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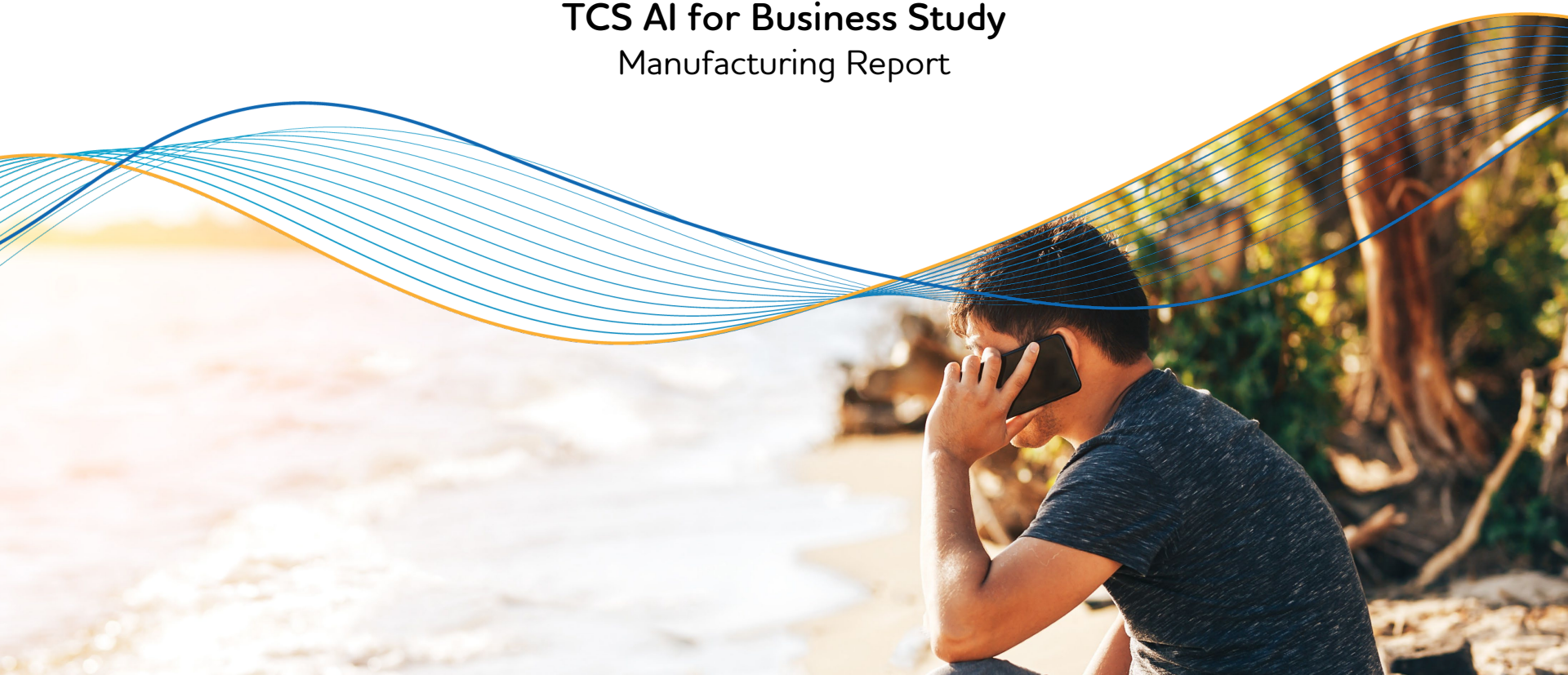
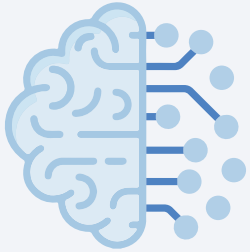
# From potential to performance by design

## TCS AI for Business Study

Manufacturing Report



# About the TCS AI for Business Study



TCS surveyed senior executives at nearly 1,300 companies in 12 sectors across 24 countries, approximately half of which had annual revenues over **US$5 billion**.

This report includes study findings from **184 survey** respondents in the **Manufacturing** industry.

What's driving AI implementations?

How are employees, skills and roles shifting?

How is AI redefining the Manufacturing industry?

What customer engagement AI trends are emerging?

Where is AI strategy headed in Manufacturing?

Are business results aligning with aspirations?

The findings in this report reflect a survey sample of 184 senior executives — CEOs, divisional and business unit heads, and senior VPs or VPs with profit-and-loss responsibility — working for major Manufacturing companies headquartered in the following countries:

- Australia
- Austria
- Belgium
- Brazil
- Canada
- Chile
- Colombia
- Finland
- France
- Germany
- India
- Ireland
- Japan
- Luxembourg
- Mexico
- Netherlands
- New Zealand
- Norway
- Spain
- Sweden
- UK
- USA

Additionally, seeking to find correlations between a company's business success and its approach to implementing artificial intelligence, each executive's company was ranked alongside the others in that same industry for its financial success, as measured by a combination of revenue growth and profit growth over the last three years.

These **"Pacesetters"** represent the top 34% of companies — 62 companies – among the Manufacturing executives we surveyed.

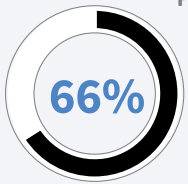
Where relevant, this report notes differences between the industry's overall survey answers and the responses of its Pacesetters.

# The transformative potential of AI

# An optimistic outlook on AI's impact

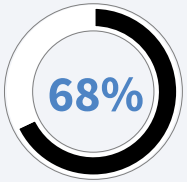
Few technology advancements have gripped the public imagination like artificial intelligence. The majority of senior executives in the Manufacturing industry believe **AI's impact on their business model will be greater or equal to earlier disruptive technologies, and they're optimistic about its potential.**

PACESETTERS

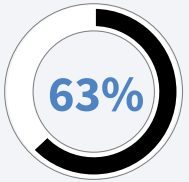



77%

believe the impact of AI will be greater than or equal to **the internet**



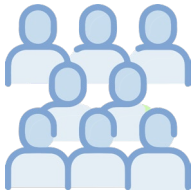

believe the impact of AI will be greater than or equal to **smartphones**



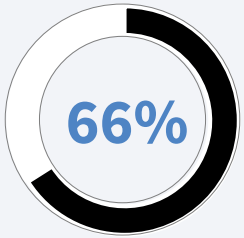

say they are **optimistic or excited about AI's potential impact** on their business

*Q. How would you compare AI's potential impact on your business model with the following technological developments: Internet; smartphone.*
*Q. Which of the following is closest to how you're feeling about AI's potential impact on your business?*

# Humans, not AI, expected to remain the competitive differentiator



Most Manufacturing executives believe that rather than replacing human workers, AI will augment and enhance human capabilities, enabling people to focus on higher-value activities that require creativity, empathy, and strategic thinking.




Two-thirds of Manufacturing executives say human creativity or strategic thinking will remain their company's competitive advantage.

**38%**

Expect AI to make more tactical decisions, freeing up workers to think more strategically

**29%**

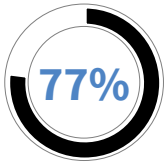
Believe human intuition and creativity will remain central to their company’s competitiveness

*Q. In your business, which of these statements most closely matches your own expectations for how AI will impact decision making in the next 3-5 years?*

# Executives want to innovate and make money with AI

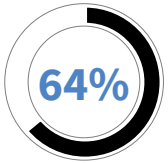
While slightly less focused on using AI to spur innovation and grow revenue than most other industries, it nevertheless remains a priority for Manufacturing executives. On a 10-point scale between “optimization” and “innovation,” Manufacturing executives averaged 6.38, compared to an average of 6.78 for all other industries.

Manufacturing Pacesetter firms are firmly in the camp of using AI to focus on innovation and revenue growth, compared to focusing on optimizing operations and cutting costs.

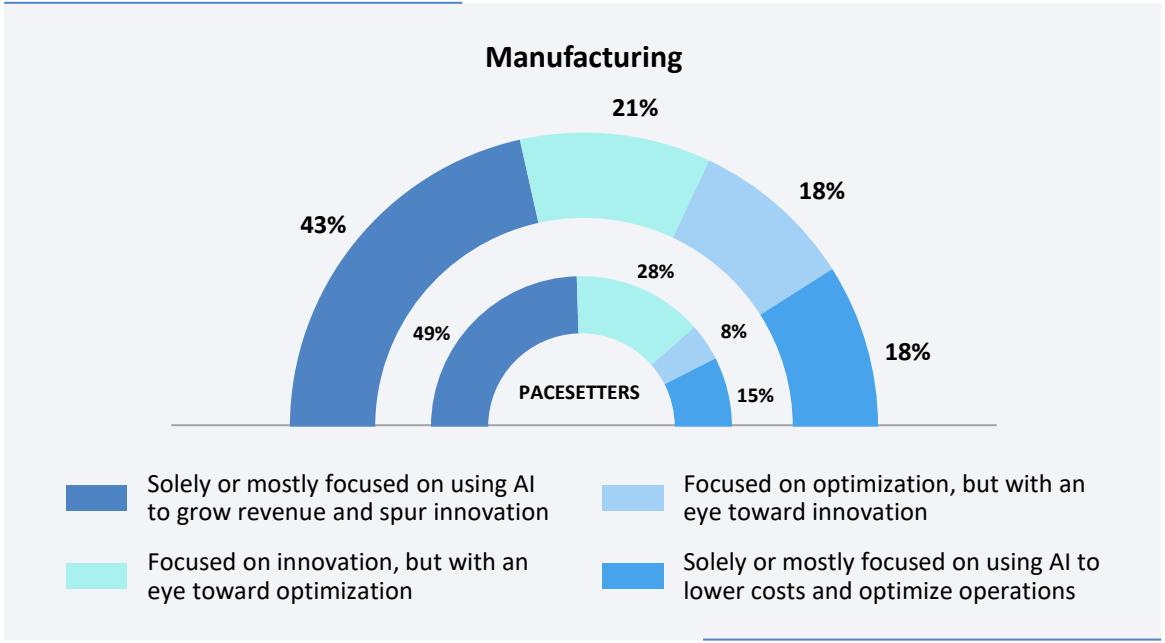



of respondents at Pacesetter manufacturers said they were primarily focused on innovation

compared with




of their industry overall.

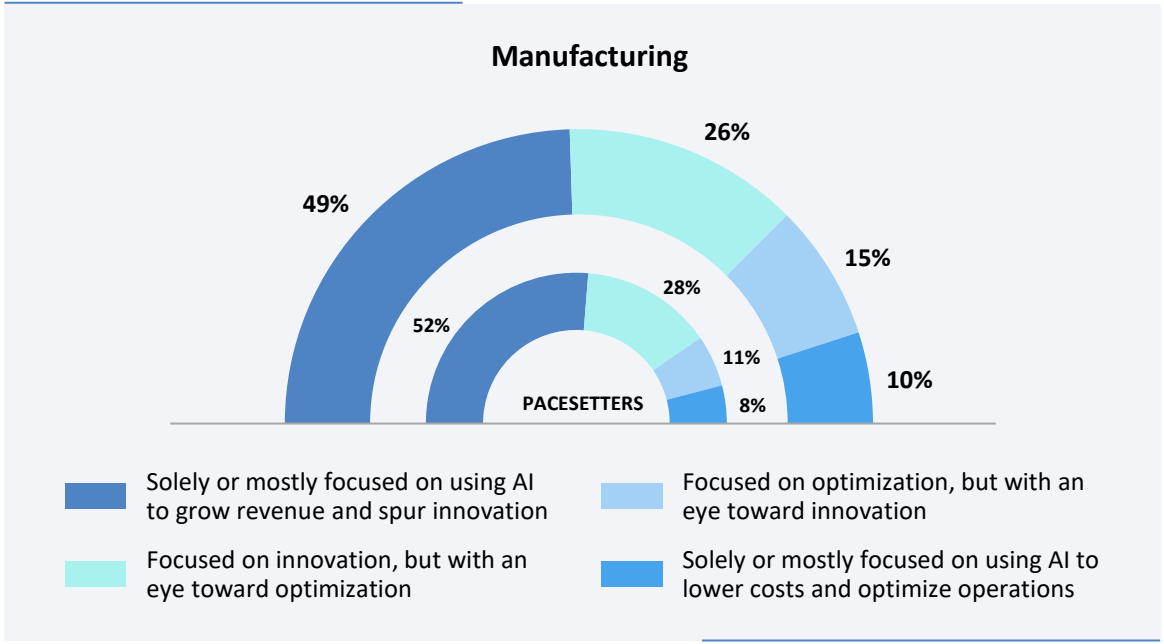



*Q. On a scale of 1 to 10 — where 1 is solely interested in using AI to lower costs and optimize operations and 10 is solely focused on spurring innovation and revenue growth — where would your company's current approach toward AI fall?*

# Productivity is an AI benefit, but quality will be its lasting value

Manufacturers are even more focused on using AI for productivity gains – as compared with using it for improving quality – than are most other industries.

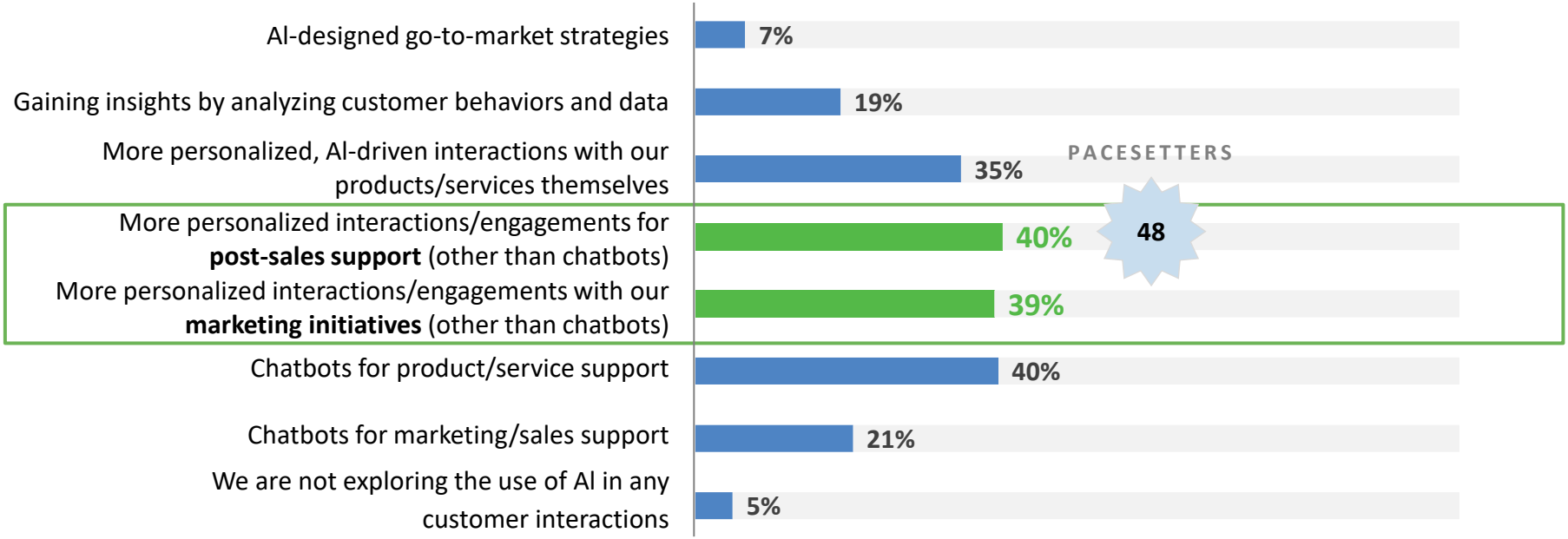
On a 10-point scale between "improving quality" and "enhancing productivity," Manufacturing executives scored an average of 6.94, compared to the 6.89 average across other industries. Pacesetters were even more focused on productivity, scoring an average of 7.08 on this scale.




*Q. On a scale of 1 to 10 — where 1 is solely interested in using AI to lower costs and optimize operations and 10 is solely focused on spurring innovation and revenue growth — where would your company's current approach toward AI fall?*

# Personalized interactions are top AI customer focus areas

When it comes to customer engagement, organizations say they're moving beyond commonplace chatbots. While chatbots for sales and product support remain important to Manufacturing companies, their use is being supplanted by other AI-driven means to accomplishing these goals.

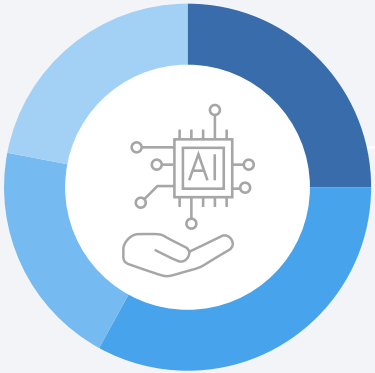



*Q. In what ways are you exploring AI's impact on your relationships with customers?*

# The journey to AI

# One size fits one? AI adoption strategies vary

AI is not plug-and-play technology with a one-size-fits-all strategy, and the findings from Manufacturing executives reflect their varied approaches to AI. A third want to find the right ways to apply AI to their current business model, a quarter favor establishing an enterprise-wide AI strategy, and fifth want bold experimentation and fail-fast methods.




**25%**

want to establish an enterprise-wide AI strategy to maximize its benefits to the company

**33%**

want to stay true to their purpose and success model in exploring how they might leverage AI

**20%**

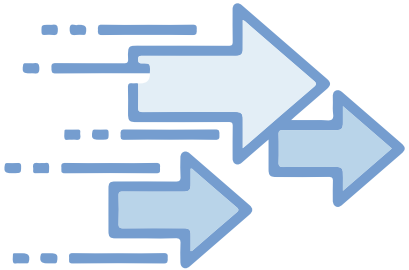
want to experiment and take risks with AI to maximize its benefits

**22%**

want to wait and see how AI gets use in their industry and follow the lead of others

*Q. Rank three areas in order of importance to your company's leadership regarding the use of AI in the enterprise.*

# Fast or slow, Manufacturing organizations are adopting AI



While the pace of AI adoption differs, the ultimate objective is overwhelmingly consistent.

**The vast majority of Manufacturing executives (94%) have AI implementations planned, in process or already completed.**

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**58%**

64%

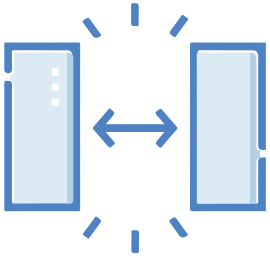
of corporate functions have AI implementations in-process or completed

**36%**

of departments are planning AI implementations

*Q. What is the state of implementation for AI-enabled operations in the following areas of your company?*

# A gap between aspiration and reality



The merging of reasoning and recognition intelligence into generative models offers tremendous potential to help companies reimagine entire value chains and transform the way they do business.

**But most Manufacturing respondents say they have a long way to go to realize these outcomes.**

Only **5%** say it's currently a differentiating factor for business transformation

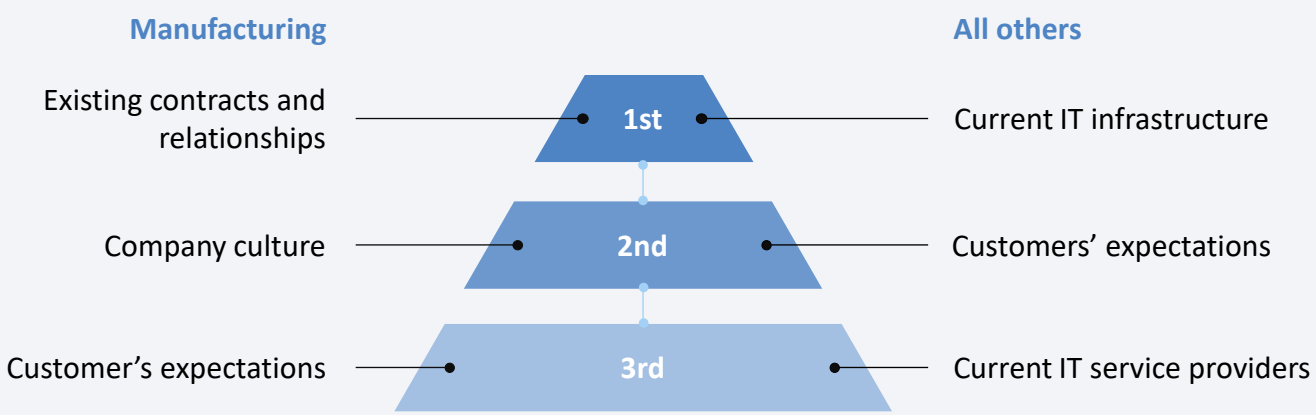
**22%** haven't even moved beyond the initial AI exploration phase

**29%** are cleaning up their data and moving it to the cloud

*Q. Looking at your organization overall, which most closely describes your company's current relationship to AI?*

# What’s hampering AI progress?

Manufacturing executives say their **existing contracts and relationships**, their **corporate culture**, and their **customers’ expectations** are slowing their overall AI efforts.

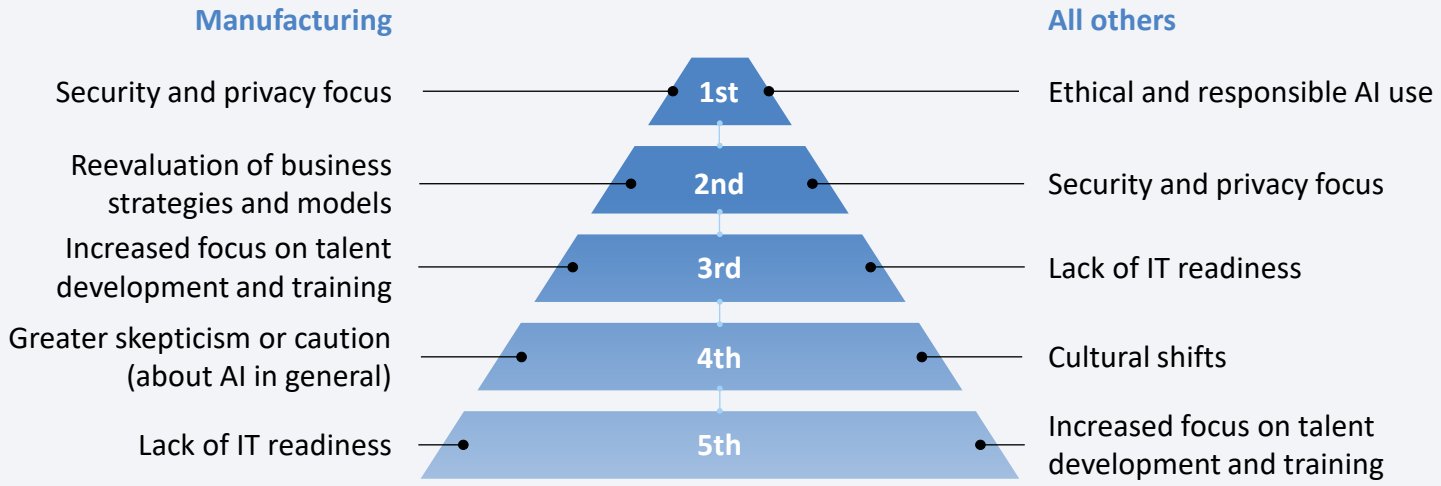



*Q. What are the top 3 challenges to making effective use of AI in your company?*

# Generative AI brings its own set of challenges

**44%** of Manufacturing executives surveyed expect up to half of their employees to be using GenAI on a daily basis within the next **3 years**. (And a majority of Pacesetter executives say that **over half** will be doing so.) Of issues that GenAI has brought to the fore, Manufacturing executives say security and privacy concern them the most.

## Top ranked Gen AI adoption concerns




*Q. In three years, what percentage of your employees do you believe will be using/interacting with Generative AI capabilities on a daily basis?*
*Q. Rank the top 3 statements, which most closely reflect how recent attention to Generative AI (specifically) has changed your company's assessment of AI's benefits and risks more generally of AI's benefits and risks more generally*

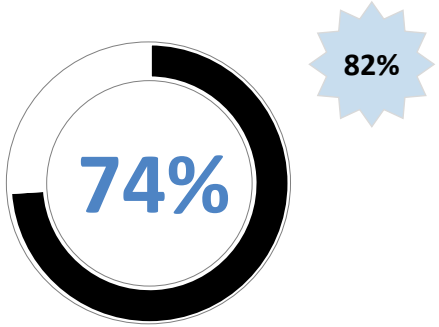
# Balancing risk with opportunity

# Making way for AI

Introducing such powerful technology into organizations comes with a great weight of responsibility. Extensive preparation and stringent governance that foster trust in outcomes and investment values must go hand in hand with AI adoption.

**Manufacturing businesses are not only aware of the changes involved, but actively planning for them.**

PACESETTERS



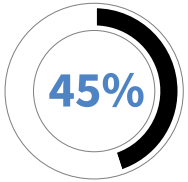

of Manufacturing companies are currently reworking or are planning to rework how they operate across the enterprise

*Q. Have you given any thought to how your company's strategic direction needs to be revised due to AI's potential benefits or risks for your organization or your industry?*

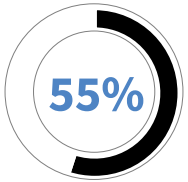
# Homegrown implementation prevails for now

As AI preparation turns to implementation, organizations face numerous decisions to achieve the right mix of artificial intelligence and investment.

Despite the complexity, nearly **half of Manufacturing companies are likely to rely on internal teams** to develop and implement AI — even for tasks as difficult as creating their own enterprise-specific LLMs.




say they are relying solely or mostly on in-house talent to implement this new technology



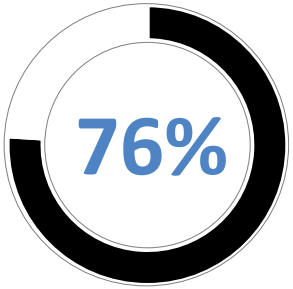

plan to create their own enterprise-specific LLMs for use in GenAI implementations

*Q. On a scale of 1 to 5, how much are you relying on external vendor and partnerships (including academic or government partners) for your AI implementations and how much are you doing in-house?*
*Q. Are you planning to create your own enterprise-specific LLMs for use in Generative AI implementations?*

# Implementation metrics fall short

Manufacturing executives say they need better KPIs to measure the success of their AI implementations. Without KPIs, organizations will struggle to demonstrate AI's value and gain internal traction for its adoption.

Only **15%** say they have "good enough" metrics and KPIs for their current stage of AI deployment.
**9%** said they aren't even aware of any useful metrics for AI implementations.




need better metrics to measure the success of their AI implementations

**27%**

need better financial KPIs for AI-enabled operations

**28%**

need better non-financial KPIs for AI-enabled operations

**21%**

Need both

*Q. Which statement most closely matches how you feel about measuring the success of and financial return on AI implementations?*

# Navigating ethical, security and privacy dimensions

The debut of sophisticated AI applications has intensified the focus on security and privacy concerns, and the ethical dimensions of AI use have also garnered significant attention. Most senior Manufacturing executives prefer global standards, debating whether specific use cases are better covered at this scale or more locally.

**41%** prefer global AI standards regulating specific use cases and outcomes

**43%** prefer global AI standards, plus specific regional controls

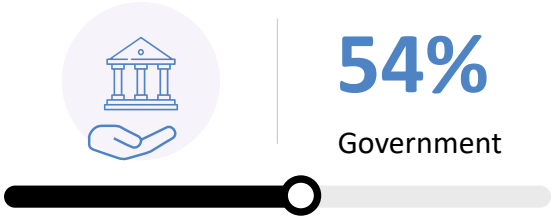
**14%** prefer a heterogenous environment of local regulations

**2%** think it's too early or unnecessary to regulate AI

*Q. Which regulatory landscape is most appropriate for your business's use of AI?*

# A regulatory partnership between industry and government

A majority of Manufacturing executives think regulations should be jointly established between industry voices and government agencies. About as many also think academic expertise deserves a seat at the table given how complex this technology already is and how quickly it is evolving.




*Q. Which organizations should be involved in establishing regulations about AI?*

# TCS recommendations

Based on this research, here are our recommended next steps.

### Focus on the business value, not the technology

Embrace an AI strategy based on prioritized initiatives and use cases that have the potential to drive tangible business outcomes.

### Make your business & culture AI-ready

Invest not only in the necessary technology and infrastructure but in a culture that embraces change, experimentation, and continuous learning.

### Adopt a more strategic approach

Consider the broader strategic value of AI initiatives and how they can be used to improve operational efficiency, reduce risk, and enhance decision-making — all of which can contribute to overall business performance.

### Don't go it alone

Let business and IT staffs focus on core competencies and strategic objectives, seeking partnerships and external expertise where appropriate, rather than shouldering the entire burden of AI implementation internally.

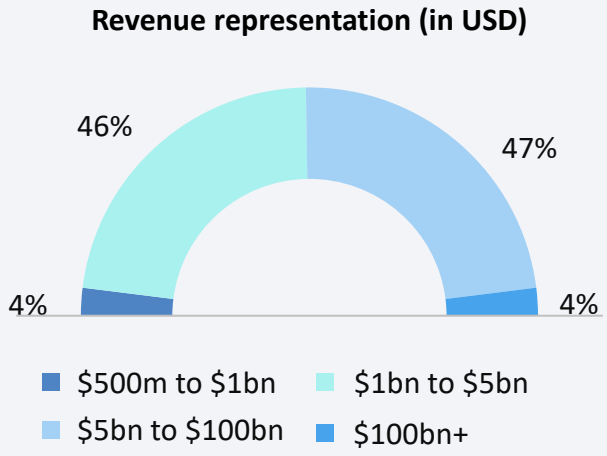
### Plan for success, not scarcity

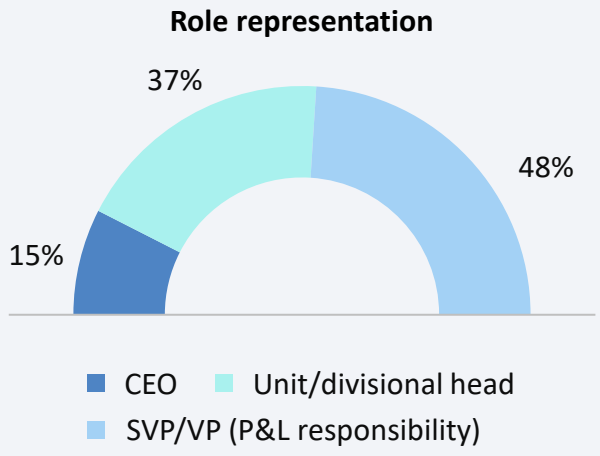
Implement AI with the goals of expanding revenue, opportunity, and innovation, which offers the potential to create new jobs and enhance human capabilities.

### Create higher-level relationships with customers

Leverage modern AI to deliver highly personalized, proactive and more value-added experiences across the customer journey for competitive differentiation and to build long-term loyalty.

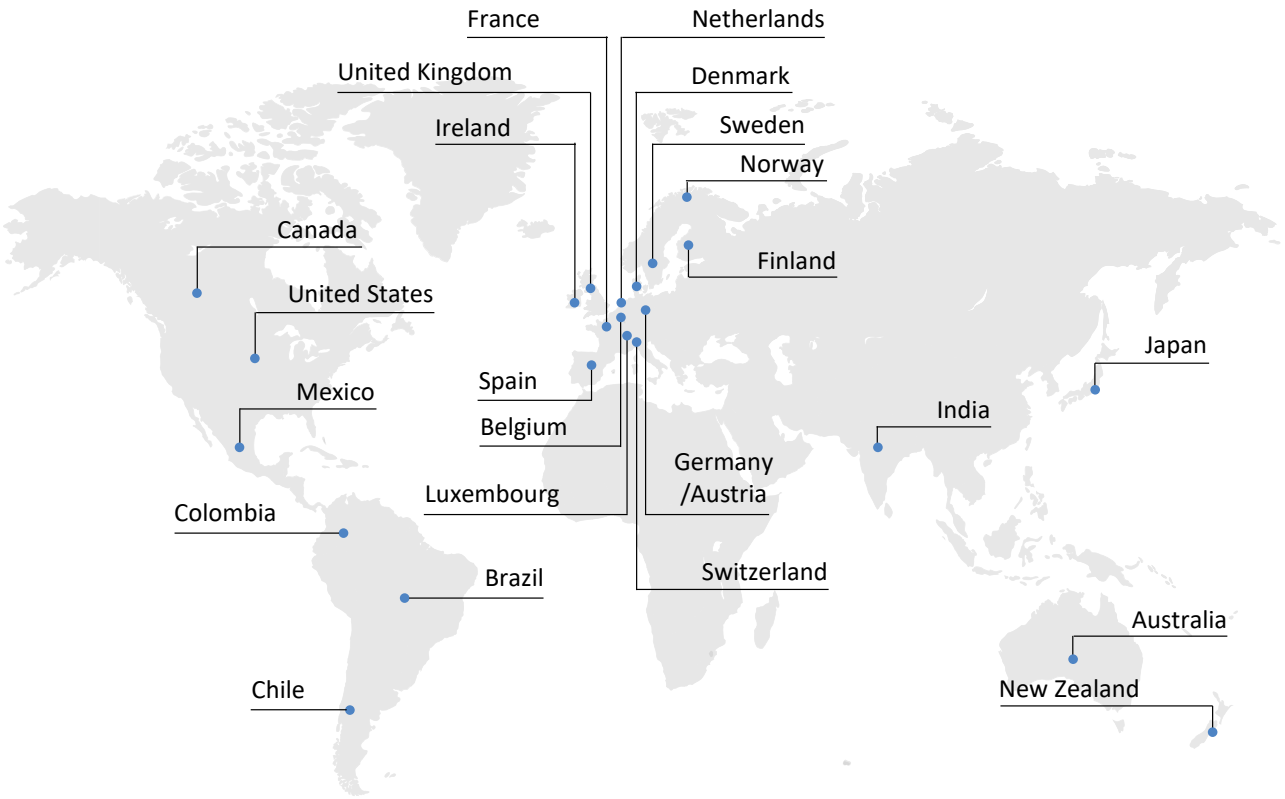
# Demographics: role and revenue




**Manufacturing**
*n = 184*

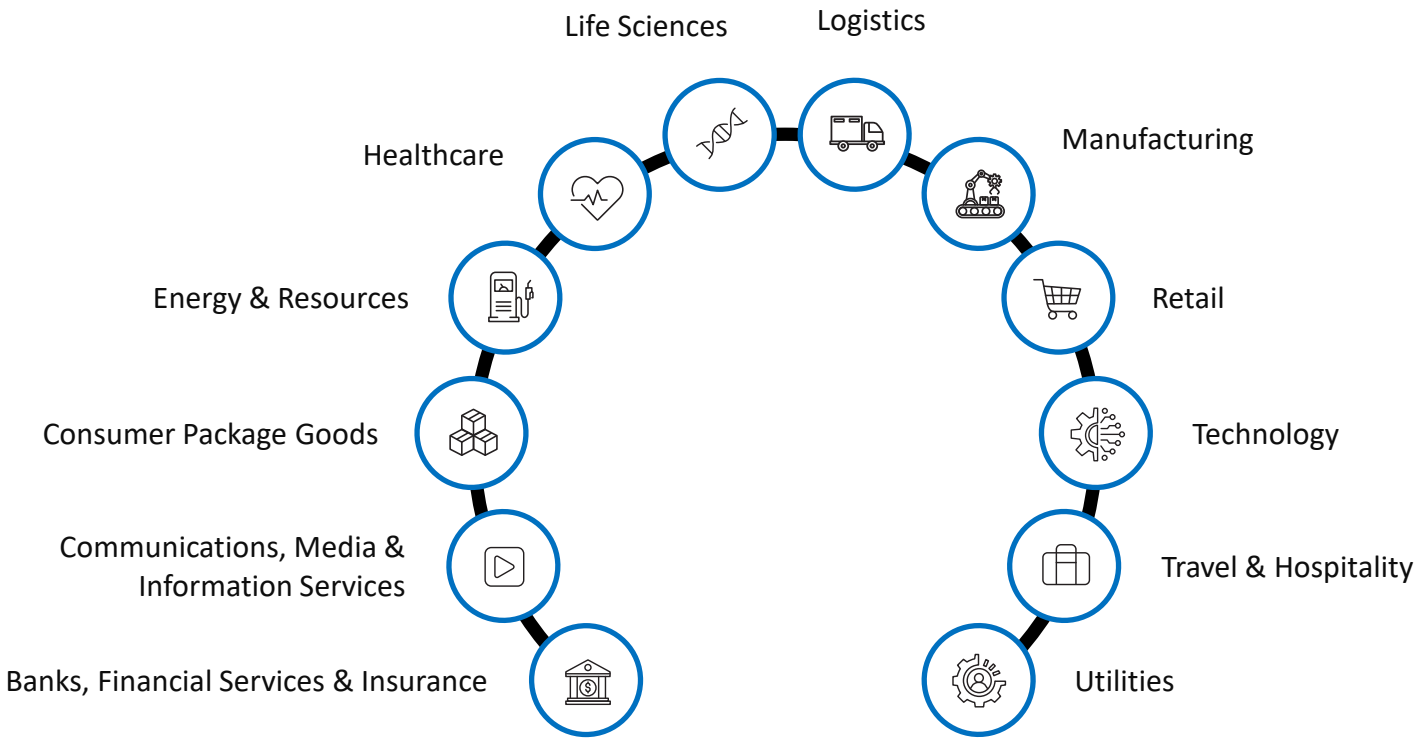
# Demographics: 24 countries represented in the study




**Note**: Note: All countries except for Denmark are included in the Manufacturing sample

***Total = 1,272***
***Manufacturing = 184***

# Demographics : 12 industries represented in the study




*n = 1,272*

# About the study

## Executive champions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Head, Advisory and Consulting, AI.Cloud, TCS

**Serge Vatin-Perignon**
Global Head, TCS Thought Leadership Institute


## Get more insights

If you would like to get additional research based on the TCS AI for Business Study, visit on.tcs.com/2024-global-AI-study

For more information or any feedback, email the TCS Thought Leadership Institute at TL.Institute@tcs.com

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The TCS AI for Business Study explores how companies around the world are looking at the strategic implications of AI technologies and how they are responding to its transformative potential. A survey of 1,272 senior executives with profit-and-loss responsibility at their companies was conducted November 28, 2023, through January 17, 2024, with responses from 24 countries across 12 industries, exploring the strategic implications of artificial intelligence and their expected impact on large, for-profit enterprises.

Some data presented will not add up to one hundred percent due to rounding, and not every answer is included in the findings reported.

## About the Thought Leadership Institute

Since 2009, the TCS Thought Leadership Institute has initiated conversations by and for executives to advance the purpose-driven enterprise. Through primary research, we deliver forward-looking and practical insights around key business issues to help organizations achieve long-term, sustainable growth. For more information, visit tcs.com/insights/global-studies

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Tata Consultancy Services is an IT services, consulting and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for over 56 years. Its consulting-led, cognitive powered, portfolio of business, technology and engineering services and solutions is delivered through its unique Location Independent Agile™ delivery model, recognized as a benchmark of excellence in software development.

A part of the Tata group, India's largest multinational business group, TCS has over 601,000 of the world's best-trained consultants in 55 countries. The company generated consolidated revenues of US $29 billion in the fiscal year ended March 31, 2024, and is listed on the BSE and the NSE in India. TCS' proactive stance on climate change and award-winning work with communities across the world have earned it a place in leading sustainability indices such as the MSCI Global Sustainability Index and the FTSE4Good Emerging Index. For more information, visit www.tcs.com

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