**Discovery
Report**

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2024 Global Trends in AI

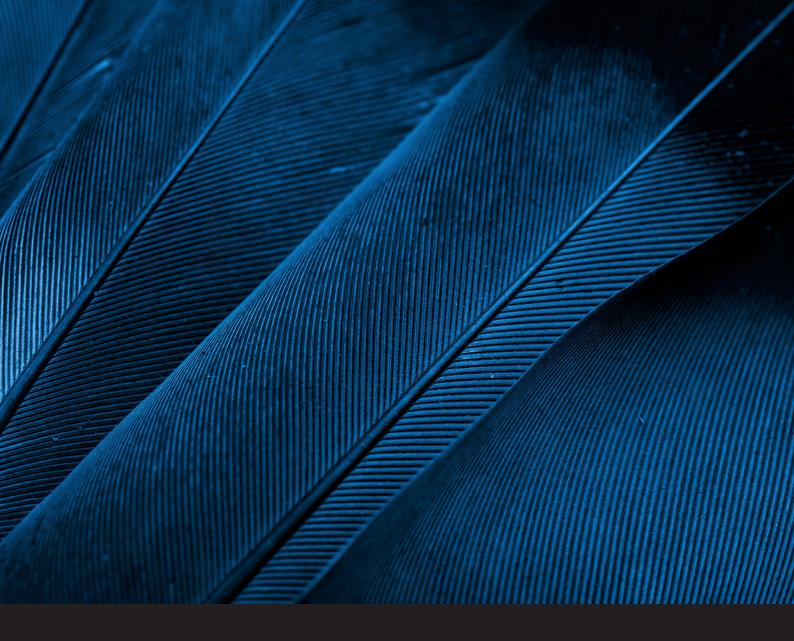**S&P Global**
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Introduction

The 2024 Global Trends in AI report delves into the underlying trends surrounding AI adoption. In last year's Global Trends in AI report, we explored the divide between organizations that were successfully running AI in production and those that were not. In this year's study, we revisit this AI leadership theme, drawing on some key practices that leading organizations are doing differently — while deep-diving into the value drivers, infrastructure decisions and environmental practices that are shaping AI strategies. To develop this study, S&P Global Market Intelligence surveyed more than 1,500 global AI decision-makers and engaged in 1:1 interviews with senior IT executives about their AI projects and initiatives.

Key findings

1. AI applications are now pervasive in the enterprise; investments in product quality and IT efficiency are top priorities.

AI adoption continues at breakneck speed, with the technology increasingly viewed as an embedded and strategic capability.

- **AI initiatives are maturing rapidly:** In the last year, reported levels of AI maturity have undergone a radical shift. In 2023, survey respondents were still largely experimenting with AI or had isolated deployments in small pockets of their organizations. This year, the majority of respondents report that AI is "currently widely implemented" and "driving critical value" in their organization.

- **Product improvement and operational effectiveness are key investment drivers:** Organizations are increasingly applying AI to enhance top-line revenue and competitive differentiation, with improving product or service quality (42%) the most popular objective, and with many targeting increased revenue growth (39%). Simultaneously, organizations recognize the potential to boost their operational effectiveness by improving workforce productivity (40%) and IT efficiencies (41%), along with accelerating their overall pace of innovation (39%).

2. Many AI projects fail to scale — legacy data architectures are the culprit.

AI projects are challenged by weak data foundations. Legacy data architectures are impeding broader deployment.

- **Achieving scale remains a challenge:** Organizations are facing significant challenges in achieving the desired reach of their AI projects. The average organization has 10 projects in the pilot phase and 16 in limited deployment, but only six deployed at scale.

- **Availability of quality data is a major obstacle:** Data quality is the greatest challenge to moving AI projects into production. The challenge for project teams is not so much about identifying relevant data, but its availability; organizations are struggling to build a consistent, integrated data foundation for projects.

- **Modernizing data architectures is critical to success:** Given this, it is unsurprising that the greatest proportion of respondents (35%) cite storage and data management as the primary infrastructure issues hindering AI deployments — significantly greater than compute (26%), security (23%) and networking (15%).

3. Generative AI has rapidly eclipsed other AI applications.

Generative AI has gained significant traction in a short time. AI trailblazers are realizing concrete benefits and are poised to compound their competitive advantage.

- **Generative AI is the focus:** An astonishing 88% of organizations are now actively investigating generative AI, far outstripping other AI applications such as prediction models (61%), classification (51%), expert systems (39%) and robotics (30%). Dedicated budgets for generative AI as a proportion of overall AI investments are growing as organizations begin to recognize the potential benefits of integrated generative AI capabilities.

- **Generative AI adoption is exploding:** Despite only being in the market for a relatively short time, 24% of organizations say they already see generative AI as an integrated capability deployed across their organization. Just 11% of respondents are not investing in generative AI at all, and the majority of organizations are actively in the process of turning this investment into scaled-up, integrated capabilities.

- **Generative AI trailblazers are expected to compound their competitive advantage:** Organizations that have already integrated generative AI across their organization plan to continue increasing their investments: They expect generative AI budgets to reach 47% of their total AI budget in the next 12 months, far outpacing less "AI-mature" organizations. The majority of these generative AI trailblazers are seeing a significant positive impact from the technology across the full range of targeted benefits. Those benefits are likely to compound their competitive advantage given that those still in the experimentation phases of their generative AI projects are not seeing the same increases in organizational innovation, new product development and time to market.

4. GPU availability continues to be constrained, shaping infrastructure decision-making.

Access to GPUs is a major concern for organizations; GPU clouds may offer a scalable solution.

- **Accessing GPUs continues to be a challenge:** Four in 10 organizations surveyed suggest access to AI accelerators is a leading consideration in their infrastructure decision-making, and 30% cite GPU availability among their top three most serious challenges in moving AI models into production.

- **Regional pressures persist:** In some geographies, particularly in Asia-Pacific, lack of access to GPUs is restricting organizations from deploying AI; 38% of organizations in India see accelerator access among their top three challenges to moving AI projects into production.

- **Hyperscaler and GPU clouds serve as key channels for companies to access GPUs:** The need for accelerators has driven 46% of surveyed organizations to leverage hyperscale public clouds for model training, as well as — increasingly — specialist GPU cloud providers (32%).

5. Concerns about AI's environmental impact persist but are not slowing AI adoption; sustainable AI practices offer opportunity to mitigate emissions.

AI's environmental and energy impact is still a prominent concern for many organizations, but it is not slowing the decision to invest in AI projects. With many organizations seeing sustainability practices deliver meaningful impacts, there is a clear opportunity to address the emissions challenge.

- **Concerns about AI's energy and carbon impact remain prominent:** Nearly two-thirds (64%) of organizations say that they are concerned about the impact of AI/machine learning (ML) projects on their energy use and carbon footprint; 25% of organizations indicate they are very concerned.

- **Adoption of sustainable data infrastructure technologies is an area of focus:** Clearly, sustainability credentials from technology providers are becoming essential, with 42% of organizations indicating that they have invested in energy-efficient IT hardware/ systems to address the potential environmental impacts of their AI initiatives over the past 12 months. Of those, 56% believe this has had a "high" or "very high" impact. Others have found that making changes in data infrastructure vendors (59%) and AI project scope (57%) have had a "high" or "very high" impact.

- **Sustainability is an important, but not the primary, factor in AI decision-making:** More than a quarter (30%) of organizations report that sustainability initiatives are a driver of AI adoption as they look to apply AI to improve energy efficiency and mitigate emissions. While this is notable, sustainability is, in fact, the least-mentioned driver overall. Even where energy-reduction initiatives are the goal, meeting sustainability targets can take a back seat to cost savings and improving operational efficiencies as the principal objective. In the context of all the issues that most strongly inform AI infrastructure decision-making, sustainability is mid-table: 37% of organizations are prioritizing it, but it is outranked by more prominent issues such as security (47%) and access to AI accelerators (44%).

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