

An Update on the State of the Artificial Intelligence Sector

Artificial intelligence (AI) is no longer a distant promise, but a pervasive technological force shaping and reconceptualizing entire industries and redefining human potential. This new era of AI has ignited a wave of disruption across industries, transforming the way we work, navigate career paths, and even perceive reality. In part one of this series, we provided an overview and background of the AI industry. Part two continues with the discussion of the trends and predictions of this industry.

Market Growth and Characteristics

The global AI market size was estimated at \$196.63 billion in 2023 and is projected to grow at a CAGR of 36.6% from 2024 to 2030¹. The continuous research and innovation directed by tech giants are driving adoption of advanced technologies in industries, such as automotive, healthcare, retail, finance, and manufacturing. AI has proven to be a significant revolutionary element of the upcoming digital era. Tech giants like Amazon, Google, Apple, Meta, IBM, and Microsoft are investing significantly in research and development of AI, thus increasing the artificial intelligence market cap.

On June 7, 2024, semiconductor firm, **Nvidia** conducted a 10-for-1 stock split which will make the stock of the company more accessible to smaller investors. After the split, the market value of Nvidia's stock adjusted to \$105 per share². Similarly, **Broadcom**, a California-based tech company that specializes in the tiny electronic components that form the brains of modern devices and computing systems that fuel AI algorithms announced a highly anticipated 10-for-1 stock split that will take effect on July 15, 2024.

The growth stage of the AI industry is high, and the pace of the growth is accelerating. The market is characterized by a high degree of innovation owing to the rapid technological innovations driven by factors such as advancements in machine learning algorithms, availability of big data, and increasing computing power. Subsequently, innovative AI applications are constantly emerging, disrupting existing industries and creating new ones.

The AI market is on a trajectory of substantial growth, with Statista estimating its value to increase from \$244 billion in 2025 to \$827 billion by 2030³. Following a significant 35% rise in 2023, 2024 is projected to sustain this growth trend with an anticipated annual increase of 32%. The AI market is also characterized by a high level of merger and acquisition activity by the leading players. This is due to several factors, including the desire to gain access to new AI technologies and talent, the need to consolidate in a rapidly growing market, and increasing strategic importance of AI.

The New AI Standard

Industries worldwide are embracing the transformative power of AI technologies. Generative AI, projected to represent 43% of the total AI market by 2030, is driving this surge. Generative AI, sometimes called gen AI, is AI that can create original content such as text, images, video, audio or

¹ Grand View Research "Artificial Intelligence Market Size, Share & Trends Report Artificial Intelligence Market Size, Share & Trends Analysis Report" (January 2024).

² Morningstar "What Does Nvidia's Stock Split Mean for Investors?" (June 2024).

³ Statista "Artificial Intelligence Report" (March 2024).

software code in response to a user's prompt or request. According to the management consulting firm McKinsey & Company, one third of organizations are already using gen AI regularly in at least one business function⁴. Industry analyst firm Gartner projects more than 80% of organizations will have deployed generative AI applications or used generative AI application programming interfaces (APIs) by 2026⁵. Despite a decline in overall AI private investment last year, funding for generative AI surged, nearly octupling from 2022 to reach \$25.2 billion. Major players in the generative AI space, including **OpenAI, Anthropic, Hugging Face, and Inflection**, reported substantial fundraising rounds⁶.

Gen AI can create many types of content across many different domains, as discussed below⁷:

- Image generation such as DALL-E, Midjourney and Stable Diffusion can create realistic images or original art, and can perform style transfer, image-to-image translation and other image editing or image enhancement tasks. Emerging gen AI video tools can create animations from text prompts, and can apply special effects to existing video more quickly and cost-effectively than other methods.
- Generative models can also synthesize natural-sounding speech and audio content for voice-enabled AI chatbots and digital assistants, audiobook narration and other applications. The same technology can generate original music that mimics the structure and sound of professional compositions.
- Additionally, gen AI can generate original code, autocomplete code snippets, translate between programming languages and summarize code functionality. It enables developers to quickly prototype, refactor, and debug applications while offering a natural language interface for coding tasks.
- Lastly, gen AI models can generate unique works of art and design, or assist in graphic design. Applications include dynamic generation of environments, characters or avatars, and special effects for virtual simulations and video games.

Labor Market

AI is becoming ubiquitous in our daily lives, and workers are embracing AI tools to focus on more creative and complex aspects. While AI's potential is undeniable, its impact on the workforce raises concerns, particularly in white-collar professions. AI is projected to bring significant labor market disruptions, with 23% of organizations expecting job displacement and 49% expecting it to create new jobs⁸. This technological transformation not only impacts the way we work but also alters job requirements and skill demands

⁴ McKinsey & Company. "What is Generative AI?" (April 2024).

⁵ Gartner. "Gartner Survey Finds Generative AI Is Now the Most Frequently Deployed AI Solution in Organizations" (May 2024).

⁶ Stanford University. "AI Index Report - Measuring Trends in AI" (April 2024).

⁷ Statista. "AI Trends and Predictions – Roadmap to 2025" (May 2024).

⁸ McKinsey & Company. "Generative AI and the Future of Work (May 2024).

Around 4% of all US firms have adopted generative AI and Goldman Sachs Research expects this figure to rise to 7% over the next six months⁹. The effects of this shift will be seen clearly in online job marketplaces. Some types of work, such as logo design, copywriting, translation, or voice-over artistry, could be displaced by free or cheap AI tools in those categories. AI is rapidly evolving, poised to reshape the landscape of the job market. While some fear widespread job displacement, the reality is likely to be more nuanced. AI will undoubtedly disrupt certain sectors, but it also holds the potential to create entirely new job categories.

One of the most significant changes brought by AI will be automation. Repetitive, data-driven tasks are particularly susceptible, with AI systems performing them with greater speed and accuracy which could lead to job losses in sectors like manufacturing, data entry, and customer service. The transportation industry may also see significant changes with self-driving vehicles potentially displacing truck drivers and taxi drivers.

However, AI will also create new opportunities. As AI takes over mundane tasks, human workers will be able to focus on areas requiring creativity, critical thinking, and social intelligence. Jobs in fields like data science, AI development, and cybersecurity will be in high demand. Additionally, AI-powered tools will augment human capabilities in various sectors. Doctors may utilize AI for diagnostics, while engineers can leverage AI for complex design projects.

The impact of AI on the job market will likely be unevenly distributed. Jobs requiring lower levels of education and technical skills are more at risk of automation. This necessitates a focus on reskilling and upskilling the workforce. Educational institutions and governments will need to adapt their programs to equip individuals with the skills needed to thrive in the AI-powered economy. These skills may include data analysis, coding, and the ability to work effectively with AI systems.

The rise of AI also presents challenges related to income inequality¹⁰. As AI automates tasks, some jobs may disappear altogether, potentially leading to unemployment and wage stagnation. Policies like universal basic income may be necessary to address these concerns. Additionally, careful consideration of the ethical development and deployment of AI is necessary to ensure AI does not exacerbate existing social and economic divides. AI's impact on the job market will be transformative, presenting both challenges and opportunities. While some jobs will undoubtedly be lost, new ones will emerge.

The Impact of AI

AI is revolutionizing major industries, disrupting traditional practices, and setting new benchmarks for efficiency, accuracy, and innovation. The transformative power of AI is evident across various sectors, indicating a paradigm shift in how businesses operate and compete.

AI has dramatically changed the game in the financial sector, particularly on Wall Street¹¹. Algorithms and black box trading systems have upended traditional trading methods, leading to faster, more efficient, and often more complex market dynamics. These AI-driven systems can analyze vast amounts of data, make decisions, and execute trades at speeds and volumes unattainable by human

⁹ Goldman Sachs. "The US Labor Market is Automating and Becoming more Flexible" (April 2024).

¹⁰ Boston University. "AI's Impact on Income Inequality" (May 2024).

¹¹ Hyena AI. "Potential Impact Of Artificial Intelligence (AI) On Major Industries" (June 2024).

traders. As a result, AI is reshaping the financial industry's landscape, leading to significant changes in how markets operate.

The eCommerce sector witnessed a remarkable surge during the COVID-19 pandemic. However, in 2022, the onset of the Russia-Ukraine war, coupled with subsequent inflation spikes and disruptions in the supply chain, led to a sharp downturn in the market. A promising avenue for reigniting eCommerce growth is through the widespread adoption of AI technologies. AI's impact on eCommerce is projected to contribute 1.1% (roughly \$31 billion) to the total growth of 14.5% this year alone, underscoring its significant potential¹². Nearly half of eCommerce businesses have already begun experimenting with AI, with close to 30% having fully integrated it into their operations in 2023, according to a Salesforce study¹³.

In the healthcare sector, AI is revolutionizing diagnostics and treatment. AI-powered algorithms can analyze medical scans with superhuman accuracy, aiding in early disease detection¹⁴. Virtual assistants powered by AI can handle routine tasks, freeing up doctors' time for complex cases. Robotics is also playing a growing role, with AI-driven surgical robots performing delicate procedures with unmatched precision. However, ethical considerations arise with AI in healthcare. Biases in algorithms could lead to misdiagnosis, and the reliance on automation might create a disconnect between patients and doctors.

The manufacturing sector is undergoing a dramatic shift with the rise of AI-powered automation. Robots are no longer confined to assembly lines; they are increasingly performing complex tasks with greater efficiency and consistency. AI-driven predictive maintenance systems can anticipate equipment failures before they occur, preventing costly downtime. These advancements translate to increased productivity and reduced production costs. However, concerns remain regarding the potential loss of manufacturing jobs as AI takes over tasks previously done by human workers.

Risks and Dangers of AI

One of the most frequently cited risks of AI is its impact on the job market. As AI systems become increasingly sophisticated, they are poised to automate a wide range of tasks, potentially displacing millions of workers across various sectors. Jobs in manufacturing, data entry, and transportation are particularly vulnerable to automation. This could lead to widespread unemployment and economic hardship, particularly for those lacking the skills necessary to compete in the AI-powered economy.

A group of current and former employees at leading AI companies **OpenAI** and **Google DeepMind** published a letter in June warning against the dangers of advanced AI as they allege companies are prioritizing financial gains while avoiding oversight. The coalition cautions that AI systems are powerful enough to pose serious harms without proper regulation. These risks range from “the further entrenchment of existing inequalities, to manipulation and misinformation, to the loss of control of autonomous AI systems potentially

¹² Statista. “AI Trends and Predictions – Roadmap to 2025” (May 2024).

¹³ Salesforce. “How Leaders Are Navigating AI in Ecommerce” (March 2024).

¹⁴ NIH. “Revolutionizing healthcare: the role of artificial intelligence in clinical practice” (May 2024).

resulting in human extinction”¹⁵. With the extraordinary capabilities of AI, there are significant risks and hurdles such as biases in algorithms, transparency, and ethical implications and trust.

Conclusion

The field of AI is experiencing a period of exciting advancements. AI is not only growing more powerful, but also becoming more accessible and user-friendly. From tailored experiences in marketing to groundbreaking applications in science and healthcare, AI is making its mark on a vast array of sectors. Ethical considerations and responsible development will remain paramount, but the potential for AI to address global challenges and enhance human capabilities is undeniable. The journey ahead will likely see remarkable breakthroughs, pushing the boundaries of what AI can achieve and fundamentally shaping the world of tomorrow.

Sources

- *Boston University. “AI’s Impact on Income Inequality” (May 2024).*
- *Gartner. “Gartner Survey Finds Generative AI Is Now the Most Frequently Deployed AI Solution in Organizations” (May 2024).*
- *Goldman Sachs. “The US Labor Market is Automating and Becoming more Flexible” (April 2024).*
- *Grand View Research “Artificial Intelligence Market Size, Share & Trends Report Artificial Intelligence Market Size, Share & Trends Analysis Report” (January 2024).*
- *Hyena AI. “Potential Impact Of Artificial Intelligence (AI) On Major Industries” (June 2024).*
- *McKinsey & Company. “Generative AI and the Future of Work (May 2024).*
- *McKinsey & Company. “What is Generative AI?” (April 2024).*
- *Morningstar “What Does Nvidia’s Stock Split Mean for Investors?” (June 2024).*
- *NIH. “Revolutionizing healthcare: the role of artificial intelligence in clinical practice”(May 2024).*
- *Stanford University. “AI Index Report - Measuring Trends in AI” (April 2024).*
- *Statista “Artificial Intelligence Report” (March 2024).*
- *Statista. “AI Trends and Predictions – Roadmap to 2025” (May 2024).*
- *Salesforce. “How Leaders Are Navigating AI in Ecommerce” (March 2024).*

¹⁵ The Washington Post. “AI employees warn of technology's dangers” (June 2024).