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TRANSCRIPT

# It’s electrifying! Understanding the Future of Mobility

*Featuring:* ***Lukas Neckermann****, Managing Director, Neckermann Strategic Advisors*

**Adam Bass** (00:03):

This is MSCI Perspectives. Your source for weekly research insights as investors respond to the COVID-19 pandemic. I'm your host, Adam Bass. And today, is November 19th, 2020. This week, Lukas Neckermann is an author, speaker, and the Managing Director of Neckermann Strategic Advisors, a consultancy that focuses on the thematic investing trends of smart cities and future mobility. We spoke with Lukas, to get a deeper understanding of this shift towards self-driving, electrified and shared ways of traveling from point A to B. Lukas, thank you for joining us today. We're happy to have you on the program.

**Lukas Neckermann** (00:44):

It's great to be here.

**Adam Bass** (00:45):

So let's step back and start with the basics, if we could, you and your firm, Neckermann Strategic Advisors, you have a very specific focus on smart cities and the future of mobility. So I'd like to start high level, can you help us define those terms and just give us some of the backgrounds, some insight in terms of how you arrived on this focus?

**Lukas Neckermann** (01:10):

Sure. So before I had written my first book in 2014, The Mobility Revolution, I would speak with a lot of experts. I went to a lot of conferences. I went to a robotics conference, a shared mobility conference. I went to a Tesla fan event. Now, I noticed though that there was something going on and there was a convergence between these topics. Now, I've been in this industry for quite a long time. And it's one, frankly, that I've followed since I was six years old. I started my career in the automotive industry. So I saw this convergence of trends and I called it The Mobility Revolution: Zero Emissions, Zero Accidents, Zero Ownership. And I think that these three trends are still the best summary of what I mean by The

Mobility Revolution and also where we're going in mobility, it's electrification, automation, and a trend towards shared transportation.

**Adam Bass** (02:09):

That's definitely significant stuff, but revolution? That's a strong word you're using there.

**Lukas Neckermann** (02:16):

Absolutely right Adam, but how we get from A to B, it's such a fundamental part of our existence. It really merits the term revolution, much like the internet revolution or the smartphone. Because just like the smartphone changed so much about our lives, mobility will change other industries as well. Real estate is impacted, infrastructure, energy. A lot of these industries.

**Adam Bass** (02:41):

People have been talking about this idea, self-driving cars, drones, for a long time. Actually, in some of my preparation for today, I came across an article on your site where you tell a great story about the first true attempt at a self-driving car, and I was surprised at the date, which was 1925. Could you share that story with us here?

**Lukas Neckermann** (03:07):

Yeah, it was called the Houdini, and it wasn't really autonomous. It was remote controlled and it drove for really just a short distance down Broadway in New York. And well, after a short distance, in fact, managed to crash into some reporters, which is not necessarily the best advertising, I suppose for this topic. But this dream, this dream of autonomous or self-driving has continued, and we've seen so many other examples in the '50s and '60s, GM demonstrated a concept car. They called it the Firebird, which followed metal strips in the highway. There was a similar one that TRL did in the UK. But really the breakthrough for autonomous truly, truly autonomous was getting away from these guidance systems that were built into the infrastructure. And that was kind of sparked by the DARPA Grand Challenges starting in 2004.

**Lukas Neckermann** (04:07):

That's when you started to see a bunch of the universities getting involved, the top robotics universities, Carnegie Mellon, and building on that, then Google got interested in the subject and well, another 10, 15 years later, meanwhile, you've got Waymo and Cruise and Tesla, Voyage, others. They've driven millions and millions of miles on real streets and literally billions of miles in simulator environments.

**Adam Bass** (04:34):

What's the appeal of autonomous driving. Why all this attention on it for so long?

**Lukas Neckermann** (04:40):

Well, driving may be the single greatest waste of our time. It's effectively a low cognition activity. Yes, sometimes we enjoy driving. I enjoy driving as well, but the truth is standing in traffic it's boring. It's a waste of our talents. It's a waste of our brain power, and we're not particularly good at it as well. Over a million people die on the roads every year worldwide. There's one more aspect though. And that's that driving in its current form is also a bit of a waste of our infrastructure and our resources, we could do better.

**Adam Bass** (05:17):

Feels a bit at times like this topic that we're talking about, about autonomous vehicles, as well as ride sharing services like Lyft or Uber, people talk about them as related but distinct areas, but you see it differently. You talk about big shifts in the entire automotive value chain. So what I'd like you to do for us, if you can, is describe this new framework as you see it, and how is it different from the value chain that we've all gotten used to and taken for granted?

**Lukas Neckermann** (05:52):

Right. So I firmly believe that the real revolution that's going on in terms the value chain, it's not that we're just evolving the automotive value chain, but that we're creating a brand new one. It's the emergence of a brand new industry called mobility. We now have tech companies supplying integrators, integrators having a fleet management for mobility operators. Uber doesn't generally fit into the old puzzle if you will, of the automotive value chain, but very much so in this new mobility value chain that we've defined. It's got a whole lot of new players as well. There's Intel and Google and Baidu and SoftBank and Amazon and tons of other companies that really didn't have a big interest in automotive and really aren't getting into automotive either. They're getting into mobility.

**Adam Bass** (06:47):

Let's talk cities versus rural areas. So I'm in New York, you're in London and we're very used to the idea of others driving us around or getting on the subway or the Tube, for instance, but what are you seeing in terms of this shift in mobility, in cities around the world? What are the trends behind it? What's, excuse me, driving these shifts?

**Lukas Neckermann** (07:13):

There's no doubt that in New York and London and other mega cities of the world, we may have a certain bias. I've lived in cities much of my adult life and those cities have had admirable public transport. So what you're seeing now, and this is fairly consistent across cities that have multiple modes, is that auction is being created of multi-modality. And what I mean by that is that it's easier to rely on different. Sometimes these multiple modes of transport. You take an East scooter to the train station and a taxi on the other side, when you get to where you're going and you pay for the East scooter ride, the taxi ride and the train fare all with the same app. Or you might take ride hailing to the airport shuttle, take that shuttle to the airport and land somewhere completely different and get in a car share vehicle and pay for that with a single app.

**Lukas Neckermann** (08:16):

And if I can actually take a detour to Asia here, there's something that's very, very well-established there, that we're only beginning to see in Europe, in North America, and that's the concept of the super app. One app with which you're going to access everything, food, groceries, rides, scooters, public transport, you've got Grab and Gojek and WeChat, [inaudible 00:08:40] quite simply help people navigate, not just their mobility lives, but every part of their day-to-day existence.

**Adam Bass** (08:48):

Let's dig into that a little bit more, the differences in different parts of the world, Europe versus cities in Asia, for example.

**Lukas Neckermann** (08:57):

So I think in Europe, we have a bit of a culture of shared mobility already at it. It makes it appealing to mobility players. We've had a tradition of public transport and it's well-established. Really public transport is the grandfather of ride pooling and ride sharing, if you like. And in some cities, in particular, in cities like London, public transport is still the fastest way to get from A to B. In particular, if you consider things like parking. I mean, Adam, how many times have you driven your car in New York 30 minutes, only to circle around for another 15 minutes for parking.

**Adam Bass** (09:33):

At least.

**Lukas Neckermann** (09:36):

This isn't going to get easier either. Because cities are looking to reduce the parking infrastructure, increase parking costs, economists call this nudging. These are gentle disincentives for driving while at the same time, public transport and biking is made easier. And in Asia, well, you've got two-wheeled and three-wheeled transport, so firmly ingrained into many of the cities, because if you didn't, if everybody had a car that permanent congestion worse than it already is.

**Adam Bass** (10:10):

Okay. What about non-urban areas though? I'm curious if there are differences. For example, I have friends in Michigan who I feel pretty strongly they would have a tough time giving up their cars. I mean, especially in the U.S., car equals freedom, right? We write songs about them.

**Lukas Neckermann** (10:33):

Yeah, that's how most of us grew up. When we turned, whatever it was, 16, 17, 18, depending on where you grew up, you got your driving license and I'm no different. I spent my childhood in rural upstate New York in a farming community of under a thousand people. So I absolutely no illusion, the pickup truck is going to go away or disappear. It won't. What will happen is it will electrify.

**Lukas Neckermann** (11:01):

So Adam, let me actually take this a step further because I think that rural areas can breed innovation across mobility. GPS-based automation accurate to within an inch is standard equipment on every John Deere soldier in America. In fact, three quarter of all farms, over a thousand acres in the U.S., use self-driving or self-correcting autonomous technology in their tractors. So why wouldn't you want the same tech that you have on the field on the street? You can see the rural areas are clearly leading the way on innovation. And when it comes to sharing that final piece of the mobility puzzle, well, farmers in the U.S. are used to sharing some of their farming equipment with their neighbors, the concept of car sharing really shouldn't be too far fetched in rural areas.

**Adam Bass** (11:54):

Very interesting. I have to say, I didn't know that, getting back to the cities more, perhaps we're not just talking about cars, right? We're also talking about bike sharing, or even I've seen electric mopeds sharing.

**Lukas Neckermann** (12:08):

This is such an important part of the puzzle, integrating multiple modes into the mobility ecosystem bikes in the Netherlands or Copenhagen, or in Rome, of course, what would Rome be without the mopeds? And really, there's no reason other than habit and infrastructure that this can't work in other cities. So you're seeing cities begin to emulate each other and launch bike sharing, scooter sharing, car sharing schemes in their cities, testing these things out. Now, again, it takes some behavioral change. It takes some nudging to get people to that point. But there's quite a lot of investment going into this.

**Adam Bass** (12:54):

That leads to the next point I'd like to get to, this is happening now in real time, we're not talking anywhere close to the range from today, back to the Houdini. So what is happening today in terms of where companies are investing and how investors are approaching these ideas? Because I have to say it all sounds fascinating, but also a bit dizzying in terms of where to find opportunities. And also, how do we evaluate these new risks that are involved?

**Lukas Neckermann** (13:27):

So my company has a database of over 900 companies in autonomous and shared mobility. Right now about 85% of those are private. So we've had to do a lot of digging to find the subsidiaries with the suppliers of the industry that you might not otherwise consider. So we've got lithium miners in there. We've got Lidar producers or connected vehicles, software developers in that list. What's going to be interesting over the next five to 10 years is seeing these companies get spun out, carved out, IPO, merge, acquire, et cetera. The flurry of activity is going to be amazing. We're already seeing UV companies that have gone down the road of SPACs. Others are issuing debt. The market is becoming a lot more liquid, a lot more transparent. And this all means for the investor there's going to be some really nice opportunities coming down the pipe over the next five years.

**Adam Bass** (14:29):

Lukas, one final question, before we let you go, you mentioned at the top that you've been following the industry, the automotive industry, since you were six years old, that's a strikingly young age. How did that happen? How did that work?

**Lukas Neckermann** (14:48):

So my dad had all of the car magazines, the Road & Track and the Car and Driver and the Motor Trend. And I would see how passionately he would read them and I wanted to read them as well. And he was a car guy and I became a car guy. And that ended up being one of the things that we talked about. We would talk about horsepower and engines, and we would change the oil together. It was just a way for me to hang out and chat with my dad.

**Adam Bass** (15:15):

And thank you so much for hanging out and talking with us today. We really appreciate your time and fascinating, fascinating stuff. Thanks again.

**Lukas Neckermann** (15:24):

Thank you, Adam. I really enjoyed that.

**Adam Bass** (15:27):

That's all for this week. Our thanks to Lukas, and to all of you for joining us. Next Thursday is Thanksgiving here in the States, which like so much else this year is taking on a whole new meaning and a whole new look. We're going to take the week off and spend time with family, some in person, some over Zoom, but we'll be back on December third, to talk about the risks and opportunities of a globalized investment world with returning guest, Raina Oberoi. Until then, I'm your host, Adam Bass. And this is MSCI Perspectives. Stay safe, everyone.

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