

FORECAST REPORT

Global AI Software Forecast, 2023 To 2030

Generative AI Will Have A 36% CAGR To 2030 To Capture 55% Of The AI Software Market

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Summary

Generative AI (genAI) software's wide applicability across industries and occupations will drive huge software sales growth. From 2023 to 2030, the off-the-shelf AI software market will have a 22% CAGR, reaching \$227 billion. By 2030, genAI will gain a 55% market share and have a 36% CAGR, and 64% of genAI software spend will come from specialized applications like security, healthcare and healthcare tools, and content marketing. Non-specialized genAI software spending will reach \$45 billion by 2030, driven by chatbots and communication platforms. This report defines the market size, growth drivers and inhibitors, and impact of the off-the-shelf AI software market and generative AI.

Additional resources are available in the [online version](#) of this report.

By 2030, GenAI Will Capture 55% Of The AI Software Market

The launch of ChatGPT in November 2022 created unprecedented demand for AI software: Two months after launch, ChatGPT captured 52% of AI social media attention and reached 100 million users. For comparison, Twitter required two years to achieve its first million users and Instagram required two and a half months. Forrester predicts that off-the-shelf genAI — the set of machine learning (ML) techniques such as large language models (LLMs) and diffusion models that leverage massive corpuses of data to generate new content (e.g., text, video, images, audio, code) — will see 36% average annual growth from 2023 to 2030 to capture 55% of the larger AI software market that includes both predictive AI (based on ML techniques) and generative AI (see Figure 1). Forrester uses different factors to calibrate this significant genAI growth:

- **Comparable growth of other tech-led black swan events.** Enterprise adoption of genAI software will reshape markets and lead to significant changes in the way we work. GenAI growth can be anchored by analyzing other significant tech events like the launch of social media, the smartphone, and the internet (see Figure 2). Plausible future scenarios for annual off-the-shelf genAI software growth range between 30% to 38%.
- **Supply-side revenues.** Forrester has modeled more than 200 generative AI companies to forecast that off-the-shelf genAI software spend will reach \$124 billion by 2030 (see Figure 3). Venture capital deal spend on generative AI in Q1 2023 more than doubled compared to the same period in 2022 to reach \$1.7 billion. Three genAI companies became unicorns with valuations surpassing \$1 billion in Q1 2023 — Anthropic (owns the Claude communication platform), Adept (a robotic process automation assistant), and Character.AI (a communication platform that creates virtual characters and personalities). Inflection AI reached a \$4 billion valuation, driven by the launch in May 2023 of a “kind” and “supportive” Pi personal assistant that converses based on a person’s interests. In China, Baidu launched a \$145 million AI venture fund in May 2023 to back generative development based on its ERNIE large language model.
- **Enterprise adoption.** The wide applicability of generative AI software across industries and occupations will drive exponential sales growth. Determining how enterprises adopt genAI is a subjective question, depending on how adoption and maturity are counted; although only 21% of enterprises had in-production genAI models in May 2023, a further 29% of enterprises have experimented with the technology. Forrester forecasts that by 2030, 62% of global enterprises with

between 50 and 250 employees will have explicit use of off-the shelf AI software in their business processes (not counting implicitly embedded genAI tools).

Enterprises are also training and/or fine-tuning open source models for some use cases that are accessed on repositories such as Hugging Face.

- **Software market share.** By 2030, off-the-shelf generative AI software revenues will reach \$124 billion to capture 55% of the AI software market. AI software will represent 13% of [global](#) off-the-shelf software spend — up from just 6% in 2022. AI software will grow at more than twice the rate of the overall software market, at 22% CAGR between 2023 and 2030. Generative AI software will grow even faster, at 36% CAGR between 2023 to 2030. The boundaries between non-AI software, AI-centric software and AI-influenced software will become fuzzier as more software vendors look to create software roadmaps driven by generative AI. Big tech players like Microsoft and Google have integrated genAI into their core offerings. Popular [B2B SaaS providers](#), such as Atlassian, HubSpot, Notion, Salesforce, Stack Overflow, and Zoom, are following suit.

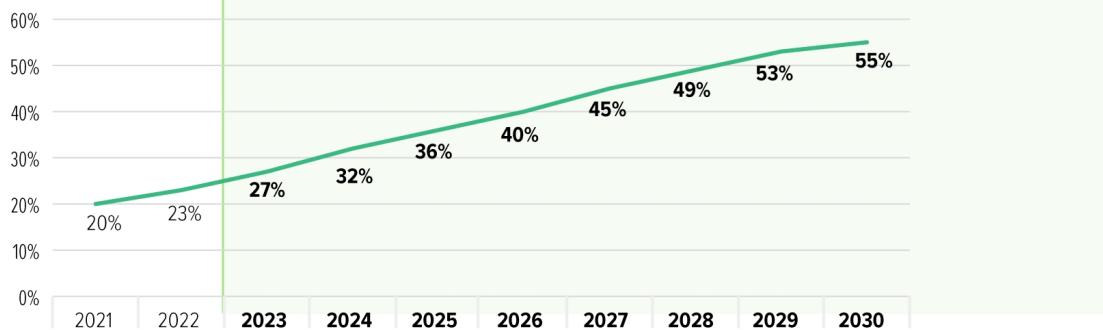
Figure 1

Generative AI Will Have 36% CAGR To 2030 And Capture 55% Of AI Software Spend

Generative AI software spend, billions of US dollars



Share of AI software spend from generative AI



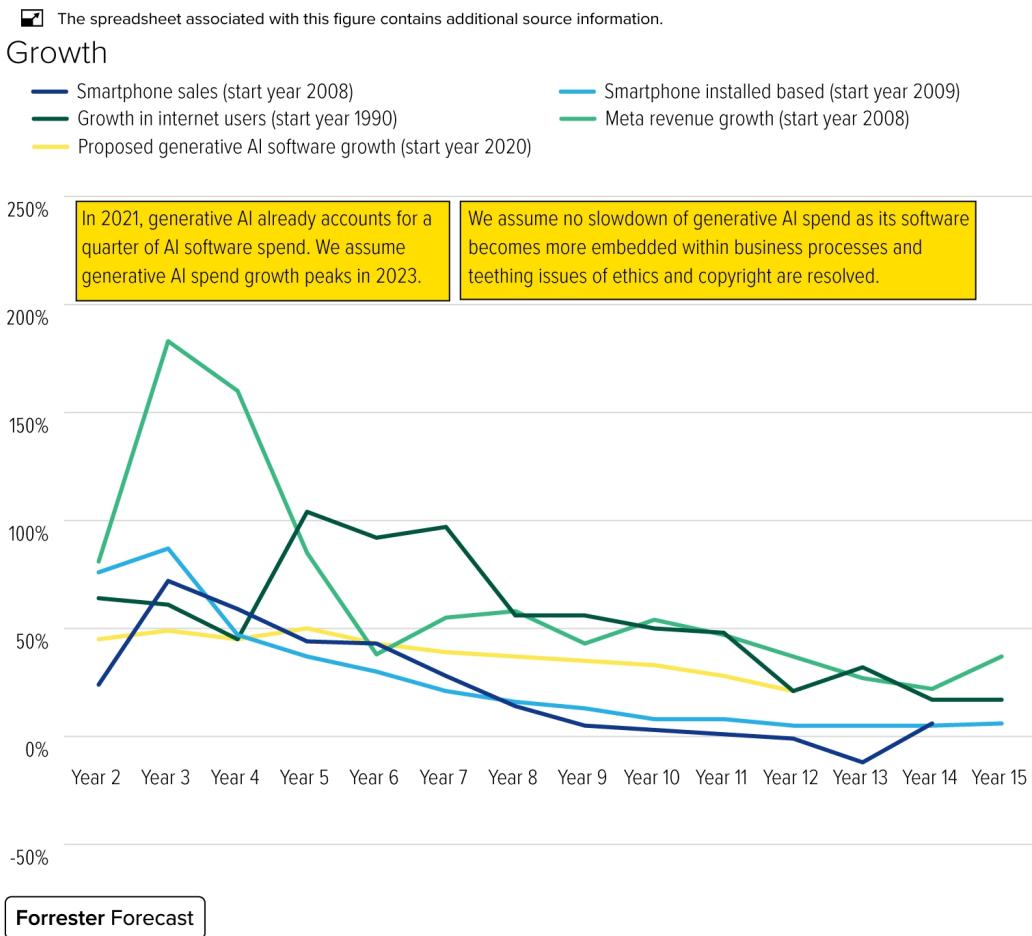
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Source: Forrester's Global AI Software Forecast, 2023 To 2030

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Figure 2

Generative AI Growth Compares To Other Tech-Driven Black Swan Events

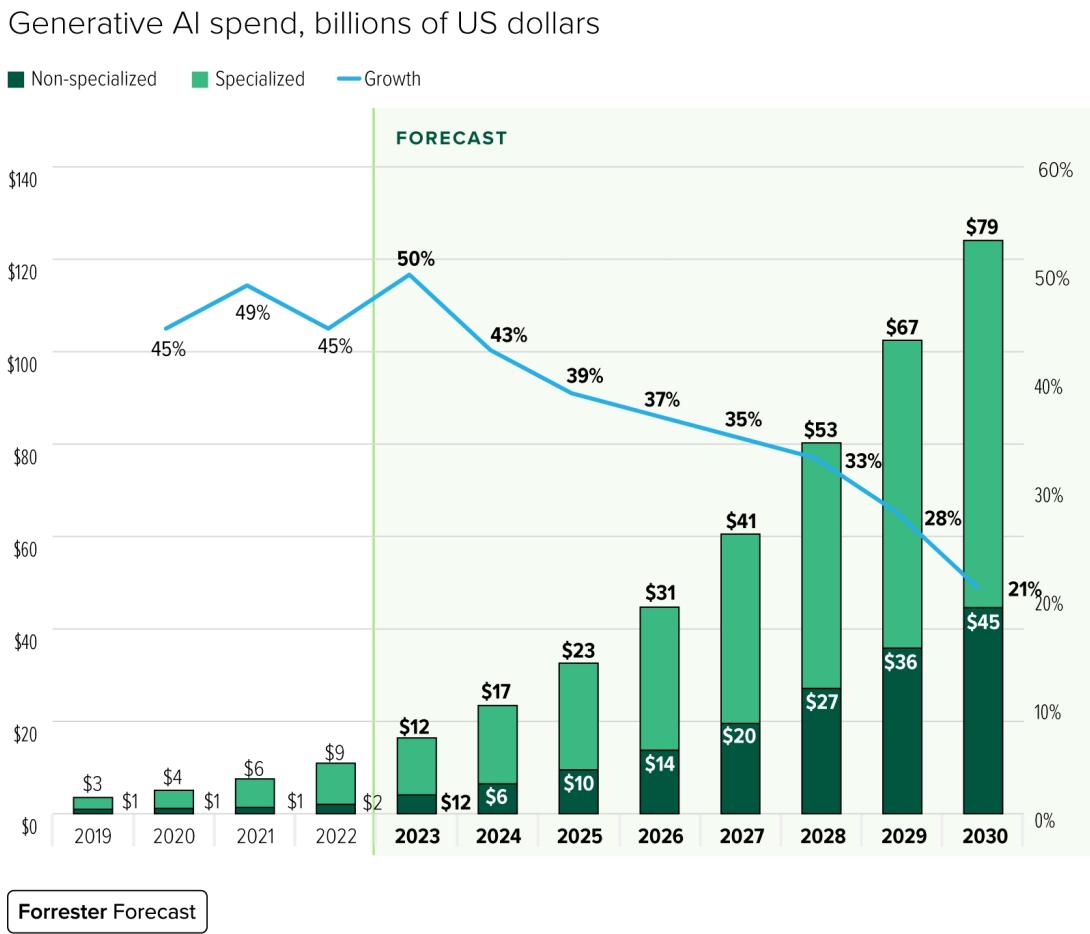


Source: Statista; Forrester Report, "2020 Mobile, Smartphone, And Tablet Forecast, Global (COVID-19 Update)"; and The World Bank Group

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Figure 3

Generative AI Software Spend Will Reach \$124 Billion By 2030



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Generative AI Software Helps Increase Occupation And Industry Productivity

Eighty-five percent of global AI decision-makers who anticipate using generative AI in the next 12 months believe that over the next two years, genAI will have a high impact on how employees do their day-to-day work and 79% believe genAI will impact what products and services they bring to market according to [Forrester's July 2023 Artificial Intelligence Pulse Survey](#). Consultancies are preparing for a considerable impact on working practices. Accenture is investing [\\$3 billion](#) to double its AI workforce by 2025.

PwC is planning to invest \$1 billion in genAI over the next three years, while IBM has paused hiring for those “replaceable” roles most under threat from genAI. In the US, Forrester forecasts that between 2023 and 2030, more than three-quarters of legal occupation jobs lost to automation will come from generative AI. At an industry level, genAI will capture more than half of automation job losses by 2030 in professional scientific and technical services, finance and insurance, and enterprise management industries (see Figure 4). GenAI software spend is driven by:

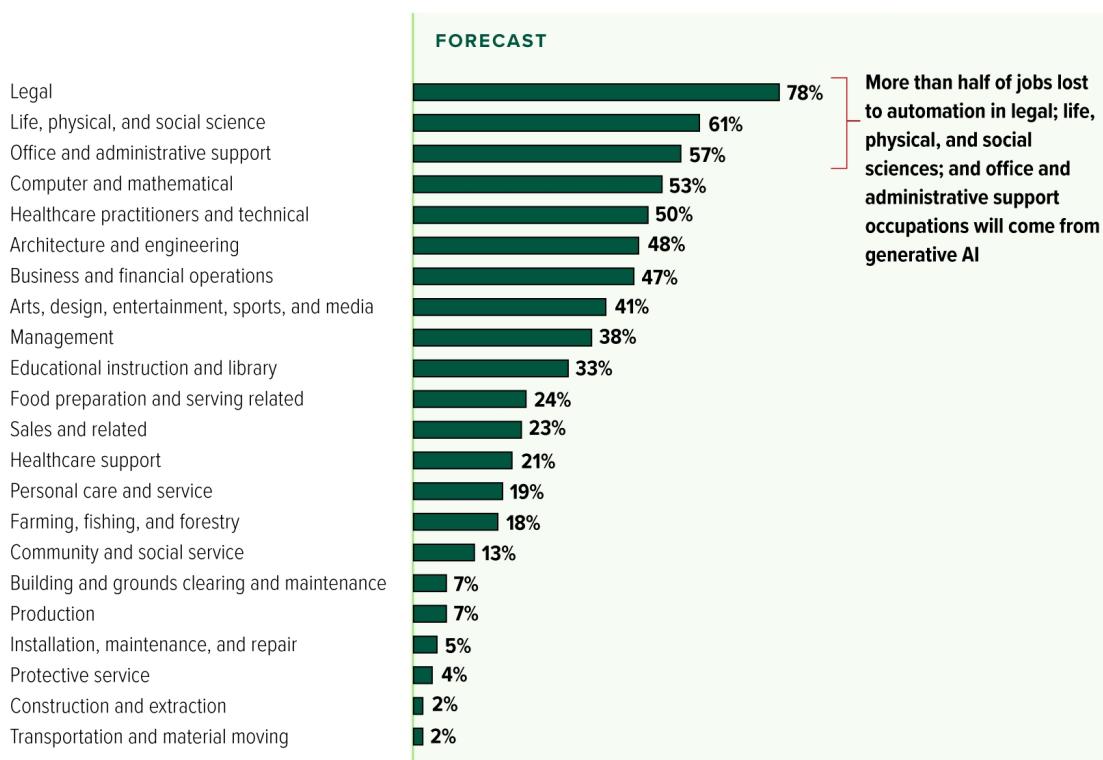
- **Specialized adoption.** In 2030, nearly two-thirds of genAI software spend will come from specialized applications that will help automate and improve occupation and industry productivity. Many such specialized AI tools already exist (see Figure 5). Security, health, content marketing, and product design/engineering will dominate specialized genAI spend, which will reach \$79 billion by 2030 (see Figure 6). GenAI for text (LLMs) is often associated with human language generation. However, LLMs can also be developed for the many “languages” of product engineering. Software coding is the most mature first use case, but many other use cases are in development, including drug discovery, automotive parts design, and packaging design. Every product engineering/design discipline will have applicable use cases. GenAI also becomes an indispensable tool to police the use of genAI by bad actors using it for fraud, chaos, and other malicious purposes.
- **Generalized adoption.** Generalized chatbot and communication platforms drive improvements and efficiency gains in customer and employee experience (CX) and will capture more than 50% of generalized AI software spend (see Figure 7). AI software spend in customer and human capital management will reach \$42 billion in 2030 (see Figure 8). OpenAI, the owner of communications platform ChatGPT, projects \$1 billion in revenues in 2024 — up from \$200 million in 2023 and just \$30 million in 2022. Twilio recently adopted generative AI technology to improve sales and marketing team conversations through a cookieless personalized service that builds out customer profiles from aftercall summaries and sentiment analysis. Synthesia’s video creation platform, which creates custom AI avatars without the need for costly camera or studio production fees, saw some of the fastest software AI growth over the last year as its user base quadrupled.
- **New business revenues.** Shutterstock compensates content creators if their IP is used in the development of generative AI models across photography, video, and music. Community platforms, like Stack Overflow and Reddit, create new revenue streams by charging AI developers for data access, and Twitter is also raising enterprise data access prices. GenAI workloads offer revenue opportunities to

hyperscalers to develop and monetize data centers. Nvidia's share price tripled in the first half of 2023, driven by data center growth. GenAI companies are partnering with hyperscalers to access computing power; OpenAI with Microsoft, Anthropic with Google, and Stability AI with Amazon. Language learning platform Duolingo generates additional revenues from a new subscription service that gives users access to an AI roleplay tutor; this allows users to practice real-world conversations and gives response accuracy and response complexity feedback.

Figure 4

Generative AI Helps Drive US Job Automation, Both By Occupation And Industry

Share of total jobs lost to automation from generative AI by 2030, by occupation

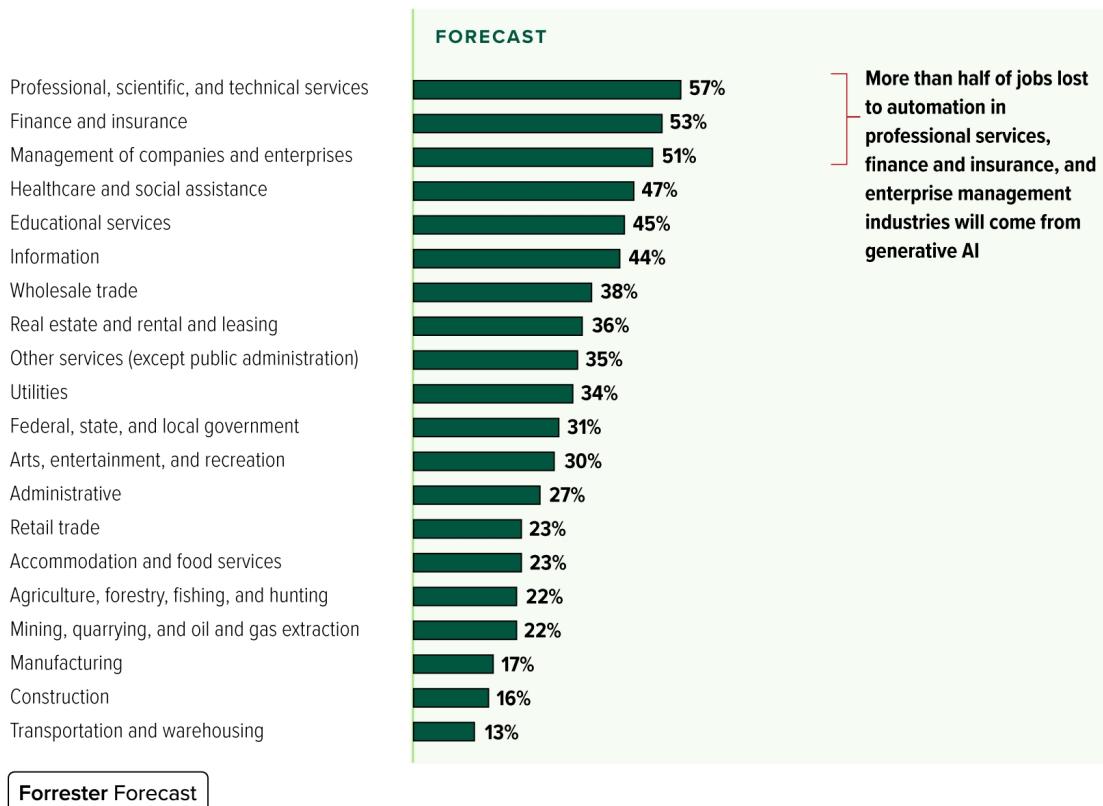


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Share of total jobs lost to automation from generative AI by 2030, by industry



Forrester Forecast

Note: : “Federal, state, and local government” excludes state and local schools and hospitals and the US Postal Service; “Administrative” is fully defined as “Administrative and support and waste management and remediation services.”

Source: Forrester’s Global AI Software Forecast, 2023 To 2030

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Figure 5

Industries And Occupations Already Adopt Specialized Generative AI Software

Occupations	Example	Source
Legal	Legal software company Disco saw revenues grow 18% in 2022 to reach \$135 million and launched AI chatbot Cecilia to allow lawyers to ask questions and receive answers with specific document citations.	CS Disco, Inc.
Life, physical, and social science	Data science and digital health help to deliver better medicines faster, such as by analyzing the characteristics of patient journey and treatment sequencing over time.	ConcertAI
Office and administrative support	Uses include front desk and help desk AI-powered conversations on telephone, chat, messaging platforms, and voice assistants.	Concerto
Computer and mathematical	For code assistants, generative AI tools like GitHub Copilot and Replit make software development easier, faster, and more accessible to the 100 million software and citizen developers.	Replit
Healthcare practitioners and technical	Nuance launched a clinical documentation workflow that uses GPT-4 to reduce the administrative burden of clinicians.	Nuance

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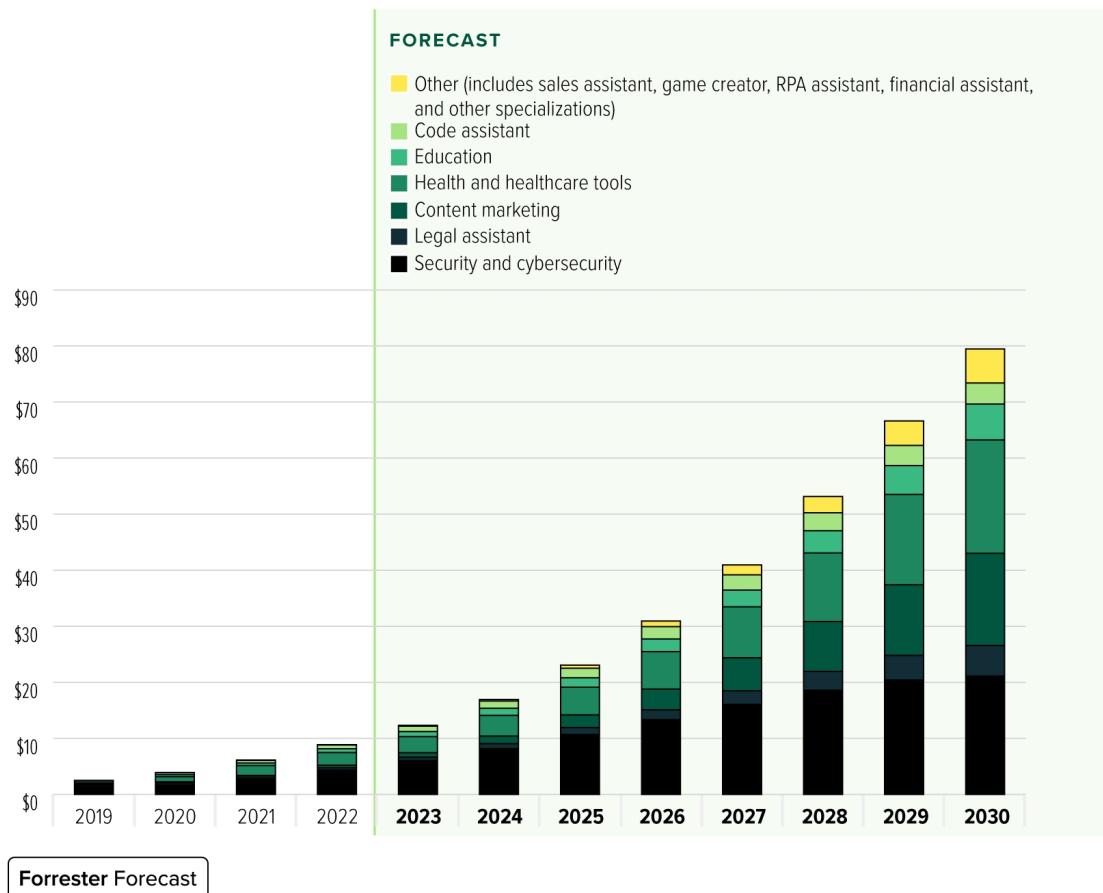
Industries	Example	Source
Professional, scientific, and technical services	Jasper uses generative AI to save time writing composition tasks to use for higher-value ideas creation, research, and marketing distribution tasks.	Jasper
Finance and insurance	With AI pricing and revenue management, generative AI gives instant answers to pricing questions.	Revenue AI
Management of companies and enterprises	Complex workflows are automated with no-/low-code.	WorkFusion
Healthcare and social assistance	Cera uses digital and data analytics technologies to monitor its users' health, enabling their families and medical professionals to track their wellbeing in real-time and uses generative AI to create infographics, videos, and other content that explains complex medical concepts in a way that is easy to understand.	Cera
Educational services	Online teaching platform VIPKid uses generative AI to monitor a student's English-speaking pronunciation and intonation and provide correction and improvement suggestions. Duolingo launches a new subscription tier with access to an AI roleplay tutor powered by GPT-4.	VIPKid Duolingo

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Figure 6

Security, Health, And Content Marketing Lead Specialized Generative AI Software Spend

Specialized generative AI spend by type, billions of dollars



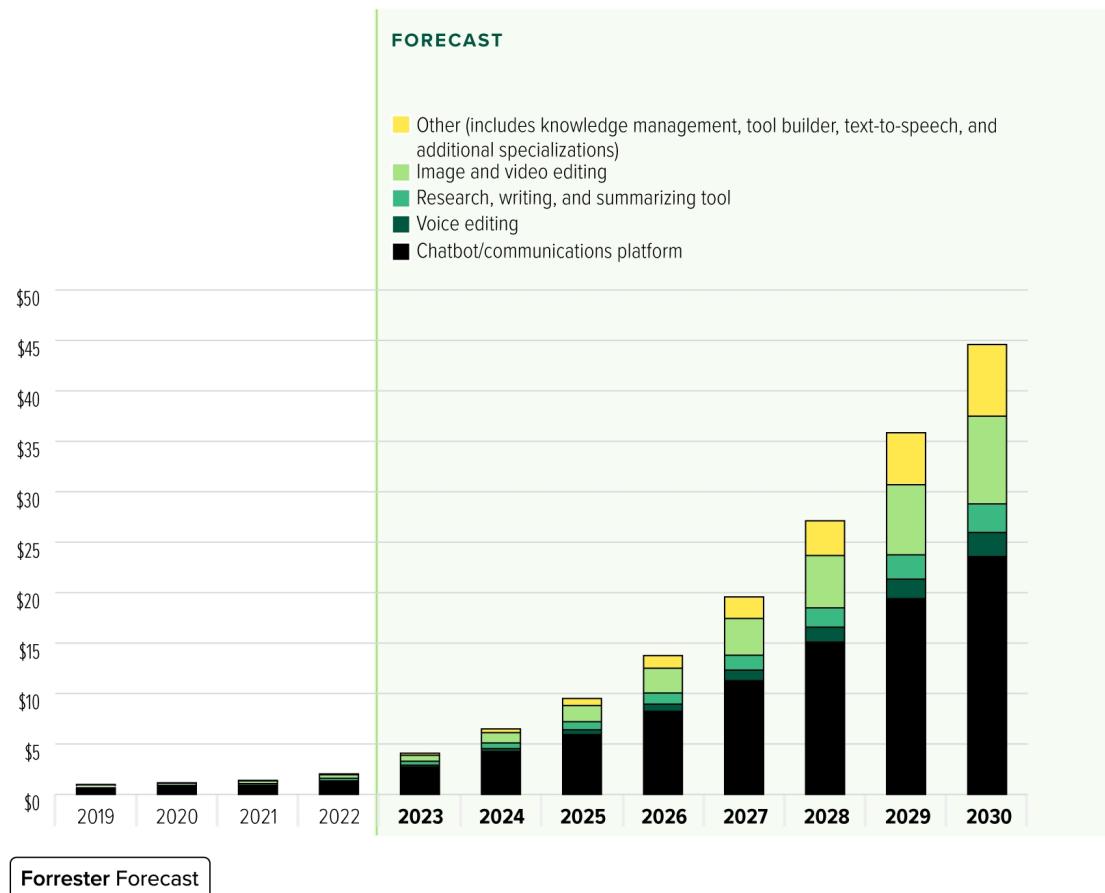
Source: Forrester's Global AI Software Forecast, 2023 To 2030

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Figure 7

Chatbots And Communication Platforms Lead Non-Specialized Generative AI Software Spend

Non-specialized generative AI spend by type, billions of US dollars



Forrester Forecast

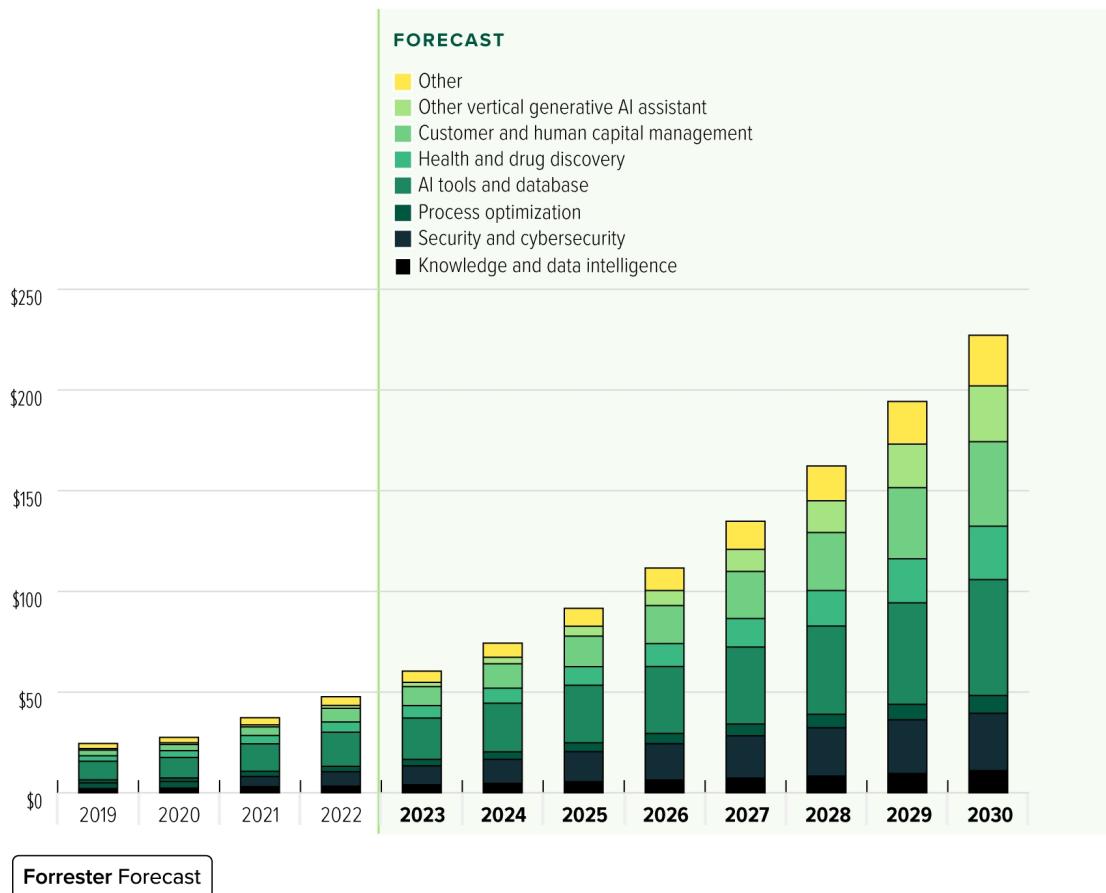
Source: Forrester's Global AI Software Forecast, 2023 To 2030

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Figure 8

Tools And Customer And HCM Lead AI Software Spend

AI software spend by type, billions of US dollars



Source: Forrester's Global AI Software Forecast, 2023 To 2030

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Generative AI Limitations Will Dampen Short-Term Enterprise Adoption

Forrester expects modest productivity gains from the use of genAI over the next two years until there are improvements to regulatory clarity, intellectual property rights, model ethics and biases, risk mitigation, and reduced model “hallucinations.” Five constraints that dampen genAI adoption include constraints on:

- **Trust.** Larger models are more capable of reflecting training data [biases](#). Biases can include facial recognition systems that discriminate based on race and gender. Hallucinations in genAI software programs also make them harder to trust. Trust in copyright is weakened when public data sources are used but not referenced in tools like [GitHub](#), Microsoft, and OpenAI and when artist images are used without [consent](#) in image generation tools like Stability AI, DeviantArt, and Midjourney. [JPMorgan Chase](#) recently decided to defer its use of genAI until its constraints are better managed.
- **Prediction.** Current use of genAI focuses more on new content creation for text, image, and video and less on making accurate “explainable” [predictions](#) from historical real-world data. In student education, the UK [Russell Group](#) of universities is supporting students to become AI-literate and adapting assessments to support the ethical use of generative AI. However, predicting how much written content comes from large language models in student assessment is challenging. Princeton University’s [GPTZero](#) tool, intended to analyze writing complexity and writing variety for AI-generated content, often penalizes non-native speakers who tend to use less variation in their writing.
- **Outcome.** GenAI chatbots are stochastic — without oversight, there is no guarantee they will give the same output to the same question every time; genAI chatbot output depends on its interpretation of the question asked. The [Cyberspace Administration of China](#) has yet to issue a license for any genAI product. Chinese regulators steer model outputs away from a list of banned topics, forcing LLM tools like ERNIE to use extensive moderation. [Expressive Barista](#)’s AI digital self-service workplace assistance tool constrains outputs by restricting the types of questions an employee can ask to ensure questions are answered in a timely manner.
- **Competition.** Financial institutions use genAI to increase client stickiness rather than to develop and sell off-the-shelf financial assistant software. Bloomberg plans to integrate LLM [BloombergGPT](#) into its terminal product to help clients monitor investment portfolios and answer financial questions. Morgan Stanley is testing genAI push and pull technology to allow its financial advisors to pull information from its in-house AI-powered chatbot to “make them the most knowledgeable person in the room” when they speak with clients, and to push client-personalized investment ideas.
- **Ethics.** Personalized AI chatbot [Xiaoice](#) remembers past interactions to provide personalized and context-aware responses to more than 650 million users. Its empathetic dialogue provides users with emotional support and a sense of social

belonging. In May 2023 in China and Japan, Xiaoice launched its [GPT Human Cloning Plan](#), which enables users to create AI clones of celebrities, experts, scholars, or even ordinary individuals from the ingestion of 3 to 5 minutes of public videos and personal social media data. The ethics of digital human cloning are complex, especially when it could be used to rejuvenate tarnished personalities and make them less accountable for historic misdemeanors.

Supplemental Material

The Forecast Methodology

Forrester's forecasts offer a quantitative framework for understanding market drivers and inhibitors across several industries to help clients plan and prioritize investment decisions.

Our forecasts employ a unique methodology: By leveraging demand-side data balanced with company supply-side metrics and working closely with Forrester's subject matter experts, we provide a highly detailed understanding of each market. Our forecasts provide data and market metrics over a five-year period for a variety of markets, including e-commerce, digital marketing, and business technology. The forecasting team creates more than 20 forecasts annually across North America, Europe, Asia Pacific, and Latin America.

As part of the forecast modeling, Forrester develops comprehensive historical and base-year market size estimates based on a variety of sources, including public financial documents, executive interviews, Forrester's proprietary primary research and surveys, and analysis of global companies' distribution and growth.

All of Forrester's forecasts are designed by a dedicated team of forecasting analysts who build the models, conduct extensive industry research, and manage the process of formally building consensus among Forrester's analysts. Forecast analysts have backgrounds in investment banking, management consulting, and market research, where they developed extensive experience with industry and company forecasting.

Most forecasts are updated on an annual basis and include historic numbers. Each report comes with an Excel deliverable with all the details of the forecast, including definitions, assumptions, and exchange rates.

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