JAKE SIEWERT

This is Exchanges at Goldman Sachs where we discuss developments currently shaping markets, industries and the global economy. I'm Jake Siewert, global head of Corporate Communications here at the firm. The question of today's episode is, why is mobility about to change more than it has since the invention of the automobile?

To answer that question, we're joined by Heath Terry, business unit leader for the Technology, Media and Telecom Group in Goldman Sachs Research. Heath and his team are out with a new report on the future of mobility. Heath, welcome back to the program. You've been one of our most regular guests.

HEATH TERRY

Great. Thanks for having me, Jake.

JAKE SIEWERT

So let’s start with putting some numbers on this. What are the three numbers that listeners should know pertaining to the future of mobility by the time we’re done with this episode?

HEATH TERRY

So the three are seven trillion, 95 percent and 26 percent. So that’s $7 trillion worth of global spending on transportation that generates $700 billion in profit, nearly nine percent of global GDP. So we always like to go after big, addressable markets. This is one of the biggest.

The second one, 95 percent, that’s the amount of time that the average automobile sits unused. So this is the second biggest purchase for most people in their lifetime, and it’s not even getting used more than roughly five percent of the time, and it’s a depreciating asset.

Then third, 26 percent, that’s the number of U.S.

16-year-olds that are getting their driver's licenses now. That was nearly 44 percent 20 years ago, and it's been coming down across all those groups. Now clearly that's not just because of ride-hailing. There's a lot more there, but it tells you a lot about kind of the changing attitudes towards car ownership.

JAKE SIEWERT

Fascinating. I can't imagine my teenage years without the automobile.

HEATH TERRY

Me neither.

JAKE SIEWERT

But I grew up in the suburbs, so what do I know? So define what you mean by the new mobility market.

HEATH TERRY

So new mobility is sort of an umbrella term that we're using to capture things like ride-hailing, micro mobility, electronic vehicles, autonomous vehicles, even things like eVTOL – which I know we'll talk a little bit more about later – that effectively are just changing the way that we get to and from where we're going. You even have some things under that umbrella like electronic freight booking which is impacting the business-to-business side of things and food delivery which is obviously having a big impact on the way we all eat.

JAKE SIEWERT

And what about micro mobility just to get some of these definitions out of the way? What's that mean and how is it growing?

HEATH TERRY

So micro mobility basically is bikes and scooters. It's all the electric bikes and scooters that you're starting to see pop up nearly everywhere except for maybe New York City right now, although that's potentially going to change here soon, but you can't walk down a street in L.A., Paris, Atlanta, Stockholm without tripping over a scooter at this point, and there are bikes all around them. But they're there because people are clearly using them, and we'll see what happens with the business model over time, but it's a really effective way for people to cover short distances.

If you've got a five-block walk from your subway stop, or you've got a 20-minute commute if you're walking into the office and you can make that a five or six-minute commute on a scooter, there's a lot of appeal there.

JAKE SIEWERT

Our CEO, David Solomon, said he was in Atlanta for a business meeting recently, meeting a big CEO of a big, big company, and the guy showed up on a scooter, so it's not just for the teenagers.

HEATH TERRY

Not at all.

JAKE SIEWERT

How about the delivery of products? You

mentioned this briefly but online shopping deliveries, food. What are watching in that space?

HEATH TERRY

Right now food is sort of where everybody's focused on this just because you can't go anywhere without being offered $20 off for a delivery or $100 to order from one company or another, and so you've got a lot of venture capital money going into feeding us and making it relatively inexpensive to do it. It's feeding into a lot of the demographic trends and changes in the way that we all behave of creating a real convenience factor around that important meal of the day that every family or every individual has to deal with.

And so a lot of this is happening in the same category because these companies are doing that as well. You've got Uber doing Uber Eats, and you've got companies like Grubhub that are offering this, and a lot of the international companies are offering both services, and so they're kind of getting lumped together around this idea of mobility, but effectively what it's doing is it's giving people a way to get something easy. Some people call it the Manhattanization of the rest of the world.

Something we all took for granted being able to order Thai food at three a.m., but if you lived in Denver or you lived in Shreveport, that wasn't really an option, and increasingly it is.

JAKE SIEWERT

Or in London, too, for that matter.

HEATH TERRY

Absolutely.

JAKE SIEWERT

That was something people talk about something unique about New York but not so unique anymore. So let's talk a little bit about investment in the space. There's been about $100 billion of venture capital and investment just in the last four years. What’s driving that, and where are the dollars going?

HEATH TERRY

What’s driving it is that big addressable market. Venture capital has always addressed ... always attracted to big addressable markets, the big wins, and so the opportunity there, and especially when it’s a market that is being impacted or has the potential to be impacted by technology as much as this one has, that kind of overlap draws venture capital in.

It’s going to ride-hailing. It’s going to electric vehicles. It’s going to food delivery really in that order. The micro mobility is also another area, and eVTOL is another area that it’s going into. Autonomous is attracting a lot of venture capital money as well. About half of it’s going to China. About a third of it’s going to the U.S., and it’s just, given the size of the market, it's really hard for venture capitalists not to want to have at least some flags in the ground there.

JAKE SIEWERT

So with that much money flowing around, there's a lot of competition, and you mentioned these offers. I mean with all these offers you wonder whether people competing on price can make money. But talk a little bit about competition in this new market.

HEATH TERRY

It's actually one of the unfortunate things I think about the development of the market, because as much as it kind of creates some excitement around it, it also creates some real distortions around the way this should look.

These aren't products that you necessarily have to subsidize for people. People want this. They want the convenience of ride-hailing. They want the convenience of being able to order, but you got a lot of companies right now that are burning nearly $10 billion a year in venture capital, competing with each other to make sure that when that ride happens that it happens with Uber and not Lyft or vice versa, or that that order goes to Grubhub and not Uber Eats or vice versa.

JAKE SIEWERT

So how does that play into the prices? I mean obviously the consumer benefits. It reminds me a little bit of the early 2000s, late '90s when everyone was trying to get in the space, and they were basically giving things away. It didn't work out well for the companies, but eventually the consumer got what they needed.

HEATH TERRY

So right now I'd focus mostly on the ride-hailing side of things because we're starting to see the way we think all the rest of this is going to play out. First it was we've got to make these rides cheaper than all the alternatives. It needs to be cheaper than a taxi, something like a pool option. It needs to be cheaper than the subway.

JAKE SIEWERT

Cheaper than the incumbents really.

HEATH TERRY

Exactly, because that's what we've got to do to win users over. Now that the users have gotten comfortable with this and appreciate what it means, you've actually seen a lot of that subsidy shift over to the driver side of things, because now it's who can pick me up the fastest. Is it a five-minute wait with one and a three-minute wait with the other? I'm going to take the three-minute wait, and so a lot of this is going to pay drivers incentive fees to subsidize putting more cars on the road for these services, and so it's less of a consumer business.

Anybody who uses these services in major cities like New York or San Francisco or London or Tokyo or Paris has seen the cost of this going up pretty dramatically. What was a $15 cab ride became a $12 ride-hailing ride. Then it became a $15 ride-hailing ride. Now it's a $17 ride-hailing ride over the last three years, and so that's caused the growth to slow down, because anytime you raise prices it's going to impact growth, but it's also the maturing of the space that you need to have happen.

That same thing we think will happen in the food delivery space over the next few years.

JAKE SIEWERT

So talk about the trajectory around profitability. I mean obviously a lot of attention on one of the big incumbents. Uber went public you know, and that put a lot of attention on this issue of scale and profit. As prices come back up, how do the ride-hailing companies become profitable for the long term?

HEATH TERRY

That's going to be the biggest driver of it, because if you look at profitability, it's all about competition, and so in markets where Uber has competition, they've got contribution margins that are negative ten percent, and in markets where they have significantly less competition like most of Europe, they've got markets that have 50 percent plus contribution margins. Europe as a whole is a 40 percent plus contribution margin market for them because they don't have the same level of competition in Europe that they have in the U.S. or some of the Latin American markets where they're losing money.

JAKE SIEWERT

So looking ahead, will ride-hailing be a utility or a luxury good?

HEATH TERRY

Right now it's a luxury good for most people. It's making that decision of I don't want to take the subway. I don't want to have to worry about finding parking once I get there. I don't want to worry about how many drinks I have at the end of dinner before I drive home. I'm going to take Uber. So for the most part it's a luxury, and if the price goes up you'll suffer through looking for parking.

Ultimately over time, we think there's going to be a replacement cycle around car ownership where you make that decision of, do I need that second car? Do I actually need a car at all? We do some math in the report and provide sort of a tool for people to put in. How often do you drive? What are your insurance costs? Does it make more sense for you to take an Uber or own an Uber or use an Uber versus owning a car?

So for people who drive, right now the math works out where if you drive less than about 100 miles a week, it probably makes more sense for you to just use Uber or Lyft or one of these other ride-hailing services versus actually owning a car, and at that point that's where it becomes a utility.

JAKE SIEWERT

Unless you have four kids and car seats like I do.

HEATH TERRY

(Laughs)

JAKE SIEWERT

So a couple of the big players in the industry have recently gone public. What are the implications for the industry coming out of these IPOs?

HEATH TERRY

We're hoping and we expect that the IPO will be sort of the growing up moment for this industry, that having public scrutiny, having investors watching this kind of progress and the tradeoff between growth and profitability that public market investors typically want to see will lead to more rational behavior around those kind of incentives and market expansion and new categories in investment so that we get to sort of a market that doesn't have the kind of distortions that all of the excesses of venture capital create.

Now that may end up being wishful thinking on our part. It's not like the equity markets or the high-yield markets are unwilling to fund loss-making companies. We see plenty of those out there, but we do think and we do hope that this is going to lead to at least some level of gradual rationalization of a lot of those decisions.

JAKE SIEWERT

So we've talked a little bit about the impact technology is having on transportation. You can't talk about this whole phenomenon without talking about autonomous fleets and autonomous vehicles, and obviously a lot of the incumbents are investing in that space along with some of the upstarts and the disruptors. What's your outlook for the timing and the implications of autonomous fleets for this space?

HEATH TERRY

As you know and I know you've done podcasts on autonomous before that look into this, there's a lot of different degrees of autonomous. There's level one through level five to define it. The autonomous that's going to matter here is generally though to be sort of level four which means that a car can operate on its own in a relatively well-defined area, so Manhattan, San Francisco, and when you look at the experts around the space, that's generally thought to be sort of a gradual process that we'll see over sort of 2023, 2025 depending upon whose view of the world you believe in.

For most of these companies, that means two, three, four percent of their rides will be addressable by autonomous at that point which doesn't sound like a lot, but when you're eliminating 70 percent of the cost, the variable cost which is the labor associated with this, it actually has a pretty big impact on the business model.

JAKE SIEWERT

Mm-hm. So how far are we away from flying cars? That comes up a lot in the car with our family (Laughter) when we're sitting in traffic. Your report talks a little bit about eVTOL, and explain that to us what it is and what we need to think about that phenomenon.

HEATH TERRY

So eVTOL, or electric vertical takeoff and landing vehicles, that's something that you're seeing a lot of development around. Uber just hosted a conference around it in D.C. called Elevate. Right now you've got companies that are doing this to some degree using helicopters. Uber has Uber Copter. There are private companies like Blade that are out there that are doing this.

But the real exciting part of it, the ... the flying car piece that we've all been promised, you know, that's probably I think some of the companies that are really aggressive on this think that they can get those into production and out there by 2023. There's a company called Lilium that's making a promise of JFK to Midtown for 70 euros in less than ten minutes, and so I think that's where the hope is. Obviously you're going to have a lot of regulatory oversight on something like that, but as any of us who have sat in JFK to Manhattan traffic knows, that'd be a nice thing.

JAKE SIEWERT

A premium product, yeah.

HEATH TERRY

It would be very much.

JAKE SIEWERT

Probably worth more than 70. So another component of technology that's poised ... or I'm sorry. Are there other components of technology that are overlooked or that we're not paying enough attention to?

HEATH TERRY

Yeah. You know, I think the thing that we're probably not spending enough time on in thinking about this space is really the electrical vehicle part of this. I think a lot of us have sort of ... that feels like old technology.

But when you look at the carbon debate that's going on right now, when you look at some of the regulations that are going into place in Europe, that potentially has a really big impact on the adoption of these new mobility models because it accelerates that replacement cycle for existing car infrastructure, and so if that seven-year average replacement cycle becomes five years or four years because suddenly it's gotten much more expensive to own a gas-powered car, or you're incentivized to move into an electric vehicle model, that potentially speeds up a lot of the growth that we're expecting in this space and really impacting that $700 billion profit pool that we talked about.

JAKE SIEWERT

So Heath, when you're thinking about this question of car ownership, you mentioned that most cars sit idle for 95 percent of the time. How might the nature of car ownership evolve over time? I mean I was recently in London and saw on the Tube an ad to try to convince you. You could earn as much as 500 pounds a month by giving your car to a ride-hailing service.

HEATH TERRY

There's a lot of different ways that people are thinking about how to monetize that asset. So you've got the sort of car rental services where you essentially enter your car into a pool that allows other people to rent it the same way they might rent a car from the airport and use it when you're not using it. That's something that we're seeing some pretty meaningful growth in, particularly in major cities where the constraints of owning a car, the cost of owning a car are a lot higher. So it makes people think about how to monetize that.

And then you're also seeing in the future. And you hear Tesla talk about this, the idea that if you own an autonomous vehicle and you're not using it 95 percent of the time, then let that autonomous vehicle go out and work for you. If it can be this sort of robo taxi that you can enter into a pool like that without any real work on your part, why wouldn't you do it? If I'm driving to the office at nine o'clock in the morning, and it's going to sit there from nine to five, it might as well be out there on the road earning some income as opposed to just sitting there depreciating.

JAKE SIEWERT

So are those models seeing investment dollars today, or are they still like a little bit in the future?

HEATH TERRY

Well, the robo taxi thing is certainly still in the future, although you're seeing a lot of investment around autonomous. The car-sharing models – and there's a variety of private companies out there that are doing it – yeah, they're seeing real investment from the venture capital communities out there. There's a variety of them that have had sort of a degree of success getting off the ground.

It's a difficult model to roll out quickly because you have to go city by city to sort of get the inventory and convince people that your car is going to be safe while it's out on the road with somebody you don't know, but the growth rates are pretty staggering.

JAKE SIEWERT

So in retail, in ecommerce, a lot of focus these days on last mile as people get more and more accustomed to having more and more things brought to them. The difficulty oftentimes is getting it to someone's door. How might that change transportation?

HEATH TERRY

You look at the way that traditional retail's having to deal with this. Right? Amazon's operating at a scale that if they want to do that, they can go out and buy 30,000 Sprinter vans the way they did last fall and invest $800 million in same-day delivery to sort of go around the postal system.

But if you're a mom and pop store or even if you're just a small, medium-sized chain that has to deal with getting product, the option of building a big fulfillment infrastructure like Amazon isn't really realistic. But if somebody else can come along – and there are several private companies that are proposing to do this – and effectively do the same thing for products that companies like Uber Eats have done for food so that I can order something from the dress shop a few miles down the road or the sporting goods store on the other side of town and have it delivered that same day in an Uber the same way I would a lunch order, that ends up being pretty powerful, particularly when we're looking for ways to allow these retailers to get into ecommerce in a more effective way than they've been able to.

You look at the record number of traditional retail store closures that we're seeing right now in large part because of ecommerce. This potentially becomes an answer for that kind of store.

JAKE SIEWERT

So talk a little bit about the mobility landscape internationally. Obviously it plays out very differently in countries like China and Brazil. What kind of dynamics are you seeing in those markets?

HEATH TERRY

The big difference in a lot of those markets is the labor costs are just a lot lower. The regulatory restraints are a lot less severe than you see in the U.S., and then the incumbent competition is less severe. This has a huge impact particularly on some of those emerging markets that don't have the alternatives around transportation. You look at Uber launching Uber Bus in Egypt and the impact that it's having there or the electric tuk tuks that are being driven in India as part of this. The impact that is has sort of on society and people's daily lives ends up being greater in those markets.

Now there's the financial component of this which is those markets also tend to be a lot more competitive. Uber notably exited the Chinese market because the competitive environment there just didn't make sense for them anymore. Brazil where you've seen that same Chinese competitor go into the Brazilian market to compete with Uber there, Brazil went from being one of Uber's most profitable markets to one of its least profitable in the course of a year because of that and so that international market, but importantly Brazil is still their second biggest market outside of the U.S. which I think is something that surprises a lot of people.

So you end up with this incredible patchwork of different markets that as an investor or someone watching the way that this industry is evolving, you have to pay a lot of attention, because the answer in the U.S. is going to be very different than the answer in all of these other markets.

JAKE SIEWERT

So you mentioned this in the context of the U.S., but what are some of the risks that the industry faces on the regulatory side, rising labor costs, sort of broader macro issues?

HEATH TERRY

The regulatory side of this, you know, you've seen this in New York with the cap that's been placed on the number of ride-hailing vehicles that you can have that's driving a lot of the costs higher that we talked about before. You're got some markets like Germany where there's just still a very severe restriction on any sort of ride-hailing being offered in those markets, and so the regulatory side of things has the potential to really slow or in some cases speed up the adoption of these services.

You also from a risk perspective, you do have this real risk around costs going higher. Higher cost means slower growth, and these companies generally have been valued as growth companies. The reason venture capital money and the reason public market money has wanted to go into it is because this is such a fast-growing category, but if this growing up period that we're going through means that we're going to see slower growth, that could have an impact on how quickly this all develops.

JAKE SIEWERT

So Heath, how did you first get interested in this space, and what was the market like when you started?

HEATH TERRY

Well, I grew up in the suburbs the same way you did, and maybe even in my case suburbs is generous. So moving to New York City and seeing the magic of the subway system when I was, you know, 20 years old meant a lot to me in terms of seeing how well some of this could change, and then I moved to San Francisco and I saw what the system looked like out there and the challenge of getting a taxi in 1999 in San Francisco.

There's a reason these businesses started.

There's a reason Uber started in a place like San Francisco, and so anyone who's seen how much having access to something like Uber has changed a city like San Francisco, in some ways for the better, in some ways for worse, it's hard not to be fascinated by all this. Then you look even more recently at just how fast this explosion of micro mobility; the fact that you can't walk down a street in Paris without tripping over a scooter right now, and that wouldn't have been the case even 18 months ago, so how fast this is developing. It's hard not to be fascinated by this.

JAKE SIEWERT

When you walk around the streets of these cities with scooters, I mean Los Angeles is just littered with them all over, and it's a strange place to really be taking a scooter in some ways, but obviously they're popular. How do you commute to work?

HEATH TERRY

So I live in Manhattan. I'm actually pretty close to the office, so I'm a subway or Uber guy depending upon the time of day and how quickly I need to be here, but I've been known to take a few scooters when I'm outside of the city, and some of these bike options are also really great.

JAKE SIEWERT

I'm a Big City Bike fan, and we're probably not supposed to promote products on this show, but it's a great way if it's not too hot. How about favorite type of food to order for delivery?

HEATH TERRY

So southern roots. It's barbecue for me. The fact that barbecue in New York City is spread all over the city and I can get it delivered without having to hike out to Brooklyn makes life a lot more enjoyable.

JAKE SIEWERT

All right. So to wrap up the episode, let's summarize the central question. Why is mobility about to change more than it has since the invention of the automobile?

HEATH TERRY

Well, the ten years we've got going forward, the impact of all of these demographic changes like we talked about before, the regulatory changes as we focus on carbon, and then of course these technologies, particularly autonomous and electric vehicles. We've never had all of these things coming together at the same time. It would be akin to getting the Model T and the interstate system and low gas prices all at the same time. We're getting these things all at the same time.

JAKE SIEWERT

Excellent. Heath, thanks for joining us today.

HEATH TERRY

Great. Thanks for having me, Jake.

JAKE SIEWERT

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