The ROI of Gen AI
in Healthcare and Life Sciences

A global survey of enterprise adoption and value

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About this report

This report is based on a survey of 305 senior leaders of global enterprises ($10M+ revenue) in the healthcare and life sciences industry, conducted by Google Cloud and National Research Group. It provides a comprehensive benchmark of the impact of 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 healthcare and life sciences industry.

Introduction

In the dynamic landscape of healthcare and life sciences, where innovation is not just an aspiration but an imperative, gen AI emerges as a transformative force. Its potential to reshape customer engagement, drug discovery, personalize patient care, streamline operations, and accelerate research is undeniable. Yet, alongside the excitement, there remains a need for concrete evidence of its real-world impact on business value and performance.

This report aims to bridge that gap. By surveying senior leaders of global enterprises in the healthcare and life sciences sectors, it offers a comprehensive benchmark of the impact of gen AI on these critical metrics. It delves into the strategies, challenges, and opportunities associated with harnessing this technology, providing invaluable insights for industry leaders navigating this new frontier.

Moreover, this report highlights the pivotal role of gen AI capabilities in shaping this transformation for meaningful impact across the healthcare and life sciences ecosystem.

As you embark on this journey through the report's findings, I encourage you to embrace the transformative power of gen AI. Let the data inspire you to envision new possibilities, challenge conventional thinking, and drive innovation that will ultimately benefit patients, providers, and the entire healthcare ecosystem.

"

With gen AI, we're not just talking about incremental improvements. We're talking about a complete transformation of healthcare and life sciences – faster drug discovery, more personalized treatments, and better outcomes for patients."

Shweta Maniar

Global Director, Life Sciences, Google Cloud

"

We stand at the dawn of a new era in medicine, where technology transcends its limitations and becomes a conduit for human connection. Gen AI will weave itself into the fabric of healthcare, seamlessly handling the mundane, will enable caregivers to provide more meaningful, personalized care, strengthening the human aspect of medicine."

Aashima Gupta

Global Director, Healthcare, Google Cloud

Gen AI is here

The healthcare industry is drowning in data—electronic health records, clinical trial results, and even genetic information. This valuable information is often too complex for humans to analyze effectively. Gen AI offers a solution to that problem. By processing and analyzing this data, gen AI can uncover hidden insights that can inform better decision-making at every level. This translates to personalized treatment plans based on individual patient data, accelerated drug discovery, improved operations, and better patient experiences through AI-powered tools like virtual assistants. Gen AI is no longer a futuristic concept but a tangible reality with the power to transform operations, improve patient outcomes, and drive innovation and significant business growth.
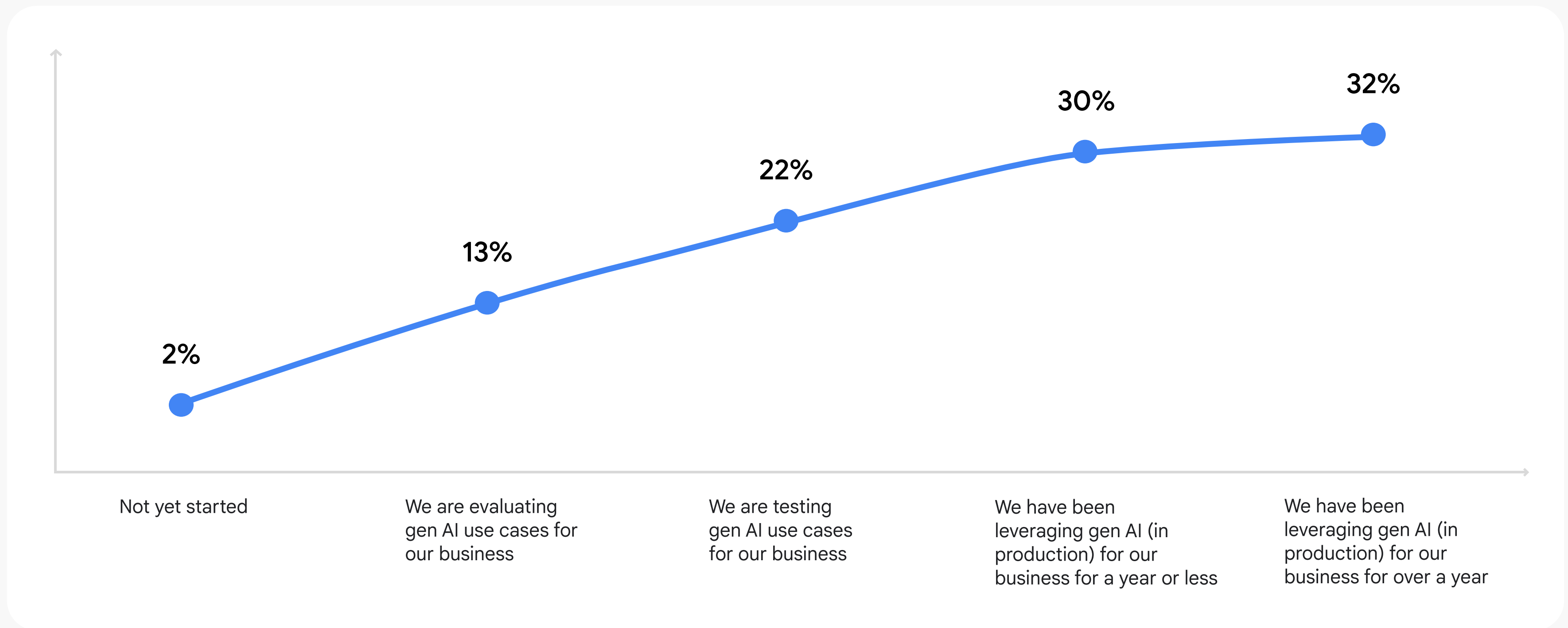
Our research reveals that while many organizations in the sector recognize the potential of gen AI, the journey to full-scale implementation is still in its early stages. Our findings show that 32% of healthcare and life sciences organizations have been using gen AI in production for over a year,[1] but a significant gap still exists between those reaping the rewards of early adoption and those still exploring the possibilities.

In fact, the data shows that overall 62% of healthcare and life sciences executives have already moved gen AI use cases into production.[1] This rapid adoption highlights the sense of urgency for many in the industry. That said, 38% are still not taking full advantage of this emerging technology.[1] It's also important to note that because the healthcare and life sciences industry is heavily regulated, cautious approaches should be adopted when transitioning from experimentation to full-scale implementation.

[1] Total market - healthcare and life sciences (global): n=305

Gen AI adoption among healthcare and life sciences organizations[1]

[1] Total market - healthcare and life sciences (global): n=305

2% — Not yet started

13% — We are evaluating gen AI use cases for our business

22% — We are testing gen AI use cases for our business

30% — We have been leveraging gen AI (in production) for our business for a year or less

32% — We have been leveraging gen AI (in production) for our business for over a year

It's clear that there's a growing trend towards gen AI adoption, with more organizations recognizing its potential benefits and actively incorporating it into their operations. In an industry where data accumulation is exponentially growing, the industry is ripe for change but historically slow to adopt technology. We've seen recent breakthroughs in gen AI, like medically-tuned large language models and multimodality features that have made it possible for organizations to drive innovation for a wider range of applications. The first of its kind, Google Cloud's MedLM, a family of medically-tuned models, can analyze medical data with speed and precision that empowers organizations to discover new drugs, personalize treatment, extract insights from medical records, and even analyze medical images.

A large majority of respondents reported significant business growth. With 81% experiencing improved lead generation and new customer acquisition, 71% witnessing increased conversion rates, 68% developing new products or services, and 63% achieving an overall increase in revenue. These findings demonstrate the transformative potential of gen AI in driving business success within this sector.

² Healthcare and life sciences organizations currently leveraging gen AI in production and reporting business growth: n=111

Business growth attributed to gen AI[2]

Among healthcare and life science organizations currently leveraging gen AI in production and reporting meaningful impact to business growth (global)

71%
of respondents increased conversion

68%
of respondents created new products/services

81%
of respondents improved leads and new customer acquisition

63%
of respondents reported increase in revenue

Realizing gen AI's benefits

To understand the impact of gen AI on healthcare and life sciences, it's crucial to understand where this technology is being applied today.
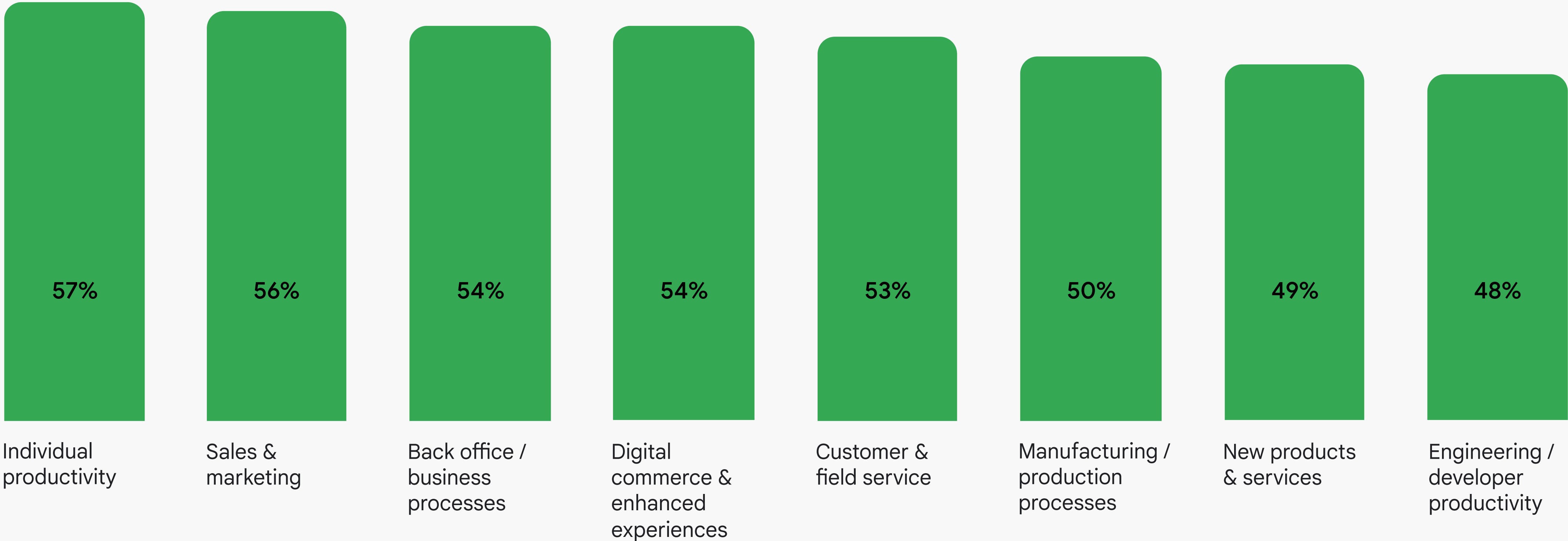
01 **Chapter** 02 03 04 05

Gen AI already delivers productivity, security, improved patient experience, and efficiency gains. These gains are driven by a focus on practical applications that address immediate business needs.

For example, in healthcare, gen AI is empowering doctors and physicians with data-driven insights. With gen AI-powered tools, doctors and physicians can more accurately and efficiently diagnose patients and create personalized treatments plans that ultimately enhance the patient experience. As a regulated industry, there's a heavy administrative burden on healthcare staff that often takes away from time spent with the patient and leads to increased burnout. By automating time-consuming administrative tasks, gen AI frees healthcare professionals to focus on what matters most: the patient. This not only improves efficiency but also contributes to a more personalized and satisfying patient experience.

In the life sciences industry, gen AI is accelerating drug discovery, enabling personalized medicine, optimizing clinical trials, and extracting valuable insights from data. Multimodal AI functionality is rapidly analyzing vast datasets, including text and images and molecular structures to identify promising drug targets, design new molecules, and predict drug efficacy. Additionally, AI-powered tools are enabling the development of personalized treatment plans based on individual patient characteristics, streamlining clinical trials, and extracting meaningful insights from complex data. These advancements are driving innovation and paving the way for faster, more effective drug development and improved patient outcomes.

Healthcare and life sciences organizations have gen AI use cases in production across a range of functions[3]

57%	56%	54%	54%	53%	50%	49%	48%
Individual productivity	Sales & marketing	Back office / business processes	Digital commerce & enhanced experiences	Customer & field service	Manufacturing / production processes	New products & services	Engineering / developer productivity

[3] Total market - healthcare and life sciences currently leveraging gen AI in production (global): n=190

01 Time to market

While the healthcare and life sciences industry has been slow to adopt new technologies, given the high stakes, time to market is a crucial determinant of success.

With the patient at the center, delays in implementing gen AI solutions can hinder innovation, limit patient benefits, and impact regulatory compliance. By accelerating the adoption of gen AI, organizations can capitalize on the technology's potential to improve patient outcomes, reduce costs, and gain a competitive edge.

80%
of respondents successfully transformed a gen AI use case idea into production within six months.[4]

[4] Total market – healthcare and life sciences organizations that have at least one use case in production: n=294

Average time to market[4]

6 months+	18%
3-6 months	45%
1-3 months	32%
<1 month	3%

02 ROI

One of the primary reasons healthcare and life sciences organizations are seeing rapid returns on investment (ROI) from gen AI is its ability to significantly enhance individual productivity. By automating routine tasks and providing valuable insights, gen AI empowers industry professionals to focus on higher-value activities, such as patient care, complex decision-making, and research and collaboration to expedite drug discovery and development.
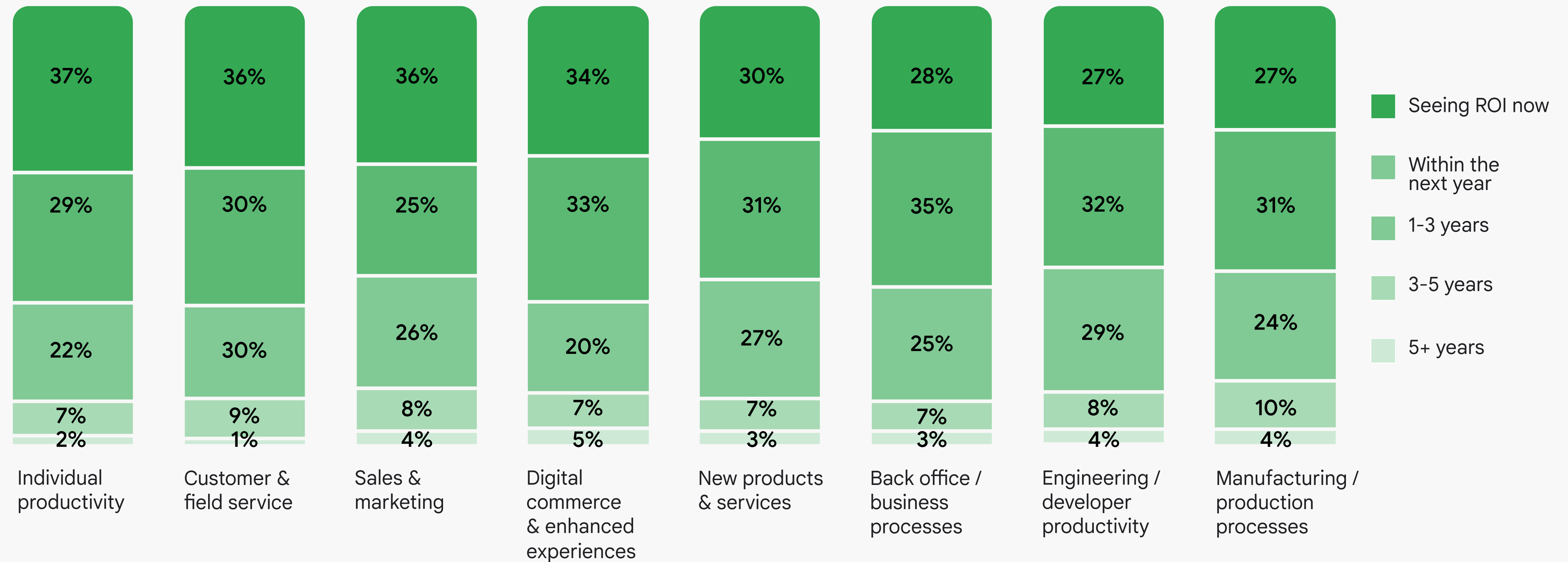
74% of respondents who have been using gen AI in production are seeing ROI from their gen AI investments now on at least one use case.[5]

[5] Healthcare and life sciences organizations currently leveraging gen AI in production: n=190

ROI timeline for gen AI use cases[6]

Legend:
- Seeing ROI now
- Within the next year
- 1-3 years
- 3-5 years
- 5+ years

	Individual productivity	Customer & field service	Sales & marketing	Digital commerce & enhanced experiences	New products & services	Back office / business processes	Engineering / developer productivity	Manufacturing / production processes
Seeing ROI now	37%	36%	36%	34%	30%	28%	27%	27%
Within the next year	29%	30%	25%	33%	31%	35%	32%	31%
1-3 years	22%	30%	26%	20%	27%	25%	29%	24%
3-5 years	7%	9%	8%	7%	7%	7%	8%	10%
5+ years	2%	1%	4%	5%	3%	3%	4%	4%

[6] Healthcare and life sciences organizations currently leveraging gen AI in production that are using or planning to use gen AI on use cases: Individual productivity: n=175, Customer & field service: n=172, Sales & marketing: n=173, Digital commerce & enhanced experiences: n=173, New products & services: n=176, Back office / business processes: n=174, Engineering / developer productivity: n=171, Manufacturing / production processes: n=169
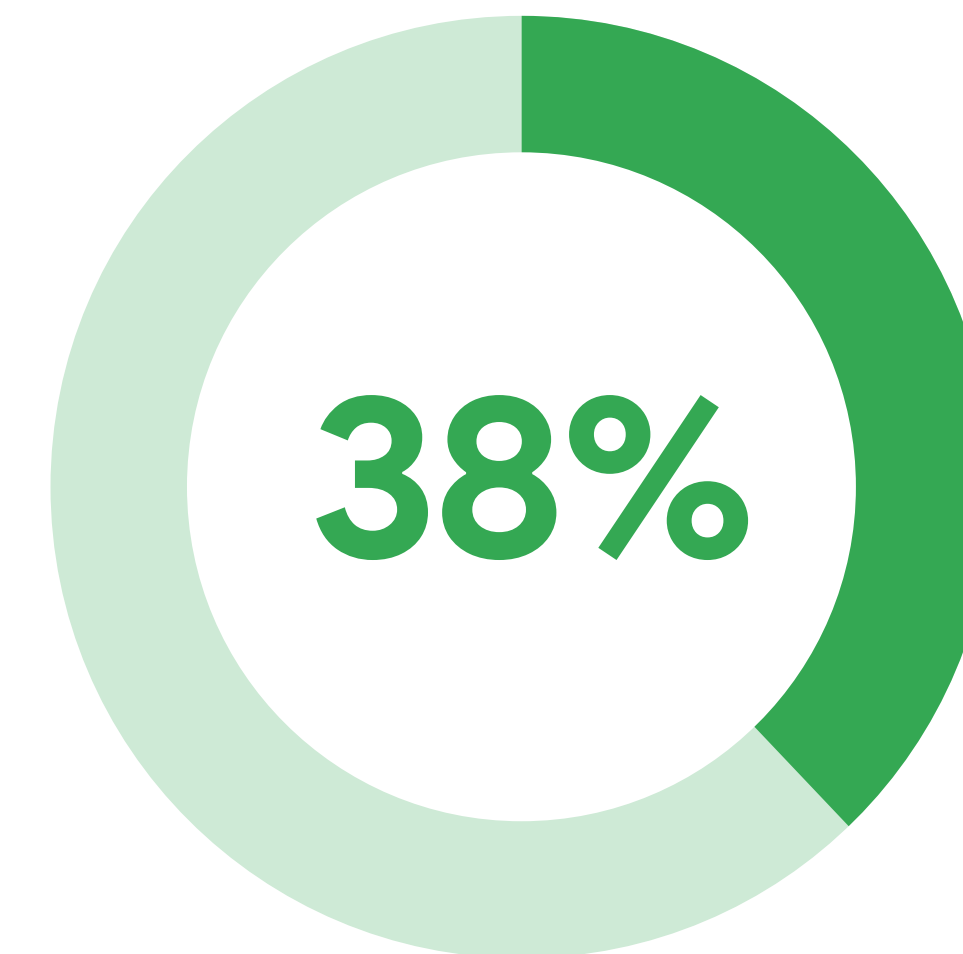
03 Productivity

Early adopters of gen AI in the healthcare and life sciences industry are experiencing significant productivity gains, with 38% of respondents using gen AI in production reporting improved productivity,[7] estimating at least a doubling of employee productivity. In an industry where the administrative burden is adding pressure to both performance and quality, productivity is a key area where gen AI is proving its worth as an assistive technology that supercharges industry professionals to work more efficiently for improved productivity.

[7] Healthcare and life sciences organizations currently leveraging gen AI in production and reporting productivity improvements: n=141

Gen AI impact on productivity[7]

Among healthcare and life sciences organizations currently using gen AI in production and reporting productivity improvements

38%

indicate employee productivity
has at least doubled

"

At Hackensack Meridian Health, our AI enabled chat tool, powered by Google's Gemini, helps boost employee productivity. We are now expanding this capability to niche use cases like clinical note summarization that will allow our healthcare professionals to have more time to focus on what matters most: providing exceptional patient care."

Sameer Sethi

SVP & Chief Data and Analytics Officer, Hackensack Meridian Health

04 Security

Healthcare and life sciences organizations face a unique set of security challenges, including protecting sensitive patient data and navigating complex IT infrastructures. Because of the data sensitive nature of the industry as a whole, our findings show a big appetite to improve security posture across organizations. Gen AI technology can provide constant vigilance through advanced threat detection, proactive responses, data privacy and continuous monitoring, providing real-time visibility into the security landscape.

Gen AI impact on security[8]

Among healthcare and life sciences organizations currently using gen AI in production

54%
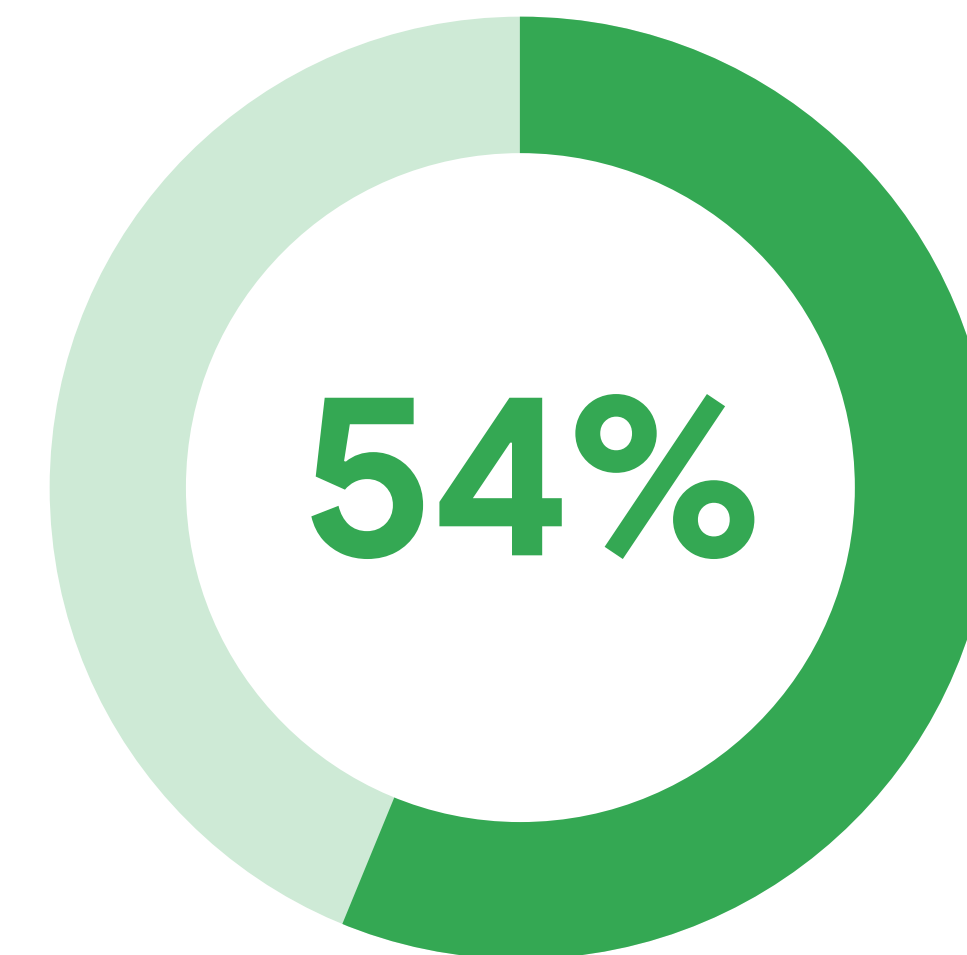
indicate improved security

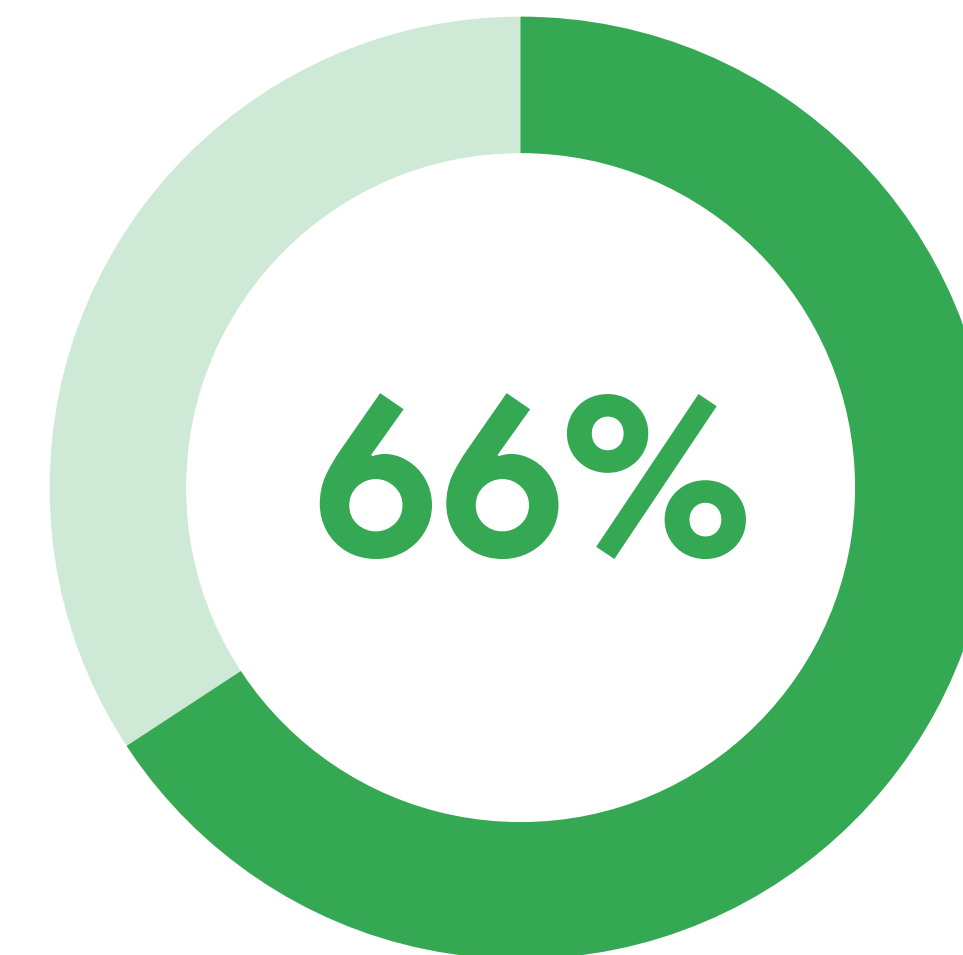[8] Healthcare and life sciences organizations currently leveraging gen AI in production: n=190

05 # Customer experience

In the healthcare and life sciences industry, gen AI is not only bolstering security but also enhancing patient experiences. 66%[9] of organizations using gen AI in production report improved user experience. This demonstrates the technology's potential to transform patient interactions and create more personalized, efficient, and satisfying care experiences.

[9] Healthcare and life sciences organizations currently leveraging gen AI in production: n=190

Gen AI impact on user experience[9]

Among healthcare and life sciences organizations currently using gen AI in production

66%

indicate improved user experience

C-level support helps unlock more value

With the backing of the C-suite, healthcare and life sciences institutions 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 (80%), compared to the overall average of 65%.[10]

[10] Healthcare and life sciences organizations with a strong gen AI connection to business goals: n=158; Total market - healthcare and life sciences (global): n=305

Healthcare and life sciences orgs with a strong connection between gen AI and business goals report ROI now on at least one use case[10]

[10] Healthcare and life sciences organizations with a strong gen AI connection to business goals: n=158; Total market - healthcare and life sciences (global): n=305

▲▼
Arrows indicate a significantly higher or lower score compared to Total Respondents at a 95% confidence interval.
* A strong connection between gen AI and business goals is defined as evaluating their organization's alignment between 4-5 at QALIGNMENT.

Seeing ROI now (any use case)

66%

**80%**▲

Not seeing ROI now for any use case

35%

20%▼

Total healthcare and life sciences orgs (global)

Orgs with strong gen AI connection to business goals

To achieve this alignment, healthcare and life sciences organizations are increasingly taking a collaborative approach. In fact, 60% of respondents say responsibility for driving gen AI strategy is shared.[11] CTOs and CIOs typically lead technology and innovation workstreams, often in collaboration with the lines of business leaders. Today, CEOs and CFOs are also actively involved in driving gen AI strategy—highlighting the need for closer collaboration across the C-suite to ensure strategic goals are reflected in gen AI initiatives.

Leaders responsible for driving gen AI strategy[11]

CTO	CEO	CIO	CFO	Line of business leaders	CSO	CMO
53%	49%	38%	20%	20%	18%	12%
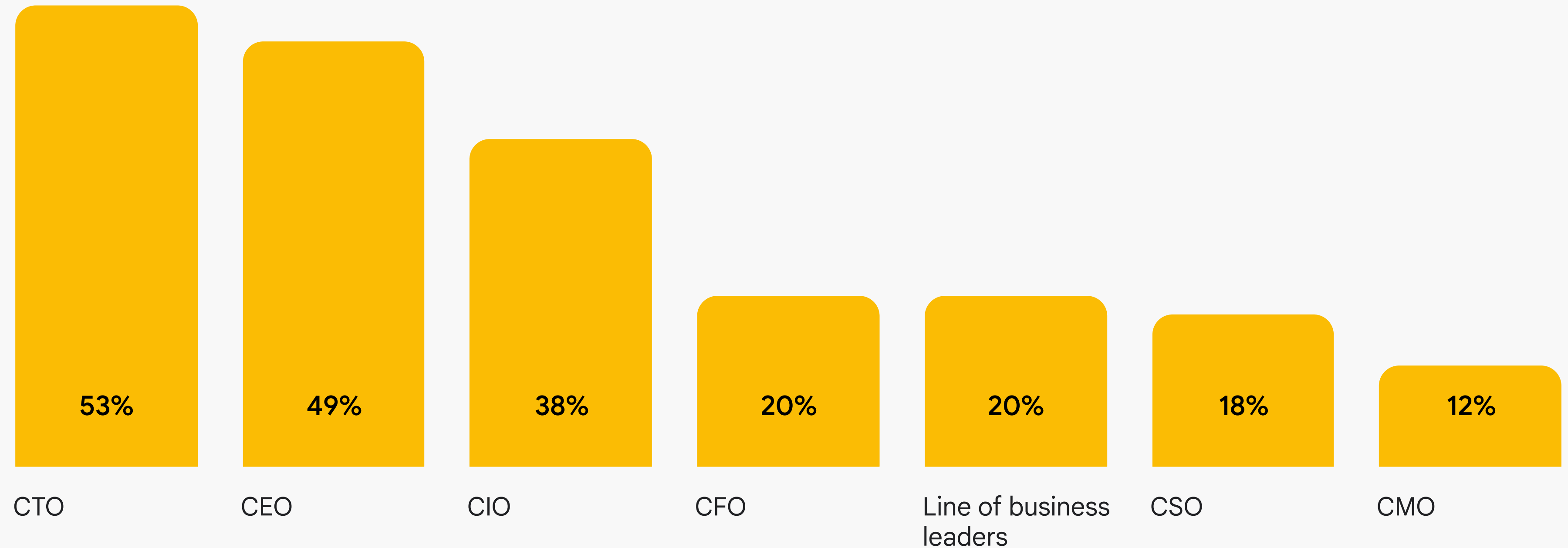
[11] Total market - healthcare and life sciences (global): n=305

Generative AI has the potential to revolutionize healthcare by making it more efficient, personalized, and effective.
By integrating AI across the healthcare system, we can improve patient care, advance medical research, and secure our position as leaders in the future of healthcare."

Bob Garrett

CEO, Hackensack Meridian Health

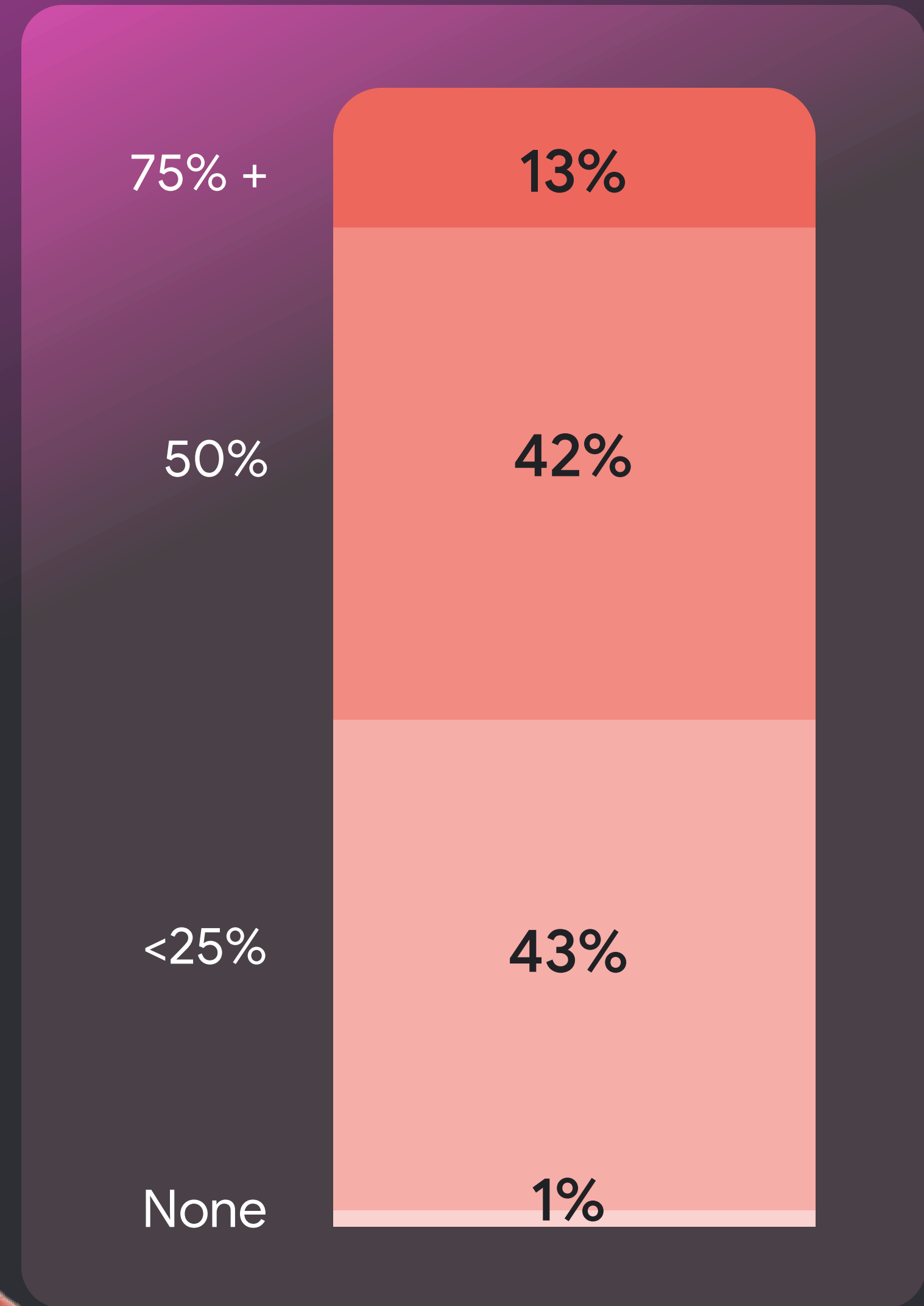# Reinvesting in innovation

Google Cloud   25

With 55% of healthcare and life sciences organizations[12] intending to allocate at least half of their future AI budget toward gen AI, it's undeniable that the technology is here to stay.

[12] Total market - healthcare and life sciences (global): n=305

Future AI budget allocated to gen AI[12]

75% +	13%
50%	42%
<25%	43%
None	1%

Healthcare and life science organizations that realize gains from gen AI have their sights set on reinvesting across a wide range of priorities. In fact, 50% of respondents plan to use the gains to improve operating profit margin, 46% to boost competitive differentiation, and 42% seek to focus on new product development.[13] The question is, can this virtuous cycle of innovation sustain itself? The potential is there, but it's crucial to ensure these early successes translate into long-term growth.
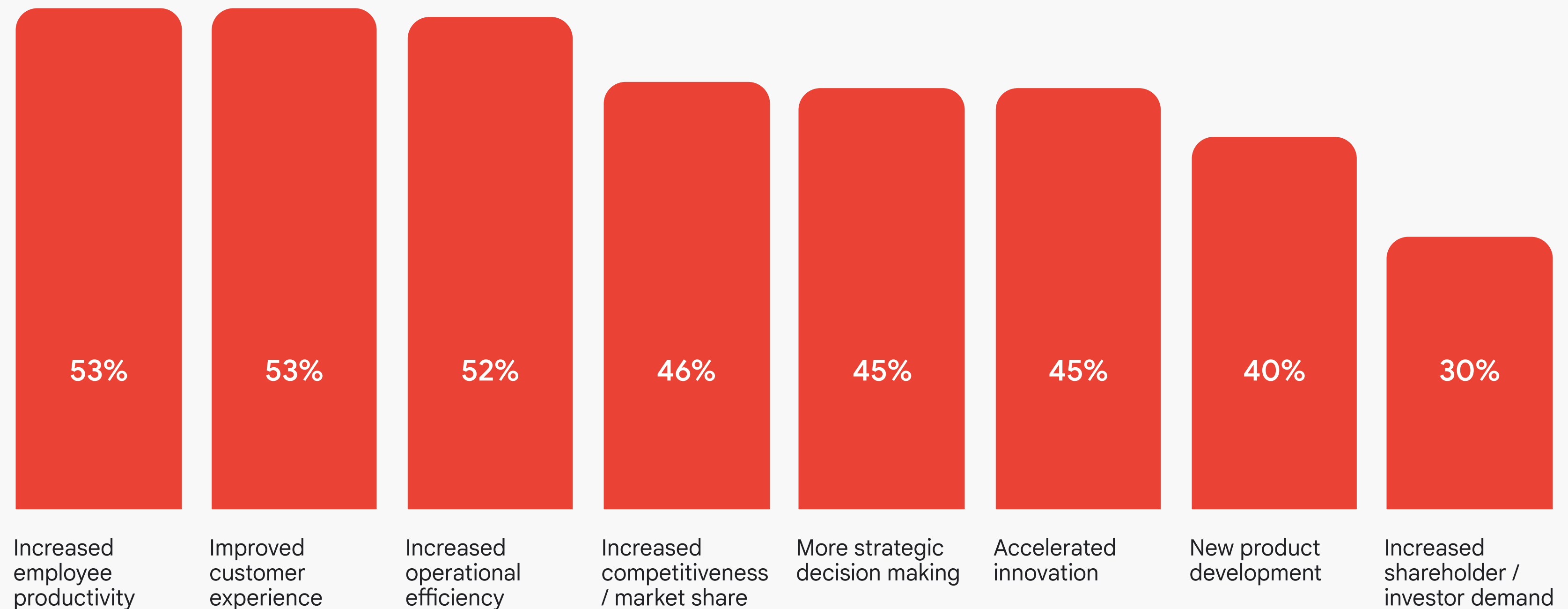
Ways organizations want to use gains from gen AI[13]

50%	46%	42%	42%	40%	39%	36%	30%	30%	23%	22%
Improved operating profit margin	Increased competitive differentiation	New product development	Employee satisfaction	Improved brand perceptions	Grow sales	Identification of new revenue streams	Grow support	Talent acquisition	Shareholders	Leadership compensation

[13] Total market - healthcare and life sciences (global): n=305

Over the next two to three years, healthcare and life sciences organizations[14] plan to use gen AI to address a range of objectives, with employee productivity (53%) and customer experience (53%), ultimately improving the quality of care delivered and the patient experience, at the top of the list. As these organizations embark on the journey, seemingly competing priorities may end up supporting each other. For example, more transformational initiatives like accelerated innovation and new product development—which are also in their sights—could help elevate the customer experience.

Planned business objectives to pursue with gen AI in the next 2-3 years[14]

Objective	Percentage
Increased employee productivity	53%
Improved customer experience	53%
Increased operational efficiency	52%
Increased competitiveness / market share	46%
More strategic decision making	45%
Accelerated innovation	45%
New product development	40%
Increased shareholder / investor demand	30%

[14] Total market - healthcare and life sciences (global): n=305

7 takeaways for your organization

The healthcare and life sciences industry is at a turning point, with gen AI emerging as a powerful catalyst for transformation.

Early adopters have demonstrated significant gains in productivity, efficiency, and patient experience, underscoring the technology's game-changing potential. However, operating in a highly regulated industry like healthcare and life sciences, realizing these benefits requires a strategic approach that balances innovation with rigorous governance.

01　02　03　04　**Chapter**　05

Not sure where to start? Based on all the findings from our global research, seven priority areas have emerged. By focusing on these things today, you'll be on your way to realizing ROI from gen AI in no time.

01

Leadership matters

Get your whole team on board. Make sure everyone understands how AI fits into your big picture goals.

02

Focus on patients and operations

Use gen AI to improve patient care and operations directly by focusing on applications that improve patient outcomes and operational efficiencies, such as personalized treatment plans, diagnostic assistance, contract management, and patient data search capabilities.

03

Security first

Protecting your patients' data is a big (the biggest) deal, use a framework such as Google's Secure AI Framework (SAIF) for a secure and consistent approach to AI implementations.

04

Data is king

Invest in good data. Clean it up, protect it, and use it wisely to get the most ROI out of gen AI.

05

Build your AI team

Train your people or bring in experts to make AI work for you. Institute a dedicated AI training program to support organization-wide understanding of key concepts and potential challenges associated with AI.
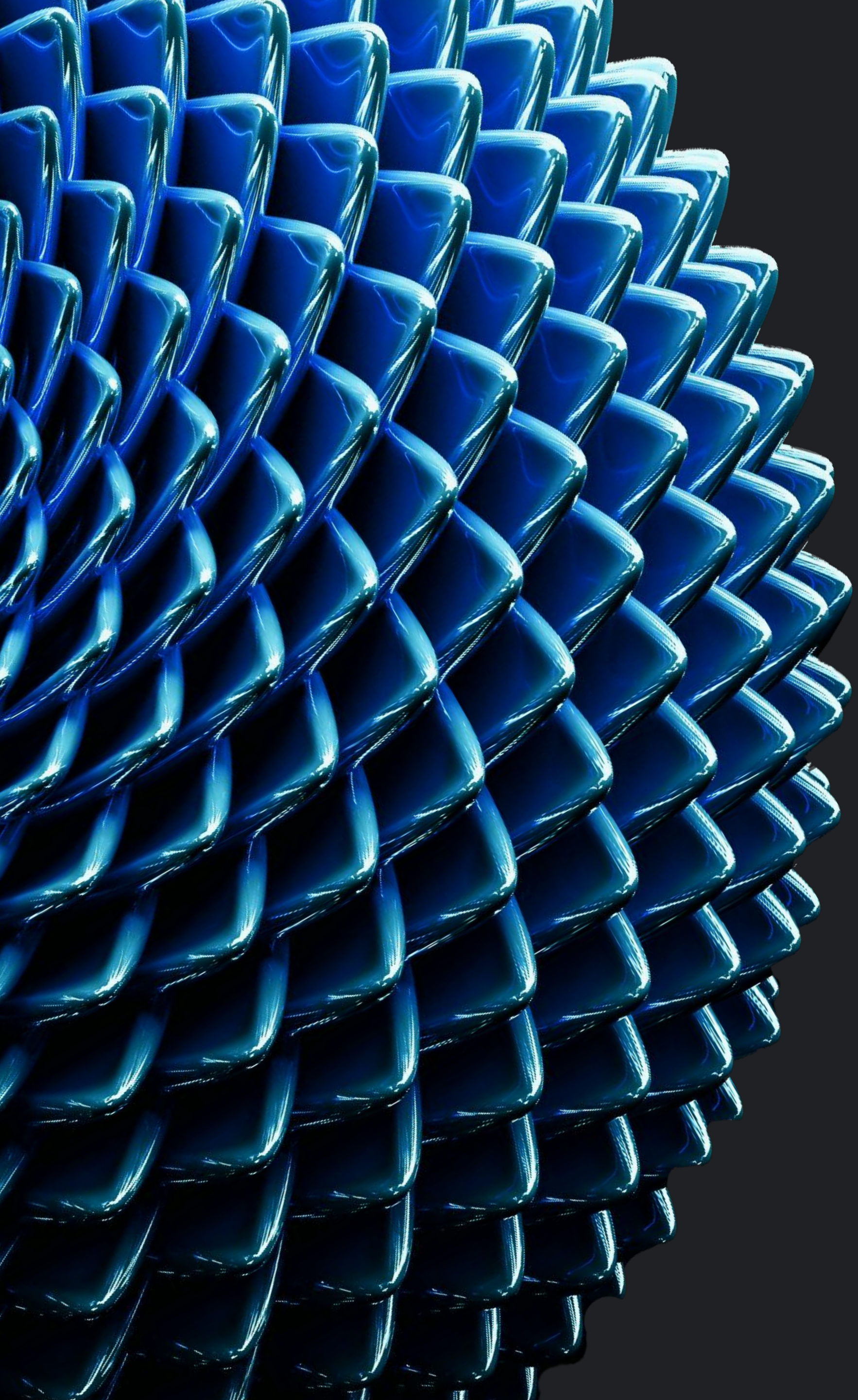
06

Embrace change

Help your team adapt by documenting and implementing relevant policies and procedures for AI design, development, deployment and operations.

07

Keep learning

Measure the impact of gen AI initiatives on patient outcomes, operational efficiency, and financial performance and optimize as needed.

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, empowers businesses 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=305 from Healthcare and Life Sciences organizations.
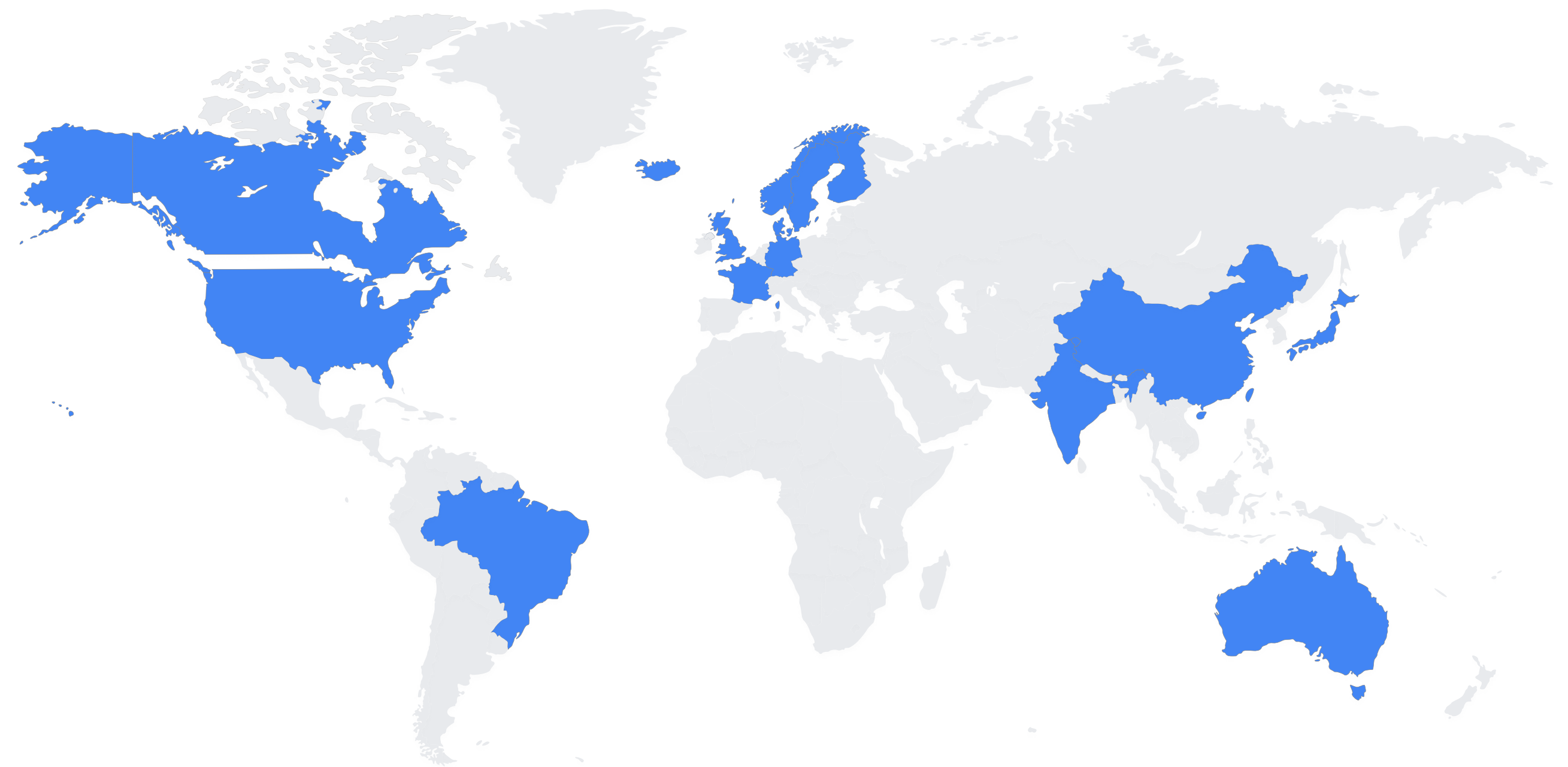
Upper-level, senior executive, and C-suite business leaders, including:

83 CEO, CIO

77 CFO, CMO, CTO

73 CISO, CDO, CSO, COO, Director of Digital Strategy, VP of IT

72 IT Director, Head of Innovation

NorthAm	100	EMEA	67
LATAM*	19	APAC	119

*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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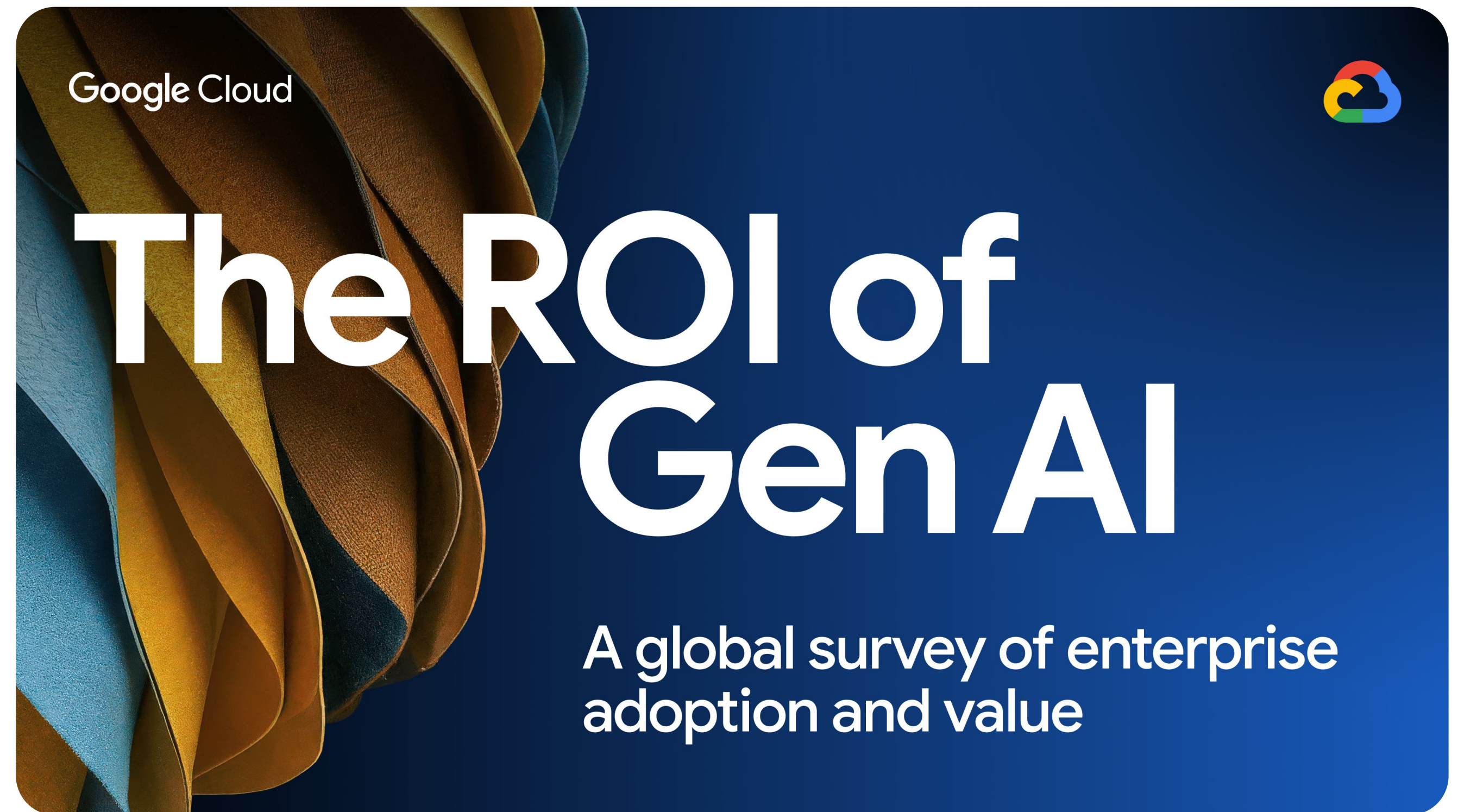
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