TSLA Earnings Call – FY2025 Q2

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Travis Axelrod

Good afternoon, everyone, and welcome to Tesla's Second Quarter 2025 Q&A Webcast. My name is Travis Axelrod, Head of Investor Relations, and I'm joined today by Elon Musk, Vaibhav Taneja and a number of other executives. Our Q2 results were announced at about 3:00 p.m. Central Time, and the update deck we published at the same link as this webcast. During this call, we will discuss our business outlook and make forward-looking statements. These comments are based on our predictions and expectations as of today. Actual events or results could differ materially due to a number of risks and uncertainties, including those mentioned in our most recent filings with the SEC. [Operator Instructions] Before we jump into Q&A, Elon has some opening remarks. Elon?

Elon R. Musk

Thanks, Travis. So we've had a very exciting quarter. We were able to successfully launch robotaxi, so providing our first drives with no one in the driver seat with paying customers in Austin. And as some may have noted, we've already expanded our service area in Austin. It's bigger and longer. And it's going to get even bigger and longer. We were expecting to really greatly increase the Austin service area to well in excess of what competitors are doing. And that's hopefully in a week or so, 2 weeks?

Vaibhav Taneja

Yes, a couple of weeks.

Elon R. Musk

A couple of weeks or so. And we're getting the regulatory permission to launch in the Bay Area, Nevada, Arizona, Florida, and a number of other places. So as we get the approvals and we prove out safety, then we will be launching autonomous ride-hailing in most of the country. And I think we'll probably have autonomous ride-hailing in probably half the population of the U.S. by the end of the year. That's at least our goal, subject to regulatory approvals. I think we'll technically be able to do it. So assuming we get regulatory approvals, it's probably addressing half of the population in the U.S. by the end of the year. But we are being very cautious. We don't want to take any chances. And so we're going to go cautiously. But the service areas and the number of vehicles in operation will increase at a hyper-exponential rate. So some other notable things. Model Y in June became the best-selling car in Turkey, Netherlands, Switzerland and Austria. It is, I believe, the best-selling car of any kind in the world still. And autonomy is a big factor there. So even without -- even absent -- even without supervised -- even with just supervised self-driving, it's a huge selling point. And it's worth noting that we do not actually yet have approval for supervised FSD in Europe. So our sales in Europe, we think, will improve significantly once we are able to give customers the same experience that they have in the U.S. This is, I think, a very important point to convey. And we've been working with our main country regulator, which is the Netherlands. And I think we're close to getting approval with the Netherlands, then it's got to go to the EU. It's quite Kafka-esque. In fact, Kafka had no idea that something like the EU could exist beyond Kafka-esque challenges with bureaucracy. But we will get the approvals. And I think we'll get -- some people in Europe will have an experience similar to that of the U.S. in most of Europe this year, hopefully, at least partly in this quarter. And then we also have some regulatory challenges in China, which we're hoping to unblock shortly where we -- because we also cannot provide supervised FSD in China currently, but we hope to unblock that soon. That's also -- that's another major -- it really is the single biggest demand driver. And then within the U.S., as we get confident about safety in different geographic areas, we'll loosen up on how much somebody has to be laser-focused -- to have their eyes laser-focused on the road. That's been a common complaint. In fact, it does create an odd safety issue where people will sometimes disengage autopilot, then do something, change the radio or maybe look at the phone, drive with their knee and then reengage autopilot, which obviously is less safe than simply keeping autopilot on. So anyway, that experience will improve in the next several weeks. Because of our focus on Austin with no one in the driver seat, the production release of autopilot is actually several months behind what people experience on a robotaxi in Austin. So now we have the robotaxi launched, we'll be adding back those elements so that there will be a step-change improvement in the autopilot experience for people outside of Austin. So this is really -- as you can tell, this is very much sort of autonomy is the story. Like we need the physical product, without which you cannot have autonomy. But once you have a physical product, you need -- the autonomy is what amplifies the value to stratospheric levels. We also launched the Tesla Diner, which has been a huge hit. It actually got worldwide attention, which is unusual for a diner. Diners don't typically get headline news around the earth. But this is a pretty special diner. And if you're in the L.A. area, it's worth visiting. It's sort of a shining beacon of hope in an otherwise sort of bleak open landscape, frankly. So it's really quite a lovely experience. Great job by the Tesla team there. On the full self-driving front, I'll continue talking about that. We have -- we're continuing to make significant improvements just with the software. So we're expecting to increase the parameter count. Actually, at this point, we think we can probably 10x the -- almost 10x the parameter count. Yes, roughly 10x the parameter count. So this is actually a very tricky thing to do because, as you increase the parameter count, you get choked on memory bandwidth. But we currently think we can 10x the parameter count from what people are currently experiencing. So not just 4x, actually 10x increase in parameter count. And yes, so still a lot of improvement on the existing hardware to happen. Energy is growing really well despite headwinds from tariffs and supply chain challenges. The Megapack is expanding capacity quickly, and we have upgrades to the Megapack that will make it even better. And we had record powerwall deployment again in Q2. So I think batteries are just going to be a massive thing. The scale of batteries, battery demand, I think, not that many people appreciate just how gigantic the scale of battery demand is. The way to think about it is that the U.S. sustained power output for the U.S. grid is around 1 terawatt but average usage is less than half a terawatt. If you add batteries to the mix, you can run the power plants 24/7 at full capacity, thus doubling -- more than doubling the energy output per year of the United States just with batteries. But that's again a big deal. It's a really big deal. Optimus, so we're evolving the Optimus design and really getting Optimus to the point where it is a phenomenal design. So we're in Optimus version 2 right now, sort of 2.5. Optimus 3 is an exquisite design, in my opinion, and will be -- as I've said many times before, I predict it will be the biggest product ever. It's a very hard problem to solve. You have to design every part of it from physics first principles. There's nothing that's off the shelf that actually works. So you got to design every motor, gearbox, power electronics, control electronics, sensors, the mechanical elements. We also got to train Optimus to use its limb sensors with a neural net. But we'll be applying the same techniques that we applied for our car, which is essentially a 4-wheel robot. And Optimus is a robot with arms and legs. So put the same principles that apply to optimizing AI inference on the car, apply it to Optimus because they're both really robots in different forms. And Tesla, it is important to note that Tesla is by far the best in the world at real-world AI. Like a clear proof point for that would be -- if you compare, say, Tesla to Waymo, Waymo has got -- the car is festooned with God knows how many sensors. And yet, isn't Google good at AI? Yes, but they're not good at real-world AI. Thus far, they have -- Tesla is actually much better than Google by far and much than anyone at real-world AI. And by far, Tesla has the best inference efficiency. Like I think a key figure of merit for AI is what is the intelligence per gigabyte. And people talk about parameters, blah, blah, blah, but I think we'll -- stop talking about

parameters and talk about per gigabytes because with the parameters, you can have 4-bit parameters, 8-bit parameters, 16-bit parameters. But the actual constraints in the hardware are how many gigabytes of RAM and how many gigabytes per second can you transfer from RAM. Therefore, it is not a parameter constraint. It is a byte constraint. And Tesla has the highest intelligence density of any AI by far. And I have a lot of insight into this with xAI. xAI is -- Grok is the smartest AI overall, but it's -- Grok 4 is a giant beast sort of at the terabyte level. And so kind of important to note, Tesla has the best intelligence density. Intelligence density will be a very big deal in the future. It is now. So with Optimus 3, which is really the right design, it's like it doesn't have -- at this point, there's no significant flaws with the Optimus 3 design. But we are going to retool a bunch of things. So there will probably be prototypes of Optimus 3 end of this year and then scale production next year. We're going to try to scale Optimus production as fast as it's humanly possible to do, so we'll try to get to 1 million units a year as quickly as possible. We think we can get there in less than 5 years, it's my sort of -- I guess. That's a reasonable aspiration, 1 million units a year, 5 years, it seems like an achievable target. So in conclusion, so far, 2025 has been a very exciting year, a lot of major milestones. We've made it clear with our demonstrable progress in autonomy that a lot of naysayers said we would not achieve. But it's worth noting that we have done what we said we're going to do. It doesn't mean we're always on time, but we get it done. Now the naysayers are sitting there with an egg on their face. So a great progress by the Tesla team. I do think if Tesla continues to execute well with vehicle autonomy and humanoid robot autonomy, it will be the most valuable company in the world. There's a lot of execution between here and there. It doesn't just happen. But provided we execute very well, I think Tesla has a shot at being the most valuable company in the world. Obviously, I'm extremely optimistic about the future of the company. The best way to predict the future is to make it happen, and we're making it happen here with the Tesla team. So I'd just like to say thanks to all of our supporters. And I think we've got an incredibly exciting future.

Travis Axelrod

Great. Thank you very much, Elon. And Vaibhav luck has opening remarks as well.

Vaibhav Taneja

Thanks, Travis. As Elon mentioned, Q2 was an interesting quarter in a few respects. We started ramping up the production of the new Model Y at all our factories. We rolled out our robotaxi service in Austin and delivered a car completely autonomously directly from the factory to the customer's home. It is a seminal point to get to this thing. I mean it took a lot of effort, and I really want to thank everybody at Tesla to make this happen. It wasn't an easy thing to do, but we did it. It took time, but we've just begun the next phase for the company. The One Big Bill has a lot of changes that would affect our business in the near term. The first among those changes is the repeal of the IRA EV credit of $7,500 by the end of this quarter. Given the abrupt change, we have limited supply of vehicles in the U.S. this quarter as we have already with the lead times to order parts to build cars. We have rolled out all our planned incentives already and we'll start paring them back as we start to sell. If you are in the U.S. and looking to buy a car, place your order now as we may not be able to guarantee delivery orders placed in the later part of August and beyond. The bill also made changes to certain emission standards by reducing the amount of penalty to zero. This, in turn, will have an impact on the new sales of regulatory credits to other OEMs and, in turn, will lead to lower revenue. While we now plan our business around such sales, it will nonetheless impact our total revenues going forward. On the automotive product portfolio, the entire lineup is updated. Globally, we are seeing an increase in the number of test drives. We started the production of the lower-cost model as planned in the first half of '25. However, given our focus on building and delivering as many vehicles as possible in the U.S. before the EV credit expires and the additional complexity of ramping a new product, the ramp will happen next quarter, slower than initially expected. One thing which is grossly underappreciated, and Elon talked about it, is that all our vehicles in the lineup are capable of autonomy. This is by far the biggest differentiator between us and the competition. Our vehicles' top safety standard has this, but with FSD, they are and will continue to set a new standard for safety within vehicular transportation. We published our vehicle safety report earlier today. And you can see a car on FSD is 10x safer than a car not on FSD. We've started seeing an uptick in FSD adoption in North America in recent months, which is a very promising trend. And just to give you a perspective, since the launch of -- since we moved to version 12 of FSD, we've seen the adoption rates really increase. We've started seeing the -- on the automotive revenue front, despite reduction in regulatory credit revenue, the total automotive revenue increased by 19% sequentially, even though total deliveries only improved 14%. This was primarily due to improved ASPs because of the new Model Y. This helped in improving margins sequentially as well, along with improved mix and higher fixed cost absorption despite an increase in cost from tariffs. We started seeing the impact of tariffs in our P&L. Sequentially, the cost of tariffs increased around $300 million with approximately 2/3 of that impact in automotive and rest in energy. However, given the latency in manufacturing and sales, the full impact will come through in the following quarters, and so costs will increase in the near term. While we are doing our best to manage these impacts, we are in an unpredictable environment on the tariff front. The margins for the energy generation and storage businesses improved sequentially, while deployment reduced primarily due to the ramp of power deployments at higher margins. We were able to achieve our highest gross profit for the business yet. Note that the overall deployments will continue to vary quarter-to-quarter. I think Elon covered this that industrial storage will make a difference in this drive towards AI and data center growth. The energy requirements are increasing at a rapid scale as AI applications are very energy hungry. The quickest path to scale up energy is deploying storage. This is something that our customers have started realizing. And despite this business having the largest impact from tariffs, we are seeing customers willing to accept some of the tariff impacts. The Big Bill has certain adverse impacts even for the energy business, most notably on the residential storage business due to the early expiration of consumer credits by the end of this year. The challenges on the storage business, therefore, remain both from the bill and from the tariffs, and we're doing our best to try and manage through this, but we will see shifts in demand and profitability. The margins for our service and other businesses improved sequentially, primarily due to higher profits from supercharging and improvement in insurance and service center profitability. Operating expenses also grew sequentially as we continued our investment in AI projects, including additional expenses related to employee-related costs, including higher stock-based compensation and depreciation for AI compute. Our operating expenses, especially R&D-related spend, will continue to grow. We believe even in the current environment, it is the right strategy to keep making investments in these areas to position us for the long term. Other income grew sequentially, primarily from the mark-to-market adjustment on Bitcoin holdings, which was a $284 million gain in Q2, while being $125 million loss in Q1. Just want to remind people that this would keep creating volatility based on the Bitcoin price. While operating cash flows increased sequentially, so did our CapEx, resulting in $146 million of free cash flow. We continue to make investments in various aspects of manufacturing like Cybercab, Semi line and other manufacturing spend, and the expansion of our AI initiatives. Our latest expectation for the year in terms of CapEx is in excess of $9 billion. To summarize, we have near-term challenges in our business due to the negative impacts of the bill and tariffs. However, the investments that we have made for AI, robotics and our lead in energy sets us up for a bright future. I would like to thank the whole Tesla team, our customers, our investors and supporters for their continued belief in us.

Travis Axelrod

Great. Thank you very much, Vaibhav. So now we're going to move on to say.com questions. The first question is, can you give us some insight how robotaxis have been performing so far? And what rate do you expect to expand in terms of vehicles, geofence, cities and supervisors?

Ashok Elluswamy

Yes. The robotaxi has been doing great so far in Austin. Customers really love the experience. They're like super smooth, very safe and like just a great experience overall. And we already did the first wave of expansion in Austin, and we'll continue to expand in Austin to probably more than 10x our current operating region. We are also testing in a lot of other cities, as Elon mentioned. The next thing to expand would be in the San Francisco Bay Area. We are working with the government to get approval here and, in the meanwhile, launch the service without the person in the driver seat just to expedite and while we wait for regulatory approval. We are also testing a lot of other cities in the U.S., including Florida, Nevada, et cetera.

Travis Axelrod

Great. Thank you very much, Ashok. The next question is, what are the key technical and regulatory hurdles still remaining for unsupervised FSD to be available for personal use? Can you provide a time line?

Elon R. Musk

We're certainly getting there. I think it will be available for incentivized personal use by the end of this year in certain geographies. We're just being very careful about it.

Vaibhav Taneja

This is not something which we want to rush. We want to make sure that everything is safe before we make it available broadly.

Elon R. Musk

Yes, we're just being extremely primary. But I would be -- I'm confident that by the end of this year, within a number of cities in the U.S., it will be available to end users.

Ashok Elluswamy

Yes. And for orders with the same AI hardware in the Austin robotaxi vehicles has still some customer vehicles and we did deliver a car autonomously from the factory to a customer this quarter. And every Tesla manufacturer in the U.S. and in Europe, autonomously drives itself from the end of line to the loading docks. And so it's just a software update.

Elon R. Musk

Yes. I think we'll end up delivering cars in the Greater Austin area and the Bay Area by default from the factory by the end of this year. A car will deliver itself to where you are, unless you say you don't want them.

Ashok Elluswamy

It will be super cool.

Elon R. Musk

Yes.

Travis Axelrod

Great. Thank you, guys. The next question is, what specific factory tasks is Optimus currently performing? And what is the expected time line for scaling production to enable external sales? How does Tesla envision Optimus contributing to revenue in the next 2 to 3 years?

Elon R. Musk

Yes. So the Optimus 3 design, as I mentioned earlier, is, I think, finding the right design. There will be further optimizations, but there are, I think, no fundamental changes that are needed for the Optimus 3 design. It has all the degrees of freedom that you really want or need. So we'll have prototypes of that in, I don't know, 3 months and then start production -- we'll certainly start production on that in the beginning of next year. The production ramp -- it's always difficult to predict the S curve of your production ramp when something has got an entire -- when everything is new because the rate of production will move as fast as the least lucky and least confident element of the entire supply chain as well as internal processes. So the more new stuff that is in a product, the slower the ramp could be because of unexpected supply chain interruptions or mistakes made internally. It's much easier to predict sort of the end of the S-curve or late in the S-curve than the beginning of the S-curve. And the beginning of the S curve of the production ramp is, in any case, not really material for revenue purposes. The beginning of the S-curve, you're usually -- usually, you're always negative gross margin, and you're debugging a lot of issues. So that's why it's -- I feel like fairly confident in predicting things or at least medium confident in predicting where we are in 5 years, but it's hard to predict where we are in a year or 2 years. So that's why I think 5 years, I think we could be at the -- with this ramp, I'd be surprised if at the end of 5 years, 60 months from now -- if we are not roughly making 100,000 Optimus robots a month in 60 months, I would be shocked.

Travis Axelrod

All right. Thank you very much. Next question is, can you provide an update on the development and production time line for Tesla's more affordable models? How will these models balance cost reduction and profitability? And what impact do you expect on demand in the current economic climate?

Lars Moravy

Well, I think Vaibhav did a good job of answering this question in his opening remarks. As we said, we started production in June, and we're ramping quality builds and things around the quarter. And given that we started in North America and our goal is to maximize production with a higher rate. So starting Q3, we're going to keep pushing hard on our current models to avoid complexity. Unfortunately, that rolls away, we'll be ready with new, more affordable models available

for everyone in Q4. And the goal of those products was not to negatively impact revenue or gross margin, but just to make a car that everyone loves and wants at a more affordable price.

Travis Axelrod

Great. Thank you, Lars. The next question is, can you talk about the benefits of Tesla investing in xAI?

Vaibhav Taneja

This is not the forum to discuss this topic. I mean if there is something which we need to discuss, we'll discuss it separately.

Elon R. Musk

I think, obviously, we're a publicly traded company. Shareholders are welcome to put forward any shareholder proposals that they'd like. I resolutely encourage that and then have shareholders vote, and we'll act in accordance with the shareholder wishes.

Travis Axelrod

Great. Thank you very much. The next question is, can you tell us a little bit more about what goes on in the Tesla design studio?

Franz von Holzhausen

Chief Designer

Do you want me to take that one? We kind of generally say that what happens in the studio stays in the studio, and that earnings calls are not the place to disclose new product stuff, but we're working to make sure that we have an exciting future for Tesla and the product lineup.

Elon R. Musk

Yes. There's a lot of exciting things happening in the design studio. It's not like static. And really, what's going to happen over the next several years is a fundamental transformation of the company from a pre-autonomy world to a post-autonomy. And I'm working on a new master plan to articulate that to the Tesla team. And there will be -- there are some teething pains as you transition from a pre- autonomy to post-autonomy world. But I think the future vision for Tesla is incredibly exciting and will profoundly change the world in a good way. This may sound like sort of hype or whatever, but I think -- well, let's just say if we execute on that plan effectively, which is you have to actually do that, Tesla will be the most valuable company in the world by far.

Travis Axelrod

Great. Thank you. The next question is actually a duplicate on unsupervised FSD for customer vehicles. We'll skip that. After that is, are there any news for Hardware 3 users getting retrofits or upgrades? Will they get Hardware 4 or some future version of Hardware 5?

Vaibhav Taneja

I mean what we want to do is we want to get unsupervised done on Hardware 4 first. Once it's done, then we will go back and look at what we need to do with the Hardware 3 cars. I mean like I said, the focus is first to get unsupervised out, and then we'll go back and see what more work we need to do.

Travis Axelrod

Great. Next question is, can you give an update on Dojo? And could xAI be a customer for Dojo?

Elon R. Musk

Dojo 2 -- we expect to have Dojo 2 operating at scale sometime next year, with scale being somewhere around 100,000 H100 equivalents. And then AI5, which is really spectacular, too -- and I don't use those words lightly, spectacular, too. The AI5 chip will hopefully be in volume production around the end of next year. That has a lot of potential. I think -- thinking about Dojo 3 and the AI6 inference chip, it seems like intuitively, we want to try to find convergence there where it's basically the same chip, but it's used where, say, 2 of them in a car or an Optimus and maybe a larger number on a board, kind of 5, 12 on a board or something like that, if you want high-bandwidth communication between the chips, for serving -- doing inference serving. That sort of seems like intuitively the sensible way to go.

Travis Axelrod

Great. The next set of questions have all actually been covered. So we'll end with, how will the BBB elimination of tax credits for solar projects affect your sales pipeline for Megapack?

Michael Snyder

Yes. Our sales pipeline is quite diversified across customers and market segments. So we aren't heavily weighted in Megapack projects that are paired with solar. And as we talked about in the opening remarks, we're seeing storage quickly being recognized for its ability to unlock grid efficiency and how quickly it can be deployed to help the grid. Additionally, although the recent bill was not favorable towards solar, we believe solar projects will still get built because the energy is necessary. The projects are well developed and they're ready for execution. And there's really no alternatives in the near term given gas turbine lead times and pricing. We also continue to see growth in the data center segment and in stand-alone storage projects, providing capacity to the grid in several markets across the U.S. Overall, we are forecasting a very strong second half of the year as we increase deployments. And lastly, we continue to invest heavily in U.S. manufacturing to mitigate policy and tariff impacts, expecting our first LFP cell manufacturing facility to be online by the end of the year and launching our third

Megafactory near Houston in 2026.

Travis Axelrod

Great. Thank you, Mike. We will now be moving to analyst questions. The first question comes from Emmanuel Rosner at Wolfe Research.

Emmanuel Rosner

Great. Can you hear me?

Travis Axelrod

Yes.

Emmanuel Rosner

So Elon, are you able to share any KPIs with us in terms of the robotaxi business? How many vehicles are you operating, miles driven autonomously or the number of safety critical intervention? Just curious how the rollout generally is going and any sort of like targets that you could share more broadly?

Elon R. Musk

Ashok, do you want to...

Ashok Elluswamy

Yes. We have more than 7,000 miles operating in Austin area. It's just because service is new, we have a handful of vehicles right now, but then we are trying to expand the service in terms of both the area and also the number of vehicles, both in Austin and other locations. So far, there's no notable safety critical incidents. Sometimes we have our own restrictions as to -- for example, we restrict our speed limit to 40 miles per hours. And if the vehicle wants to go on like higher speed roads, we can stop the vehicle, but those are out of convenience as opposed to safety critical nature. So far, the service has been really well received, and we continue to expand on it.

Emmanuel Rosner

Yes, longer term, from an economics point of view, longer term, you've previously talked about working to drive down the cost per mile on robotaxis, maybe towards $0.30 or $0.40 per mile over time. Now that your service is live, how should we think about the main milestones to getting there?

Elon R. Musk

Yes. Well, the Cybercab, which is really optimized for autonomy, that, I think, has got probably sub-$0.30 per mile potential over time, maybe $0.25. It's really -- like if you design a car from scratch to be a cost-optimized robotic taxi like Cybercab -- like, for example, we're not trying to make its cornering like incredibly well like a Model 3 would or Model S would or even a Model Y, like it's got -- all of our cars that are driven by people are super fun to drive. They've got incredible acceleration, incredible cornering capability. But we're confident that very few people in a Cybercab want to be hurtling around. So we've produced the top-end speed, which means we can use more efficient tires. We don't need as much acceleration. We don't need as much -- take breaks to sort of -- we want stopping distance, but we're not expecting it to be heavily used. It's a gentle ride. Essentially, if you design it for a gentle ride and then you have a much more optimized design point. So that's why it seems probable we could achieve that. Especially, Optimus is serving, cleaning up the car and doing maintenance and stuff. And doing automatic charging. So I think it's going to -- the actual cost per mile of Cybercab will be very low. The cost per mile of our existing fleet will be higher, but still very competitive. So maybe something over $0.50, I'm just guessing, yes. So really, it tells us robotaxi will go from tiny to gigantic in terms of operations in a pretty short period of time. Like my guess is it has a material impact on our financials around the end of next year.

Travis Axelrod

Great. Thank you very much. The next question comes from Adam at Morgan Stanley.

Adam Michael Jonas

Great. Hello, everybody. So Elon, as Tesla moves into this next phase of physical AI, autonomous humanoids, robotaxis, et cetera, world-changing, civilizational, species-changing technology with dual purpose, are you comfortable moving Tesla in this direction while only having a 13% stake in the economy -- sorry, in the company? Is that sustainable? Or do you still insist that something needs to happen given your current lack of control and the types of technologies you're getting into?

Elon R. Musk

Yes, that is a major concern, as I've mentioned in the past, and I hope that it's addressed at the upcoming shareholders' meeting. But yes, it is a big deal. I don't want to find that I've got like so little control that I can easily be ousted by activist shareholders after having these army of humanoid robots. I think as I've mentioned before, I think my control over Tesla should be enough to ensure that it goes in a good direction, but not so much control that I can't be thrown out if I go crazy.

Adam Michael Jonas

Okay. Elon, you're not going to go crazy. We trust you. You can stay a little crazy. A little crazy is okay. Elon, now we understand the Board of Directors of a major U.S. investment bank recently toured Optimus production. I don't know if you want to confirm that or not. It's just what we've heard. That's cool. But when do you think others will be able to get a firsthand view of Optimus like that? And is the second half of this year too soon to have an AI Day? Because it seems like everybody else in the world is doing it and this talent war is getting freaking crazy. And I know you mentioned, for recruiting purposes, this is a very important

thing that you've done. I think people have copied you on this. And I'm wondering if this year is too early for that.

Elon R. Musk

Yes. It's a bit of a tough thing because like when we do an AI Day, we find that some of our competitors have literally done a frame- by-frame examination of our slides and everything we say and then copy us. So not to say like, well, where's the trade-off, which it does help with recruiting, but then competitors look very closely and copy us. I mean that said, we should probably -- I mean, I guess we could consider the shareholder meeting to be sort of -- we can maybe go into depth, some amount of depth at the Annual Shareholder Meeting with respect to Optimus and AI and sort of our chip stuff perhaps. Yes. Tesla is also really underrated in terms of AI chip design as well as AI software. So like there's still not a chip that exists that we would prefer to put in our car, that is, an AI chip that we would prefer to put in the car over our own, even though it's been now out for several years. And we're confident that the AI5 chip will be a profound game changer. In fact, it's so powerful that we'll have to nerf it, to some degree, for markets outside of the U.S. because it flows way past the export restrictions. So unless the export restrictions change, we actually will have to nerf our AI5 chip, which is kind of weird. Hopefully, we keep raising the bar on export restrictions. Otherwise, it gets a bit [soggy]. We'll have a bunch of Optimus robots onstage at the shareholder meeting. The Optimus lab is cool to see. It looks like -- it basically looks like the set of Westworld. We get robots in various stages, some of them are in various stages of repair. I don't know, some combination of like the tattooing junkyard and Westworld sort of thing. It's very cool. And Optimus is walking around the office here in Palo Alto. So 24/7, it's just walking around like some old -- and so we feel optimistic that Tesla Diner is selling popcorn. Yes. So we'll go from a world where robots are rare to where they're so common that you don't even look up.

Travis Axelrod

The next question comes from Edison at Deutsche Bank. All right. While Edison figures that out, we will go to the next question, which is going to come from Dan Levy at Barclays.

Dan Meir Levy

Elon, you've talked about the opportunity to put non-Tesla-owned vehicles into the robotaxi network. Can you just talk about the gating factors to enabling that and what time line we should expect on personally owned vehicles in the robotaxi network?

Elon R. Musk

We haven't really thought hard about that, but we need to make sure it works when the vehicles are fully under our control. And it's kind of one step at a time here. We don't want to jump the gun. As I said, we're being paranoid about safety. So it's like -- but I guess like next year, I'd say confidently next year, I'm not sure when next year, but confidently next year, people would be able to add or subtract their car to the Tesla fleet.

Vaibhav Taneja

I mean one thing to keep in mind is that we will have some criteria because like even when you put your car in an Uber or a Lyft fleet, they go through a whole checklist process of making sure things are working.

Elon R. Musk

Just like an Airbnb.

Vaibhav Taneja

Yes. So we will do something like that.

Elon R. Musk

Kind of bidding process.

Vaibhav Taneja

Yes. Because we want -- like Elon said, we want to be paranoid about security. I mean assets, along things like tread on the tire, can have an impact on safety. So that's why we would want to do some proper validation before we let other cars come in.

Travis Axelrod

Dan, do you have a follow-up?

Dan Meir Levy

Yes. Could you just unpack the different costs associated with scaling the robotaxi business and how you think about funding those costs? Are the cash flows in the auto business sufficient to fund it? And if not, what other funding sources do you think you'd use? Would you just fund it off the balance sheet?

Elon R. Musk

Well, as soon as there is a clear cash flow stream associated with any product, you can debt finance it.

Dan Meir Levy

And in the interim?

Vaibhav Taneja

In the interim, we will use our balance sheet. But like once we get to a certain scale in terms of recurring revenues, like Elon said, we could get into a -- easily have this kind of transaction to try and get funding.

Travis Axelrod

Great. We will now move on to Mark from Goldman Sachs.

Mark Trevor Delaney

With the FSD trials that Tesla has been offering to consumers and the attention on self-driving more generally, are you able to comment more specifically on what you're seeing with FSD subscription trends and take rates and help us better understand how large FSD revenue may be currently?

Vaibhav Taneja

So we've definitely -- I mentioned it in my opening remarks, since we have launched version 12 of FSD in North America, we've definitely seen a marked improvement in the FSD adoption. And the other thing which we had also done last year is we did bring down the pricing and we've made subscription much more affordable. So we have seen a 25% increase since that time, which is an encouraging trend. But honestly, we've just started the story around explaining the benefits of FSD. Like I said before, we released our vehicle safety report. Even if you don't believe in anything else, a car on FSD being 10x safer should be a motivator. Plus the other thing is people don't realize, even at $99 a month, it's like you're getting a personal chauffeur for almost $3.33 a day. And this is by far the biggest game changer, which I know we've been talking about it because part of it is we live and breathe it, but I think...

Elon R. Musk

Most people still don't know. The vast majority of people don't know it exists. And it's still like half of Tesla owners who could use it haven't tried it even once. They don't actually. And obviously, this is something we want to educate them on. So we've got to -- when they come in for service, we'll reach out to them, send them like videos of how to make it work. It's such a shocking thing. They don't think a car is capable of this. So you have to actually show them and get them comfortable with turning it on and off. It's so trivial. It's like saying you've got a cat that can sing and dance, but it just looks like an old cat. And you're like until you see the cat sing and dance and talk, like you assume it's just a cat. That's Tesla FSD. Our car is intelligent.

Vaibhav Taneja

And so what we are going to do, to Elon's point, like we've been giving people free time to try FSD, but we'll start giving more prompts to say, okay, this particular drive try FSD. So that -- I mean, because it's literally seeing is believing. Like Elon said, think of it like a cat. It looks like a normal cat, but this cat can sing and dance. Same thing on FSD, too.

Travis Axelrod

Great. And the 25% comment was 25% increase in the penetration rate since we've seen the release of V12 and V13 in North America. Great. Mark, did you have a follow-up question?

Mark Trevor Delaney

Yes. Tesla has historically said it would use pricing as one tool to help drive auto vehicle growth as long as free cash flow stayed positive given the ability to monetize products like FSD. I'm curious how you're thinking about pricing from here as a potential tool to drive increased volumes given where you stand with FSD as well as the fact that the IRA purchase tax credits are poised to go away in the U.S. starting in the fourth quarter. So should we expect more meaningful price reductions given that monetization potential? Or do you envision price reductions being more limited compared to cost downs given where free cash flow now stands?

Elon R. Musk

Well, we're in this like weird transition period where we will lose a lot of incentives in the U.S. We have incentives actually in many other parts of the world, but we'll lose some in the U.S. Look, we're still a bit at the relatively early stages of autonomy. On the other hand, autonomy is most advanced and most available from a regulatory standpoint in the U.S. So I mean, does that mean like we could have a few rough quarters? Yes, we probably could have a few rough quarters. And I'm not saying we will, but we could, Q4, Q1, maybe Q2. But once you get to autonomy at scale in the second half of next year, certainly by the end of next year, I think I would be surprised if Tesla's economics are not very compelling.

Travis Axelrod

Great. The next question is going to come from Will from Truist.

William Stein

First, I'd like to ask for a little bit more detail about the lower cost model that you talked about having, I think, started production in the first half, but you said will ramp later. At the last Analyst Day, as I recall, you talked about some aspects of this, like 2/3 or 3/4 reduction in silicon carbide and not using rare earths in the motor and perhaps other cost downs. You also had this unboxed architecture that I think you said would not be part of this sort of interim approach. Can you update us on what we should expect this thing to actually look like?

Vaibhav Taneja

Well, we won't get into the looks because...

Elon R. Musk

Let's just get the model out, yes, with the cat out of the bag there, a dancing cat that can sing and dance. But we can talk and say it now, but that's the cool part. Yes. I mean, fundamentally, the biggest obstacle remains that people just don't have -- some people don't -- the desire to buy the car is very high. Just people don't have enough money in their bank account to buy it, literally, that is the issue, not a lack of desire, but a lack of ability. So the more affordable we can make the car, the better. I think it's going to be -- it will be a very big deal when people can release their car to the fleet and have it earn money for them, which like I said, I think I feel confident in saying that will happen next year in the U.S. at least. In the U.S., we're legally allowed, appropriate disclaimers. And that will make the affordability dramatically greater. Just like if you have an Airbnb and you rent out your home when you're not there or rent out a guestroom or a guesthouse, something like that, the affordability of your home is much greater.

William Stein

Okay. Trying another topic then. We see all these wonderful developments at xAI like Grok, and obviously, Tesla is trying to do quite a bit in AI. Elon, how do you manage the division of efforts and recruiting and talent and capital between these 2 that seem like there's a very high potential that they could, in fact, compete?

Elon R. Musk

Well, they are doing different things here. So xAI is doing like terabyte-scale models and multi-terabyte-scale models. Tesla is 100x smaller models. So one is real-world AI and one is kind of, I guess, artificial superintelligence type of thing. I mean, really kind of the genesis for xAI was that there were certain people who simply would not join Tesla AI engineers because they wanted to work on ASI, and they would join Tesla. And I was like, "Well, maybe they'll join a new company." I think the Tesla problem is extremely important, but not everyone agrees with me on that. And so rather than have them join OpenAI or Google or some other company, it's like might as well have them create a company in that regard, which is xAI, so that's -- and particularly make a decision, do they want to work on like superintelligence data center or real-world AI. They're both compelling problems, but some people want to work on one and some want to work on the other.

Travis Axelrod

Great. And unfortunately, that is all the time we have today. Thank you, everyone, so much for your questions, and we will see you next quarter.