

Amazon bets savings from automation can help fuel AI spending boom

Amazon is betting its multibillion-dollar investment in robotics will yield significant near-term savings, as the technology giant races to cut costs in its sprawling retail network amid rising spending on artificial intelligence.

The Seattle-based group is expected to spend up to \$25bn on its retail network, including investment in a new generation of robotics-led warehouses, as it seeks efficiencies across the business and to improve delivery times in the face of growing competition from low-cost rivals such as China's Temu.

While most of Amazon's planned \$100bn in capital expenditure this year will be spent on expanding AI initiatives such as computing infrastructure, about a quarter will be directed at its ecommerce arm where the business is investing heavily in automation, according to analyst estimates.

"We're seeing today how fruitful this technology is in transforming our everyday," said Tye Brady, chief technologist at Amazon Robotics, noting that it plans to "continue to invest" in automation.

The push on robotics comes as chief executive Andy Jassy oversees a cost-cutting effort, having in recent months taken an axe to middle management to ensure the business can operate "like the world's largest start-up".

An Amazon delivery robot on Sunset Boulevard in Los Angeles. The company is pushing to shorten delivery times, particularly for users of its Prime subscription service © Uwe Kraft/IMAGO via Reuters

Amazon had already cut more than 27,000 jobs following the Covid-19 pandemic, and shuttered or delayed planned warehouses after it expanded aggressively during various government-mandated lockdowns to service a boom in demand for online services.

The focus on cost-cutting has also helped to facilitate huge investments in data centre capacity as it races against rivals Google and Microsoft to take a lead in the

AI boom and power its fast-growing profit engine Amazon Web Services.

Research by analysts at Morgan Stanley estimate that investments by Amazon in a new generation of robotics-led warehouses could generate about \$10bn in annual savings by the end of this decade.

Amazon's fulfilment centre in Shreveport, Louisiana — its most technologically advanced warehouse — has demonstrated the type of savings it can achieve with automation.

The 3mn sq ft facility, which opened in September, uses robots at every stage of fulfilment and has achieved a 25 per cent cut in costs, according to Amazon, following a tenfold increase in robotics compared with its previous generation of warehouses.

Morgan Stanley estimates that Amazon's investments in a new generation of robotics-led warehouses could generate about \$10bn in annual savings by the end of this decade © Dimitar Dilkoff/AFP via Getty Images

Shreveport features a range of mobile drive units, which are used to carry items across the warehouse, and advanced robotic arms that pick and sort items, cutting down on the number of human workers in the warehouse.

The tech giant is also investing in robotics talent as part of a wider push to deploy generative AI in its warehouse robots. In August, it hired Pieter Abbeel and Peter Chen, co-founders of physical AI start-up Covariant, to head up a San Francisco-based lab where it plans to develop more advanced autonomous robots.

While its retail business continues to be profitable, Amazon has forecast more modest growth across the group in the first quarter of this year, with a strong dollar knocking revenues.

The US ecommerce group is pushing to lower delivery times, particularly for users of its Prime subscription service. This includes separating its logistics network into specific regions to ensure inventory is in place for same day deliveries, in a move to compete on convenience against lower cost but slower to deliver rivals such as Temu and Shein.

Amazon has in recent years introduced Proteus, a fully autonomous lift vehicle that navigates sites independently using a set of sensors having been trained using AI © Seth Herald/AFP via Getty Images

Amazon has said it invested roughly \$1.2bn since 2019 in upskilling workers, but is facing some barriers in the labour market.

Eva Ponce, a director at the MIT Center for Transportation & Logistics, said worker shortages were spurring automation in the warehousing sector with Amazon prioritising the use of technology and “deploying robots at a hectic pace” to meet its delivery targets.

“Labour shortages are a persistent theme and this is another driver for this investment,” Ponce added. “Companies are looking to enhance productivity and in the case of Amazon they are looking for reduced delivery times.”

The company has maintained that its robotics innovations have not reduced employee headcount across its vast commerce operation, which accounts for nearly three-quarters of its 1.5mn-strong workforce.

“As we continue to roll out automation, we continue to create new jobs. And there are new job types that we never imagined,” said Brady.

Amazon has a long history of investing in robotics. The group has deployed more than 750,000 mobile drive units since it acquired robotic start-up Kiva Systems in 2012.

In recent years it has introduced Proteus, a fully autonomous lift vehicle that navigates sites independently using a set of sensors having been trained using AI.

The company has also partnered with chipmaker Nvidia to develop “digital twins” of its warehouses to enable it to run thousands of simulated situations before deploying an autonomous robot.

Brady said the business would only move forward with new robotics where they cut costs and improve worker safety, while investor jitters over the scale of its investment in AI would be rewarded with strong efficiency gains. “We don’t do technology for technology’s sake,” he added.