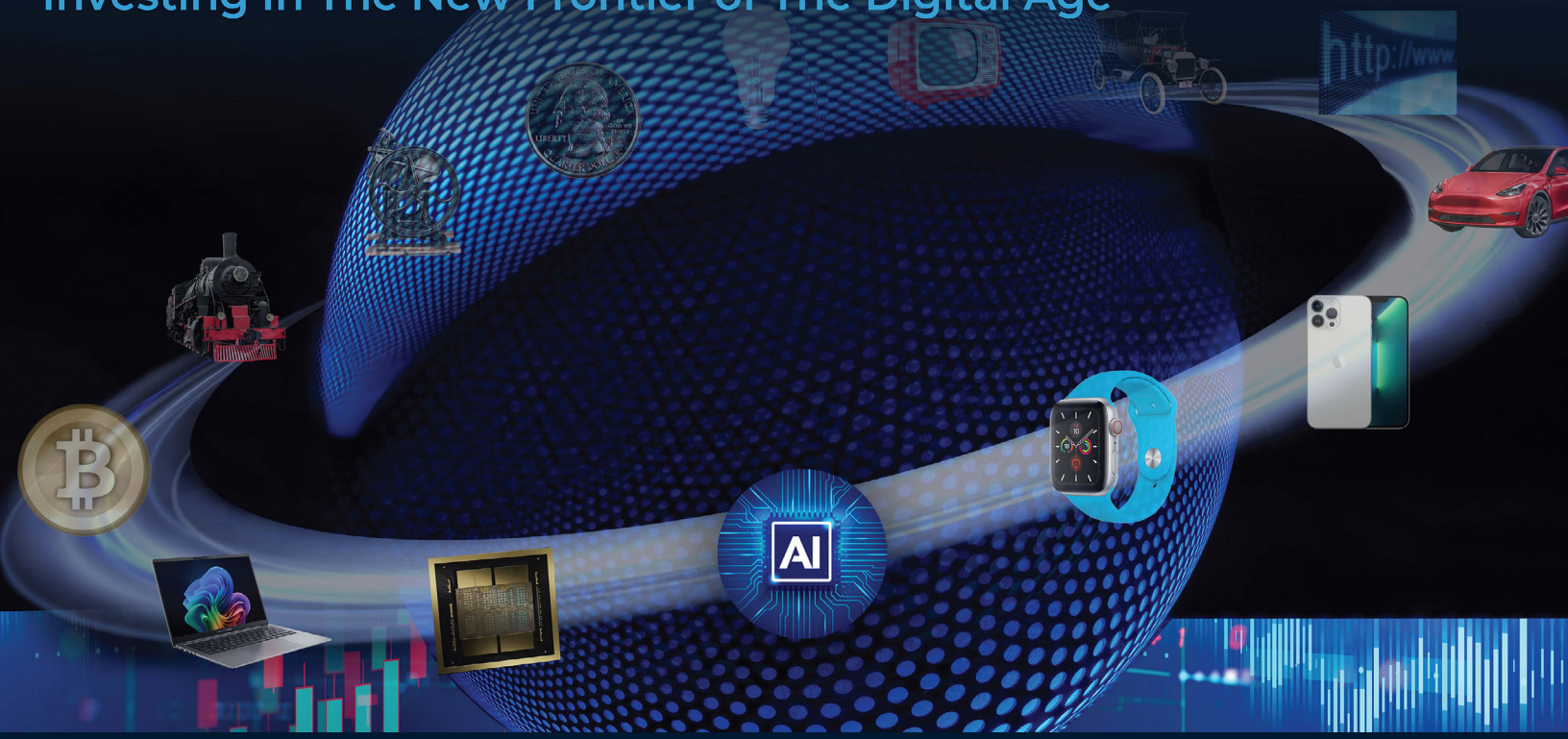
Special 2026 Mid-Year Edition

Investing In The New Frontier of The Digital Age



Mary Ann Bartels
Chief Investment Strategist

SANCTUARY WEALTH

Investing In The New Frontier of The Digital Age

Technology Remains The Leadership Of The Secular Bull Market

Technology companies and their closely linked ecosystems currently hold strong leadership positions in the stock market and in the investment universe overall. They lead in several key drivers of long-term shareholder value, namely: Frontier Model performance, Compute Infrastructure scale, specialized supply chains, and integrated platforms that generate revenue, margins, and growth.



Terms Worth Knowing

Frontier Model
The most advanced AI systems that push the boundaries of reasoning, creativity, and complex problem-solving

Compute Infrastructure
The powerful computers, specialized chips, data centers, and networking systems that provide the raw processing power for AI

Near-Term Caution With Long-Term Confidence

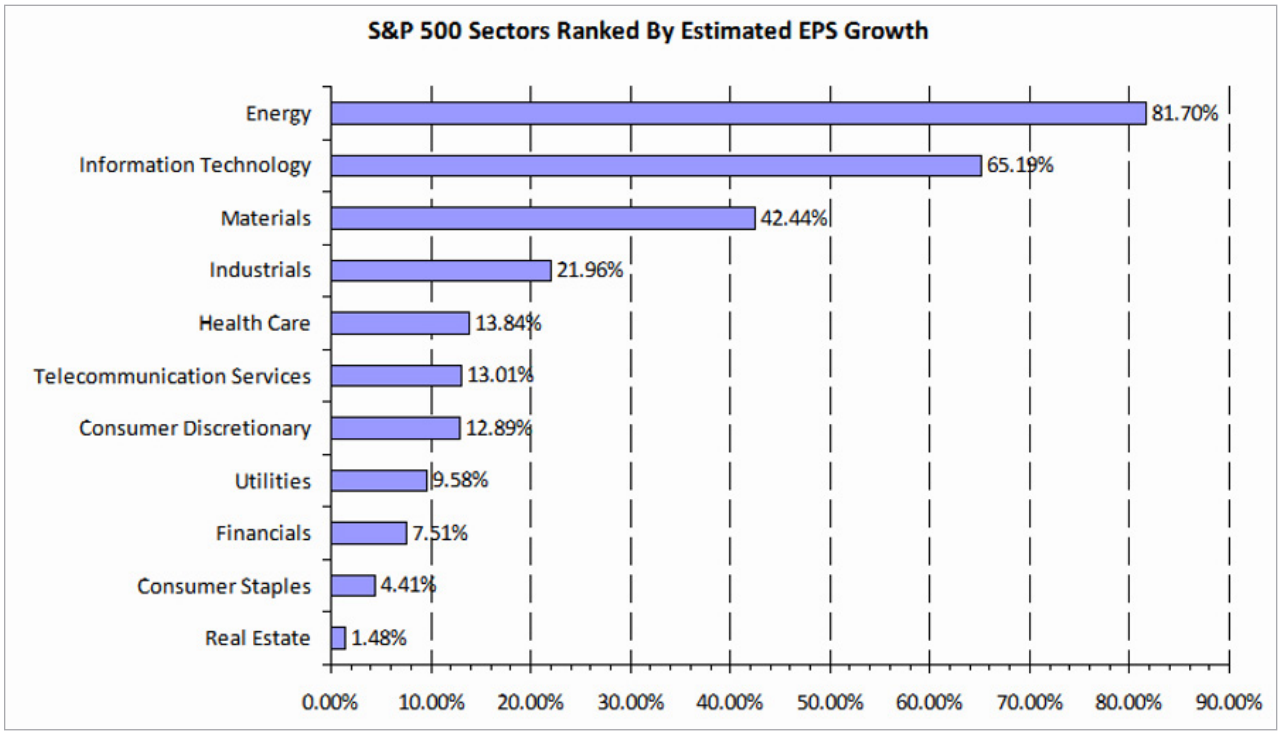
We believe that investors should brace for more volatility, with Technology likely leading any near-term correction – which would be driven by the superior returns in semiconductor stocks. Semis are up on average 80% at the end of June. There has been a rotation within the Technology sector. The Magnificent Seven (Mag 7) — Apple (AAPL), Microsoft (MSFT), NVIDIA (NVDA), Amazon (AMZN), Alphabet (GOOGL), Meta Platforms (META), and Tesla (TSLA) — have pulled back amid concerns over rising capital expenditures and debt issuance. At the same time, semiconductor stocks tied to memory chips have surged as supply shortages pushed stock prices sharply higher, creating an overbought condition.

What supports Technology's long-term leadership is the abundance of earnings coming from the sector with semiconductor stocks delivering the strongest growth rates. The Information Technology sector specifically has the highest number of companies issuing positive earnings guidance in the second quarter of this year. According to FactSet, earnings guidance is above their 5-year and 10-year averages. *In fact, it's the highest number of companies in the Information Technology sector issuing positive EPS guidance for a second quarter since FactSet began tracking this metric in 2006!* With such strong earnings, we view any weakness as a normal correction following a significant rally, rather than the beginning of a more prolonged market event.

Where Are the Earnings?

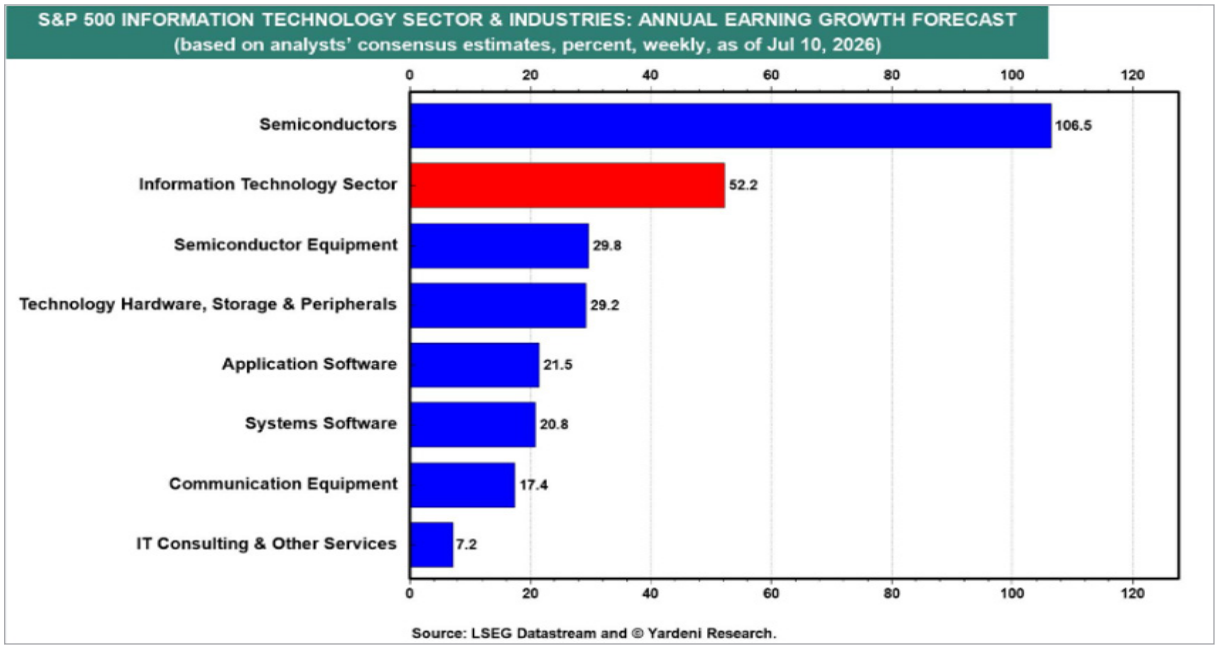
Earnings growth remains the ultimate driver of stock prices over time. In the current environment, Technology and semiconductor companies specifically are delivering the strongest earnings momentum (outside of the Energy sector), fueled by surging demand for AI infrastructure, data centers, and related hardware. While the broader market digests earlier gains, the fundamental earnings power in the Tech sector continues to support leadership. We expect this trend to persist as AI moves from early adoption into widespread commercial and productivity applications, with the strongest companies converting innovation into sustained revenue and profit growth.

Technology A Leading Sector For Earnings Growth Over The Next Year



Source: Bloomberg, Sanctuary Wealth, July 11, 2026

Semiconductors Driving Earnings In The Technology Sector

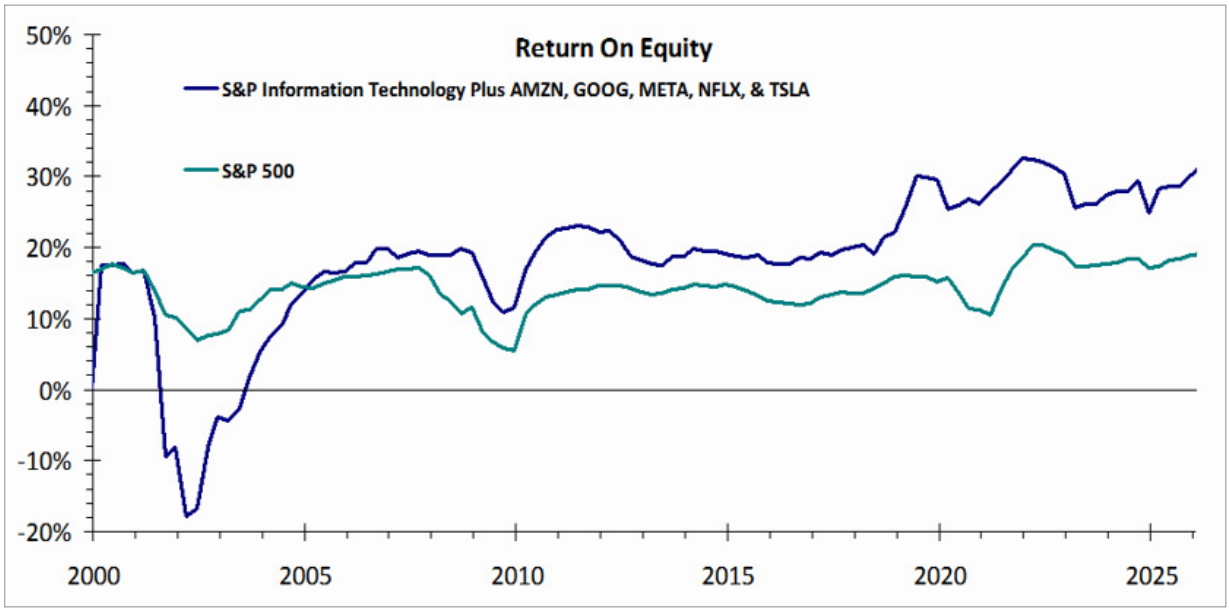


Source: Yardeni Research, July 12, 2026

ROE Continues To Rise For Technology Companies

We have been making the case that what is also driving the performance of Technology companies is their Return on Equity (ROE). ROE has been rising for the Technology sector, moving up to 32% from 30%, while the S&P 500 ROE slipped from 20% to 19%. We have added several key companies to the Technology sector as they are main drivers of the buildout of the AI Digital Era. They are Amazon (AMZN), Alphabet (GOOGL), Meta (META) and Tesla (TSLA).

Return On Equity For Technology Companies Significantly Above The Market



Source: Bloomberg, Sanctuary Wealth, July 11, 2026

Where Have We Been And Where Are We Going?

Since 1955, U.S. real GDP has grown at an average annual rate of 2.81%. Major technological breakthroughs — from mainframe and personal computers to the internet, smartphones, and social media — have consistently accelerated the economy. In the six years following these innovations, GDP growth averaged 3.15%, a 12% improvement. During the World Wide Web's peak adoption years (1993–1999), the U.S. economy expanded at an annual rate of 4.85%. Across the broader era of rapid digital innovation (1980–1999), growth averaged 4.02% per year. We believe we are now entering the next phase of the Digital Era, powered by Artificial Intelligence, Robotics, Blockchain, Web 3.0, and Virtual Reality. These technologies have only begun to influence the economy, productivity, and corporate profits, and we expect them to have a profound positive impact over the coming decade. This wave of innovation is powering the secular bull market in equities — which began in 2013 and, in our view, can run through the end of this decade. *We believe AI is the greatest technological leap since the introduction of the steam engine in the early 1700s.*

The current AI wave is the pivotal breakthrough phase of the Digital Age, building on decades of IT investment to industrialize cognition and physical work.

Federal Reserve (Fed) Chair Kevin Warsh has stressed the need for better, more timely (i.e., high frequency) data to guide policy, noting that much current information arrives with long delays and is backward-looking. Concerning AI itself, Warsh was particularly direct: ***"Artificial intelligence, the latest generation of general purpose technology, is perhaps as important a change in the economy and business and households that we've had in my adult lifetime. It is filled with both a huge opportunity and with risks."***

Historical Perspective

Major technological revolutions of the 19th century — including the steam engine, railroads, and steel — produced economic booms and busts, along with periods of painful adjustment in both the economy and financial markets. Yet after each period of dislocation, patient investors who stayed focused on the underlying productivity gains were ultimately rewarded as the new infrastructure transformed the economy.

We believe the AI-driven digital transformation is following a similar long-term pattern. The growth and development of AI are often compared to the Tech revolution in the mid to late 1990s. Back in this period, earnings were not abundant, and valuations reached the most extreme in history. Today, valuations in some areas of Technology are slightly elevated relative to the market, but they are not at an extreme level given the earnings power being generated.

Today Vs. The 1990s Dot-Com Boom

Historically, the Technology sector carries higher valuations on a price-earnings ratio basis than historical averages of the market. This is because the growth in earnings and the transformation to the economy are so positively impacted. Let's review where we are today compared to the Technology boom of the 1990s.

Technology Valuations Remain Well Below Dot-Com Extremes

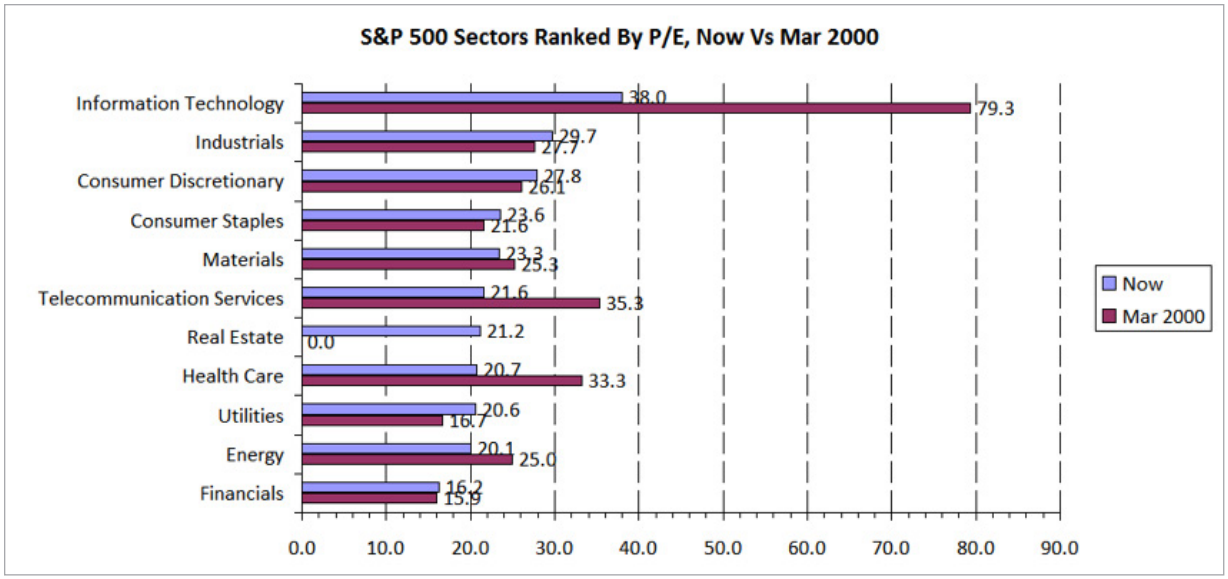
The price-to-earnings (P/E) ratio measures how much investors are willing to pay for each dollar of a company's earnings.

The Technology sector currently trades at a trailing P/E of approximately 38x. At the peak of the dot-com bubble in March 2000, the sector traded at more than 100x trailing earnings. Looking ahead, the estimated 2026 forward P/E is approximately 25x, compared with 22x for the S&P 500. *Technology is not very expensive, especially given the strength and growth in earnings.*

While today's trailing Technology P/E of 38x is elevated by historical standards, it remains far below the dot-com era extreme. More importantly, today's valuations are supported by strong earnings, record margins, and cash flow, unlike many technology companies in 2000 that generated little or no profit.

Today's P/E Ratios Are Not Near Those In The Dot-Com Boom

Trailing Price-Earnings Multiples By Sector



Source: Bloomberg, Sanctuary Wealth, July 10, 2026

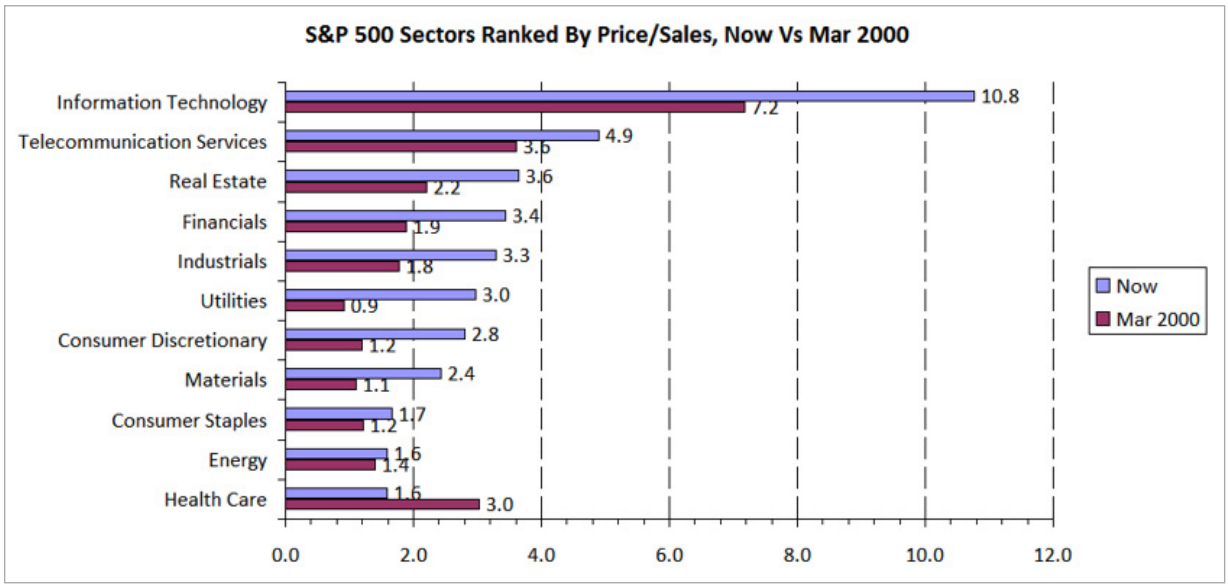
Price-to-Sales Ratios Reflect Stronger Profitability But Are Elevated

The price-to-sales (P/S) ratio measures how much investors are willing to pay for each dollar of company revenue.

The Information Technology sector currently trades at approximately 10.8x sales, above the 7.2x multiple reached at the peak of the dot-com bubble in 2000. By comparison, the S&P 500 trades at approximately 3.6x sales.

Unlike the P/E ratio, the P/S ratio suggests that Technology valuations remain elevated relative to history. However, today's companies generate substantially stronger earnings, cash flow, and margins than many of their dot-com-era predecessors. While this valuation measure could prove susceptible to periodic corrections, the sector's underlying fundamentals remain considerably stronger than they were 26 years ago. We believe the sector can maintain its leadership.

Price-To-Sales Ratios Today And In March 2000



Source: Bloomberg, Sanctuary Wealth, July 10, 2026

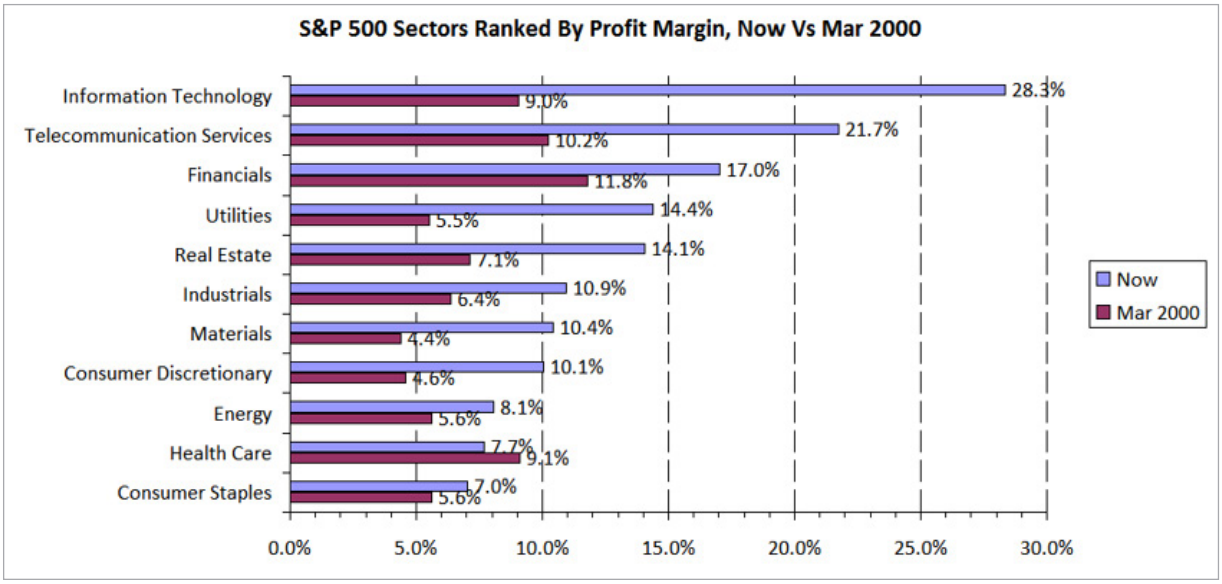
Profit Margins Have Improved Dramatically Since the 1990s

Net profit margin measures the percentage of revenue that a company converts into profit after all expenses.

Technology sector profit margins have expanded dramatically over the past two decades. Today, the sector's net profit margin is approximately 28%, with forward estimates approaching 34% — the strongest in the market. By comparison, Technology profit margins peaked at roughly 20% during the late 1990s.

Today's Technology leaders (hyperscalers and semiconductors) are fundamentally more profitable businesses than the hardware manufacturers and early internet companies that dominated the dot-com era. These stronger margins help justify higher price-to-sales multiples, even as price-to-earnings valuations remain reasonable relative to historical extremes and may prove to be cheap based on future reported earnings.

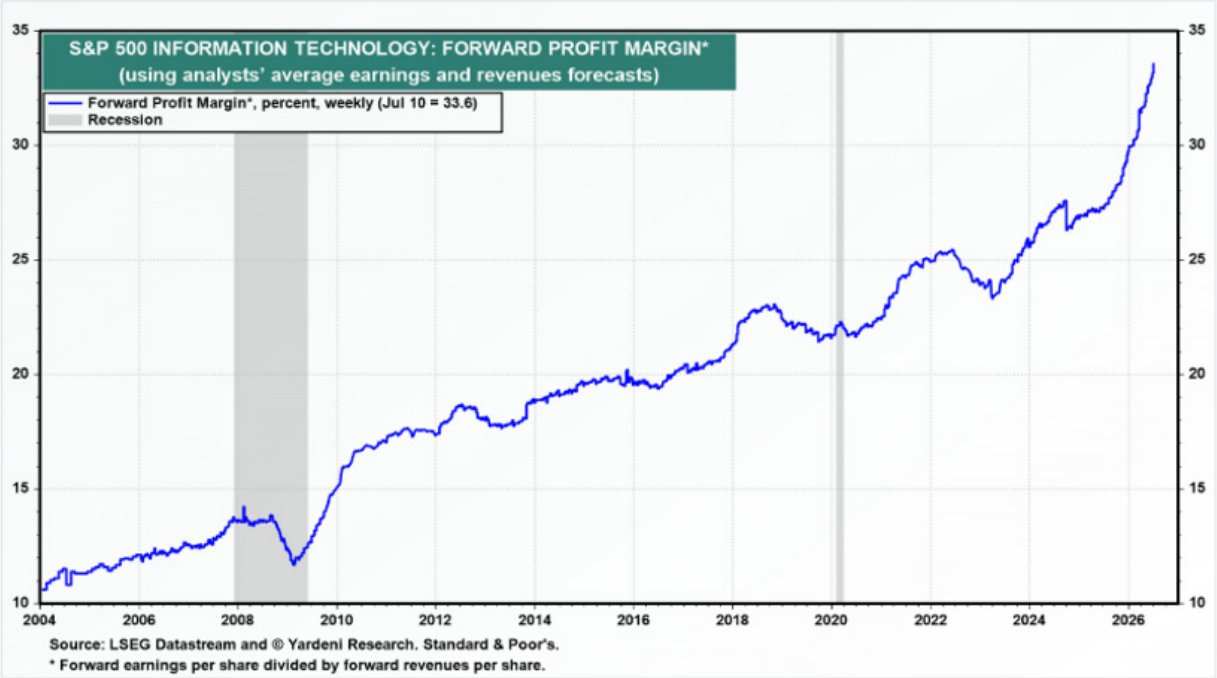
Profit Margins Today Are Better Than In The Dot-Com Boom



Source: Bloomberg, Sanctuary Wealth, July 10, 2026

Technology Profit Margins Going Parabolic

Figure 4 S&P 500 INFORMATION TECHNOLOGY: FORWARD PROFIT MARGIN



Source: Yardeni Research, July 2026

Key Differences

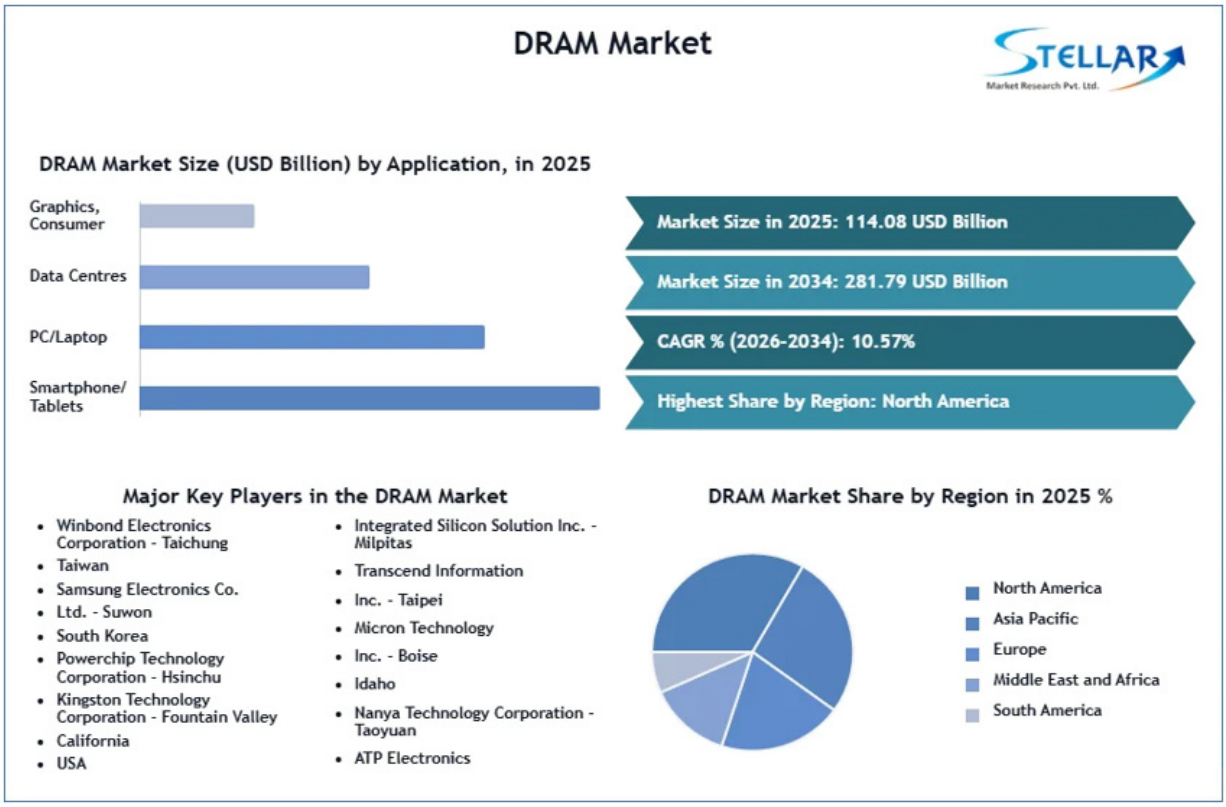
- Today's leading AI companies have much stronger earnings, revenue growth, and profit margins than the speculative names that dominated the market's peak in 1999–2000.
- The current environment shares more characteristics with the productive mid-1990s buildout phase (1995-1998) than with the final manic phase of the dot-com bubble.

Semiconductors Remain the Key Leadership Industry

Semiconductors are the foundational technology powering the entire AI buildout. We refer to them as the brains of all technology. Without semiconductor chips, you cannot have technology. Every advanced data center, every high-performance GPU, and every AI training or inference system depends on specialized GPU chips and high-bandwidth memory. Demand is currently outstripping supply, giving the semiconductor industry a structural leadership position with strong pricing power and growth leading to superior earnings.

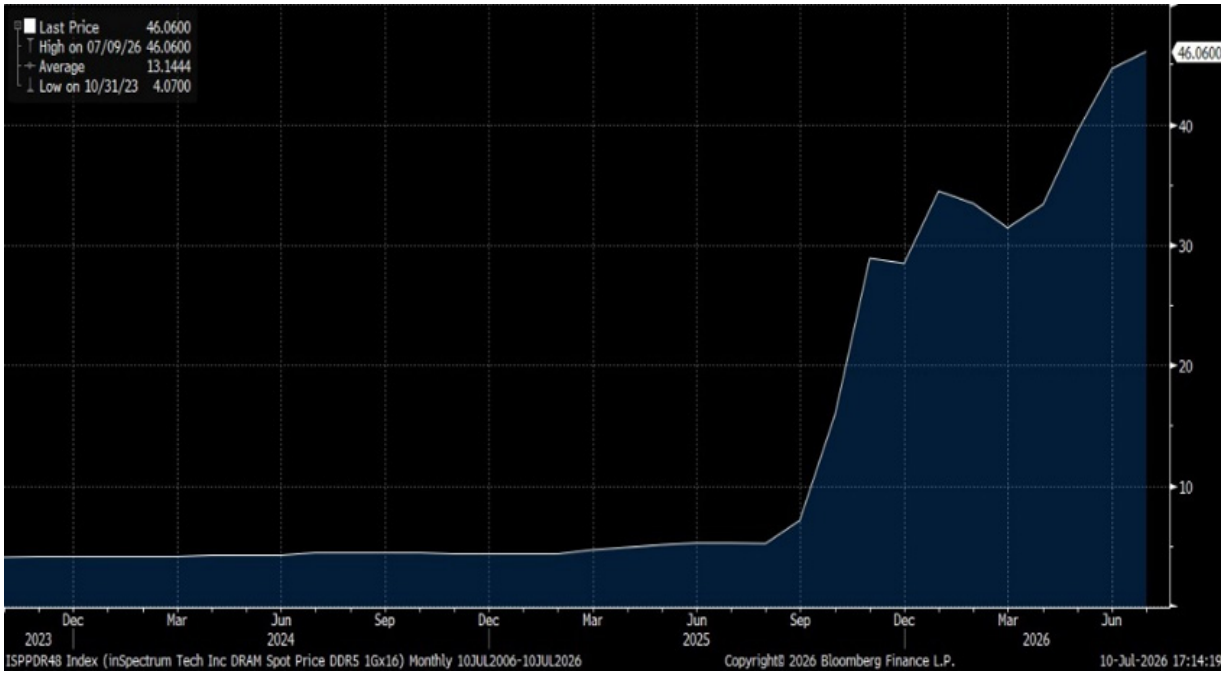
Data centers are the primary driver of this growth. They represent the new core infrastructure being built across the United States. Major technology companies are committing hundreds of billions of dollars annually, with total estimates for the data center buildout reaching as high as $7.0 trillion through 2030. This insatiable demand is particularly evident in the memory market. AI workloads require massive amounts of High Bandwidth Memory (HBM), a premium form of Dynamic Random Access Memory (DRAM). Chipmakers are reallocating production capacity away from standard DRAM to HBM to meet this high-margin AI need, resulting in shortages and sharp price increases across the broader DRAM market. Prices for key DRAM products have risen 50%–90% in recent quarters, with tightness expected to persist through the remainder of 2026 and into 2027.

DRAM Market by Application: AI/Data Center Share Rising Sharply



Source: Stellar Market Research Pvt. Ltd. (2025–2034 projections)

InSpectrum Tech Inc DRAM Spot Prices Are Still Rising



Source: Bloomberg, July 10, 2026

Moats And Their Investment Importance

A technical moat is a structural, technology-based barrier that protects a company from competitors replicating its product or service. Moats are durable competitive advantages that support high returns on capital over time. They include network effects, data advantages, switching costs, scale economies, and proprietary technology. Software and data flywheels are a prime example: more users generate more data, improving models and services, attracting even more users and developers in a self-reinforcing cycle.

These competitive moats help explain why certain technology companies have delivered exceptional market returns. History also reminds us that no competitive advantage is permanent. During the dot-com era, many early internet leaders soared on hype but later struggled when execution, profitability, and sustainable business models proved more important than growth alone. More recently, BlackBerry and Palm devices — and even standalone products like the iPod — were displaced as smartphones consolidated multiple technologies into a single platform. Innovation has a way of conquering yesterday's moats and eroding competitive advantages.

Today's AI-driven cycle appears different because it is already delivering measurable gains in productivity, efficiency, and earnings growth. AI is also accelerating the pace of innovation itself, rewarding companies that continue investing in research, development, and adaptation while making it increasingly difficult for others to keep pace.

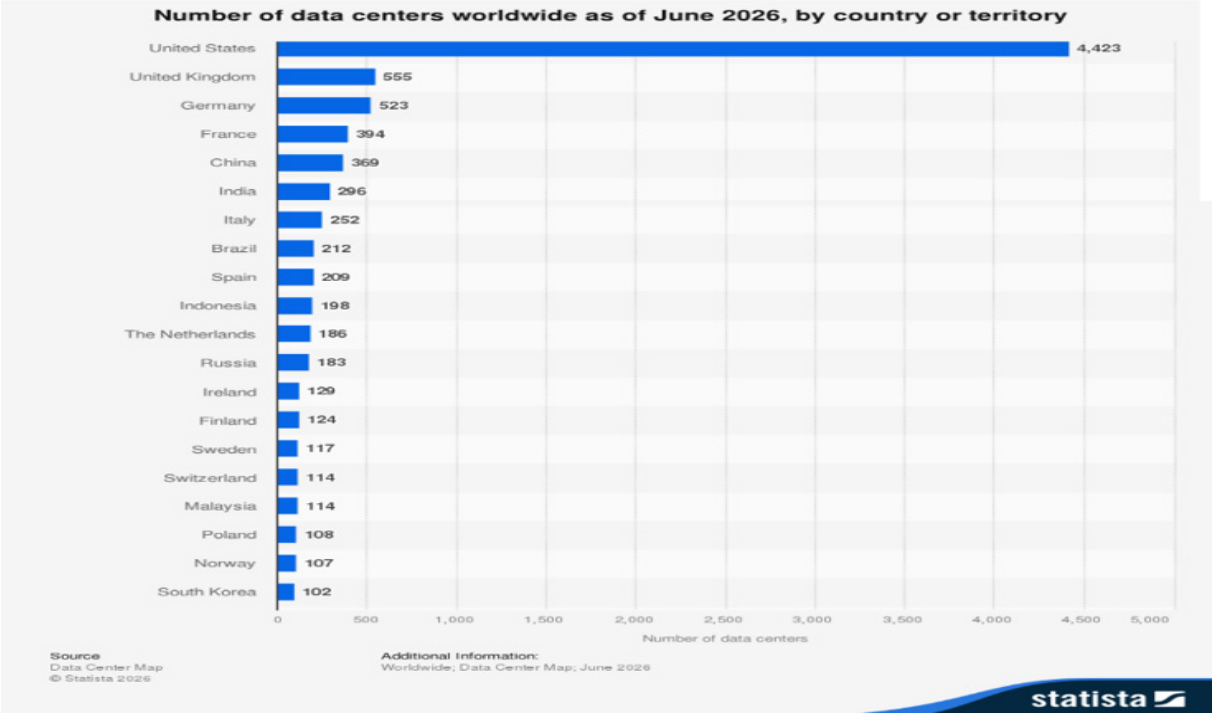
Key Drivers Of Current Market Leadership: Compute And Infrastructure Dominance

The United States hosts a large share of the world's advanced data center capacity. Recent estimates suggest the U.S. dominates global hyperscale data center capacity, with the gap continuing to widen as major technology companies concentrate new AI infrastructure investments domestically.

High-end AI accelerators (specialized chips designed to dramatically speed up the mathematical calculations required for training and running AI models) remain at a premium. Capacity owners are able to monetize through rental or internal use. Nvidia (NVDA) maintains clear leadership in these specialized processors, supported by Advanced Micro Devices (AMD) and others. But competition is emerging.

Critical supply chain elements include ultra-pure silicon from U.S. sources and advanced lithography equipment from ASML (ASML) from the Netherlands and Zeiss (AFX GY) from Germany.

The U.S. Has The Most Data Centers In The World By Far



Source: Statista, July 12, 2026



Terms Worth Knowing

Cloud Platform
Large-scale online computing services that let companies rent powerful computers, storage, and software over the internet instead of owning and maintaining their own hardware

Full Stack
The entire chain — from chips and power, all the way to the finished software, models, and applications customers use. It's like a car company that designs the engine, builds the body, makes the tires, and runs the dealerships. It provides more control, faster innovation, and higher potential profit capture.

Concentration of engineering and research talent enables rapid progress. Iteration speed means how quickly teams can test new ideas, measure results, fix problems, and improve; for example, rapidly updating a video game, level by level, instead of waiting months for the next version. This speed, combined with deep capital markets, lets leaders move from concept to real-world use faster.

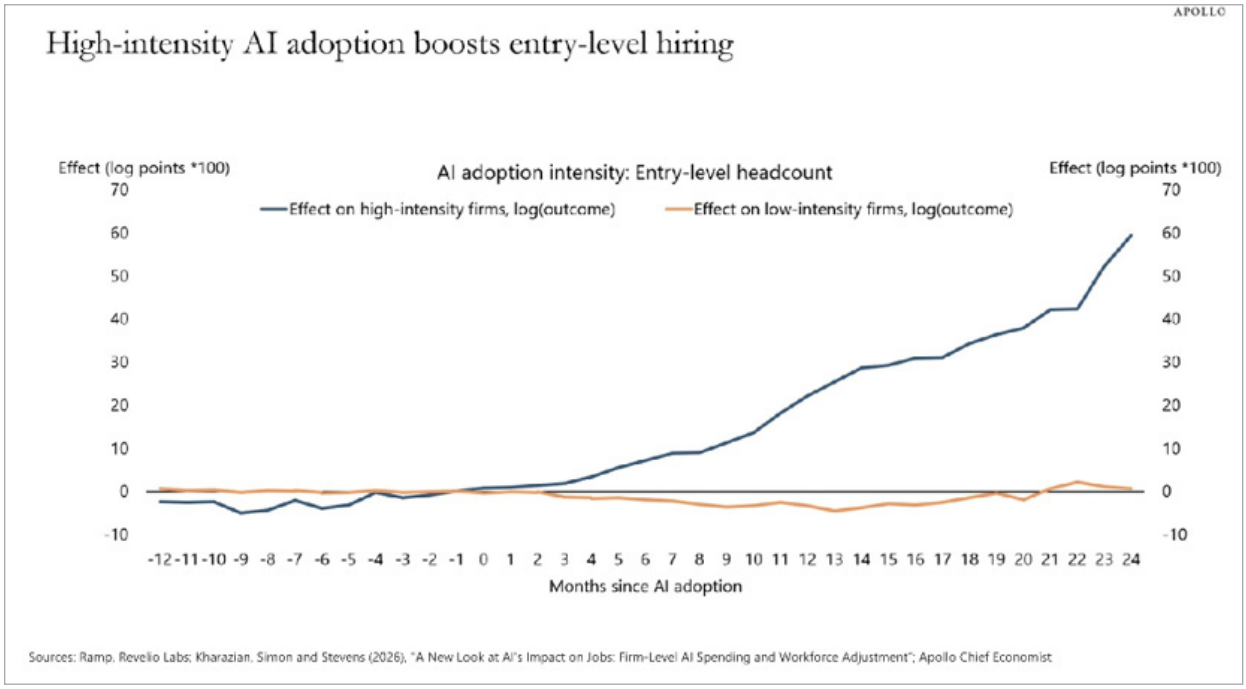
Capital Intensity And Scale — A Market Tailwind

Building competitive AI infrastructure requires enormous, sustained investment in chips, electric power, data centers, and equipment. Leading U.S. tech firms (and their supply chain partners) have demonstrated the ability to raise and deploy capital at this scale through strong cash flows, secondary offerings, debt, and IPOs. For example, the major hyperscalers alone are spending hundreds of billions of dollars annually on AI infrastructure, with cumulative estimates for the U.S. data center buildout reaching as high as $1.0 trillion this year and next with projections of up to $7.0 trillion through 2030.

This mirrors the capital-intensive buildout phases of earlier industrial revolutions, when concentrated investment created lasting economic and market advantages once the infrastructure was in place. Electric power remains a key constraint: data centers already consume roughly 4%–5% of U.S. electricity, and demand is projected to rise rapidly. At the same time, lower compute costs may trigger Jevons paradox, as cheaper access drives greater overall usage and expands demand for infrastructure rather than reducing it.

Jevons Paradox in Action: Why AI May Increase Employment

Apollo's Torsten Slok highlights a powerful illustration of Jevons paradox at work with AI: when tools lower the cost of knowledge work, demand expands rather than contracts. Just as more efficient steam engines led Britain to burn more coal overall, cheaper AI-driven legal, consulting, and financial services are growing the addressable market, spurring more startups, hiring (including AI implementation roles), and overall employment. The bottom line is that cheaper technology is creating more demand and more jobs, while the AI spending boom is also putting upward pressure on wages, semiconductors, equipment, and energy prices.

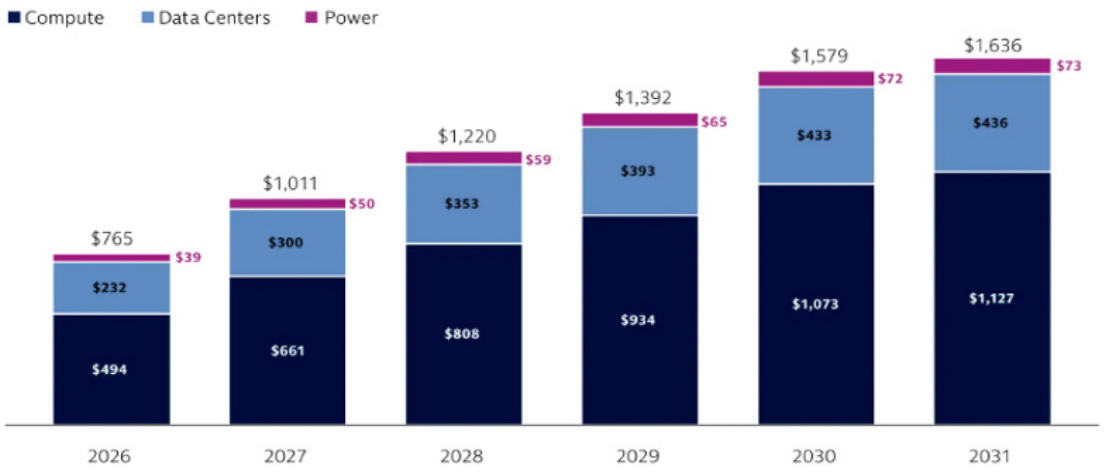


Source: Apollo Global Management, July 12, 2026

CapEx Spending Accelerating Out To 2031

Baseline aggregate AI CapEx estimates (bn)

~$7.6tr of capital between 2026 and 2031 across compute, data centers, and power



Source: Goldman Sachs Global Institute, Goldman Sachs Global Investment Research NVIDIA projections (as of March 3, 2026) Note: Forecasts and expectations are based on material assumptions subject to change. Assumes NVIDIA accounts for 75% of total compute spend in each period. Assumes 5% YoY compute growth past the projection period (2031). Uses VR200 (Rubin) chip as baseline spec ($80.5K per GPU [incl. node costs] and 3,000 W per package) across all years. Assumes 1.2 PUE, $15mn per MW for data centers, and $2,500 per kW for new power. Assumes 15% of required data center space is brownfield (i.e., excluded from calculation) in 2026, growing to 30% in 2031. Totals may not sum due to rounding.

Source: Goldman Sachs Insights, May 10, 2026

Bloomberg

Zuckerberg Pledges 'Aggressive' Pricing With Meta's First Pay-to-Use AI

By Kurt Wagner

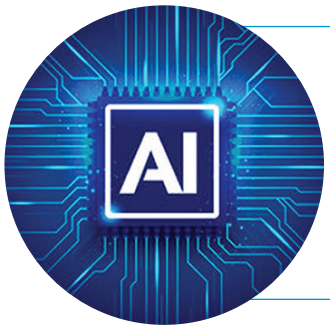
July 9, 2026 at 2:00 PM UTC

- Meta Platforms Inc. unveiled a version of its AI model, Muse Spark 1.1, that includes a new paid tier for developers, marking the first time Meta has charged businesses for access to its models.
- The new model's standout improvement is in its agentic capabilities, with "state-of-the-art or very close to it" agentic reasoning and tool use, and is also greatly improved when it comes to coding.
- Meta will introduce a new Meta Model API system with pricing that is roughly 25% of the cost advertised by other top models, allowing developers to use Meta's model for free up to a certain token threshold, after which they'll be required to pay for access.

Source: Bloomberg.com

Industries Positioned to Benefit

- Semiconductors and Memory
- GPUs, CPUs, and NPUs (GPUs excel at parallel AI tasks, CPUs handle general computing, NPUs are optimized for efficient neural network work)
- Lithography and equipment (ASML, Zeiss)
- Electric Power and Electrical Infrastructure
- Construction & Engineering
- Machinery
- Copper Wire and Optical Fiber
- Robotics and Embodiment



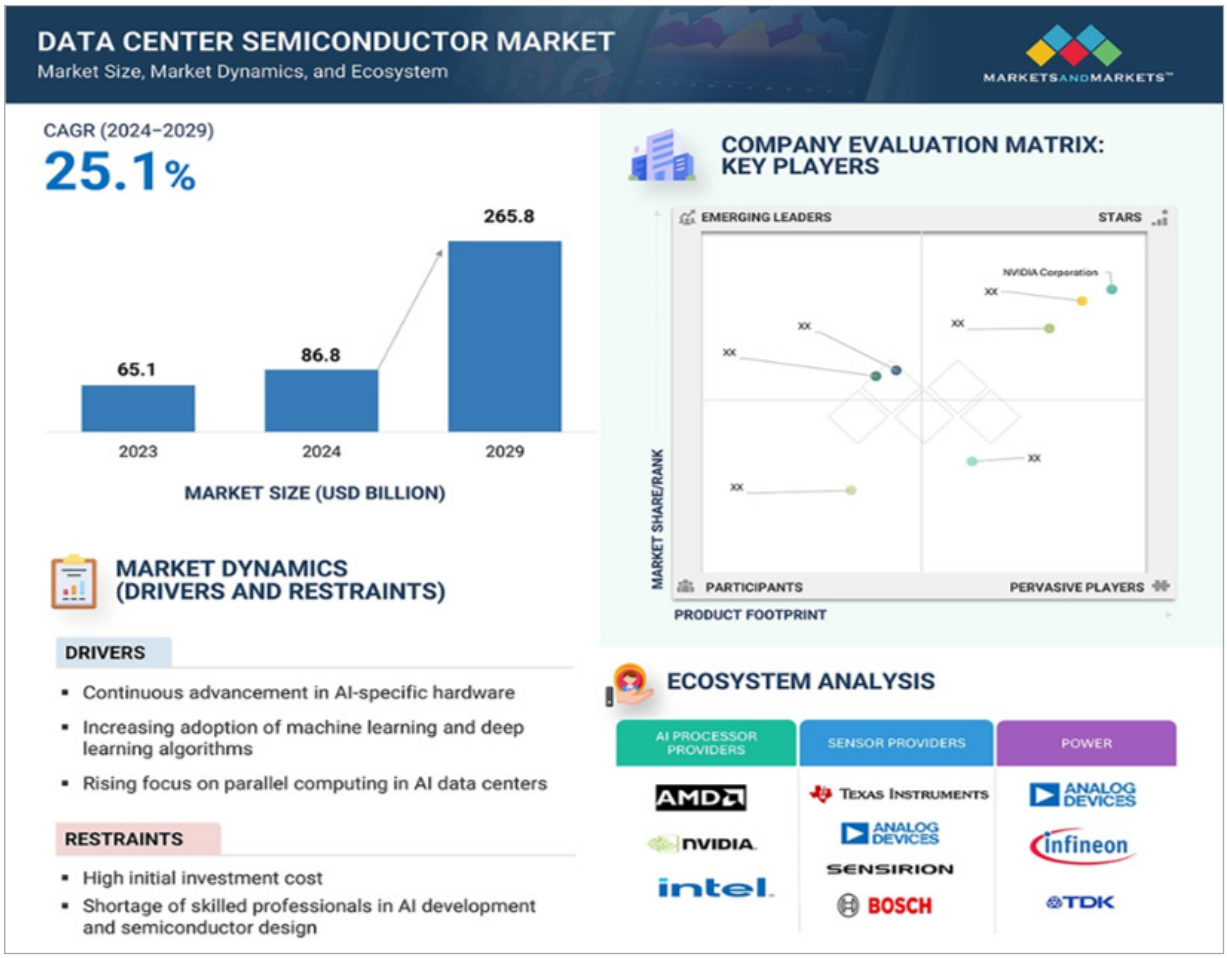
Terms Worth Knowing

Embodiment
Integrating AI into robots and autonomous machines

Data Centers: The Engine of AI-Driven Economic Activity

Data centers are the power plants of the AI age. Massive capital expenditure by hyperscalers is driving economic activity and creating tailwinds for many sectors. AI involvement is a major contributor to recent growth.

Data Center Semiconductor Market Growth: Robust Projected CAGR Reflects Strong AI Demand



Source: MarketsandMarkets™ (2024–2029 projections)

Electric Power: The Critical Bottleneck

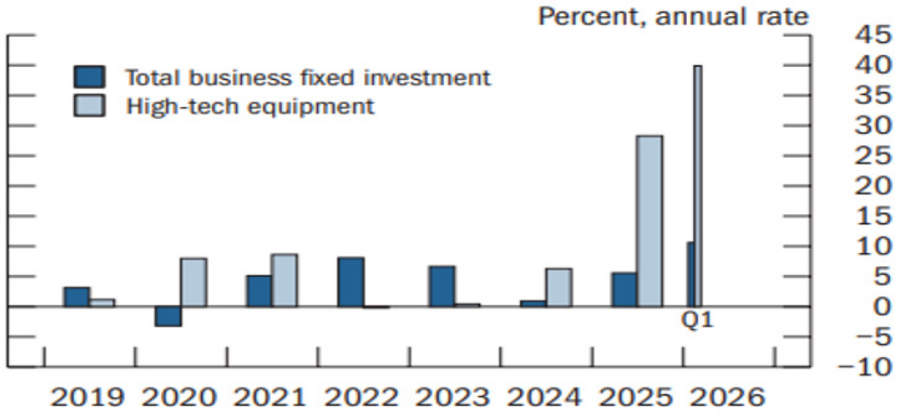
Electric power availability is becoming increasingly constrained in key regions, including Delaware, Illinois, Indiana, Kentucky, Maryland, Ohio, Pennsylvania, Virginia, and West Virginia. To help meet growing demand, retired nuclear plants are being refurbished, while new small modular reactors (SMRs) have recently reached criticality (a sustained nuclear reaction). At the same time, local opposition ("Not In My Back Yard," or NIMBY) has delayed or halted some projects. For example, Blackstone recently abandoned plans for a Virginia data center following community resistance. Infrastructure constraints also remain significant, with transformer shortages pushing lead times for new equipment to two to three years. Together, these power generation, transmission, and permitting challenges are likely to slow the pace of AI infrastructure expansion, underscoring why electricity has become one of the industry's most important strategic resources

Small Modular Reactors (SMRs): A Promising Solution To The Power Bottleneck

Small modular reactors (SMRs) offer a promising solution to the electricity bottleneck facing AI data centers. Aalo Atomics achieved criticality with its commercial-scale advanced reactor on July 4, 2026, at the Idaho National Laboratory, while Antares Nuclear reached the same milestone on June 4, 2026. Both companies are privately held. These achievements, combined with the U.S. Navy's more than 65 years of safe and reliable operation of compact nuclear reactors aboard submarines and aircraft carriers—although based on different designs—underscore the growing maturity of advanced nuclear technology and its potential for broader commercial deployment.

U.S. Technology Fixed Investment Is In A Sharp Upward Trajectory

Figure 29. Change in real business fixed investment



Note: Business fixed investment is known as "private nonresidential fixed investment" in the national income and product accounts. The key identifies bars in order from left to right.

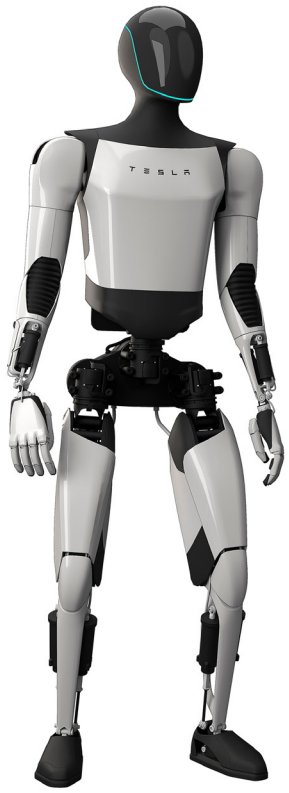
Source: Federal Reserve Board Report to Congress, July 10, 2026

Beneficiaries across the chain include Electrical Equipment, Construction & Engineering, Machinery, Materials Suppliers, Semiconductor and Memory companies.

Robotics: From Factories To Broader Embodiment

Robotics turns AI intelligence into physical action. Humanoid and utilitarian robots are already working in factories and logistics. Auto makers are turning their production lines to humanoid robots for mass-market potential. Simpler delivery robots are common in warehouses and hospitals. Military uses have proven reliable. Consumer humanoids are emerging, with broader availability expected soon. Tesla (TSLA) is investing heavily in delivering humanoid robots to work in homes. Elon Musk predicts that humanoid robots will become a standard household staple, eventually outnumbering humans. He plans to sell Tesla's Optimus robot to the public for $20,000 to $30,000, and envisions these robots performing everyday domestic chores, cooking, caring for pets, protecting the elderly, and even monitoring children. Robotics embodiment extends AI into mobile, adaptable forms that can learn new skills on the fly and multiplies productivity across environments.

Optimus Robot



Source: Tesla "Editorial Use Only - stock.adobe.com."

Japan Already Using Robots In The Workforce And Home

Japan uses robots primarily to combat its shrinking workforce and aging population. By manufacturing 45% of the global supply of industrial robots, the nation integrates automation deeply into eldercare, manufacturing, logistics, and disaster response. The government plans to deploy 10 million additional robots by 2040 according to International Federation of Robotics.

Additional Emerging Technologies: Blockchain, Web 3.0, And Virtual Reality

Emerging technologies such as Blockchain, Web 3.0, and Virtual Reality are also advancing rapidly and becoming more ubiquitous. Blockchain applications are spreading quickly across finance, supply chains, and digital ownership. *Web 3.0 aims to give users greater control over their data and online interactions, while Virtual Reality is creating new ways to work, learn, and experience the world.* These innovations build on the same digital foundation as AI and contribute to the same long-term productivity gains that have historically driven stronger corporate earnings and stock market leadership for technology and tech-related companies.

Autonomous Transport

Autonomous transportation—including Waymo's self-driving taxis and, eventually, long-haul trucking—is another example of AI translating into real-world productivity gains, much as warehouse automation has already done for logistics.

A Waymo Car



Source: Waymo, July 2026

Space Economy: Commercial Growth Accelerates

The global space economy has grown into a market valued at more than $626 billion and is projected to reach between $1.0 trillion by 2032 and $1.8 trillion by 2035, according to industry estimates from McKinsey and the World Economic Forum. Commercial activity accounts for approximately 78% of the market, with defense and sovereign spending representing the remaining 22%.

Global Space Economy Is Just Launching

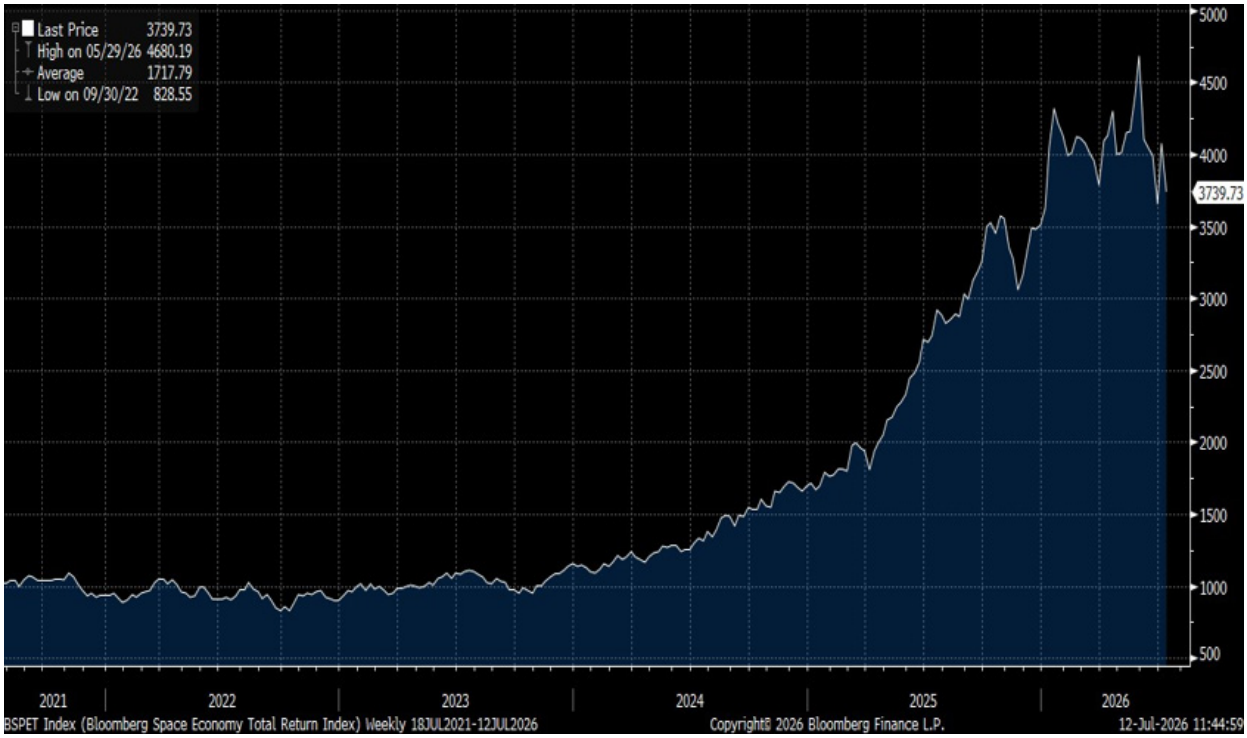


Source: Orbital Radar, July 2026

The space economy is a capital-intensive industry with significant technical risk and a high rate of failure. Even so, investment continues to accelerate as governments and private companies pursue ambitious goals, including a space station on the Moon and, eventually, travel to Mars. NASA Administrator Jared Isaacman has outlined plans for a permanent Moon base and nuclear-powered Mars missions as the United States competes with China in space exploration.

A leader in this effort is SpaceX (SPCX). Its Starship program aims to reduce launch costs dramatically — from thousands of dollars per kilogram to just hundreds — potentially enabling in-space manufacturing, space-based solar power, and access to extraterrestrial resources on the Moon and nearby asteroids. Recent satellite servicing missions have also demonstrated the ability to extend the useful life of aging satellites. Together, these advances have the potential to drive long-term investment opportunities and productivity gains across the global space economy.

Bloomberg Space Economy Index (BSPET) Skyrocketing



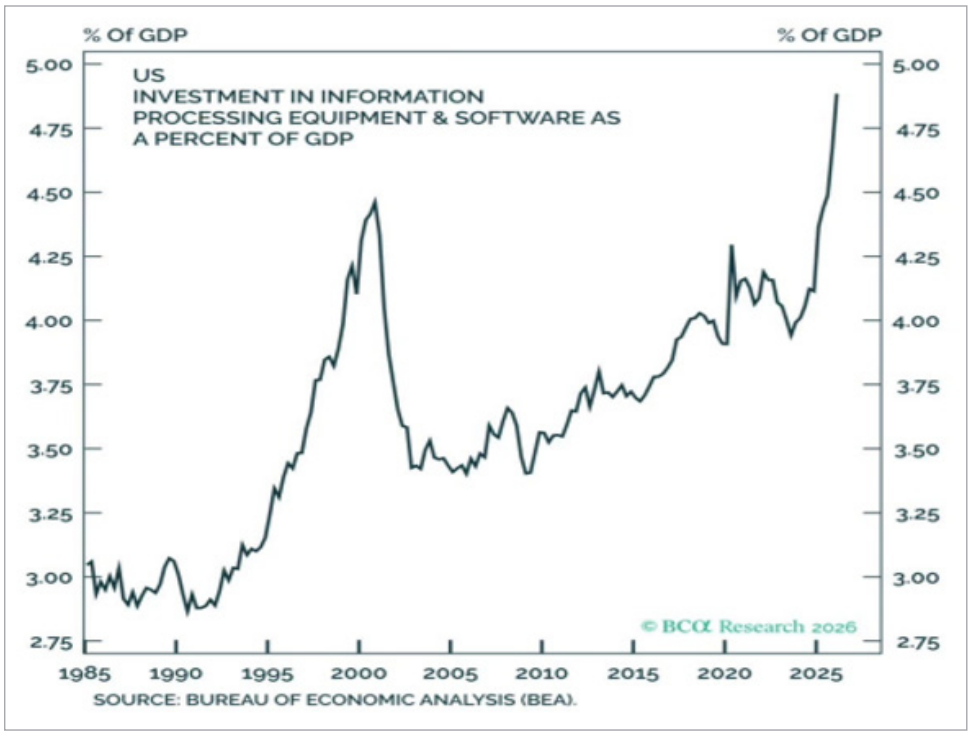
Source: Bloomberg, July 12, 2026

Productivity Gains Signal The Pivot Point Of The Digital Age

Labor productivity growth has accelerated to an annual rate of 2.9%, a significant improvement from the 1.6% average recorded during 2010–2020. Productivity gains are expected to continue to improve throughout this decade as AI infrastructure continues to expand. Businesses are pouring significant amounts of capital into the digital foundation, and as a result, investment in Information Processing Equipment and Software has risen sharply as a percentage of GDP. The last time we had this type of tremendous growth was during the internet days of the 1990s.

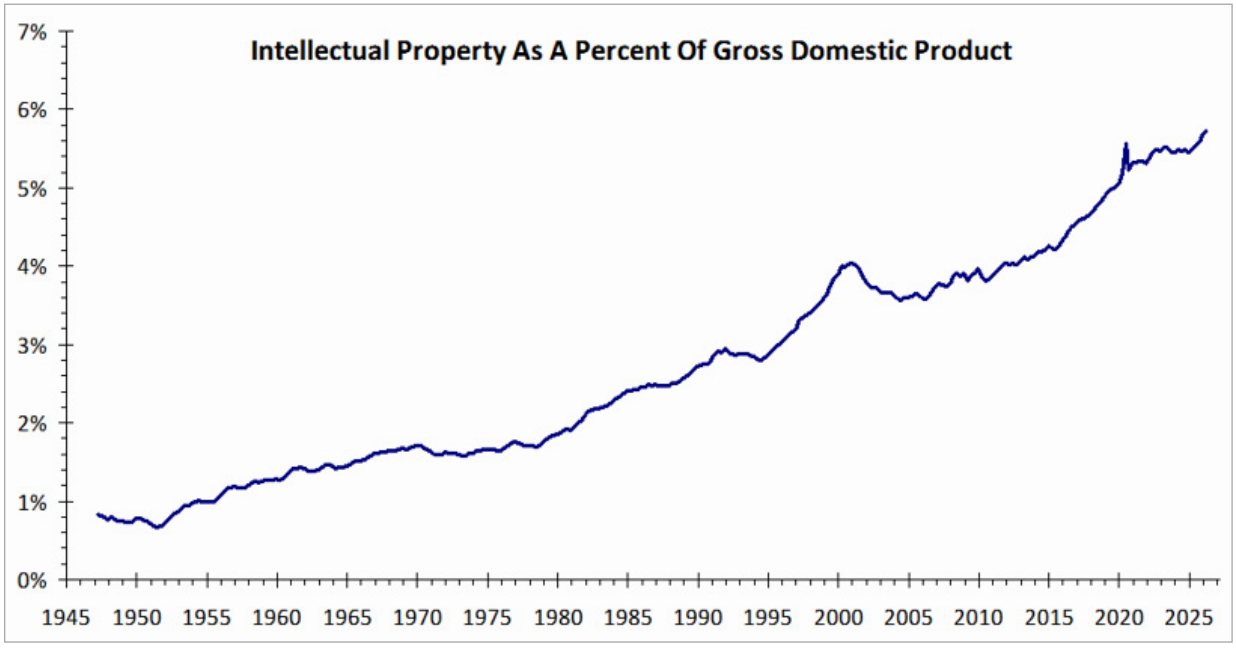
At 5.7%, Intellectual Property as a percentage of GDP has reached a new record — and significant increases were also seen during the 1990s.

U.S. Investment In Information Equipment & Software As Percent Of GDP



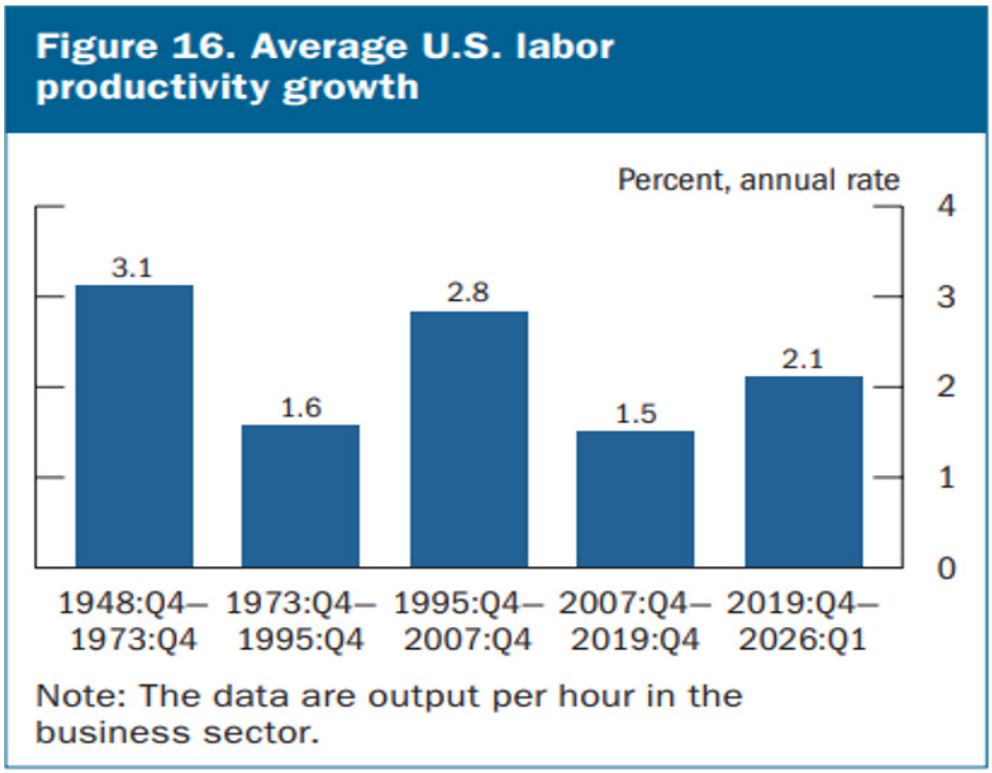
Source: BCA Research, July 2026

Intellectual Property Has Risen To New Record Highs At 5.7% Of GDP



Source: Bureau of Economic Analysis (BEA), Sanctuary Wealth, July 26, 2026

Average U.S. Labor Productivity Growth Across Historical Periods

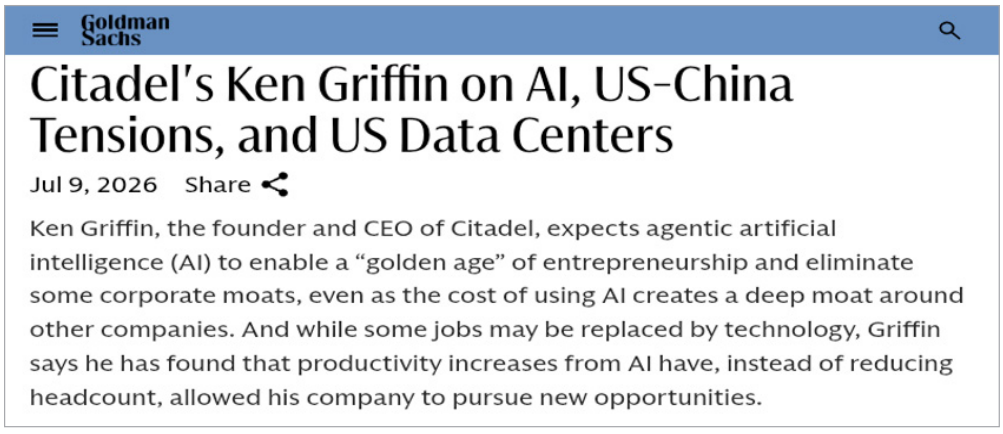


Source: Federal Reserve Board Report to Congress, July 10, 2026

AI Productivity Gains Are Already Emerging

AI is already delivering measurable productivity gains across a wide range of industries. Citadel CEO Ken Griffin recently described an internal AI system that analyzes complex financial research papers in just two to three hours, compared with the weeks or months such work once required. AI scribes are reducing physician documentation time, while specialized models in medicine, chemistry, astronomy, and mathematics are augmenting human expertise and accelerating scientific discovery.

During the mid-1990s, Federal Reserve (Fed) Chair Alan Greenspan was among the first policymakers to recognize the productivity gains emerging from Information Technology. Rather than raising interest rates aggressively, he allowed the economy to expand as those gains took hold. Fed Chair Kevin Warsh, who has embraced many of Greenspan's views on productivity and innovation, has echoed similar themes today. *The AI-driven productivity gains now emerging mirror the digital transformation of the late 1990s — and may ultimately prove even more significant.*


Goldman Sachs

Citadel's Ken Griffin on AI, US-China Tensions, and US Data Centers

Jul 9, 2026 Share

Ken Griffin, the founder and CEO of Citadel, expects agentic artificial intelligence (AI) to enable a "golden age" of entrepreneurship and eliminate some corporate moats, even as the cost of using AI creates a deep moat around other companies. And while some jobs may be replaced by technology, Griffin says he has found that productivity increases from AI have, instead of reducing headcount, allowed his company to pursue new opportunities.

Source: Goldman Sachs Insights



JAMA Network

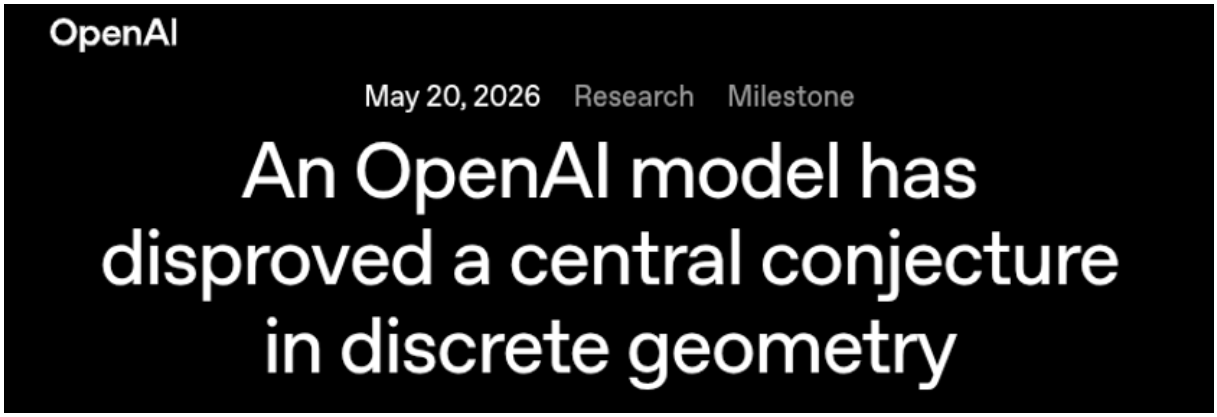
Changes in Clinician Time Expenditure and Visit Quantity With Adoption of Artificial Intelligence–Powered Scribes

A Multisite Study

Lisa S. Rotenstein, MD, MBA, MSc[1,2]; A. Jay Holmgren, PhD[1]; Robert Thombley, BS[1]; et al

Published Online: April 1, 2026
2026;335;(16):1408-1417.
doi:10.1001/jama.2026.2253

Source: Journal of the American Medical Association (JAMA)



Source: OpenAI.com

Outlook for 2027 And Beyond: What's Next And Why Technology Leadership Can Remain In Place

Looking beyond 2026, the market is expecting the next phase of the AI revolution to move well beyond chatbots and image generation. *Increasingly, value will be created by sophisticated AI agents — systems capable of planning and executing complex, multi-step tasks autonomously.* There can be hundreds to thousands of AI agents working on your behalf at the same time. This could significantly increase productivity over time.

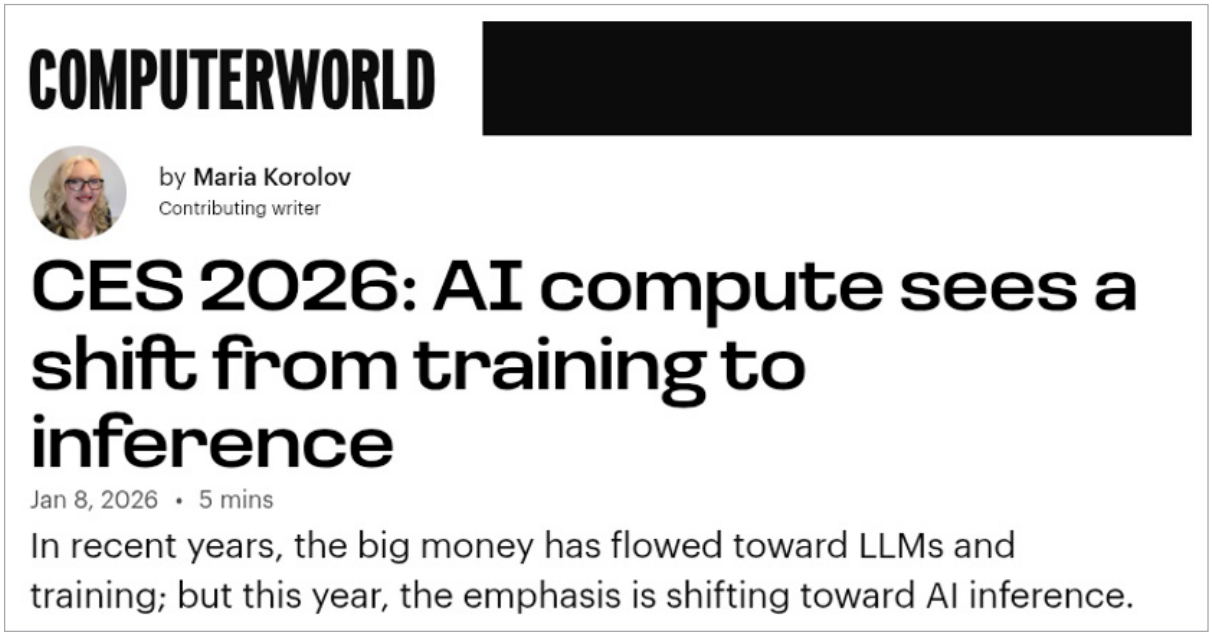
The inference shift refers to the transition from training AI models to deploying them at scale in everyday applications. As AI adoption broadens, an increasing share of computing demand will move to inference, favoring companies with strengths in AI infrastructure, optimization, and efficient computing. Beyond software, embodiment — the integration of AI into robots and autonomous machines — represents the next physical frontier, from factories and warehouses to broader civilian and military applications.



Terms Worth Knowing

AI Agents
Systems that can plan and execute multi-step tasks

Inference
The model taking new information and producing answers, text, images, predictions, or decisions



COMPUTERWORLD

by Maria Korolov
Contributing writer

CES 2026: AI compute sees a shift from training to inference

Jan 8, 2026 • 5 mins

In recent years, the big money has flowed toward LLMs and training; but this year, the emphasis is shifting toward AI inference.

Source: Computer World

Tokenization In The World Of Artificial Intelligence

In AI, a token is the basic unit of text that Large Language Models (LLMs) work with. These models break down words, punctuation, and even spaces into tokens before processing them.

The total number of tokens an LLM can handle at once is a key measure of its power. When you send a query (your question or request), the AI converts it into tokens, performs a compute (the heavy calculation work), and then converts the result back into readable text.

Artificial intelligence companies usually charge users based on the number of tokens used. Right now, many retail consumer tools underprice this usage. As a result, some large companies like Microsoft (MSFT) are actively limiting how much outside artificial intelligence their teams can use because of high token costs, while many software engineers compete to see who can push the highest token usage.

Token in Cryptocurrency

In the world of cryptocurrency, a token is a digital asset that lives on a blockchain. Famous examples include Bitcoin, Ethereum, Solana, and the stablecoins Tether (USDT) and USDC, whose value is designed to stay pegged to the U.S. dollar.

This double meaning of "token" is why context matters when you hear the word in financial or technology discussions.

Risks and What Can Help

Competition among the major hyperscalers, higher costs for chips or supplies, and electricity shortages could slow down development or squeeze profits in some areas. Barriers to entry are high in both data centers and advanced semiconductors, so the main competitive risk is among the leading hyperscalers themselves as they vie for dominance in AI infrastructure.

The good news is that companies are pouring huge amounts of money into new factories, power solutions, and smarter designs. Efficiency improvements are coming fast, and the overall trend of AI making people and businesses much more productive should keep driving demand for years. When the real-world benefits become clearly visible in corporate earnings, the strongest companies and their suppliers will do well over the long run, in our view.

Investment Implications

Technology and AI leadership, built on compute scale, data flywheels, talent, and capital intensity, are all positions leading toward long-term growth in earnings. Near-term risks around valuations, execution, and bottlenecks exist and should be monitored and could cause market volatility from time to time. Over a multi-year horizon, the productivity boom that is expected — comparable in impact to steam engines, railroads, and electricity — creates a compelling secular investment opportunity across the industries we discussed.

We are focusing on companies with strong moats, proven execution track records, and exposure to the full stack (the entire chain from chips and power to finished AI applications).

Key names and industries include:

- ***Semiconductors & Memory:*** Nvidia (NVDA, for leadership in AI accelerators), Advanced Micro Devices (AMD), Taiwan Semiconductor (TSM), Micron (MU), SK Hynix (SKHYV).
- ***Hyperscalers / Cloud Platforms:*** Microsoft (MSFT), Amazon (AMZN, for Amazon Web Services, or AWS), Alphabet (GOOGL), Meta (META) — the primary builders and users of AI infrastructure.
- ***Infrastructure & Power Enablers:*** Electrical Equipment, Construction & Engineering firms, transformer manufacturers, copper, and specialty materials and metal suppliers. Caterpillar (CAT), GE Vernova (GEV), Southern Copper (SCCO).
- ***Robotics & Embodiment:*** Tesla (TSLA, for its Optimus robots) and emerging humanoid/robotics companies.

Last Words

We believe the companies leading the AI revolution are best positioned to generate sustained revenue and earnings growth, enhance returns on equity (ROE), and benefit from the continued buildout of AI infrastructure — all while helping drive productivity gains for themselves, businesses, the consumer, and the broader economy.

Mary Ann Bartels | Chief Investment Strategist

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