



# The ROI of Gen AI

## in Manufacturing and Automotive Industries

A global survey of enterprise  
adoption and value

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# About this report

This report is based on a survey of 364 senior leaders of global enterprises (\$10M+ revenue) in the manufacturing and automotive industry, conducted by Google Cloud and National Research Group. It provides a comprehensive benchmark of the impact of generative AI (gen AI) on business and financial performance.

Unless otherwise noted, all statistics in this report are derived from the survey and are focused on respondents in the manufacturing and automotive industry.

# Introduction

The manufacturing industry stands at a crossroads. Technological advancements, evolving customer expectations, and scarcity of skilled labor demand a swift response. To forge a path to success, manufacturers will seek to embrace the transformative power of gen AI.

This report explores the strategic imperative of integrating gen AI into core business operations, offering a roadmap to help achieve tangible value and competitive advantage. We expect gen AI to be a catalyst of accelerated business growth, redefining end-to-end capabilities across production processes, workforce productivity, and customer interactions.

Data reveals a clear trend: early adopters are already experiencing significant gains from gen AI deployment. However, widespread adoption remains a challenge. This report delves into the critical factors for success, emphasizing the need for robust data infrastructure, enterprise system modernization, and strategic alignment across the C-suite.

Through real-world examples and insights from industry leaders, this report shows the path to AI-driven transformation. It underscores the importance of focusing on high-impact use cases, prioritizing data-driven decision-making, and cultivating a culture of innovation. Readers will gain a comprehensive understanding of how gen AI can revolutionize manufacturing, from optimizing production and supply chain efficiencies to delivering personalized customer experiences and bolstering enterprise security.

This is not simply a theoretical exploration; it's a call to action for manufacturers ready to embrace the opportunities presented by gen AI. By navigating the complexities of implementation and adopting a strategic, long-term approach, organizations can position themselves at the forefront of the industry's evolution, unlocking new levels of efficiency, innovation, and growth.


## **Praveen Rao**

Managing Director, Global Market Leader,  
Manufacturing, Google Cloud



# Gen AI is here

To keep up with rapidly changing technology, manufacturers are reinventing their business models, embracing gen AI as a driving force. By bringing together massive amounts of data and enhancing customer experiences, AI tools and agents can help manufacturers increase production throughput, unlock hidden capacity, and reduce inventory without impacting customer service.



The data shows that 60% of manufacturing and automotive organizations have already moved gen AI use cases into production, yet 32% are still evaluating or testing gen AI use cases.<sup>1</sup> Manufacturing and auto industries also have a higher percentage of companies that have not yet begun to evaluate gen AI compared to the global average across industries.

To fully realize the benefits of gen AI, organizations must build their innovative solutions on a foundation of reliable enterprise systems and accurate data. Many organizations have a complex set of data silos scattered across various legacy systems and applications. Unlocking and integrating data for operational use is crucial for AI-driven transformation. By connecting a gen AI model to a company's real-time operational data, AI can access and process specific information from the data source/ERP systems, making its responses more accurate and relevant.

<sup>1</sup> Total market - manufacturing and automotive (global): n=364

For example, instead of giving a general estimate of delivery times, gen AI can check the order status, inventory levels, and shipping carrier information to provide a precise delivery date. Or by checking documentation and manuals, gen AI can deliver more helpful answers to product questions and troubleshooting.

## Gen AI adoption among manufacturing and automotive organizations<sup>1</sup>

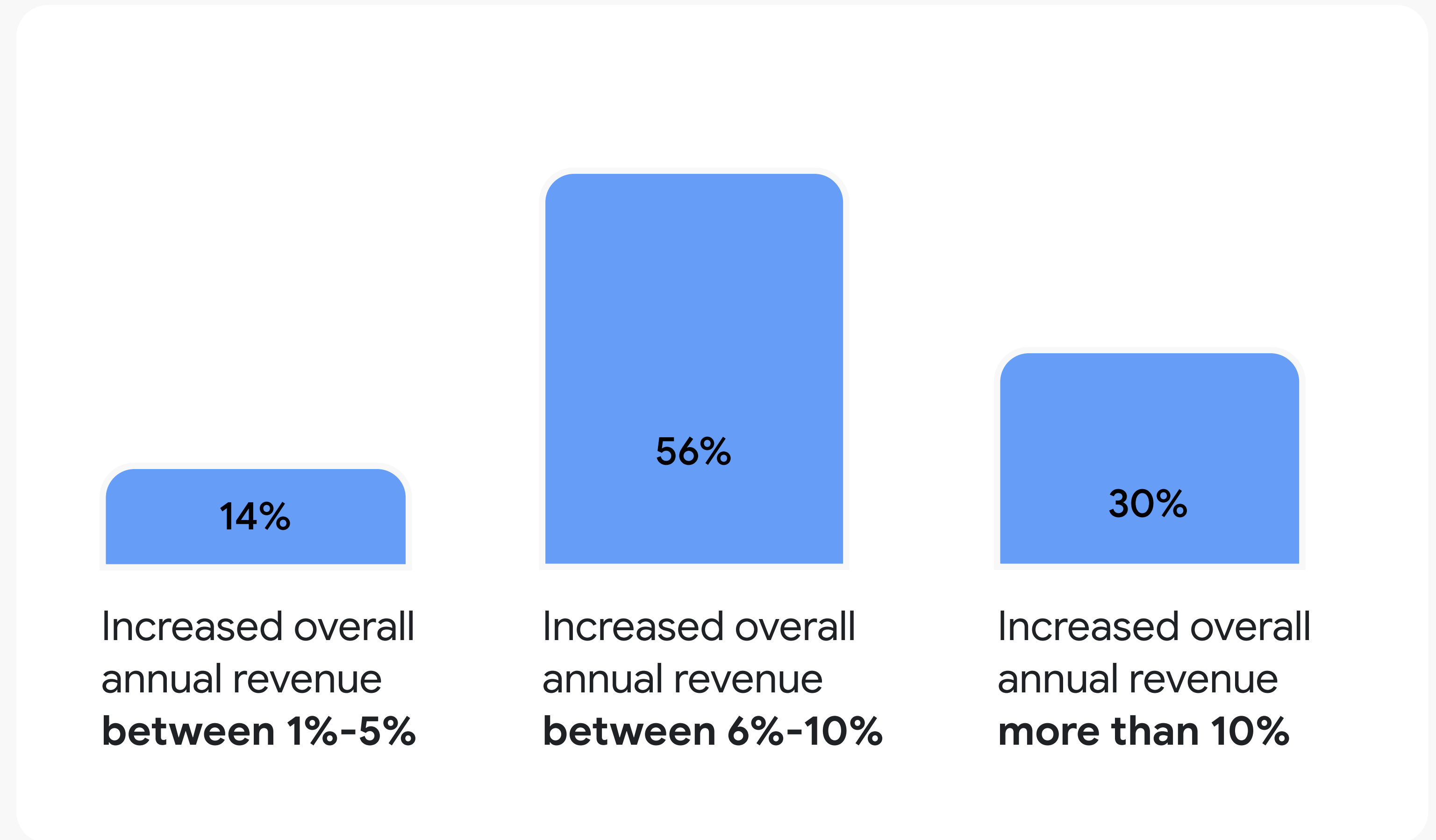


<sup>1</sup> Total market - manufacturing and automotive (global): n=3648

Early adopters of gen AI in manufacturing and automotive are already seeing benefits— with 86% of manufacturing and auto leaders reporting an increase in annual overall revenue estimating gains of 6% or more.<sup>2</sup> Gen AI is no longer just an experiment; it's becoming a driver of business growth.

## Revenue growth attributed to gen AI<sup>2</sup>

Among organizations that report meaningful impact to business growth



<sup>2</sup> Manufacturing and automotive organizations currently leveraging gen AI in production and reporting increased revenue: n=111





Defining ROI can be challenging because we're all learning this new tool together. However, the investment versus potential makes it an easy decision to start using gen AI. Experimentation and early adoption are key. The organizations willing to take these steps will be the ones leading transformation.”

**Kevin Nolan**

President & CEO of GE Appliances (a Haier company)



We don't focus on just one gen AI tool. We're very experimental about it, using different tools and testing them against multiple business challenges and outcomes to understand how they can help. With new technologies, you have to be willing to walk away from something if it's not working or move onto the next thing. We're set up well to do that.”

**Natalie Bowman**

**Managing Director, Product & Experience Design, Alaska Airlines**

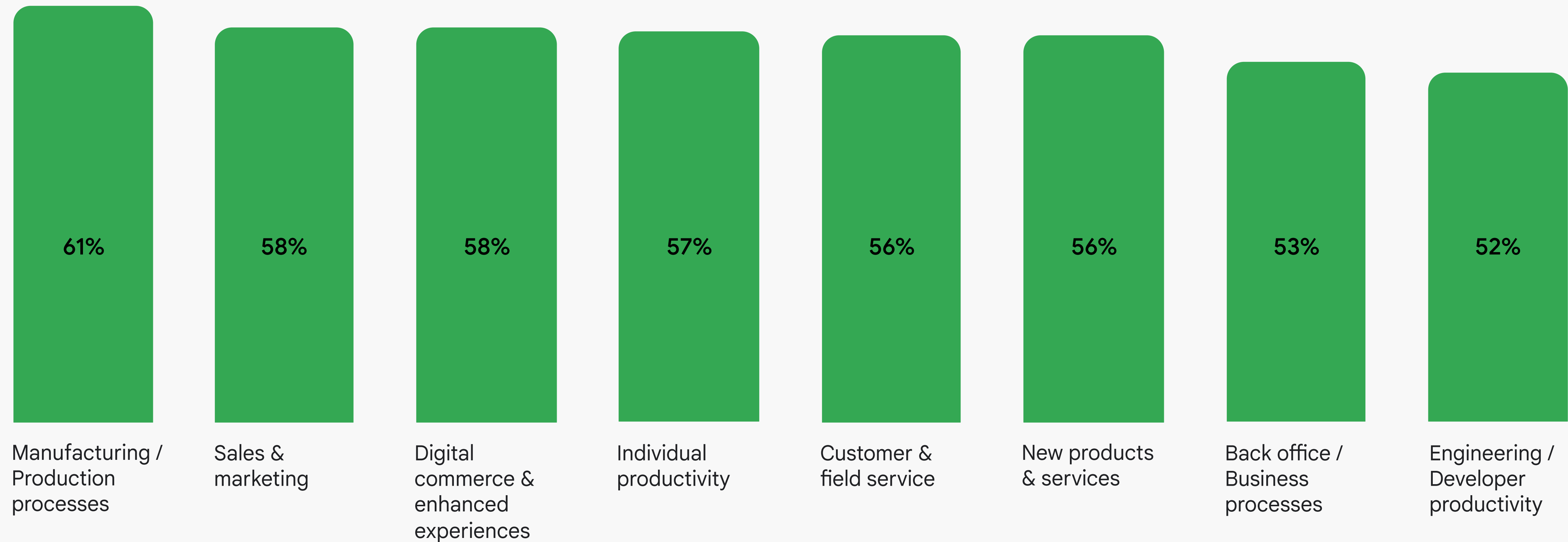


# Realizing gen AI's benefits

Organizations are integrating gen AI into their broader technology strategy to improve efficiency, customer service, and competitiveness. Gen AI can process and analyze vast amounts of data from technical equipment manuals and procedures, enhance the customer service experience, expedite product support, and suggest sales opportunities based on past sales performance or offer deeper insights into intricate supply chain operations.

The business benefits are being felt across five key areas: time to market, ROI, productivity, security, and the user experience.

# Manufacturing and automotive organizations have gen AI use cases in production across a range of functions<sup>3</sup>



<sup>3</sup> Manufacturing and automotive organizations currently leveraging gen AI in production: n=218

# 01 Time to market

The changing buying behaviors and the desire to develop new business models are pushing manufacturers to expand customer offerings and reimagine customer relationships and interactions. The data shows that the majority of manufacturers who adopt new technology are able to get their gen AI use cases off the ground quickly.

# 81%

of manufacturing and automotive organizations with current use cases in production<sup>4</sup> can transform an idea to use case in production in less than 6 months.

<sup>4</sup> Total market - manufacturing and automotive organizations with at least one use case in production: n=351

## Average time to market<sup>4</sup>

6 months+

18%

3-6 months

52%

1-3 months

28%

<1 month

1%

## 02 ROI

Manufacturers are focusing on high-impact use cases to drive adoption and ROI from core operations. AI is playing a pivotal role in linking data to insights to optimize processes around production, inventory, and streamlining logistics. Gen AI can quickly sift through generations of documents throughout the product lifecycle, extracting and summarizing the information needed by sales teams and technicians. For example, it can present servicing instructions in an easily digestible, step-by-step format so technicians can get straight to work. And it can synthesize purchase orders and quickly provide customers a quote, eliminating the need for sales teams to manually cross-reference emails with inventory availability.

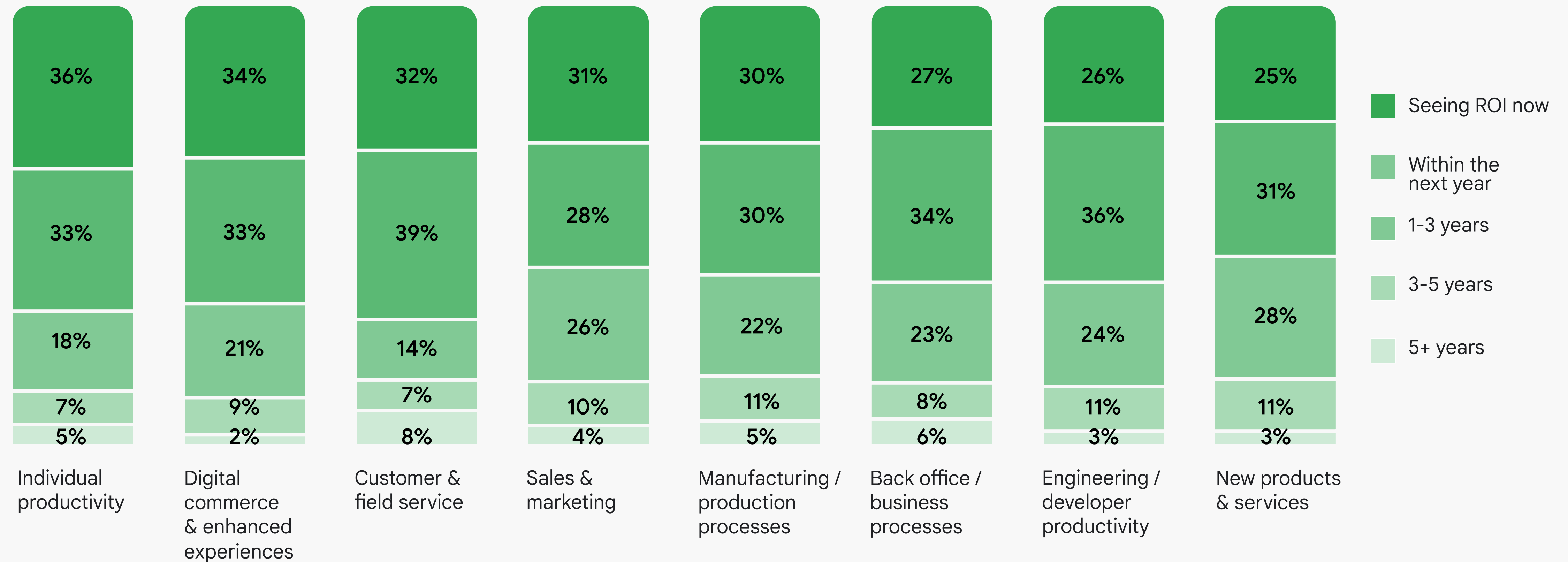
# 72%

of respondents who have been using gen AI in production<sup>5</sup> are seeing ROI from their gen AI investments now on at least one use case.

<sup>5</sup> Manufacturing and automotive organizations currently leveraging gen AI in production: n=218



# ROI timeline for gen AI use cases<sup>6</sup>



<sup>6</sup> Manufacturing and automotive organizations currently leveraging gen AI in production that are currently using or planning to use gen AI on use cases: Individual productivity: n=209. Digital commerce and enhanced experiences: n=201. Customer and field Service: n=204. Sales and marketing: n=214. Manufacturing / Production processes: n=205. Back office / Business processes: n=213. Engineering / Developer productivity: n=206. New Products and services: n=209

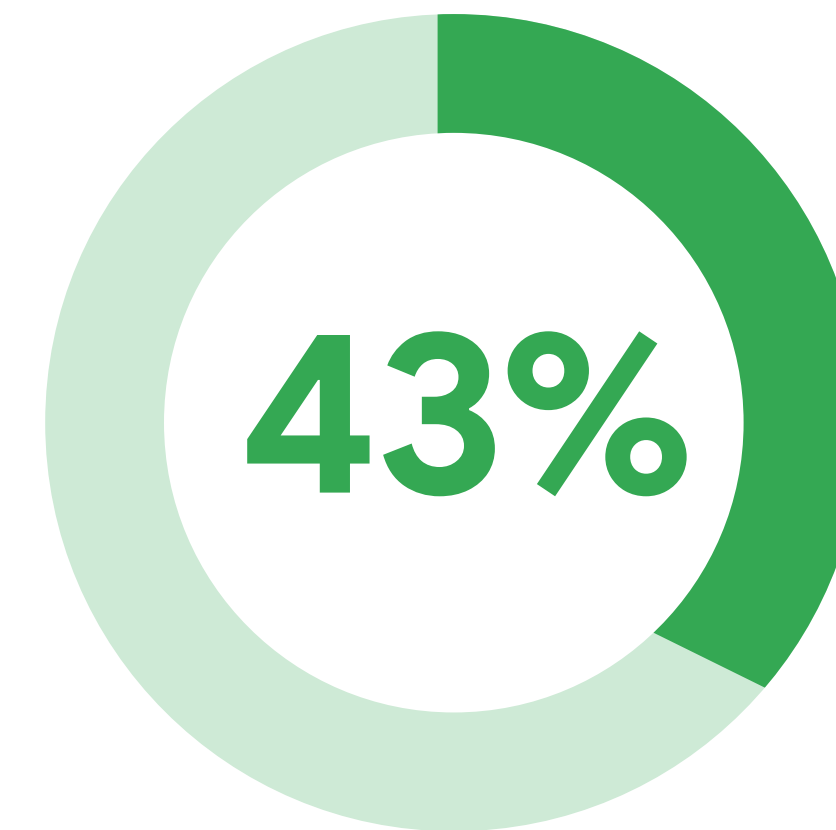
# 03 Productivity

Manufacturing and automotive organizations report significant improvements when asked about the ability of gen AI to increase business and IT productivity to drive innovation and transformation. For example, a gen AI agent can assist maintenance crews by guiding them through truck repairs, ordering parts and distilling complex information. The application can provide comprehensive references, providing detailed, verified source information to ensure accuracy and reduce the amount of time a technician needs to complete a work order.

<sup>7</sup> Manufacturing and automotive organizations currently leveraging gen AI in production and reporting productivity improvements (global): n=154

## Gen AI impact on productivity<sup>7</sup>

Among manufacturing and automotive organizations currently leveraging gen AI in production (global)



indicate employee productivity has at least doubled



# 04 Security

Gen AI can be used to analyze vast amounts of data in order to report anomalies, automate routine security functions, such as rule creation, and serve as a helpful assistant to aid human analysts when triaging and actioning alerts. AI-driven security operations and threat intelligence helps manufacturers secure operating technology (OT) environments with improved detection, investigation, threat hunting and response workflows.

# 87%

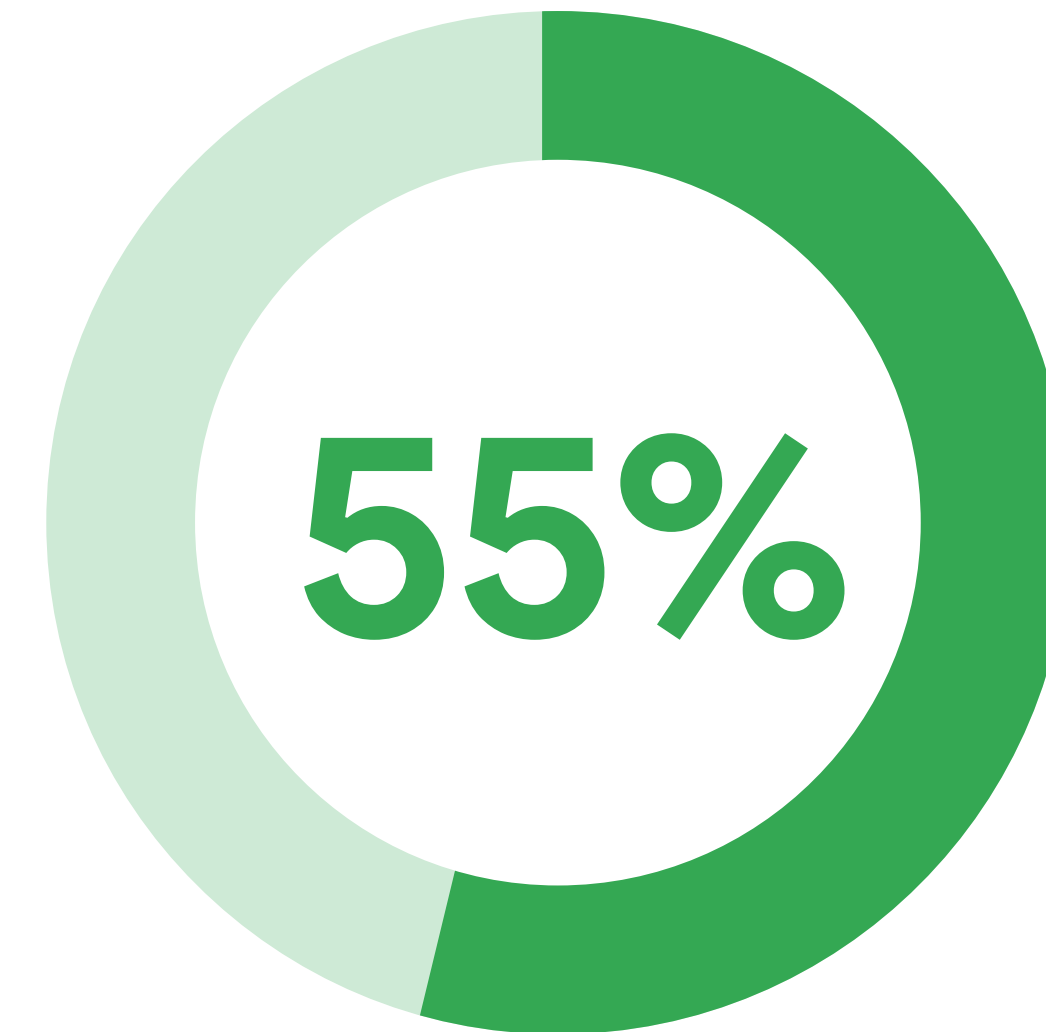
of manufacturing and automotive organizations reporting gen AI has resulted in improved security posture<sup>9</sup> have seen gen AI improve their ability to identify security threats.

<sup>8</sup> Manufacturing and automotive organizations currently leveraging gen AI in production: n=218

<sup>9</sup> Manufacturing and automotive organizations currently leveraging gen AI in production and reporting improved security posture: n=120

## Gen AI impact on security<sup>8</sup>

Among manufacturing and automotive organizations currently leveraging gen AI in production (global)



indicate improved security

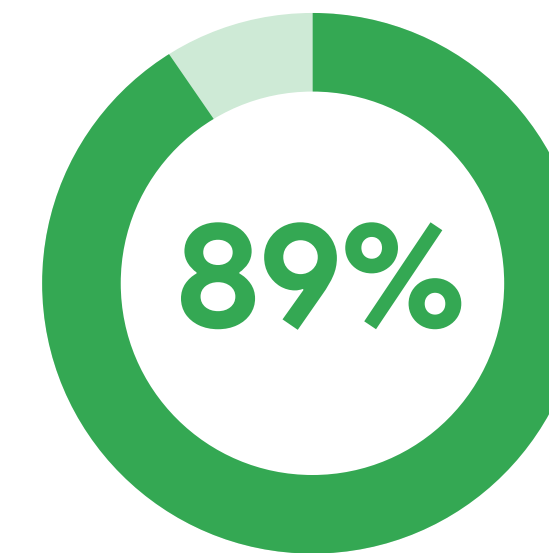
# 05 Customer experience

Manufacturers are working on forging deeper, data-driven relationships with their customers. These personalized connections help empower them to anticipate evolving customer needs and respond proactively, fostering customer loyalty and driving growth. It is also important for manufacturers to personalize product experiences themselves. Offering consumer apps for products and using user profile information are effective ways to better tailor the customer experience by learning interaction behavior with gen AI.

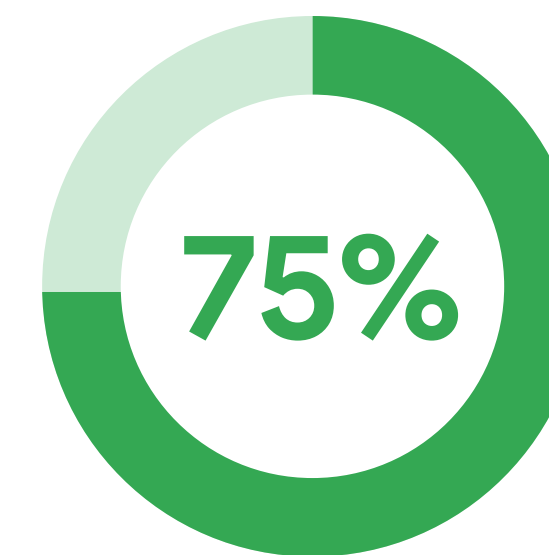
<sup>10</sup> Manufacturing and automotive organizations currently leveraging gen AI in production and reporting improved user experience: n=126

## Gen AI impact on user experience<sup>10</sup>

Among manufacturing and automotive organizations currently leveraging gen AI in production and reporting meaningful impact to user experience



increased user engagement (i.e., engagement score, traffic or click through rate (CTR), time of site)



improved user satisfaction / NPS



# C-level support helps unlock more value

With the backing of the C-suite, manufacturing and automotive companies are more likely to have organizational alignment between gen AI and business goals. It can help realize success with gen AI initiatives. In fact, organizations with strong gen AI connection to business goals are more likely to see a ROI now on at least one use case (70%<sup>11</sup>), compared to the overall average of 65%.

<sup>11</sup> Manufacturing and automotive organizations currently leveraging gen AI in production and have strong gen AI connection to business goals: n=203; Total market - manufacturing and automotive (global): n=364

# Manufacturing and automotive orgs with a strong connection between gen AI and business goals report ROI now on at least one use case<sup>11</sup>

Seeing ROI now  
(any use case)

65%

70%

Not seeing ROI now  
for any use case

35%

30%

Total manufacturing  
& auto orgs (global)

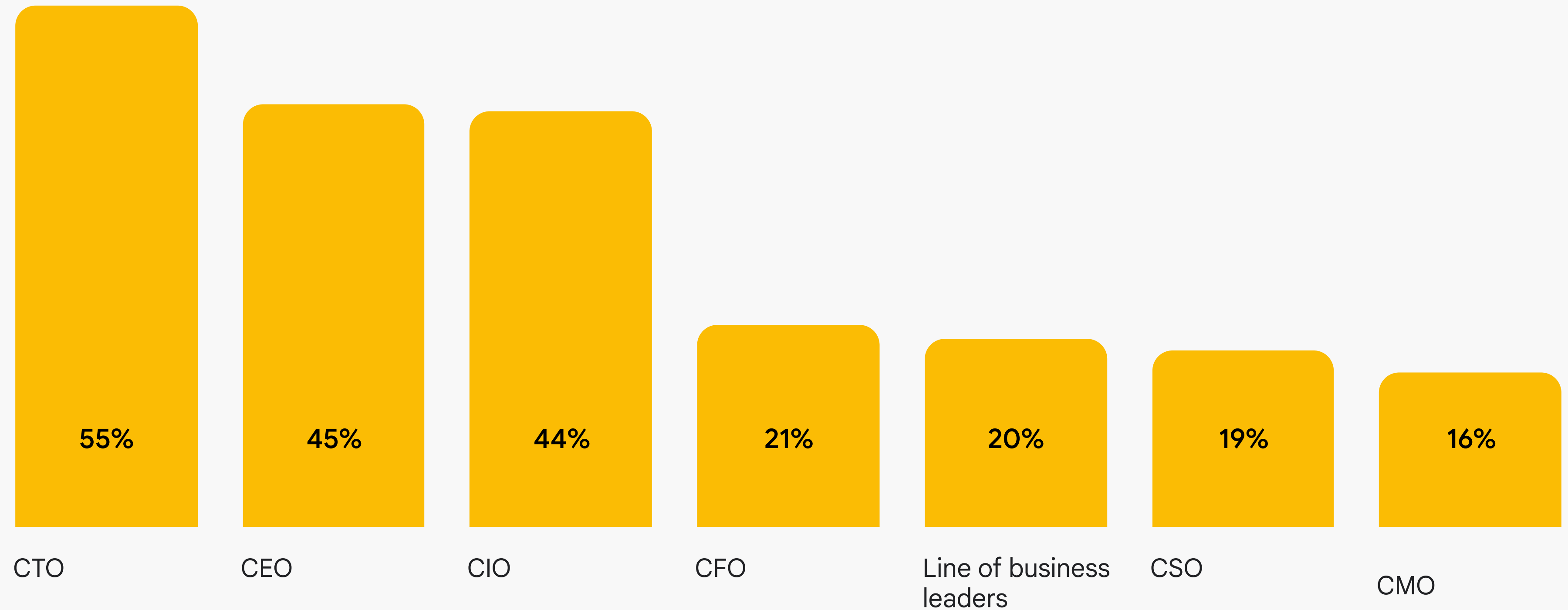
Orgs with strong gen AI  
connection to business goals

<sup>11</sup> Manufacturing and automotive organizations currently leveraging gen AI in production and have strong gen AI connection to business goals: n=203; Total market - manufacturing and automotive (global): n=364

An opportunity exists for the 74%<sup>12</sup> of manufacturing and automotive organizations who don't have comprehensive C-level sponsorship on gen AI adoption to build closer collaboration with CEOs and CFOs to reach these goals.

<sup>12</sup> Total market - manufacturing and automotive (global): n=364

## Leaders responsible for driving gen AI strategy<sup>13</sup>



<sup>13</sup> Total market - manufacturing and automotive (global): n=364



Top-level support is critical. Gen AI is not just another tool—it fundamentally changes how we work. And if competitors are moving faster than you, then you risk becoming irrelevant. An endorsement from the C-suite ensures that the necessary resources, strategic alignment, and cultural shift occur to fully leverage gen AI."

**Kevin Nolan**

President & CEO of GE Appliances (a Haier company)



Getting C-level buy-in starts with showing the business impact. We want to make our employees' jobs easier. Our brand is about care, and giving our employees tools that improve their jobs shows them that we care about them and invest in their happiness. That resonates with our C-level executives.”

**Natalie Bowman**

Managing Director, Product & Experience Design, Alaska Airlines



# Reinvesting in innovation

01

02

03

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04

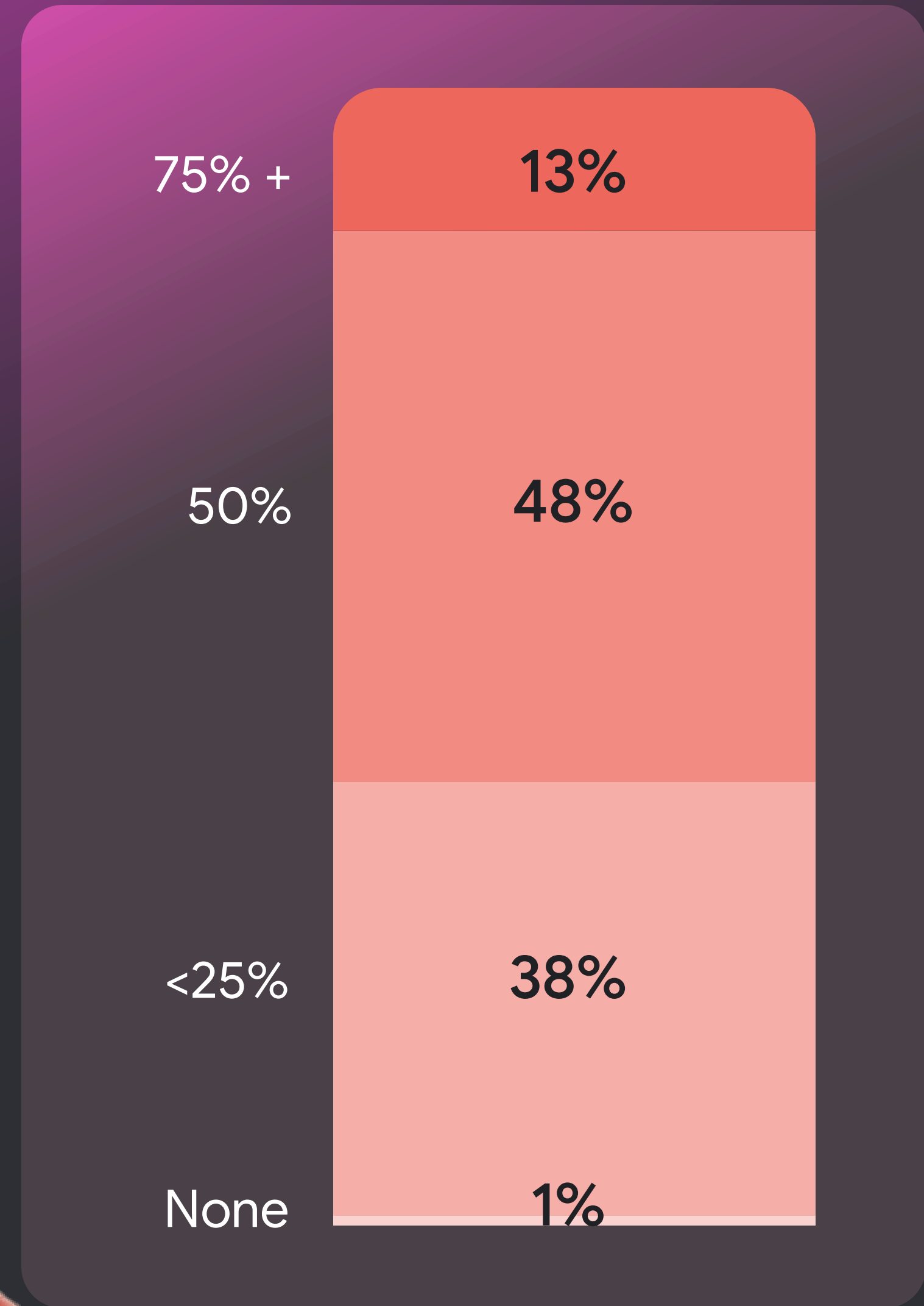
05



Given that 61%<sup>14</sup> of respondents plan to invest at least half their future AI budget in gen AI, it's clear that this technology is here to stay.

<sup>14</sup> Manufacturing and automotive organizations with defined funding plans for gen AI: n=345

## Future AI budget allocated to gen AI<sup>14</sup>



One area of extra capital is early gains from gen AI. In fact, 49% of respondents hope to leverage gen AI gains for new product development and improve profit margins, followed closely by improved competitive differentiation.<sup>15</sup>

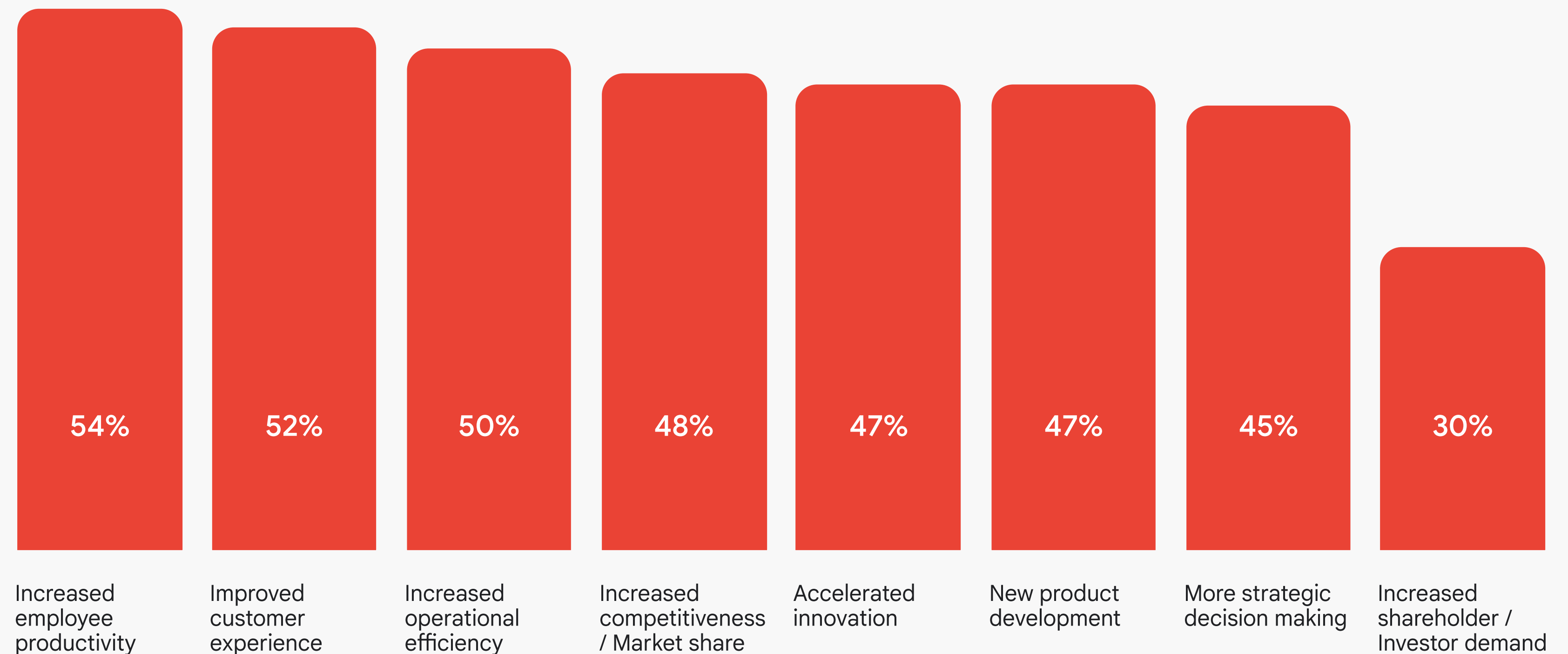
## Ways organizations want to leverage gains from gen AI<sup>14</sup>



<sup>15</sup> Total market - manufacturing and automotive (global): n=364

Over the next two to three years, manufacturing and automotive leaders are also planning to use gen AI to increase employee productivity (54%) and improve customer experience (52%).<sup>16</sup> Achieving this ambition may require balancing competing priorities and trade-offs.

## Planned business objectives to pursue with gen AI in the next 2-3 years<sup>16</sup>



<sup>16</sup> Total market - manufacturing and automotive (global): n=364



# 9 takeaways for business executives

Gen AI is no longer a theoretical concept. It can be a game-changer with the potential to reinvent the business landscape.

Not sure where to start? Based on all the findings of the global research, seven priority areas have emerged.

01

02

03

04

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05

# Focus on these things today, and you could be on your way to realizing ROI from gen AI in no time.

01

Establish a structured approach to use case discovery, for instance by process or functional area

02

Build C-suite support for each function or process

03

During use case discovery, focus on key decision points and opportunities to turn unstructured knowledge into structured

04

Understand your data sources. Who owns them? How often do they change? Are they trusted sources?

05

Invest in optimization projects, starting with finding and digitizing paper-based processes

06

Invest in transformational projects but fund them via optimization efforts

07

Update your priority use cases as business priorities change

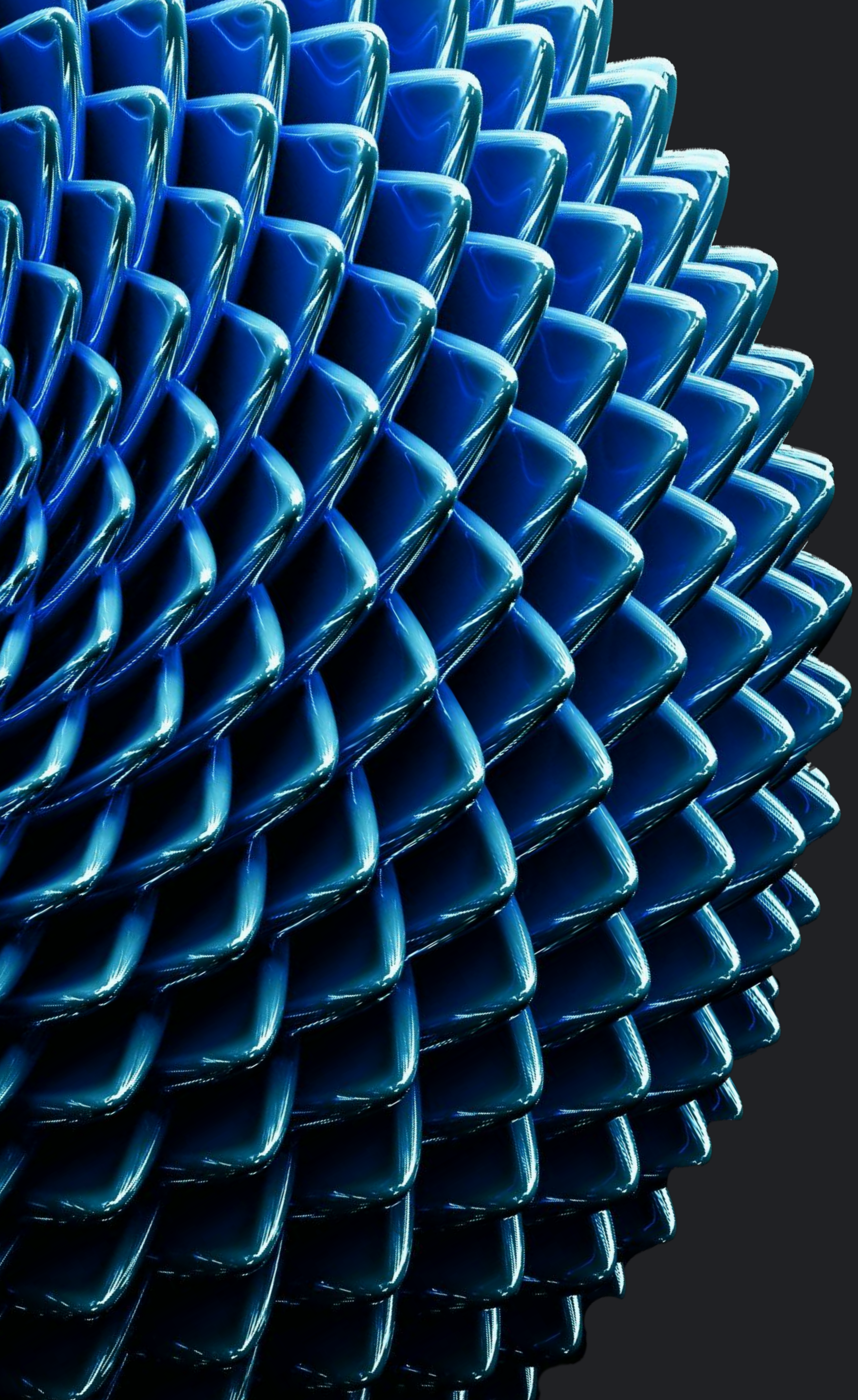
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Aim to bolster enterprise security with gen AI

09

Build your AI talent





# How Google Cloud helps organizations realize business value

Google Cloud helps organizations build transformative gen AI experiences with confidence and speed. Google's comprehensive AI stack, backed by a decade of research, helps empower customers to access and customize leading foundation models, build and deploy gen AI applications with an integrated developer platform, boost productivity with AI agents, and develop their own models using Google Cloud's cutting-edge AI Hypercomputer infrastructure.

# Methodology

A 14-minute online survey with a total of n=2,843 business leaders, n=364 from Manufacturing & Automotive organizations.

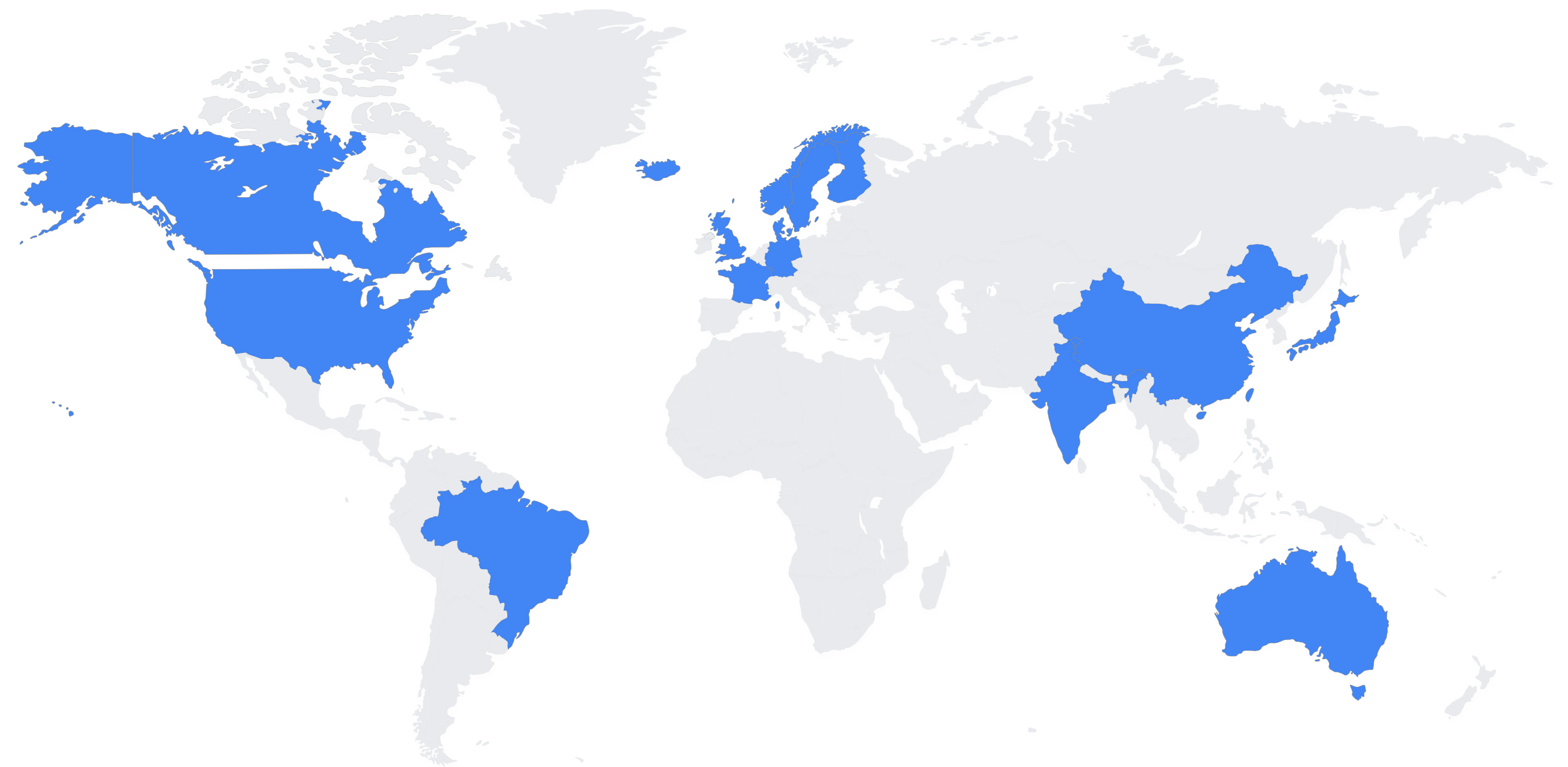
Upper-level, senior executive, and C-suite business leaders, including:

**94** CEO, CIO

**104** CFO, CMO, CTO

**85** CISO, CDO, CSO, COO,  
Director of Digital Strategy, VP of IT

**82** IT Director, Head of Innovation



NorthAm 100  
LATAM\* 40

EMEA 79  
APAC 145

\*Low base (n<100)

Over  
**100**  
full-time employees

Over  
**\$10m**  
annual revenue

Must be at least interested in gen AI use cases

A robust representation from priority industries

Global fieldwork conducted across 19 countries from February 23 - April 5, 2024  
Additional North America augment fieldwork conducted July 2-24, 2024

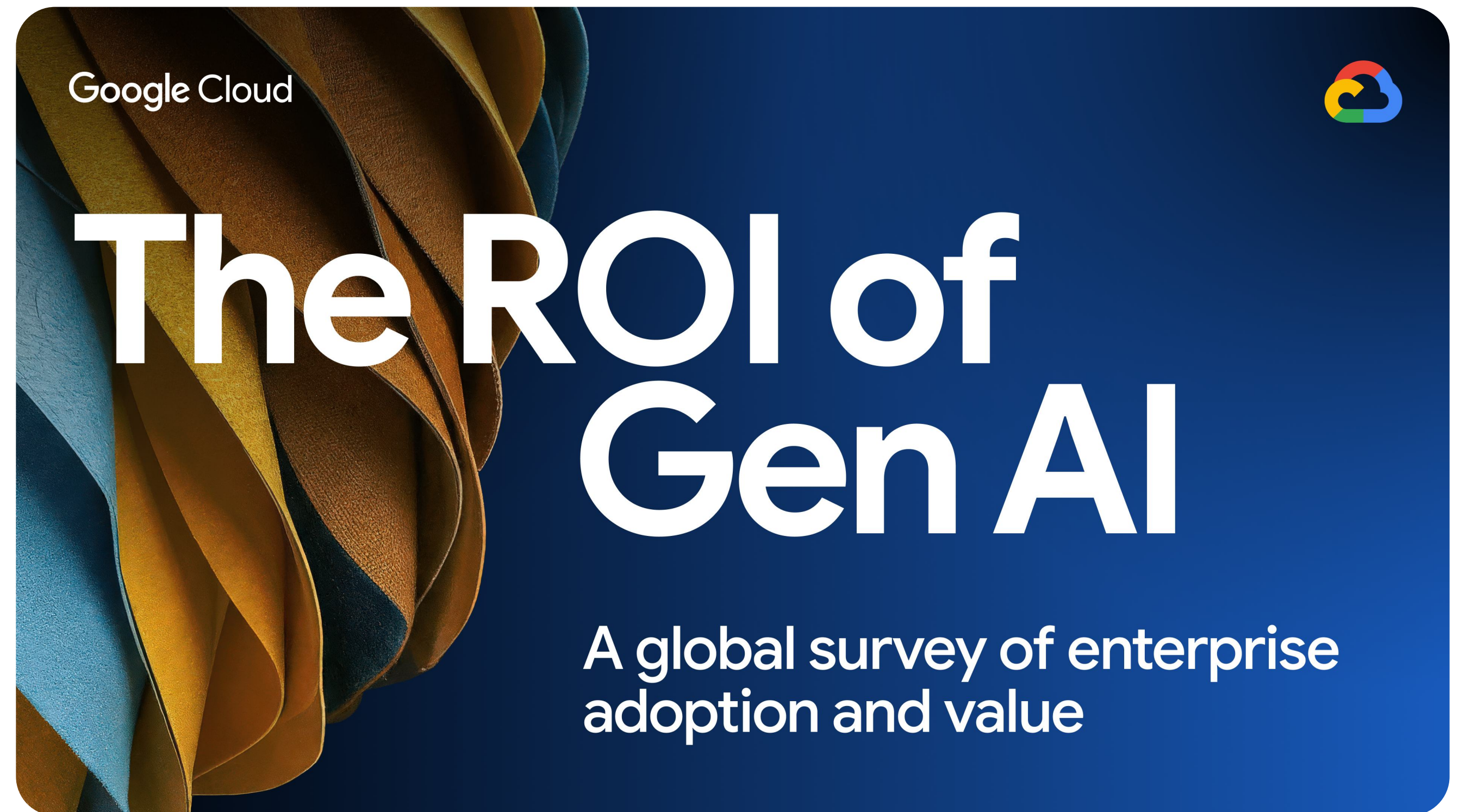


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