



Xos Trucks, Xosphere, Hub, Fungible Tech and a Facility Tour: CTO Rob Ferber

By Lynn Walford - June 8, 2022

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Los Angeles-based large truck maker Xos gave tours of its facility in Atwater Village, during Xos Fleet Week. Auto Futures took the tour, learned about Xos technology and talked to Chief Technology Officer, Rob Ferber.

My last interview with a Xos leader was Co-founder and CEO Dakota Semler during the Future of the Automobile event in 2019, months after the company won first prize in Top Ten Startups at the Los Angeles Auto Show.

Semler did not attend the winning ceremony because he dealt with raging wildfires at his family-owned Malibu Wine Safari and ensured that social-media star **Stanley the Giraffe** was safe.

Xos has grown exponentially since then. It went public through a SPAC in February 2021. Xos received 300 purchase orders and delivered 56 units in the first quarter of this year. It expects to deliver 70 to 90 units in the second quarter.

The company moved into the Atwater facility last year. The building houses offices, a battery pack maker robot, supplies and a Tiki bar.

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Flint Mansur, guide and account executive, led a group of interested parties through the facility. He walked us past the executive and HR offices over to the open spaces of computer programmers and engineers.



Welcome to the Xosphere

“During Fleet Week, we unveiled the Xosphere – the software for the trucks that Xos is delivering,” says Mansur.

The software provides everything needed for fleets, such as maintenance charger status, OTA updates and more.

“We are not just an EV company. We are a one-stop-shop for everything including software.”

Then he showed us the glass-enclosed area for assembling the Lyra battery packs. The packs are currently made from LG cylinders and are tested during the process. The packs are shipped to the assembly factory in Byrdstown, Tennessee. Other parts of the trucks are made in Monterey, Mexico.

Mansur says that the battery packs will be forced air-cooled. The facility also stores a supply of parts, mostly battery parts.

“We work with Tier One suppliers to be able to ship parts directly to our customers,” he says.

He walked us past the Tiki bar conference/ lunch room packed with monitors and Polynesian décor. The tour-goers were drawn to the mobile charging unit parked outside in the parking lot.



Leading the Charge with Mobile Hubs

One of the biggest problems fleet operators have is dealing with charging infrastructure. Xos developed a mobile charging station, the Xos Hub that eases charging deployment.

The tour members had many questions about the Xos Hub.

Rob Ferber, CTO, explained how Xos Hub works and how Xos is not dependent on supply chain issues and can use multiple vendors.

A Xos Hub is about the size of a trailer or Recreational Vehicle (RV). It can charge up to five vehicles at once and fits about two parking spots. A solar array on the roof of Xos Hub powers the cloud-enabled control and safety systems.

Ferber says that the Hubs can be powered with second-use batteries from Xos trucks or purchased with new battery packs.

“We provide the Hubs as temporary support for customers because of the complicated permitting process of installing permanent charging infrastructure. Those may contain second-life batteries. When you buy one, you’re getting new batteries,” says Ferber.

He gave the example of the Xos current location that borders three different municipalities and has been waiting for permitting for over eight months.

All a Xos Hub requires is RV style NEMA outlet or for an electrician to splice it into a distribution box, says Ferber.

Because the Hub is mobile, the owner can take it with them when they move or take it to a truck hub.

“There are no permits required for the Hub because it is portable and you can park it anywhere where you have a depot,” says Ferber. “It’s a vehicle trailer with a license plate and then puts it into an entirely different set of rules.”



How Xos Adapts to Supply Chain Constraints

The technology behind all of the Xos trucks and software is adaptable to changes in supply chain dynamics.

“We don’t make the cells. We love cell makers. We are lucky because we engineered the system design to be fungible,” says Ferber.

The word ‘fungible’ means readily changeable to adapt to new situations.

“If I want to buy battery cells of a particular model of cells, and they can’t give it to me, we got a problem. To give us the flexibility to deal with potential local sourcing and to mix newer and older tools and systems, we made sure that we can use a wide range of cells in engineering our system.”

“Because we built that flexibility in the system if LG says ‘we can’t get you this particular cell we have this cell in good supply right now,’ we can use that cell,” adds Ferber.

He says Xos has tested the battery packs with the three major battery suppliers and several Chinese battery cell makers.

“Xos has core competencies – our vehicle system manager control software, battery systems and chassis. They are all interoperable.”

The battery systems are designed to be interoperable in any combination. It allows Xos to sell customers trucks that have batteries that are right-sized for today’s application and then swap out battery packs and add more range later, says Ferber.

Xos systems can also adapt to chip supplies. Xos adapted to a circuit board shortage.

“We changed the board and ran the validation tests. It took us four weeks. In our business we have to have that flexibility because it is our technology.”



Riding in Xos Trucks & Stanley the Giraffe Update

The tour group went for rides in pre-production models of the newly announced Xos MDXT medium-duty box truck and Xos HDXT Class 8 heavy-duty electric tractor around a few blocks of the area.

The driver noted how manoeuvrable and easy to drive the Xos trucks are with power steering.

When I returned to the building, we were offered snacks, water or coffee in a conventional-style conference room with a large table.

I wondered how Mansur came to the company. Mansur says that he used to work as a tour guide at Malibu Wine Safari for Xos CEO Dakota Semler and Dakota's parents Ron and Lisa Semler.

“How is Stanley the Giraffe? What is he up to?” I asked.

Previously, I learned that animal-activists were advocating for Stanley to be moved to a safe place out of the range of Malibu fires. It turns out that Stanley has followed the trail of fellow social media star Elon Musk.

“Stanley is fine. The Semlers (Ron and Lisa) and Stanley have moved to Texas,” says Mansur.

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