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MANUFACTURING ERP
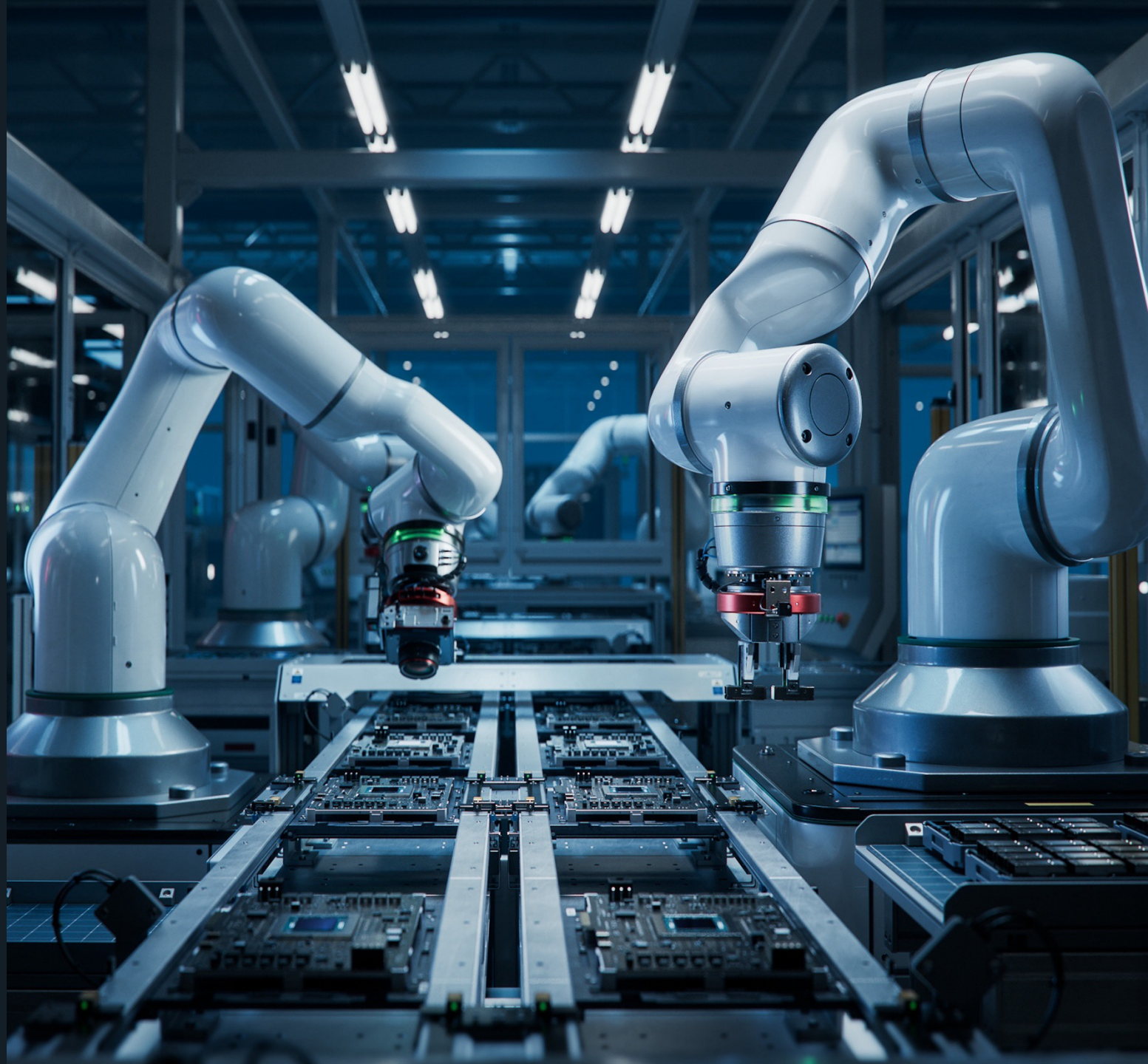
2024 State of Manufacturing Technology Survey

June 2024

Executive summary

Our second annual State of Manufacturing Technology Survey of more than 500 manufacturers revealed a robust commitment to adopting AI, enhancing operational efficiencies, and overcoming continued challenges in the industry.

→ AI adoption and challenges

- AI adoption is widespread among manufacturers, with **(90%) utilizing some form of AI in their operations**. However, **(38%) still feel they are behind their peers** in terms of AI implementation and progress.

→ Economic and strategic concerns

- Manufacturers anticipate significant negative impacts from current economic conditions, with the top concerns being **unreliable suppliers (39%)** and **decreased demand (36%).**

- The primary challenges to digital transformation include **constraints to budget/resources (31%)** and **time (27%)**— both have emerged as the new top obstacles in 2024, representing a shift from previous concerns centered around data access and departmental collaboration.

→ Digital transformation and IT investment

- Manufacturers are committed to digital transformation with the top challenge focused on **enhancing operational and production performance (41%), overtaking cybersecurity (34%)**—which was the top in last years' report—and **cost reduction (30%)** which was also prioritized.

- Investments in enterprise software (such as ERP, CRM, HCM, SCM, finance) are seen as critical, with **(51%) planning to increase spending in this area**, underscoring the importance of these digital tools.

- Those who have implemented cloud ERP have experienced significant benefits, including **reduced overall costs (56%), improved IT security (46%)** and **enhanced business agility and resiliency (46%)**.

- A significant differentiator in digital transformation success is the adoption of a Manufacturing Signal Chain. Among those far ahead in their digital transformation journey, **76% have implemented a Signal Chain strategy.**

About the survey

This survey was conducted by Researchscape and commissioned by Rootstock Software to assess how manufacturers view their digital transformation journeys, where they are currently making tech investments, and where they see opportunities for emerging technologies such as AI.

Demographics

- **508 professionals** who lead "digital transformation" in mid- to large-sized manufacturers

- Across countries in **North America**, **Europe**, and **Asia**

Timing

- Conducted between **February and April 2024**

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Digital Transformation in Manufacturing

Where are manufacturers today?

Majority on par or slightly ahead

In 2024, manufacturers show a positive outlook on digital transformation, with most feeling they're at least on par with peers (39%) or slightly ahead (24%).

63%

Room for improvement

This segment says they're slightly behind (21%) or far behind (8%), and thereby, they acknowledge a need to accelerate their digital transformation efforts.

29%

Minority leading

A small percentage (8%) consider themselves far ahead. They may be leveraging cutting-edge technologies and innovative practices, as well as setting benchmarks and best practices for the rest of the industry to follow.

8%

Compared to your peers, which of the following best represents your organization's overall digital transformation maturity/progress?

Far behind	Slightly behind	On par	Slightly ahead	Far ahead
8%	21%	39%	24%	8%
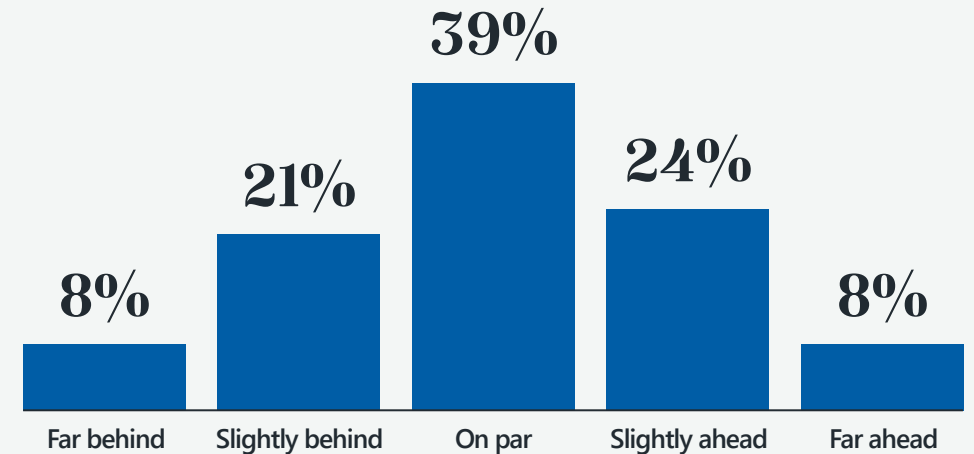
Defining the terms

Digital Transformation refers to the adoption or advancement of digital technology to transform processes or services in a business.

What's holding manufacturers back?

Today, more manufacturers are feeling strapped for time and resources than they did a year ago.

- In 2023, **the top two barriers were a lack of cross-departmental collaboration and coordination** (37%) **and limited access to data** (34%). Budget and time constraints were not even in the top five concerns.
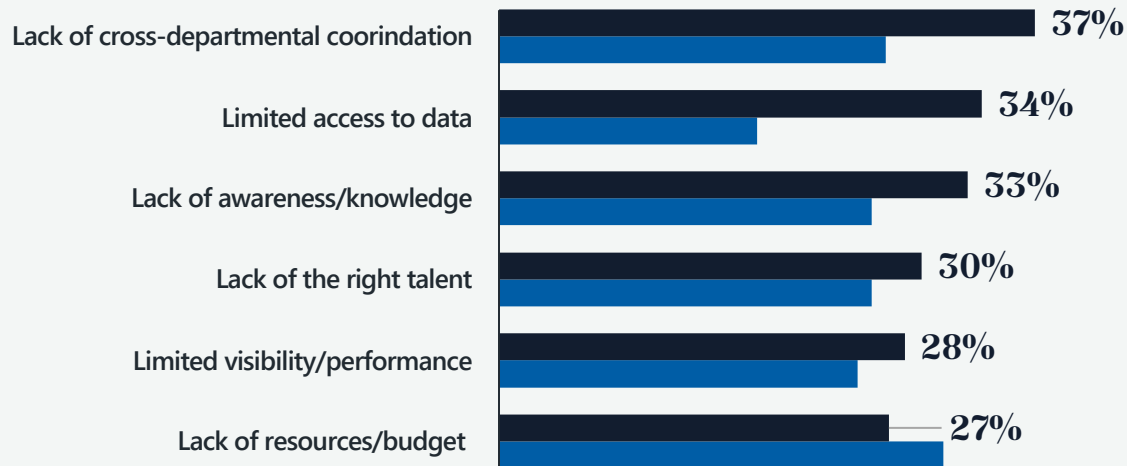
- In 2024, **the top two barriers to digital transformation have shifted to a lack of resources and budget** (31%) **and being too busy** (27%). These responses point to an overall pressure in today's economic climate to do more with less.

	2023
Lack of cross-departmental coorindation	37%
Limited access to data	34%
Lack of awareness/knowledge	33%
Lack of the right talent	30%
Limited visibility/performance	28%
Lack of resources/budget	27%

	2024
Lack of resources/budget	31%
Too busy/in reactive mode	27%
Lack of cross-departmental coordination	27%
Lack of awareness/knowledge	26%
Lack of the right talent	26%
Limited visibility/performance	25%

2023   2024

What if manufacturers don't digitally transform?

While many manufacturers are still facing challenges, they also recognize that a failure to digitally transform would present several risks to their operations. The top 3 include:

27% Lack of supply chain visibility and/or flexibility

26% Lack of adaptability to react to disruptions

26% Inability to get products to market fast enough

As you think about the future of your business, what consequences are likely to be the most problematic if your organization does not digitally transform?

23%	24%	24%	26%	26%	27%
Lack of digital skills amongst employees	Lack of sufficient collaboration with external suppliers and/or customers	Use of multiple platforms that are disjointed	Inability to get products to market fast enough	Lack of operational adaptability to react to disruptions effectively	Lack of supply chain visibility and/or flexibility
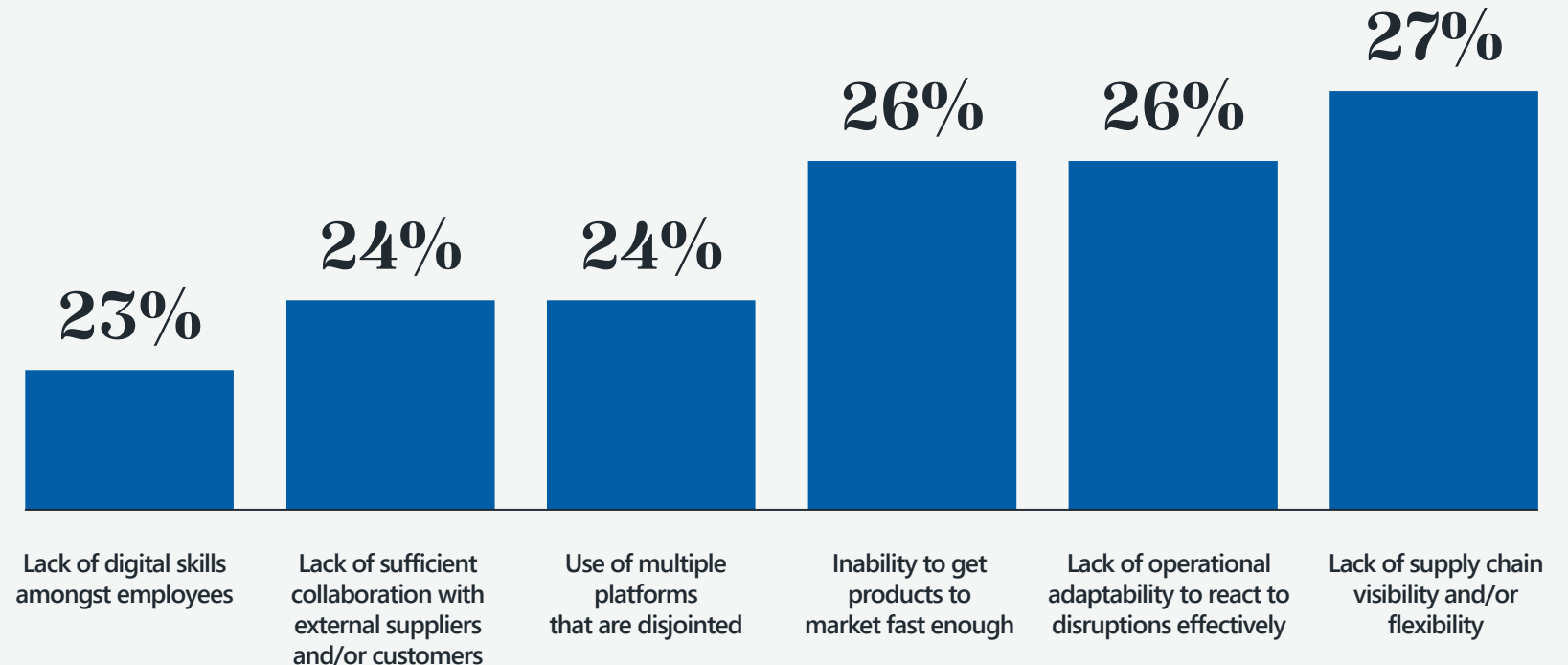
What's driving manufacturers to invest?

41%

The highest priority is enhancing operational and production performance. This suggests a strong focus on improving efficiency and productivity through AI automation, enterprise software, IoT, cloud platforms, and more.
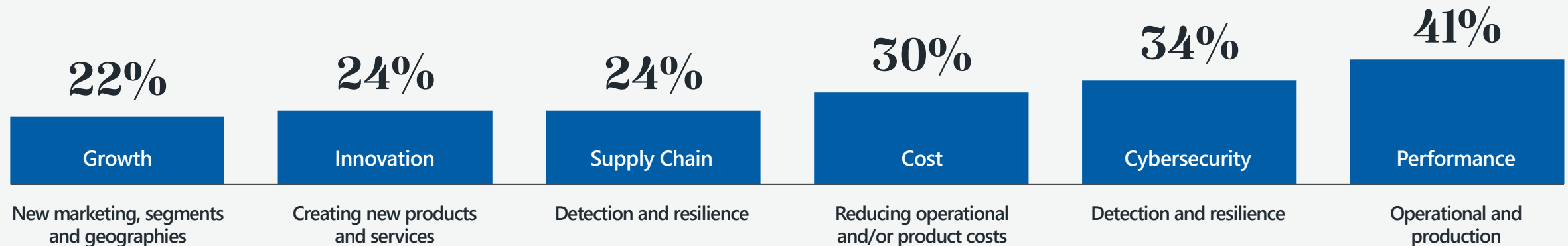
34%

Cybersecurity emerges as a crucial investment area, indicating increased awareness of cyber threats.

30%

Reducing operational and product costs is also a significant focus, highlighting the continuous pressure on manufacturers to enhance profit margins and competitiveness by lowering expenses.

Which of the following initiatives will be significant drivers behind IT investments at your organization in the next 12 months?

22%	24%	24%	30%	34%	41%
Growth	**Innovation**	**Supply Chain**	**Cost**	**Cybersecurity**	**Performance**
New marketing, segments and geographies	Creating new products and services	Detection and resilience	Reducing operational and/or product costs	Detection and resilience	Operational and production

Increased spending on enterprise software

28% reduce spending

Less than a third of the respondents plan to reduce their spending, with varying degrees of cutbacks. This could be due to budget constraints or shifts in business strategy.
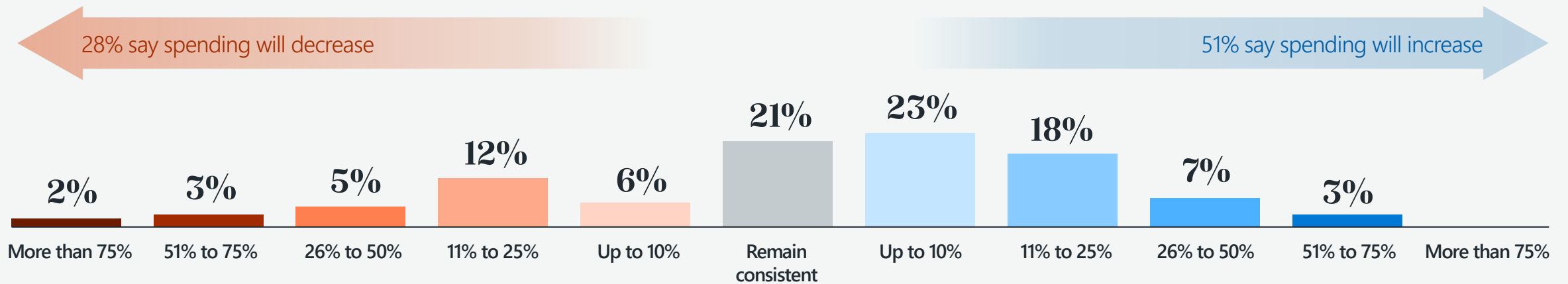
21% maintain spending

A significant portion plan to keep software spending consistent. This might reflect satisfaction with current software capabilities or a cautious approach in an uncertain economic environment.

51% increase spending

A majority of manufacturers plan to increase spending on enterprise software, suggesting a desire to improve operational efficiency, security, and competitive advantage.

What are your organization's investment plans for software that's used across your entire enterprise over the next 12 months?

28% say spending will decrease

51% say spending will increase

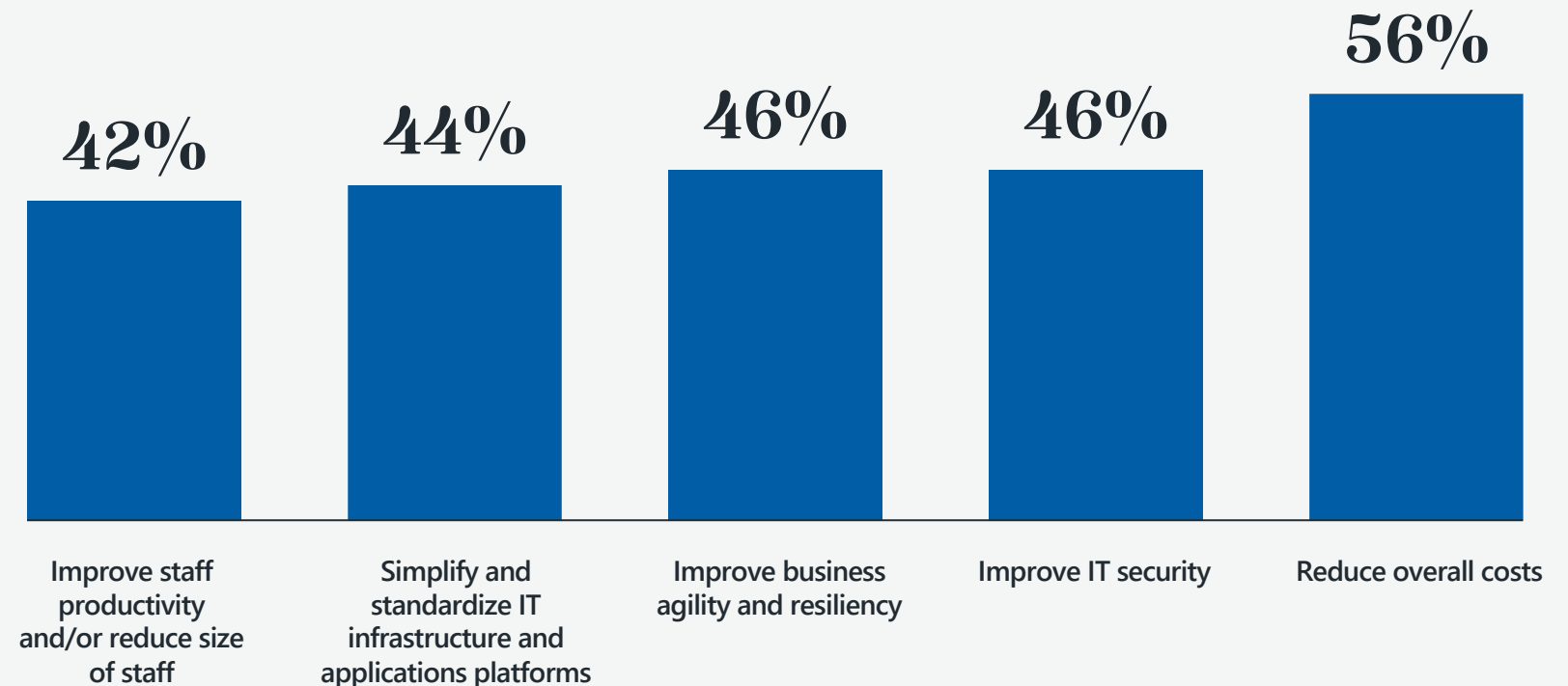| 2%	3%	5%	12%	6%	21%	23%	18%	7%	3%	
More than 75%	51% to 75%	26% to 50%	11% to 25%	Up to 10%	Remain consistent	Up to 10%	11% to 25%	26% to 50%	51% to 75%	More than 75%

ERP and the Manufacturing Signal Chain

The ERP constant

- Investment in a modern ERP is an initiative that underscores a manufacturer's need to improve operational and production performance. The top three benefits of cloud ERP as cited by manufacturers are **reducing overall costs** (56%), **improving IT security** (46%), **improving business agility** and **resiliency** (46%).

- The benefits strongly align with the digital transformation drivers that manufacturers cited earlier in this survey. It's clear that ERP plays a critical role in helping manufacturers navigate constantly fluctuating market demands and pressures.

Where have you experienced, or expect to experience, the greatest positive outcome from a cloud ERP solution?

42%	44%	46%	46%	56%
Improve staff productivity and/or reduce size of staff	Simplify and standardize IT infrastructure and applications platforms	Improve business agility and resiliency	Improve IT security	Reduce overall costs

Embracing the Manufacturing Signal Chain

- The Manufacturing Signal Chain is a powerful strategy that has taken root across many manufacturers' operations. This approach helps manufacturers supercharge their digital transformation efforts, while also improving decisioning capabilities.

- Our survey results demonstrate this power – among the respondents who are reportedly far ahead of their peers in terms of digital transformation maturity and progress: **76% have been utilizing a Signal Chain strategy; only 8% of those without a Signal Chain strategy have achieved the same progress.**

Defining the terms

The Manufacturing Signal Chain utilizes a cloud platform to connect live data streams on customer demand and supply chains, so manufacturers can dynamically balance production capacity.

When augmented with artificial intelligence, the Signal Chain can serve as a Decisioning Platform to help make better, more timely decisions that improve manufacturing operations.

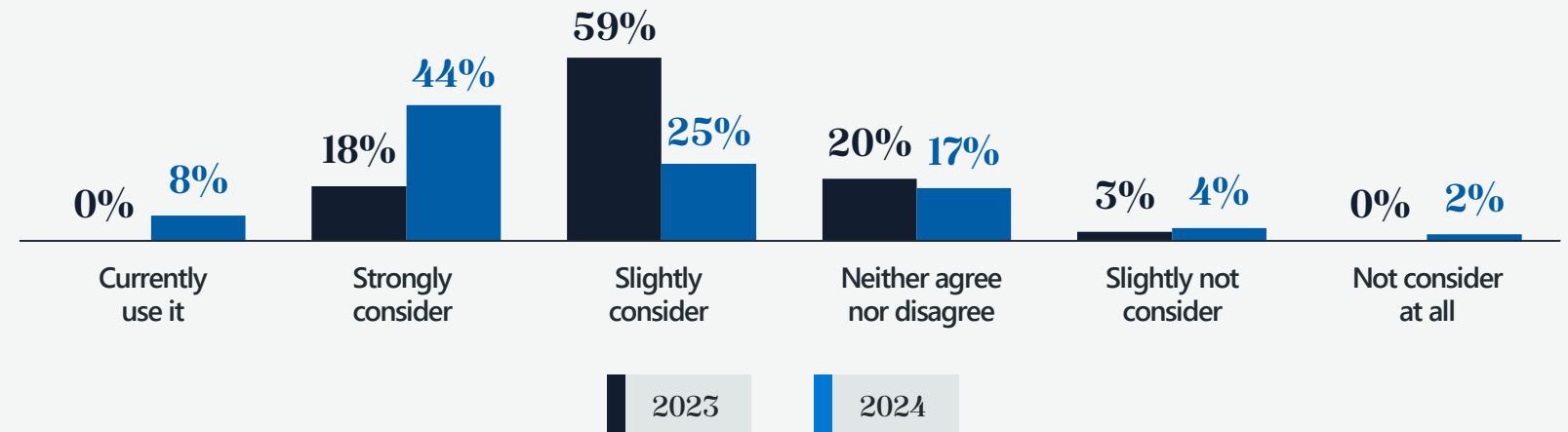Manufacturers far ahead in digital transformation maturity and progress

76%

8%

All others
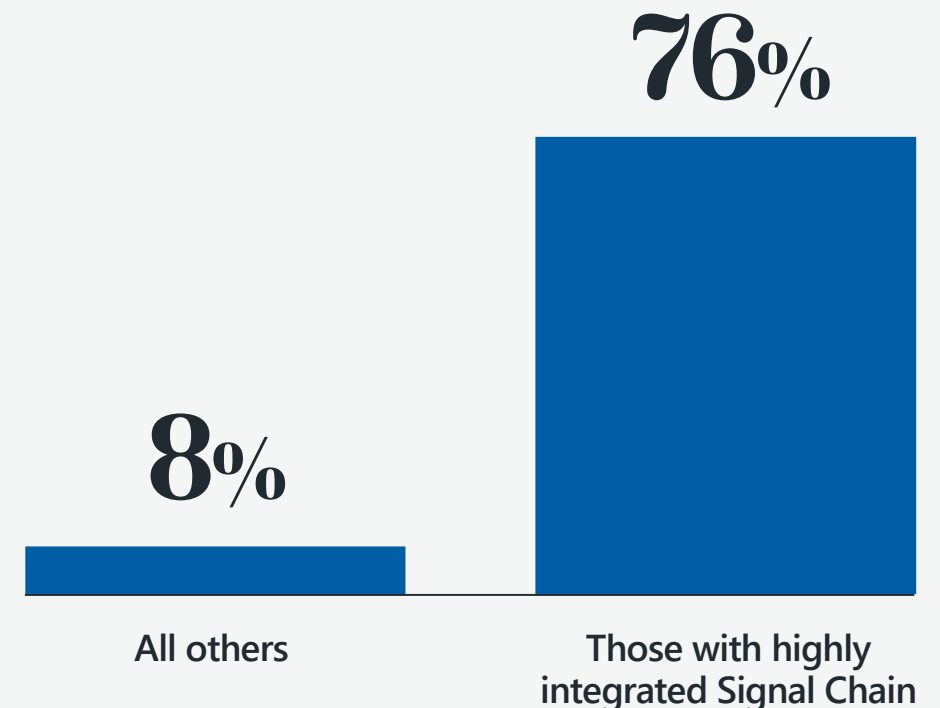
Those with highly integrated Signal Chain

Salesforce as a Platform

- While some manufacturers have started to build a connected Signal Chain, others are still using disjointed systems with data silos. **Consolidating onto a single platform is a key method to achieving a Signal Chain strategy.**

- In 2024, **44% of manufacturers said they'd strongly consider using Salesforce as a platform.** This is more than a two-fold increase over the 2023 survey results, in which only 18% of manufacturers said the same.

- In general, the survey shows that more manufacturers are moving further down the path to actual adoption of Salesforce as a platform. For example, **in 2024, 8% said they're now using Salesforce in this manner, whereas last year, no one had yet adopted it.**

Would you consider Salesforce as a single platform to standardize your IT systems?

	Currently use it	Strongly consider	Slightly consider	Neither agree nor disagree	Slightly not consider	Not consider at all
2023	0%	18%	59%	20%	3%	0%
2024	8%	44%	25%	17%	4%	2%

"Technology, especially Salesforce, streamlines processes, enhances communication and provides real-time insights crucial for transformation success."

"I see the Salesforce Platform as being central to integrating multiple systems to better execute on company goals and initiatives."
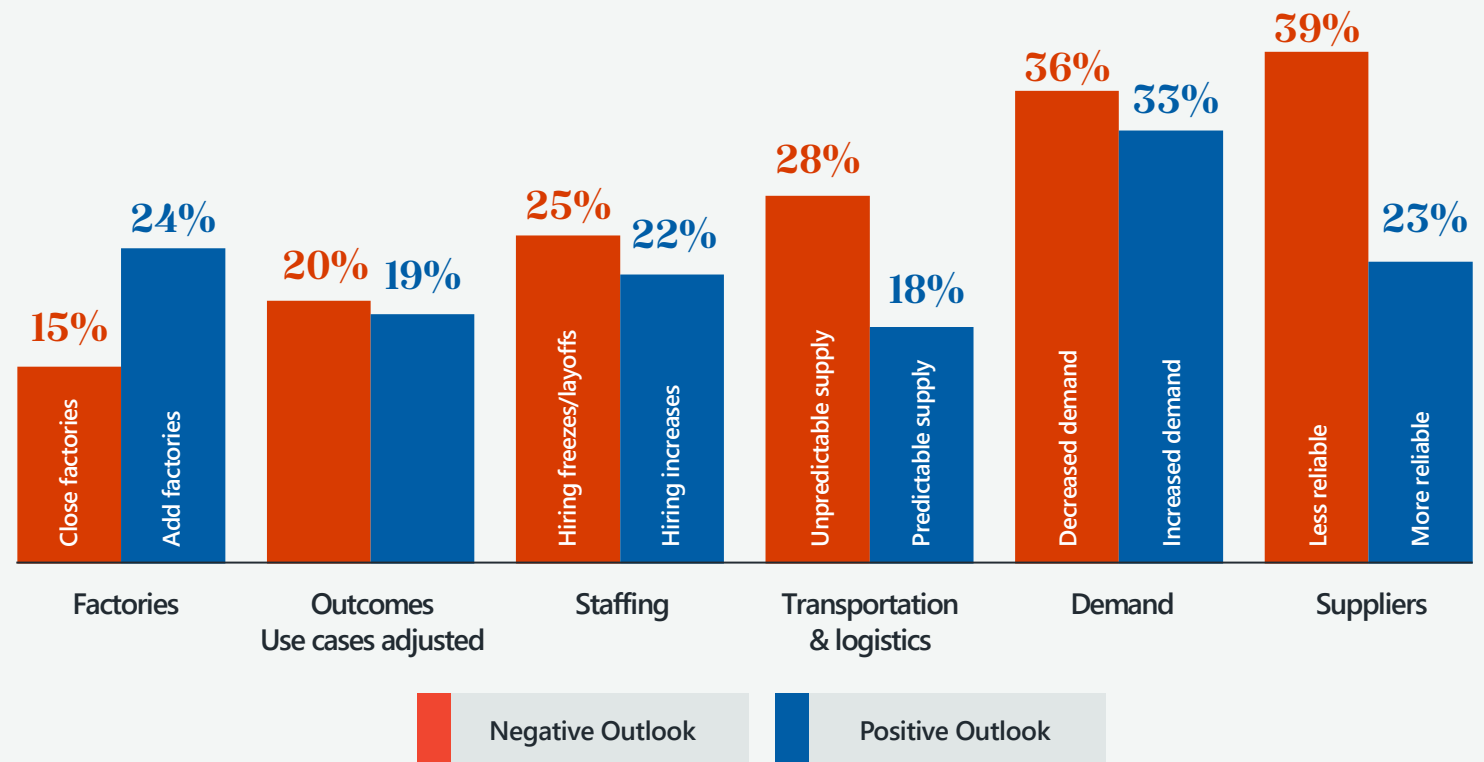
Investments and Economic Conditions Outlook

Economic headwinds/tailwinds

- Most manufacturers are bracing for a range of negative impacts due to today's current economic conditions, with a **focus on supply chain risks** (39%), **a potential decline in demand** (36%), and **transportation and logistics issues** (28%). The ability to navigate these challenges will likely define their success in the coming months.

- **Staffing issues and potential hiring freezes** (25%) indicate concerns about the ability to maintain or expand the workforce. **This can affect not only production capacity but also innovation and growth initiatives.** Manufacturers may need to consider how to optimize workforce productivity by investing in automation to counteract resource limitations.

- It's important to note that while a majority of manufacturers had a "negative outlook" on how current economic conditions will affect their operations, some companies had a "positive outlook."

How do you expect inflation, interest rates, economic conditions to impact your organization over the next 12 months?

	Factories	Outcomes Use cases adjusted	Staffing	Transportation & logistics	Demand	Suppliers
Negative Outlook	15% (Close factories)	20% (Hiring freezes/layoffs — Outcomes)	25% (Hiring freezes/layoffs)	28% (Unpredictable supply)	36% (Decreased demand)	39% (Less reliable)
Positive Outlook	24% (Add factories)	19%	22% (Hiring increases)	18% (Predictable supply)	33% (Increased demand)	23% (More reliable)

Legend: Negative Outlook (red), Positive Outlook (blue)
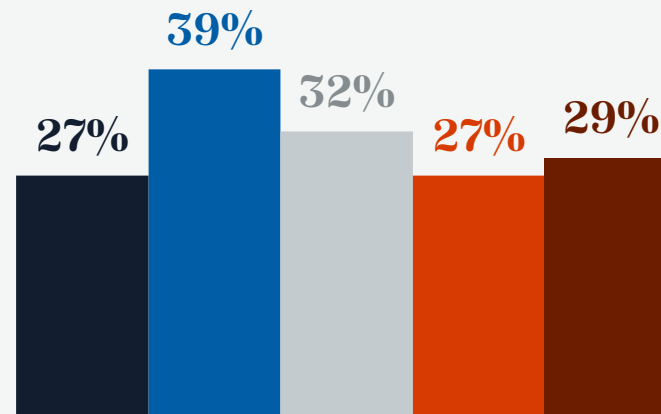
Geographic differences

39%

of Canadian manufacturers believe concerns about unreliable transportation and logistics were more prevalent compared to other regions.
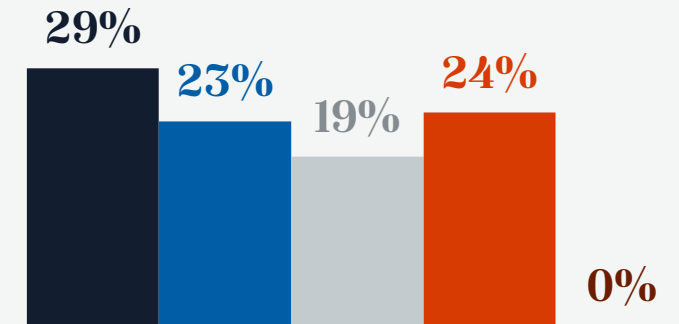
29%

of U.S. manufacturers believe that worries about staffing issues and hiring freezes, were significantly higher than all the other countries.

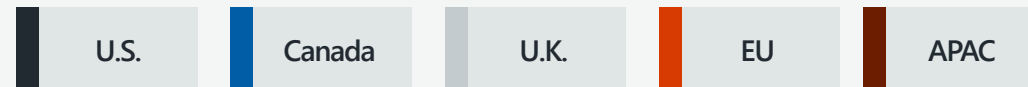How do you expect inflation, interest rates, economic conditions to most negatively impact your organization over the next 12 months, if at all?

Problems with transport and logistics

- 27% U.S.
- 39% Canada
- 32% U.K.
- 27% EU
- 29% APAC

Staffing problems/recruitment freeze

- 29% U.S.
- 23% Canada
- 19% U.K.
- 24% EU
- 0% APAC

| U.S. | Canada | U.K. | EU | APAC |

The AI Equation: Adoption and Impact

Manufacturers are embracing the AI era

- **90% of manufacturers reported that they're using some form of AI in their operations.**

- When asked what types of AI manufacturers are deploying, **the top three responses were automation** (48%), **generative AI** (43%), and **AI-powered industrial IoT** (38%).

- One reason deployment of predictive AI may be relatively low (36%) is the **difficulty in implementing it effectively**, especially when data is not consolidated into a solid foundation.

Defining the terms

Predictive AI

Predictive AI analyzes historical data to make predictions about future outcomes.

AI-powered industrial IoT

Systems that monitor manufacturing activity and predict potential issues to reduce manual intervention.

Generative AI

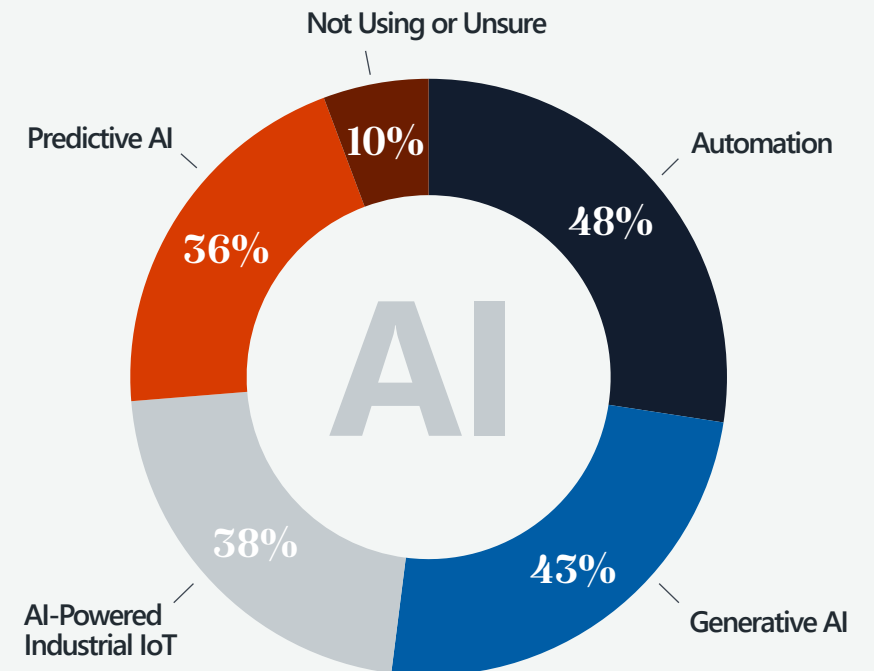Technology that can produce various types of content, including text, imagery, audio and synthetic data.

Automation

AI-powered software that automates manual processes and administrative work such as in an ERP solution.

What types of AI are you deploying in your organization?

Not Using or Unsure — 10%
Automation — 48%
Generative AI — 43%
AI-Powered Industrial IoT — 38%
Predictive AI — 36%

AI adoption: maturity and progress

Despite AI's high adoption rate covered on the previous page, 38% of the respondents still feel their company's AI progress lags that of their peers. This perception could stem from several factors:

- **Levels of Implementation**

  The depth and effectiveness of AI utilization may vary. Some might be in the early stages, using AI in limited or experimental capacities, whereas others may have integrated AI into core processes.

- **Competitive Disparity**

  Organizations might be aware of more successful AI applications or more advanced use cases deployed by competitors, which can influence their perception of being behind.

- **Resource Disparities**

  Differences in available resources, such as personnel, investments, and infrastructure, can contribute to varying levels of AI efficacy. Companies with fewer resources may find it challenging to keep pace.

Compared to your peers, which of the following best represents your organization's overall AI adoption maturity/progress?
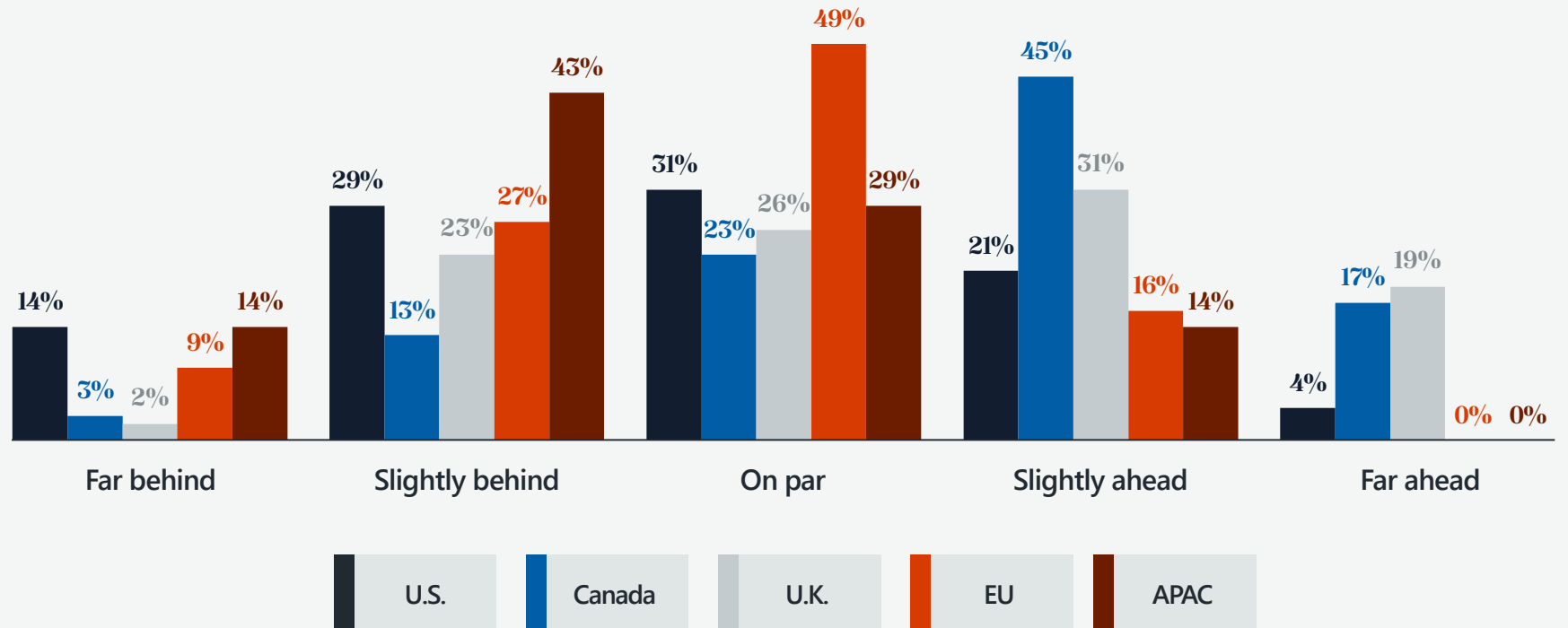

11%	27%	36%	21%	5%
Far behind	Slightly behind	On par	Slightly ahead	Far ahead
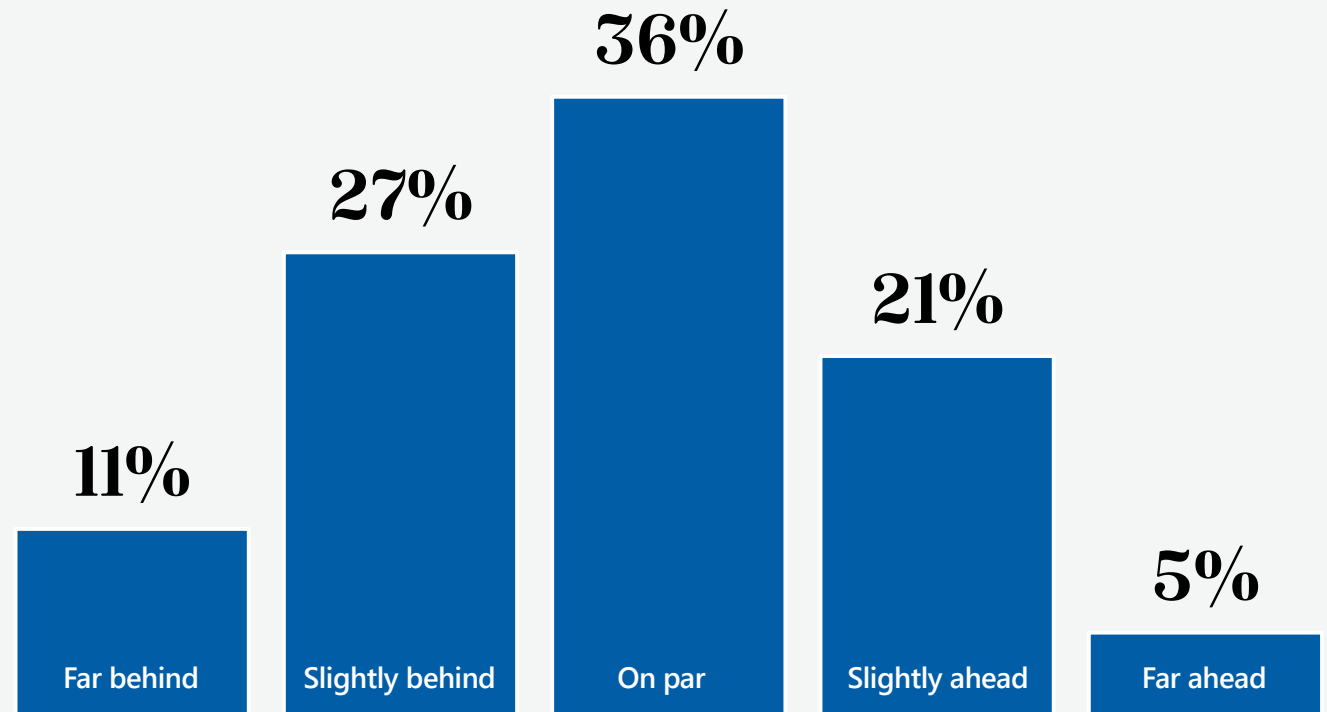
AI progress varies globally

- **U.S. and APAC manufacturers felt more behind the ball than their global counterparts** – in these geographic regions, 43% and 57% of manufacturers respectively felt their organizations were either far or slightly behind their peers in AI adoption.

- On the other hand, **manufacturers in Canada** (62%) **and the UK** (50%) **felt they were either slightly or far ahead of their peers in AI maturity and progress.**

Compared to your peers, which of the following best represents your organization's overall AI adoption maturity/progress?

	Far behind	Slightly behind	On par	Slightly ahead	Far ahead
U.S.	14%	29%	31%	21%	4%
Canada	3%	13%	23%	45%	17%
U.K.	2%	23%	26%	31%	19%
EU	9%	27%	49%	16%	0%
APAC	14%	43%	29%	14%	0%

AI adoption: sector leaders and laggards

- Some manufacturing sectors are leading, while others are a little behind.

- For example, 100% of renewable manufacturers are confidently using some form of AI, **while medical device** (11%) and **aerospace and defense** (10%) are either not using or unsure if they're using AI.

- Aerospace and defense has the highest adoption of **AI automation** (61%), while high-tech equipment is **highest in generative AI** (53%), and renewables is highest in **AI-powered industrial IoT** (52%).

What types of AI are you deploying in your organization?

Not using or unsure: Renewables 0%, Aerospace and Defense 10%, High-Tech Equipment 3%, Medical Devices 11%, Other Discrete Manufacturing 17%

Predictive AI: Renewables 42%, Aerospace and Defense 41%, High-Tech Equipment 35%, Medical Devices 32%, Other Discrete Manufacturing 33%

AI-Powered Industrial IoT: Renewables 52%, Aerospace and Defense 27%, High-Tech Equipment 38%, Medical Devices 26%, Other Discrete Manufacturing 32%

Generative AI: Renewables 45%, Aerospace and Defense 31%, High-Tech Equipment 53%, Medical Devices 47%, Other Discrete Manufacturing 30%

Automation: Renewables 42%, Aerospace and Defense 61%, High-Tech Equipment 43%, Medical Devices 47%, Other Discrete Manufacturing 44%

Legend: Renewables | Aerospace and Defense | High-Tech Equipment | Medical Devices | Other Discrete Manufacturing

Survey participants view technology as critical to being able to effectively operate in a constantly changing, disruptive environment.

"The industry has increasingly integrated advanced technologies like robotics and AI into their processes. These technologies have helped our business enhance efficiency and reduce costs. "

"Supply chains have been greatly disrupted over the past few years; using tools, we're expecting to become a sustainable environment regarding our incoming inventory. "

"It's important to have all the core tools needed to streamline and automate processes, improve customer experience, and drive growth. "

"Manufacturing has been hit hard in the last few years by COVID, supply chain issues, energy, and material inflation. We need tools to react quickly to threats and to protect the business from damage. "

"Supply chain is slow but improving. Our biggest challenge is on-time delivery, retention of employees, and cash flow due to large customer orders. We need an ERP system we can depend on rather than manual manipulation of inventory. "

About Rootstock

Rootstock Software provides the leading Manufacturing Cloud ERP, which empowers hundreds of manufacturers to turbocharge their operations in today's dynamic, post-pandemic world. Natively built on the Salesforce Platform, Rootstock delivers a futureproof solution. With it, manufacturers gain the ability to continually transform their businesses to meet evolving customer needs, navigate emerging challenges, and accelerate success. In addition, the "connectability" of Rootstock Cloud ERP gives manufacturers 360° visibility to collaborate with suppliers, trading partners, and the broader value chain.

Ranked as a leader by industry analysts, Rootstock has vertical expertise in discrete manufacturing, medical devices, and high-tech verticals. Rootstock team members partner with customers as trusted advisors in driving change and transformation to what's next.

For more information, visit **rootstock.com**