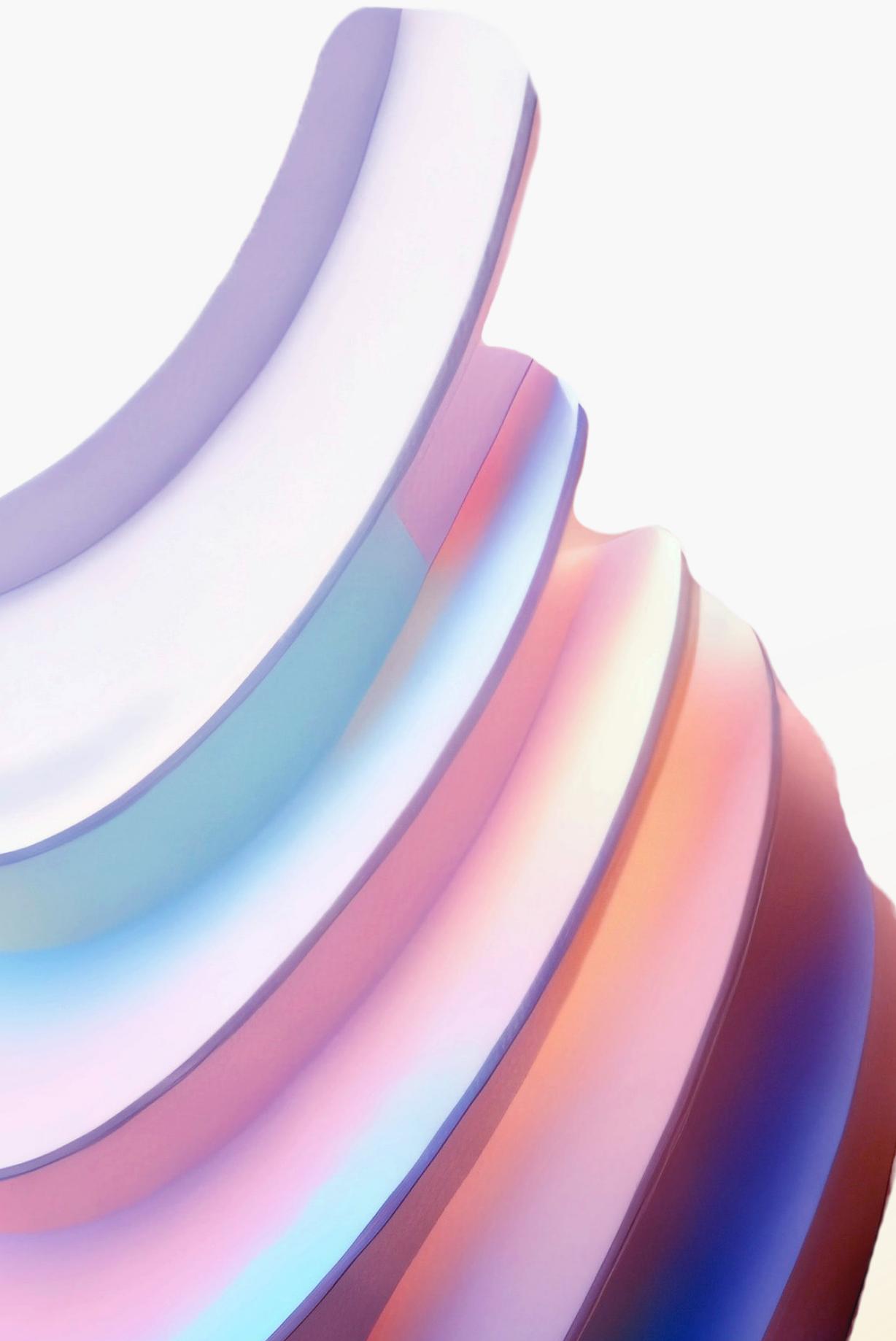


The executive's guide to generative AI.

Google Cloud



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Introduction



Generative AI marks one of the most significant technological shifts in history.

Its impact on individual and business productivity can be significant, with the potential to rival the advent of the internet or the mobile device. Indeed, among organizations considering or using AI, 82% believe it will either significantly change or transform their industry.¹

What makes generative AI different from other forms of AI that have come before is its ease of use in helping solve everyday problems in people's personal or professional lives. Anyone who knows how to ask a question of a search engine can use everyday language to interact with a generative AI chatbot or virtual agent — getting it to answer questions, create content, produce images, summarize documents, and much more.

Even better, a single generative AI platform can deliver solutions for multiple use cases, creating a network effect. As the number of users and applications increases, the model is exposed to more data and becomes increasingly accurate and useful — which in turn encourages more users.

Organizations that use generative AI to speed up, automate, scale, and improve business processes stand to reap big benefits. According to McKinsey & Company, generative AI's impact on productivity could add between \$2.6 trillion and \$4.4 trillion USD annually to the global economy.²

No technology ever takes away the fundamentals of your value proposition and the core value chain in your industry. At the end of the day in healthcare, for example, you're still trying to improve patient care.

What can change, though, is how you use this technology to enable your teams to improve core offerings, and how you solve fundamental problems that get in the way of delivering them. Indeed, with the right tools, you could even identify and deliver new points of difference.



Every day, people in your business spend time and energy digging for information to make decisions, serve customers, and move your business forward. Informed decisions require information, and collecting the right inputs can take time.

Suppose you need to know how ad spend impacts customer perceptions. Or you want to see the trends in a competitor's patent filings, R&D investments, and technology acquisitions. Information like this exists somewhere in your organization, often across a bunch of places. You need it to decide the next step — and, to obtain it, experts need to be convened, research completed, and the information compiled and synthesized. If you have a follow-up question, the whole process might have to start again.

From executives digging into strategic trends to salespeople creating product demos or new employees with benefits questions — everyone in your organization can relate to this frustration. But that's changing.

Imagine giving each person in your company not only a personal assistant, but an expert in every piece of data relevant to their job and, indeed, potentially every piece of data across your whole organization. With an assistant like that, impatient moments of indecision would dwindle. Everyone would be empowered to spend less time waiting and more time doing.

With generative AI, this is achievable. And it's just one example of the many disruptions this technology has unlocked. Always-on coding collaborators. Brainstorming assistants to draft and iterate content. Personalized self-education on any subject. Human-like interactions with customers wherever they need you, for whatever reason. Generative AI is all these things and more. In time, it will affect almost every aspect of every business.



Foundation models are the engine powering generative AI.

Generative AI applications are powered by foundation models, which are trained on vast amounts of content. For example, Large Language Models (LLMs) are one type of foundation model, trained on text or language. Other multi-modal types can be trained on images/photos, video, music, software code, medical information, or cyber security data. But access to models alone won't position your business for success.

Foundation models are best thought of as probability engines that can be nudged and shaped by human input. Because they are probabilistic, they are fundamentally different from traditional software paradigms. When today's apps need to look up product prices or validate customer information, they use deterministic functions that call a database. In contrast, foundation models use the patterns they learn during training and tuning to calculate the most probable output, such as the most likely answer to a question or an accurate caption for an image.

Since they're not confined by rows and columns in a database, foundation models are extremely powerful. They're often capable of performing many downstream tasks — such as Q&A, summarization, or open-ended

content generation — with little or no additional data or tuning. Yet they can also be [expensive to train](#) and run, prone to inaccurate outputs, and difficult to work with.

For these reasons, generative applications aren't reducible to generative models. Your intelligent applications will need to mix probabilistic foundation models with traditional, deterministic (in other words, constrained) programming. Deterministic models are constrained to what can flow out of them, and are limited by endless options that have to be pre-established.

Traditional AI is purpose-built for the task at hand. It is all about optimizing and tweaking existing processes such as forecasting specific patterns that have been pre-determined by humans. It's why traditional AI can be used to automate discrete, standardized processes in specific areas of the business, such as customer service.

In comparison, generative AI models have emergent capabilities where they can perform multiple tasks, even if they were not explicitly trained for them during the instruction tuning phase. It is this ability to multitask, plus the freedom afforded by the prompting interface, that enables these models to perform in a wide variety of use cases.



Core capabilities and applications

At the core, generative AI has four capabilities:

Creation

Summarization

Discovery

Automation

And it tends to excel in four applications:

Chat

It's no coincidence that generative AI has gained rapid popularity and adoption through simple chat interfaces. Chat is a natural way to interact with powerful generative AI models. You can use it to improve customer interactions, enhance product capabilities, train employees, and more.

Search

By combining generative AI capabilities with search, you can anchor on a knowledge base — either internal or external — for more tailored and targeted interactions. Using generative AI for search can help eliminate hallucinations by sourcing information from a factual knowledge base.

Generate content

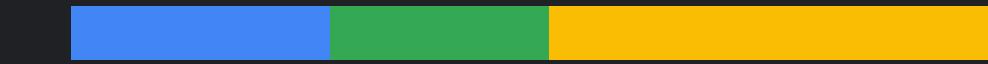
The ability to generate high-quality text, images, speech, and code has enormous potential. Whether it's speeding up processes or helping employees turn ideas into output faster, generative capabilities can be deployed into products, tools, and workflows.

Associative reasoning

This is the ability to suggest associations in information based on context, frequency, or proximity. For example, generative AI could identify the three most common reasons that a call center interaction ends negatively by parsing the large amounts of transcribed conversations.



[Read our glossary on generative AI terms and concepts.](#)



The step-by-step guide to getting started

To enable your foundation models to get very smart, very fast, pick one functional domain in your business and experiment in that area.

By clustering use cases into a domain, you can start with one, and then when that's working, you can naturally expand to your second, third, and fourth use case within the same domain. The more you throw at a model, the smarter it gets.

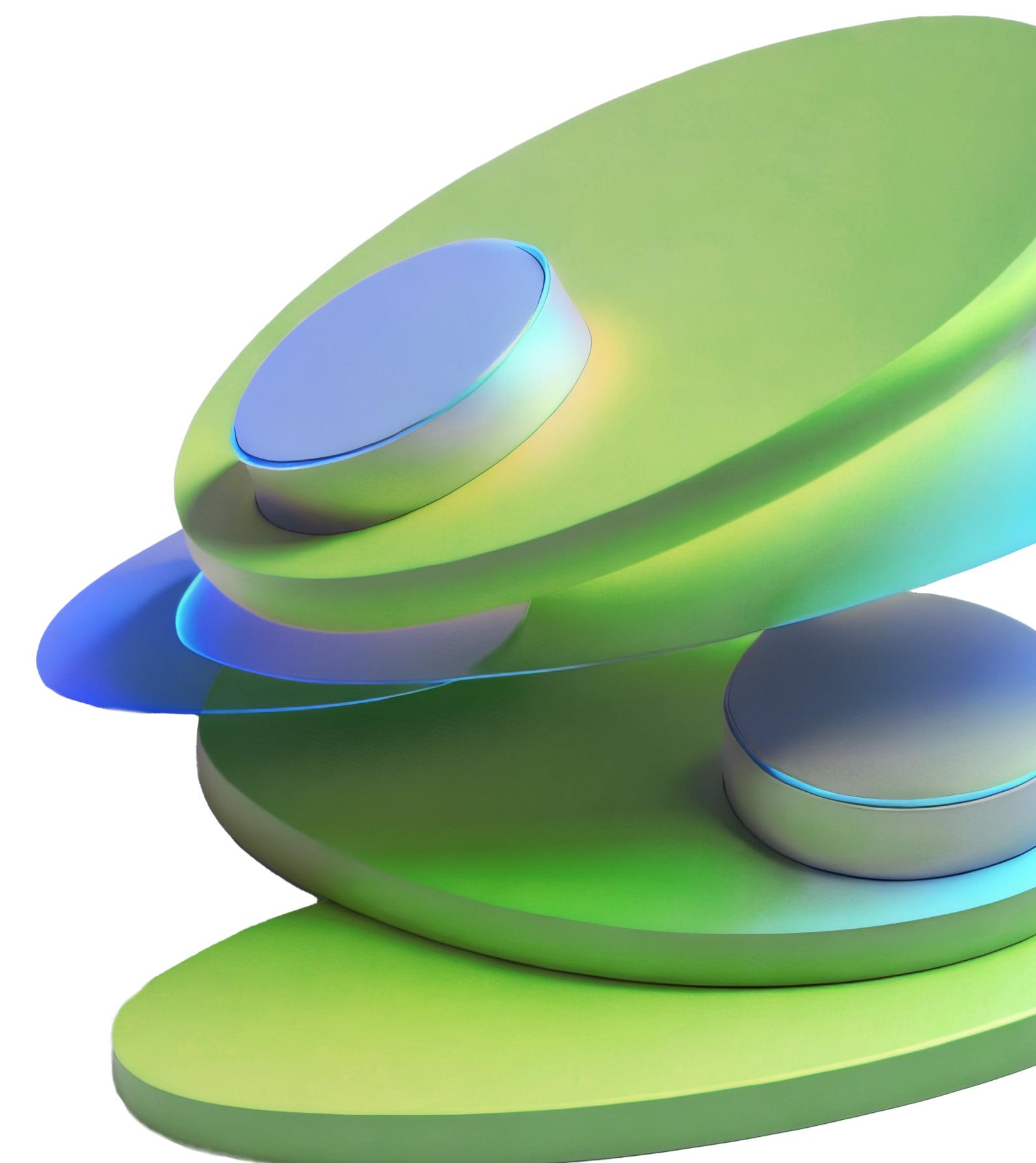
Take customer service, for example. First, let's say you give your call center agents a generative AI tool with a conversational interface to use when taking phone calls. Customers might call in and say, "My credit card no longer works." Or "I lost my passcode." Or "When I go traveling, how do I make my cell phone work internationally?" Your agents can answer these questions naturally, querying the generative AI interface to provide an answer using similar wording to how the customer asked the question.

Then, you can look at the aggregate of those queries and ask generative AI, "What questions are being asked

most frequently? What's our response time? What responses do we provide?" Now, you're moving from just answering customers' questions to summarizing their data.

Third, using this summarization, you can prompt generative AI to take the most frequently asked questions and compare them to the FAQs on your website. You can then ask it to generate answers to any questions not answered on your website, so you can publish them.

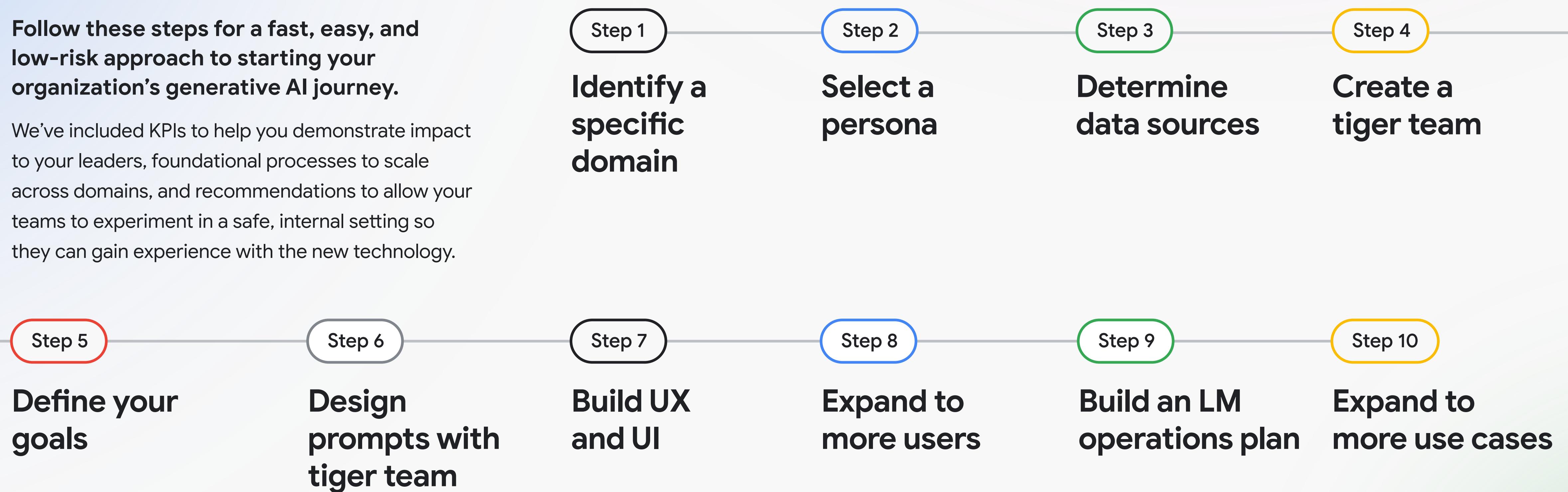
In this example, generative AI solves three use cases that enhance the customer service domain — answer the question, summarize what's being asked, and produce answers to these questions. With each use case, the model gets smarter.



10 steps to launch your first use case in 30 days

Follow these steps for a fast, easy, and low-risk approach to starting your organization's generative AI journey.

We've included KPIs to help you demonstrate impact to your leaders, foundational processes to scale across domains, and recommendations to allow your teams to experiment in a safe, internal setting so they can gain experience with the new technology.



Looking ahead at days — 60-90 —

Once you are ready to extend your use case to external users and/or third-party data, use these methods and tactics to scale quickly and safely:

01

Host a hackathon

Harness enthusiasm across your teams by hosting a hackathon, which encourages employees to brainstorm ideas and get hands-on with AI — all within a matter of days.

02

Bring in partners

Bring in help. Google Cloud Consulting alongside partners can consult on business value and technical implementations, provide training, and even work side-by-side with your teams to transfer knowledge as they build out your implementation. Learn more at cloud.google.com/consulting

03

Create a center of excellence

Excitement about new technologies can often lead to widespread use. A center of excellence in models, tuning, and application integration can help to standardize processes, share knowledge, and ultimately drive innovation.

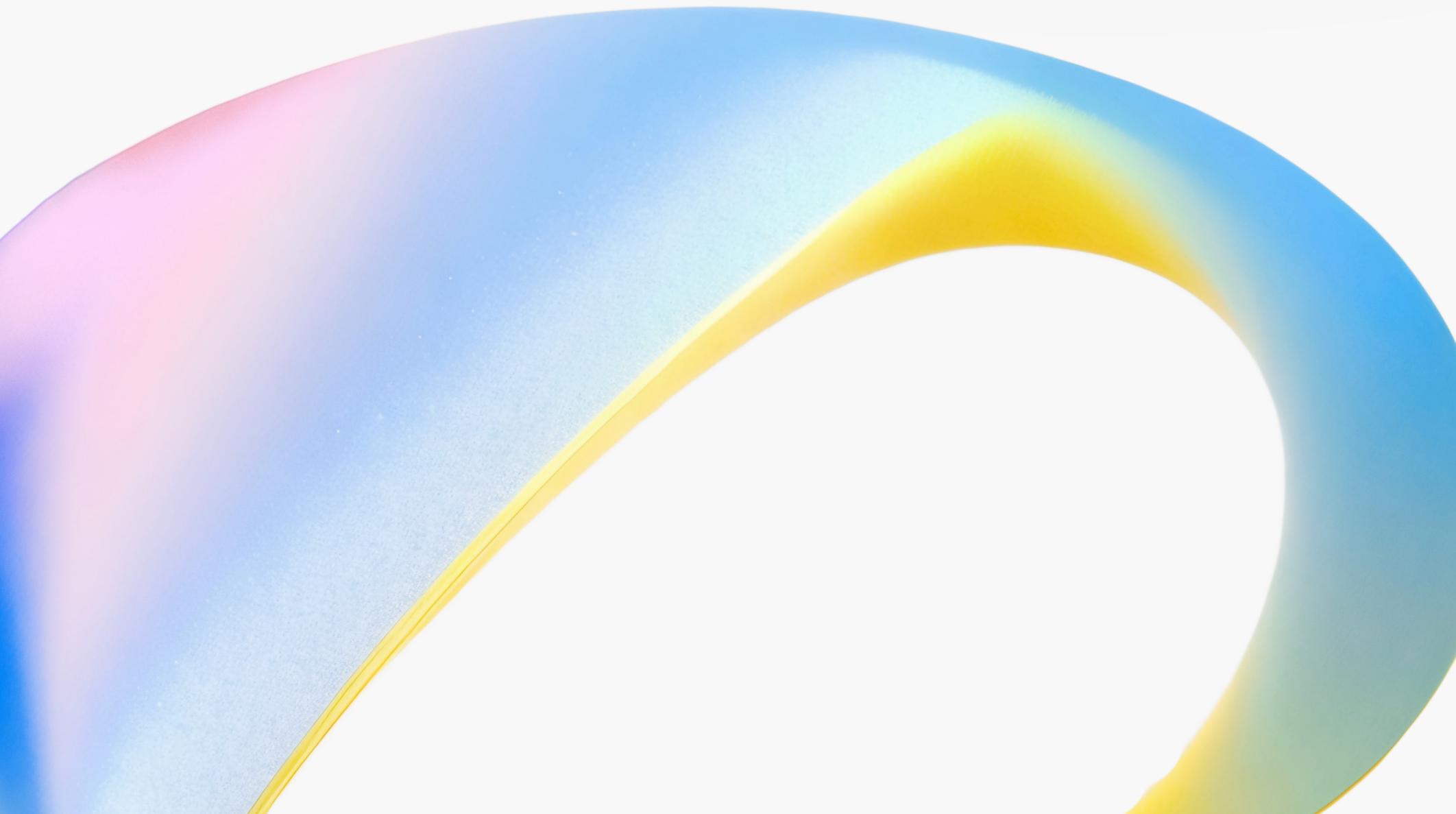
KPIs for generative AI

When evaluating projects, consider the feasibility, actionability, affordability, anticipated business value, and ultimate return on investment of each generative AI project.

Like any technology investment, you need to prove its worth.

Embed [ROI measures](#) into every use case and project, and establish KPIs to keep a pulse on progress along the way.

Consider using these commonly used generative AI KPIs to measure and report on the value of generative AI to your organization, board members, and stakeholders. These KPIs apply to generative AI use cases across various domains and industries.





Accuracy

Measure the accuracy of the generative AI model in producing relevant and correct outputs. This can be quantified using metrics such as precision, recall, F1 score, or mean squared error, depending on the nature of the use case.



Productivity

Assess the impact of generative AI on the productivity of the target persona or department. This could include metrics like the number of tasks completed per unit of time, response time, or reduction in manual effort required.



Customer satisfaction

If the generative AI use case involves customer-facing applications, use customer satisfaction surveys or feedback to gauge how well the AI system meets customer needs and expectations.



Cost savings

Measure the cost savings achieved through the use of generative AI. This may involve comparing the costs of employing the AI system to the expenses associated with traditional manual processes or outsourcing.



Turnaround time

Evaluate the time taken for the generative AI model to generate responses or outputs compared to traditional methods. Faster turnaround times can lead to increased efficiency and improved customer experience.



Quality of output

Assess the quality of the generative AI outputs against predefined criteria. This can be done through manual review or automated quality checks, depending on the use case.



Error rate

Quantify the rate at which the generative AI model produces incorrect or undesirable outputs. Minimizing error rates is crucial for maintaining accuracy and reliability.



Business impact

Identify specific business metrics that are directly impacted by the generative AI use case, such as increased sales, reduced customer complaints, or improved employee retention.



Training time and cost

Measure the time and resources required to train and fine-tune the generative AI model. Efficient training processes can lead to faster implementation and quicker time-to-value.



Human-in-the-loop metrics

If human intervention is involved in the generative AI process, track metrics related to the efficiency and effectiveness of human oversight.



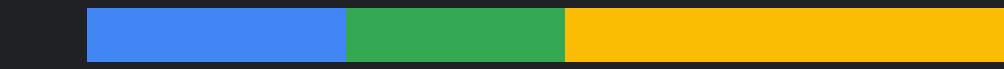
Scalability

Assess how well the generative AI model scales to accommodate increased usage or higher demands. Scalability is essential for long-term success.



Regulatory compliance

For sensitive domains like healthcare or finance, monitor how well the generative AI system adheres to relevant regulatory requirements and data privacy standards.



The value of generative AI in every industry

Retail and CPG

Insight

82%

of retail organizations consider customer service automation to be valuable⁵

Priority use cases

Creative assistance

Empower retail creative teams to create bespoke images and creative content for campaigns and editorial placements, and enable 1:1 personalization.

Conversational commerce

Interactively address queries, provide recommendations, and engage with customers in real time to help them make shopping decisions (for example, “Sure, here are some dresses in your size and style you may like, and here are influencer images for style inspiration”).

Customer service automation

Streamline customer service with conversation summaries and task automation.

New product development

Enhance internal consumer research with easy querying, summarization, and insight generation. Create copy concepts and claims for further testing, and visual concepts for product and packaging designs.



Hit the ground running with generative AI.

Take the Gen AI Navigator assessment to get personalized recommendations for your business.

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Contact us to get started today.

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