

How AI could evolve into a multi-year investment theme

Research studying the growth of past transformational technologies, conducted by Fidelity's Asset Allocation Research Team (AART), establishes that AI may lead to higher productivity over time. Read ["Artificial intelligence: An X-factor in a new investment regime"](#) for a deeper dive.

KEY TAKEAWAY

Broad economic productivity contributions resulting from AI may take years.

Why AI matters to investors: It could eventually reshape the tech sector and drive future corporate revenue and profit margins. Should its contributions to higher productivity exceed current expectations, it could counteract rising costs that threaten future market returns.

AI as an economic game changer: AI is poised to become a secular trend. In an era of deteriorating demographics and subdued productivity, even a modest productivity boost from AI could support stronger economic growth.

What prior technologies suggest for AI: Historical data suggests that a move from 5% to 50% adoption rate for new technologies often took multiple years, sometimes more than two decades. Modest initial productivity gains became more substantial as adoption rates approached 50%.

The current state of AI adoption: 4.8% of businesses were using AI tools as of May 2024. Adoption is higher in information and professional services sectors.

Arriving at a productivity estimate: Using two approaches, extrapolating adoption patterns by sector and deriving estimates from capital spending, we estimate a productivity boost of 0.2%–0.3% over the next decade, with gains of 0.5%–0.9% in the lead-up to widespread adoption.

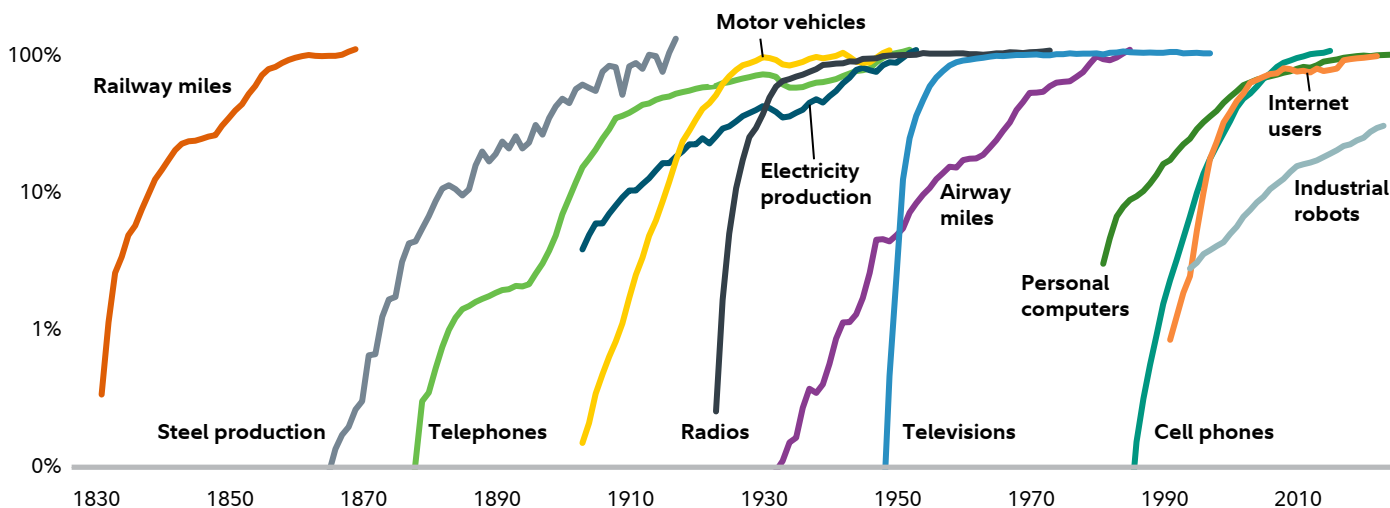
Why capital spending rate matters: Productivity gains from AI companies will require increased capital spending, upskilled workforces, and adaptation of business processes. Investment activity correlates closely with productivity trends, often leading productivity by about five years.

What AI could mean for company profits: AI could raise economic growth and GDP, with gains divided between labor compensation, company profits, and government tax revenues.

Potential constraints on AI: Regulatory issues, information abuse, job displacement and inequality, computing costs, and carbon emissions related to current technology.

The adoption rate of past technologies

U.S. major technology adoption patterns (log scale)



Railway miles per 1,000 people, steel short tons per employee, telephone lines per household, electricity 10 megawatts per household, automobiles per household, radios per household, airway miles per 1,000 people, televisions per household, households with computers, cell phones per person, internet users per household, robots per 1,000 manufacturing employees. Sources: "Historical Statistics of the United States, Earliest Times to the Present: Millennial Edition," edited by Susan B. Carter et al., New York: Cambridge University Press, 2006. Diego Comin and Bart Hobijn, "An Exploration of Technology Diffusion," The American Economic Review, Vol. 100, No. 5 (December 2010), pp. 2031–2059. World Bank, U.S. Census Bureau, Bureau of Labor Statistics, Haver Analytics, Macrobond, Fidelity Investments (AART).





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