

# THE LAGGING ADOPTION OF TECHNOLOGY AND HOW TO FIX IT

New technologies are opening new doors, but also threatening to leave slow adopters behind. To ensure Canada remains competitive, CME is calling on governments to accelerate technology adoption through policies that put manufacturers in the driver's seat and encourage growth.

BASED ON RESPONSES FROM 279 MANUFACTURING BUSINESSES ACROSS CANADA.



32% Medium businesses  
16% Large businesses



5% Between 5-10 years  
6% Between 3-5 years  
3% Less than 3 years

## STAGE OF PROGRESS IN DIGITAL TRANSFORMATION

Two out of five companies have not started, or are in the early stages of digital transformation. If Canada's manufacturing sector is to remain globally competitive, more manufacturers will need to embrace digital transformation at a faster pace.

**12%** of businesses say they have no digital transformation started or planned

**28%** Beginning digital transformation process

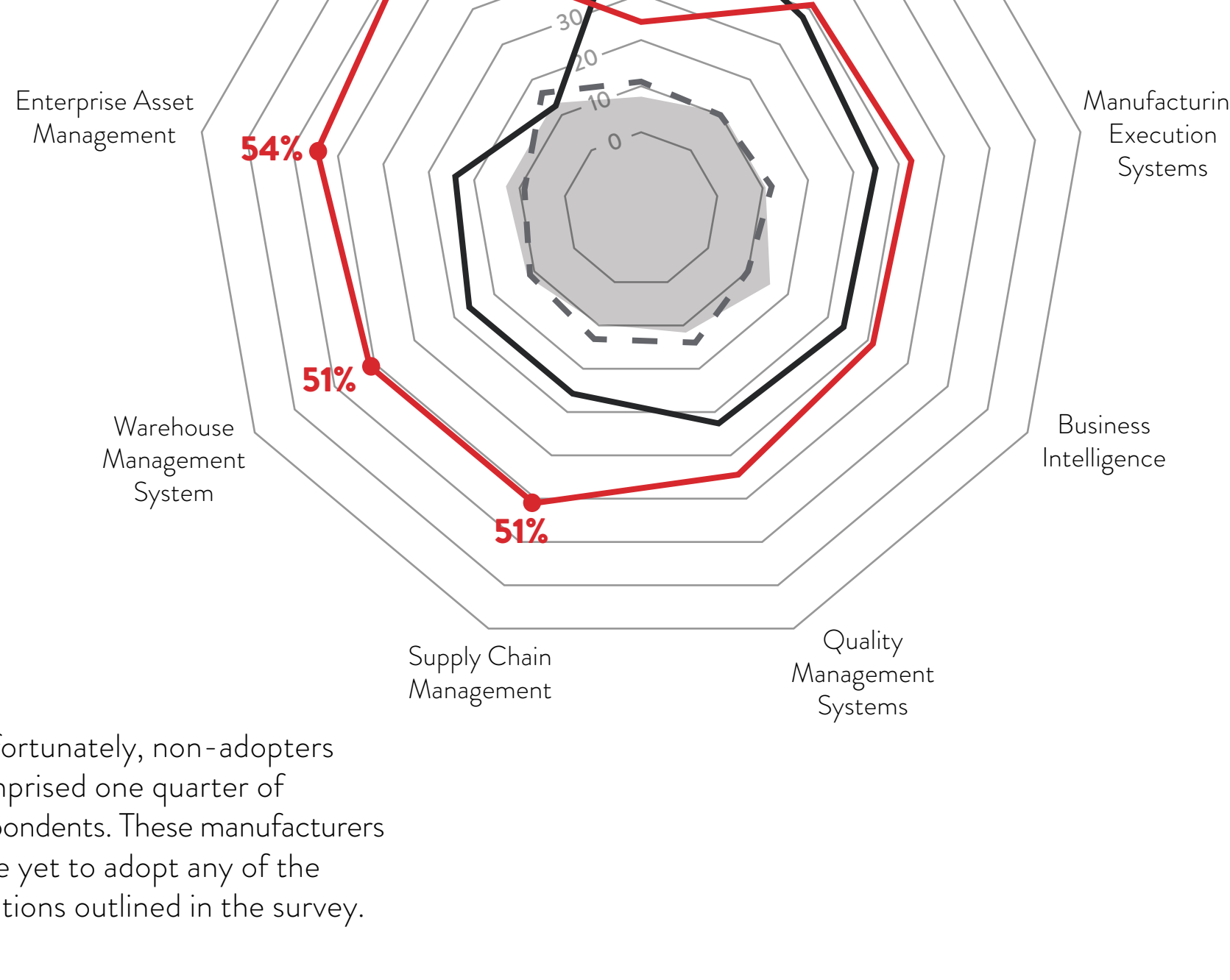
**47%** In progress of digital transformation

**13%** Advanced digital transformation strategy

## IS YOUR BUSINESS USING ANY OF THE FOLLOWING MANUFACTURING SOFTWARE SOLUTIONS?

The good news is that three-quarters of manufacturers are using at least one software solution to increase productivity. The average manufacturer is using one to three solutions.

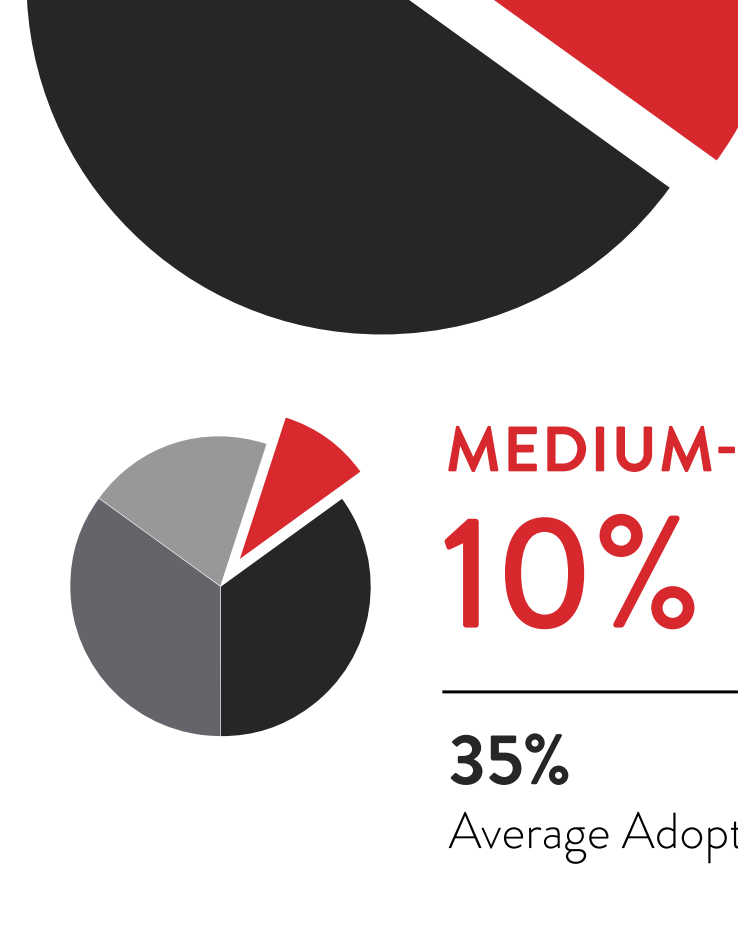
— NOT USING WITHIN THE NEXT 12 MONTHS  
— CURRENTLY USING  
- - PLANNING TO USE WITHIN THE NEXT 12 MONTHS  
● DONT KNOW



Unfortunately, non-adopters comprised one quarter of respondents. These manufacturers have yet to adopt any of the solutions outlined in the survey.

## USAGE OF SOFTWARE PLATFORMS

Notably, software platform adoption was particularly low among small businesses, as they often lack the resources and expertise needed to take this critical step. Small businesses will require more government support to keep pace with their larger counterparts, or risk falling behind, and affecting the supply chains of those that depend on them. Such support could include better access to technology demonstration centres and online technology adoption roadmaps.



**SMALL BUSINESSES**  
**35%** Have not adopted any software platforms within their business.  
48% Average Adoption (1-3)  
12% High Adoption (4-6)  
5% Power Users (7+)



**MEDIUM-SIZED AND LARGE COMPANIES**  
35% Average Adoption (1-3)  
35% High Adoption (4-6)  
20% Power Users (7+)

## HOW BUSINESSES ARE FINANCING THEIR DIGITAL TRANSFORMATION

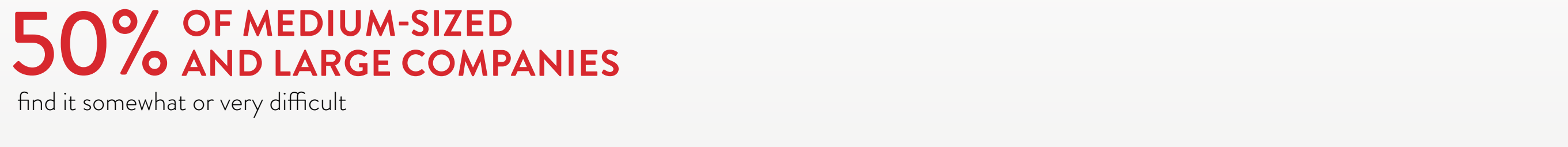


- 37% Private financial institutions like a bank or credit union
- 32% Government programs administered through ISED, Investissement Quebec, MEDJCT or other agencies
- 16% Government financial institutions like BDC, NGEN or others
- 7% Currently not conducting any digital transformation projects
- 6% Private investors/ venture capitalists
- 3% Other
- 2% Equity markets

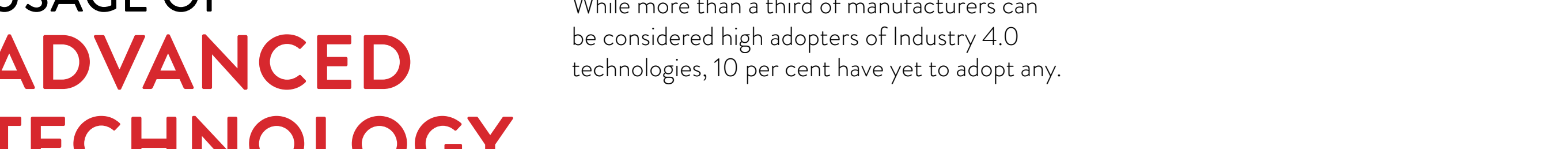
Although most manufacturers prefer to self-finance their projects, access to capital is a major barrier to investment. More than half of manufacturers identify financing as difficult, or very difficult to secure. Improving this access can accelerate the pace of technology adoption, especially among small businesses that struggle most.

## DIFFICULTY FINANCING THESE PROJECTS

**57% OF SMALL BUSINESSES** find it somewhat or very difficult

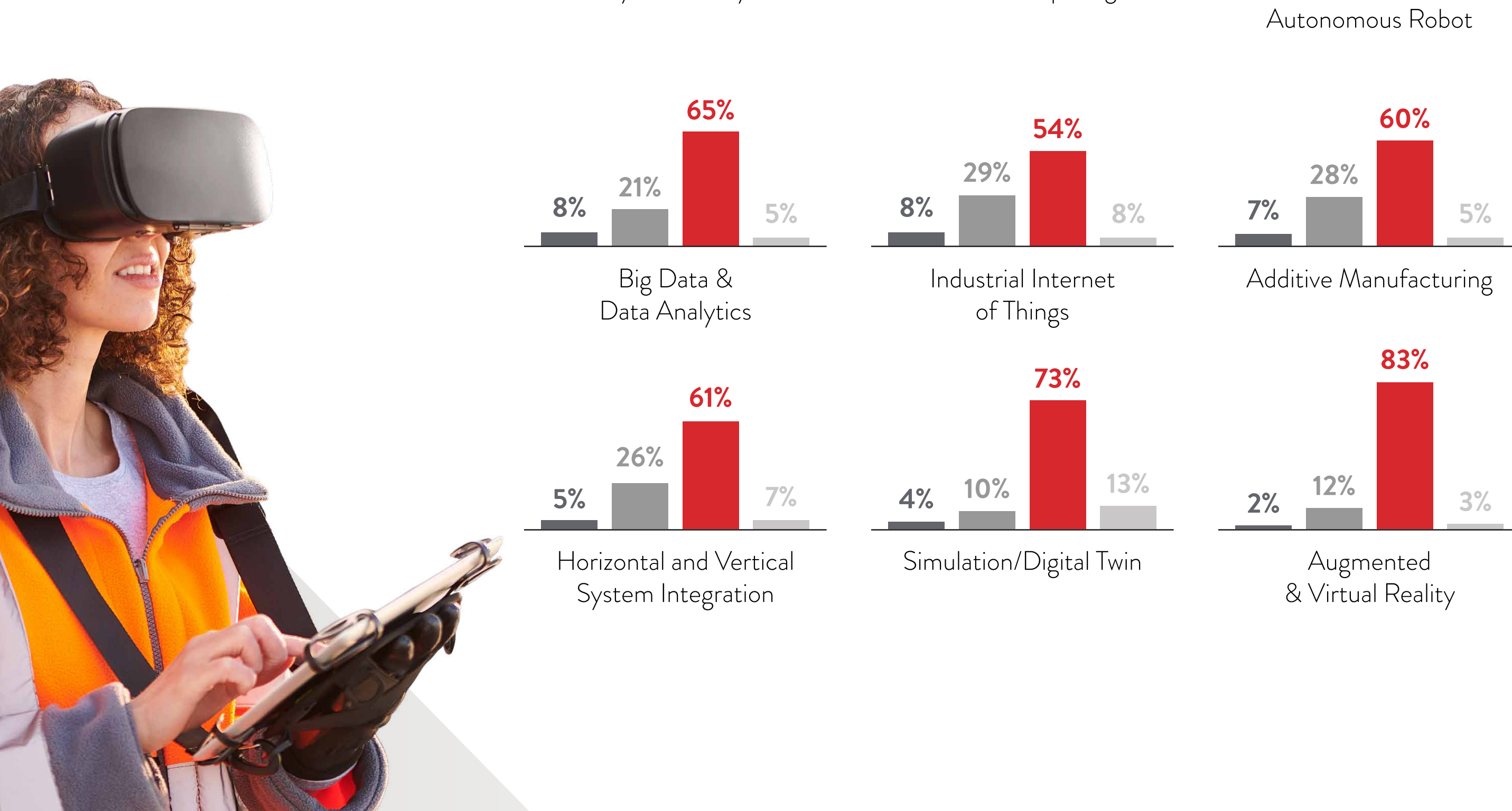


**50% OF MEDIUM-SIZED AND LARGE COMPANIES** find it somewhat or very difficult

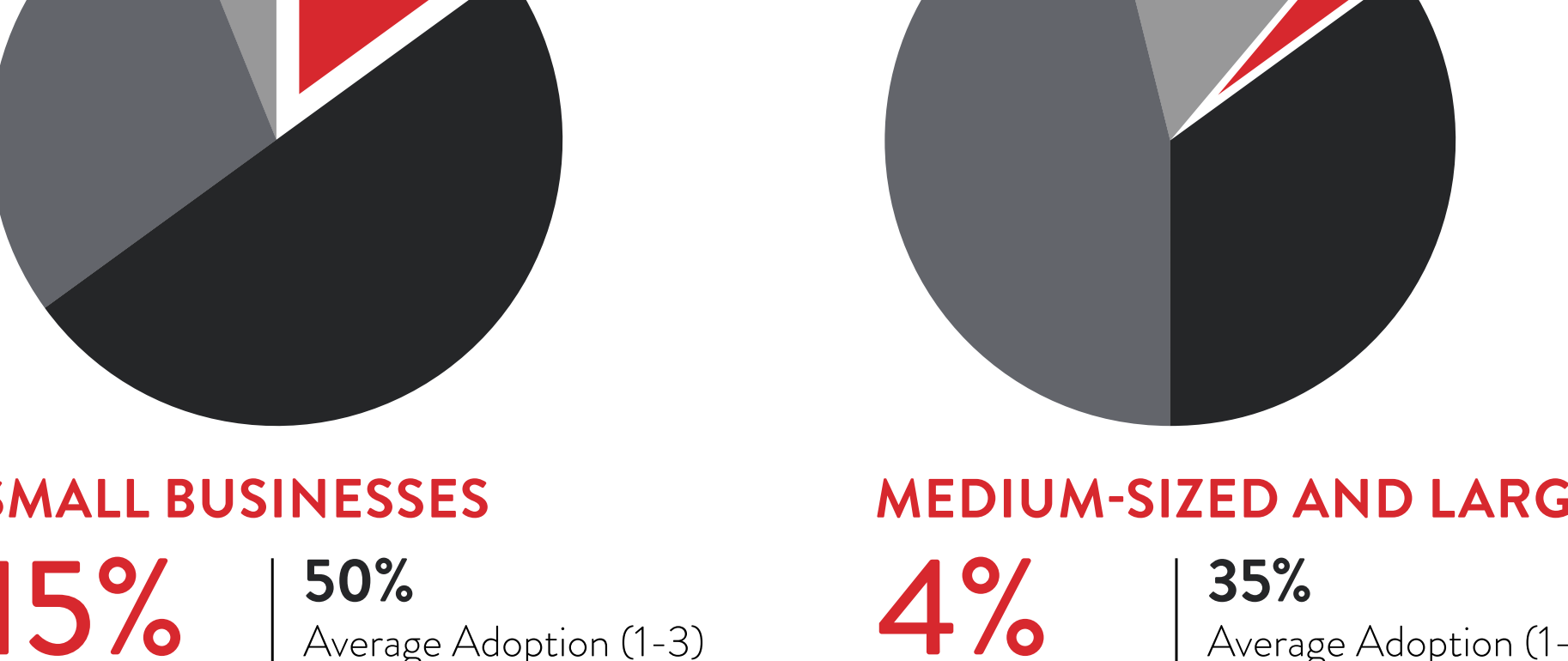


## USAGE OF ADVANCED TECHNOLOGY

While more than a third of manufacturers can be considered high adopters of Industry 4.0 technologies, 10 per cent have yet to adopt any.



## INDUSTRY 4.0 TECHNOLOGY USAGE



**SMALL BUSINESSES**  
15% have not adopted Industry 4.0 technology within their business.  
50% Average Adoption (1-3)  
29% High Adoption (4-6)  
6% Power Users (7+)

**MEDIUM-SIZED AND LARGE COMPANIES**  
4% have not adopted Industry 4.0 technology within their business.  
35% Average Adoption (1-3)  
46% High Adoption (4-6)  
15% Power Users (7+)

Larger companies report greater knowledge and use of advanced manufacturing technologies than small businesses. CME is calling on governments to increase funding for programs that help SMEs learn about key productivity-enhancing technologies and how they can be implemented within existing systems. Additionally, incentives that reduce purchase costs and de-risk investments will also accelerate the pace of adoption.

## INTENTION TO INVEST IN THESE TECHNOLOGIES WITHIN THE NEXT THREE YEARS

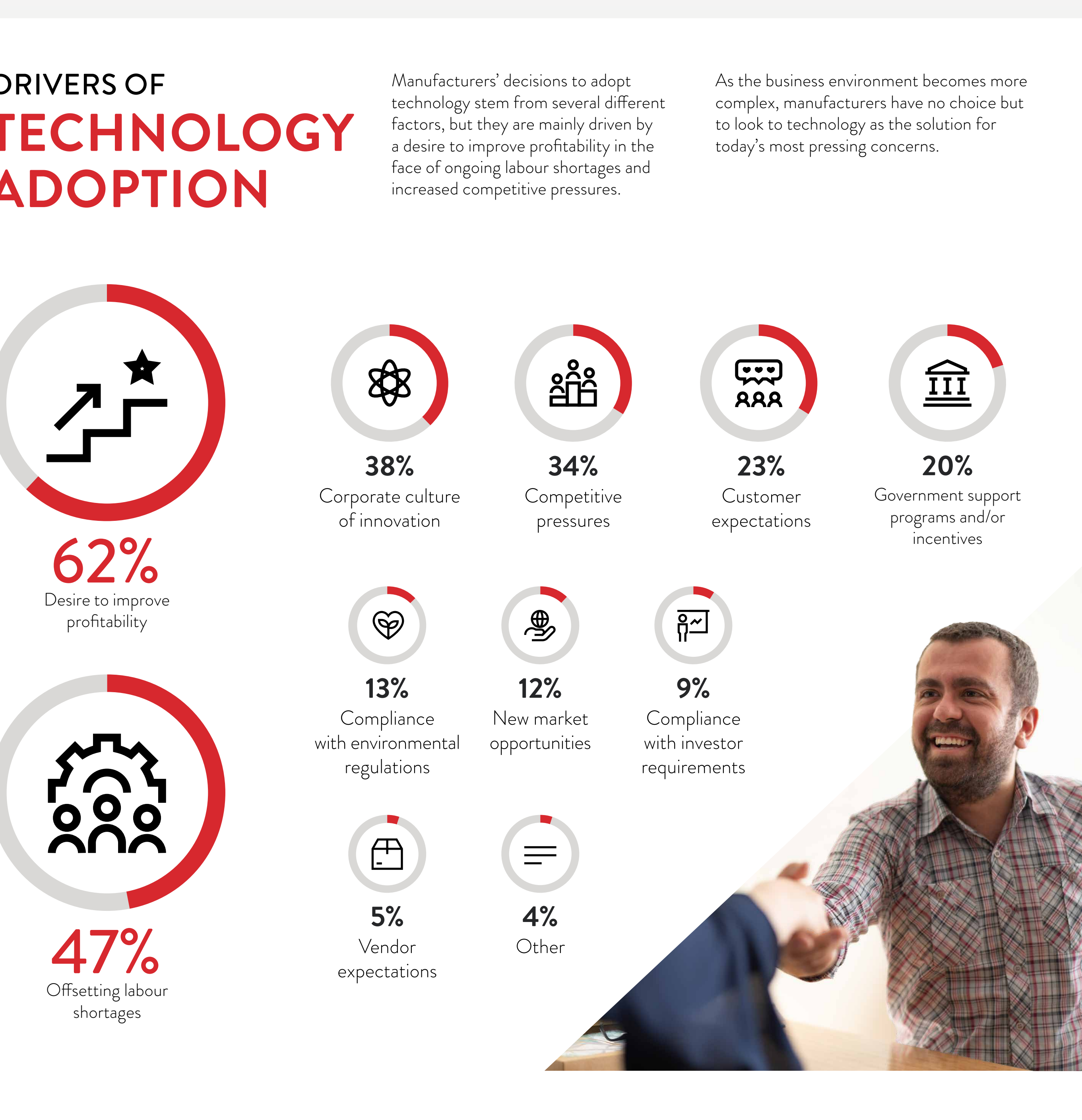
Half of small manufacturers are planning to invest in advanced manufacturing technologies over the next three years, but more support is needed if they are going to catch up to their larger corporate counterparts with more ambitious investment plans.



## DRIVERS OF TECHNOLOGY ADOPTION

Manufacturers' decisions to adopt technology stem from several different factors, but they are mainly driven by a desire to improve profitability in the face of ongoing labour shortages and increased competitive pressures.

As the business environment becomes more complex, manufacturers have no choice but to look to technology as the solution for today's most pressing concerns.



## OBSTACLES IMPEDING INVESTMENT

Although manufacturers feel increasing pressure to adopt technology, they face a range of barriers that impede their ability to take such steps.

Reducing purchase costs, de-risking investments, and reducing skills shortages and skills gaps will help manufacturers address these barriers and invest and grow.



## EFFECTIVE SOLUTIONS FOR AN INNOVATIVE WORKFORCE

Based on the findings of this survey and other research, along with ongoing consultations with members, CME recommends that governments take the following actions to encourage the investment in and adoption of advanced technology in the manufacturing sector:

- SUPPORT INFORMATION AND TESTING OPPORTUNITIES**
  - Provide financial support to facilitate technology demonstration tours and site visits for Canadian manufacturers that showcase cutting-edge machinery, equipment and technologies.
  - Fund technology demonstration and testing hubs across Canada to give manufacturers the opportunity to learn about and test new and emerging technologies.
  - Develop an online technology adoption roadmap that allows businesses to learn about the various stages of technology adoption, assess their own progress in moving towards Industry 4.0, and get information on the steps needed to advance to the next level.
- REDUCE PURCHASE COSTS AND DE-RISK INVESTMENTS**
  - Introduce a nationwide federal 10 per cent refundable manufacturing investment tax credit (ITC) for investments in new buildings and new machinery, equipment, and software. This could be accomplished by extending the Atlantic Investment Tax Credit—currently only eligible for capital projects in the Gaspé Peninsula and the Atlantic provinces—across the whole country.
  - Introduce a matching 10 per cent ITC in all provinces, using the same base as the federal program.
  - Extend the Accelerated Investment Incentive's current rate for three more years.
  - Expand the Canada Digital Adoption Plan (CDAP) by creating a dedicated manufacturing stream including a non-repayable component to offset the high cost associated with software critical to process automation.
  - Support the creation and delivery of a nationwide technology assessment and investment program that would offset the cost of technology assessment and diagnostic services and provide support for advanced manufacturing technology adoption initiatives at SMEs.
- REDUCE SKILLS SHORTAGES AND SKILLS GAPS**
  - Develop more vocation-focused education streams at the secondary level and provide more information to secondary students about career options in manufacturing.
  - Fund Regional Industry Councils (RICs) that bring together employers, government, and educators to coordinate skills training and education programs based on regional needs.
  - Support employer-led training through a 50 per cent tax credit that offsets half the costs of employee training.
  - Increase funding of the Canada Job Grant to \$1 billion annually, make it permanent, and expand it to include on-the-job training.