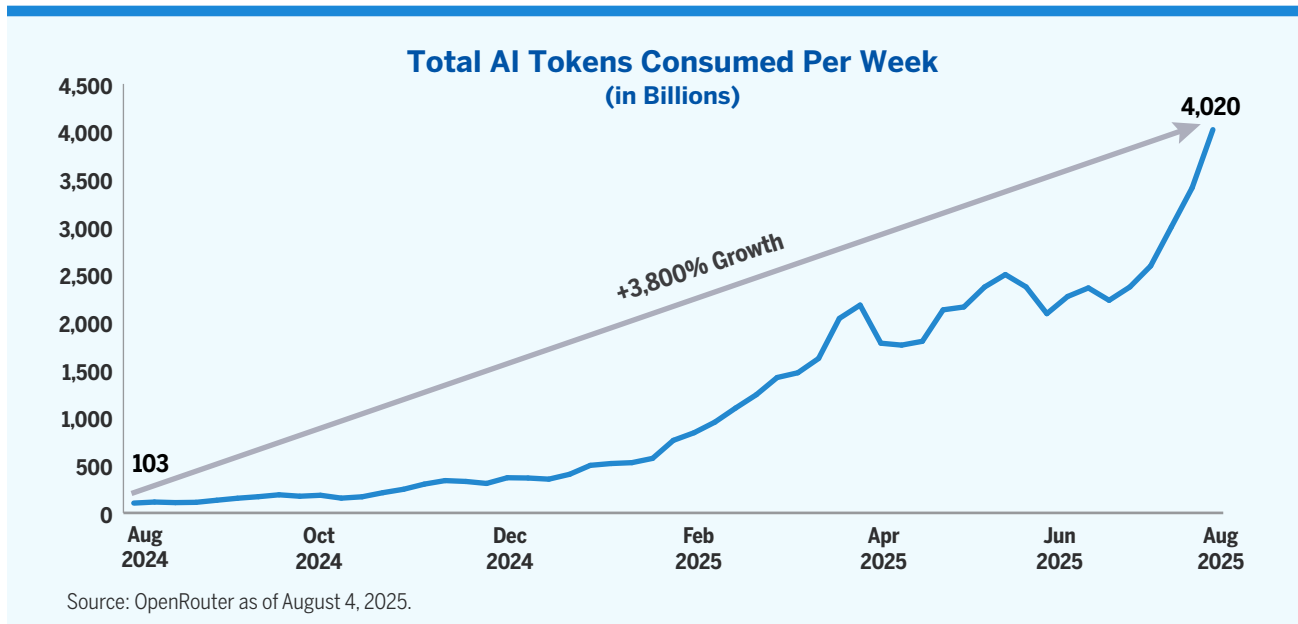


Mapping AI Momentum

With major cloud service providers investing hundreds of billions of dollars in artificial intelligence (AI) over the past few years, some investors may be skeptical about AI's practical utility and broader adoption. A clear indicator of real-world AI adoption is the consumption of AI “tokens”—small units of text processed by AI models—which have surged dramatically over the past year. What might this rising token consumption suggest for long-term investors, and can this rapid growth be sustained?



- Operations such as responding to simple queries, performing detailed reasoning tasks, or powering sophisticated AI agents rely on token usage. While precisely measuring total global token usage is challenging since not all companies disclose this information, we estimate that the annual total tokens processed could be in the tens of quadrillions.¹
- To illustrate this trend, we analyzed data from OpenRouter, a platform providing unified access to multiple AI language models and aggregating token usage as a proxy for overall AI adoption. As shown in the chart above, weekly token usage has soared over 3,800% in the past twelve months. Token consumption increased steadily throughout 2024 but experienced a sharp acceleration beginning in January 2025. This dramatic uptick was fueled by AI companies introducing innovative model techniques like chain-of-thought reasoning, which mimic human deliberation by methodically breaking down complex problems into logical, step-by-step processes rather than rushing to an answer (see also [Inferring Strong Demand](#)).
- Earlier this year, we contended that declining AI-training costs would spur higher utilization; the latest figures support this claim (see [The AI Investment Paradox](#)). Looking ahead, we believe token volume may climb even further as agentic APIs enable AI systems to autonomously orchestrate models to form thoughts, execute tasks, and collaborate with other services—reducing reliance on human prompting.
- In our view, intensifying demand for AI workloads requires companies to increase investment in AI infrastructure, including GPUs, high-speed networking, and reliable power solutions, in our view. Moreover, the emergence of agentic and multimodal models (e.g., audio- and video-based prompting), which require multiple complex backend steps, may compound token consumption and place further strain on AI infrastructure. The resulting rising token usage underscores AI's accelerating momentum. Ultimately, we believe companies successfully implementing AI into their operations could achieve significant productivity enhancements, operational efficiencies, and sustained competitive advantages over the long term (see also [Dynamic Disruption in Global Advertising](#)).

¹ Although many large-scale platforms do not disclose token statistics—meaning total generation is likely far higher—two recent disclosures provide a useful reference point. Alphabet Inc. stated on its July 23, 2025, earnings call, “At I/O in May, we announced that we processed 480 trillion monthly tokens across our surfaces. Since then, we have doubled that number, now processing over 980 trillion monthly tokens.” Microsoft Corp. reported on its July 30, 2025, earnings call, “Looking just at tokens served by our Foundry APIs, we processed over 500 trillion so far this year, up more than 7x.” Annualizing Alphabet’s figure (980 trillion × 12 = 11.8 quadrillion) and projecting Microsoft’s half-year total over a full year (500 trillion × 2 = 1.0 quadrillion) yields a combined run-rate of approximately 12.8 quadrillion tokens.

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OpenRouter is an AI infrastructure platform providing APIs that facilitate access to various large language models.

The following positions represent firm wide assets under management as of May 31, 2025: Alphabet, Inc., 1.7%, Microsoft Corporation, 8.7%.

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