The Future of Generative AI: An Analysis of the Leaders, Opportunities, and Threats

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What's Inside

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Introduction

A new era is here for business professionals and knowledge workers: Generative AI (genAI). GenAI and other foundation models are radically changing the AI game, taking technology to new heights and bringing powerful capabilities to even the most nontechnical of users.

In an AI-driven world, there is the power to create both competitive advantage and creative disruption in nearly every industry. To capitalize—and not fall behind your peers—today's whirlwind of activity must evolve into a generative AI strategy driven by the C-suite.

The likes of ChatGPT, Stable Diffusion, Dall-E and Midjourney have awakened the business world to genAI. An exponential improvement in ease of use and capability has attracted over 100 million users in just a few months. While startups race to build disruptive products and excite investors, incumbents are seeking to acquire and deploy the right generative AI systems to push their business forward.

And this impact will be nothing short of transformative.

Goldman Sachs predicts the technology could boost annual global GDP by 7% over the next 10 years. It's no surprise that companies are taking notice: In the last 90 days, there has been a 413% increase in business documents published that mention generative AI in the AlphaSense platform.

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22,948
TOTAL DOCUMENTS

413.02%
90D CHANGE
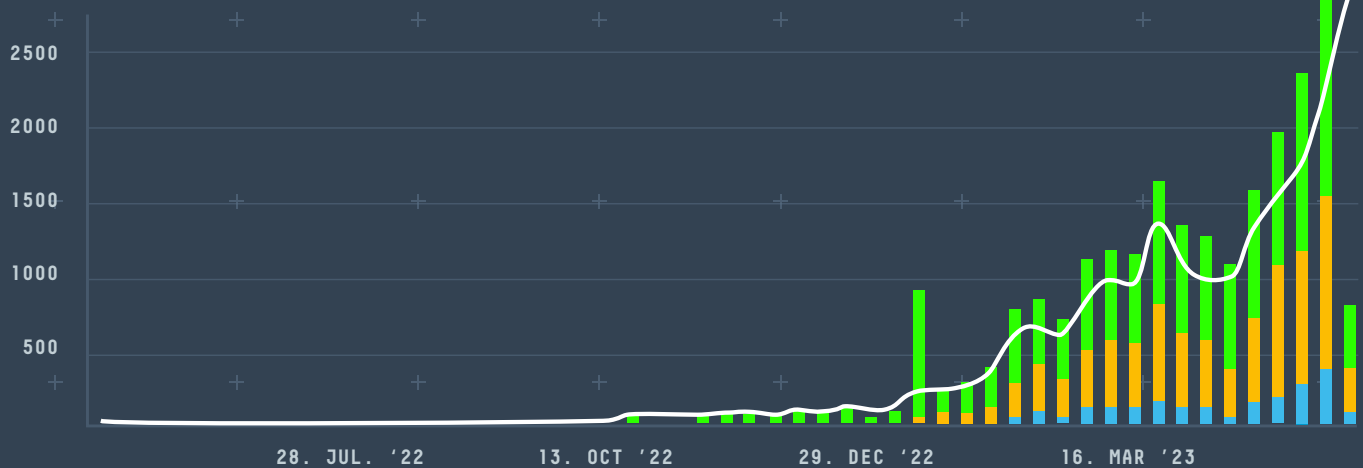
Using the platform, we summarized the discussion around generative AI from the perspective of analysts, executives, experts, and journalists so you can quickly get smart on this evolving market landscape.

In this report, we answer the following top-of-mind questions:

- What is generative AI?

- What is the expected market size and growth?

- Which areas of businesses will be impacted the most?

- What companies are leading this transformation?

- How can we expect it to impact industries?

- What risks should we be aware of?

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High-Level Insights

There has been a 413% increase in documents published that mention generative AI.

The genAI market size is estimated at $11.3B in 2023 and is forecasted to be a $52B to $60B opportunity in the next 5 years.

The six areas that will shape generative AI are: market research, operations, support, marketing, learning & development, and product.

Alphabet, Microsoft, OpenAI lead the genAI conversation with the highest number of document mentions.

Software and Interactive Media hold the highest industry share of conversation.

Misinformation, data privacy, and industry consolidation present the greatest threats.

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What is Generative AI?

Generative AI refers to technologies using deep learning and natural language processing (NLP) to generate new content and data, including images, sounds, text, and code.

A generative model can learn from datasets and specific examples to create something entirely new based on that information. The most popular types of generative AI, large language models (LLMs), study vast libraries of content to generate novel combinations of text in natural-sounding language.

Here is how some analysts, experts, and executives are defining genAI:

SAP

"

Generative AI refers to a type of machine learning that involves training artificial intelligence models to create new data and output that did not exist in the training data. Unlike classification and prediction algorithms, generative AI models can generate output based on their understanding of the patterns and structures in the training data.

"

DZMITRY MAZOUKA, SAP

AlphaSense

Deloitte.

> ❝
> Generative AI refers to artificial intelligence that can generate novel content, rather than simply analyzing or acting on existing data. Generative AI models produce text and images: blog posts, program code, poetry, and artwork. The software uses complex machine learning models to predict the next word based on previous word sequences, or the next image based on words describing previous images.
> ❞

NITIN MITTAL, DELOITTE

NVIDIA

> ❝
> With generative AI, we have gone beyond perception to now the generation of information. No longer just the understanding of the world, but to also make recommendations or generate content that is of great value.... Just about every interaction you have with computers in the future will have some generative AI connected to it.
> ❞

JENSEN HUANG, NVIDIA

BCG

> ❝
> Generative AI is a set of algorithms, capable of generating seemingly new, realistic content—such as text, images, or audio—from the training data. The most powerful generative AI algorithms are built on top of foundation models that are trained on a vast quantity of unlabeled data in a self-supervised way to identify underlying patterns for a wide range of tasks.
> ❞

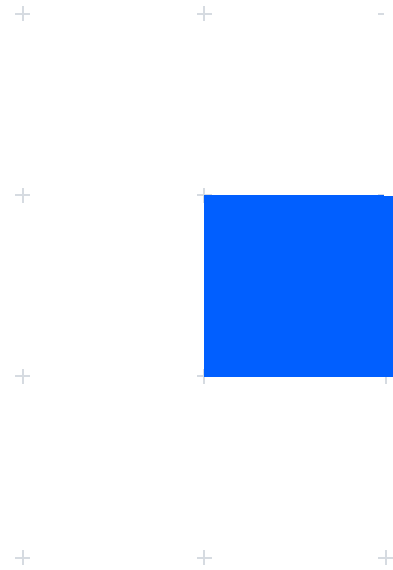**BOSTON CONSULTING GROUP**

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Morgan Stanley

" Generative AI refers to unsupervised and semi-supervised machine learning algorithms that can use existing text, images, audio or video to create new content. While early results underscore that the models need to be trained, or 'tuned,' to produce accurate, trustworthy and valuable outputs, companies point to these algorithms as the basis for future software that will be useful or even essential in every industry and profession. "

BRITTANY SKODA, MORGAN STANLEY

Market Size

The generative AI market is projected to grow from $11.3B in 2023 to

$51.8B

by 2028 according to Markets and Markets

Boston Consulting Group estimates that generative AI will achieve a 30% share, or

$60B,

of the total AI market by 2025

Precedence Research projects the global generative AI market size will hit

$118B

by 2032

Generative AI could drive a 7%, or

$7T

increase in global GDP in the next 10 years, according to Goldman Sachs

Milestone Events in the History of Generative AI

1957
Noam Chomsky releases a book about "Phase–Structure Grammar:" translating natural language into a format computers can understand.

1966
Joseph Weizenbaum develops the first chatbot, ELIZA, at the MIT Artificial Intelligence Laboratory.

2003
Yoshua Bengio develops the first feed-forward neural network language model, which predicts the next word in a sequence.

2013
Google researchers create Word2vec, using a neural network to learn word associations from a large set of text.

2014
Ian Goodfellow develops the first generative adversarial network (GAN), which generates new data based on a training set.

2016
Aaron van den Oord introduces Pixel RNN, a generative model that creates high-quality images pixel by pixel.

2017
Google researchers propose a new network architecture, the transformer, to replace recurrent neural networks.

2018
Alec Radford's generative pre-training (GPT) research shows how a generative language model can acquire and process knowledge unsupervised.

Jacob Devlin introduces BERT, a language model including sentiment analysis, named entity recognition, and text classification.

2019
OpenAI releases the complete version of GPT-2, which was trained on more than 9 million documents.

Google develops a natural language processing model called T5 (Text-to-Text Transfer Transformer).

2020
NVIDIA introduces Megatron to generate news headlines and full stories.

2021
OpenAI released Codex, a model that translates natural language into code.

2022
Stability AI develops Stable Diffusion to generate images based on text descriptions, leading to DALL-E and Midjourney.

ChatGPT releases GPT-3.5 to the public, reaching 1 million users within five days.

2023
Microsoft invests $10B in ChatGPT maker OpenAI.

Microsoft integrates ChatGPT technology into the Bing search engine.

Google releases its own generative AI chatbot, Bard.

OpenAI releases another version of their bot, GPT-4, along with a paid "premium" option.

Timeline markers: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023

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The Six Areas Shaped by Generative AI

Market Research

Generative AI is well-positioned to [significantly streamline market research](). This type of AI can summarize documents in seconds with increasing accuracy, whereas a researcher might spend hours manually analyzing earnings transcripts and research reports. Moreover, generative AI tools that learn strictly from premium business content can more effectively summarize long-form documents associated with key use cases for market researchers. The quality of content is key here, as consumer-grade genAI models are often learning from unverified, low-quality sources of information, thus informing their output.

These systems include prepackaged questions from key workflows that market intelligence professionals ask about companies, their earnings, the outlook, and the competitive landscape.

Examples

✔ Streamline earnings analysis with summaries of investor sentiment and market movements pre-earnings, as well as highlights, lowlights, and guidance after the call.

✔ Capture company outlooks with Wall Street's aggregated perspective about bullish and bearish forecasts, competitive landscape, and reasoning behind upgrades and downgrades.

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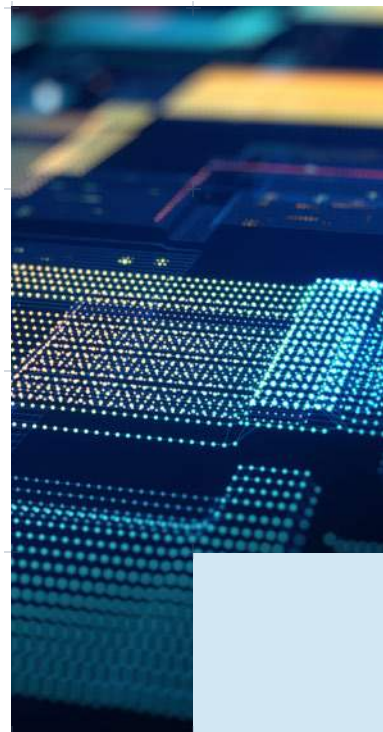
- ✔ Understand at a glance what former employees, competitors, and channel partners of companies are saying about strengths, opportunities, threats, and weaknesses.

- ✔ Quickly grasp where a company beat or missed expectations, and extract guidance on critical KPIs.

Operations

Generative AI helps operations professionals and their teams get the most mileage out of data and content, though work is ongoing to still protect data and ensure compliance. Chatbots may prove particularly useful by giving prompts and instructions when and where associates need them, increasing decision confidence and productivity.

Examples:

- ✔ Automatically create a product description for an SKU when it joins a database.

- ✔ Analyze quarterly reports to see which OKRs to develop, or which differentiators or areas of advantage to prioritize based on this competitor analysis.

- ✔ Audit figures and content in a database based on specific compliance and regulatory standards.

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Marketing

Marketing professionals are using generative AI tools to boost productivity in several ways, including generating content drafts and imagery that they can review and refine. GenAI can also create derivative assets much faster, freeing up time for deeper strategizing and allowing for personalization at scale.

Examples:

✔ Generate an introduction to a whitepaper or webinar script, or develop interview questions for a customer case study.

✔ Repurpose content assets, like a blog post and social media messaging, based on a group of event transcripts.

✔ Personalize digital marketing across different channels for specific audiences.

Support

For customer service teams, generative AI can guide interactions by recommending a script for a call, suggesting targeted offers per customer, and summarizing conversations. When it comes time for analysis, genAI can monitor the content and tone of customer interactions to assess whether that shopper is likely to benefit from the information they received and how it was delivered.

Examples:

✔ Write an informational article on a new feature, or turn a support article into an FAQ .

✔ Find out what questions users are likely to ask about a product based on different documentation.

✔ Analyze areas for interaction improvement based on customer survey responses.

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Learning and Development

Similarly to support content, generative AI can help internal educators brainstorm useful content from any source material and produce it in short order. Once best practices are captured and documented, these teams can use genAI to automatically create or augment materials for onboarding and training.

Examples:

✔ Generate a new hire/ promotion best practices guide, and customize learning curriculums for different teams and functions.

✔ Identify and answer frequently asked questions in an internal source of truth.

✔ Turn a written training manual into a video (and vice versa), and analyze which resources will fill a skills gap.

Product

Beyond writing code based on text prompts, generative AI helps product teams prioritize features and functions based on unstructured customer feedback. It also helps them create content to support its roadmap with a mix of clear language, product terminology, and brand voice.

Examples:

✔ Generate product error alerts, new feature tags, and other messaging personalized for a user.

✔ Find out a user's job-to-be-done and likelihood to use a feature based on a customer interview transcript.

✔ Repurpose structured and unstructured feedback to turn bug tickets and code comments into release notes.

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Leaders and Headlines

Though tech giants are leading the implementation of generative AI, the top 10 highest-valued private companies offering generative AI have a collective value of roughly $30 billion, according to Morgan Stanley.

AlphaSense has identified the following companies mentioned the most in relation to genAI, with Alphabet leading the pack.

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Alphabet, Microsoft, OpenAI Lead Highest Number of GenAI Mentions

Companies in search results—500+

COMPANY	DOCUMENT COUNT	MARKET CAP ($ USD)	REVENUE ($ USD)
Alphabet Inc	1,216	1422B	284.6B
Microsoft Corp	930	2322.2B	207.6B
OpenAI	616	PRIVATE	35M
NVIDIA Corp	590	714.4B	27B
Meta Platforms Inc	340	597.3B	117.3B
Adobe Inc	331	157.8B	18B
Amazon.com Inc	203	1130.6B	524.9B
Baidu Inc	154	40.8B	17.8B
Salesforce Inc	146	200.6B	31.4B
C3.ai Inc	128	2.3B	266.7M
Alibaba Group Holding Ltd	116	211.7B	124.4B
Shutterstock Inc	103	2B	844M
NexTech AR Solutions Corp	95	53.2M	2.4M
International Business Machines Corp	95	110.8B	60.6B
Samsung Electronics Co Ltd	87	325.2B	226.6B
Apple Inc	83	2729.8B	385.1B
Intel Corp	74	125B	56.4B
Absci Corporation	66	121.2M	5.7M
Snap Inc	65	13.9B	4.5B

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Ripped from the Headlines: Launches, Announcements, and Acquisitions

DeepMind has predicted the structure of almost every protein known to science

MIT Technology Review | July 28, 2022

CICERO: AI That Can Collaborate and Negotiate With You

Meta press release | November 22, 2022

DALL-E image generator is now open to everyone

Ars Technica | September 28, 2022

Salesforce Announces Einstein GPT, the World's First Generative AI for CRM

Salesforce press release | March 7, 2023

Microsoft Invests $10 Billion in ChatGPT Maker OpenAI

Bloomberg | January 23, 2023

Morgan Stanley wealth management deploys GPT-4 to organize its vast knowledge base

Fortune | March 14, 2023

OpenAI releases GPT-4, a multimodal AI that it claims is state-of-the-art

TechCrunch | March 14, 2023

Moderna teams up with IBM to put A.I., quantum computing to work on mRNA technology used in vaccines

CNBC | April 20, 2023

NVIDIA Brings Generative AI to World's Enterprises With Cloud Services for Creating Large Language and Visual Models
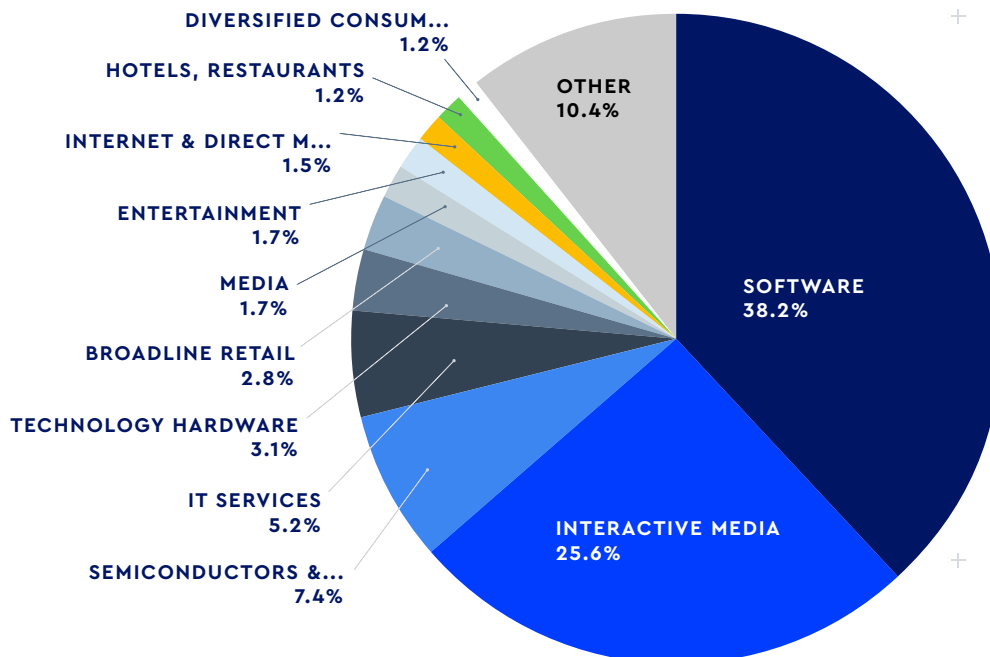
Nvidia press release | March 21, 2023

GenAI Opportunities by Industry

Unsurprisingly, the technology and media industries are early adopters of generative AI tech. While many companies will use one of the many generative AI models and APIs coming to market, some need to build custom LLMs with their proprietary data and content based on industry expertise. Either way, genAI is poised to reinvent productivity across nearly every vertical.

Software and Interactive Media Hold the Highest Industry Share of Conversation

DIVERSIFIED CONSUM...
1.2%

HOTELS, RESTAURANTS
1.2%

INTERNET & DIRECT M...
1.5%

ENTERTAINMENT
1.7%

MEDIA
1.7%

BROADLINE RETAIL
2.8%

TECHNOLOGY HARDWARE
3.1%

IT SERVICES
5.2%

SEMICONDUCTORS &...
7.4%

OTHER
10.4%

SOFTWARE
38.2%

INTERACTIVE MEDIA
25.6%

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Software & IT Services

Generative AI is rapidly changing the software and IT verticals by helping businesses generate content, extract insights, and write code—all using NLP. Activities in product development, marketing, and customer support that once took significant time and deep expertise will no longer drain resources. Using genAI to automatically and consistently learn from product usage and customer feedback will enable software and IT services sellers to develop features, reach target users, and support clients at record speed.

> 66
>
> With the generative AI products we launched last week, the rate at which we can automate the consumer experience and reduce costs for our brands in both voice and messaging channels is incredibly exciting.
>
> 99

JOHN DENEEN COLLINS, CFO, LIVEPERSON

Internet & Interactive Media

Generative AI offers internet-based services, social media platforms, and other apps a way to deliver better experiences that feel natural for the user. For search and publishing apps, there's ample opportunity to build leaner creative engines to increase content supply, improve recommendations and product experiences, and create and serve more relevant ads.

Meanwhile, companies that rely on user data are introducing generative AI to identify cyber threats and automate security workflows.

> 66
>
> I think those who can deliver results that are meaningful and reliable and do that at scale are going to be in a good position. And our 1 billion user data profile, that is a great start for us to do it. But as with any technology, there's a lot of iteration, there are going to be areas of opportunity beyond product.
>
> 99

MATTHEW GOLDBERG, CEO, TRIPADVISOR

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Hardware & Semiconductors

For product-led companies like hardware and semiconductor manufacturers, genAI will go a long way in improving predictive diagnostics and reducing support costs. At the same time, it has the power to create training data at a previously untenable scale for more cost-efficient learning and product development.

More importantly, for the industry as a whole, adopting large language models and other generative AI capabilities requires significant increases in compute performance. What naturally follows is a demand for GPUs and other high-capacity tech infrastructure, areas poised to grow significantly.

> **"**
>
> Network becomes a very key part of fulfilling generative AI dream here... We're doing $200 million as far as we could estimate of silicon, Ethernet switches and fabric that goes into those AI networks as far as we could identify in hyperscalers. With generative AI and the urgency and excitement of it coming in that we are seeing today, we are seeing that increase very, very dramatically.
>
> **"**

HOCK E. TAN, CEO, BROADCOM

Life Sciences

The $2 trillion drug discovery industry is leaning heavily into generative AI to discover disease targets, design pharmaceuticals, and predict the behavior of the medicines in the body. For example, Moderna and IBM are using the technology to help scientists better understand how molecules behave and facilitate the creation of entirely new ones.

> **"**
>
> With the support of generative AI, we have achieved several industry milestones and advanced the drug candidates discovered by generative AI to the clinical stage. In 2022 alone, we nominated nine preclinical candidates utilizing generative AI.
>
> **"**

ALEX ZHAVORONKOV, CEO, INSILICO MEDICINE

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Consulting

Internally and externally, consulting companies are finding myriad ways to harness generative AI. Several are using genAI to accelerate consulting, design, engineering and operations to increase the productivity of associates.

From accounting and market research to financial planning and proposal building, consultancies are fine-tuning genAI models to specialize their services to the industries they serve. For example, both Deloitte and IBM Consulting have launched practices to help clients adopt genAI for business growth.

"

As we approach a transformative era marked by a fundamental shift in the interaction between humans and machines, the remarkable rate of genAI adoption by consumers serves as a clear harbinger. This ongoing evolution within our communities foreshadows a rapid and imminent surge in enterprise adoption.

"

JAS JAAJ, MANAGING PARTNER, DELOITTE

Manufacturing

Manufacturing leaders are finding new and exciting ways that genAI can improve factory automation and operations through automated software development, problem reporting and quality inspection. Quality systems trained with synthetic data can detect product flaws and enhance procurement by simplifying access to supplier data, contracts, and public information about suppliers.

Using automakers as an example, Mercedes-Benz is using Nvidia's genAI platform to build "digital twins" of factories and to generate synthetic data that validates safety systems against virtual driving tests.

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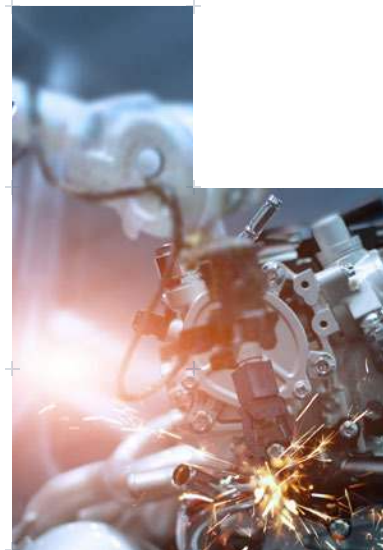
> **❝**
>
> By putting new kinds of hyper-personalized intelligence into human hands, generative AI will support many different supply-chain tasks. These range from advising on vendor selection within specified parameters, to providing step-by-step guidance for asset maintenance processes, or even assisting with real-time queries on supply chain KPIs and alerts.
>
> **❞**

TECHNOLOGY VISION 2023, ACCENTURE

Banking & Financial Services

The financial services industry stands to benefit from generative AI not only by improving efficiency and customer service, but also revolutionizing the way companies assess risk and make decisions. Purpose-built large language models paired with deep reinforcement learning can support strategic efforts to enhance the liquidity, integrity, and transparency of financial ecosystems.

Plus, the technology will help banks, investors, and insurance companies better anticipate customer needs, respond to claims, and optimize fraud investigation processes.

> **❝**
>
> We have used generative AI technology, particularly in creating data sets that allow us to compare and find threats in the cybersecurity space. You will find AI in our personalization products… And internally, you can see increasingly so, that generative AI might be a good solution for us when it comes to customer service propositions and so forth… it's something that we cannot afford to ignore.
>
> **❞**

MICHAEL MIEBACH, CEO, MASTERCARD

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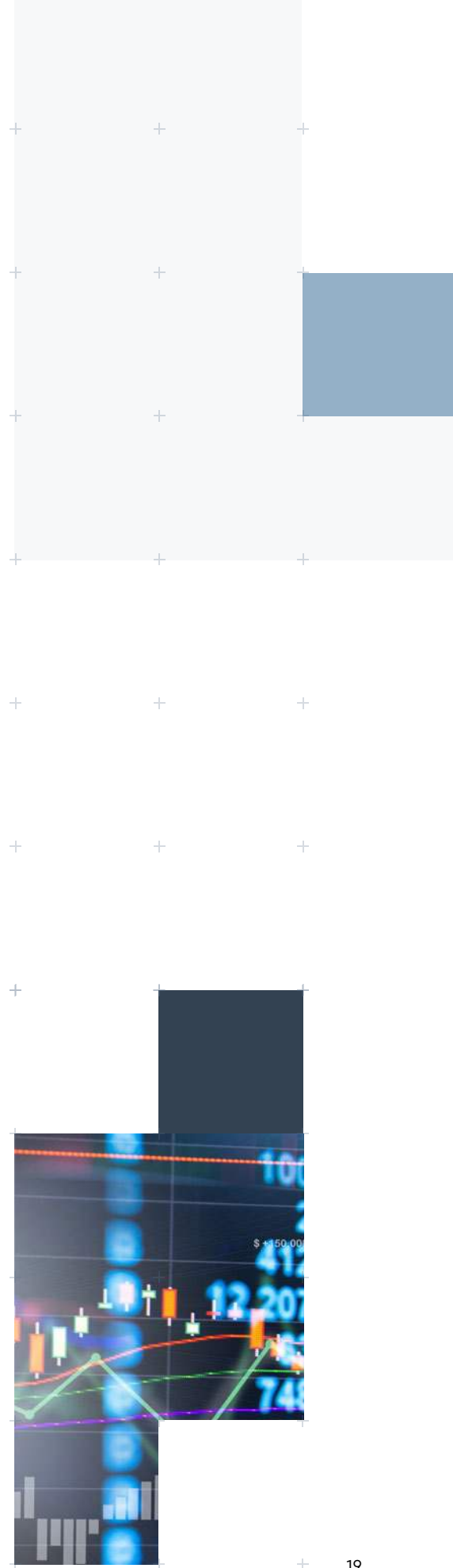
Threats

The downsides of generative AI are coming into focus, even as adoption of the nascent technology skyrockets.

Below are the main threats that industry leaders should take seriously.

Misinformation and "Hallucination"

Generative AI is still limited by its likelihood for error, or "hallucination," since it doesn't know when information is factually incorrect. As language models absorb new information over time, discerning truth from farce could be more of a challenge, as seen in recent troublesome AI-generated articles and viral images.

On the brand level, General Mills and others are increasingly focused on detecting misinformation online amid heightened use of genAI across social media, review sites, and other public forums. On the user level, untrained employees could be tricked into relying too heavily on results from a chatbot, making it more difficult to properly assess the veracity of benchmark data, competitive signals, and strategic recommendations.

Area of opportunity: Use generative AI systems that cite its reference to avoid misleading information creeping into your workflow.

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Consolidation

Venture capitalists are aggressively pouring money into the genAI space: $1.7 billion was generated across 46 startup deals in Q1 2023, according to PitchBook. But these budding generative AI startups, though garnering investor interest, are facing a notoriously difficult and acquisitive set of incumbents—the world's biggest technology companies. Just last month, Salesforce announced it will invest $250 million in startups focused on generative AI.

It is likely that the major advances in generative AI will be limited to the likes of Alphabet, Meta, Microsoft and Amazon, while technological development for small and medium-sized businesses could be limited to highly-specific, lower-cost use cases.

Area of opportunity: Weigh the pros and cons of developing language models and generative AI functionality in house, versus adopting a pre-built system.

Data Privacy

One of the most critical risks posed by generative AI to companies is copyright infringement and leaks of proprietary data. Information typed into genAI tools will be stored and used to train the model. Microsoft, an early leader in generative AI investment and adoption, has warned its employees not to share sensitive data with ChatGPT.

Similarly, data ownership carries its own risks. For example, does the training data for LLMs produced and captured by manufacturing equipment in a factory belong to the equipment OEM or the manufacturer? Does an artistic style used to train content-production software belong to the artist or the software maker? Regulators and courts will be answering these questions for years to come.

Area of opportunity: Ensure employees are aware of what internal information can be used with generative AI systems, and how the content they produce can be shared.

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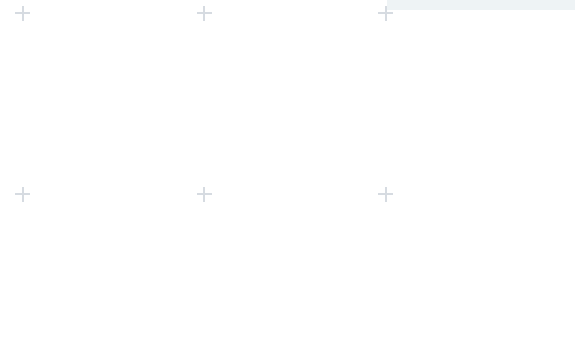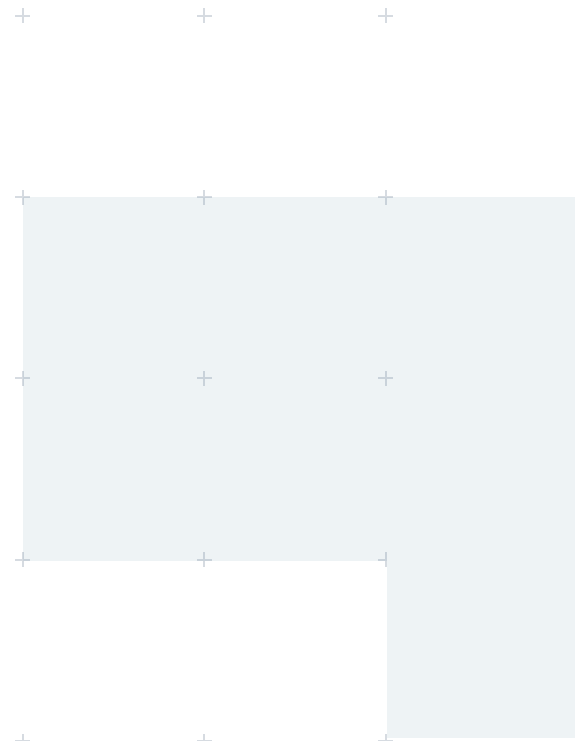
Adoption & Human Resources

We previously assumed that AI would automate the most boring and repetitive jobs, and leave creative jobs alone due to the inherent human-ness of art. Generative AI is challenging that assumption, stoking concern across employees of all types.

For example, early research indicates significant improvements in developer productivity and happiness, and there is already a blooming marketplace for creators of high-quality text prompts.

Area of opportunity: Before adopting or using generative AI systems, weigh the functional benefits against the potential disruption for each team and business function individually.

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Conclusion

Countless business applications and spiking investor interest are leading companies across virtually every single industry to improve products, services, and productivity using generative AI. For market researchers, investing professionals, and corporate strategists, generative AI tooling is a natural progression of the AlphaSense platform, given our 10+ years of investment in AI tech and large language models. Our utmost interest is in delivering functionality that is trustworthy and accurate–a goal that requires a measured approach.

Our first genAI release, Smart Summaries, is the only generative AI tool that learns from a vast content universe of premium and proprietary sources specifically curated for business professionals, and is built on a foundation of 10+ years of investment into AI technology and language models. These AI capabilities allow our generative AI Smart Summaries to parse through millions of documents across the premium and high-value content sets available in AlphaSense, and then present highly accurate and valuable summaries.

Smart Summaries provide you with citations to the exact snippets of text from where the summaries are sourced, combining high accuracy with instant and easy verification. As a result, you have the ability to quickly validate any of the information contained in our summaries and find the broader context.

Learn more about Smart Summaries here.

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Methodology

This market landscape was conducted by searching mentions of generative AI across all document types found in AlphaSense—including Wall Street analyst research, company earnings, and event transcripts, company press releases, expert interview call transcripts, and news. AlphaSense's AI surfaces trends and key themes to accelerate the research process. All information included in this report was also verified to exist in the public domain — excluding expert call interview transcripts that are exclusive to Stream.

Keyword Search: "generative AI"

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About AlphaSense

AlphaSense is a market intelligence and search platform used by the world's leading companies and financial institutions. Since 2011, our AI-based technology has helped professionals make smarter business decisions by delivering insights from an extensive universe of public and private content—including company filings, event transcripts, expert calls, news, trade journals, and equity research. Our platform is trusted by over 3,500 enterprise customers, including a majority of the S&P 500.

Headquartered in New York City, AlphaSense employs over 1,000 people across offices in the U.S., U.K., Germany, Finland, and India.

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