

Getting Up to Speed: How Toyota's Project ETA Keeps Vehicles on Track

July 07, 2022

Image not found or type unknown



At a time when almost any online purchase can be tracked from the moment an order is submitted, a veteran team of technologists, data scientists and logistics specialists at Toyota Motor North America (Toyota) came to a logical conclusion.

Why can't the car buying experience be the same?

"There are lot of different ways companies think about and utilize data," said Brian Kursar, group vice president, Digital Technology at Toyota, who recently was named Toyota's first North American Chief Data Officer.

"When we think about data, we think about building trust. In other words, how can Toyota use this incredibly powerful resource to create new products and capabilities to strengthen our relationships with our dealers, team members and business partners? And how do we build trust? Through tools that are secure, transparent, consistent and reliable."

Enter Project ETA. A sophisticated software tool developed in-house that helps Toyota and Lexus dealers get the right car, at the right place at the right time.

Shifting the Point of Sale

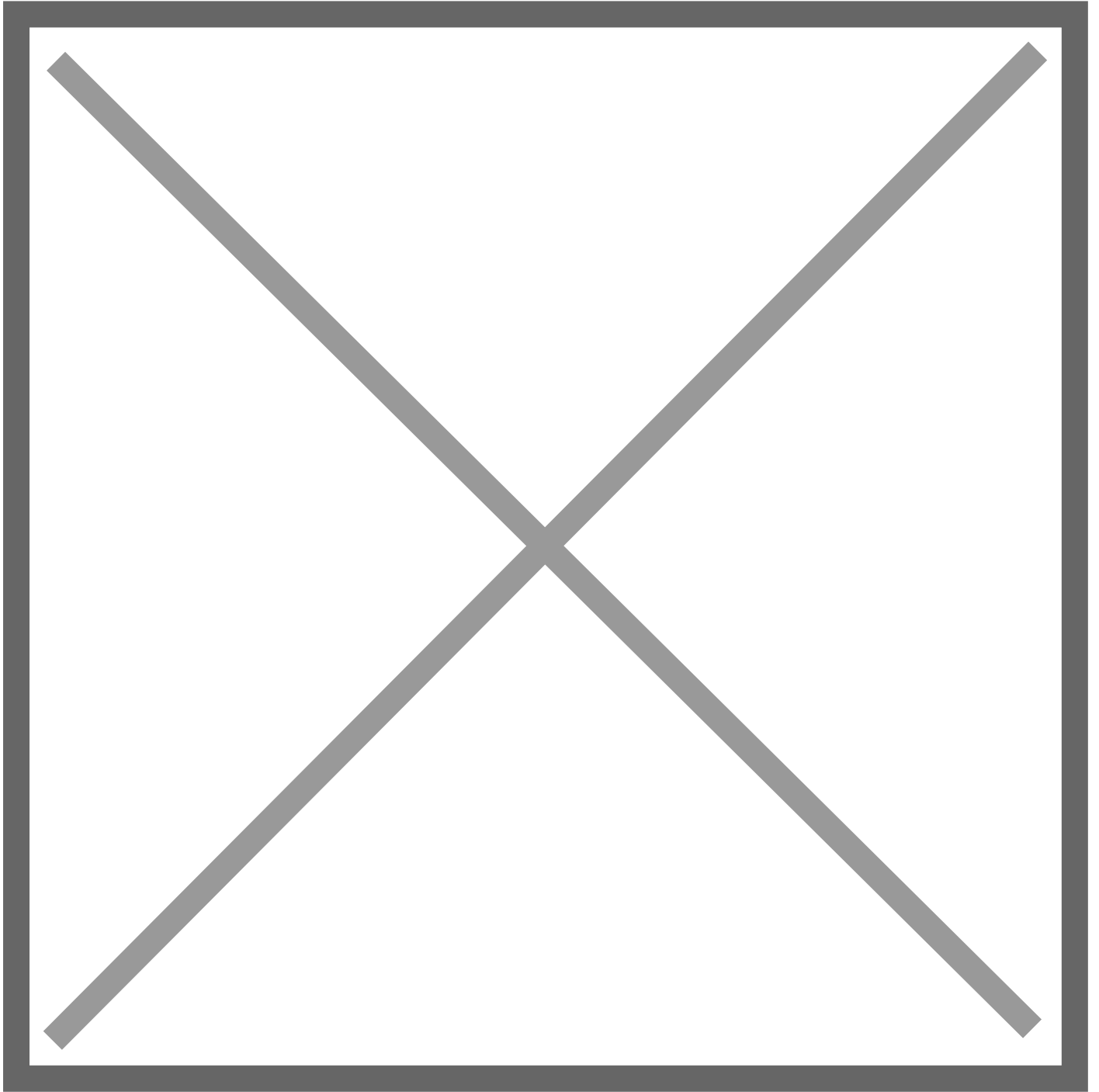
Prior to the pandemic, customers would flock to their local dealerships in hopes of driving away with a brand-new vehicle. Today, purchasing vehicles from Toyota and Lexus dealers looks a lot different. There is now more visibility in the buying process as customers can select and customize a vehicle to their liking while dealers stay up to date on where it is in the delivery process to be able to share with the buyer.

By using the vehicle identification number (VIN), dealers can access precise information about their customers' vehicle, including when they cross a specific milestone, such as their assembly or arrival on a vessel — all via proactive alerts and notifications. With Project ETA, convenience and visibility are priorities.

"Toyota is able to track the specific life cycle and logistics milestones from order to delivery in near real time for every vehicle produced for the North American market," says Kevin Austin, group vice president of Demand and Supply Management and Supply Chain Transformation at Toyota, and head of Project ETA. "This increased visibility simplifies complex supply networks and gives dealers the information they need to successfully manage their inventory and customer expectations."

From production confirmation to freight departure, dealers are kept abreast of a vehicle's status from start to finish in order to share a more precise delivery time with customers.

Tracking the Journey



Project ETA sample image

Naturally, building and transporting vehicles is a bit more complex than baking and delivering pizzas. But Toyota’s Information Technology (ITx) and Supply Chain Logistics teams have been working to put together the right ingredients to support this type of data initiative for quite some time.

“A big focus across our entire enterprise has been building up our own data and advanced AI capabilities and bringing more of these functions in-house,” explained Kursar. “The fact that we were able to roll out Project

ETA ahead of schedule, and at our scale, is a huge credit to our team.”

Launched in late March 2022, Toyota expects to implement Project ETA at all of Toyota and Lexus dealerships in the United States.

Project ETA is built on a powerful programming mix that can help predict, identify and even prevent common roadblocks in the vehicle delivery process. The platform seamlessly computes two types of distinct data sets: first-party data from Toyota’s internal systems; second-party data from transportation and logistics partners including maritime, railway and trucking. Project ETA also notifies dealers in real-time of potential delays encountered during the delivery process.

“A key component to our supply chain transformation is improved predictions for estimated time of arrival (ETA),” says Austin. “We’re looking across the supply chain at anything that might affect ETA, such as material supply, labor availability and other factors, and tapping into that data. We’re combining these data sources with analytics, data science and machine learning techniques to develop predictions that become increasingly accurate over time.”

For example, with advance notice, Toyota may mitigate a delay by allowing dealers to explore options for expediting delivery, exchanging vehicles with another dealership, offering the customer a similar vehicle on the lot, or communicating the delay to customers and offering remediation.

The early results have been tremendous, as Toyota has been able to provide a delivery window that averages up to 90 percent accuracy.

“We are still rolling out Project ETA in phases and what the dealers are seeing has already completely changed the game,” says Smail Haddad, general manager of Supply Chain and Fulfillment at Toyota. “What you hear consistently is that it’s not just about having a more accurate and dynamic picture of their inventory. That absolutely makes them more competitive, but it goes further than that. It creates more trust and loyalty at the heart of the dealership experience, which is really powerful.”

Across-the-Board Benefits

Toyota, of course, is no stranger to manufacturing and supply chain innovation. But the company’s ability to stand up this new initiative so quickly and effectively is a testament to its renewed focus on data and technology across its entire North American enterprise.

“Increased trust in ETA enables transparency to customers, driving satisfaction and loyalty,” says Austin. “It improves dealer credibility with customers and that foundation of trust, which will drive loyalty and purchase behavior over time. It also increases the ability along the supply chain to manage inventory levels and business operations with confidence.”

Work is already underway to move Project ETA even further upstream in the manufacturing process, to provide customers with more optionality with made-to-order vehicles and dealers a more powerful forecasting and inventory management system. The team is also analyzing third party sources, such as weather and road condition data for inclusion in the model to further improve delivery timing estimates.

“When I first started at Toyota 20 years ago, the algorithms we developed and used for similar processes took four or five hours to run,” said Kursar. “Now with the technology that we have, we are able to take 20 to 30 times the inputs we used in the past and iterate on those algorithms in a matter of seconds. It’s really an evolutionary step that is having a clear and meaningful impact on how we do business.”