TOYOTA

Vision towards

Ever Better Mobility For All

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Didier Leroy
Member of the Board
Executive Vice President, Toyota Motor Corporation
Chief Competitive Officer
Toyota Global Fiscal Year Sales Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Global Vehicle Sales, Mn Units</th>
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<tbody>
<tr>
<td>2008</td>
<td>8.33</td>
</tr>
<tr>
<td>2009</td>
<td>8.14</td>
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<tr>
<td>2010</td>
<td>8.42</td>
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<tr>
<td>2011</td>
<td>8.33</td>
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<tr>
<td>2012</td>
<td>9.69</td>
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<tr>
<td>2013</td>
<td>10.13</td>
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<tr>
<td>2014</td>
<td>10.17</td>
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<tr>
<td>2015</td>
<td>10.09</td>
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<tr>
<td>2016</td>
<td>10.25</td>
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New Vehicle Sales

Traditional assumption

Scale is illustrative-only
Emerging Parameters

• Excessive **congestion**
• City access restrictions
• Regulatory developments
• Conventional **energy** depletion
• New **consumer** behaviours and needs
• New mobility **services**
New Vehicle Sales

Risk scenario

Scale is illustrative-only
Global Market and TOYOTA Sales

Conclusion towards 2050

Continuous Global **Market** and **Sales** growth is not a certainty.

Continuous **Turnover** and **Profit** Growth from **Vehicle Manufacturing** is not a certainty.
Ever Better Mobility For All

Future mobility must be:

Clean and Green

Totally Safe

Permanently Connected

Convenient for all consumers
Ever Better Mobility For All

Future mobility must be:

**Clean and Green**

Totally **Safe**

Permanently **Connected**

**Convenient** for all consumers
Ever Better Mobility For All: **TOYOTA’s 360° approach**
Ever Better Mobility For All: **Reducing vehicle CO2**

By 2050, reduce new vehicle CO$_2$ emissions by 90% vs 2010
Sustainable Mobility

Energy Diversity       CO₂ reduction       Air Quality

Hybrid technology

Gasoline, diesel
Gaseous fuels
Biofuels
Synthetic fuels
Electricity
Hydrogen
Ever Better Mobility For All: **Hybrid dominance**

**Clean and Green**

10.4 Million Hybrid EVs sold worldwide since 1997

34 Hybrid EV models on sale worldwide (largest range)

> 90 Countries & Regions where Toyota Hybrid EV models are sold
Ever Better Mobility For All: **Hybrids drive AFV growth**

**Clean and Green**

Source: IHS Market Insight
Ever Better Mobility For All: **Hybrid dominance**

Clean and Green

**Toyota Yaris Hybrid**  
Only B-Segment Hybrid

**Toyota C-HR**  
80% Hybrid Mix

By 2020, 1 Hybrid version in each major Segment
Advantages of Mirai – the ultimate Eco-car

**Energy diversity**
- Hydrogen sourced from a wide variety of primary energy

**Fun to drive**
- Electric motor enables smooth, quiet driving
- Excellent acceleration at start and low/mid speed

**Power supply**
- High capacity

**Zero emissions**
- Zero tailpipe CO₂

**Usage**
- Range (gasoline equivalent)
- Refueling (3 to 5 minutes)

Ever Better Mobility For All: **Fuel Cell Electric Vehicle**
Fuel Cell: multiple applications

Building a Hydrogen Society

- Mirai production 30,000/yr (2020)
- Toyota group activities include H2 Buses, Trucks, Forklifts, Stationary use.

TOYOTA
Fuel Cell bus

TOYOTA – Project Portal
Fuel Cell Truck @ LA Port

Toyota Material Handling
Fuel Cell Fork lift

Aisin Seiki
Household Fuel Cell system
Ever Better Mobility For All: **Joining forces**

**Clean and Green**

**Hydrogen Council**

- Air Liquide
- ALSTOM
- AngloAmerican
- BMW GROUP
- DAIMLER
- ENGIE
- HONDA
- HYUNDAI
- Kawasaki
- Shell
- THE LINDE GROUP
- TOYOTA
- Total
- Iwatani
- PLASTIC OMNIUM
Ever Better Mobility For All: **Supported by Governments**

**Clean and Green**

**Government initiatives**

- Mobilité Hydrogène France
- H₂ MOBILITY Wasserstoff Tanken
- UK H₂ Mobility
- Hydrogen Mobility Europe
- California Fuel Cell Partnership
Ever Better Mobility For All: **Battery Electric Vehicles**

**Clean** and **Green**

BEVs still need to overcome many issues: **Cost, Weight, Range, Charging Time, Consumer Convenience** ...
Ever Better Mobility For All: BEV, We challenge the barriers
Clean and Green

Nov 2016: TOYOTA established an In-house Company for BEV Development to:

- Utilise the know-how and resources of the Toyota Group Companies

TOYOTA
TOYOTA INDUSTRIES CORPORATION
DENSO
AISIN
Ever Better Mobility For All

Future mobility must be:

Clean and Green

Totally Safe

Permanently Connected

Convenient for all consumers
Ever Better Mobility For All: **Aim zero accidents**

Totally **Safe**
Ever Better Mobility For All: Towards Accident-Free Society
Totally Safe

TOYOTA Global Vision
Transport people safely and securely and inspire them.
Enrich lives and communities around the world.
Ever Better Mobility For All: **2-level approach**

Totally **Safe**

**Advanced Technologies**

1. Current
   - Common Use
   - Downsizing
   - Cost Down

2. Popularize Technologies
   - Toyota Safety Sense

**Automated Driving Technologies**

- The Next Generation
- The Next Next Generation

**Accident-free Society**

Blue: System covers cause of traffic accident fatalities
Ever Better Mobility For All: **Popularizing Active Safety**

**TOYOTA SAFETY SENSE** – 92% Installation across the range Yaris: standard on all grades.
Ever Better Mobility For All

Future mobility must be:

- **Clean** and **Green**
- **Totally Safe**
- **Permanently** **Connected**
- **Convenient** for all consumers
Ever Better Mobility For All: Connected Mobility Service Platform

Permanently Connected

[Diagram showing various components of a mobility service platform, including ride-sharing, car-sharing, insurance, rent-a-car, taxi, and technology partners such as Toyota, Microsoft, KDDI, and Getaround.]
Ever Better Mobility For All

Future mobility must be:

Clean and Green
Totally Safe
Permanently Connected

Convenient for all consumers
Ever Better Mobility For All: *Convenience for all*

CITY VS. RURAL
Ever Better Mobility For All: **Convenience for all**

**Ageing population**
Convenient for all consumers

Ever Better Mobility For All: Convenience for all

Generations X & Y
Ever Better Mobility For All: **New TOYOTA group companies**

**New Toyota Companies lead new Partnerships**

1. Enhance **safety** of cars.
2. Increase **access** to cars for those who can't drive.
3. Translate Toyota's expertise in outdoor mobility to **indoor mobility**.
4. Accelerate scientific discovery by applying techniques from AI and machine learning, esp. in materials science.

Consolidation of all Toyota initiatives in one **Data Science Hub**.
Building further on existing collaboration w/ Microsoft (Azure cloud technology)
02/06/16 Toyota to develop with KDDI globally uniform Data Communications Modules (DCMs) by 2019

25/05/16 Collaboration and trials in the world of ridesharing

04/04/16 Consolidation of all Toyota initiatives in one Data Science Hub. Building further on existing collaboration w/ Microsoft (Azure cloud technology)

12/01/16 Implementation of a Mirai-based R&D car w/satellite communication function

17/12/15 Reinforce relationship w/Preferred Networks Inc. (JPY1Bn Investment; machine/deep learning technology)
Ever Better Mobility For All: The future has already started

27/03/17 Toyota Motor Corporation and NTT have agreed to collaborate on developing, verifying, and standardizing technology in the connected car field.

25/04/17 Tokyo Hire-Taxi Association (THTA), have begun verification testing on data collection for making "connected taxis" a reality.

27/07/16 Motor Corporation and Aioi Nissay Dowa Insurance Co., Ltd. will launch a discounted insurance fee service.
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<tr>
<th>Date</th>
<th>Event Description</th>
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<tr>
<td>31/10/16</td>
<td>Establishment of Joint Mobility Services Platform (MSPF). “Air BnB for cars” that integrates Getaround’s platform with Toyota’s Products and Financial Services</td>
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<td>15/09/16</td>
<td>Research Institute (TRI) announced that it will join forces with the Open Source Robotics Foundation (OSRF)</td>
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<td>13/04/16</td>
<td>New company by Aioi (50%), TFS US (45%) and Toyota Connected (5%) Consolidating Toyota’s Data / Financing / Insurance knowhow</td>
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<td>04/01/16</td>
<td>Joint development of standard middleware for application to Toyota’s in-car devices globally.</td>
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<td>Over USD70 Mln over several years in leading US Universities for AI R&amp;D</td>
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<td>11/05/17 Collaboration to deliver AI hardware and software technologies that will enhance the capabilities of AD driving systems.</td>
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Ever Better Mobility For All: **The future has already started**

- **Investment in MaaS Global (Finnish Company)** – multi-modal mobility solutions provider
- **Owners of WHIM app** – already live in Helsinki – concrete plans for 3 other European cities
- **TME** has the **global lead on Recognition Technology**
- **TME R&D and TRI cooperation with KU Leuven and European Universities**
- **Yuko** – Car-sharing trials across Europe
- **Ha:mo** multi-modal 3-year experience in Grenoble, France
Regional Centres of Excellence -> Global approach
Ever Better Mobility For All: Cooperation and Partnerships
Ever Better Mobility For All: (para-) Olympics mobility partner

• 8-year agreement in the mobility category

• Includes vehicles, mobility services and mobility solutions (incl. robots)

• 2020 Tokyo Olympics and Paralympics will showcase Toyota’s mobility
TOYOTA

is re-inventing itself
TOYOTA is re-inventing itself: **From looms to Mobility for All**

- **Looms**
- **Cars**
- **Mobility for all**
“Toyota will lead the way to the future of mobility, enriching lives around the world with the safest and most responsible ways of moving people.”

*Toyota Global Vision*
Mobility Services will drive TOYOTA future growth

Scale & Proportions are illustrative-only
Toyota is capable and ready to take on the challenge
“It is not because we do not talk that we do not do, but when we talk, we do”

Akio Toyoda
Thank you