



Powering the API world

API Impact Report 2024

AI Edition: Innovation and Adoption Challenges

Executive Summary

In the minds of many, artificial intelligence (AI) is synonymous with innovation. And though some naysayers may feel the promise of AI is overhyped, the reality experienced by developers and business leaders in the digital trenches working with generative AI (GenAI) and large language models (LLMs) paints a clear picture: AI is a top priority in the enterprise and has already delivered tangible business benefits.

92% say AI is a priority, and 83% report AI investments have created the opportunity for new products or services in the last year. Believe it or not (or like it or not) the AI age is not only here but well underway.

The task at hand for organizations has moved beyond figuring out if AI can deliver business value to determining how to quickly adopt AI without compromising on data security and compliance.

Organizations are scrambling to adopt and integrate GenAI and LLMs into their products and services. But the rush to adopt AI paired with a

disconnect between how employees work and employers' policies has led this moment in AI history to feel a bit like the Wild West – with policies, rules, and best practices disregarded or worked around.

Most report their organizations have AI guidelines or restrictions in place. But among those users in organizations with rules or other safeguards in place, **60% say they find ways around their organization's AI-usage restrictions.**

How does an organization move swiftly into uncharted waters without throwing caution to the wind? The key lies in a place most organizations investing in technology already are well aware of: APIs (or application programming interfaces). AI and APIs are connected, with APIs serving as the eyes, ears, and hands of AI. And the same API management tools used to keep tabs on API usage can also be used to ensure compliance and security around AI.

Moving into 2025, the focus for many organizations will remain on AI and APIs. And the impact of these intertwined technologies is staggering. **The global economic impact of APIs is expected to reach \$17.3 trillion by 2030**, and the value of APIs to enable AI is forecasted to have a cumulative economic impact of \$43 trillion by the end of the decade.

Of course, all this upside comes with challenges. Our research predicts a **550% growth in the forecasted annual number of API attacks by 2030.**

In this report, we'll examine the global state of AI in the enterprise as told by the developers and leaders who know it best. We'll then dig into why there's no AI without APIs – and how organizations can benefit from the symbiotic nature of the two. We'll run the numbers on the massive economic impact of APIs. And we'll explore how leaders and developers report AI adoption and API innovation are going in their organizations: the challenges they're facing, the benefits they're seeing, and their honest outlook about what's next.

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CHAPTER 1

Is AI living up to the hype?

AI is a top priority for businesses and builders

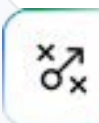
It's been less than two years since ChatGPT first made waves. In the short time since, GenAI and LLMs have quickly found their way into workflows and applications across industries and in businesses big and small.

But beyond the hype and headlines, what do the people in the digital weeds building digital experiences have to say about AI? 92% of developers and leaders surveyed say AI is a priority relative to other initiatives.

92%

say AI is a priority

Most important initiatives this year



- 1** INNOVATION / NEW PRODUCT DEVELOPMENT
- 2** LEVERAGING AI
- 3** SECURITY, COMPLIANCE, AND GOVERNANCE
- 4** PRODUCTIVITY OR DOING MORE WITH LESS
- 5** REDUCING COSTS

Innovation and leveraging AI are top initiatives

Leveraging AI, innovation, and new product development top the list of developers' critical initiatives this year. But doing more with less and reducing costs (two peas in the same efficiency-focused pod) aren't far behind.

Most have already seen the benefit of AI

The focus on developing new products and further leveraging AI is probably due to the fact that the majority of people report that investing in GenAI has already paid off: 83% say their organization's AI investments have created the opportunity for new products or services in the last year.

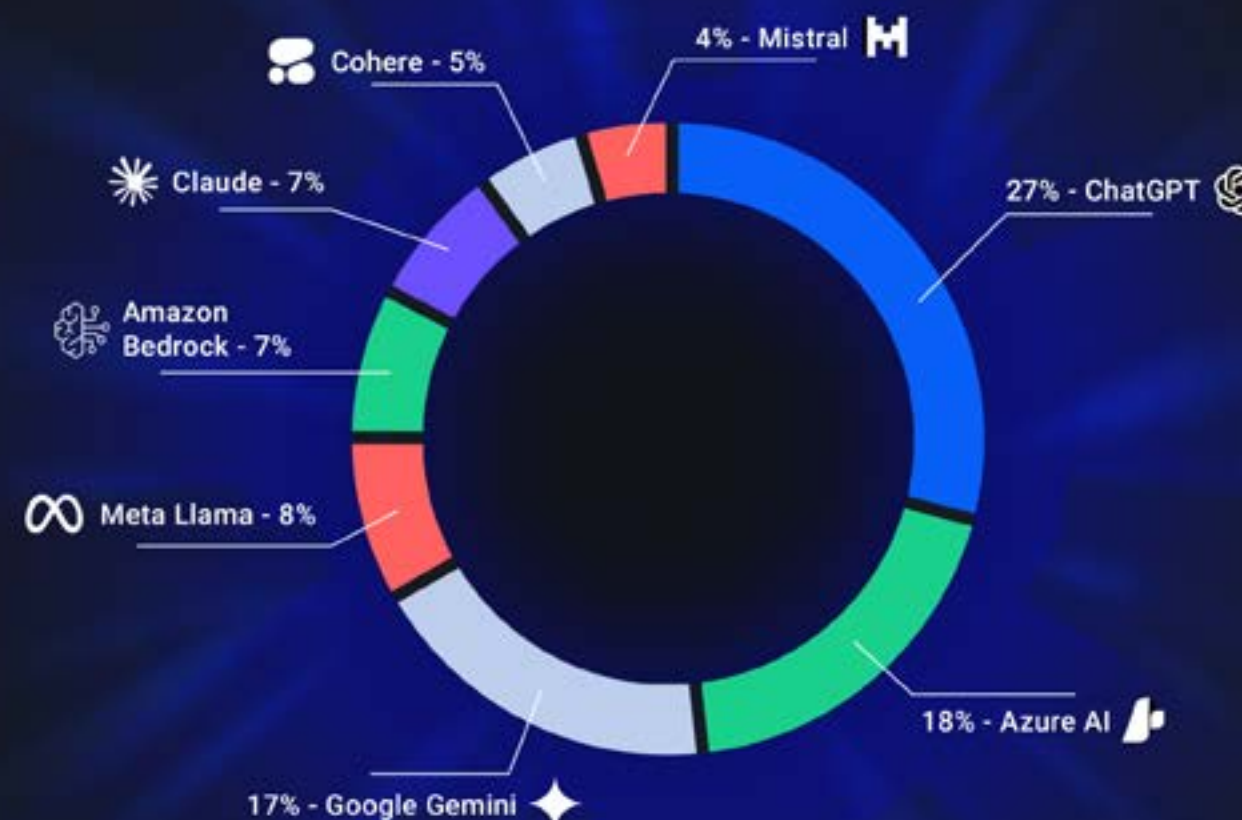
83%
say AI has created opportunity for new products

All eyes on GenAI

Given the new opportunities builders and leaders are seeing due to embracing AI innovation, it's no surprise that GenAI tops the list of things those surveyed say leadership should focus on — followed closely by investing in the right tools.

Areas leadership needs to be more aware of

- | | |
|---|---|
| 1 GENERATIVE AI (56%) | 4 DEVELOPER BURNOUT (29%) |
| 2 CHOOSING RIGHT TOOLS (55%) | 5 TOOL OVERLOAD (28%) |
| 3 BUSINESS IMPACT OF APIS (46%) | 6 VENDOR LOCK-IN (22%) |



The most used LLMs and AI services

For organizations looking to leverage AI, there's plenty of competition around LLMs today. But when it comes to the models and AI services builders and leaders are using in the workplace, our survey results show that ChatGPT — the first LLM to capture the world's attention — remains the most used (27%). However, it's important to note that Microsoft's Azure AI (used by 18% of respondents) enables companies to access OpenAI's LLMs, which brings the total usage of OpenAI's models higher. (Similarly, Amazon Bedrock provides access to multiple LLMs.) Following these, Google Gemini is at 17% usage. The rest of the pack garner between 8% to 4% reported usage: Meta's Llama (8%), Amazon Bedrock (7%), Anthropic's Claude (7%), Cohere's suite (5%), and Mistral AI (4%). 4% report using tools not included in our survey, while 3% don't use any LLMs.

The competition is fierce, and the field is only growing more crowded. But this competition will benefit early adopters of AI. Open source models are quickly getting as "good" as more well-known cloud-hosted models. And different models are proving better suited for some tasks than others. This is why organizations investing in AI are increasingly adopting a multi-LLM strategy and leveraging different LLMs for different use cases.

CHAPTER 2

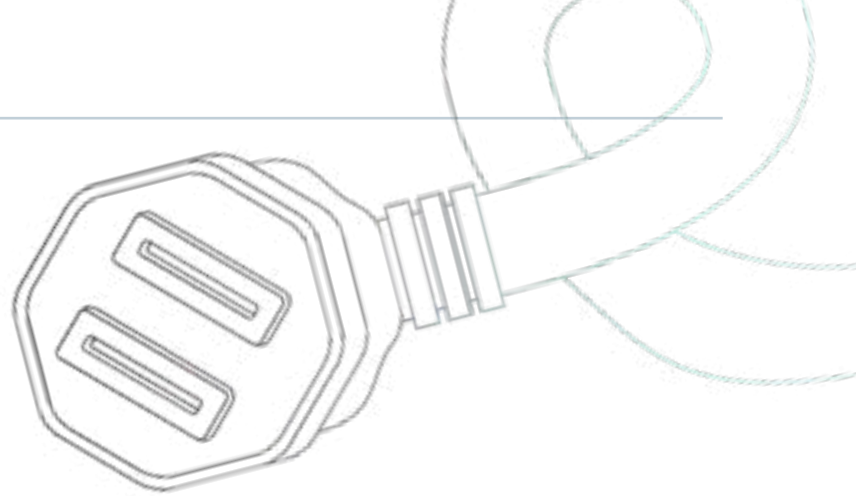
Why are APIs essential in the AI age?

To better understand the impact of AI, it helps to understand a little about APIs.

An API is a delivery mechanism for data transfers that allows applications to communicate. APIs enable all the effortless online interactions we've grown accustomed to — like finding the best price for a flight online, tracking a pizza delivery, or accessing your library of online photos in a card-making app.

For businesses, APIs enable seamless and superior customer experiences, speed up time to market, and lead to the creation of innovative new business opportunities.

APIs are a core part of the organization for at least 85% of Fortune 100 companies, and **nearly half of developers and managers say their organization needs to be more aware of the business value of APIs.**



There's no AI without APIs

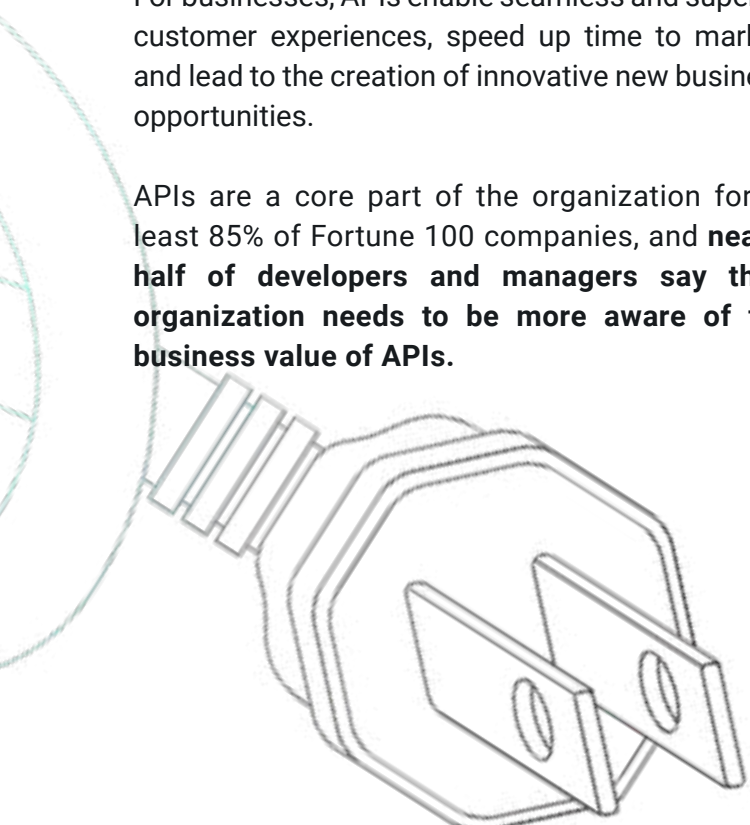
APIs enable communication between humans and AI systems — as well as AI systems and other digital tools. APIs serve as the hands, eyes, and ears of AI. And as AI usage increases, so will the number of APIs that enable them.

By 2026, Gartner predicts that over 30% of the increase in demand for APIs will come from AI and tools using LLMs. But what about in the years to follow?

With the proliferation of AI-powered agents and applications, we can picture a future where the users of APIs are AI working for humans rather than humans. Let's say in the not-so-distant future there may be 100 AIs per human online. If we consider the number of people online — which, according to Statista, is around 5.35 billion — that's 535 billion AIs, each interacting like a human user online.

This simple back-of-the-napkin math paints a picture of why an API strategy is so essential for organizations today: in a short time, the consumers of our websites or digital products are more likely to be AI than human.

Whether we're using AI, training AI, or having AI interact with APIs to perform operations, an API is involved. That's why controlling the usage of AI at the interface level is an API problem.



Integrating AI is the most critical aspect of API management

According to developers and business leaders, **the most critical aspect of API management in the next 1 to 2 years will be the integration with AI.** This is followed closely by API security, compliance, and governance.

For businesses, integrating AI into API management is crucial for automating and optimizing operations, enhancing security, and offering more personalized user experiences. It can allow for things like real-time anomaly detection, dynamic resource adjustment for optimal performance, and innovative service development.

The value of APIs to enable AI to grow 170% by 2030

The rapid growth in AI will have a deep and lasting impact on the global economy. To take a more tangible look at that, we sought to determine the value of infrastructure and API technology within the AI adoption curve. The result?

We forecast \$5.3 trillion in growth in 2030 relative to 2023, translating to 170% growth and a \$43 trillion cumulative economic impact by the end of the decade.

\$5.3 Trillion
forecasted growth
by 2030

\$43 Trillion
cumulative economic impact
by the end of the decade

Aspects of API management most critical to business



- 1 **INTEGRATING AI** (19%)
- 2 **API SECURITY, COMPLIANCE, AND GOVERNANCE** (15%)
- 3 **AUTOMATION** (15%)
- 4 **IMPROVING API OBSERVABILITY** (11%)
- 5 **SERVICE CONNECTIVITY AND DISCOVERY** (10%)
- 6 **SUPPORTING CLOUD MIGRATION** (10%)
- 7 **DECENTRALIZING APPLICATIONS/SERVICES** (8%)
- 8 **TRAFFIC RELIABILITY** (7%)
- 9 **CREATING/ENABLING A DEVELOPER PORTAL** (6%)

CHAPTER 3

The economic impact of APIs

API technologies have enabled innovation since at least 2002 and the [API Mandate](#), the memo of tech lore alleged to have come from Jeff Bezos. In the decades since then, API usage has skyrocketed as businesses moved to the cloud and (most recently) as GenAI has gained traction.

To get a better understanding of the tangible impact of APIs in the early days of the AI age, let's further examine the role APIs play in the global economy.

APIs are responsible for nearly \$12 trillion in economic impact

Today, APIs are essential to modern enterprises and the economy, with the US economic impact of APIs projected to increase from \$2.3 trillion in 2024 to 3.4 trillion in 2030 – for a cumulative \$21.7 trillion impact by the end of the decade.

Zooming out to take in the bigger picture, the global economic impact is expected to balloon from \$11.7 trillion in 2024 to \$17.3 trillion in 2030. That \$5.6 trillion worldwide growth in market size is larger than the current GDP of Germany or Japan.

Economic impact of APIs

	2024	2030
US	\$2.3 Trillion	\$3.4 Trillion
WORLDWIDE	\$11.7 Trillion	\$17.3 Trillion

Economic impact of APIs to be 14% of global GDP by 2030

Using data from the International Monetary Fund on projected international GDP growth and the global digital economy, the economic impact of APIs is expected to increase from 12.7% of global GDP in 2024 to 14.0% of global GDP in 2030.

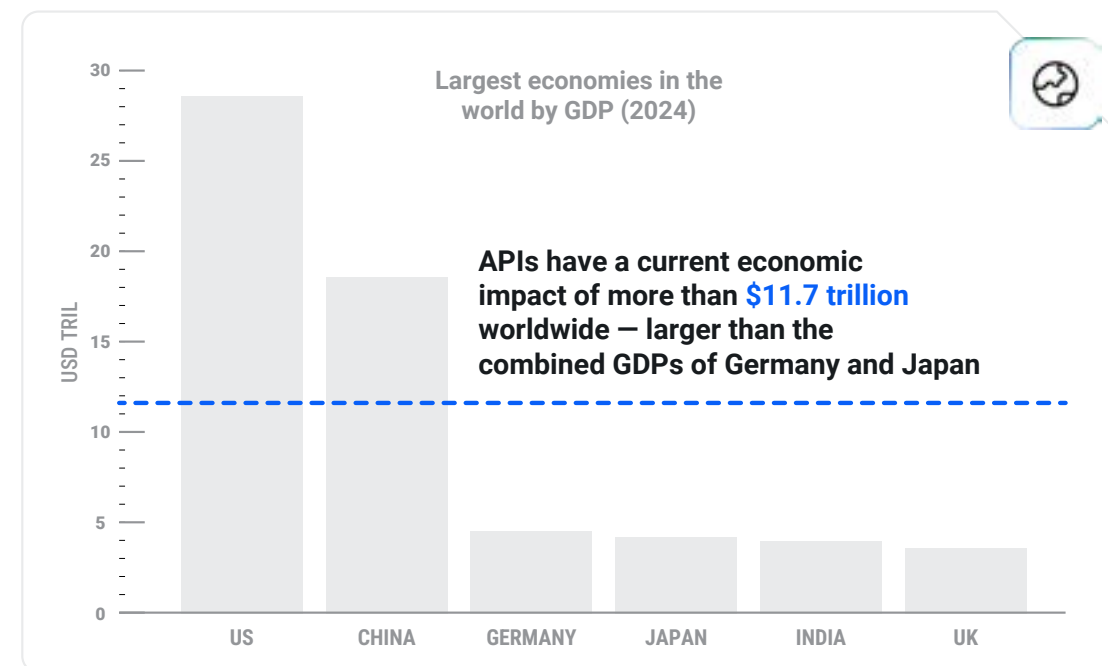
In the US alone, the economic impact of APIs is expected to increase from 8.6% of GDP in 2023 to 10.3% of GDP in 2030. That's 19.7% relative growth as a share of the US economy.

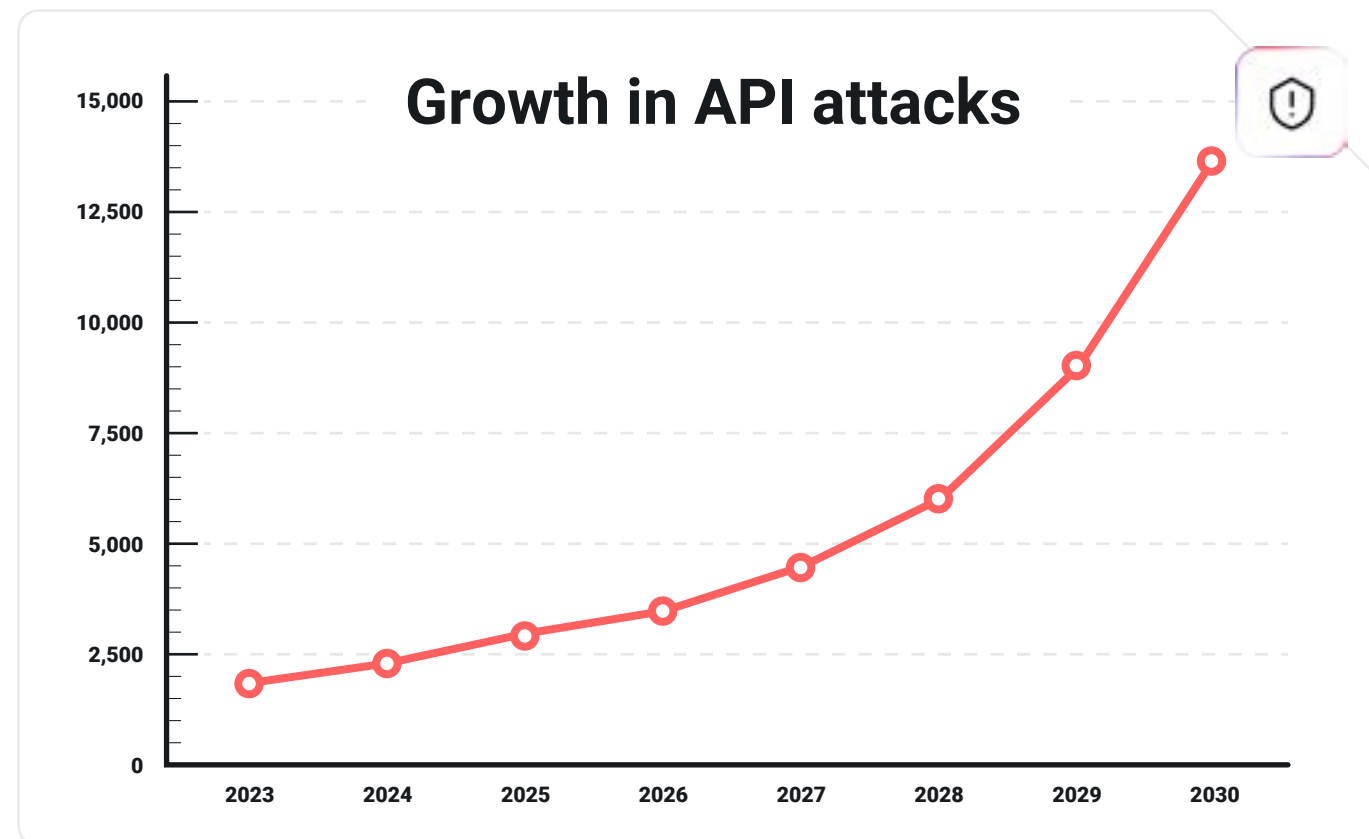
Impact of APIs as share of worldwide GDP by 2030

14%

Impact of APIs as share of US GDP by 2030

10%





Want to learn more about API security? Download the eBook [Best Practices for Becoming a Secure API-First Company](#).

The rise of API attacks

548% growth in number of API attacks forecasted

With the rise of AI adoption, the growing number of APIs shows no sign of slowing down. Given that insufficiently secured and managed APIs can be a major security weakness, this creates an opportunity to be taken advantage of by malicious actors.

The number of annual attacks is forecasted to grow 548% by 2030, for a total of nearly 42,000 API attacks in the US alone.

CHAPTER 4

AI governance and management

While many see AI adoption as a boon to business, the unprecedented accessibility of GenAI technologies can lead to reckless adoption and improper usage – which carry potential risks.

Historically, in larger organizations, it takes time for policies to be put in place around new and disruptive technologies: employees are more keen to adopt new tools than their employers, and organizations are often left playing catch-up.

The speed at which organizations and individuals are adopting AI arguably outpaces previous technological breakthroughs, which means organizations need to move faster than ever to keep on top of the wave of AI innovation. About **1 in 5 report no guidelines or restrictions of any kind of AI usage in their organization**. Fortunately, 80% say their organizations do have guidelines or restrictions in place around AI usage – while **2% say GenAI tools are banned** entirely in their organizations.

80%
orgs have guidelines on AI use

Data security and compliance top reasons for restrictions

For those working in organizations with AI-related restrictions or guidelines in place, 60% say data privacy/security and regulatory compliance are the top reasons for the measures.

Compliance may become even greater of a concern in the years to come as new laws and regulations go into effect around the use of AI, such as the European Union’s AI Act, which went into force in August 2024.

Top reasons orgs have AI restrictions in place

- 1 DATA PRIVACY AND SECURITY (34%)**
- 2 INDUSTRY REGULATIONS OR COMPLIANCE (26%)**
- 3 COPYRIGHT INFRINGEMENT (21%)**
- 4 INACCURATE OUTPUT (16%)**
- 5 OTHER (3%)**

60%
find ways around
AI restrictions

Majority of users find ways to bypass AI constraints

How effective are the AI-usage restrictions organizations have in place? 60% say they find ways to get around the AI restrictions in their workplace.

Most turn to solutions to ensure approved AI usage

To ensure approved usage around GenAI, **72% say their organization uses tools like a data loss prevention (DLP) solution or an AI gateway.**

An [AI gateway](#) is a central place to manage AI consumption across teams. They can be used to accelerate the adoption of AI without compromising on business-critical must-haves like observability, security, and governance.

Data privacy and security are top AI challenges

When it comes to the challenges faced in integrating AI services with existing microservice infrastructures, data privacy and security/governance top AI the list for nearly 60% of those surveyed.

Top challenges faced in integration of AI services

- 1 DATA PRIVACY (60%)**
- 2 SECURITY AND GOVERNANCE (55%)**
- 3 LACK OF A CENTRALIZED MANAGEMENT TOOL (36%)**
- 4 LACK OF STANDARDIZED API INTERFACE FOR ACCESSING SERVICES OR LLMS (29%)**

How to securely implement AI in your organization

Forward-thinking organizations can learn from the missteps made by organizations dealing with the early days of past innovations. We don't want to be like the companies in the 1990s that banned internet browsers or email, or – more recently – the Fortune 500 companies that wouldn't allow developers to use AWS or mobile devices for work purposes.

Employees will use GenAI – they already are. To make the most of the opportunities these technologies present, organizations must figure out how to address the challenges that come with it, like what it means for data governance or regulations. A well-defined, robust governance playbook for responsible adoption is key.

Want to learn about how to properly implement AI in your organization? Check out our eBook on developing an AI governance playbook, [Navigating AI Innovation: A Playbook for Secure and Governable LLM Integration.](#)

Download Now



CHAPTER 5

The AI outlook

When looking through the headlines around AI, the viewpoints can be extreme: you'll find Big Tech leaders comparing AI to fire or electricity in terms of its value to humanity right alongside social influencers with dystopian visions and predictions of mass layoffs.

But what do the people who are actually working with GenAI have to say about it?

60%
are passionate about working with AI

57%
say AI will make their job easier

Most are passionate about AI, have positive outlook on its impact

Nearly 60% say they're passionate about AI and feel it makes their job easier. But, of course, not everyone is enthusiastic.

35% feel that AI adoption is moving too fast. 18% feel AI adoption will lead to layoffs in their organization. And nearly 1 in 10 surveyed said they prefer not to work with AI and that AI will undervalue their work or increase their workload.

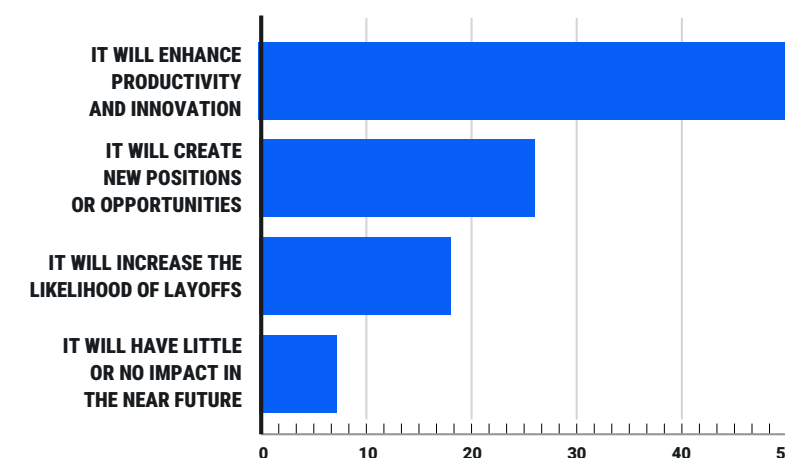
How do developers and leaders feel about AI?

- 1 I'M PASSIONATE ABOUT WORKING WITH AI (60%)
- 2 IT MAKES MY JOB EASIER (57%)
- 3 AI ADOPTION IS MOVING TOO FAST (35%)
- 4 AI ADOPTION IS HAMPERED BY UNDUE SECURITY RISKS (19%)
- 5 AI WILL INCREASE MY WORKLOAD OR UNDERVALUE MY WORK (9%)
- 6 I PREFER NOT TO WORK WITH AI (9%)

3 out of 4 say AI will increase innovation, opportunities

Zooming out from personal outlook to their view on business impact, half of those surveyed say AI will enhance productivity and innovation. 26% say AI will create new positions or opportunities in their organizations.

How will the use of GenAI impact businesses?



CONCLUSION

Organizations must balance security and compliance with innovation

GenAI has proven its value in the enterprise and will be a priority in most organizations over the coming years. But will these organizations be ready for all that comes with this?

Users have made it clear they're willing to bend or break the rules to use the tools they need in their jobs. It's on organizations to quickly adapt to figure out how to enable AI innovation and efficiencies without compromising on non-negotiables like data security and regulatory compliance, especially as new laws are put in place to ensure responsible AI usage.

The union of AI and APIs isn't just a pathway to innovation but a crucial strategy for securing a competitive edge in the modern digital landscape. The journey ahead, marked by rapid technological advancement and increased threats, calls for a robust, secure, and flexible approach to navigating the intricacies of AI and API management.

Kong can help your organization simplify API management and unlock AI innovation. Visit konghq.com to learn more.



About Kong

Kong Inc., a leading developer of cloud API technologies, is on a mission to enable companies around the world to become “API-first” and securely accelerate AI adoption. Kong helps organizations globally – from startups to Fortune 500 enterprises – unleash developer productivity, build securely, and accelerate time to market.

For more information about Kong, please visit www.konghq.com or follow us on X [@thekonginc](https://twitter.com/thekonginc).

Learn More



ABOUT THIS REPORT

Methodology

This study examined the financial landscape of API infrastructure and associated technologies, analyzing the economic trends alongside the costs tied to different API security vulnerabilities.

We employed statistical modeling to predict future inflation-adjusted economic growth in the API sector and projected the costs of security breaches (both direct and indirect). These projections were weighted and adjusted for inflation using data from the US Bureau of Labor Statistics. Furthermore, we compared this data with the US Gross Domestic Product (GDP) figures compiled by the Congressional Budget Office, providing a comprehensive overview of the API economy in the context of national economic production.

Expert opinions on the use of AI in the workforce and the future of AI were obtained through a survey of 747 IT professionals and business leaders conducted in June and July 2024.

Respondent profile

Who's working with AI and APIs? 53% of those surveyed report they work in organizations with more than 500 employees. And more than half of respondents are in leadership or management positions and have at least six years of experience.

Here's a little bit more about the people who participated in our survey – and the organizations they work for.

Industry	
Technology	18%
Business / IT Services / Telecom	18%
Financial Services / Banking / Insurance	16%
Healthcare	14%
Manufacturing / Production	8%
Retail / Supply Chain	7%
Education	6%
Media / Entertainment / Gaming	4%
Travel / Hospitality	3%
Advertising / Marketing	2%
Government	2%
Energy / Utilities	1%
Other	1%

Years of Experience	
More than 20	18%
10 - 20	24%
6 - 9	29%
1 - 5	26%
Less than 1	3%

Job Title	
Executive Leadership	21%
Management	48%
Individual Contributor	27%
Other	4%

Number of Employees	
Under 500	47%
500 - 999	25%
1,000 - 4,999	18%
5,000 or more	10%

Location	
US and Canada	60%
Asia Pacific	16%
Europe	13%
Latin America	6%
Middle East / Africa	5%



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