Where is the car heading?

The auto industry’s three big challenges: CO₂ emissions standards, integrating new technology, and meeting evolving market demand globally.

1. Rising Demand for Higher Tech Infotainment Systems
   Global infotainment semiconductor revenue (OEM market only) in billions of US dollars.
   - 2010: $2.8
   - 2017: $5.2
   - Growth: 186%

2. Advanced Driver Assist Systems (ADAS) Taking Off
   Global ADAS semiconductor revenue in billions of US dollars. Includes both active and passive systems.
   - 2010: $0.64
   - 2017: $2.5
   - Growth: 289%

3. CO₂ Emissions
   Estimates of potential gains in fuel efficiency from new technologies in addition to powertrain technologies.

4. Four Powertrain Options to Reduce CO₂ Emission
   - Improving the efficiency of internal combustion engines, increasing ratio range and control of transmissions, and advanced powertrain management systems remain top priorities but electric vehicles and hybrids are gaining ground.
   - Millions of vehicles produced worldwide.

5. The Big Challenge Ahead for Auto Makers
   CO₂ reduction targets measured in grams per kilometer, normalized to Europe's NEDC Test Cycle.
   - China: 33%
   - Europe: 27%
   - US: 51%
   - Japan/Korea: 40%
   - US: 33%
   - Europe: 27%
   - Percent of CO₂ reduction required by 2020

6. Six Ways to Improve Fuel Consumption
   Estimates of potential gains in fuel efficiency from new technologies in addition to powertrain technologies.
   - Reducing power: <10%
   - Parasitic loss reduction: 1-3%
   - Improved tire rolling resistance: 1-3%
   - Using lightweight materials and right-sizing the vehicle: 20-25%

Sources: IHS, International Council on Clean Transportation (CO₂ reduction targets)