



● CASE STUDY

● How Toyota leverages Appsheet to drive productivity
● at its manufacturing plant

AppSheet



Toyota is synonymous with manufacturing excellence and invented “lean” production.

It’s not surprising that the Japanese automobile manufacturer constantly looks for ways to perfect its vehicle assembly process.

The company realized that a mobile application would enable it to gather data from their assembly lines and unlock valuable insights. They turned to AppSheet, a lean app-building platform that dovetails with Toyota’s own lean philosophy. The platform allows them to deploy mobile apps quickly and easily, without professional developers.

With the help of AppSheet, Toyota is able to gather assembly line data on the fly and see patterns that pave the way for quality and productivity improvements.

“We’re really excited to be able to collect data on the assembly line, and anyone in final assembly, anyone in design has constantly up-to-date information down to the part level.”

New vehicle models need to be adapted from designs to the production line. That takes intricate coordination between design and assembly teams. Toyota collects data on every step in its assembly process with the goal of making a smooth transition when new designs are introduced each year. The typical car has about 7,000 parts, and assembly data are collected manually for each part on the line.

Toyota ergonomist Ben Atkinson, based at Toyota’s Lexington, Kentucky engineering headquarters for North America, is in charge of taking that data and making sure that the production process optimizes productivity and worker comfort.

Toyota’s assembly data was trapped in spreadsheets

In the past, Toyota’s seven North American manufacturing plants collected information on each part, but it was confined to spreadsheets. There was no sharing data across plants or upstream. “It was very hard. There was no real communication on this data list,” Atkinson recalls.

Hoping to improve data quality and accessibility, he approached corporate IT and asked for an enterprise application that would collect data from the assembly lines and create a central database. IT was unable to justify the resources to build an application from scratch, considering a user base of fewer than 100 people company-wide.

Toyota developers instead offered Atkinson two applications that had already been built for other uses. But they were not equipped to do what he needed without significant revision. They did not have a mobile interface, which was crucial for collecting data on the plant floor.



The problem: IT departments can't meet every need

The prospect of adapting Toyota-built applications for this new purpose again raised the problem of a scarcity of developer resources to produce the exact solution needed. Like many non-developer line-of-business users, Atkinson was frustrated.

His thoughts echoed ideas commonly expressed by Appsheet users. They know their data can propel advances if it can be packaged usefully, but they encounter obstacles in collecting the data from mobile workers. "Every company has innovators like Ben who are impatient with the status quo. They have innovative ideas to improve productivity in their teams by using mobile technology in smart ways. AppSheet enables that innovative spirit," noted Appsheet founder Praveen Seshadri.

The ergonomist turned to Appsheet. The no-code app development platform was an ideal solution for many reasons:

- No developer time was needed.
- No upfront costs were involved.
- Intuitive interface to get up and running quickly
- Simple adoption: data drawn from spreadsheets that Toyota already had.
- Mobile responsive apps for easy data collection on the assembly line.
- Data is protected and secure.

Why Toyota chose AppSheet

“What AppSheet did was allow me to really quickly create a tool to collect the data...We’re really excited to be able to collect data off the assembly line, and anyone in final assembly, anyone in design has constantly up-to-date information down to the part level,” Atkinson added.

AppSheet’s development was driven by that urgency to get from idea to app, refining as many times as needed with minimal effort, Seshadri noted. “The project owner needs to translate his ideas to a working app, put it in the hands of his users, capture their feedback, and iterate rapidly. With AppSheet, Ben is able to eliminate all friction and run multiple iterations every day,” he said.



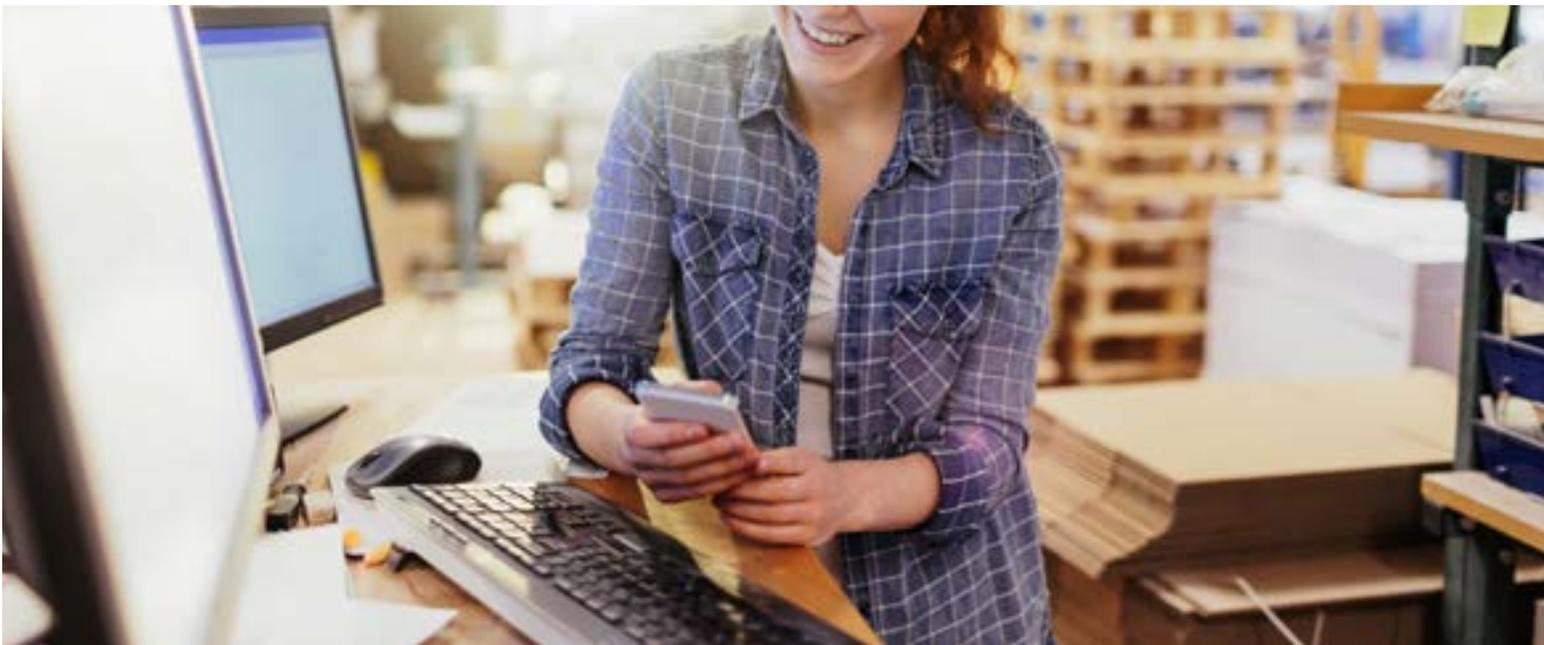
How the Appsheet app unlocks the power of Toyota's data

When preparations are under way for the next Toyota model transition, teams at each North American vehicle assembly plant will collect data on how much push force is required to install every part and a comfort rating from each worker.

"If we're minimizing fatigue and minimizing discomfort, then we'll see an increase in productivity and an increase in quality. That's what we're after," Atkinson said.

The information will create a database for each part, so assembly teams working with Toyota design counterparts in Japan can make decisions based on the latest statistics.

"This is actually something that AppSheet allows us to do that we couldn't otherwise.... it will have a profound impact," he said. "We will identify design changes earlier, when the car still lives on computer screens because once they start stamping steel, it gets really, really expensive to change. Eventually we plan to use this by aggregating data on all vehicles being manufactured, all processes, all parts," he said.





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