



**January 24, 2018**

**U.S. Senate Committee on Commerce, Science, and Transportation**  
***Driving Automotive Innovation and Federal Policies***

**Testimony of Tim Kentley-Klay, co-Founder and CEO, Zoox**

Chairman Thune, Ranking Member Nelson, Senators:

Thank you for the opportunity to testify before you today. When I arrived in the U.S. from Australia just over three years ago, Zoox was but a dream, so it is indeed an honor to be here before you and among respected business leaders.

Today, I will share with you our vision and the journey we are on at Zoox; our perspective on the step-change safety opportunity offered by autonomous technology in mobility; and finally, the opportunity we have as a country to set the best policy foundation on which build this technology and get it on the road.

**The Zoox Vision**

My journey with autonomous mobility began in 2012, while in Melbourne, Australia, watching from afar what Google was doing: attempting to develop a “self-driving car.”

My insight at the time was that such a technology is about much more than just incremental adaptation to the automobile. This technology, correctly understood, is going to transform how we move everyone and everything on this planet.

To understand what is about to happen, let’s take a step back. The previous mobility age, before the automobile, was, of course, the horse and carriage. We were in that age for around 6,000 years. It was around 4,000 BC that we domesticated the horse, put the axle on the wheel, and invented coach building. So what allowed the transition from that mobility age to the next?

Arguably, it was the invention of the internal combustion engine. We achieved a technology level on this planet where we could mechanize the horse’s biomechanical power. The correct implementation of that invention was not to put the engine in the coach and keep the horse. People actually tried that, but it didn’t work particularly well. The right application was to remove the horse—and change the architecture of the coach, quite radically, to get to a design such as the Model-T Ford in 1908. This transformation took us into the age of the automobile, an age we have been in for 130 years.

The belief we hold at Zoox is that A.I. in mobility will take us from the age of the

automobile into the next mobility age. And we think that's the age of robotics—fully automated transportation. Thus, Zoox was founded to ask the questions: what would the full realization of AI and mobility be? Can we imagine that? And if we can, let's build it not in ten years, but today.

At Zoox, we have gone from a founding vision three and a half years ago, to augmenting cars to work as autonomous vehicles driving in downtown San Francisco, during the day, during the night, and in heavy rain. We are also driving autonomously on highways. In short, Zoox is driving autonomously a complete set of urban road and weather features, today.

Beyond this, because we believe that the full realization of this technology is not retrofitted cars, we are also creating a vehicle from the ground-up—without traditional controls—that's purpose-built for the needs of our cities today and tomorrow.

This represents a phenomenal effort by a highly interdisciplinary and fast growing team of over 375, with expertise ranging across the fields of artificial intelligence, product design, safety, and vehicle engineering. The team comes from organizations such as Google, Tesla, Apple, Ferrari, NVIDIA, NASA, and NHTSA, along with academic institutions such as Stanford, MIT, Oxford, Princeton, and Carnegie Mellon.

### **The Safety Opportunity: Our Philosophy at Zoox**

The very real safety opportunity that autonomous mobility will offer drives our work every day at Zoox. Autonomous technology holds out the promise of a whole new safety paradigm: One that allows us to both prevent crashes in the first place and protect occupants and vulnerable road users in superior ways if a crash does occur.

The number of people killed as a result of car crashes in 2016 went up 6% from the year prior. That number represents nearly two-thousand more loved ones lost. In fact, car crashes are the leading cause of death for young people in the U.S. This should be unacceptable to us: We should pursue autonomous technologies, which hold the potential to eliminate most crashes.

Indeed, in our view, it is only autonomous mobility that offers the real opportunity to make irrelevant the safety risks associated with driver impairment and error.

### **The Policy Opportunity**

Finally, with these paradigm shifts in both mobility and safety innovation, what then is the policy opportunity? What is the government opportunity?

First, it is important to recognize that we are in the midst of a great race. Other countries



are sprinting to harness and deploy this technology. And I know I certainly could not have started and scaled Zoox as fast as I have in any other country, and the United States has welcomed me with open arms. I am grateful for that, and keen to maintain our competitive edge here.

The signals we send to entrepreneurs and innovators through our regulatory system are vitally important to meet that end. To date—and this brings me to my second point—the posture of both the Administration and this Congress has been to create a level playing field to let the innovators innovate. That must continue. Your AV START Act, as well as the SELF DRIVE Act, capture these principles, assert the federal government’s preemptive role over state legislation, and encourage innovation in a technology-neutral way, without picking winners. The legislation making its way through Congress, is in our view, the right approach for this moment.

Third, it is important to recognize that data-driven best practices must precede standard-setting. We are still in the very early stages of this paradigm shift, so it is important that responsible developers have the freedom to develop and generate the data needed for best practices and eventually relevant regulatory policies. I would note that this emerging industry has a strong safety record. In fact, there has been no injury caused by any fully autonomous vehicle developer to date. As such we should be encouraged to continue advancing our development while acting at all times responsibly.

Finally, the Zoox journey is all about connecting people and places, safely, in an environmentally conscious way, and with a sense of wonder. Autonomous mobility sits on the vanguard of possible. As the innovators, we look forward to working with the regulators to create, with verve, the next era in mobility.

Thank you.

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