MARKET ANALYSIS

osaic NO COFFEE NEEDED: AI JUST STARTED ITS FIRST DAY

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Added value

The continuous advancements of Artificial Intelligence (AI) have had a significant impact on today's workforce. As companies increasingly adopt AI to boost productivity and streamline operations, certain roles may be at risk of displacement or becoming obsolete. However, the rise of AI paves the way for the introduction of new types of jobs and opportunities, potentially fueling broader economic growth. A successful transition into an Al-driven workforce will require sustained investment in both technology and human development.

Chart 1

PAST TECHNOLOGICAL REVOLUTIONS

Chart 1¹ shows that AI is not the first technology to disrupt the labor market. The workforce has always evolved alongside technology, dating as far back as the first industrial revolution. Machines like the steam engine boosted production and manufacturing efficiency, modifying the skills required of workers and displacing traditional roles. However, technological innovation tends to boost wages by shifting employment patterns. For instance, automation of an assembly line may destroy factory jobs, but simultaneously open up demand for software engineering and programming jobs.² More recently, Amazon introduced warehouse robots that automate warehouse operations, making it one of the first examples of Al job displacement.3

Late 18th - early 19th Century Substitution Industrial cities Mechanization Steam engine and mechanical production Late 19th - mid 20th Century Industrial regions Scale economies **Mass Production** Electricity and division of labor Second half of 20th Century Global production networks Input costs Automation 3.0 Electronics and information technologies

Global value chains

Cyber-physical systems

AI'S IMMEDIATE IMPACT

As firms begin to implement Al into workflows, roles that focus on surface level analysis, or perform repetitive tasks, often referred to as "grunt work," are most at risk of replacement. Particularly, entry-level positions in white-collar careers like customer service, banking, and programming could become outdated. Dario Amodei, CEO of Anthropic, predicts Al will eliminate half of white-collar entry-level positions within the next five years,4 and many large companies have already begun trimming their workforce. In May 2025, Microsoft reported 6,000 layoffs, with software engineers making up 40% of the job cuts. IBM let go of 8,000 employees, with 9,000 more layoffs planned as the company plans to automate more roles using Al. Even managerial positions aren't safe either, with an estimated 10% - 20% of jobs at risk of automation. According to the World Economic Forum, 41% of employers intend to reduce their workforce in the next five years and replace their roles with technologies.4

Early 21st Century

Robotization

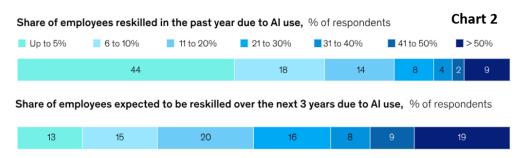
Job elimination is not the only avenue for AI implementation, as many firms and employees already utilize AI in their existing positions. All is used to streamline routine tasks for employees, which increases productivity and allows more time to work on more important projects. Bloomberg research estimates 53% of tasks done by research analysts and 67% of tasks done by sales representatives could be automated by Al.4 This shift could have a dramatic impact on what traditional human roles look like in an Al-influenced environment.

With AI automating tasks, the demand for entry-level employees is expected to decrease, driving lower hiring rates and employment for recent graduates whose roles often involve repetitive tasks. Some of these entry-level jobs include paralegals, computer programmers, and customer service agents. Al is likely to transform white-collar work in many of the same ways that automation has changed blue-collar work over the past two decades. While AI will reshape the corporate

landscape overall, the extent of the change will likely depend on the size and willingness to adopt new technology on a firm-by-firm basis.

LONG-TERM IMPACTS OF AI ADOPTION

As new technologies are adopted, new roles and responsibilities are required. According to the World Economic Forum and McKinsey, AI could lead to the creation of 97 million new jobs globally, with an estimated 20 to 50 million of those appearing by 2030. Some of these new occupations include machine learning engineers, natural



language processing specialists, and AI ethicists. Employment in the professional, scientific, and technical service sectors are projected to see a 10.5% increase over 10 years from 2023 to 2033⁵. Second-order-effect jobs are also anticipated to rise, with data scientists and security analyst positions expected to increase by roughly 40% over the next decade.⁶

As AI advances, the skills required to succeed are evolving as well. To ensure AI is used effectively, companies must focus on upskilling their employees. Training existing employees could serve as an alternative to hiring new employees with AI skills and has already seen adoption across the US (Chart 2⁷). Even though on-the-job training would require short-term capital investment by firms, it would allow companies to bolster their workforce to successfully utilize AI.⁸ It's estimated that roughly 39% of core job skills will change by 2030, a shift that both employers and employees are aware of.⁹

ECONOMIC IMPACTS OF PRODUCTIVITY GAINS

Forecasting productivity gains from AI is extremely volatile as the technology is currently evolving and far from its final form. However, looking back at the adaptation of the internet, which had profound productivity impacts, there are some parallels. The internet introduced lower transaction costs, increased management efficiency, made pricing more transparent, and created the ability to transmit information instantaneously and inexpensively. Prior to the introduction of the internet, the quarterly average growth rate in the output per hour of each worker in the U.S. was 0.38%. From 1990-2010, when the internet became mainstream, the growth rate nearly doubled to 0.61%. One important distinction between the adoption of the internet and AI is that the user learning curve for AI is expected to be shorter, since all industries and workers already have computer skills. In contrast, the internet adoption took much longer to gain traction. As an example, OpenAI's Chat GPT has reached over 300 million weekly users and over 90% of Fortune 500 companies use its technology, whereas it took the internet a decade after its inception to reach this type of usage level. This opens the potential for exponential productivity gains and stronger economic growth, but the benefits may vary significantly across different sectors and businesses.

CONCLUSION

During the Second Industrial Revolution, the creation of the assembly line led Henry Ford to institute a 5-day, 40-hour work week, a standard that remains common for most American workers. At the turn of the 20th century, this was under half of what a typical manufacturing employee worked in a week. The result of the assembly line saw increased productivity, decreased working hours, and increased pay. Today, as technology makes rapid advancements, some companies have tried a 4-day, 32-hour workweek, which has shown positive results, including higher worker productivity and better workforce retention. Technological advancements are here to stay, and each disruptive innovation comes with its own unique set of challenges and opportunities to reshape the workforce in positive ways, along with creating new industries. As Al integration into the workforce advances, it will create both challenges and opportunities, but it will also allow the potential for rapid growth in innovation and productivity, prompting a significant economic transformation.

GDP: Gross domestic product (GDP) measures the final market value of all goods and services produced within a country. It is the most frequently used indicator of economic activity. The GDP by expenditure approach measures total final expenditures (at purchasers' prices), including exports less imports. This concept is adjusted for inflation.

Personal Income: Consumer or Household Income (often referred to as personal income) tracks all income received by households including such things as wages and salaries, investment income, rental income, transfer payments, etc. This concept is not adjusted for inflation.

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¹ The Four Industrial Revolutions | The Geography of Transport Systems

² <u>Automation Doesn't Just Create or Destroy Jobs — It Transforms Them</u>

³ https://hbr.org/2024/11/research-how-gen-ai-is-already-impacting-the-labor-market

⁴ Al Job Displacement 2025: Which Jobs Are At Risk?

⁵ Over 97 Million Jobs Set to be Created by AI

⁶ <u>Is AI Going To Be a Killer or Creator of Tech Jobs?</u>

⁷ The State of AI: Global survey | McKinsey

⁸ Career Opportunities in Artificial Intelligence in 2025

⁹ https://onlinedegrees.sandiego.edu/ai-impact-on-job-market/

¹⁰ AI in the workplace: A report for 2025 | McKinsey

¹¹ A brief history of the five-day workweek