Driving Innovation In The Digital Economy
Jayadev Gopinath, General Manager - Advanced Technologies & Data

Camry Most American Vehicle
The Toyota Camry was first sold in the United States in mid-1983. The Camry remains the best-selling car in America for 15 straight years and was voted the most American vehicle by Congress.

10 Plants in the U.S.¹
$32.9 Billion parts & materials purchased²
365,000 Jobs created in the U.S.¹
60 YEARS operating in the U.S.
$21.9 Billion direct investment in the U.S.
9 Models built in the U.S.¹
1,334,691 vehicles produced
MOBILITY COMPANY

MOBILITY: WHEELS OPTIONAL
Advent of Technology companies like Apple, Google will compete and cooperate with OEMs on multiple fronts.

Managing data "legally" and with appropriate privacy controls is becoming increasingly complex.

New competition and cooperation
Advent of Technology companies like Apple, Google will compete and cooperate with OEMs on multiple fronts.

Customers are increasingly using digital sources in making their purchase decisions and seek a rich, individualized experience.
Connected Everything

Connected Car
Integrated Office
Smart Factory
Connected Dealerships
V2V, V2I, External Data

On Prem

Hybrid

Connecting Through Advanced Technology

Connected Car
Connected Factory
Connected Customer
Connected Car
Internet of Things

$25 billion
Connected “Things” by 2020
— Gartner

$1.7 trillion
Market for IoT by 2020
— IDC

IoT Provides a Competitive Advantage

70%
of Value Enabled by IoT Will Come from B2B Scenarios
McKinsey & Company

Humidity Low in Paint Environment
Machine Maintenance Required
Heat Sensor Calibration Off
Adjust Alignment

IoT in Manufacturing
Connected Machines
Retail Transformation

A Connected Customer Journey

Create customers for life by delivering unparalleled products and experiences.

Toyota Vision
Data is Key

GOAL: Enable TOYOTA to be a Data and Analytics Driven Company

Data Sources

- Connected Car
- Manufacturing Ctrs
- Web

Data Context

- that drives better business decisions, for Operations, Quality, Customer Experience & Profits

Extracting value despite uncertainty due to data inconsistencies

Structured, unstructured, text, multimedia Streaming data, milliseconds to respond

Terabytes to Exabytes of existing data to process

Data in Doubt Data in Many Forms Data in Motion Data at Rest

Volume Velocity Variety Veracity Value

Business Value

- Business Strategy
- Profitability
- Operational Efficiency
- Business Agility
- New Business Models

Data, Data, Data...

The Challenge

- Documents
- Information

Data

Documents

Information

PREDICTIVE ANALYTICS

- STATISTICAL MODELS
- CONSUMER BEHAVIOR
- MACHINE LEARNING
- PATTERN RECOGNITION
- VISUALIZATION
- SCORING

The Challenge

- Documents
- Information

Data

STORAGE

PREDICTIVE BEHAVIOR

DECISION MAKING

COMMUNICATION

Data Sources

PUBLIC

Data Value

- Business Strategy
- Profitability
- Operational Efficiency
- Business Agility
- New Business Models
“Customer states there is a groaning noise when vehicle is cold and starting to drive.”
FIRST SOCIAL MEDIA ACTIVITY

5 month lead on internal indicators.


Repair Deviations Call Center Deviations Tech Bulletin

Toyota Big Data Platform
**Culture Shift**

*Becoming a data driven company*

![Diagram showing the process from DATA, to INSIGHTS, to ACTION, to RESULTS.]

**Targeted Marketing (2018 Camry Launch)**

<table>
<thead>
<tr>
<th>Area:</th>
<th>Sales &amp; Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope:</td>
<td>Target online campaigns (2018 Camry) at potential customers. Provide personalized experience to customers visiting Camry site</td>
</tr>
<tr>
<td>Objective:</td>
<td>Better understand Customer behaviour by collecting and analysing all their touch points with Toyota. Build predictive models to identify and target high value customers. Provide information to marketing partners to execute campaign</td>
</tr>
<tr>
<td>Foundation:</td>
<td>Regression Analysis (Gradient Boosting, Random Forest, Logistic Regression) Digital Media Platforms</td>
</tr>
</tbody>
</table>

**Results**

Launched for FY18 Camry Launch Digital Marketing Campaign
In closing....

THANK YOU!