and answer questions without fear. When one or the other oversteps, the matter must be handled promptly, with tact and grace, on the understanding that correcting the “infraction” is in the best interests of the organization.
- How can we make the board table a safe place to disagree?
 - Thoughtful discussion is essential to good governance. An opinion can only change through robust discussion.
 - It is the board’s job to contribute (provide an opinion) and in doing so, the board will bump up to the line of how far it can go. The CEO will tell the board/director where the line is. It will not be personal.
- Does our decision-making model reflect the culture we want?
 - Do we require the formality of Robert’s Rules/Parliamentary procedure or might a consensus-based model (recommend, discuss, consensus) work?
- Do we get the right people at the board table?
 - The knowledge, skills, and attributes of each director should help you reach your organizational objectives. Be intentional with recruiting.
 - Avoid “constituents”, “representatives”, and “honorary directors” on the board. Every director is equal in responsibility and liability and governs in the interests of the organization.
- Is the board’s agenda aligned to the strategic plan (or is it based on how we’ve always run meetings)?
- Do the board’s committees only do the board’s work?
 - Board committees (typically only three) must align with the governance function, not operations.
 - Governance (or Governance/Nominations)
 - Audit (or Finance/Risk Management/Audit);
 - CEO Review Committee (which includes contracting, performance management, compensation).
 - The CEO can also establish committees to help achieve operational outcomes. If a board member serves on an operational committee, that director is just another volunteer.
 - Avoid an Executive Committee. It is dangerous to have a board-within-a-board. Every director needs the same information and has the same responsibility in deciding.
- Do we evaluate everything (board, committees, CEO, staff, programs, etc.) and then access developmental opportunities to make ourselves even stronger?

A game changer for women and non-binary entrepreneurs

By Lindsay Stewart Glor

Sludge, bias, and bottlenecks. When it comes to accessing funding, these three things can stop women entrepreneurs in their tracks, pushing them towards self-financing and away from more traditional lending options. With a commitment to supporting the growth of women and non-binary entrepreneurs, Women's Enterprise Organizations of Canada (WEOC) has released a series of online supports for financial institutions and advisors, to help them better understand, identify, and address the sludge, biases, and bottlenecks inherent in their lending practices.

"We wanted to provide lenders with a clear way forward," says Alison Kirkland, CEO of WEOC. "It can be difficult to understand and identify the issues within your own organization and we hope that spending some time exploring these resources will enable lenders to make simple changes that will have a significant impact."

Developed using recommendations from WEOC's 2022 report: *Bootstrap or Borrow? Improving Equity and Access to Financing for Women and Non-Binary Entrepreneurs in Canada*, the robust suite of digital resources includes a multi-part podcast series, animated videos, a sludge audit checklist, and a seven-part article series.

Last year, just as the Bootstrap or Borrow resources were being developed, WEOC stepped into the lending space itself, with the launch of the WEOC National Loan Program, made possible through the Government of Canada's Women's Entrepreneurship Strategy.

"We definitely had the opportunity right away to put what we learned from the report into action," laughs Kirkland.

The loan program, which is currently distributed as a partnership with loan fund partners in B.C., Alberta,

Saskatchewan, Manitoba, Ontario, and Newfoundland & Labrador, offers entrepreneurs loans in any amount up to \$50,000, flexible terms, as well as tailored business advising, training, and loan aftercare supports.

"It's a holistic approach to lending that looks beyond credit scores to understand the individual context around each business," explains Kirkland. "I think this approach could be a game changer for many women and non-binary entrepreneurs in Canada."

The first WEOC loan went out in November and since then more than \$1 million has been disbursed to women and non-binary entrepreneurs in diverse industries across Canada. The response from entrepreneurs has been overwhelmingly positive.

"The experience overall has been fantastic," says Leah Murphy, owner of Star Payroll in Newfoundland & Labrador. "There wasn't that intimidation factor of working directly with the bank, where you feel like there may be less of an opportunity to ask questions when you're unsure."

Murphy worked with Newfoundland & Labrador Organization of Women Entrepreneurs (NLOWE), the WEOC loan fund partner on the East Coast.

"NLOWE was pivotal in helping me get my first business off the ground and in helping me get the WEOC application to the point where I could submit it and get it approved quickly," says Murphy. "There was a lot of back and forth with NLOWE initially, with them asking clarifying questions, so when the application went through, I was shocked at how quickly it came back, and the funds were processed."

To find out more about the WEOC National Loan Program, including partners in your regions, please visit weoc.ca/loan-program.



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National Loan Program

A portrait of Dr. Maggie Penfold, a woman with long dark hair, smiling. She is wearing a black top with a dark, textured scarf. The background is a blurred outdoor setting with trees and a white railing.

In conversation with... **Dr Maggie Penfold**

We take the bull(y) by the horns to explore what bullying is, why it happens, and how it continues to impact folks in both the personal and work domains.

Bullying.

We've all been there, and we've all felt it in one way or another. Someone did or said things to us to belittle us, to beat down our spirit, or to make us feel rotten. It may have happened in the schoolyard, on the playground, at home, or in the arena. And it kept happening for days, weeks, months, or even years.

You'd tell someone – a parent, a teacher, a coach – and they may have just told you to 'suck it up' or 'grow a thicker skin.' They said it would end at some point; that everyone would grow out of it.

But what if everyone didn't grow out of it? What if the behaviours continued or started anew in adulthood?

Well, that's still bullying, and its effects are still real to those being targeted by a bully. In fact, bullying – particularly when it takes place in the work environment – has negative impacts that reach throughout an organization and its workforce.

Prairie Manufacturer's Jeff Baker spoke with Dr. Maggie Penfold, a clinical psychologist working in private practice at Wolseley Wellness on Corydon in Winnipeg, about bullying, what we can do to mitigate its negative impacts, and how we can support those being targeted. Dr Penfold's practice addresses a range of common mental health concerns for adults living in Manitoba and the Northwest Territories. She completed her Ph.D. at the University of Manitoba in 2016.

This conversation took place on April 29, 2023, and has been edited for length and clarity.

Jeff Baker (JB): So, Dr Penfold, what is bullying?

Dr. Maggie Penfold (MP): A generally accepted definition is that bullying is a chronic pattern of behaviour that involves physically or psychologically harming or intimidating someone to get a certain outcome through that behaviour.

JB: Is bullying always a longer-term pattern or can it be a one-time thing?

MP: If we think about what looks like bullying in terms of a one-time behaviour, we could say somebody in this moment is behaving poorly or making a poor choice of what to do or what to say. When we think of what bullying actually is though, you're looking for a pattern over time; it's not just a one-time instance of misbehaviour.

JB: There are probably a lot of folks who think bullying is something that only children experience or perpetrate. I assume that isn't really the case though?

MP: I think it is common for some people to pass it off as something that's just kids being kids and they'll

grow out of it. However, it can and does happen well into adulthood, and of course it will have a different look and feel than what you might see in school or on the playground. Not everyone will grow out of the behaviour, particularly if there's something about it that's actually working for them on some level.

People don't just wake up one day and say, 'It'd be really great to just go out and bully someone.' There's something that triggers the behaviour - like some kind of stress or threat, a feeling of insecurity, or competing for scarce resources – and the bullying becomes a way of trying to cope with that stress and get a need met. If there's reinforcement – negative or positive – the bullying is likely to continue.

JB: Does bullying in the workplace look different from that taking place outside the workplace, like in a family or personal situation?

MP: Not necessarily. Some aspects of it *can* have a different look and feel in more personal relationships, but if we think about what tends to trigger the behaviour and what the general function of the behaviour is, it's really not that different. There might be some different styles or different ways in which it's carried out, but the underlying processes are very similar.

JB: Does there need to be an imbalance of power, authority, or control for bullying to happen?

MP: Certainly, there can be a power imbalance or a situation where people might be a subordinate, have less seniority, or be part of a marginalized group, or identify with a minority group that has less power or less status. These are people who can end up being targets of bullying. However, sometimes bullying can get aimed at people with more power or status. It's not nearly as common, but it can definitely happen.

JB: What sort of behaviours will we typically see or experience with bullying in the adult domain?

MP: The behaviours can be physical or verbal, subtle, or very in-your-face. In terms of physical behaviours, it can be physical intimidation, like people not respecting personal space. In more serious cases, there might be physical acts carried out towards another person, like hitting, pushing, and shoving, or physically blocking someone's ability to leave or enter a space. There can also be other behavioural markers, such as not completing tasks as directed and not cooperating with requests from co-workers or supervisors.

If we think about verbal bullying behaviors, it could be extremely negative feedback or derogatory comments. It can be as blatant as name-calling or insults. It might also be somebody delivering subtle

jabs, giving backhanded compliments, or implying that you don't know what you're talking about. It could be aimed at undermining your confidence, trying to get other people to undermine your confidence, saying things that might get you to question your own perceptions of yourself and your abilities.

JB: That almost sounds like going down the path of gaslighting someone.

MP: Gaslighting can be one of the ways that bullies will attempt to undermine confidence and have control over others. If you're wanting to speak up or address the bullying, the bully might be planting the message of 'can you really trust what you're thinking or saying, or how you're seeing this?' 'Did that thing really happen?' or 'Is this really happening?'

JB: Going back to the physical nature – particularly not respecting personal space and not allowing people to exit or enter a space – there seemed to be more of that sort of bullying taking place over the last few years during the pandemic. Was there actually more, or was it more the case of heightened awareness and more people ready to record these situations with their phones?

MP: There's so many variables at play in every situation, but I do think the pandemic - and all the extra care, thought, and precautions that it required of us – probably illuminated some challenges and issues that were already there. There was more attention paid to the situations, and a lot of people were living with so much more stress than they had ever experienced. And of course, when we're experiencing stress like that, our ability to self-regulate, to be thoughtful, to just engage with other people the way we might usually want to, it was very challenging for many of us.

JB: What negative impacts can bullying have on a person who is a target of the harassment?

MP: It's quite jarring, upsetting, and distressing to be the target of bullying behaviour. People might express feelings of sadness, anxiety, or anger, or all the above. There can also be a feeling of just being alone in the situation, feeling trapped, and feeling like they don't know what to do.

There may be a sense of hopelessness or helplessness that if they even try to bring this up, they are not going to be believed, nothing is going to happen in response, or they risk having things get worse. We do hear stories about people who have tried to speak up or get help, and then the bullying escalates in some way or there's some other negative consequence that happens, so there's a lot of fear, anger, and doubt.

There's such a burden of proof placed on the person who is the target, so it's just further victimization in the process of trying to get help or trying to advocate for themselves. This can result in the victim engaging in avoidance behaviours, the person doing the bullying behaviour not being held accountable, and the bullying continuing.

In the workplace, avoidance can manifest as someone starting to disengage from important workplace tasks or not participating as much as they might have been. There might be some time away from work where people end up using sick time or vacation time, or perhaps even unpaid time if they're feeling desperate enough to get away.

Productivity will also drop. It's difficult to be productive if you've got this element of threat in your environment at work. You're just not going to be able to show up and give as much as you might otherwise be able to.

JB: Can someone be bullied, but not know that they're being bullied? Can it be a covert behaviour?

MP: Yes, absolutely. One of the ways that it can be carried out is through gaslighting, as we discussed earlier, where the person might be left questioning their



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perception, questioning their reality, questioning their experiences of it. Sometimes this can even become self-gaslighting, where they're not just receiving it from other people, but it starts to turn into an internal loop of negative self-evaluation and self-doubt.

JB: What can someone do to help if they have a person in their life – at work or at home – who is experiencing bullying behaviours?

MP: It's going to depend on the context of each situation, but generally a great way to start to help is just to make space for the person to really share what they've been experiencing, giving them an opportunity to walk through the pattern of experiences that they've had, really offering that validation for them to just be heard and to feel understood.

It helps to have another person they trust hear about the reality and have it known, to have it outside of them and to begin to help think about ways to address the situation: Who should they go to next? What's the chain of command to go through? What supports are available to assist the person?

JB: You commented earlier about the burden of proof being quite heavy on the victim of the bullying. So, what advice might you offer to an HR director or company leader as to making the process less onerous or intimidating for the victim of the bullying?

MP: Well, I'm not an HR professional, so my knowledge isn't necessarily about HR processes or practices or how this might all play out, but I would suggest examining if there are any unnecessary steps or bureaucracy that could be a barrier to reporting and looking at ways to reduce those barriers would be a good start to easing the process. Another important piece would be making sure that there is a safe place to go, and making it clear who and where that is.

Educating your workforce is critical, too. Make sure people know the language for this, that there is a way to talk about these issues, to name them, and to properly identify and address them. Helping people find the words to use and knowing where to go helps reduce the uncertainty they might have about reporting and flagging bullying behaviours.

JB: Can you talk more about the psychological safety aspect of bullying and the importance of it in a business or team?

MP: It's something that takes time and effort to build and maintain an environment where these

kinds of bullying behaviours will not be tolerated. It's important for the psychological safety of workplaces that the leaders and workforce be able to name what the behaviours are, and that there will be actual, meaningful consequences for people who are engaging in bullying behaviour; and it will be done as transparently as possible.

Another thing a workplace can do to help is reduce the focus on competitiveness (at least internally). It goes back to one of the causes behind bullying behaviour – the competition for scarce resources or a feeling of insecurity. Maybe the competitiveness or scarcity is real, but maybe it's not, and emphasizing a more collaborative and team-based approach in the workplace will be more likely to allow people to thrive and produce. There might be some concern about the impact of less competitiveness on productivity, but productivity definitely takes a hit when bullying is present.

JB: Is it possible to fix or reform a bully?

MP: It really depends, but I absolutely think it's possible. For change to happen, the person engaging in bullying behaviour will need to be willing to examine themselves and look at some hard truths. It will be very uncomfortable, and they might require therapy or additional training in order to build skills for coping with stress and engaging in alternative behaviours.

Unfortunately, not everyone is open or willing to change, they might not yet be at a place where they're ready to give up the behaviours, or they still lack the insight needed.

When trying to address this issue, there is going to be discomfort experienced by everyone involved, and it's often not a situation people go into willingly or easily. There's the discomfort for the person who is being targeted – not just for experiencing it, but also having to talk about it, name it, and explain it to other people. Supervisors, managers, and HR personnel will feel discomfort hearing about the experiences, and also in having to give difficult feedback or enforce consequences.

As people, we have to practice being more willing to feel the discomfort, to take some risks, to try something different. It's important to focus on what we have immediate control over – our own behaviours – and we also can't stop there. To make change happen, you can't focus only on an individual or a small group – you might get some short-term results – you need the focus to be on the workplace as a whole. This requires buy-in, implementation, and patience from all levels of the workplace. ⁶

Canadian Innovation on the World Stage

By Robbie MacLeod



Hannover Messe is one of the world's largest industrial trade shows, attracting thousands of companies and industry professionals from around the globe each year. For Canadian manufacturing companies, attending this event can be a game-changer, offering opportunities to showcase their innovations, network with international peers, and explore new markets. Fortunately, NGen is here to help.

NGen, the Global Innovation Cluster for Advanced Manufacturing, is a not-for-profit organization that supports the growth and competitiveness of Canadian manufacturing companies through funding, resources, and networking opportunities. One of the ways that NGen helps Canadian companies to expand their horizons is by supporting their participation in events like Hannover Messe.

This year, NGen's activities at Hannover included benchmarking and learning about cutting edge technologies and applications world-wide, increasing the visibility of Canadian advanced manufacturing companies, and preparing to showcase our strengths in 2025 when Canada is the official country partner for Hannover Messe.

Hannover Messe kicked off with a renewed focus on sustainability, digitalization, and innovation. With NGen's support, Canadian companies were able participate in the



PHOTO COURTESY: NGEN



PHOTO COURTESY: DEUTSCHE MESSE

Canada Pavilion alongside partners from coast to coast to showcase their advanced manufacturing capabilities and connect with potential partners and customers from around the world.

The Canadian delegation saw many more applied use cases for leading technologies, such as artificial intelligence (AI) and digital twins. At the forefront was collaboration between robots and humans enabled by AI. Digital twins were also displayed as a valuable tool for design and collaboration, virtual commissioning and training providing rapid start-up and shorter switch-over times, real-time monitoring and troubleshooting, and virtual scenario analysis. Digital twins are connecting with other technologies to build exciting use cases, such as VR and AR for virtual troubleshooting and operation.

The Canadian delegation saw many more applied use cases for leading technologies, such as artificial intelligence (AI) and digital twins.

By showcasing Canadian innovation and expertise on the global stage, Canadian companies can help to raise the profile of Canada's manufacturing sector and attract new investment and talent to the industry.



PHOTO COURTESY: NGEN

While the application of these technologies are changing the manufacturing landscape, industrial decarbonization and battery technologies remain a key focus on the main stage at Hannover Messe. Alternative storage solutions like hydrogen and battery technologies were well represented in 2023 with a full exhibit hall focused on hydrogen and clean fuel technologies on display. The latest in industrial electrification and battery tech were also prominent. Regenerative designs were also present, such as self-powering devices using thermal gradients or kinetic energy, minimizing or eliminating the need for energy storage in some cases. Real-time carbon tracking and reporting were also gaining traction and contributing to transparency across manufacturing supply chains.

NGen offers a range of services to Canadian companies attending Hannover Messe, including networking opportunities, matchmaking services, and funding support. Through these services, NGen helps Canadian companies to make the most of their



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One of the key benefits of attending Hannover Messe is the opportunity to showcase Canadian manufacturing innovation on an international stage.

participation in the event, maximizing their exposure to potential partners and customers.

One of the key benefits of attending Hannover Messe is the opportunity to showcase Canadian manufacturing innovation on an international stage. With hundreds of thousands of visitors and exhibitors from around the world, Hannover Messe is the perfect platform for Canadian companies to highlight their cutting-edge technologies and solutions.

By attending Hannover Messe, Canadian companies can also explore new markets and connect with potential partners and customers from around the world. The event attracts industry professionals from a wide range of sectors. Canadian companies can connect with customers who are interested in their products and services, helping them to expand their reach and grow their business.

In addition to networking opportunities and matchmaking services, NGen also offers funding support to Canadian companies attending Hannover Messe. This funding can be used to cover the costs of attending the events such as travel, accommodation, and booth rental fees.

NGen Canada's support for Canadian companies at Hannover Messe also has broader benefits for the Canadian manufacturing industry as a whole. By showcasing Canadian innovation and expertise on the global stage, Canadian companies can help to raise the profile of Canada's manufacturing sector and attract new investment and talent to the industry.

Support for Canadian companies at Hannover Messe is just one example of NGen's broader efforts to support advanced manufacturing in Canada. Through its various programs and ecosystem building initiatives, NGen is helping to drive innovation, competitiveness, and growth in the Canadian manufacturing sector.

Visit www.ngen.ca to become a member and to access training solutions and funding through our calls for manufacturing R&D project proposals.

Robbie MacLeod is Director of Strategic Communications with NGen. ¶

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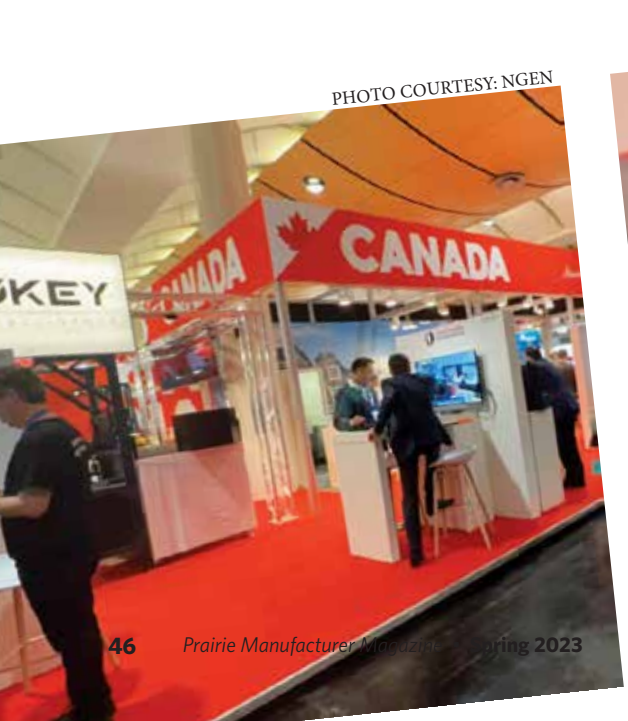


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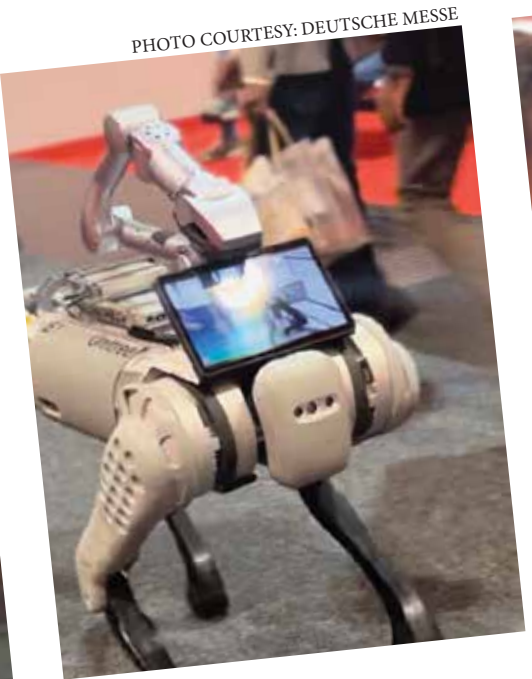


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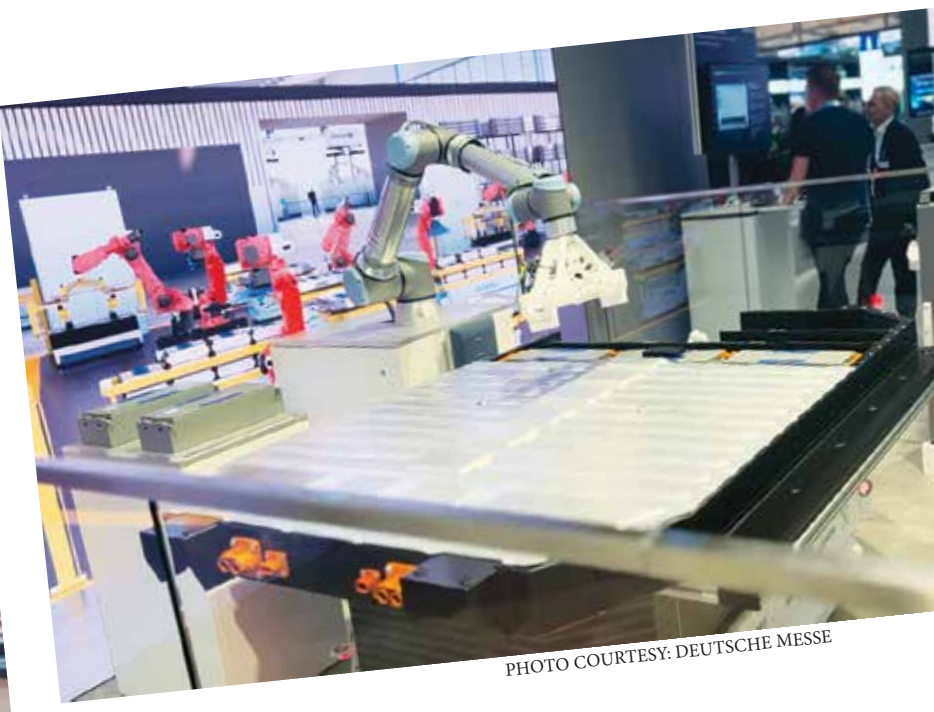


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Hundreds of manufacturers celebrated March Manufacturing Week events, Canadian Manufacturers & Exporters

By Riley Dunn

Manufacturing Week success after years of event hiatus

Industry leaders, practitioners, and supporting service providers all crowded to the RBC Convention Centre last month to participate in Manufacturing Week events. Manufacturing Week, declared by the government of Manitoba each year, marks a time to celebrate the contributions of the manufacturing and exporting industry. During this week, Canadian Manufacturers & Exporters (CME) hosts two of their largest annual events – the Dare to Compete Conference and Gala Awards Dinner.

The return of the Dare to Compete Conference

Returning for the first time since 2019, the Dare to Compete Conference 2023 brought together more than 250 manufacturers

to share insights on the latest industry trends. The conference was met with buzz from attendees excited to reconnect with peers once again after a years-long hiatus. The engaging keynote lineup, along with workshops from *Supply Chain Forecasting to Leading Exhausted Teams*, pointed toward an overarching theme of industry evolution.

The manufacturing industry is undergoing a transformation, driven by technological advancements, shifting supply chains, and changing consumer and worker preferences. As a result, manufacturers are increasingly looking to technology to streamline operations, improve efficiency, and enhance their competitive advantage. This was a key theme over the span of Manufacturing Week, with keynotes focused on technology integration and the role of automation in driving innovation and growth.



Jamie Wilson, Keynote, Dare to Compete Conference.

Keynotes Simon Drexler, ATS Automation, and Jayson Myers, NGen, both gave addresses that placed Canada among the most advantageous destinations for manufacturers to grow their businesses. Drexler, industry expert and thought leader in automation, included insights on the changing nature of the work and practical applications of automation for manufacturers on the prairies. Myers discussed how manufacturers can stay ahead of the curve by adopting new technologies, improving processes, and investing in research and development.

The closing address of the day was delivered by Jamie Wilson, former Deputy Minister & Treaty Commissioner for Manitoba. Working with CME and other industry leaders, Wilson has helped shape the foundation for a collaborative strategy geared toward engaging the Indigenous workforce. In this late

afternoon address, he opened up about the process. In Canada, more than 85 per cent of manufacturers struggle to fill vacancies. With an Indigenous population growing four times quicker than any other demographic, Wilson hopes that with the proper tools in place, a culture shift that considers the needs of Indigenous folks can have a beneficial outcome for all. Alongside industry, Wilson and others hope to bridge the gap between Indigenous peoples in Canada and the industry opportunities available.

All in all, the crowd was inspired and engaged by the topics and presentations. Conversation was rampant in between breakout sessions among attendees and exhibitors alike. Aside from the technology theme, workshops centred around people and culture were also present – and were highly attended! – as manufacturers showed their desire to adapt to more modern



The Gala Awards Dinner welcomed nearly 500 guests at the RBC Convention Centre Winnipeg.



PHOTO CREDIT: DANIEL CRUMP

From left to right, Mike Friesen, Elmer's Manufacturing Ltd., Frank Plett, Westfield Industries, Steve Kroft, Former President and Chairman, Conviron, Todd LeRoy, Loewen Windows and Doors, Gord Atamanchuk, Micro Tool & Machine Ltd.

practices. Hiring and retention have been major issues of late, and it was clear Manitoba manufacturers are looking to change their HR decision-making.

Celebrating innovation and success on the prairies

Later that week marked CME's Annual Gala Awards Dinner, an event that brings together manufacturing leaders, innovators, and job creators to celebrate their achievements and successes. The event is an important event for the industry, as it provides a platform to recognize and celebrate accomplishments that often go unseen. The awards ceremony allows for an opportunity to honour the Hall of Fame, Pioneer, Safety Leadership, Export, and Emerging award recipients. 2023 award recipients included:

- Hall of Fame Award – STEVE KROFT, Former President and Chairman, Conviron
- Pioneer Award – A.D. PLETT, Westfield Industries - *awarded posthumously*
- Export Award – ELMER'S MANUFACTURING LTD.
- Emerging Award – MICRO TOOL & MACHINE LTD. (MTM)
- Safety Leadership Award – TODD LEROY, VP, Manufacturing, Loewen Windows and Doors

Evening highlights

This year, nearly 500 attended the Gala Awards Dinner, which surpassed expectations following years of uncertainty. As usual, the RBC Convention Centre Winnipeg put on a fabulous backdrop for the evening's affairs, with a top-tier dinner menu preceded by a cocktail hour. Attendees had the opportunity

to network with other industry professionals, exchange ideas, and learn about the latest developments in the field. The event program, which ran throughout the evening, included scholarship awards, and of course, the manufacturing awards ceremony.

The evening reached its high point as the awards recipients' highlight videos were unveiled. The five-minute long vignettes paint a well-told story of drive, perseverance, and achievement for those being honoured, and always leave the audience feeling inspired. Other memorable moments included the recipients' acceptance speeches. In particular, Frank Plett, who accepted the Pioneer Award on behalf of his late father, tickled the crowd



PHOTO CREDIT: DANIEL CRUMP

Award recipients' vignettes played during the Gala Awards program.

with his storytelling and wry humour. Steve Kroft, accepting the Hall of Fame Award, brought the show to a close with his acceptance speech where he paid a special tribute to his mother. He reminded us that in addition to being the family rock, she was also a successful entrepreneur herself, in a touching moment no one will soon forget.

The CME Annual Gala Awards Dinner has been celebrated by the manufacturing community for more than 25 years and is a must-attend event for industry leaders. It offers a unique opportunity to celebrate the industry's achievements, network with other professionals, and learn about the latest developments in the field. The event's success is a testament to the strength and vitality of the manufacturing industry and its role in driving economic growth and creating jobs.

Farewell... for now

Overall, Manufacturing Week 2023 was a resounding success, providing valuable insights, practical tips, and networking opportunities for attendees. The event highlighted the important role of technology in driving innovation and growth in manufacturing, while also emphasizing the need to invest in people and culture to drive success. As Canadian manufacturers continue to navigate an evolving industry, events like these will be critical in helping them stay ahead of the curve and drive success.



PHOTO CREDIT: DANIEL CRUMP

Gala Awards Dinner

At the end of the week, participants left with a renewed enthusiasm for the critical role of Canadian manufacturers in driving economic growth and job creation in the Canadian landscape, and a highlighted need for connection to overcome the opportunities and challenges they face in an evolving industry. Looking ahead to next year, Manufacturing Week 2024 promises another exciting event lineup. It will provide an opportunity for industry leaders, innovators, and job creators to come together once again to celebrate their successes and continue to drive the industry forward. 🏆

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8 Questions with Heart & Stroke Foundation of Canada



1 What is heart disease? Is it the same thing as a heart attack?

Heart disease refers to what is really a group of conditions that affect the structure and functions of the heart and has many root causes. Your heart is a muscle and its job is to pump blood around the body. Your heart pumps blood through a network of arteries and veins.

There are many different types of heart disease. Some types can be grouped together according to how they affect the structure or function of your heart.

- **Coronary artery and vascular disease** are due to hardening of the arteries (atherosclerosis). Coronary artery disease happens when the arteries in your heart are narrowed or blocked. It's the most common kind of heart disease and causes most **heart attacks** as well as angina (chest pain). Vascular disease is problems in other blood vessels which reduce blood flow and affect the function of your heart.
- **Heart rhythm disorders** (arrhythmias) cause the heart to beat too slowly, too quickly, or in a disorganized fashion. Millions of Canadians experience heart rhythm disorders which disrupt blood flow. There are many types of arrhythmias – some have no symptoms or warning signs; others can be sudden and fatal.
- **Structural heart disease** refers to abnormalities of the heart's structure – including its valves, walls, muscles, or blood vessels near the heart. It can be present at birth (congenital) or acquired after birth through infection, wear and tear, or other factors. People living with heart defects and their families need support throughout every age and stage of their life, often requiring ongoing medical care and surgical procedures.
- **Heart failure** is a serious condition that develops after the heart becomes damaged or weakened. The two most common causes of heart failure are heart attack and high blood pressure. There is no cure, but early diagnosis, lifestyle changes and medication can help people lead an active life, stay out of hospital and live longer.
- **Other heart diseases** include infections, enlarged heart muscle, and inherited disorders.

2 Are there groups of people that need to be extra-aware about heart disease?

There are some risks for heart disease and stroke that we can't control, including:

- **Age:** The older you are, the higher your risk of heart disease.
- **Family and medical history:** If you have a close relative who has experienced heart disease at an early age, you are at an increased risk.
- **South Asian & African heritage:** People of African or South Asian heritage are more likely to have high blood pressure, diabetes, or other risk factors.
- **Indigenous heritage:** First Nations, Métis, and Inuit peoples are more likely to have high blood pressure and diabetes. This puts them at greater risk of heart disease.
- **Sex:** Women are at increased risk of heart disease and stroke during certain phases of their lives, in particular during pregnancy and menopause.

3 How can we prevent and/or manage heart disease?

Prevention starts with knowing your risks. Nine in ten Canadians have at least one risk factor for heart disease and stroke.

Almost 80 per cent of premature heart disease and stroke can be prevented through healthy behaviours. That means that habits like healthy eating, being active, managing stress, and living smoke free, have a big impact on your health.

There are also some medical conditions that increase the risk of heart disease and stroke, but you can manage them with medication, treatment, and by making healthy choices. The more risk factors you have, the greater your risk.

The key medical conditions that increase your risk for heart disease and stroke include:

- High blood pressure (hypertension)
- High cholesterol
- Diabetes
- Atrial fibrillation
- Pre-eclampsia
- Sleep apnea

4 What is the relationship between heart disease and stroke?

Heart disease and stroke are both types of cardiovascular disease. They share many of the same risk factors, so prevention of the two diseases is very closely related.

When someone has a heart attack, it's usually due to a blockage of blood flow to the heart, which damages the muscle tissue. When someone has a stroke, it's usually due to a blockage of blood flow to the brain, killing the brain cells in the affected area.

There are also some heart diseases, such as atrial fibrillation, that can cause blood clots that block the blood flow to the brain, resulting in a stroke.

The heart and the brain are both essential organs for life, so an assault on either is an emergency that requires urgent medical attention.

5 What is a stroke?

A stroke happens when blood stops flowing to any part of your brain, damaging brain cells. The effects of a stroke depend on the part of the brain that was damaged, and the amount of damage done. There are three types of stroke:

- **Ischemic stroke**, caused by a blockage or clot in a blood vessel in your brain. The blockage can be caused when a substance called plaque builds up on the inside wall of an artery.
- **Hemorrhagic stroke**, caused when an artery in the brain breaks open. The interrupted blood flow causes damage to your brain. High blood pressure weakens arteries over time and is a major cause of hemorrhagic stroke.
- **Transient ischemic attack (TIA)**, caused by a small clot that briefly blocks an artery. It is sometimes called a mini-stroke or warning stroke. The TIA symptoms usually last less than an hour and may only last a few minutes. TIAs are an important warning that a more serious stroke may occur soon.

6

What are the signs of stroke, and what should we do if we see or feel them?

Every minute after a stroke begins, 1.9 million brain cells die – stroke is a medical emergency. Everyone has the potential to be a part of saving lives and improved outcomes from stroke by recognizing the signs and understanding the urgency to call 9-1-1 when they witness or experience a stroke. There are excellent treatments for stroke and our provinces have very efficient and effective stroke systems to ensure that a stroke patient receives timely access to treatment. But time is of the essence – the sooner someone having a stroke gets to the right hospital for the right treatment at the right time, the better their chances of good outcomes.

Heart & Stroke's **FAST signs of stroke** campaign provides the public with an easy to remember the most common signs of stroke and what to do if they witness or experience one.

There are some additional signs of stroke that are less common. They include:

- Vision changes - blurred or double vision
- Sudden severe headache - usually accompanied by some of the other signs
- Numbness - usually on one side of the body
- Problems with balance

Know the signs of STROKE

- F** **Face**
is it drooping?
- A** **Arms**
can you raise both?
- S** **Speech**
is it slurred or jumbled?
- T** **Time**
to call 9-1-1

Beat stroke
Call 9-1-1 FAST
heartandstroke.ca/FAST

7

What areas are researchers currently focused on in relation to heart disease and stroke?

Heart & Stroke-funded researchers work in the full spectrum of research: basic biomedical, clinical, health systems services, and population health.

Since our inception 70 years ago, Heart & Stroke has invested more than \$1.6 billion in research, making us one of the leading forces supporting Canadian research in heart and brain health. This investment, made possible by Heart & Stroke donors, supports best-in-class researchers across the country. Their innovative studies will set the stage for faster diagnosis, better treatments, and improved quality of life for people living with heart and brain conditions – both in Canada and around the world.

Our research strategy is founded on a commitment to excellence, and to investing in the best science as evaluated by competitive peer review. We fund investigator-driven research, build the capacity and strengths of Canada's research community, and invest in priorities that will have the greatest impact and benefit to people living with or at risk of heart conditions, stroke or related dementia.

8

How can employers support their employees' heart health?

There are many ways that employers can support their employees' heart health, and each organization needs to evaluate the channels and initiatives that work for them. Some suggestions include:

- Co-ordinate workplace CPR/AED/First Aid training
- Share the emergency signs of cardiac arrest, heart attack, and stroke with employees through internal newsletters or intranet sites.
- The Heart & Stroke website has a wealth of healthy living information, including tips and strategies to empower Canadians to adopt healthy lifestyles. This information can also be shared with your employees.
- Stress and smoking are two risk factors for both heart disease and stroke. Providing your employees with access to support to manage stress or to quit smoking is a great way to support the health of your employees. ¹

For more information about heart disease, stroke, and how you can decrease your risk, visit heartandstroke.ca.



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