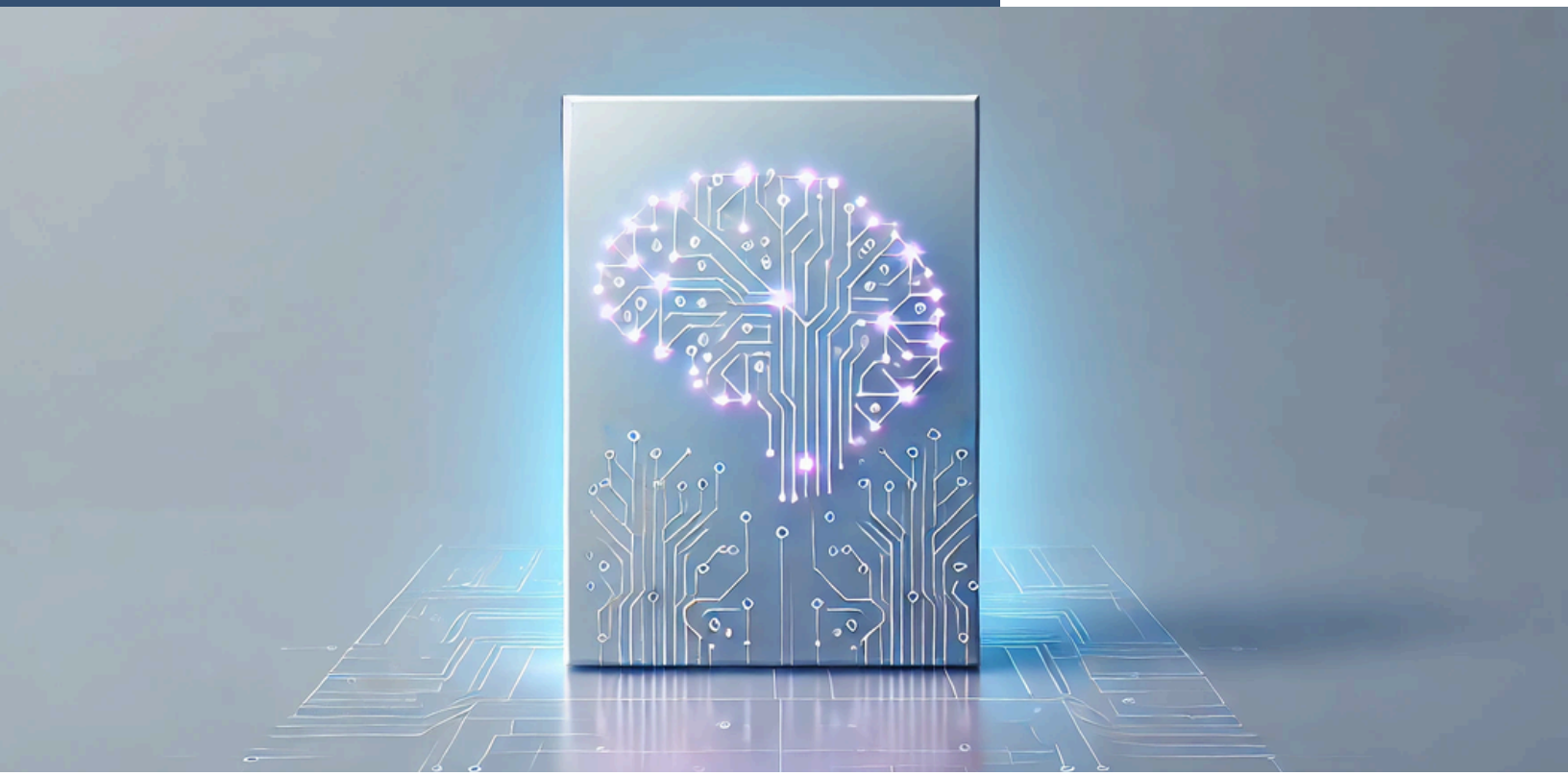
ARTIFICIAL INTELLIGENCE:
NOT YOUR GRANDPA'S TECH BOOM

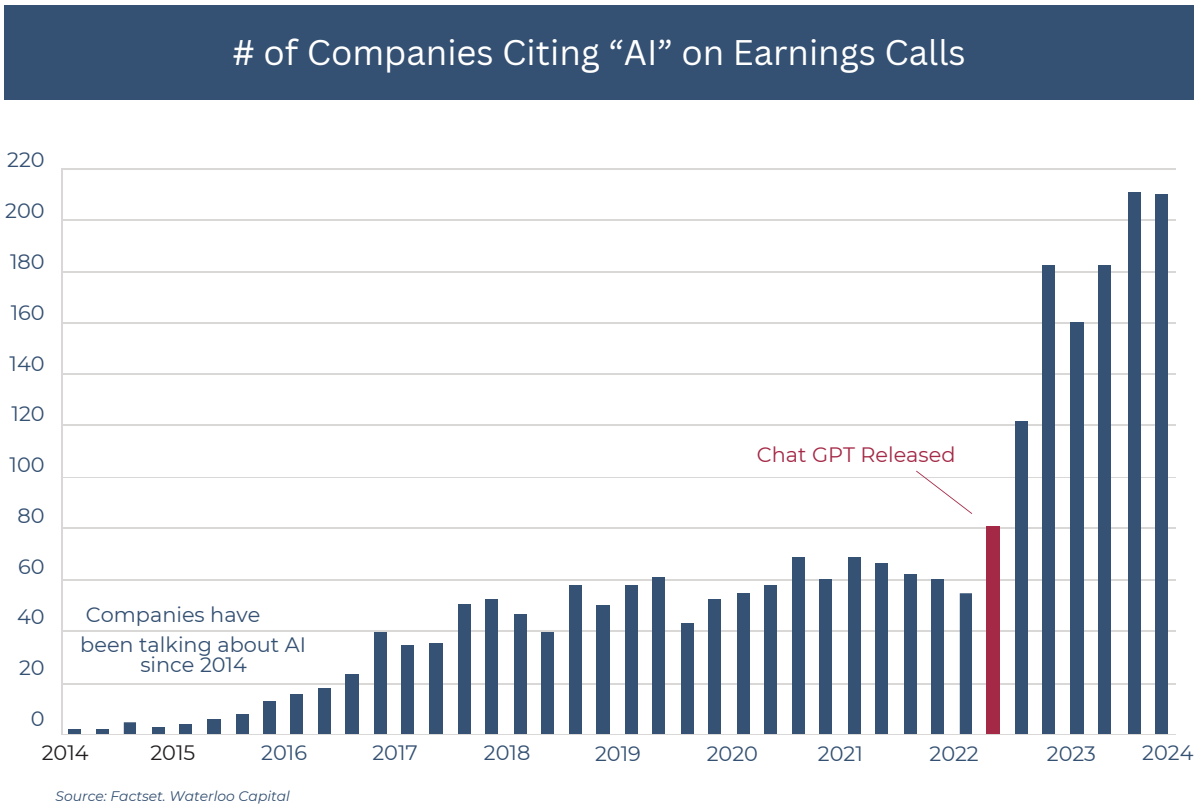
WATERLOO™ CAPITAL



AI isn't just a buzzword anymore, it's a transformative force defining our era. As this technology reshapes the way we live and work, it carries the weight of both immense potential and profound uncertainty. History has shown that technological revolution brings both opportunities and challenges, and AI is no exception. Will it usher in an era of unprecedented growth, or will the hurdles of adaptation and sustainability slow its momentum?

One thing is certain: the AI revolution has arrived, and its impact is only just beginning to unfold.

Artificial Intelligence (AI) has witnessed explosive growth over the past few years, evolving from niche technology to one of the most transformative forces in the global economy. While AI has long been a part of technological discourse, its prominence has skyrocketed over the past decade. Just ten years ago, only a handful of companies touched on the topic during earnings calls. By 2024, over 40% of S&P 500 companies mentioned it. While this enthusiasm may temper somewhat in 2025, the opportunities within AI remain immense.

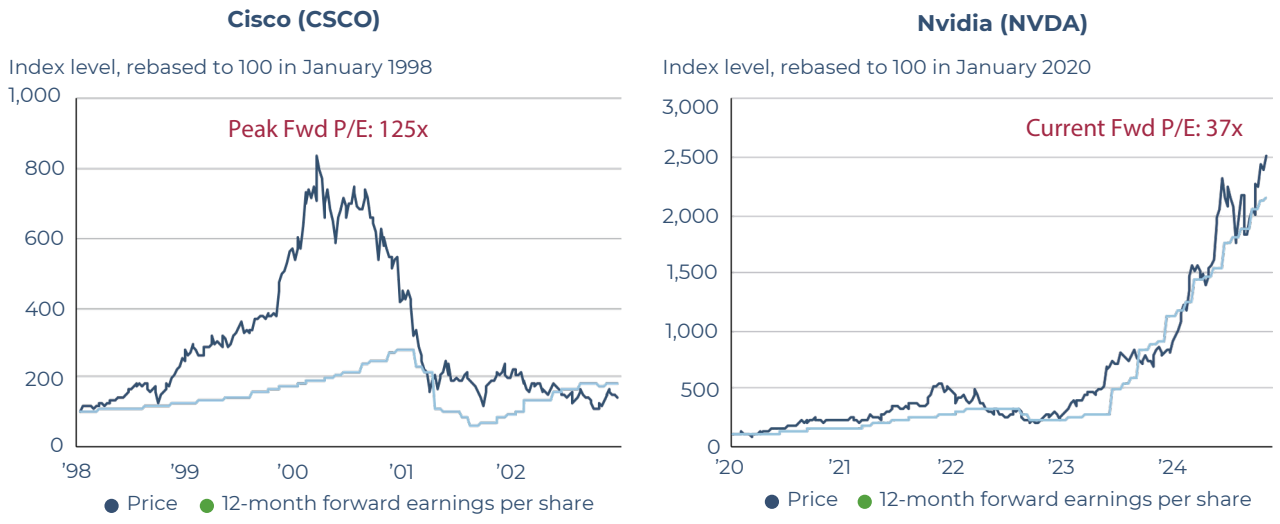


Without question, the AI boom is here, yet it raises countless questions about its potential, its risks, and, most importantly, its impact on markets. The biggest storyline has been drawing parallels between today's artificial intelligence revolution and the dot-com era of the late 1990s. And these similarities are hard to ignore as both represent transformative technological waves that reshaped industries and investor behavior. What's important is that unlike the speculative frenzy of the dot-com boom, where companies could simply add ".com" to their names to ride the hype, this AI cycle is being driven by tangible earnings and measurable productivity gains.

Take NVIDIA for example. the company has been at the center of this era of innovation, thanks to its advanced GPUs that power everything from ChatGPT ChatGPT to autonomous vehicles. This dominance has fueled its meteoric stock performance, reminiscent of Cisco's rise during the 1990s. However, the key difference lies in valuation and earnings. While Cisco traded at a lofty forward P/E of over 125x at the height of the dot-com bubble, NVIDIA's current forward P/E is comparatively modest at 37x. Wall Street's optimism for NVIDIA is anchored in real earnings growth as AI infrastructure continues to expand globally. This is not just speculative enthusiasm; it is a bet on the tangible value AI is already delivering to businesses globally.

"This AI cycle is being driven by tangible earnings and measurable productivity gains."

2000's Showed Price-Earnings Decoupling: Today Tells a Different Story

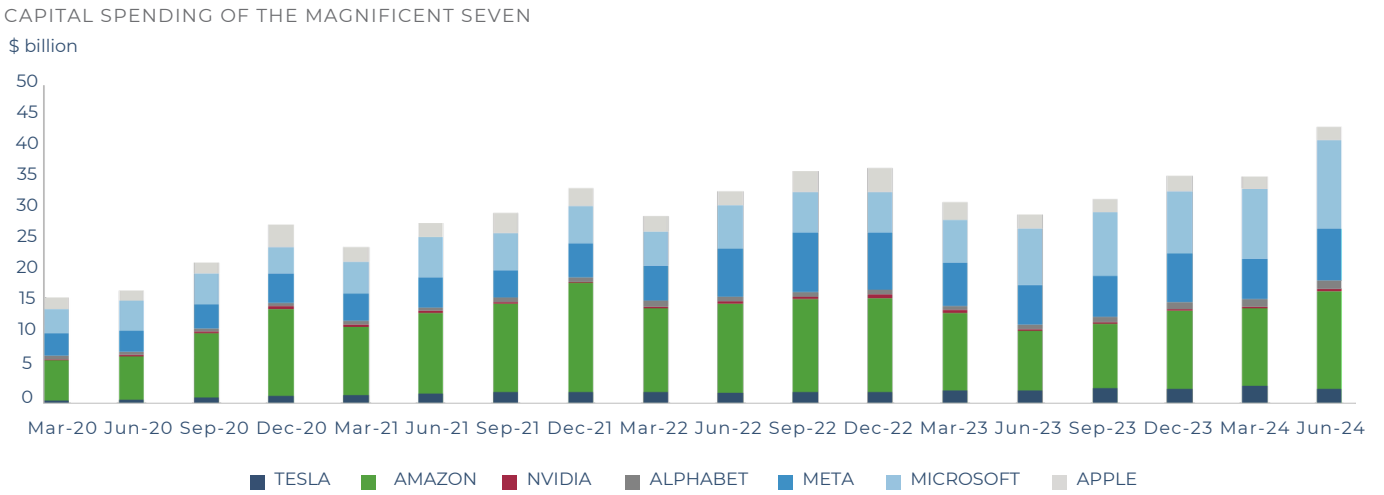


Source: IBES, LSEG Datastream, J.P. Morgan Asset Management, Waterloo Capital, Chart Data as of November 12, 2024. NVDA's current P/E as of January 2025.

The comparisons to the dot-com era serve as a cautionary tale, but they emphasize the importance of focusing on the concrete catalysts and observable opportunities that extend far beyond one single company or sector. The AI ecosystem is rapidly evolving, with infrastructure development accelerating to support this new technological movement.

At the forefront are the "Magnificent Seven" tech giants, collectively investing $50 billion annually in capital expenditures to develop AI capabilities. These investments are supercharged by fiscal incentives such as the CHIPS Act, which aims to strengthen domestic semiconductor production and innovation. The story of AI does not end with these preeminent names. Data centers, energy providers, and industrial suppliers are poised to ride this multiyear investment cycle as AI infrastructure expands and matures.

The Magnificent Seven are Approaching $50 billion in Combined Capital Spending



Sources: Bloomberg, Apollo Chief Economist. Data as of June 2024 .

Looking ahead to 2025 and beyond, key drivers for adoption include advancements in chip technology, the democratization of AI tools for small- and medium-sized companies, and government efforts to reshore critical semiconductor manufacturing. Beyond the dominance of the industry leaders, the broader ecosystem supporting AI is just as critical. Companies in other areas such as data center REITs, energy providers, and hardware manufacturers, are well positioned to gain from the growing demand for AI infrastructure.

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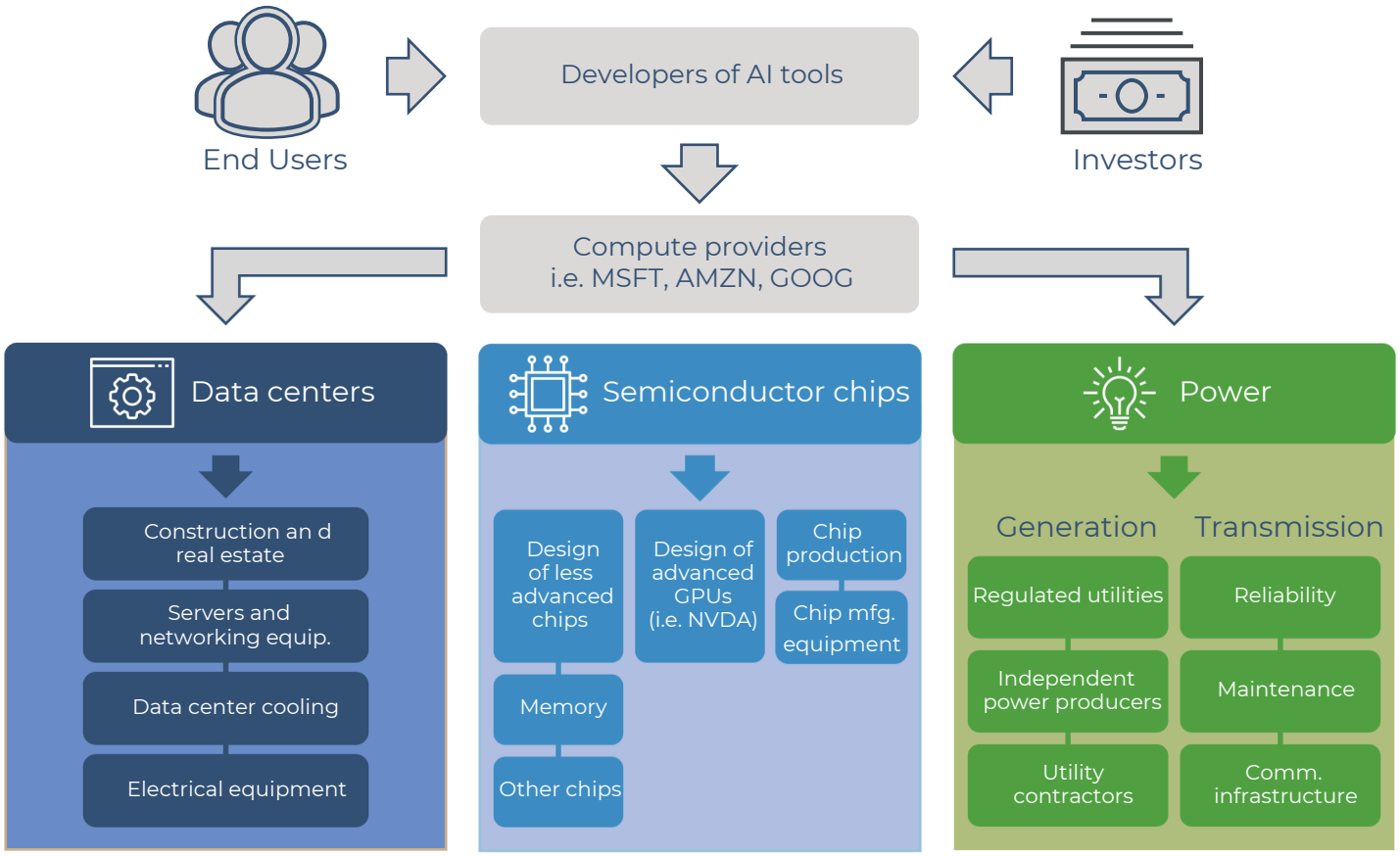
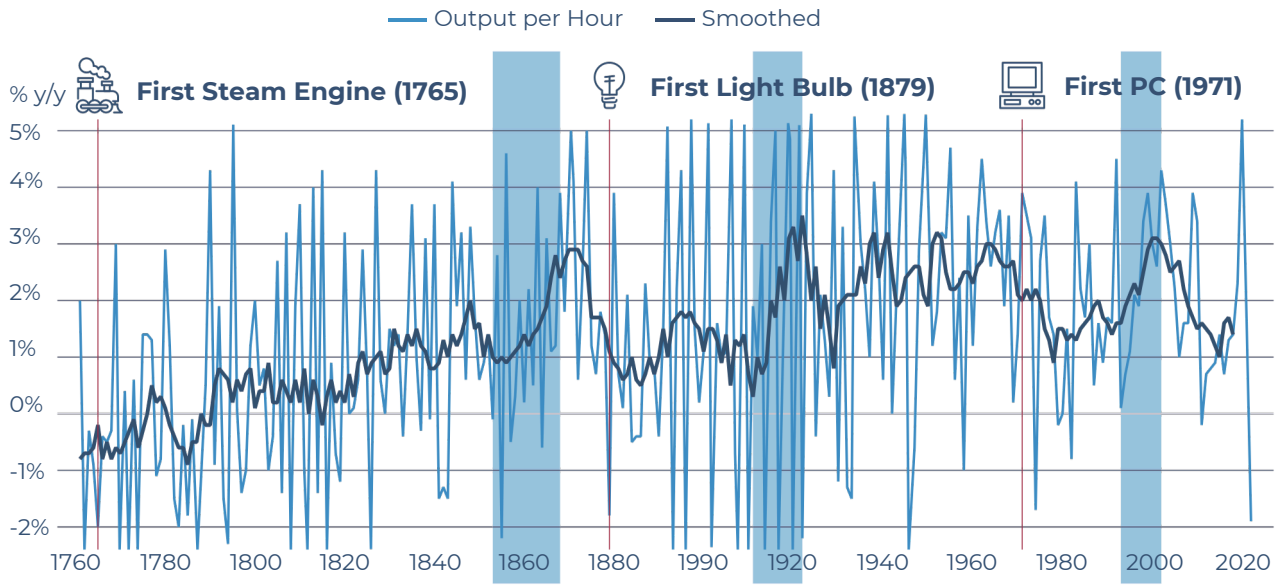
On the real estate front, firms are developing multimegawatt data center campuses, while energy providers are building nuclear-powered campuses to address AI's skyrocketing electricity demands. In healthcare, AI-powered systems are innovating diagnostics, optimizing workflows, and improving patient outcomes. Logistics, too, is undergoing transformation as firms are deploying AI-powered robots to enhance warehouse efficiency, reduce costs, and streamline supply chains. Firm's deploying Generative AI, powered by large language models like ChatGPT, have witnessed historic growth. Released in November 2022, ChatGPT set a record as the fastest application to reach 100 million monthly users in just two days, underscoring the technology's disruptive potential. These advancements demonstrate how AI is becoming a foundational power, reshaping industries, driving innovation, and opening new avenues of growth for the economy in 2025 and beyond.



Source: Bridgewater Associates, J.P. Morgan Asset Management. Data are as of November 15, 2024.

Zooming out, we argue that AI represents not just a technological advancement but a structural shift in the economy, redefining how growth can be achieved. Economists predict that AI could boost U.S. productivity by 1.5% annually, potentially adding 8-9% to GDP over the next decade. Unlike past technological revolutions, such as the steam engine or the personal computer, AI's adoption timeline is expected to be much faster, with its productivity benefits becoming evident in economic data by the late 2020s. By automating labor-intensive tasks, enhancing decision-making, and enabling new economic activities, AI is poised to transform industries and reshape economies.

Effect of Technological Advances on Labor Productivity

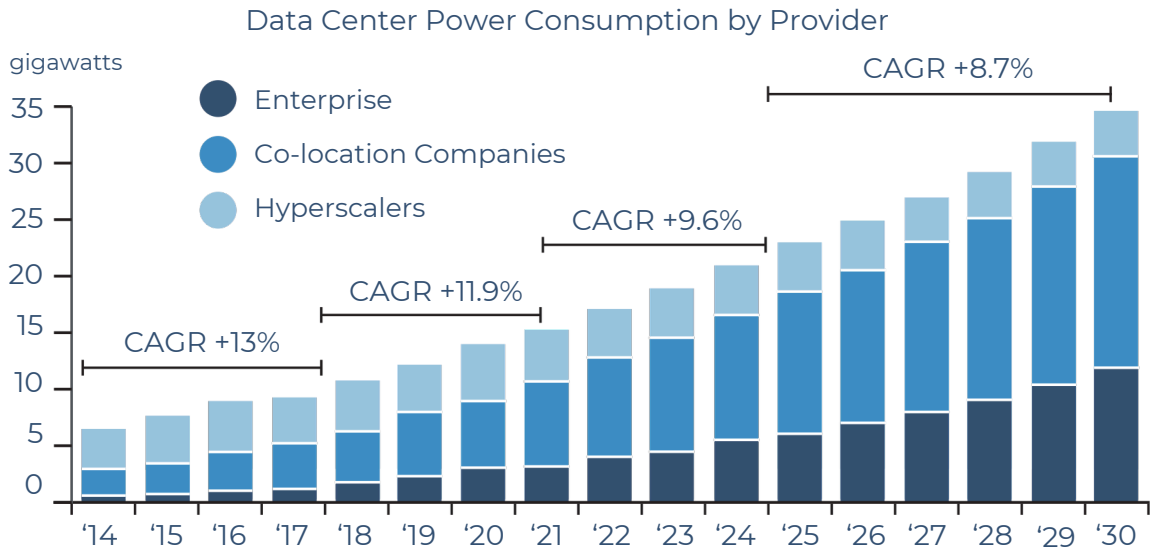


Source: Kendrick (1961), Syverson (2013), BLS, BoE, Barclays Research. Smoothed series is 9YR centered moving average.

However, this transformative power comes with significant challenges that must be addressed to ensure sustainable growth. Workforce disruptions are a major concern, with up to 30% of jobs in advanced economies potentially subject to automation over the next 20 years. White-collar roles, such as technical writing and budget analysis, are particularly vulnerable, highlighting the need for proactive public policies such as job retraining and workforce adaptation programs. This is a modern example of creative destruction – a process where old industries and roles are replaced by new, innovative ones. While the transition may be disruptive, history shows that technological advancements ultimately lead to the creation of entirely new jobs and economic opportunities.

At the same time, AI's growth is under pressure from supply chain bottlenecks and energy demands. China's ban on critical rare metals like gallium and germanium, essential for semiconductor production, poses a major threat to AI infrastructure. This recent move, seen as retaliation for U.S. chip export restrictions, could further disrupt an already fragile supply chain. Adding to the uncertainty, President-elect Donald Trump has floated the idea of new tariffs on Chinese goods, potentially escalating tensions more. Meanwhile, AI's energy needs are expected to soar, with data centers projected to consume 8% of U.S. electricity by 2030, up from just 3% in 2022. Addressing these challenges will require innovative solutions, such as nuclear-powered data campuses and increased integration of renewable energy, to ensure AI's expansion remains sustainable.

AI Data Centers Have Insatiable Demand For Power



Sources: J.P. Morgan Wealth Management, Bloomberg Finance L.P. Data as of Q2 2024.

"AI's energy needs are expected to soar, with data centers projected to consume 8% of U.S. electricity by 2030."

The emergence of Chinese AI startups like DeepSeek could throw a wrench in the AI buildout as it is amplifying concerns for U.S. AI companies and their investors. DeepSeek's rapid development of a ChatGPT equivalent, achieved despite restrictions on advanced GPUs and at a fraction of the cost, raises significant questions about the sustainability of lofty U.S. AI valuations. If efficient models like DeepSeek's can compete without such staggering investments, it challenges the notion that heavy capex is the optimal approach to leading in AI. For investors betting on the AI theme, DeepSeek serves as a stark reminder of the risks tied to escalating costs and intensifying international competition.

Legal and ethical concerns further complicate the progression of AI's development. The supply of high-quality human-generated data needed to train AI models is finite and projected to be depleted within the next 15 years. At that point, AI models will rely on synthetic datasets, data created by AI itself, to continue training. This poses risks of "model collapse," where model quality degrades over time, increasing errors as they progressively rely on artificially generated rather than factual.

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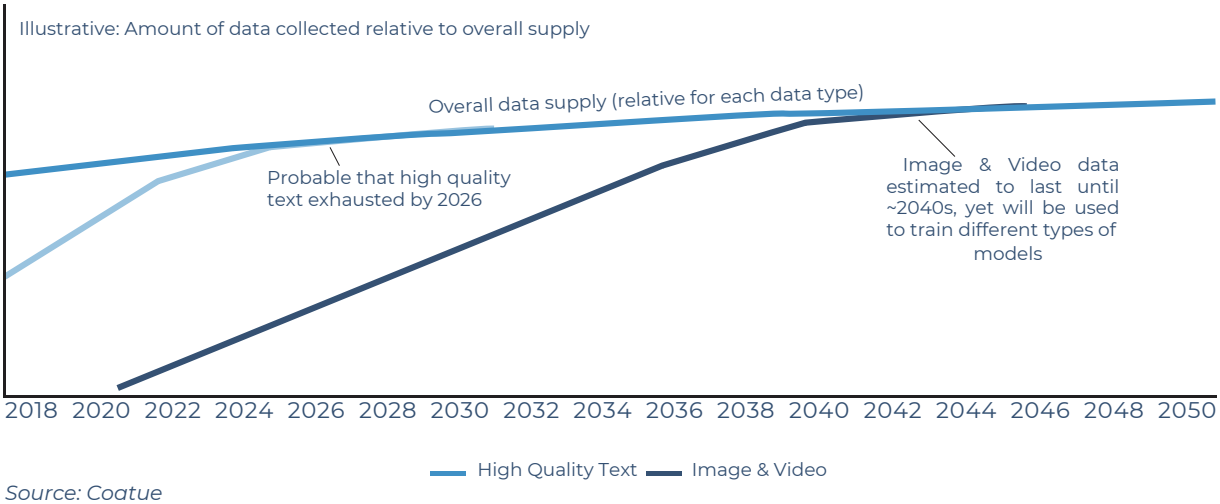
Data Scarcity is a Potential Wall to Scaling Models

High quality text data could be exhausted soon, images & video have longer runway



Source: Coatue

> "It highlights the need for regulatory oversight to establish effective checks and balances, ensuring that AI develops responsibly and ethically. "

Rather than a speculative bubble, AI represents a multi-year investment cycle with significant long-term potential. AI's integration is set to drive economic growth, enhancing efficiency and generating new opportunities. Early adopters are already enjoying a considerable competitive advantage as improved automation, decision-making, and process optimization drive lower costs and higher efficiency. While challenges like supply chain constraints and energy demands persist, they also pave the way for innovation. In 2025, AI's evolution goes beyond technological advancement, it is about unlocking new pathways for productivity, investment, and economic transformation.

Oh, and in case you're wondering - yes, AI wrote this entire theme. Just kidding, we're not at the point where AI is stealing the writing gigs from us humans... yet.

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