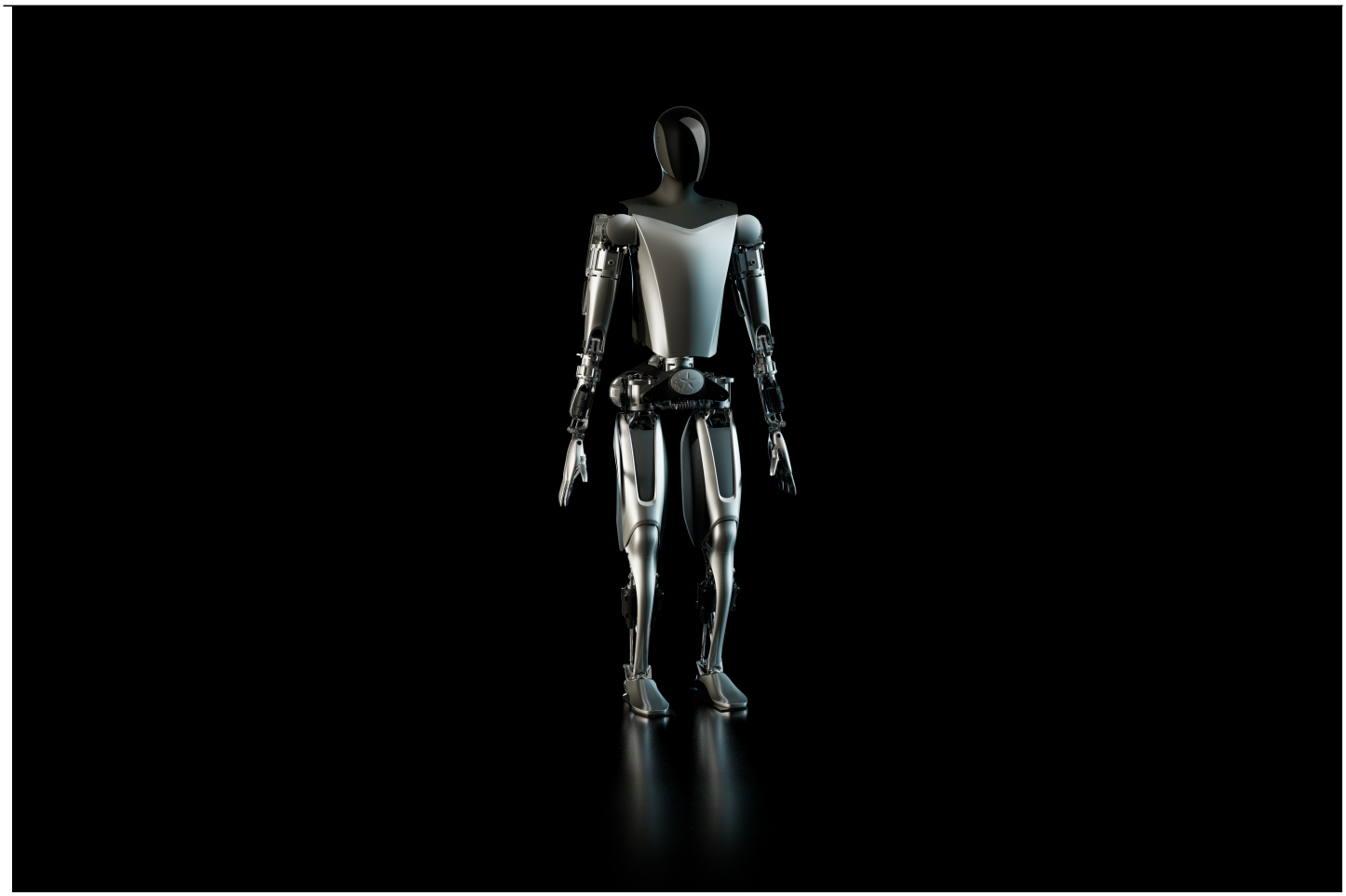
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Elon Musk says that Tesla's AI-powered Optimus robot will "be a fundamental transformation for civilization as we know it" once the prototype is fully developed. This sounds like a very heady claim, but Elon Musk is known for making grand statements. Let's ask a more practical question: what business problems will Optimus solve? The answer: plenty. Optimus still has a long way to go before it's ready for prime time, but the robot could address issues such as the labor shortage many industries face.

Optimus as We Know It Today

Musk unveiled the latest prototypes of Optimus at Tesla's AI Day recently. The first consisted of a deconstructed Optimus that Tesla calls "Bumble C." The robot walked forward on a stage and did a "raise the roof" dance move. And that was about it. Musk said that Tesla was limiting Bumblebee's moves literally to avoid having it "fall flat on its face."

A second prototype consisted of a “very close to production” version of Optimus. This one sported a fully assembled body, but it was not fully functional. It was held up on a stand and was capable of waving the audience. waved to the audience, showing the range of motion of its wrist and hand. Musk said that Prototype #2 still contains actuators, battery pack, and everything else but “wasn't quite ready to walk.”

Musk complemented the live demo with video clips of the robot doing other tasks like picking up boxes.

He claimed that if the robot was produced in mass volumes it would probably cost less than $20,000, although no one really knows how much the final product would cost. Ultimately, Tesla believes Optimus will do nearly anything a human can do. It will have approximately the same size and weight as a person, at 125 pounds and five feet, eight inches in height. The robot should be able to operate for several hours without recharging. Eventually, Optimus is expected to be able to follow verbal instructions to perform various tasks, including such mundane, yet complex jobs as picking up your laundry.

Optimus received mixed reviews. Critics noted that other companies are much further along in developing robots that can walk, run, and even jump (an example being Boston Dynamics' Atlas robot). But supporters noted the Elon factor. Under his direction, companies such as Tesla and SpaceX have taken technology, in particular artificial intelligence, further than expected. And much of Tesla's track record of genuine achievements in electric vehicle engineering and manufacturing apply to Optimus.

As a CNet reporter observed, “Musk has a talent for picking businesses that are difficult but attainable, for finding engineers up for the challenge, and providing them an environment where they expect to make a difference.”

For its part, Tesla maintains that Optimus’ advantage over competitors will be its ability to navigate independently using technology developed from Tesla’s driver-assistance system “Full Self Driving,” as well as cost savings from what it has learned about manufacturing from its automotive division. (Tesla’s “Full Self Driving” requires a human that is alert and attentive, ready to take over at any time, as it is not yet capable of fully driving itself.)

Why Optimus Matters

Optimus matters precisely because it is not revolutionary. Rather, it’s a natural evolution for how technology can solve business problems such as addressing the global labor shortage and finding better, safer ways to perform tasks that are either too repetitive or dangerous for people to do.

For example, Amazon, the second-largest private employer in the US, fears the company could run out of workers to hire in the US. And so it's rapidly developing automated solutions. The latest is a robot that can pick and stow items at rates several times faster than a human worker could.

The entire retail industry continues to grapple with the challenge of finding and keeping reliable finding reliable labor. Walmart recently announced one of the ways the giant retailer is addressing the problem. The company is teaming up with Ford and Argo AI to deliver goods to customers’ homes via self-driving vehicles. It is the latest move by the retail giant to leverage autonomous technology for transportation in its supply chain. In doing so, Walmart is advancing its embrace of more customer-centric ways of doing business, such as faster last-mile delivery of purchases to customers – a trend

that exploded when the COVID-19 pandemic hit.

And the quick service restaurant industry – arguably the hardest hit by the global labor shortage – is gradually figuring out how to apply artificial intelligence and machine learning to reduce the number of mistakes made by people in the drive-through lane and to managing orders among other improvements.

In manufacturing, AI-powered robots are already taking on dangerous, messy, and other unpleasant repetitive tasks that free up humans to do more meaningful and safer work. For instance, Lutfhansa Technik uses robots to inspect for cracks on engine components. Previously this process involved using dyes by hand, which was messy and tedious. Roll-Royce is experimenting with flexible snake robots that can inspect engine lines and make patch repairs. These are robots that can accomplish tasks that humans cannot by reaching areas that are impossible for a person.

It's easy to see how Optimus can solve all these and many more challenges by becoming literally a robotic assistant. Elon Musk believes that within three-to-five years, people will be able to buy an Optimus to become their personal assistants. Musk described a utopian future where the Tesla bot handles dangerous and distasteful work, leaving people with the freedom to explore creative and inspiring work or to simply enjoy a life filled with leisure.

"It'll be a fundamental transformation for civilization as we know it," said Musk. He continues to say that Optimus has the potential of "two orders of magnitude" of potential improvement of economic output.

But because businesses are already traveling far down the path of smart automation, it’s reasonable to expect that Optimus will have its biggest near-term impact in the workplace.

Contact Centific

At Centific, we’re already helping businesses apply AI to support critical needs ranging from safeguarding retail stores to demand forecasting. To learn how we can help you, contact us.

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