



WHITE PAPER

DEMYSTIFYING GENERATIVE AI

# Key Insights for Investors



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# Introduction

Generative AI (Gen AI) represents one of the most groundbreaking technological advances in recent memory. It has the potential to reshape industries, enhance productivity and drive innovation in ways that rival the introduction of the internet itself. Once a sci-fi vision – where computers could understand natural language, provide real-time responses and assist users in solving complex problems – Gen AI is now here, and it is beginning to fundamentally change how businesses operate.

Software is likely to become one of the primary beneficiaries of the Gen AI transformation as businesses increasingly look to deploy Gen AI-enabled software products to enhance productivity, streamline processes and unlock new opportunities. As the software industry continues to evolve – as it has with past technological shifts like the rise of mobile internet – businesses that strategically incorporate Gen AI into their products and operations can capture significant market share and improve their margins.

For investors and enterprises alike, understanding the nuances, opportunities and risks of Gen AI is essential to navigating this rapidly evolving landscape. This article provides an in-depth look at Gen AI, the potential benefits it provides, and the key factors businesses and investors should evaluate to position themselves for success.

## What Is Gen AI?

At its core, Gen AI refers to a type of artificial intelligence that can create new content – whether text, images, audio or even software code – based on the data it has been trained on. This marks an evolution from previous AI and machine learning models, which focused mainly on making predictions or recognizing patterns from existing data.

Gen AI has emerged because of the convergence of several factors:

### 1. Breakthroughs in Algorithms and Models

Advancements in deep learning and neural networks allowed for more complex and capable generative systems.

### 2. Exponential Increases in Computational Power

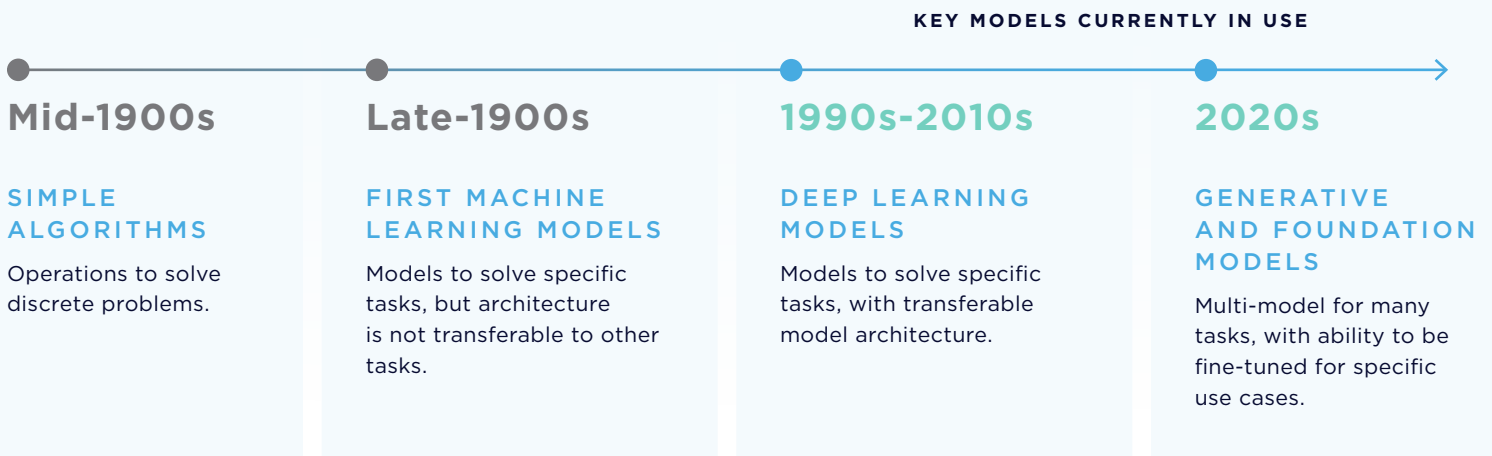
Cloud platforms and powerful hardware resources like graphics processing units enabled researchers to train AI models at an unprecedented scale.

### 3. Availability of Vast Amounts of Data on the Internet

The explosion of accessible data provided the raw material needed to train generative models.

Together, these factors have democratized access to Gen AI tools. Previously, machine learning models were embedded in software systems and required specialized skills to develop and use. Now, Gen AI tools, which still require extensive technical expertise to develop, are accessible to a much broader audience thanks to their user-friendly, conversational interfaces.

## Generative Models Are the Latest Evolution of AI Model Tech



# The Gen AI Business Opportunity

## ENHANCING PRODUCTIVITY THROUGH AI COLLABORATION AND AUTOMATION

Gen AI presents businesses with a wide range of opportunities, particularly in automation, content creation and decision-making. One of the most immediate impacts of this technology is its ability to automate routine tasks, allowing organizations to drive efficiency by freeing up human capital for higher-value strategic activities.

For example, AI-powered customer service chatbots can handle basic inquiries, allowing human employees to focus on complex client issues. Mindbody, a software company that provides business management software for the wellness industry, has been able to deflect 40% of its customer service queries using Gen AI.<sup>1</sup>

Meanwhile, Quickbase, a software company that enables application building without the need for extensive coding knowledge, has increased marketing content production by 30%.<sup>2</sup> These use cases are already driving tangible impact in terms of cost savings and revenue growth.

Beyond automation, Gen AI can act as a “copilot,” enhancing human capabilities and enabling collaboration between machines and employees. Rather than replacing workers,

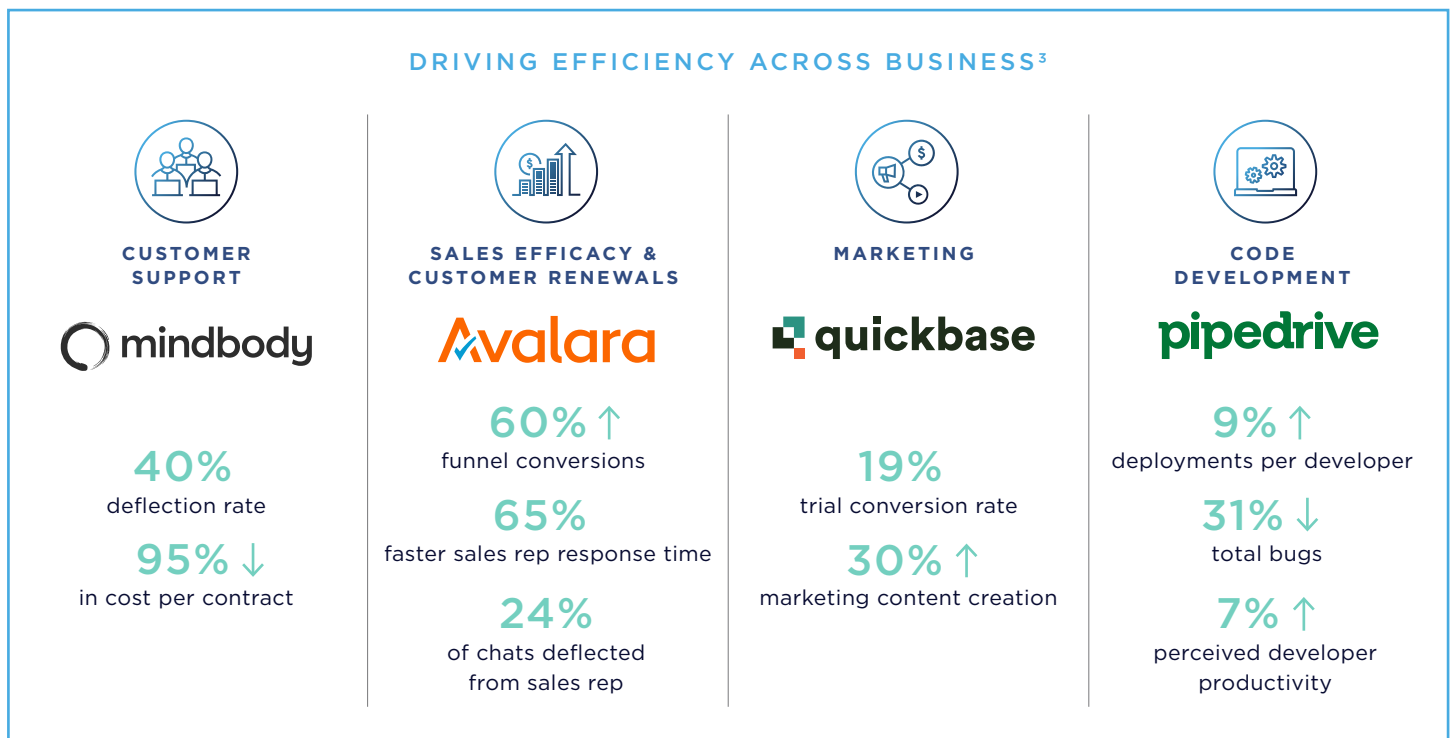
these tools augment productivity by allowing employees to focus on tasks that require judgment, creativity and problem-solving. As Gen AI becomes more integrated into workflows across industries, businesses should invest in upskilling their workforce to unlock the full potential of these technologies.

In addition to driving internal efficiencies, Gen AI can offer significant value to end customers. By delivering more tailored and effective solutions, companies across all sectors can better meet their customers’ needs. Improved customer experiences not only strengthen client relationships but also expand a company’s total addressable market (TAM).

## FRONTIER MODELS ENABLING ADVANCED PROBLEM-SOLVING

Beyond these immediate applications, frontier models – state-of-the-art generative models – are unlocking even more sophisticated use cases. These models are expected to handle increasingly complex tasks that require reasoning, planning and problem-solving.

For example, AI is already helping companies optimize logistics by forecasting and planning supply chain routes using real-time data. Future advancements, however, are expected to enhance these capabilities, allowing businesses to anticipate disruptions, automate complex scheduling tasks and dynamically adjust routes to maximize efficiency and minimize costs.



<sup>1,2</sup> Vista Equity Partners, 09/30/2024.

<sup>3</sup> Vista internal data as of 09/30/2024. Case studies presented herein are for informational purposes only and are intended to illustrate Vista’s experience in leveraging generative AI within its portfolio, and the profile and types of investments previously pursued by Vista. It should not be assumed that investments made in the future will be comparable in quality or performance to the investments described herein. Further, references to the investments included in the illustrative case studies should not be construed as a recommendation of any particular investment or security. The investments listed should not be assumed to have been profitable. Past performance is not an indication of future results. The metrics regarding select aspects of the company’s operations were selected by Vista on a subjective basis. Such metrics are provided solely for illustrative purposes to demonstrate elements of the company’s business, are incomplete, and are not necessarily indicative of the company’s performance or overall operations. There can be no assurance that historical trends will continue. A complete list of Vista portfolio companies is available upon request.

# Gen AI and Enterprise Software

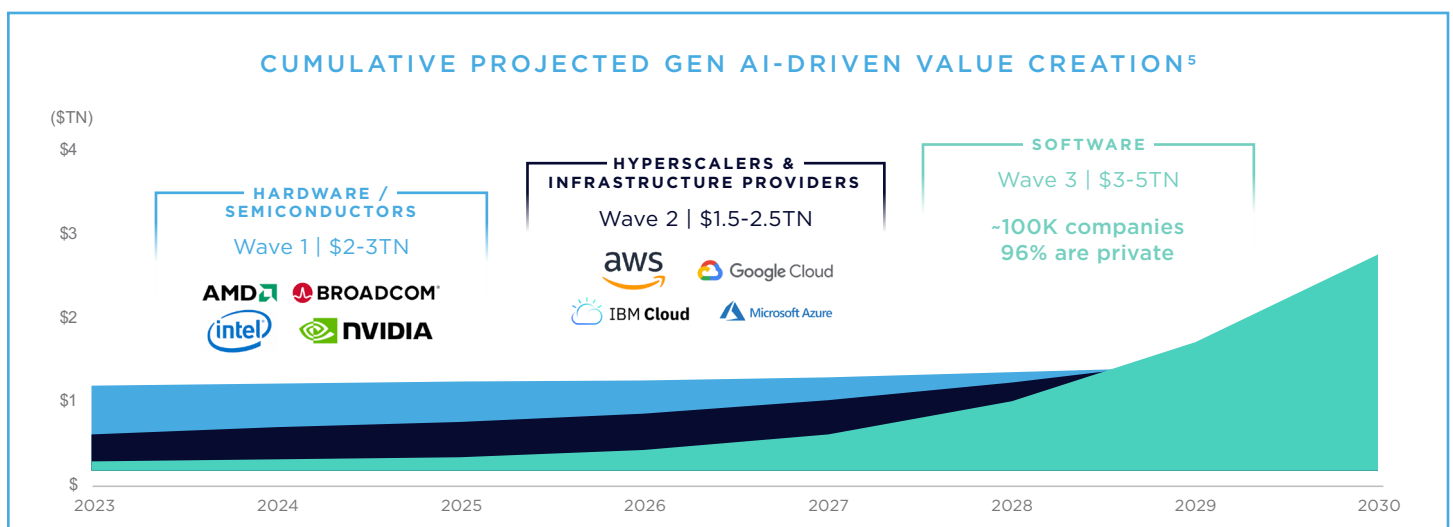
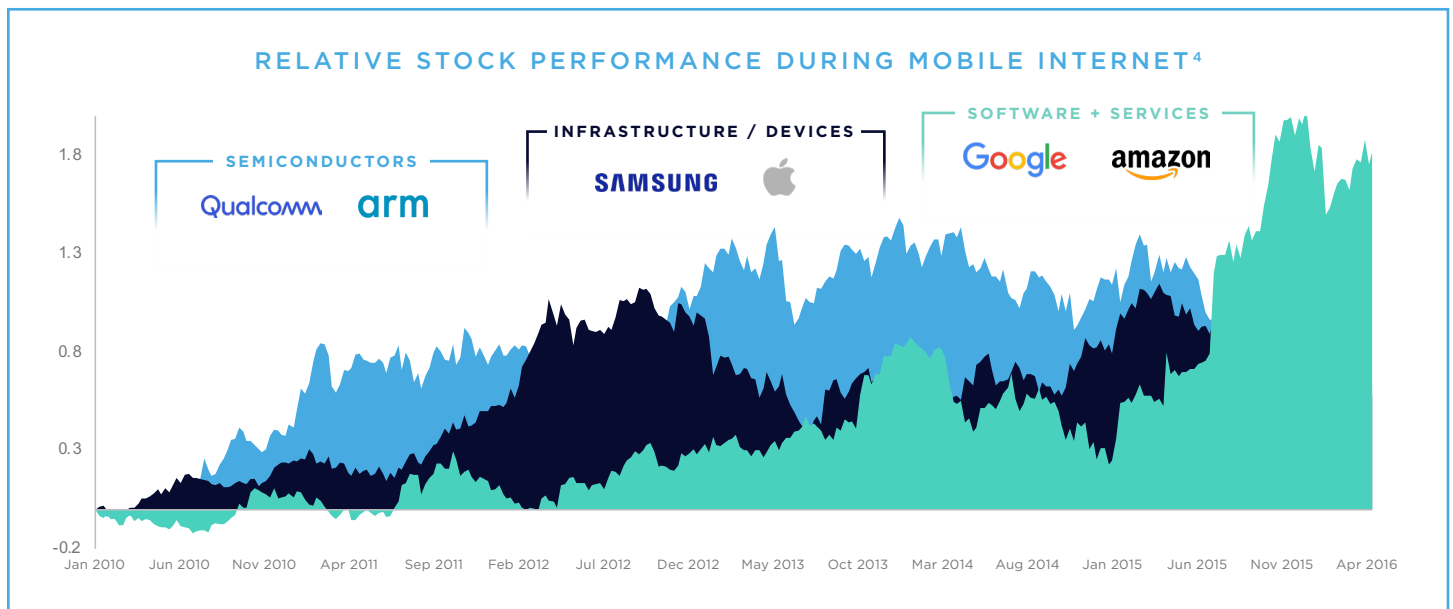
## REDEFINING THE ENTERPRISE SOFTWARE LANDSCAPE

As with prior major technological shifts – like the internet – we expect value creation from Gen AI to occur in waves, with various constituents benefiting throughout the cycle:

**1. Wave One** is what we’re experiencing now. Hardware and semiconductor providers like Nvidia are accruing significant value as they create the substrate from which scaled Gen AI is possible.

**2. Wave Two** is expected to benefit hyperscalers like AWS who provide the infrastructure and compute capacity to make the technology widely available.

**3. Wave Three** is expected to benefit enterprise software companies, as their solutions can be the bridge between the power of Gen AI and its practical application in the business environment. This wave is expected to generate significant value, especially for software companies with sovereignty and dominion over proprietary, industry-specific, non-public data sets and workflows. Software companies have an established customer base and installed solution base that enables them to achieve greater ROI on Gen AI and expand their total addressable market.



<sup>4</sup> Index Outperformance vs. S&P 500. FactSet, Morgan Stanley Research as of 05/2023. Index constituents indicated by logos above. Selection of benchmarks or indices is inherently subjective and others might select other benchmarks or indices based on their assessment of the market. Actual results may differ materially from projections and there can be no assurance that any historical trends will continue. Company logos do not represent Vista or Vista fund investments and do not signify affiliation or endorsement. Certain information herein was prepared by a third party but selected by Vista and although Vista believes that the determinations related to the market backdrop described herein are reasonable, they are inherently subjective in nature. Other market participants may make different determinations relating to the market based on the same underlying data.

<sup>5</sup> Q1 2024 Bain & Company market study. Figures represent cumulative market capitalization value forecasted to be created between 2023 and 2030 (e.g., 2025 values represent total projected value accumulated to that point). Value creation was estimated through a combination of (1) assessing current market performance of 'Generative AI Market Leaders' (Hardware: Nvidia, Intel, AMD, Broadcom, HP; CSPs/Infra: Microsoft, Google, Amazon, IBM, Alibaba; Software: Adobe, Salesforce, ServiceNow, Oracle, SAP) to estimate value created to-date and (2) projecting Generative AI-driven revenue through 2030 using Bain's AI market forecast to calculate incremental market capitalization gains. Certain information presented in this slide was prepared by a third party and Vista makes no representation regarding its accuracy. The "forecasts" presented herein are provided for illustrative purposes only, and actual results may differ materially. Such information herein was selected by Vista and although Vista believes that the determinations related to the market backdrop described herein are reasonable, they are inherently subjective in nature. Other market participants may make different determinations relating to the market based on the same underlying data. Company logos do not represent Vista or Vista fund investments and do not signify affiliation or endorsement. There can be no assurances that Vista or any Vista fund portfolio company will partner with, or continue to partner with, any of the companies referenced herein in the future.

## BOOSTING DEVELOPER PRODUCTIVITY AND TRANSFORMING BUSINESS PROCESS AUTOMATION

A key area where Gen AI is already having a profound impact is developer productivity. Gen AI tools like GitHub Copilot and other coding assistants are automating low-level coding tasks, enabling software developers to reduce the time spent on repetitive work and focus on more complex, high-value activities. A 2023 study from Microsoft, GitHub, and MIT found that developers paired with an AI programmer completed tasks ~55% faster than a control group.<sup>6</sup> By allowing developers to dedicate more time to product innovation and solve intricate technical challenges, businesses can accelerate development processes and improve the quality of their offerings.

### Gen AI's Potential in Code Generation and Product Innovation



#### CODE GENERATION

- Developer Productivity
- Tech Debt Remediation
- Refactoring
- Modernization



#### PRODUCT INNOVATION

- Conversational AI
- Automation
- Intelligent Capabilities
- Advanced Functionality

#### BUSINESS PROCESS OPTIMIZATION THROUGH AI

## LEVERAGING PROPRIETARY DATA FOR INTELLIGENT SOLUTIONS

One of the most exciting frontiers for Gen AI lies in its ability to unlock the value of proprietary data to build more intelligent solutions. Enterprise software companies with mature data infrastructures can leverage their proprietary data to develop AI-driven solutions tailored to their customers. For example, AI-powered analytics tools can sift through large datasets to provide actionable insights, optimize workflows or even predict future trends – offering organizations a competitive edge in fast-evolving markets.

PowerSchool, which provides student information management and reporting solutions to over 18,000 K-12 schools across over 90 countries, launched PowerBuddy in 2024, an AI-powered solution enabled by a large, proprietary dataset. PowerBuddy has access to a deep pool of more than 5 petabytes of student data. By leveraging this data through a privacy-first approach, PowerSchool is able to deliver personalized support for students, teachers and parents while enhancing value for school districts. For example, PowerBuddy can save teachers up to 12 hours per week by creating instructional resources. As a result, PowerSchool expects to achieve more than \$100 million in additional ARR each year over the next 3-5 years.<sup>7</sup>

## ACKNOWLEDGING THE LIMITATIONS OF LARGE LANGUAGE MODELS

While large language models (LLMs) are incredibly powerful at generating text and automating specific tasks, they are not designed to fulfill every role or completely displace specialized third-party applications. LLMs, for instance, may struggle with highly specialized industry tasks that require deep domain knowledge, precision or real-time data processing. As such, Gen AI is likely to work in tandem with enterprise software applications rather than replace them. Businesses are expected to continue to rely on software applications tailored to specific use cases.

<sup>6</sup> Microsoft, 02/2023. "The Impact of AI on Developer Productivity: Evidence from GitHub Copilot."

<sup>7</sup> PowerSchool as of 12/2023. PowerSchool's estimate is based on global K-enrollment and expected pricing.

# Why Software Can Be an AI Beneficiary

The rapid adoption and innovation in AI present significant opportunities for software businesses to gain market share, improve margins and drive new innovation. Software companies are uniquely positioned to capitalize on Gen AI due to several key factors:



## UNIQUE ACCESS TO PROPRIETARY NON-PUBLIC DATA

Software companies have privileged access to vast stores of proprietary data generated from customer interactions, operational workflows and industry-specific processes. This non-public data forms a critical foundation for building highly specialized AI-driven applications that competitors cannot easily replicate without access to similar datasets.



## OWNERSHIP OF THE END-USER RELATIONSHIP TO DRIVE PRODUCT INNOVATION

Software companies maintain direct relationships with end users, whether businesses or consumers, which places them in an advantageous position to identify unmet needs and innovation opportunities. This unique connection to the end user allows for iterative and responsive product development.



## ESTABLISHED CUSTOMER BASE AND INSTALLED SOLUTIONS BASE

With a well-established customer base and a broad portfolio of installed solutions, software companies are well-equipped to deploy Gen AI at scale across their existing platforms. This existing infrastructure allows for a faster roll out and adoption of new AI functionalities within their solutions, effectively layering advanced AI capabilities onto an already trusted ecosystem.



## ABILITY TO QUANTIFY GREATER ROI THROUGH REVENUE AND OPTIMIZATION OPPORTUNITIES

The integration of Gen AI within software solutions can offer quantifiable ROI by enabling both revenue generation and cost optimization. For example, Gen AI-driven tools can increase efficiency in areas like workflow automation, predictive analytics, and personalized customer engagement. The tangible benefits of productivity gains and revenue enhancement make it easier for software companies to justify investment in AI development and to demonstrate clear value to customers.

## Risks of Gen AI

Despite its transformative potential, Gen AI comes with risks that businesses and investors must carefully consider.

### PROLIFERATION OF MISINFORMATION

A significant risk with Gen AI lies in the potential to produce factually inaccurate content that appears credible. The spread of such misinformation can have far-reaching consequences, particularly in critical fields like healthcare and finance.

Inaccurate medical advice could result in harmful misdiagnoses or inappropriate treatments. Similarly, financial misinformation could mislead investors, destabilize markets and erode trust in financial institutions. Beyond specific industries, the proliferation of deepfakes - highly realistic but fabricated photo, video and audio content - adds another layer of risk. These false representations can manipulate public opinion, disrupt social cohesion and undermine trust in legitimate sources of information. To mitigate these risks, companies can implement rigorous content verification processes and leverage AI-driven tools specifically designed to detect deepfakes and other false information.

## HALLUCINATIONS

A specific challenge within AI-generated content is the occurrence of hallucinations – where the AI model generates information that, while plausible-sounding, is incorrect or fabricated. Hallucinations arise from the inherent randomness in generative models, which is designed to enhance creativity. In many ways, hallucinations are a core feature of this technology – not a bug. However, this unpredictability makes it difficult to ensure factual accuracy. Mitigating this risk involves combining Gen AI with robust human review processes, especially in high-stakes applications.

## INTELLECTUAL PROPERTY DISPUTES

LLMs are often trained on vast amounts of data, which may include proprietary or copyrighted materials. This has sparked legal disputes over whether AI-generated content infringes on the rights of the original creators of the training data.

To address these concerns, companies can adopt transparent data practices and seek permission or licensing agreements when using proprietary content for training purposes. Legal frameworks should also evolve to provide clearer guidelines for businesses.

## ETHICAL BIASES IN AI

Bias in AI models is a widely discussed issue, and Gen AI is no exception. Because these models are trained on large datasets that often reflect societal biases, there is a risk that the AI can perpetuate or even exacerbate existing biases in the content it creates.

For businesses, ethical missteps resulting from biased AI models could lead to reputational damage and regulatory scrutiny. To mitigate these risks, organizations must implement clear “Responsible AI” policies that govern the deployment of AI technologies. These may include ongoing monitoring for biased outputs and incorporating human oversight to correct potentially harmful outcomes.

## JOB DISPLACEMENT CONCERNS

Unlike previous technological advancements, which primarily affected labor-intensive jobs, Gen AI can potentially disrupt a broader array of roles. Fields such as content creation, programming and other knowledge-based jobs could experience significant disruption in the near term. While the long-term outlook suggests that Gen AI should augment rather than replace human workers, the near-term impact on employment could still be significant, leading to workforce shifts and the need for upskilling or reskilling.

## Final Thoughts

Gen AI is evolving at an unprecedented pace, with constant advancements driving its adoption across industries. Software companies stand to benefit significantly from this growth as they leverage Gen AI to develop innovative solutions, optimize processes and unlock the value of proprietary data. The potential for AI to transform industries is vast, and software companies that strategically embrace these technologies with the right resources and risk-mitigation mechanisms can shape the future of business.

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