# 2026 ADVANCED MANUFACTURING OUTLOOK REPORT

## Industry 4.0 in focus: What Canadian manufacturers are prioritizing now

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# A NEW ERA IN AI-POWERED MANUFACTURING HAS ARRIVED

By Rory Macleod

Successful Canadian manufacturers have always kept a close eye on output, new orders and staffing levels. The manufacturers that win in the future will be just as focused on data, delivering a better customer experience and augmenting their workforce with AI.

Although some of the challenges facing the industry look new, most manufacturers are focusing on age-old issues. Operations aren't as efficient as they could be. The cost of doing business is too high. There's never enough time to pursue potential new revenue streams. More recently economic challenges such as tariffs are complicating strategic planning even further.

AI powered by well-managed data opens up an opportunity to change all that and allows manufacturers to accelerate longstanding modernization efforts and support growth and new market expansion.

This year's *Advanced Manufacturing Outlook Report* is a reflection of where the sector stands today, but the strategic use of technology will make tomorrow look a lot different. Many firms have already been exploring AI use for a long time, but those projects were probably limited to generative AI. Agentic AI represents another huge leap forward, where agents will be able to perform actions on a user's behalf.

Think about what this means in a manufacturing context. AI Agents will not only be able to identify repairs before equipment goes down, but proactively reach out to order replacement parts or schedule a technician to come on site. Instead of employees spending time scouring inventory to respond to customers, AI agents will respond to natural language requests and provide the answers they need.

AI agents will also free up sales teams to focus on building customer relationships by checking agreements for discrepancies and finalizing them for signoff. Even partner relationships will get easier as AI agents deal directly with tasks like managing rebate programs.

All this depends on manufacturers working with robust, accurate, up-to-date and consistent data, which will fuel AI agents in the work they do. Unifying data and making it accessible to all relevant stakeholders should be job one for firms that want to transcend current economic headwinds and get ahead of competitors.

Next, Canadian manufacturers should be educating their teams about how an AI-enabled workforce will support them in achieving their most ambitious business objectives. Unlike previous eras of innovation where organizations depended on IT and developers, low-code and no-code tools, along with pre-built templates, are empowering employees at every level to develop prototypes that turn into full-fledged AI apps.

Of course, this transformation will look different from one manufacturing firm to another. Reviewing your existing performance can provide critical insight on where the gaps are, what data management issues should be resolved and how you should prioritize AI agent deployments.

Technology investments should also align closely with specific goals and key performance indicators. These could include using AI to amplify productivity, reducing costly downtime and addressing overstretched resources with a limitless digital workforce.

As more Canadian manufacturers modernize, they'll quickly learn how to spot additional areas for technology-powered improvement. These could include using AI agents to create quotes and win new business faster, using data more strategically to expand operations and reach new levels of productivity.

This year's findings will give you a comprehensive snapshot of where the Canadian manufacturing sector stands now. It's up to the industry's trailblazers to determine what happens next.

**Rory Macleod**
Area Vice President, Sales – Accelerated Industries
Salesforce

# HOW CAN MANUFACTURING BUSINESSES NAVIGATE TARIFF IMPACTS?

By Ryan Magee, CPA, CA

Tariffs on goods between the U.S. and Canada uniquely impact manufacturing businesses, and MNP has been talking with clients over recent weeks about their concerns. In this article, we summarize the major trends and share insights into how your manufacturing business can navigate some of these challenges.

## Concerns about rising costs

Tariffs present a real threat to costs. Some manufacturers rely on U.S. imports to make their products and could face tariffs on critical components.

Manufacturing businesses can try to offset these price increases by passing them on to customers. However, customers may not be willing to accept higher prices due to the increased rate of inflation over recent years and broader challenges in the economy.

Another option is to offset some of the tariff impacts by looking at your internal operations and improving your efficiency to produce more with the same resources. Some priority areas to explore include:

- **Operations excellence:** Your business can reduce costs and increase output by improving its process and systems efficiencies.
- **Quality control:** Quality issues lead to waste and erode the profitability of your business. It is important to address this problem immediately if your business is experiencing quality issues.
- **Product-mix:** Prioritize products that are high-margin or essential to your customers.

## Questions about U.S. operation implications

Some manufacturing businesses have considered opening operations in the U.S. to avoid tariffs. However, it is important to consider the tax implications. The U.S. tax system can be complex, and some business owners underestimate the impact of paying taxes in multiple jurisdictions.

Taxes are also revenue-dependent in many cases, so you may be subject to different and unfamiliar legal and regulatory requirements. If you're considering opening operations in the U.S. market, it is important to ask yourself these questions:

- Are you confident that you understand the competitive landscape and that there's a market for your business?
- The exchange rate as a Canadian business exporting to the U.S. may make your prices more competitive. Would moving to the U.S. eliminate that opportunity?
- How would the tax implications impact your bottom line?

## What government supports and programs are available?

Multiple levels of government have announced their intention to support businesses heavily impacted by tariffs.

The federal government's tariff remission process is especially relevant to manufacturers. To understand and support businesses impacted by tariffs, the government is soliciting requests for businesses to receive relief from paying tariffs or refunds on tariffs that have already been paid.

You can learn more about the remission process on the Government of Canada's website.

## Loan programs from EDC and BDC

**Trade Impact Program – Export Development Canada (EDC)**

The Trade Impact Program will deploy $5 billion over two years to help exporters reach new markets and navigate economic challenges such as currency fluctuations and cashflow issues.

**Pivot to Grow loan – Business Development Bank of Canada (BDC)**

This trade support loan program will offer $500 million in financial support, advice and loan deferrals to small- and medium-sized businesses (SMBs) with concrete financial impacts directly resulting from U.S. tariffs.

## How can MNP help?

For larger businesses with a range of products, planning for tariffs starts with understanding if you're exposed to risk. MNP's Tariff Risk Exposure Assessment can help you identify your risk level and start to make mitigation plans.

By getting ahead and thinking about potential tariff-related challenges and opportunities, you can position your business to remain competitive. To learn more about how to prepare, contact:

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# ADVANCING MANUFACTURING IN CANADA

By Scott McNeil-Smith

Manufacturing remains a cornerstone of Canada's economy, contributing over 10% of GDP and employing more than 1.8 million Canadians across every region of the country. Yet, as we enter 2026, our sector faces both unprecedented challenges and significant opportunities.

Global economic headwinds—ranging from trade and tariff uncertainty, supply chain pressures, inflationary costs and talent shortages—continue to weigh heavily on manufacturers' investment decisions. At the same time, survey results show cautious optimism, as Canadian manufacturers are embracing advanced manufacturing, clean technology and digital transformation at a pace that reflects both necessity and resilience. Notably, while spending on most digital technologies slowed over the past year, investment and intent around artificial intelligence surged, highlighting a growing recognition of AI's value in driving competitiveness.

For Canada's largest manufacturing consortium, EMC's approach to Advancing Manufacturing in Canada' is anchored in a People–Process–Plant/Technology framework—ensuring that the sector's evolution is as much about human capability and operational excellence as it is about the adoption of new tools and systems.

## People: Developing a skilled and resilient workforce

Canada's manufacturing future hinges on its people. Skills shortages remain one of the most pressing challenges facing manufacturers today. As technologies advance faster than human adaptation, the need for upskilling, reskilling and new talent pathways is more urgent than ever. Upskilling current capabilities, engaging youth, newcomers and underrepresented groups, and strengthening lifelong learning opportunities are all vital to addressing gaps and building a more diverse, dynamic workforce.

## Process: Building productivity, agility and sustainability

In today's volatile trade environment, process optimization and excellence is a differentiator. Manufacturers are rethinking operations to mitigate risks, improve productivity and strengthen resilience. Continuous improvement, lean best practices and green manufacturing are enabling firms to reduce costs, shorten lead times and build capacity for sustainable growth. Our survey confirms that companies prioritizing process efficiency and sustainability are better positioned to navigate tariff disruptions and global competition.

## Plant/Technology: Leveraging digital, clean and smart manufacturing

Technology remains a catalyst for transformation. Integrated systems, automation and IIoT are unlocking data-driven insights, enabling predictive maintenance, improving quality and optimizing energy use. The strong upswing in AI investment signals its emerging role in enhancing productivity, from smarter scheduling to energy optimization to real-time quality monitoring. Meanwhile, clean technologies are supporting manufacturers in reducing carbon footprints, aligning with net-zero goals and opening access to new international markets where sustainability is a precondition for competitiveness.

The pursuit of excellence in advanced manufacturing depends on the synergy of People, Process and Plant/Technology. Together, these elements form the foundation for a sector that is resilient, sustainable and globally competitive.

For nearly three decades, EMC has stood alongside manufacturers across Canada—providing leadership, benchmarking, subject-matter expertise and a powerful national network. As a proud partner in this year's *Advanced Manufacturing Outlook Report*, we remain dedicated to supporting manufacturers in navigating uncertainty, seizing opportunities and advancing their own pathway to excellence.

Together, we will continue our mission of advancing manufacturing in Canada—building a sector that is more resilient, more competitive and ready for the future.

**Scott McNeil-Smith**
Vice-President, Manufacturing Sector Performance
Excellence in Manufacturing Consortium (EMC)

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# WHO TOOK OUR SURVEY?

This year's Advanced Manufacturing Outlook survey drew responses from executives and managers across Canada's manufacturing sector, with the majority based in Ontario (54%). Western Canada accounted for nearly a quarter of participants (24%), while Quebec represented 14% and Atlantic Canada 8%.

Most companies surveyed are small- to mid-sized businesses, with 39% employing fewer than 50 people and another 38% reporting between 50 and 249 employees. Larger organizations are also present in the sample, including 8% with 250–499 employees, 7% with 500–999, 4% with 1,000–4,999 and 3% with 5,000 or more.

Three-quarters of respondents report annual domestic revenues under $50 million, with 26% falling in the $10–30 million range. The average company size is 486 employees and the average domestic revenue is $81.7 million.

**51.4**
Estimated average age of survey respondents.

## Respondent profile

Respondents are predominantly male (80%), with 17% identifying as female. Two-thirds are between the ages of 36 and 65 and the average age is 51.4 years. Forty percent of participants hold an ownership stake and management role, while 44% are managers only. The most common titles among respondents are Owner/Partner, CEO/President and Plant Manager.

Manufacturers from a broad range of sectors took part, with the largest groups representing miscellaneous manufacturing (27%), computer and electronic products (14%), fabricated metal products (14%), machinery (14%) and electrical equipment/appliances/components (12%).

## Technology investment and attitude

Survey participants continue to show strong engagement with digital transformation and advanced technologies. Forty percent say their company is in the Developing stage of digital transformation, while another 39% are Established, Advanced or Leading. Nearly 80% of respondents are applying IIoT in some form, most often to improve efficiency, maintenance and data visibility.

Technology investment remains a priority, with 97% planning to invest in new technologies over the next three years. Artificial intelligence is the fastest-growing area of interest, with 64% planning investments—a 13% increase over last year. Robotics and automation, as well as cybersecurity, are also top priorities.

When it comes to spending, one-third of respondents expect to invest between $100,000 and $499,999 in technology over the next three years, while a quarter plan to spend $500,000 to $999,999. Sixteen percent anticipate investments of $5 million or more and the average intended spend is $1.3 million.

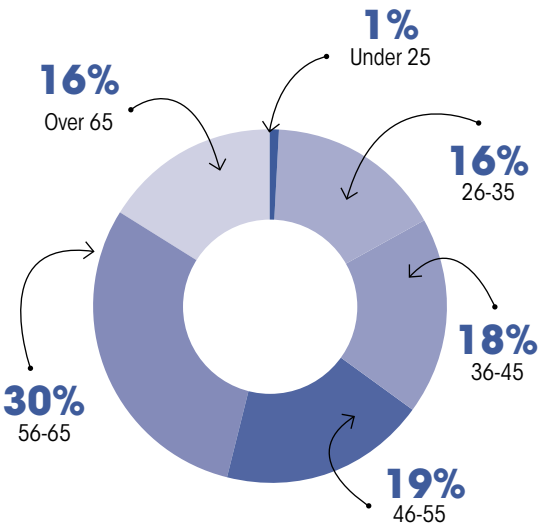
Most manufacturers report tangible benefits from technology upgrades, including increased product quality, throughput and reduced downtime. However, challenges persist, with integration difficulties, cost and lack of financing or support cited as the main barriers to investment. Cybersecurity remains a concern for one in five respondents.

The survey reveals a sustained optimism about the potential of advanced technologies. Eighty-six percent agree that systems are designed with user input and 84% say Industry 4.0 is a great concept, though challenging to implement. Eighty-two percent see IIoT as a business growth opportunity and more than half say their company has a roadmap for Industry 4.0. At the same time, 52% believe new technology increases cybersecurity risk and three-quarters are concerned about the future of businesses that do not invest in Industry 4.0.

Cybersecurity remains a top concern for manufacturers, with 78% expressing high levels of concern about risks. Three-quarters have experienced a cyberattack or breach, most commonly phishing and ransomware. Nearly all respondents have taken measures to protect against cyber threats, including implementing security infrastructure and conducting risk assessments.

# DEMOGRAPHICS

## AGE




## NUMBER OF EMPLOYEES

| | |
|---|---|
| Less than 50 | 39% |
| 50 – 249 | 38% |
| 250 – 499 | 8% |
| 500 – 999 | 7% |
| 1,000 – 4,999 | 4% |
| 5,000 or more | 3% |

## TITLE

| | |
|---|---|
| Owner/partner | 12% |
| CEO/President | 11% |
| Plant Manager | 9% |
| Design Engineering | 8% |
| Production/Operations Manager | 8% |
| Administrative Management | 6% |
| Maintenance Manager | 5% |
| Plant Engineering | 5% |
| Vice-president | 5% |
| Quality Assurance Manager | 4% |
| Safety manager | 4% |
| Technician/Technologist | 4% |
| Director | 4% |
| IT/Systems Manager | 2% |
| Logistics Manager | 2% |
| Purchasing/Supply Manager | 2% |
| Materials Manager | 1% |
| Other | 7% |

## LOCATION


Ontario
**54%**


Quebec
**14%**


British Columbia
**10%**


Alberta
**9%**


Nova Scotia
**4%**


Manitoba
**4%**


New Brunswick
**4%**


Saskatchewan
**2%**


Newfoundland & Labrador
**1%**


PEI
**0%**


Yukon / NWT / Nunavut
**0%**

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## INDUSTRY SECTORS

| Industry | % |
|---|---|
| Miscellaneous manufacturing | 27% |
| Computer and electronic product | 14% |
| Fabricated metal product | 14% |
| Machinery | 14% |
| Electrical equipment, appliance, and component | 12% |
| Plastics and rubber products | 9% |
| Food manufacturing | 7% |
| Motor vehicle parts | 7% |
| Environmental | 5% |
| Life Sciences (such as Biopharma/Pharmaceutical, medical devices) | 5% |
| Primary metal | 5% |
| Transportation equipment | 5% |
| Wood product | 5% |
| Aerospace product and parts | 4% |
| Furniture and related product | 4% |
| Beverage and tobacco product | 3% |
| Chemical | 3% |
| Motor vehicle | 3% |
| Non-durable goods industries | 2% |
| Paper manufacturing | 2% |
| Clothing manufacturing | 1% |
| Petroleum and coal product | 1% |
| Printing and related support activities | 1% |
| Ship and boat building | 1% |
| Non-metallic mineral product | 0% |
| Textile product mills | 0% |

## TOTAL REVENUE (domestic operations only)

| | |
|---|---|
| Less than $1M | 8% |
| $1M to just less than $5M | 16% |
| $5M to just less than $10M | 14% |
| $10M to just less than $30M | 26% |
| $30M to just less than $50M | 11% |
| $50M to just less than $100M | 13% |
| $100M to just less than $250M | 6% |
| $250M to just less than $500M | 3% |
| $500M to just less than $1B | 2% |
| $1B plus | 2% |

# EXECUTIVE SUMMARY

For Canadian manufacturers, 2025 was a year of navigating uncertainty and adapting to new pressures, driven largely by U.S. tariffs and a trade war that compounded challenges around demand and market stability. These disruptions added to persistent issues, such as inflation, a tightening labour market and evolving cybersecurity threats, that have defined the sector in recent years, prompting manufacturers to rethink their investment strategies and adjust their digital transformation plans.

In response to economic and trade pressures, many companies raised prices, paused hiring or reduced staff. On the upside, manufacturers continued to explore new markets, diversify supply chains and invest in technologies to remain resilient. Meanwhile, growing cybersecurity threats and ongoing labour shortages continued to shape how manufacturers approach digital transformation and investment.

Our 2026 Advanced Manufacturing Outlook survey found that Canadian manufacturers are continuing to leverage advanced technologies such as IIoT, artificial intelligence and machine learning; however, progress has been tempered by caution. Investment intentions are more selective and many are prioritizing strategies that offer clear, immediate returns amid ongoing challenges. The survey measured advanced manufacturing engagement, including IIoT, artificial intelligence and machine learning, among 114 Canadian manufacturing executives and leaders.

For the second consecutive year, the survey was conducted by Bramm Research Inc. in Toronto from the end of May to mid-July. This research was conducted on behalf of *Canadian Manufacturing Online (CMO)* and *Plant*, in partnership with our sponsors: MNP, EMC and Salesforce. The survey defines advanced manufacturing as the integration of machine learning, interconnectivity, automation and real-time data analysis, encompassing the Industrial Internet of Things (IIoT), advanced computing, artificial intelligence and cloud technologies.

## Digital transformation and IIoT adoption

Survey results indicated that Canadian manufacturers are making steady, if uneven, progress towards digital transformation. Nearly four in five respondents (79%) report applying IIoT solutions within their operations, up from 67% in the previous year. The most common applications remain improving efficiency and productivity (46%), but there has been a notable increase in the use of IIoT for maintenance functions (37%, up 14 points), as well as for enhancing data visibility across production and management (35%).

It's also worth noting that those who indicated they are not currently applying IIoT dropped 11 points from 2025.

The sector continues to display a wide range of digital maturity. Forty percent of respondents describe their organizations as being in the Developing stage of digital transformation, with another 39% identifying as Established, Advanced or Leading. However, 22% reported that they still operate at the Initial stage, relying on siloed technology and manual processes.

This digital divide is somewhat reflected in the tools used for data collection and analysis. Data-driven decision-making is the norm, but spreadsheets are still the primary method for collecting that data (76%), followed by ERP systems (55%) and accounting packages (49%). More advanced tools such as sensors and big data analytics is gradually increasing.

## Technology investment

Technology investments are delivering clear business benefits, with 95% of manufacturers reporting at least one positive outcome. Top gains include improved product quality (54%, up 7 points), throughput (44%) and data security (33%, up 16 points), with manufacturers also noting reductions in downtime (42%) and operating costs (42%). Despite these gains, the path to digital maturity is not without obstacles. The top reasons for not investing in technology are integrating new technologies with existing systems (40%) and cost (33%). Funding and financing issues remain persistent (30%) and concerns about cybersecurity as a barrier to investment have grown (21%, up 10 points). Fewer respondents this year cited a lack of skills or uncertainty about where to start as major barriers, suggesting that perhaps awareness, education and digital skills are on the rise across the sector.

Investment intentions for the next three years reflect a more selective, ROI-driven approach than 2025. While nearly all respondents (97%) plan to invest in at least one advanced technology, the average

*46% percent of respondents report that recent tariffs have reduced their technology investment, while 42% say there has been no change. Companies with more advanced digital transformation are somewhat more likely to maintain or increase investment, suggesting that digital maturity may provide a buffer against disruptions.*

intended spend has moderated to $1.3 million, down from $2.2 million among the most digitally mature companies last year. Manufacturers are prioritizing technologies with clear, immediate returns, with artificial intelligence (AI) showing the greatest increase in planned investment, while interest in automation has declined. Planned investment in robotics and automation dropped by 19% compared to last year and management systems dipped by 9%.

## Artificial intelligence (AI)

The survey suggests that artificial intelligence is moving from concept to implementation. Nearly two-thirds of respondents plan to invest in AI over the next three years and 62% report already using machine learning or AI in at least one area of their business. Among organizations with more advanced digital transformation, 36% are deploying AI in several areas and 6% have integrated it throughout their operations.

The anticipated impact of AI is broad: Forty-five percent anticipate improvements in production processes, while 44% see potential for supply chain management, 43% for sales automation and 35% for financial processes. AI and machine learning are also being adopted to mitigate supply chain risks, with 30% of respondents reporting use in this area. As adoption grows, manufacturers are shifting their focus from pilot projects to practical, ROI-driven applications that support resilience and competitiveness.

## Data utilization

As manufacturers expand their use of AI, they are also finding new ways to leverage and monetize data. Of the respondents, 70% said they are leveraging data to improve operational efficiencies, 38% are strengthening supply chain relationships and 35% are developing new business models based on data insights.

Efforts to monetize data are expanding, with 92% of digitally mature organizations reporting some form of data monetization. Thirty percent are developing analytics capabilities for external sale and 25% are partnering with similar companies to unlock new value from data. There is also growing recognition of the benefits of data sharing and advanced analytics, particularly for improving production, sales and maintenance. As manufacturers expand their use of data, they are laying the groundwork for more sophisticated, integrated approaches to business intelligence.

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## Cybersecurity

As manufacturers continue to digitize their operations, the importance of robust cybersecurity measures has grown. With nearly 75% of respondents reporting cyberattacks, investment in cybersecurity infrastructure, data privacy controls and breach response plans is now seen as essential to protecting both operational continuity and sensitive business data.

Manufacturers are taking a more proactive approach to cybersecurity, with 97% having implemented at least one protective measure. Common strategies include upgrading security infrastructure (63%), conducting risk assessments (59%, up 9 points), developing cybersecurity strategies (57%) and implementing data privacy controls (51%).

A notable increase has been seen in the adoption of cyber breach response plans (40%, up 13 points). However, only 20% of respondents

feel they have taken all possible precautions, suggesting a need for continuous vigilance in the face of evolving cyber threats.

## Trade, tariffs and supply chain

Throughout the first half of 2025, escalating U.S. tariffs, particularly on critical raw materials and goods, forced many manufacturers to reevaluate and adapt their supply chain strategies. While these tariffs created immediate pressure on costs and demand, manufacturers responded by diversifying suppliers, exploring alternative markets and adopting advanced technologies to mitigate the impact. Forty-six percent of respondents report that recent tariffs have reduced their technology investment, while 42% say there has been no change. Companies with more advanced digital transformation are somewhat more likely to maintain or increase investment, suggesting that digital maturity may provide a buffer against external shocks.

To manage the effects of tariffs and rising costs, manufacturers are employing a range of strategies. The most common include diversifying supply chain sources (53%), increasing product or service prices (46%), reducing operational expenses (39%) and pursuing alternative partnerships (41%). Many are also streamlining processes to boost productivity (56%) and seeking alternative suppliers (57%) to mitigate the impact of inflation and supply chain disruptions. Notably, 42% are investing in efficiency-enhancing technologies as a direct response to these challenges.

## Organizational priorities

As manufacturers look to the future, their priorities are shifting toward targeted, high-impact investments that can deliver measurable results. The biggest perceived threats to not investing in Industry 4.0 technologies include missing out on new business opportunities (55%), pricing pressure from commoditization or automation (52%), disruption by industry outsiders (48%, up 19 points) and customer losses (43%, up 11 points). Financial concerns, resistance to change and the challenge of integrating new technologies within current operations remain significant risks.

Despite these challenges, there is growing optimism about the future. Survey and roundtable insights suggest that increasing diversity and generational change in leadership may help accelerate digital transformation. Manufacturers are not just responding to current pressures but are actively positioning themselves for success in an ever-evolving global market.

**By Kirstyn Brown,** Editor, *Plant & 2026 Advanced Manufacturing Outlook Report*


# THE DIGITAL JOURNEY

## Canadian manufacturers are navigating technology investments at their own pace—all while in a volatile economy.

By Jack Kazmierski

Despite strong economic headwinds, including an unprecedented tariff war, Canadian manufacturers recognize the need to invest in technology and are pushing forward with digitization.

However, the digital journey is different for each manufacturer, and companies are progressing at their own pace. According to our 2026 Advanced Manufacturing Outlook survey, a variety of factors are affecting the pace of digitization, from lack of funding and legacy systems to employee resistance and feeling of unreadiness.

The survey results were analyzed by a panel of seven industry experts who participated in a roundtable discussion in August 2025. One of the experts, Scott McNeil-Smith, Vice President, Manufacturing Sector Performance at Excellence in Manufacturing Consortium (EMC), noted that manufacturers are experiencing real benefits from technology adoption, but the pace of adoption is uneven.

"We're seeing this more so with small and medium-sized manufacturers," he said. "I think for the most part they see the value, but tend to struggle, especially when there's things like trade and tariffs that they're dealing with, even if they don't directly apply to them."


McNeil-Smith explained that some manufacturers are also struggling with legacy systems and with pushback from staff.

"We've heard from a number of companies that tried to put ERP in, and their employees tried to make the new system do things the way the old system used to do it," he said.

Hussam Malek, Partner at MNP, noted that generational differences in leadership can influence how companies approach technology adoption. He spoke about a business owner who didn't see the value of newer technologies until his 23-year-old son joined the business.

"He's now implementing a full ERP system," said Malek.

Succession plans also play a part. Malek explained that as older individuals get out of the manufacturing business, younger individuals are purchasing their companies and for them, technology adoption is crucial.

"Some of the big private equity firms have moved downmarket to pick up some of these small to mid-sized businesses and for them data is very important. So they're going to be injecting IIoT into these businesses to ensure that they're running at the same level as the larger businesses they own," said Malek.

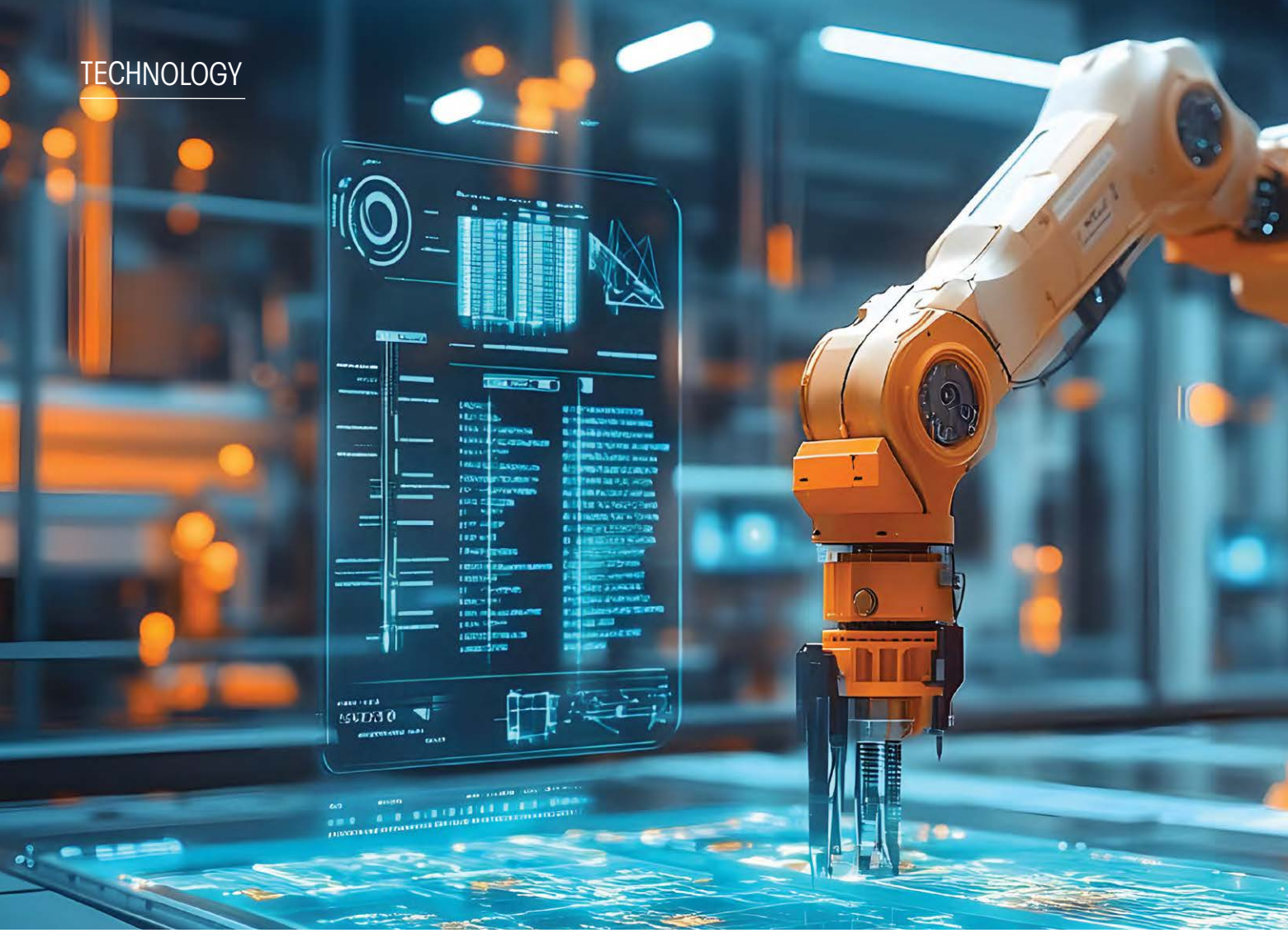


Photo: © Ram / Adobe Stock

## LEVEL OF AUTOMATION

| | Initial | Developing | Estab+ |
|---|---|---|---|
| Primarily machine-driven systems, minimal human intervention | **0%** | **2%** | **2%** |
| Machine-driven, some human intervention | **24%** | **20%** | **37%** |
| Machines, processes require significant human involvement | **16%** | **49%** | **33%** |
| Minor automation, processes mostly require human involvement | **36%** | **29%** | **23%** |
| No automation systems in place | **24%** | **0%** | **5%** |

## Digital transformation stages: What's holding manufacturers back?

The survey shows most manufacturers are still early in their digital transformation journey, with 22% in the Initial stage (Level 1), meaning technology is used in silos, most processes are manual and data integration is limited, and 40% of respondents in the Developing stage (Level 2), characterized by partial automation and limited data use. Another 34% are at the Established stage (Level 3), where systems are connected across departments and data is used proactively to support decisions. Just 4% have reached the Advanced stage (Level 4), characterized by high automation and predictive analytics, and only 1% are at the Leading stage (Level 5), with fully integrated, AI-enhanced operations and innovation driven by data.

According to Jayson Myers, CEO of Next Generation Manufacturing Canada, the fact that so many companies are at the Developing and Established stages (Levels 2 and 3), means that they see the importance of new technologies. However, the reason so few are in the Advanced and Leading stages (Levels 4 and 5), he added, is because these are very difficult stages to get to.

"The more developed you become, the more integrated your data

systems and information systems need to be, which is a really difficult management and organizational change," said Myers. "It's not just about sharing data; it's about changing the entire organization, reporting structures and everything else. So, it's not a surprise that that we don't see too many in the Advanced and Leading stages because it is a very difficult stage to attain, I think."

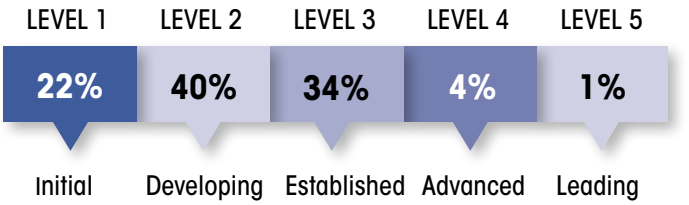
Among the top reasons for not investing in technology, respondents cited the difficulties in integrating advanced technologies into existing systems (40%) and cost (33%). But notably, compared to our 2025 survey, a greater percentage of respondents now state that investment is not necessary for continuing operations (+8%) and express concern about greater exposure to cybersecurity threats (+10% ). On the other hand, fewer respondents are unsure where to start or lack the skills to support investment (both down 9%).

McNeil-Smith added that many manufacturers are cautious about adopting new technologies due to concerns about operational disruption.

"When you ask them, 'Why didn't you invest in this? Why didn't you and go down that road?' it's because they're worried about disruption to productivity."

> *Manufacturers need help to develop a plan. Companies need to understand where to start, what the journey will look like and what the end goal should be.*
>
> *– Aaron Kelly, Salesforce*

## LEVEL OF DIGITAL TRANSFORMATION




## KEY CHALLENGES TO INVESTING IN TECHNOLOGY

| | |
|---|---|
| 40% | Difficulties integrating advanced technologies in existing systems |
| 33% | Too costly |
| 30% | Lack of fainancing and support |
| 27% | Uncertainty, risk, and disruption |
| 27% | Investment not necessary for continuing operations |
| 25% | Lack of skills to support investment |
| 21% | Concerned about exposure to cyber security threats |
| 18% | Lack of support or services from government |
| 18% | Lack of adequate information about advanced technologies |
| 17% | Not convinced of economic benefit |
| 17% | Lack of support or services from external vendors |
| 16% | Weak customer demand |
| 4% | Not sure where to start |
| 4% | Other |
| 4% | None of these - we are investing in technological upgrades |


Another key concern is the quality of the data. Aaron Kelly, Senior Director at Salesforce, said that some companies are hesitant about implementing more advanced solutions because they don't feel that their data is ready for these more advanced levels. He explained that a lot of manufacturers are spending time just trying to get their data in one place; they're not ready for AI or high automation because their systems are still siloed.

"I think there's a misunderstanding of what the various stages could be, and where you need to be internally," he said.

Malek agreed, noting that a lack of leadership can be an issue as well.

"The reason why the majority are at Level 2 and 3 is because of the change management that's required, and also because of the data accuracy, which is linked to the lack of change management within some of these small companies."

Vishen Maharaj, Director of AI and Machine Learning at MNP Digital added that fear can prevent some companies from embracing change.

"Digital transformation is difficult," he said. "Reimagining how your business works from a digital standpoint and trying to transform your business is like rebuilding a plane in the air. It's scary, and a lot of times, you don't know where to begin."

Maharaj recommended starting slowly, rather than trying to change everything at once.

"I don't believe in this big bang approach to digital transformation because it takes years, and you don't see the ROI immediately," he said.

Instead, Maharaj recommends that businesses experiment to see what works. If something is not working, he recommends abandoning it quickly. If something is working, "understand the impact to your bottom line, and how much you want to reinvest to see if it will continue to help create productivity in your operations," he said.

Kelly offered a new way of looking at ROI.

"Sometimes the ROI isn't how much more money you're going to make, but the risk you're mitigating so that you're not paying for a cybersecurity incident or a data breach incident," he said.

Warren Ali, Director of Industry Development at Vector Institute explained that safety and security have always been seen as something physical—the safety of employees or of the products being manufactured. Now, that paradigm has shifted, and companies need to consider the safety of non-physical things, like data.

"This requires a different type of thinking, a different type of process, a different type of evaluation—and that's a challenge for small and medium-sized enterprises," he said.

**93**
Percentage of respondents who reported using any automation.

Cybersecurity should be top-of-mind, Malek added, especially for small and mid-size companies because they're, "easy targets. They're wide open for attack."

One of the challenges facing manufacturers as they look at ways to upgrade technologies is that they're still heavily invested in legacy systems.

"I think a lot of manufacturers understand that the digital infrastructure is as important as the physical infrastructure," said Maharaj. "The problem is that there are a lot of legacy systems and trying to create interoperability of information has become really difficult."

Malek explained that small to mid-sized companies are facing a catch-22 scenario: The adoption of newer technologies has been challenging for them because the people who own and manage these businesses tend to be from an older generation. When younger individuals join these businesses, however, they often don't want to stick around because of the lack of technology.

Photo: © Bird Photographer TH / Adobe Stock

## Attitudes toward technology

In general, manufacturers have a positive view of technology. The majority of respondents (80%) feel that systems are designed with user input; that Industry 4.0 is a great concept but challenging to implement; and that emerging technologies allow small companies to compete globally.

However, fewer respondents (82%; -8% vs. 2025) see Industrial Internet of Things (IIoT) as a business growth opportunity compared to last year and state that their company has a plan or roadmap for Industry 4.0 (55%; -14% vs. 2025). Meanwhile, 57% said machinery replacement is an investment they can't afford due to the downtime, down only 3% from last year.

To this, Maharaj offered this perspective:

"Industry 4.0 is coming, whether people want it or not," he said. "The frustration can arise when you're dealing with legacy systems, trying to access that information, and just trying to understand where to begin. That's where you could feel that IIoT is not necessarily going to help your business because it's just so difficult to understand how to access it, leverage it and make sense of it."

He added, "It's a challenge to make these investments in today's economic environment without knowing what the ROI will be. That's why we're seeing a pullback, but I don't think it's the right move."

The good news, explained Kelly, is that the number of manufacturers who understand the importance of Industry 4.0 is increasing, and the vast majority of upper management support it.

"However, there's a lack of understanding when it comes to implementing it," he said. "Manufactures need help to develop a plan.

### CHALLENGES DEVELOPING AND IMPLEMENTING TECHNOLOGY STRATEGIES

| | 2026 | 2025 |
|---|---|---|
| Funding challenges | 52% | 51% |
| Integrating with legacy technology | 48% | 38% |
| Resistance to change | 40% | 35% |
| Pressure to deliver short-term results | 39% | 31% |
| Lack of skilled talent | 36% | 45% |
| Too many technology choices and unsure where to start | 31% | 33% |
| Difficulty keeping pace with the rapid pace of change | 30% | 30% |
| Lack of leadership vision | 25% | 21% |
| Fear of failure | 14% | 18% |
| Not sure how to access available resources | 13% | 21% |
| Other | 0% | 1% |
| None of the above | 2% | 3% |

### ATTITUDES TOWARD TECHNOLOGY

| Percentage of respondents that agree or somewhat agree with the following statements: | 2026 | 2025 | 2024 |
|---|---|---|---|
| Systems are designed with input from those who use them | 86% | 81% | 83% |
| Industry 4.0 is a great concept, but challenging to implement | 84% | 82% | 82% |
| Emerging technologies allow small companies to compete globally | 84% | 83% | 81% |
| I see IIoT as a business growth opportunity | 82% | 90% | 82% |
| Upper management at our company supports industry 4.0 | 75% | 77% | 72% |
| Machinery replacement is a massive investment and will cause downtime we can't afford | 57% | 60% | 54% |
| Our company has a plan/roadmap for Industry 4.0 | 55% | 69% | 47% |
| Investing in new technology raises the company's cyber security risk | 52% | 66% | 66% |
| I know where to find government programs to help with new technology investments | 51% | 46% | 46% |

*Manufacturers are not thinking about IIoT as the end-all be-all solution that will help them get through this. They're worried about the next tariff and how that will affect them.*

*– Hussam Malek, MNP*

### HOW HAVE TARIFFS AFFECTED YOUR TECHNOLOGY INVESTMENT?

| | Initial | Developing | Estab+ |
|---|---|---|---|
| Reduced investment significantly | **32%** | **13%** | **9%** |
| Reduced investment moderately | **32%** | **33%** | **26%** |
| No change in investment | **32%** | **40%** | **51%** |
| Increased investment moderately | **4%** | **13%** | **14%** |
| Increased investment significantly | **0%** | **0%** | **0%** |

### STRATEGIES TO ADDRESS TARIFF CHALLENGES

| | Initial | Developing | Estab+ |
|---|---|---|---|
| Diversified supply chain sources | **44%** | **53%** | **56%** |
| Increased product/service prices | **48%** | **53%** | **37%** |
| Reduced operational expenses | **24%** | **38%** | **49%** |
| Pursued alternative partnerships | **44%** | **38%** | **44%** |
| Explored new revenue streams | **24%** | **42%** | **40%** |
| Paused hiring efforts | **52%** | **33%** | **28%** |
| Other | **0%** | **0%** | **0%** |
| No specific strategies in place | **12%** | **13%** | **5%** |

Companies need to understand where to start, what the journey will look like and what the end goal should be."

The survey also shows that fewer respondents see new technology investment as raising cybersecurity risks (down 14% since 2025).

"I see that as a positive," said Kelly, "because the more they're learning about IIoT and Industry 4.0, the more they understand that it does not necessarily raise the risk of cybersecurity threats."

Malek noted that many manufacturers don't see IIoT as a business growth opportunity because they're focused on economic conditions and tariffs.

"They're not thinking about IIoT as the end-all be-all solution that will help them get through this. They're worried about the next tariff and how that will affect them."

Even companies that are doing well can be affected by the fear of the unknown.

"They're feeling the pressure from their banks," said Malek. "Even though they have positive earnings, the banks are giving them a hard time because the banks are scared about what's to come. So IIoT doesn't seem like a priority that's going to help them with their business."

Rory Macleod, Area Vice President, Accelerated Industries at Salesforce, noted that when the economy is good, companies tend to be more eager to invest in technology, but tend to hesitate when dealing with economic threats.

"When the market is stable, everybody's kind of leaning in a little bit. Then you get inflation and interest rates and everybody's backing off a little bit," he said.

## Navigating tariff challenges

The survey found that manufacturers that are further along in their digital journey are more willing to continue investing in new technologies, despite tariff threats.

Photo: © Nattawat / Adobe Stock


Forty-six percent of respondents stated that recent tariffs have reduced investment moderately or significantly, while 42% stated that there has been no change in investment. Half of respondents with companies with Established or higher digital transformation levels (51%) stated that there has been no change in investment.

"The organizations that have digital transformations probably already understand the value of technology and are more likely to therefore see it as a benefit," said Macleod of Salesforce. "Those companies understand the value of technology, they understand the value of investing, whether it's in technology or machinery or other areas, and therefore they're less likely to pull back on it, because they do see value and they do see it as part of a survival and adapt strategy, as opposed to a pullback strategy."

His colleague agreed.

"Once a manufacturer has invested in digital transformation, they see the ROI and the benefit, and they're less likely to cut back because of macroeconomic factor like tariffs," said Kelly. "Those who are reducing their investment, haven't seen the benefits and so it's easier for them to pull back and take a wait-and-see approach."

To navigate the challenges brought on by tariffs, manufacturers are considering a range of strategies to mitigate the impact. According to the survey, the top five strategies being considered or implemented to address the challenges posed by tariffs are diversified supply chain sources (53%), increased product/service prices (46%), reduced operational expenses (39%), pursuit of alternative partnerships (41%) and exploration of new revenue streams (37%).

"What we're hearing across industries is that companies are not planning to increase their product or service price," said Kelly. He noted that this allows them to stay competitive in a volatile market.

Malek said that he's surprised by how many companies weren't proactively looking at how operational cost reduction would allow them to continue to cover some of those tariff costs.

"I don't think we're seeing enough action in this area," he said.

While it's clear that manufacturers are facing significant economic headwinds, including tariffs, our expert panel urged companies not to lose sight of the bigger picture.

McNeil-Smith offered the following view.

"The biggest risk isn't just cost," he said. "It's missing out on opportunities, losing customers and being disrupted. And so what we typically advise manufacturers is to start small, prove the ROI in areas like quality, maintenance, energy and scale it from there."

## STRATEGIES TO MANAGE INFLATION AND COSTS

| | Initial | Developing | Estab+ |
|---|---|---|---|
| Seeking alternative suppliers | **24%** | **69%** | **64%** |
| Streamlining processes to boost productivity | **40%** | **62%** | **57%** |
| Cutting operational expenses | **40%** | **62%** | **50%** |
| Raising product/service prices | **44%** | **60%** | **36%** |
| Investing in efficiency-enhancing technologies | **20%** | **38%** | **60%** |
| Other | **4%** | **4%** | **2%** |
| No specific strategies in place | **8%** | **2%** | **5%** |

## TECHNOLOGIES TO MITIGATE SUPPLY CHAIN RISKS

| | Initial | Developing | Estab+ |
|---|---|---|---|
| Artificial intelligence and Machine Learning | **8%** | **33%** | **38%** |
| Advanced analytics | **12%** | **31%** | **40%** |
| Cloud-based supply chain management systems | **12%** | **29%** | **33%** |
| Digital twins for supply chain modeling | **8%** | **9%** | **26%** |
| IoT sensors | **4%** | **18%** | **12%** |
| Blockchain | **4%** | **2%** | **17%** |
| Other | **0%** | **0%** | **2%** |
| None | **68%** | **49%** | **17%** |

# AI: A MODERN MUST-HAVE

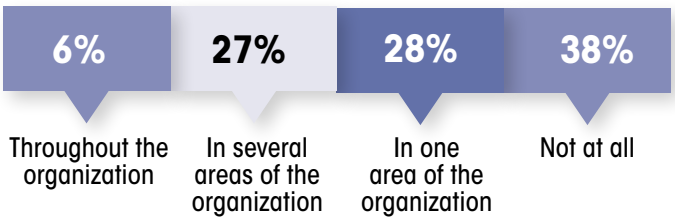
## Artificial intelligence is a priority for manufacturers, but it comes with its own set of challenges.

By Jack Kazmierski

According to the 2026 Advanced Manufacturing Outlook survey, manufacturers may be willing to cut back on some tech investments, but not on AI.

When survey respondents in the developing stage or higher were asked which technologies they invested in over the past 12 months, they reported declines in all areas of digital transformation initiatives, especially in machine/shop floor data capture (-13%), IIoT/M2M (-18) and robotics and automation (-12%). However, investment in AI was up 6% compared to 2025, and the intent to invest in AI over the next three years was up 13%.

### WHERE ARTIFICIAL INTELLIGENCE/MACHINE LEARNING IS USED



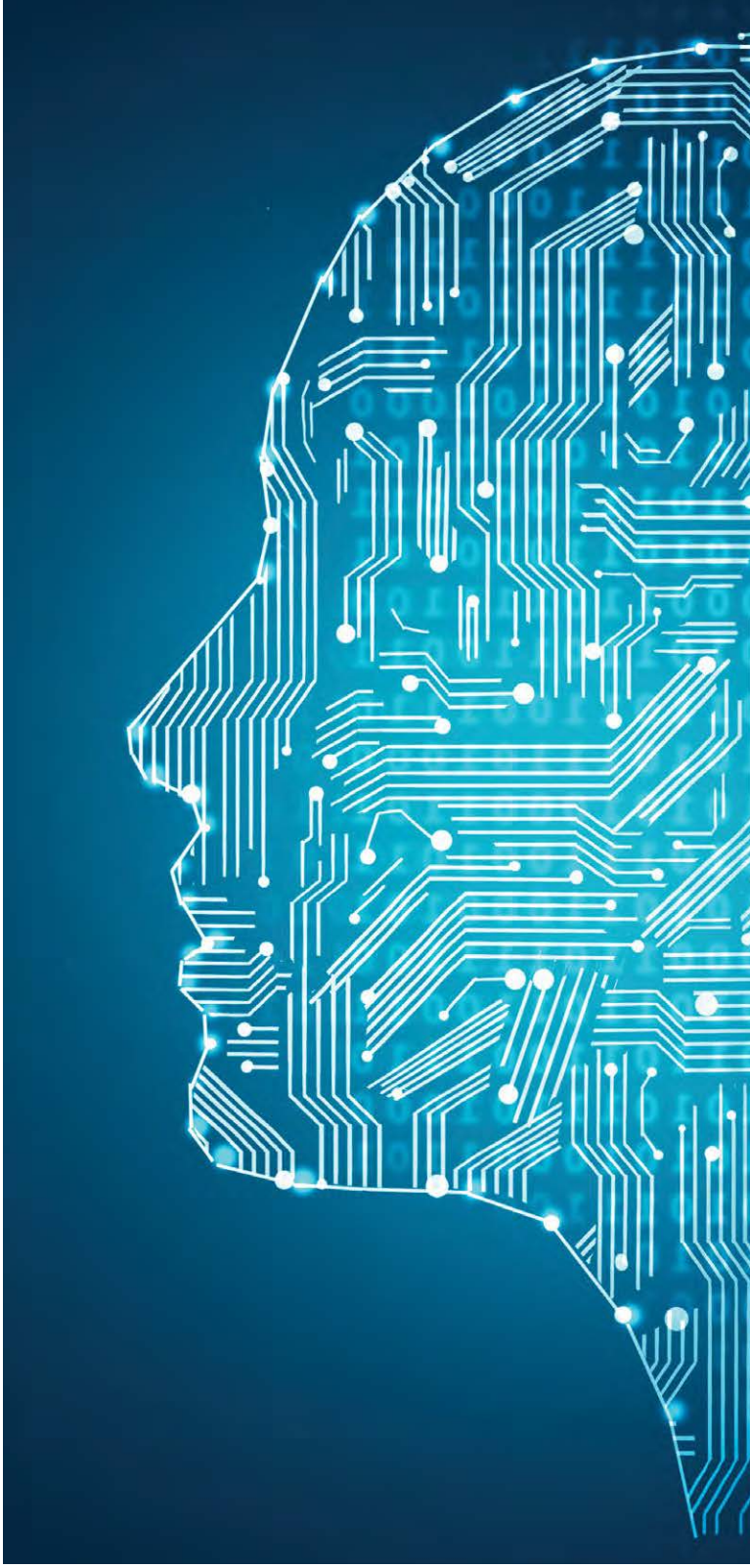



Photo: © peshkova / Adobe Stock

Meanwhile, 62% percent of respondents reported that they use at least some machine learning/artificial intelligence in their company. That number, however, may be conservative. Rory Macleod, Area Vice President, Accelerated Industries at Salesforce noted in Salesforce's work with manufacturers, they've found "in excess of 80%" are already adopting AI in some capacity.

"So, I'm not surprised to see an increase in [AI] investment," he said.

## INTENDED SPEND

A third of respondents stated they intend to spend between

**$100,000 to $499,999**

in select technologies over the next three years, while another 25% intend to spend between

**$500,000 to $999,999.**

Sixteen percent intend to spend

**$5,000,000 or more.**

*"There's a need for transparency and trust, but we're not there yet."*

*– Warren Ali, Vector Institute*

### TECHNOLOGIES INVESTED IN (BY THOSE IN DEVELOPING STAGE OR HIGHER)

| | 2026 | 2025 |
|---|---|---|
| Cloud computing | **76%** | **83%** |
| ERP | **73%** | **80%** |
| Data capturing machine/shopfloor | **69%** | **82%** |
| Advanced analytics | **63%** | **72%** |
| IIoT/M2M | **60%** | **78%** |
| Robotics, automation | **58%** | **70%** |
| Artificial intelligence | **57%** | **51%** |
| 3D printing, additive manufacturing | **54%** | **61%** |
| Digital Twinning | **33%** | **37%** |
| Virtual reality | **29%** | **32%** |

## Benefits of AI

When it comes to the perceived benefits of AI, respondents believe that AI can help them improve production processes (45%, -2% vs. 2025), improve the supply chain (44%, +13% vs. 2025), automate sales processes (43%, +14% vs. 2025) and improve financial processes (35%, +13% vs. 2025).

Vishen Maharaj, Director of AI and Machine Learning at MNP Digital offered an example of how AI can leverage data to dramatically boost efficiencies.

"A healthcare company we work with used to take about three weeks to invoice a client, because each of their contracts were slightly different and had different templates. Doing that manually took their finance department three weeks," he said.

After building an AI agent that could access the data and understand which templates apply to which contractor, Maharaj said that what used to take three weeks now takes 10 minutes. "That's a huge productivity gain and it was easy to implement," he said.

## Proceed with caution

While business owners may see AI as a way to boost efficiencies and cut costs, they still need to exercise caution. "There's a need for transparency and trust, but we're not there yet," said Warren Ali, Director of Industry Development at Vector Institute.

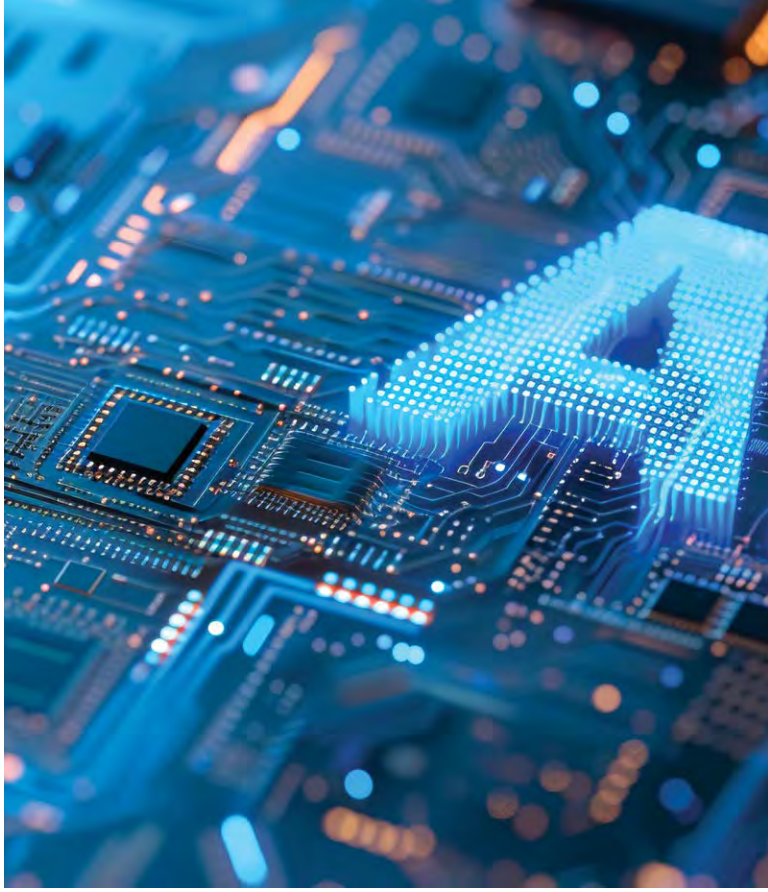
Employees fear that AI will replace them, he said, while customers, stakeholders and investors need to understand what kind of data is being incorporated into calculations and decisions made by AI. Otherwise, they may not trust the resulting data.

Another danger is employing AI to the point where it creates undue stress on company staff.

"If you're just going to add more work to your workforce, good luck making any other changes in the future," said Ali. "People are not going to go through this chaos and change, and all the stress and anxiety that comes with it to then find out that more work is going to be forced upon them, or that they're going to lose their jobs because of all the time they saved [by implementing AI]."

### INTENT TO INVEST IN THE NEXT THREE YEARS (BY THOSE IN DEVELOPING STAGE OR HIGHER)

| | 2026 | 2025 |
|---|---|---|
| Artificial intelligence | 64% | 51% |
| Robotics, automation | 48% | 66% |
| Cybersecurity | 44% | 38% |
| Data capturing machine/shopfloor | 44% | 41% |
| 3D printing, additive manufacturing | 40% | 34% |
| Cloud computing | 38% | 36% |
| ERP | 38% | 41% |
| Advanced analytics | 33% | 39% |
| Energy management systems | 26% | 35% |
| Virtual reality | 20% | 16% |
| Digital twinning | 17% | 12% |
| No investments planned | 3% | 1% |



That human issue sits beside a technical one. Even with buyin, AI only delivers if the plant can capture and connect the right data across machines and systems. Jayson Myers, CEO of Next Generation Manufacturing Canada warned that integrating AI into existing manufacturing facilities isn't always as easy or straightforward as some might think.

"In order to get the data that will improve production processes, which is the top application of AI here, you need cloud computing and IIoT connectivity," he said. "However, how many of those robotics, automation systems or production systems have some form of AI, or ability to integrate?"

Myers explained investing in AI is not the same as being able to use it effectively and profitably to achieve the business outcomes a manufacturer may want.

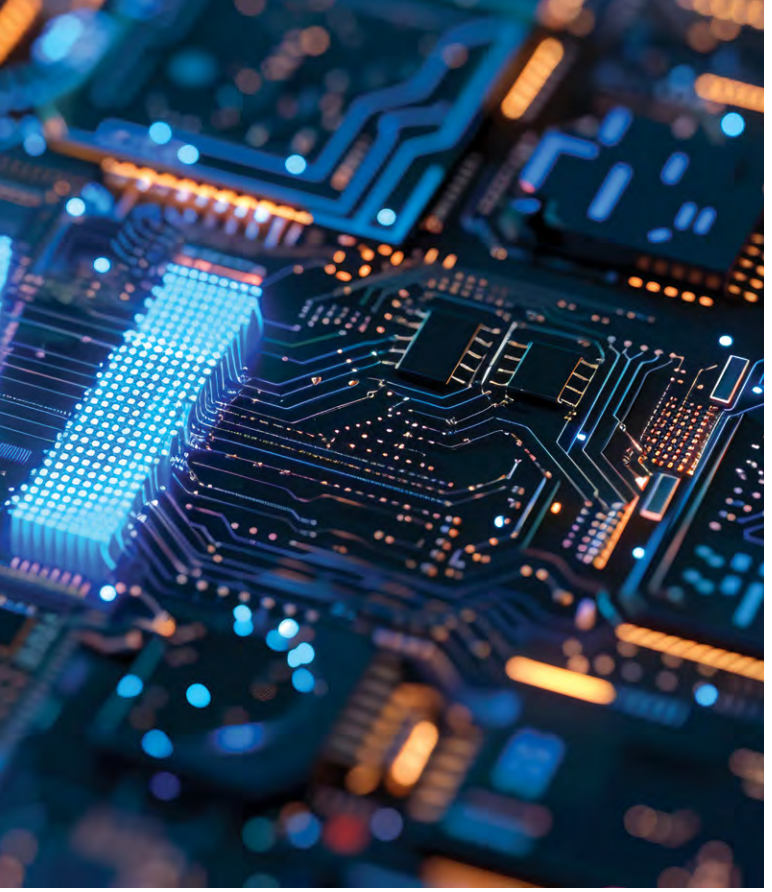
That said, Aaron Kelly, Senior Director at Salesforce noted that AI is rapidly becoming easier for companies to implement and predicts that AI is going to continue to be a priority with manufacturers for years to come. Kelly added that one of the reasons companies will continue to prioritize AI over other technologies is that AI is quickly becoming a necessity.

"AI is no longer a nice-to-have," he said. "Since more people are investing in it, manufacturers will have to do so as well, or they're going to fall behind the competition."

## Data utilization: The foundation of AI

According to the survey, 92% of respondents with digital transformation at the "Developing" stage or higher are monetizing data—whether by improving operational efficiencies (70%), leveraging supply chain and

Photo: © Werckmeister / Adobe Stock



customer relationships (38%), developing new business models (35%) or building analytics capabilities for external sale (30%).

Yet, for many, the tools for collecting data remain basic. Spreadsheets are still the primary method for collecting and using data (76%) for production and material planning, a statistic that came as a surprise to some roundtable experts.

"There's a real opportunity for manufacturers to modernize their data estates, improve sharing and use those insights for better decision-making," said Maharaj.

Adoption of integrated systems like ERP is underway, with 55% reporting it as their primary method for collecting data. However, as Hussam Malek noted, many manufacturers still struggle to fully utilize these platforms, often relying on manual processes instead.

Integration challenges are a recurring theme. As Macleod of Salesforce noted, manufacturers are increasingly aware of the need for a coherent data strategy to harmonize systems and unlock the full potential of AI:

"More and more manufacturers now are recognizing that they need a data strategy which will simplify some of that integration need. And I think they're realizing just how important it is to try to harmonize across all their systems. Especially with AI and being able to action data."

As manufacturers position themselves for future growth, data is emerging as the foundation for competitive advantage and innovation.

"Your business model now has to revolve around data, either the data within the [product] you're making, or the data that's created by the [product] that you're contributing to," said Ali. "All of this is part of the business transformation that's taking place in the manufacturing world."

## HOW DATA IS COLLECTED

| | 2026 | 2025 |
|---|---|---|
| Spreadsheets, such as Excel (for production planning and material planning) | **76%** | **72%** |
| Integrated ERP | **55%** | **58%** |
| Accounting package (such as QuickBooks, Sage50 Cloud, FreshBooks, ERP) | **49%** | **50%** |
| Manual paperwork | **33%** | **35%** |
| MRP | **25%** | **38%** |
| Sensors-big data | **23%** | **18%** |
| None of the above | **0%** | **3%** |

## HOW DATA IS MONETIZED

| | 2026 | 2025 |
|---|---|---|
| Any Monetization | **92%** | **88%** |
| Improving operational efficiencies | **70%** | **65%** |
| Leveraging supply chain/customers | **38%** | **37%** |
| Developing new business models | **35%** | **32%** |
| Developing analytics capabilities for external sale | **30%** | **23%** |
| Adding new services to existing offerings | **30%** | **29%** |
| Partnering with similar companies | **25%** | **15%** |
| Other | **1%** | **1%** |
| None of the above | **8%** | **37%** |

# PREDICTIVE MAINTENANCE: A STRATEGY WITH MEASURABLE RETURNS

## Canadian manufacturers are embracing IIoT for maintenance, delivering ROI through greater uptime.

By Jack Kazmierski

Predictive maintenance is a powerful concept. Imagine how much downtime you could avoid and how efficient your production line could be if you could monitor all your equipment, foretell which parts are about to fail and take preventive action to avoid a shutdown before that failure happens.

Years ago, this may have been just a dream. Today, it's a reality, thanks to the power of Industrial Internet of Things (IIoT). With the right equipment in place, sensors can continuously monitor the health of all parts and components, collect data in real-time and send out a warning when predetermined norms or parameters (such as temperature, vibration or sound) are exceeded, indicating that a failure is likely soon—or imminent.

According to our 2026 Advanced Manufacturing Outlook survey, the above scenario is exactly the solution that small and mid-size Canadian manufacturers are interested in.

Of the top four applications of IIoT—improving efficiency and productivity (46%), enhancing maintenance functions (37%), increasing data visibility across production and management (35%), and providing greater visibility into production processes (34%)—the biggest shift from our 2025 survey was in maintenance, which jumped 14%. In contrast, the number of manufacturers not using IIoT dropped by 11%, suggesting that hesitation is giving way to action.

Commenting on the fact that there was an increase in the number of respondents who are keen to improve maintenance functions, Vishen Maharaj, Director of AI and Machine Learning at MNP Digital made the following observation:

"The 14% jump means that manufacturers are passing the experimental phase and they're starting to see the value. They see the impact proactive maintenance can have on their businesses."

The roundtable experts explored what's driving the shift toward IIoT in maintenance functions. Hussam Malek, Partner at MNP, pointed to the proliferation of new maintenance tools and software, noting that better tracking and increased automation are making preventive maintenance more accessible—and necessary—especially for small and mid-sized manufacturers.

"I think everyone's getting better educated in the small- to mid-sized world," he said. "As they're adopting more automation, that maintenance now becomes that much more important and the preventive maintenance becomes that much more important."

Malek stressed, however, that preventive maintenance is only possible if manufacturers can collect the right data.

"Otherwise, all you're doing is reacting when something goes wrong."

Rory Macleod, Area Vice President, Accelerated Industries at Salesforce noted that declining rates of non-adoption and an increase

## HOW IIOT IS APPLIED

| | 2026 | 2025 |
|---|---|---|
| Improving efficiency/productivity | 46% | 46% |
| Improving maintenance functions | 37% | 24% |
| Visibility of data from manufacturing floor to business management | 35% | 34% |
| Providing more visibility into production processes | 34% | 33% |
| Analytics functionality | 30% | 29% |
| Tracking materials, shop floor assets | 29% | 34% |
| Developing smart products | 19% | 16% |
| Consolidating control rooms | 16% | 9% |
| Developing new services/revenue streams | 14% | 11% |
| Not currently applying IIoT | 21% | 33% |

> ***Maintenance can be the easiest entry point to get into IIoT. Predicting uptime, avoiding downtime and everything that goes into predictive maintenance is a KPI on almost everyone's list.***
>
> ***– Scott McNeil-Smith, EMC***

in efforts to improve maintenance functions are a natural evolution as technology improves and equipment is updated.

"The technology is getting better and it's easier to actually action the data that's coming out of that," he said. "So, I can see it being more applicable, more actionable, more value to more manufacturers right across the board."

Beyond efficiency gains, experts stressed that IIoT-driven maintenance delivers significant business value. Aaron Kelly, Senior Director at Salesforce, explained that connected systems can automatically trigger service calls and prevent costly breakdowns, helping manufacturers maximize uptime and improve customer satisfaction. Just as importantly, the data generated can create new revenue streams.

"If I'm able to offer a product connected with IoT data and action that, now I can offer different types of service level agreements that maybe upsell or cross-sell opportunities," Kelly said. "When we think about maintenance, it's not just service anymore. Now it's also a revenue generation opportunity because of that data."

And for manufacturers considering IIoT but unsure where to start, or where the biggest ROI lies, maintenance is a practical first step, delivering measurable returns.

"Maintenance can be the easiest entry point to get into IIoT," said Scott McNeil-Smith, Vice President, Manufacturing Sector Performance at Excellence Manufacturing Consortium. "Predicting uptime, avoiding downtime and everything that goes into predictive maintenance is a KPI on almost everyone's list."

McNeil-Smith explained that when his customers aren't sure what to focus on when starting their digital journey, one of the areas he typically recommends they consider first is maintenance.

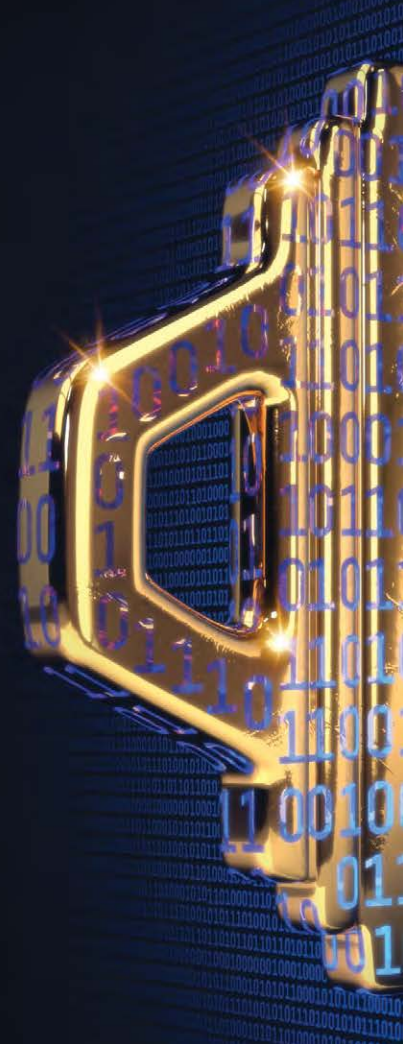
"We advise manufacturers to start small, prove the ROI in areas like quality, maintenance and energy, and scale up from there," he said.

Predictive maintenance also helps avoid unnecessary preventive maintenance because the former takes the guesswork out of scheduling maintenance at fixed intervals. Instead, sensors pick up on anomalies that would indicate that a part is going to fail, and only then are technicians dispatched to carry out the preventive maintenance necessary to avoid the predicted failure.

In addition to reducing downtime and boosting productivity, predictive maintenance has another benefit, explained Warren Ali, Director of Industry Development at Vector Institute.

"It could be seen as an alternative to CapEx (capital expenditure) spending," he said. "There are a lot of cost pressures in the market right now, especially for small and mid-size manufacturers. They probably have legacy equipment in there that might not be the most intelligent or the most data-driven. Applying IIoT to that equipment is a way to extend its useful life."

# CYBERSECURITY: THE STORY BEHIND THE NUMBERS



## As digital transformation increases, manufacturers are stepping up cybersecurity measures. But is it fast enough?

By Kirstyn Brown

As digital transformation becomes more prevalent in manufacturing, cyber risks continue to grow and diversify. This year's Advanced Manufacturing Outlook survey captures how companies are adapting to this reality, revealing both where they're making progress as well where the sector remains vulnerable. While the survey paints a picture of an industry that is becoming more aware and proactive, it still may not be enough to keep up with the pace of emerging risks. Attack rates are up, especially for ransomware and data breaches, and the types of attacks are broadening as manufacturers digitize more of their operations. Most companies report taking more proactive steps, particularly in risk assessment and response planning, however few said they feel fully secure. Also, data governance is emerging as a new area of concern.

Hussam Malek from MNP said he's not surprised to see cybersecurity become a more important issue to manufacturers, as attacks increased during the COVID-19 pandemic and are especially prevalent among small- to mid-size companies.

"They're just such easy targets," he said, noting that several of his clients have experienced breaches that forced them to "go dark" for a few weeks.

**97**

Percentage of companies in the Developing or higher stage of digtial transformation that have taken measures to protect against cyberattacks.

"The small- to mid-sized companies are starting to understand and hear from their peers on where they're falling apart and how they should be a bit more robust when it comes to cyber security."

### Risks on the rise

The survey found that three-quarters of manufacturers (75%) have experienced a cyberattack or breach, a notable increase from 68% in 2025. The most common form of attack continues to be phishing, reported by 49% of respondents, unchanged from last year.

However, ransomware incidents have risen sharply, with 27% of manufacturers affected, up from 19% in 2025. Data breaches or losses of proprietary, personal or financial information were reported by 20% of respondents, a 7% increase over the previous year.

Other types of attacks are also on the rise. Banking and other financial attacks were experienced by 15% of manufacturers, up from 10% last year. Breaches through third-party vendors and incidents involving the encryption of operational or control systems were each reported by 15% of respondents, both showing increases from 2025. Targeted external cyberattacks and watering hole attacks were reported by 14% and 8% of respondents, respectively.

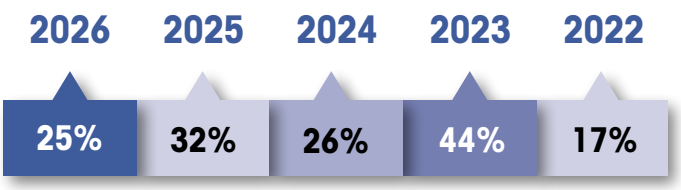
Photo: © Mysterylab / Adobe Stock

Only 25% of manufacturers reported no breach or attack in the past year, down from 32% in 2025. The data suggests that as manufacturers continue to digitize operations and integrate new technologies, their exposure to a broader range of cyber threats is increasing.

## Security measures and preparedness

Manufacturers are responding to these threats with a range of security measures. Nearly all respondents (97%) have taken some action to protect against cyberattacks, up slightly from 95% last year. The most common measures include implementing security infrastructure (63%), conducting cybersecurity risk assessments or reviews (59%), developing a cybersecurity strategy (57%) and establishing data privacy controls (51%).

### NO BREACH OR ATTACK




### TYPES OF CYBERATTACK OR BREACH EXPERIENCED

| | 2026 | 2025 |
|---|---|---|
| Experienced a  or breach | 75% | 68% |
| Phishing attack | 49% | 49% |
| Ransomware | 27% | 19% |
| Data breach or loss of proprietary data, personal or financial information | 20% | 13% |
| Banking or other financial attack | 15% | 10% |
| Breach through a third-party vendor | 15% | 13% |
| Data encryption of operational/control systems or information, financial information, or management or communication systems. | 15% | 11% |
| Targeted external cyberattack | 14% | 15% |
| Watering hole attack | 8% | 3% |
| Other | 1% | 1% |

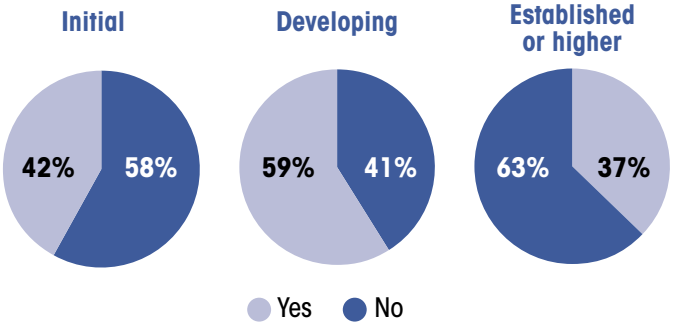
## Measures taken or in place to protect against cyberattacks

| | 2026 | 2025 | 2024 | 2023 | 2022 |
|---|---|---|---|---|---|
| Security infrastructure | 63% | 61% | 62% | 23% | 43% |
| Cybersecurity risk assessments/ review | 59% | 51% | 56% | 52% | 53% |
| A cybersecurity strategy | 57% | 62% | 44% | 46% | 50% |
| Data privacy controls | 51% | 54% | 37% | 33% | 35% |
| Crisis management procedures and/ or a business continuity plan | 41% | 38% | 58% | 44% | 56% |
| A cyber breach response plan | 40% | 26% | 73% | 70% | 51% |
| None of the above | 3% | 5% | 3% | 3% | 5% |

## Have you done enough to protect against cyberattacks?

| | Total % | Initial | Developing | Estab+ |
|---|---|---|---|---|
| Yes definitely, we have taken all possible precautions | 20% | 8% | 20% | 29% |
| Yes somewhat | 61% | 56% | 62% | 62% |
| No, not really | 16% | 28% | 18% | 7% |
| No, not at all | 3% | 8% | 0% | 2% |

## DO YOU HAVE A DATA GOVERNANCE POLICY?

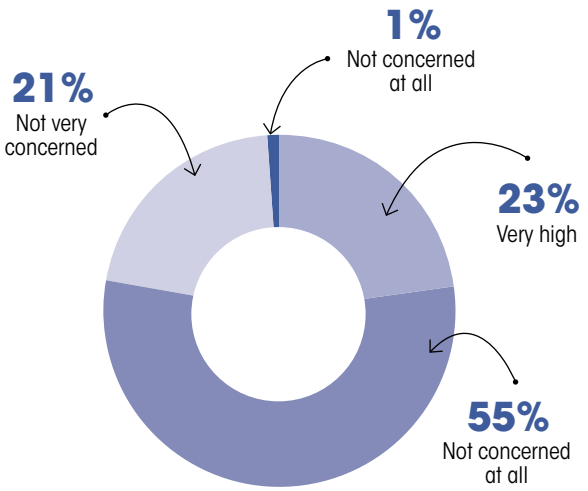



*Given the rapid pace of change and threat, I don't think any company can let down their guard.*

*– Jayson Myers, NGen*

## PERCEIVED RISKS OF INDUSTRY 4.0


## LEVEL OF CONCERN REGARDING CYBERSECURITY RISK




## "AGREE" THAT NEW TECHNOLOGY RAISES CYBERSECURITY RISK

| | 2026 | 2025 | 2024 | 2023 | 2022 |
|---|---|---|---|---|---|
| Investing in new technology raises the company's cyber security risk | 52% | 66% | 66% | 74% | 78% |

Photo: © buraporn / Adobe Stock

There is evidence of a more proactive approach to cybersecurity, with increases in both risk assessments and the adoption of cyber breach response plans: 40% of manufacturers now report having a breach response plan, up from 26% in 2025. Crisis management procedures and business continuity plans are in place at 41% of companies, also up from last year.

**33**

Percentage of respondents who said they've seen increased security against data breaches as a benefit of technology investment, compared to only 16% in 2025.

But the number of companies that felt confident in their security was a concern to some of the roundtable members. The majority (61%) of survey respondents believe they have done "somewhat" enough to protect themselves from threats, while only 20% of respondents feel they have taken all possible precautions to protect their business from cyberattacks. Another 16% admit they have not done enough and 3% say they have not taken any real precautions.

Jayson Myers of NGen warned that manufacturers should not be complacent.

"Given the rapid pace of change and threat, I don't think any company can let down their guard," he said. "They need to continuously upgrade their protections and train their workforce about the threats they could face."

Meanwhile, over half of respondents (56%) state that they have a data governance policy and among respondents with Established or greater digital transformation levels, this figure rises to 63%.

## Cybersecurity as a priority

Cybersecurity is increasingly recognized as both a barrier and a driver of technology investment. This year, 21% of respondents cited concern about exposure to cybersecurity threats as a key challenge to investing in new technology, up from 11% in 2025. At the same time, the proportion of manufacturers who agree that "investing in new technology raises the company's cybersecurity risk" has declined to 52%, down from 66% last year.

These shifting attitudes are reflected in investment intentions. Forty-four percent of manufacturers said they plan to invest in cybersecurity over the next three years, up from 38% in 2025. Cybersecurity now ranks alongside artificial intelligence, data capture and advanced analytics as a mainstream investment priority.

While the survey found that fewer respondents see cybersecurity as a risk that comes with technology, it is still one of major considerations. When asked about the perceived risks of adopting Industry 4.0 technologies, 35% of respondents cited cybersecurity threats, down from 44% last year.

Acknowledging that cybersecurity threats are ubiquitous with manufacturing, Myers said companies must balance the realities of increased risk with the imperative to innovate.

"Every product and process is potentially a digital platform and could be under threat," he said, pointing to the recent attack on Jaguar Land Rover in the U.K. that resulted in a supply chain disaster. "Cybersecurity concerns should not be a reason to avoid investing in technology, but an incentive to put strong cyber protections in place," he added.

"Many of those protections are embedded in new technologies themselves and I think that is where companies see a benefit. But tech itself will not keep companies safe. The strongest protection comes from people who are aware of the dangers and well trained to prevent cyberattacks from shutting down operations."

The survey also highlights a shift in attitudes toward cybersecurity. While concern remains high (78% of respondents report "very" or "somewhat high" concern about cybersecurity risks) there is a growing recognition that cybersecurity is not a one-time fix but an ongoing, organization-wide responsibility. Only a minority of manufacturers feel fully prepared and most see cybersecurity as a process that requires regular review and adaptation.

# LOOKING FORWARD: PROGRESS OVER PERFECTION

By Kirstyn Brown

As Canadian manufacturers look toward the near future, the road ahead remains uncertain. We don't yet know the full impact of this tumultuous year, or what shape the geopolitical and economic landscape will take in 2026 and beyond.

What we do know is that the pace of change is accelerating. And while our survey shows that most manufacturers have actively adopted some degree of Industry 4.0 technology—implementing partial automation, connected systems and data-driven decision making—the indsutry lost some momentum in 2025.

That slowdown can be traced to a number of barriers to digital transformation, including legacy systems, limited access to financing, an aging workforce and a heightened sense of risk amid ongoing economic volatility.

But as our roundtable experts explained, digital transformation doesn't need to happen overnight. It's often most effective when approached incrementally, focusing on practical changes that deliver the greatest impact. The one thing manufacturers cannot afford to do is stand still.

"For SMEs, the biggest risk to not investing isn't just cost, it's missing out on opportunities, losing customers, being disrupted," said Scott McNeil-Smith. "Start small, prove the ROI in areas like quality, maintenance and energy and scale it from there. Advanced manufacturing doesn't just apply to the large, complex multinational industries; it applies to all manufacturers, large and small, and it really comes down to how they deploy their people, their process and their technology."

Vishen Maharaj from MNP echoed the importance of keeping change manageable:

"A lot of the reason we're not seeing significant investment is because people look at this as a massive transformation. So, if they look at how to start off with something small and impactful, that's where it would bring value to the business."

Another thing we know for certain: Artificial intelligence is gaining ground. While investment in other digital technologies slowed in 2025, manufacturers showed growing interest in AI, recognizing its potential to improve production processes, supply chain and more.

However, AI, like all technology, isn't without challenges, nor is it a magic wand. Technology needs to work in tandem with strategy and people in order for a business to thrive.

NGen's Jayson Myers offered these final words:

"The key to business success for any manufacturer isn't technology, but a strategy to create value for customers that they can manage and afford. Tech is a tool, not a solution. It's how it is used that counts and that depends above all on people and lean management skills."

Whether 2026 is a year of recovery or one in which manufacturers continue to face economic and geopolitical challenges, those that have taken a strategic approach to digital transformation—grounded in business needs, empowered by data and supported by people—will be better positioned to weather the storm. The industry is no stranger to adversity, and it continues to embrace Industry 4.0 knowing that continuous innovation is a key to remaining competitive and resilient.

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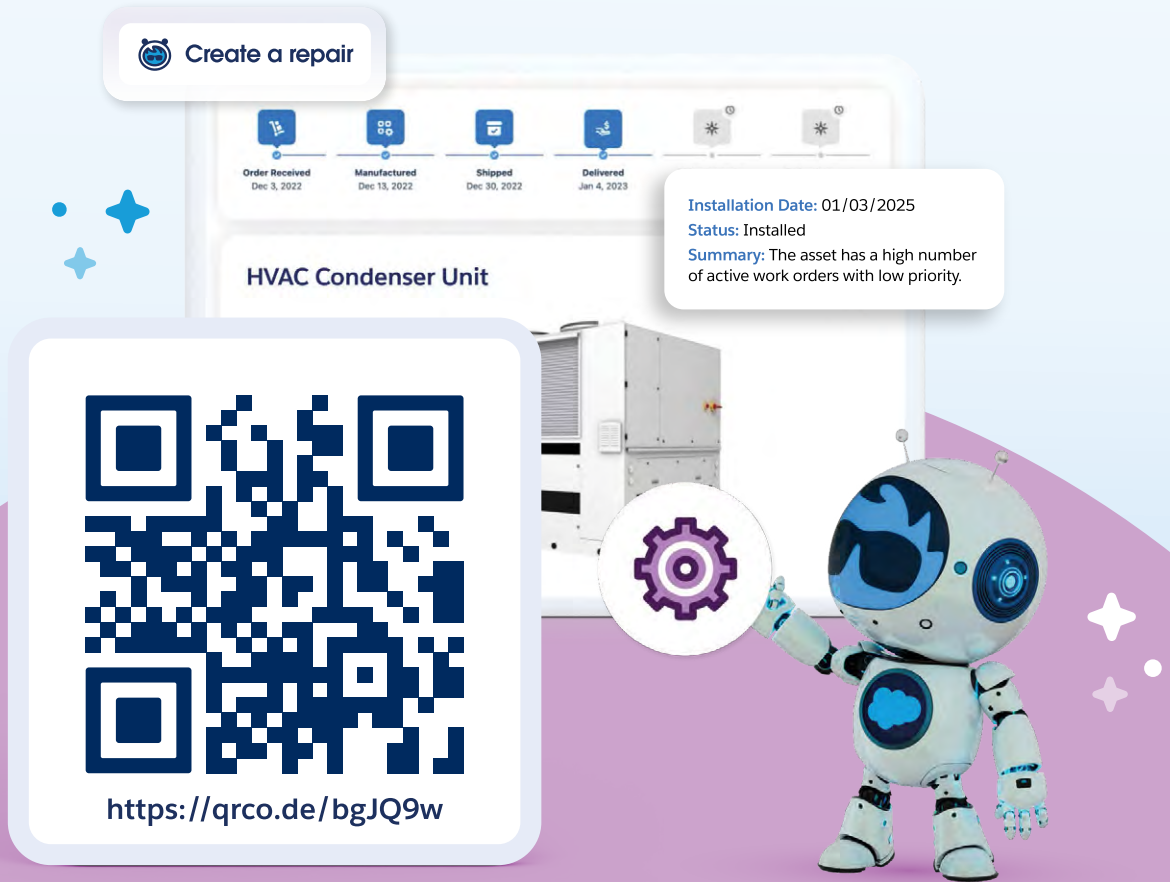


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