Itay Michaeli: Kick off the 2019 Citi Car of the Future Symposium, I'm Itay Michaeli. I'll be your host today. And I'm very happy you're all here and I want to thank all of our presenters today for again making this -- I think our sixth or seventh annual event, which actually began here on a snowy December years ago.

A couple quick housekeeping items before we begin, we do have research disclosures available to you. If you need them, please let us know. And all of the sessions will be in the room. Restrooms are out and to your left.

But let's kick it off right away with our first presenter. We are very pleased to have Ford Motor Company back again to this symposium for a fireside chat with Sunny Madra. He's VP of Ford X. As always, we'll keep it fairly informal in the spirit of a symposium. So we'll get into Q&A. If you have questions just feel free to raise your hand. We can call on you and get you a mic. Also, if you'd like to ask a question anonymously, you have cards in front of you with an email address. Feel free to email that address and all your questions will be asked during the session anonymously.

Sunny, welcome.

Sunny Madra: Hey, great. Thanks for having me.

Itay Michaeli: Welcome, absolutely. So maybe we'll kick it off, if you could just for those in the audience who are a little less familiar with Ford X, just get an overview. What do you guys do, what you're working on and what's exciting? And then maybe do a little background as well.

Sunny Madra: Great, yeah. So I actually joined Ford last January through the acquisition of my company. It was called Autonomic. I was the co-founder and CEO. And what Autonomic was responsible for was building an automotive cloud for connected vehicles. And since joining Ford, my responsibilities include Autonomic, but beyond that they sort of expanded. And so I'm responsible for our internal incubator, which we call Ford X. I also led the acquisition of Spin, which was the electric scooter company that we bought last fall.

And so it's been a really great journey at Ford. I think 2018 was a year of us kind of building up our assets and strategy and getting ready. And then 2019 we've really started to execute. And so there's a lot of exciting stuff that's starting to come into fruition based on all the bets that we made in the subsequent years.

Itay Michaeli: Absolutely. So maybe talk a little bit about the Mobility Cloud. The folks who are newer to it, what is it and what's the game plan in terms of how an investor should think about that, your strategy versus some of the others in terms of approaching the connected car ecosystem?

Sunny Madra: Yeah, great. You know, if you really go back to when you said you started this symposium, 7 years ago. Connected vehicle was probably like an early thought back then. And today, it's a core part of strategy for most automakers. And really for Ford
where it really took a turn I think in an aggressive direction and a leadership direction, was we made a commitment to go 100% connected across our fleet. And so all Ford vehicles over the course of the next couple years become connected. And so the minute you make that choice on the vehicle side, you have to have sort of the subsequent backing and in this case a cloud that can run, accept the data from those vehicles, but allow you to rollout new applications and services to those vehicles. And that is what the TMC, Transportation Mobility Cloud, provides. It’s an automotive cloud that has the collection of ecosystem and services for developers to roll out features, both internal developers and external developers, to our vehicles.

Itay Michaeli: Right. So when we think about the data in the car, I think one of the perceptions is legacy car companies struggle because of the electrical architecture dynamics that you used to use. How much data are you actually getting? What can you do with it? And how important are new architectures in terms of harvesting sensor data and other parts? Kind of where are we in that, or was there already enough and you can sort of build upon what you have today?

Sunny Madra: Yeah. You know, it’s an evolution. And I would say there’s more than enough today. But coming -- and I come from the software world. So my background is not automotive. And I’ve been an entrepreneur and I actually -- my previous company was an early innovator in the mobile space. It was ultimately acquired by Pivotal. But we saw the evolution from sort of the world of Nokia and Blackberry and I’m sure there was time when most everyone in this room carried a Blackberry around, right? And now it's switched over to Android or iPhone.

And really what we saw there was the evolution of hardware, but coupled more with software that allowed that ecosystem of application and services. Now if you look at say, the iPhone for example, when they first came out they didn't have as many features as they do today. And that’s where I think we are in sort of the connected car world. We always want more. We want better electrical architectures. And we’ll get that through the traditional automotive channels. But today there’s a lot of great information that is on the vehicle that can be exposed to the ecosystem of developers that allow them to create better services and offerings for our customer.

Itay Michaeli: And to that point, when you think about investing in the space, what’s a kind of high-level monetization opportunity? Is it more enhance the customer experience? Is it leverage data for financial monetization, a little bit of both? If you sort of plan your decision strategy, how do you think about the--?

Sunny Madra: Yeah. You know, I would say when you think about connected vehicle, it breaks into like two major categories. I think the first is what efficiencies can auto makers get in various ways in their business, right? How can we better market to or create better loyalty programs for our customers through the connection that we get through the connected vehicle? And then beyond that, what are the additional services that we can offer to folks over time? So that once the vehicle leaves the lot after a purchase, we can continue to make that experience better over time through the connectivity, more services, more applications; more functionality. And so that’s the balance that exists there.

And there’s a lot of efficiencies that we feel will come out of the connected vehicle because of the better customer experience, whether that’s better preventative maintenance and being more proactive about those things, right? Or whether it’s understanding your use patterns and offering you better incentives around that when it comes to insurance and things like that. And so really it’s very, very early on because we haven't scratched the surface. And I go back to the first year of the iPhone. We didn't know that you'd have
Instagrams and Ubers and Snapchats. But what the ecosystem developers did was when they looked at all the information that could come off of that phone and what the customers were looking for, that's why it's so key to open that up through the Transportation Mobility Cloud and that we can get developers to imagine all the different things that we could offer to our customer.

Itay Michaeli: Sure. And yeah, that's a good point you bring up loyalty. I think there's a (inaudible) out there for every point in higher loyalty. There's just sort of a positive financial implication. But one of the pushbacks I think we often hear from investors when it comes to these types of discussions is Ford's a large company. I'm sure there are a lot of great ideas. How quickly is Ford moving, the buy-in across the organization? Any friction that you might have or not, how would you address that perception that you have the assets, but somebody will beat you to the punch, just because they move faster.

Sunny Madra: Yeah. No, it's a great question. And I think Ford has been on a really great journey here. One of the reasons that we decided to join Ford as part of the acquisition of Autonomic and it actually predates even us. And what I'd say is the relationship that Ford started with Pivotal was pretty important, right? That was a relationship where Ford started to make a conscious decision to embrace digital transformation. Take the learnings that you're getting out of a company like Pivotal, and that's why that investment was great for them, not just financially but for the learnings that that brought the company in terms of understanding how to be more modern in software development. And so that takes time, but that's starting to really sort of pay off now.

And what's happened subsequent to that and this is where Ford X which is the internal accelerator that I run, we're also starting to bring a DNA of moving and building things quickly, right? If we think about say the mobility ecosystem as a whole for a second. Two years ago no one even knew what scooters were. Right now you have a couple of billion-dollar scooter companies, independent ones. We've bought one. And that's just how fast that ecosystem is moving. And then we're starting to see sort of the big transportation and service companies become public in Uber and Lyft. And so with that speed, I think you're going to see more and more happen quicker. And we've started to develop that DNA. Within Ford X, we challenge our teams to launch new products in under 90 days and under half a million dollars. And in the last 9 months, we've launched 7 new businesses internally. But they're germinating. They're early.

But I think having that DNA is really, really important so that you can kind of match that speed that exists in the external world. So I do see that being embraced within Ford, which I think is really positive, from my standpoint.

Itay Michaeli: And maybe just remind us how many folks are in that Ford X team developing those products as well as have you talked to other start-ups and opportunities to partner? How are you seeing--?

Sunny Madra: Yeah. Yeah, you know, our team in a relative sense is pretty small at just under 30 people. But that's by design. You know, I think that's the difference where you want to remain really small. And I have a past history in corporate incubation in my previous company, Xtreme Labs. We actually did a joint venture with IAC and that joint venture was called Hatch Labs, which ultimately led to the creation of Tinder. And so we know what it takes to innovate internally. And we saw the numbers coming out of the match group now, to maybe being a big driving force there. And so we've seen that play out before of like embracing corporate innovation and incubation inside a large company and having success come out of that.
And so we're following that playbook, but with all the right changes for the industry that we're in. And I feel really positive on the momentum that we've seen early on.

Itay Michaeli: So there's not a lot of detail in the weeds you can go into in a discussion like this. But as you see opportunities, is there the next big thing out there that you -- how excited should investors be about what you're working on relative to the examples you've cited in terms of past incubators and what could happen? What's the pipeline look like in terms of, wow, this could really be something? Or should investors think about this stuff as more incrementally additive in terms of value to the company and to investors?

Sunny Madra: So that's the exciting part. I think there's a bit of both, right? So I think there's a lot of untapped opportunity. So when I think about when we did corporate incubation in the past, the ecosystem was pretty large at that point, right? There was hundreds of thousands of apps in the app store and the thesis there was, hey, we need to do that ourselves. Now when I think of the connected care ecosystem, it's still relatively emergent. You know that, right? And so I think we're there earlier, which is great. And the amount of technology that exists in the broader ecosystem that can be leveraged is phenomenal. So when I think of digital assistance, the voice. And when I think of technology that we can enable coming off data and the car around location, command and control; it's very early and we haven't -- being there in the start is going to prove to be really, really valuable. And so when I come back and think of the portfolio of stuff that's coming out of the work that's we're doing, and even sort of the broader mobility group; it's very, very promising.

Itay Michaeli: Great. Any questions? Please?

Unidentified Audience Member: (Inaudible)

Sunny Madra: Yeah, I don't think we break out the specifics of within mobility. But the cloud, like I said, impacts our business on two sides. It impacts our core business. There's some efficiencies that we can get in and around things like royalty and warranty. But beyond that, when we think of the ecosystem that will be developed on top of it, I think we're very positive in our thoughts that that will lead to something big ultimately when it plays out. But we don't break that out today yet though.

Itay Michaeli: A question?

Unidentified Participant: Thanks. We have a couple questions from the audience. So for the first one, you mentioned connectivity standard on the Ford fleet rolling out. At what point in time model year wise, is that reaching full penetration? And then I guess, can that be done via mid-cycle refresh? Is there an entire redesign that's tied to it in terms of incremental features that are required to hit that? Is it just basically an embedded Telecomatics control unit or is there other content that you have to be adding to it?

Sunny Madra: Yeah, a good question. It's a mix of two things. So in terms of the rollout in the fleet, I think it's greater than 90% in the North American fleet by the end of this year. And I think we reach those numbers over the subsequent year and a half to 2 years globally. And so that answers where we're at there.

In terms of what's required, I would say across the majority of the fleet, it didn't require a major change, because most vehicles had some level of optionality that included a
modem, just maybe in a higher trim level and we were able to make that. So they didn't require sort of a huge change. What you will see though is improvement in the core architecture. Because that sort of -- the connectivity that we had initially is great and there's a lot of things we can do. But as we imagine more services for the future, what else we can open up to developers internally and externally, we are imagining better and more advanced electrical architectures, which we'll continue to roll out with new vehicle programs.

Itay Michaeli: And I guess sticking to that point, how much -- and maybe to both those questions is the monetization channel for your team dependent on Ford OTA capabilities expanding over the next several years? Are you just sort of waiting for that? Or hey, as long as we can update the infotainment, we can already open up a significant opportunity?

Sunny Madra: Yeah. You know, it's interesting. When we think of OTA, it's incredibly important and we do support that through the Transportation Mobility Cloud. OTA I think falls more on the improvement of the vehicle over time. When we think about monetization, that's more about what kind of data can we get off the vehicle and what can developers use that for to create a better experience? And so I think today we have the starting set of data based on even the decisions that were made without understanding we were really going to do that. I think as we think about our next-gen architecture that becomes much more advanced for us.

There's lots of -- and what that really means just get more specific is there's lots of modules that are connect today. But there's also modules that weren't connected. And that's because no one ever envisioned needing those things to be connected. Now as we move forward, we understand there's value there. So we think more about like the cameras on the vehicle. We want to make sure those are connected to our TCUs so we can get that data off. And we've seen what others are doing with that kind of stuff. And so that's what you're starting to roll out now. You sort of have a baseline of things connected today and a whole bunch of modules that weren't. And the future architecture is more and more of those modules are connected.

Itay Michaeli: But when you think about, you know, we've had these types of events and also had some companies who are doing a lot of data and AI analysis off of data coming on the cellphone. What kind of data do you think you have in the vehicle? You know there's some diagnostics that you can think of. But what other data do you think you sort of have the advantage on or other analytics that you might be able to take versus others who are trying to leverage people's data? Or is it just the fact that the driver has their eyes on the road, hopefully, and you can sort of do better location-based type of offerings and things of that nature?

Sunny Madra: Yeah. You know, I think it comes down to a couple things. And this is a learning process, right? My crystal ball is not working. So I kind of give you what I'm starting to see based on the team at Ford. One, location of the vehicle is great. But for the fact that if a person is in the vehicle with their phone, you kind of have location to another device. But what I think though is becoming interesting is location when you're not in the vehicle. Because what can you do with it? And then if you saw, we just rolled out delivery to trunk.

And so those are the kind of services that we can imagine where the location is important but you're not with the vehicle, right? And so that's sort of one example. Beyond that, I think when you think the telemetry coming off the vehicle, there's so many things today. And there's the stuff that we all know about like UBI or the usage based insurance. But when we start to think of more advanced things, especially as we get to our next-
generation electric architecture, what can we do with the cameras? What could we do in terms of security?

We’re a big seller of commercial vehicles, right? You can imagine that’s really important for our customers. People keep their tools in the vehicles. And so having the security around that, what does that mean for folks? And so there’s a whole set of applications that become immediately available once you do that. And then again, just kind of building on sort of commercial vehicles and people that take upfit (ph) from there; then there’s a connectivity it brings to those folks. Because today, to a lot of mechanical stuff, now they’ve moved that into the digital world. How can then their upfitters create better digital experiences that go alongside these vehicles that they— you know, our customers invest a lot of money into.

Itay Michaeli: Right.

Unidentified Participant: We have like three or four questions that came in all centered around the same topic. So I’m going to aggregate them together the best that I can. So you were talking about the iPhone before and talking about the incremental benefit that you were able to extract as it rolled out from an app development standpoint. At what point in time do you think that that reached critical mass within the vehicle? And when critical mass was referenced, more along the lines of from the usage of the consumer more at the connected element, so being able to bring their seamless integration from phone to vehicle; is that more done at the level of the AV, autonomous vehicle, or can you get there with better infotainment systems, such as a head-up display, better HMI; things along those lines? Or do you see that more along the lines of let’s get the distracted drivers out of the way with AV, and then all of a sudden you can unlock new verticals? So where exactly in the pipeline do you see that happening?

Sunny Madra: Yeah, I would kind of look at it in two different paths. I think there’s an entire path that exists around the content and infotainment. And I think that’s a big battle. But there’s a lot of players there, right? Because you’re going to get your traditional even the phone players. You’re going to get that by plugging your phone in and getting your car playing Android Auto. And there’s great opportunities for us there just in terms of creating that seamless integration with those things, and we’ve done that on Ford vehicles for now.

I think where the larger opportunity exists, where it’s not so directly head-up competitive against sort of the existing mobile ecosystem. Because when you think about what you can do with your vehicle, off of data that you can’t get from the phone. And so how can we create better experiences for maintenance? How can we create— because that’s still a reality? So how can we create better experiences on utilization your car when you’re not there, the trunk-to-delivery stuff that we’ve done, right?

How can we create better experiences? Could we create a geo-fence around a vehicle so that when your son or daughter has told you that they’re going to go down the block to see someone that they’re not 30 miles away? Can you get an alert about those types of things? And how can you really expand the set of overall customer experiences that come off the vehicle data? And so I kind of really separate those two things and focus more on sort of the vehicle side, rather than the infotainment kind of content side.

Unidentified Participant: Do you see more of push initially and then more of a consumer pull later down the line?

Sunny Madra: Yeah. You know, if you think about like sort of the first year of the iPhone, right? There was no app store. It was all highly curated. And so Apple took that first year and they brought in Yahoo to build the stocks app, YouTube to build the video app, Google Maps
Itay Michaeli: Let's just touch on micro-mobility. You mentioned that earlier as kind of come out of -- it's a great example of how the concept can go from the concept to something being larger. Your view of the industry, what happened there, and of course Ford and your role in that industry in the next few years.

Sunny Madra: Yeah. So this is a great example of the speed that we were talking about earlier. So the scooter business for us was actually something we were incubating inside Ford X. And we had seen very early on what was happening out in California and a few other places with some of the other businesses. And so we started our own internal business. We actually launched it with Purdue University, leveraging some of our Ford relationships. And what we saw in rolling that out -- and again, we use our mantra, right? Under 500K 90 days. We built a small scooter company and we launched it out with Purdue University. And there's actually a bunch of research that came out of it, which is great and it's available online.

And what we saw in that small rollout which was in the fall in Purdue, which is starting to get a bit even cold, was incredible product market fit. Where we rolled these things out, even as we were putting them on the street, people picking them up and wanting to use them. And so that really informed us that this was a trend that was being driven by customer demand. And so as we saw that, we said, how do we take advantage of that? And so we wanted to accelerate. So we had built the small business within Ford X. And then we started to look at the players that were there and why Spin was incredibly interesting to us is Ford is a long-standing business a long 100-plus year history. We wanted to have a partner that had the right approach to cities. And so Spin, the company that we ended up acquiring that had a city-first approach, where they didn't (inaudible). They only launched in cities that they got permits and with those permits and they put the vehicles on the street. They worked very closely with cities to understand what their needs are for their constituents. And so we've subsequently done that and I think we're now in 27 cities. The product market fit appears to be great.

So this summer I think the entire industry is referring to it as the summer of scooters, because it's finally where everyone is there and ready for the big push and the pull coming from the customer. So we're really, really excited about what we're seeing in micro-mobility.

Itay Michaeli: And you know, as you think about the next 5 years, are there other areas you're looking at to say, what is that next element where 2 to 3 years ago we didn't talk much about micro-mobility? Now it comes up a lot. There's something real people are talking about -- There's (inaudible) concepts out there that people are talking about. In your position, how do you steer Ford and your team to the now versus hey, should we be at the forefront the next thing?

Sunny Madra: Yeah. No, it's really good and good question. What we really think about -- and again, it's this customer-centric notion, right? We go back and we're looking at the customer problems. And so if you take a step back for a sec and you go, why so much demand for
scooters and micro-mobility? It's because congestion, right? And it's because the experience that you're getting that Uber and Lyft is not sufficient, right? And so we look at it that way. And so when we think about the future, we start to create sub segments. And we look at the census and we say, what are the right roads that are going to serve these different distances?

So scooter is probably great under 2 miles. But 2 to 5 miles, it's not the best thing. So that kind of maybe points to an electric bike or something. Or that's a better mode for that. And then you say, okay, well bikes are great. But they're so limited by weather. So what could we do in and around that? And so that's how we're starting to kind of understand. And this is why the relationships that we have with cities is so important. Because we do these programs called City Challenges and there's a big event in LA coming up as well called City Symposium (ph), where we work very closely with cities to help them understand their needs, right? Because as they roll out updated infrastructure for bike lanes and parking or micro-mobility parking, we need to work hand-in-hand with them.

So it's an ever-evolving story and that's why it's critical to have our hand in the city relationships that we have, have our feet on the ground with the scooter business, and also understanding different sub segments that are being created within micro-mobility that we can address. What everyone's realizing now is like, not all miles are equal. And I think for the longest time, people just looked at miles as the same thing. They're not. They're different. There's different modes that serve them and there's different use cases that people have for different types of miles. And I think we're thinking about that the right way.

Itay Michaeli: Question?

Unidentified Audience Member: So you talk about scooters and e-bikes and different use cases. So what do you see going forward as far as -- and there's mobility as a service with Uber and Zoosk (ph) will be here. So what do you see as far as the demand owning cars? Do you see that waning over time and just going to a leasing program? How does that picture look in your eyes, 5-10 years out and what does that do to overall volumes?

Sunny Madra: Well, what I think is there's probably been a shift in customer behavior. And I think this is one of those things where the overall problems just get bigger. I would say there will always be a use case for people owning cars, in my view for today. Because I don't see a solution. And I'll give you an example that I see in my own life.

We probably don't have as many people coming out of high school or college needing a car right away, because of the things you mentioned. We have scooters. We have e-bikes. We have transportation as a service. But at some point people have children. And when you have children, you have strollers and car seats and soccer balls and sand toys. And that's not solved by any other mode today. Now maybe someone will solve it and find a way to keep that stuff somewhere else and put in whenever you need it on-demand. But I do think there's been a shift.

But what happens now is yeah, I think coming out of college and those places, you can still rely on other things. So I think there's just been a shift. And that shift has created like an overall expansion of the market where you have a whole bunch of folks that use these things on demand in that sense, whether like I said there's scooters or cars or bikes. And then I think as you shift kind of later in life, there is still a need and a notion around personal automotive transportation. And that's the way I really see it playing out for now, until some of these things are addressed, right? And today I don't see an easy way to address some of those problems. So that's my view of it.
Itay Michaeli: Of course, I think in our work -- I think we have a few more minutes. I've worked with (inaudible) obviously. And it's commonly known that pickup trucks like you mentioned commercial as very important to Ford. What are you doing there in terms of the commercial? You have the smart city initiative. Arguably in some of these cities your market share is low. So maybe there's an opportunity in the core of the business, commercial fleet, the pickup trucks; some of the exciting parts that your organization is trying to develop?

Sunny Madra: Yeah, definitely. Commercial is really important and we have a couple of major initiatives in and around commercial vehicles that I think highlight what the potential is for us going forward, because it's such a strong business for us. So with our commercial van business, we've had a very strong project going on in London for a couple of years, which we call our Commercial Vehicle Beacon Project, which is sort of rethinking what that end-to-end experience is. And out of that is coming a lot of work, like I mentioned. How can people that use our vehicles store tools in them? It's important for them. It's their business. How can we make them feel safe about those things? How can we bring modern technology to them, sort of things that you have on your house, like a ring camera or nest camera. Why don't you have those things in your vehicle and how can we leverage the sensors that we have to create a similar type of safety and security for those customers? And so we'll see (inaudible) that coming out with our new vehicle electric architectures.

And then similarly, on our trucks, our next-generation electric architectures start out on our F150. And that has all sort of what I was saying. On that one we've been able to go to those teams and say, these are the types of things we'd like to have access to, because we think we can create better experiences for our commercial vehicles. So it's been a (inaudible) for us in terms of what we rollout and how we think about it and how we can roll out those feature to that set of customers as well. I think that's the one big difference that we'll see in this rollout of applications and services to customers, where in the mobile world it was a lot more consumer stuff and enterprise stuff later. I think here you'll see a lot of commercial stuff very, very early on. And so we've been really trying to embrace that with the work that we're doing.

Itay Michaeli: (Inaudible)

Unidentified Audience Member: So you mentioned earlier the trim element where you're able to take, call it the TCU from a high trim vehicle and put that to the rest of the vehicles. Now obviously there's a cost associated with that. But the data that you're collecting from a connectivity standpoint, do you find that either you have the offset to that via monetizing that data externally or is that an internal monetization that you're able to use to get more better information that helps you develop programs that maybe things that are working on in Ford X or that kind of just the cost that you're willing to absorb for the consumers?

Sunny Madra: It's both today. And I think also when we went down that initiative, we really asked the teams to create other offsets as well to absorb that. So I think we are looking internally and externally and we see those benefits. But we also created costs to offset. We'll take some of the out-of-the-vehicle to put that in. Because we know there's longer-term value that we can create out of that choice.

Itay Michaeli: I think we're just about out of time. So please join me in thanking Sunny Madra for a great discussion. I learned a lot for sure.

Sunny Madra: Thank you. Thanks for having me.
Itay Michaeli: Thank you very much. Appreciate it, thank you.