Tracking Firm Use of AI in Real Time:

A Snapshot From the Business Trends and Outlook Survey

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BUSINESS TRENDS AND OUTLOOK SURVEY (BTOS)

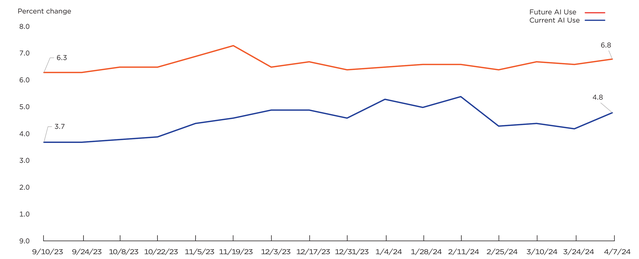
- Provides insight into the state of the economy by providing timely data for key economic measures and business expectations about future conditions.
- Has ongoing 2-week data collection periods and publications every 2 weeks.
- Data includes all employer businesses (single location and multilocation) in the U.S. economy, excluding farms.
- Is an experimental data product with standing core content and changing supplemental content.
- Collects a wide range of business conditions, such as current performance, changes in revenue or employment, hours worked, location operating status, demand, and prices. For most concepts, businesses are asked about the previous 2 weeks and for a 6-month projection.
- "Core" AI usage questions were added to the BTOS in October 2023. These questions will remain on the survey until summer 2024.
- Supplemental content was added to the BTOS from December 2023 to February 2024 to provide more detailed information about businesses' use of artificial intelligence.

DATA AND METHODOLOGY

- Sample consists of approximately 1.2 million businesses split into six panels.
- Target population is nonfarm employer businesses with receipts of $1,000 or more that are in the United States, the District of Columbia, and Puerto Rico.
- Asks businesses to respond to the survey once every 12weeks for a year.
- Data available at the national, state, sector, subsector, employment size class, sector by employment size class, and top 25 metropolitan statistical area levels.
- Response rate for the pooled supplemental period was around 16 percent, with approximately 164,500 businesses responding.
- Asks a series of qualitative questions about business conditions in the last 2 weeks and expectations about future business conditions. These qualitative questions result in response share estimates: the percent of businesses which have selected each possible answer. For most questions, an index is produced to create one estimate per question for easier comparison over time.

Note: The AI use question is fielded as a core BTOS question and is included in all collection periods. "Current AI Use" refers to a business responding "yes" to using AI in producing goods or services during the 2-week period ending with the date indicated on the graph. "Expected AI Use" refers to a business responding "yes" to thinking it will be using AI during the 6 months following the date indicated on the graph.

CURRENT AND EXPECTED AI USE



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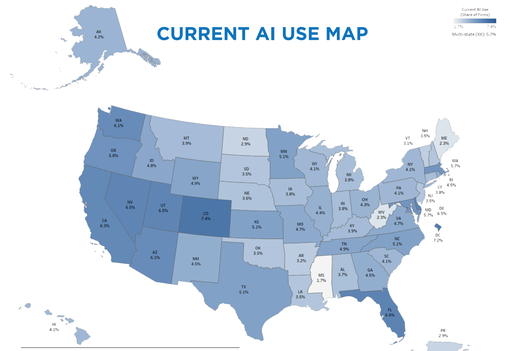
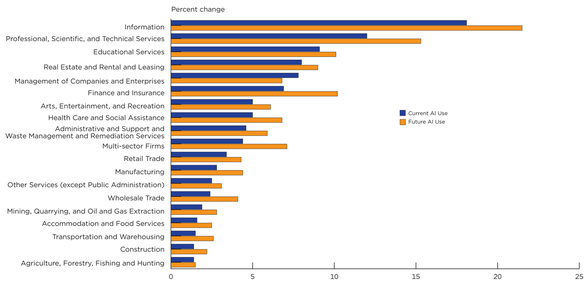
CURRENT AI USE MAP



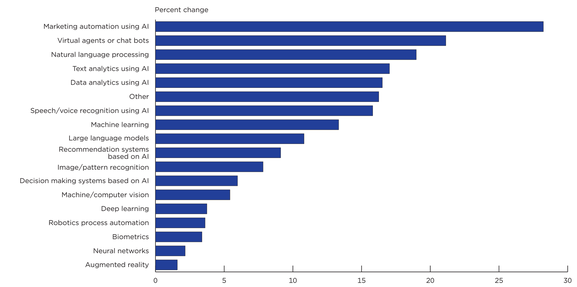
Note: Statistics are representative of all companies in the target population.

CURRENT AND EXPECTED AI USE BY SECTOR



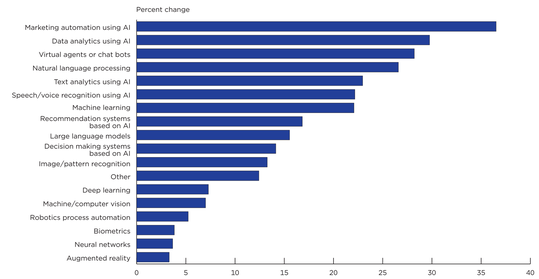
Note: Statistics are representative of all companies in the target population.

CURRENT USE OF AI TECHNOLOGIES ('NONE' EXCLUDED)



Note: Statistics are representative of all companies in the target population, with businesses reporting none excluded from the total for display purposes.

EXPECTED USE OF AI TECHNOLOGIES



Note: Statistics are representative of companies that reported planning to use AI to produce goods or services in the next 6 months.

SUMMARY

- The BTOS AI supplement provides a new, real-time snapshot of current and expected future use of AI amongst US businesses. We find that AI adoption has increased from about 3.7 percent in Fall 2023, to 5.4% in February 2024, and is expected to rise to about 6.6 percent by Fall 2024. AI usage varies across both sectors and states: the highest rates of adoption are found in the Information and Professional, Technical, and Scientific Services sectors, in contrast with the Construction and Agriculture sectors at the lowest. States with the highest AI include Colorado, the District of Columbia, and Florida; the lowest-usage states include Mississippi, West Virginia, and Maine.
- Businesses using AI report using it for a variety of technologies: the most commonly-reported applications are marketing automation, virtual agents/chatbots, natural language processing, and text and data analytics. These technologies are also the most commonly reported technologies for future AI usage, along with speech/voice recognition, machine learning, and recommendation systems based on AI.
- While the overall use of AI in producing goods and services remains low, it is growing. Whether these patterns will change as the diffusion of AI progresses through the U.S. economy remains to be seen. While the BTOS AI supplement data collection has ended, the core AI questions will continue to be fielded until August 2024. The accumulating large data on AI use by firms will remain a valuable resource for a robust analysis of the continuing diffusion of AI and its effects on the economy.

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