Four AI misconceptions that deserve greater scrutiny

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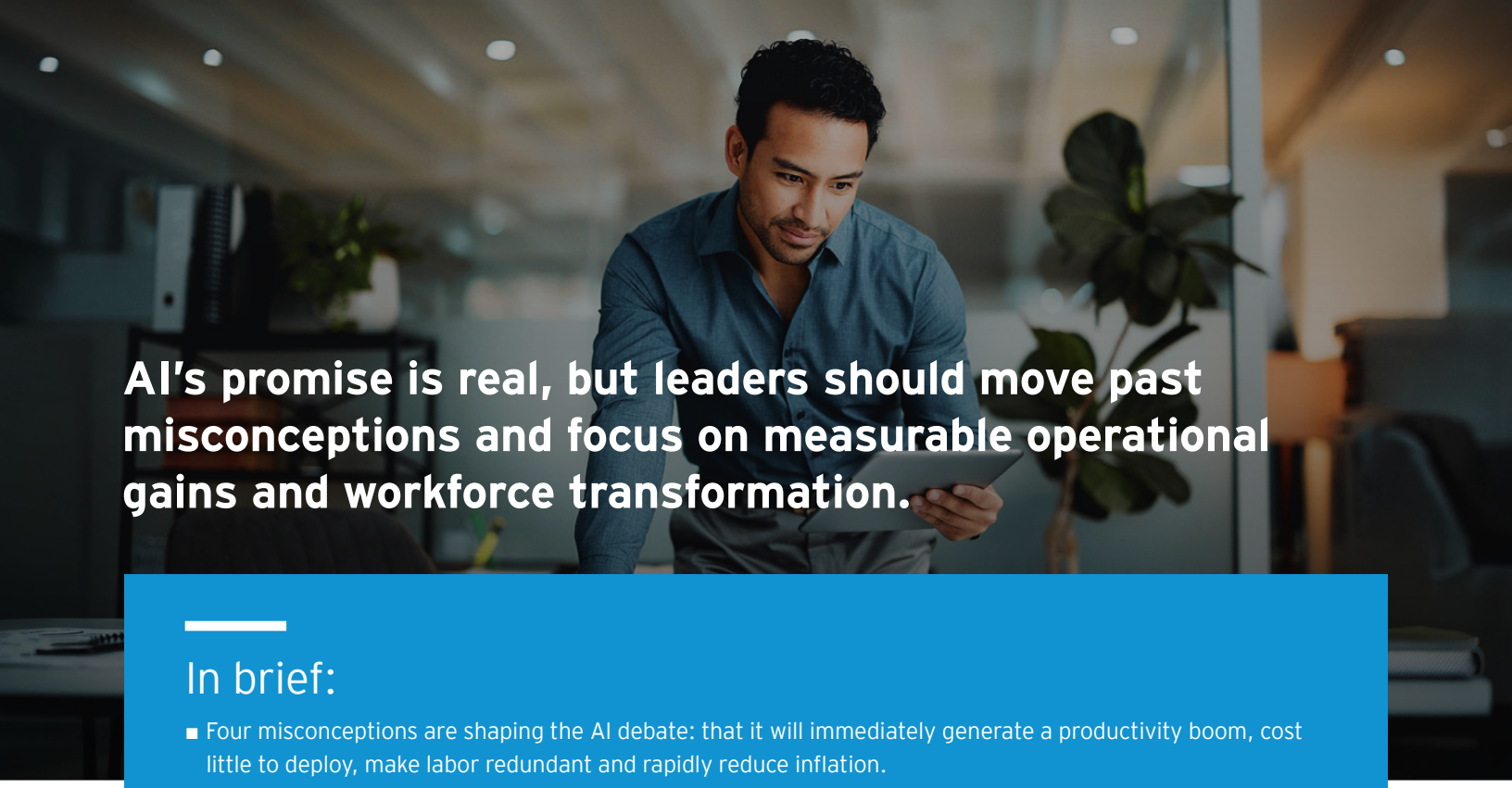

AI's promise is real, but leaders should move past misconceptions and focus on measurable operational gains and workforce transformation.

In brief:

- Four misconceptions are shaping the AI debate: that it will immediately generate a productivity boom, cost little to deploy, make labor redundant and rapidly reduce inflation.
- Prior technological revolutions suggest AI's impact will unfold gradually as firms redesign business processes, reorganize production, retrain workers, adapt management practices and rethink operating models.
- For business leaders, the priority is to focus AI investment on measurable value, workforce readiness and operating model change rather than expecting immediate productivity, labor or cost benefits.

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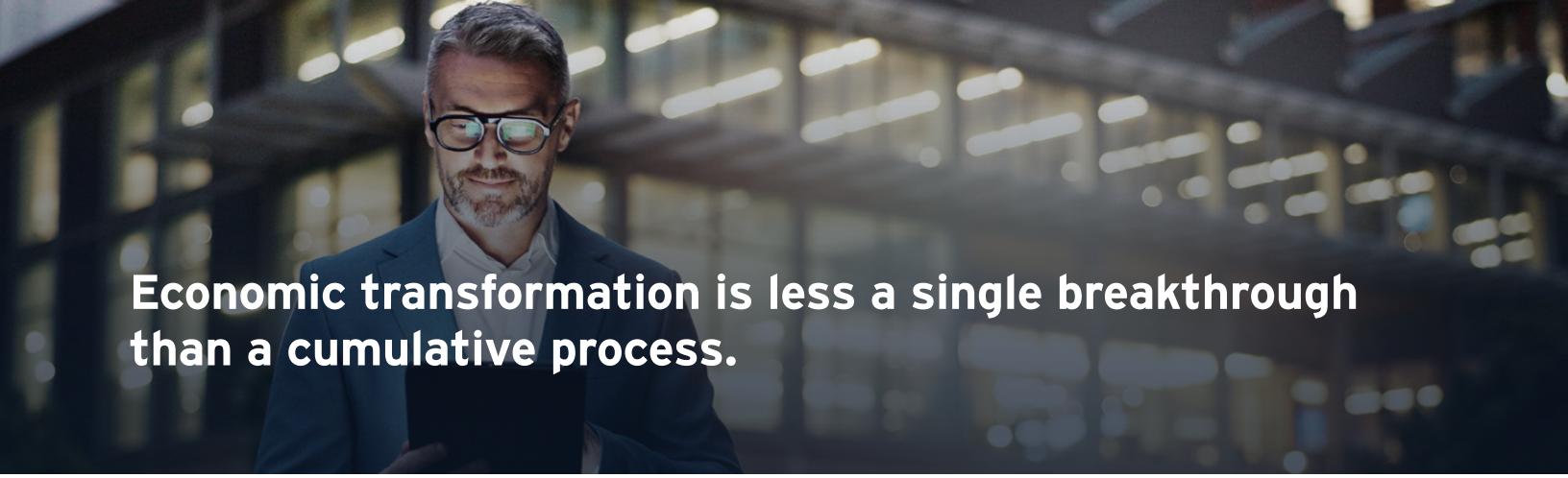
AI is increasingly viewed as a transformative technology with the potential to reshape economic activity across industries. Yet, much of the discussion surrounding AI quickly jumps from technological breakthroughs to sweeping macroeconomic conclusions: Productivity will suddenly surge. Cost little to deploy. Workers will lose their jobs. Inflation will rapidly subside.

While we share the optimism surrounding this technological revolution (see our seven-part AI series), we would encourage a more measured perspective. Before extrapolating today's advances into immediate economic outcomes, it is worth revisiting some of the most common AI misconceptions shaping the debate. History suggests that the path from innovation to economy-wide impact is rarely linear or immediate. The missing dimension in much of today's debate is time. Technologies diffuse gradually. It's crucial for firms to redesign processes, reorganize work, retrain employees and make complementary investments before productivity gains become broad-based.



Economic transformation is less a single breakthrough than a cumulative process.

The challenge, therefore, is not whether AI will reshape the economy. It almost certainly will. The more important questions are how, where and over what horizon. Understanding those distinctions is essential for separating genuine long-term potential from overly ambitious short-term expectations.

Misconception #1: AI will immediately generate a productivity boom

The assumption that AI will immediately generate a surge in productivity is difficult to reconcile with economic history. Major technological revolutions rarely produce economy-wide gains overnight. It took nearly a century for the steam engine to translate into sustained productivity growth in Britain, roughly five decades for electricity to reshape industrial production and close to a decade before the computer revolution produced measurable improvements in aggregate productivity.

The first stage of any technological revolution is the buildout of the infrastructure that enables it. In the case of AI, that means expanding data centers, semiconductor manufacturing, electricity generation, cloud computing capacity and digital infrastructure. It also requires developing the talent needed to deploy and manage these technologies before they can diffuse across the broader economy.

It's crucial that firms redesign business processes, reorganize production, retrain workers, adapt management practices and rethink operating models. Early adoption is therefore often characterized by implementation costs rather than productivity gains. Productivity frequently follows a J-curve, with the costs of adjustment arriving first and the benefits emerging only gradually as organizations learn how to deploy new technologies effectively.

That historical pattern is worth keeping in mind because much of the recent improvement in US productivity is not yet an AI story. Rather, it reflects a post-pandemic adjustment. Faced with higher financing costs, labor scarcity and elevated uncertainty, businesses have spent the past several years becoming more efficient through organizational streamlining, stronger workforce retention, targeted training and more disciplined capital allocation. In a higher cost-of-capital environment, firms have also become more selective, focusing investment on projects with clearer and higher expected returns.

AI will likely reinforce productivity over time, but the pace of economy-wide gains will likely depend less on technological breakthroughs than on how quickly firms reorganize production, develop complementary skills and integrate AI into their operations.

For business leaders, the priority should be to set realistic productivity expectations and focus on the organizational changes that unlock value. AI creates the greatest competitive advantage when firms redesign processes, redefine roles and rethink operating models rather than simply layering new technology onto existing ways of working.

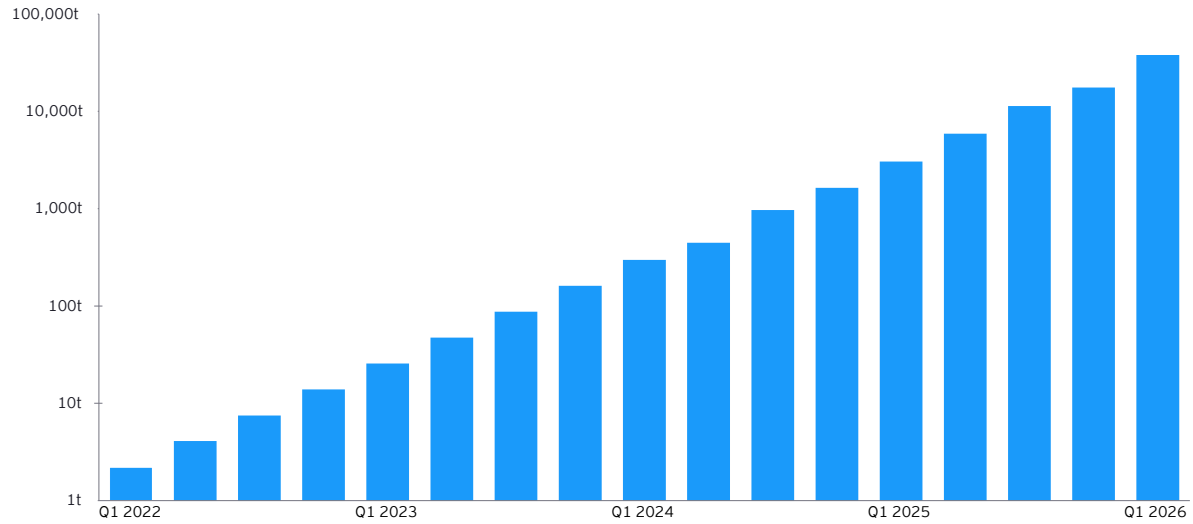
Misconception #2: AI is nearly free

The assumption that AI adoption is inexpensive overlooks an important economic reality. Unlike traditional enterprise software, AI carries a meaningful marginal cost every time it is used.

For many businesses, the initial investment on licenses, infrastructure and training is only the beginning. Every prompt consumes tokens, computing power and electricity. As AI becomes embedded across organizations, costs accumulate rapidly, transforming AI from a one-time technology investment into a recurring operating expense.

Many early adopters are already discovering this reality. Several firms have reportedly exhausted annual AI budgets within months as employee usage exceeded expectations, prompting the introduction of token budgets, usage caps and tighter governance. At the same time, frontier AI providers continue to introduce more capable reasoning models whose greater performance often comes with higher token consumption and greater operating costs.

Tokens processed per quarter across all providers (log scale)
Q1 2022–Q1 2026



Data from Q2 2022 to Q4 2023 is extrapolated using the midpoint between the tokens processed in Q1 2022 and Q1 2024.
Source: Epoch AI; EY-Parthenon

Looking back, the diffusion of new technologies is constrained less by technological capability than by the economics of deployment. AI will be no exception. The pace of adoption will depend not only on what the technology can do, but whether the value created by each token exceeds its cost.

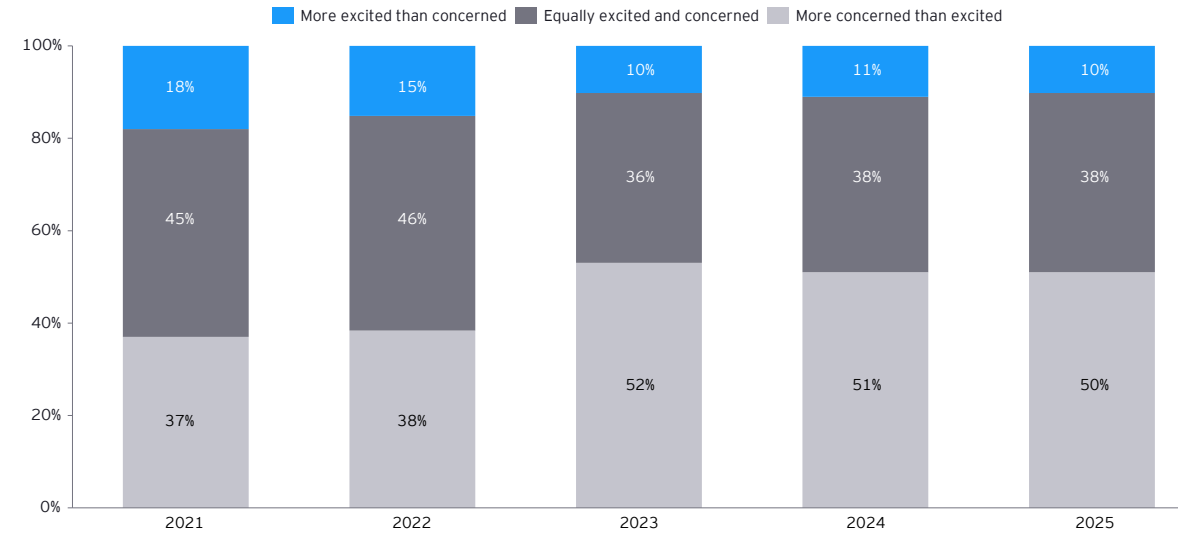
For business leaders, the implication is clear. AI should be managed like any other capital allocation decision. Success will depend not on maximizing adoption, but on maximizing return on usage. That means prioritizing applications where productivity gains, revenue opportunities or cost savings consistently exceed the recurring costs of inference, infrastructure and organizational change.

Misconception #3: AI will make labor redundant

Perhaps the most widely publicized misconception is the doomsday scenario in which AI replaces workers en masse and unemployment surges.

It is likely one reason why half of workers (50%) say they are worried about the future impact of AI in the workplace, while 32% believe it will reduce their long-term job opportunities, according to a recent Pew Research Center survey.

US adult feelings on the increased usage of AI in daily life
2021-2025



Source: Pew Research Center

The reality is more nuanced. When technology is costly and qualified talent is scarce, the combination of people and AI often generates more value than either could alone.

The evidence of widespread labor displacement remains limited. While employment in computing infrastructure, data processing, web hosting and related services has declined roughly 4% over the past three years, it remains nearly 30% above its 2019 level. Even in the industries at the frontier of AI development, the feared employment collapse has yet to materialize.

Much has also been made of announcements linking layoffs to AI. Challenger, Gray & Christmas estimates that roughly one-fifth of layoff announcements over the past year cited AI as a contributing factor. But those announcements likely overstate AI's current impact on employment. Few firms have reached the level of organizational maturity where replacing workers with AI generates an attractive economic return. Moreover, announcing AI-driven restructuring often sends a stronger signal to investors than conventional cost-cutting.

Broader labor market indicators reinforce this view. Hiring in the information sector has trended higher, not lower, since early 2023, while demand for AI-related skills continues to rise.

The longer-term demographic backdrop is also important. Across most advanced economies — and increasingly in large emerging economies such as China — labor force growth is slowing as populations age. In that environment, many firms are likely to face labor shortages rather than labor surpluses. AI is therefore more likely to complement a constrained workforce by raising output per worker than to generate broad-based technological unemployment. The more relevant question over the medium term may not be how many jobs AI replaces, but how effectively businesses combine technology and talent to offset increasingly binding demographic constraints.

For business leaders, the takeaway is to view AI as a force multiplier for talent rather than a substitute for it. The greatest returns are likely to come from redesigning work so that employees can focus on higher-value activities while AI automates routine tasks. In a world of slowing labor force growth and persistent skill shortages, competitive advantage will increasingly depend on how effectively firms combine human judgment with artificial intelligence.

Misconception #4: AI will be immediately disinflationary

Technology is often viewed as inherently disinflationary. Over longer horizons, that is frequently true. By improving efficiency, expanding productive capacity and lowering costs, technological innovation has historically exerted downward pressure on prices. The transition, however, can look very different.

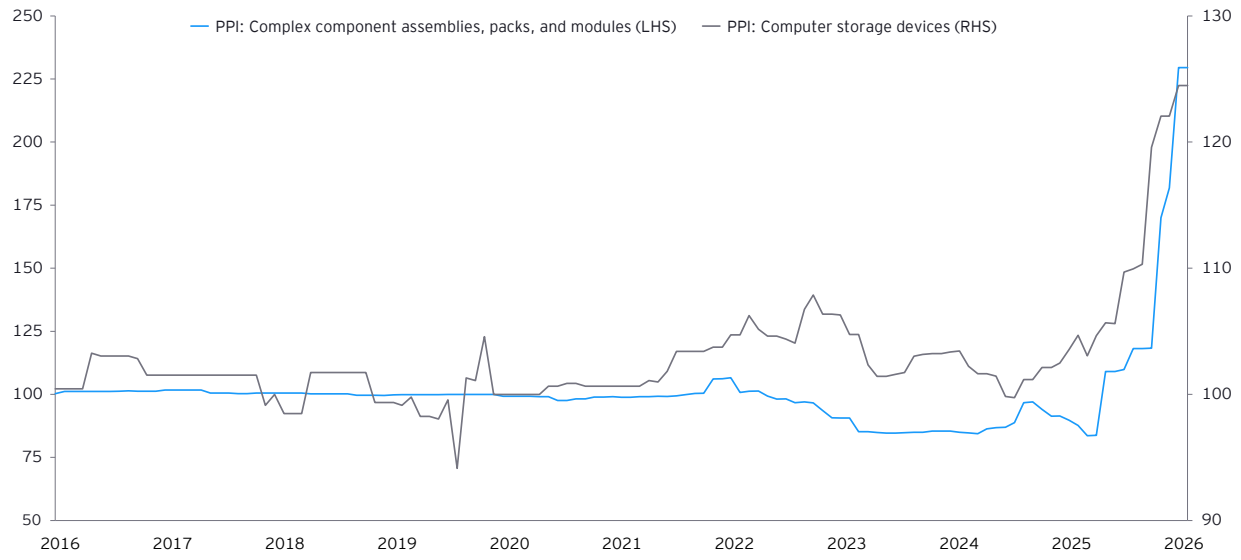
AI is fueling one of the largest investment cycles in decades. Data center construction, electricity demand and investment in semiconductors, cloud infrastructure and cybersecurity are all rising. In 2026 alone, the four largest hyperscalers are expected to invest around $700 billion, an increase of more than $300 billion relative to 2025, according to the Bureau of Labor Statistics.

AI capital expenditures $700b

Expected 2026 investment by the four largest hyperscalers.

That investment boom is creating substantial demand for a finite pool of resources. Building AI infrastructure requires chips, servers, networking equipment, electricity and construction capacity. When demand for these inputs rises faster than supply, prices increase. The effects are already visible in the data. Bureau of Labor Statistics findings indicate that producer prices for printed circuit assemblies, loaded boards, modules and external modems have nearly tripled over the past year, while producer prices for computer storage devices have increased roughly 20%. At the consumer level, prices for computers, peripherals and smart home assistant devices have risen about 15% over the same period.

US producer price index of commodities (January 2020=100)
January 2016-May 2026



Source: Bureau of Labor Statistics; EY-Parthenon

The irony is that the path toward a more productive economy may initially be inflationary. Before AI lowers production costs, it first requires an enormous buildout of productive capacity. That means higher investment spending, stronger demand for scarce inputs and localized price pressures. AI may ultimately prove disinflationary, but the transition is more likely to resemble an investment boom than a deflationary shock.

For business leaders, the takeaway is to distinguish between AI's short-term investment costs and its longer-term efficiency gains. The transition is likely to require significant spending on technology, infrastructure, energy and talent before productivity improvements translate into lower operating costs. Firms that plan for this investment cycle, and maintain the financial flexibility to see it through, will be better positioned to capture AI's long-term benefits.

Separating AI promise from economic reality

Taken together, these misconceptions reflect a broader tendency to confuse technological possibility with economic reality. AI will very likely reshape productivity, labor markets and inflation, but the timing and magnitude of those effects will depend on adoption, organizational change, complementary investment and economic incentives.

Summary

Four AI misconceptions deserve closer scrutiny: that AI will immediately boost productivity, cost little to deploy, make labor redundant and rapidly lower inflation. AI's economic effects will be real but gradual, shaped by infrastructure investment, workforce readiness, adoption costs and organizational change. For firms, the priority is to manage AI as a disciplined operating shift focused on measurable value, not a shortcut to immediate gains.

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