Capgemini RESEARCH INSTITUTE

Physical AI

Taking human-robot collaboration to the next level

Make it real.

Physical AI refers to the application of AI in physical systems, enabling machines to perceive, reason, and act autonomously in the real world.

This report focuses specifically on its application in robotics.

Physical AI spans multiple robot form factors – mobile robots, industrial arms, and humanoids among them – each suited to different tasks and environments.

Physical AI is a game changer for industry

67% of executives expect physical AI to be game-changing for their industry

64% of executives believe that physical AI will become a critical driver of competitiveness in their industry

Physical AI transforms robots from rigid, pre-programmed tools to adaptive, context-aware collaborators

Source: Capgemini Research Institute, Physical AI for robotics survey, January–February 2026, N = 1,678 executives. Note: The term physical AI is used here only in the context of robotics.

Physical AI's expected value is multi-dimensional

What business value could physical AI deliver for your organization if adopted?
Percentage of respondents rating each benefit as high value

Source: Capgemini Research Institute, Physical AI for robotics survey, January–February 2026, N = 1,678 executives. Note: The term physical AI is used here only in the context of robotics.

Physical AI unlocks new frontiers in robotics – enabling entirely new value pools

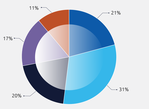
62% of executives say physical AI will expand the range of environments and tasks where robots can be used in their operations

60% of executives believe physical AI will enable the adoption of robotics in areas that were once impossible or impractical

Source: Capgemini Research Institute, Physical AI for robotics survey, January–February 2026, N = 1,678 executives. Note: The term physical AI is used here only in the context of robotics.

The growing imperative to adopt physical AI

Which of the following best describes your organization's current stage of adoption for physical AI?



79% **of organizations are already engaging with physical AI for robotics**

Labor shortages and rising labor costs are the top drivers of investment in physical AI

Source: Capgemini Research Institute, Physical AI for robotics survey, January–February 2026, N = 1,678 executives. Note: The term physical AI is used here only in the context of robotics.

Scaling physical AI goes beyond technology, spanning safety, cybersecurity, regulation, and operations

73% of executives cite **technology** readiness challenges (e.g., lack of reliability, performance issues) as a critical barrier to the adoption of physical AI

62% of executives cite **safety** concerns and absence of established standards as a critical barrier

53% of executives cite **cybersecurity** risks as a critical barrier

72% of executives say that embedding physical AI will require significant **operational** changes

Physical AI introduces probabilistic decision-making into regulated environments, raising trust and certification requirements, alongside challenges in reliability, dexterity, and data availability

Capgemini Research Institute, Physical AI for robotics survey, January–February 2026, N = 1,678 executives. Note: The term physical AI is used here only in the context of robotics.

Recommendations: Accelerating the physical AI revolution

Source: Capgemini Research Institute analysis.

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