



## How Toyota is Leveraging AI and Voice to Create Deeper Connections with Drivers

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At our core, Cerence is a customer-first organization, and we're proud to work with automakers worldwide on game-changing innovation that sets new standards for technology in the car. From conversational AI to enhanced connectivity, the car of the future is right around the corner as OEMs move quickly to implement and deliver new technologies to their drivers.

On that note, I recently sat down with Charan Lota, Chief Engineer, Connected Technologies at Toyota North America. Read on to hear more about how Toyota is prioritizing AI, connectivity, and voice across their lineup to deliver safe, exciting in-car experiences.

### **How critical is connectivity to Toyota's future products?**

Basically, connected cars are now an expectation, rather than connectivity being viewed as an optional feature. I think when somebody goes to buy a vehicle, they fully expect it to be connected, and if it's not, there's going to be disappointment. The reason is that connectivity enhances countless user experiences, everything from safety and freshness of data to providing convenient time-saving features like Cerence Pay. Who wouldn't want a feature like that, right? So overall, I strongly feel that the connected car is key to the success of our Toyota brand.

### **How important is it for Toyota to retain ownership of the human-machine interaction and user experience in the car?**

Honestly, it's imperative that we carefully manage the user interface and user experience to ensure that we provide a consistent and safe experience. We need to manage and balance both of those things, even when we make the sometimes-necessary choice to bring in third-party platforms. We still take pride in seamlessly integrating those platforms into our ecosystem, and that is one of the big keys to building trust with our customers and with our product.

### **How do you view the extension of the consumer's digital life from outside the car to inside the car?**

Good question! I know from personal experience that nobody enjoys spending their Saturday morning syncing various platforms, whether it be their vehicle or a new TV that they bought. When you buy a vehicle, it is essentially a piece of technology that you bring home – albeit a very expensive piece of technology – and in the last decade we have seen a rapid expansion of platforms available in the market. As a chief engineer, I and my team see all these platforms and are faced with making decisions: Do we integrate? Do we not integrate? How do we make everything from music to video streaming to social media seamless? There's a lot to consider, and then you add in the fact that these platforms differ across regions whether you're in China, Japan, Russia, Australia, etc.; they typically have different platforms as there are very few platforms like Google and Apple that go across the globe.

Overall, ideally the transition from outside the vehicle to inside the vehicle is seamless, and it's my charge to make sure that that happens and that we're always working towards that goal. It's not easy, but we must make that transition as easy as possible.

### **Let's talk a little bit about the voice assistant in the car. What do you think are the advantages of an embedded virtual assistant over bringing in your phone and tethering in the car? Is this distinction important for Toyota?**

Yes, it is. The importance is simple for me: anytime you embed a system, it allows for a quicker and more seamless user experience. In turn, this can actually allow for a safer user experience as well. As the technology grows inside the vehicle, drivers have access to more features via touch screens and physical controls, and that can get complex if we don't manage it very carefully. Voice is always a quick way to access features and functions. I use voice around my house all the time to turn on the lights, sprinklers or any gadget that I can get my hands on that I can connect to voice. Embedded voice allows Toyota to quickly access features and functions and do things like setting the temperature quicker. I do not have to look for the volume knob or anything other physical control; it's as easy as just uttering a command.

### **What role do you think AI plays in Toyota vehicles in the near future?**

I think it plays a key role. AI in and of itself is quite broad, and honestly the applications are limitless. What we do with it is up to the ingenuity and creativity of the engineers working on it. My assessment is that AI is going to allow Toyota to deliver a more personalized user experience for our guests. But one of the keys here is that we have to show restraint, because sometimes tech for the sake of tech can lead to unnecessary complexity as well as annoyances. Think about just getting suggestions or videos popping up when you're surfing the web. We have to manage that really carefully, and if the customer doesn't see a benefit from any feature made by AI, we should restrain ourselves and not offer it. Overall, I'm really excited about thoughtfully integrating AI into our connected experience overall. We're just looking for the ideas from the engineers, seeing and building proof of concepts and trying to get some stuff out there.

### **This technology that you talked about, do you see this expanding across all the models and brands of Toyota, and how long in the future do you think this is?**

I think it's most definitely technology that will expand across the line up – it's only natural. Any technology that comes out to the market and that consumers are truly enjoying and that is time saving and a value add, we have to take a look at that and its progression. At Toyota, we're now in the process. It's a careful make vs. buy decision in leveraging platform partners, so our ultimate goal is to spread this tech across Toyota and Lexus as much as possible. Gone are the days of introducing new tech just to the flagship or top-of-the-line models like Lexus LS. That same tech is now expected by people that are buying a Corolla or a Yaris, and we have to figure out ways to get it there. I can't today give specifics know how long it'll take, but I'll say that in my team and inside Toyota, there's a sense of urgency to get to the market quickly and make it affordable as well. Cerence is one of those key partners that we look at when looking at voice tech. You guys are really doing an excellent job in this arena and kudos to that. Ultimately partnerships like ours help us significantly to get the things to market quicker.

My chat with Charan took place during our recent virtual technology showcase, where key leaders from our engineering and product teams gathered to share insight into our product and technology leadership. Interested in more from our tech showcase? Check out the replay [here](#).