Beyond Gridlock

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Redefinition of Mobility

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The Global Growth

Mega Cities

From 7 billion people today to 9 billion in our lifetime

From
1 billion cars

To four billion

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Near and Mid-term

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Ford Technology Migration Strategy

- Optimize conventional powertrains
  - EcoBoost technology
  - Introduce dedicated ECOnetic models with lowest CO_2
  - Auto Start/Stop, recuperation
  - Reduction of driving resistances
- Full hybrids in the US (2004)
- Lightweight technologies
- Alt. fuel vehicles depending on market demands

- Continue and further develop near-term strategy
- Ford Battery Electric Vehicles
- Next generation hybrids vehicles
- Plug-In Hybrids
- Connectivity
- Vehicle-to-x technology

- Market share of internal combustion engines dependent on renewable fuels
- Increased market share of Hybrids, Plug-In Hybrids and BEVs
- Fuel cell vehicles
- Multi-modal transport connectivity

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Ford Power of Choice

Examples

- Ford 1-litre EcoBoost
- Auto Start/Stop
- Focus Electric
- C-MAX Energi (Plug-in Hybrid)

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Driver Assistance & Active Safety Systems Today

- Forward Alert
- Active City Stop
- Lane Departure Warning
- Lane Keeping Aid
- Blind Spot Information System
- Auto High Beam
- Traffic Sign Recognition
- Driver Alert
- Active Park Assist
- Speed Limiter

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Connectivity - Today

- Nomadic device integration - Ford SYNC
  - Emergency Assistance
  - Text-to-speech
- Connect the vehicle using nomadic device
- Internet connectivity for features such as
  - Infotainment
  - Navigation
  - Real time traffic information
  - Remote diagnostics

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Connectivity - Today

Connectivity - Today

Cloud Connectivity

- Connect to the driver's personal cloud of information to provide the same personalized lifestyle as at home or office
  - Example: the car plays the same music as you have heard in your house; when driving away, the car informs the house to lower the heating, to lock the doors, and turn on the alarm

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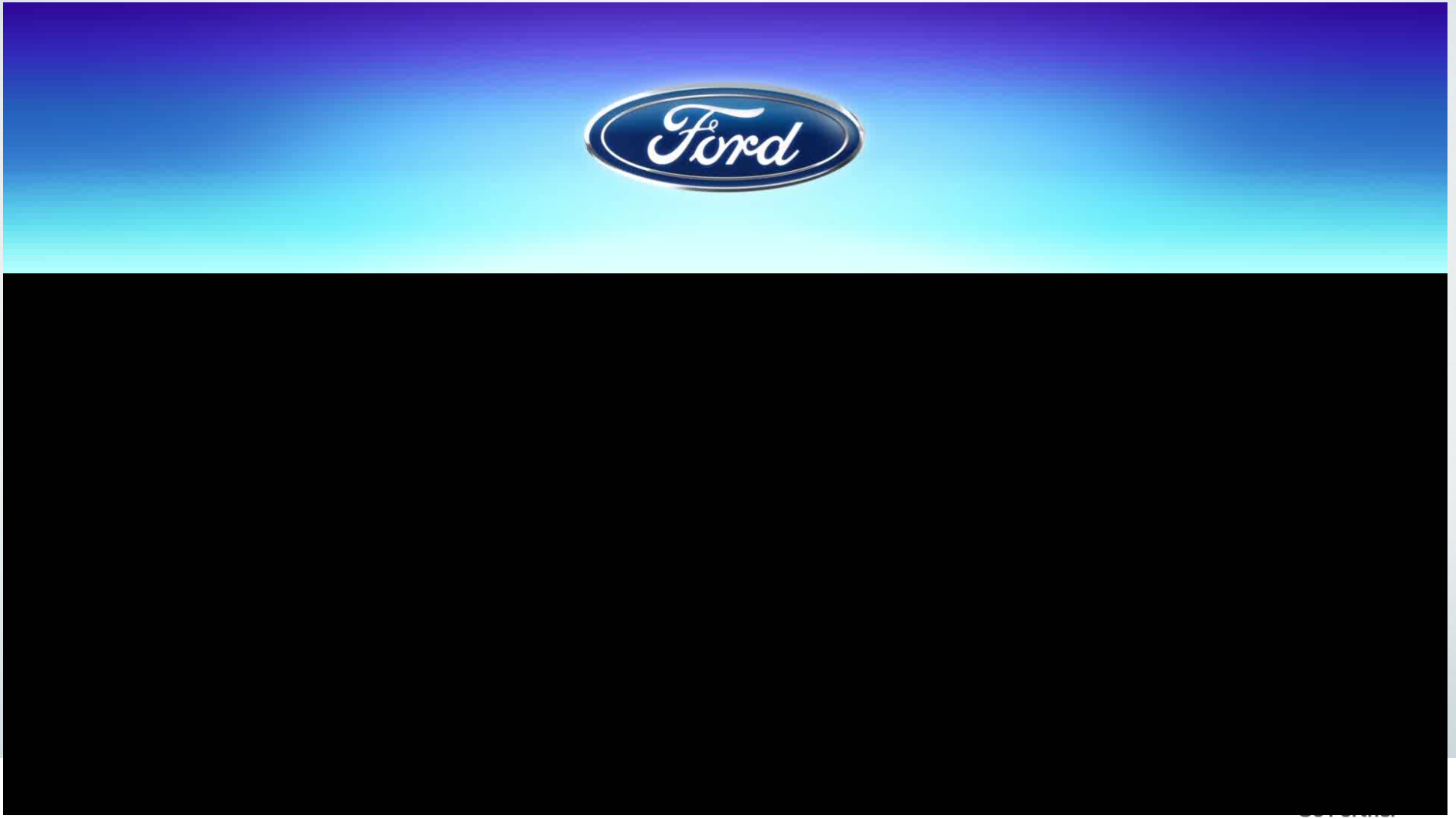
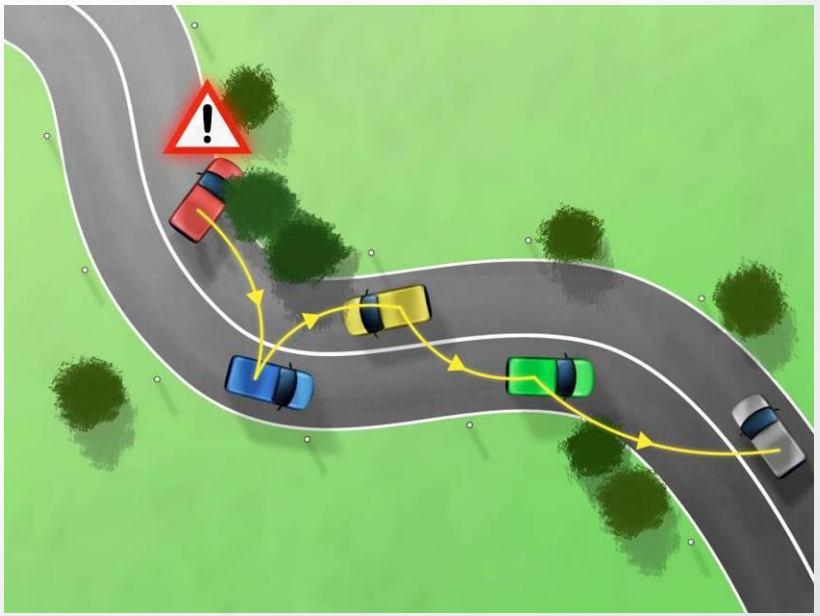
Cloud Connectivity



Connectivity - Tomorrow

- Safe and intelligent mobility using vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication
- Vehicles become sensors and share data with each other and the infrastructure
- Cooperative systems provide foresighted information to the driver



➔ Connected vehicles in a connected world

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Vehicle-to-x Communication

- Wide area of applications using Vehicle-to-X communication:
  - Driver assistance and active safety
  - Driving efficiency and traffic management
  - Comfort functions, health & wellness
- Low cost technology
- Democratize driver assistance features

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Vehicle-to-Vehicle Communication

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Vehicle-to-Vehicle Communication

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Advanced Driver Assistance System

- Design vehicle architecture for features and systems such as
  - Advanced sensing
  - Smart actuators
  - Distributed control and computing architectures
- Limited „follow-leader“ vehicle platooning
- Auto pilot functions

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Long-term (by 2050)

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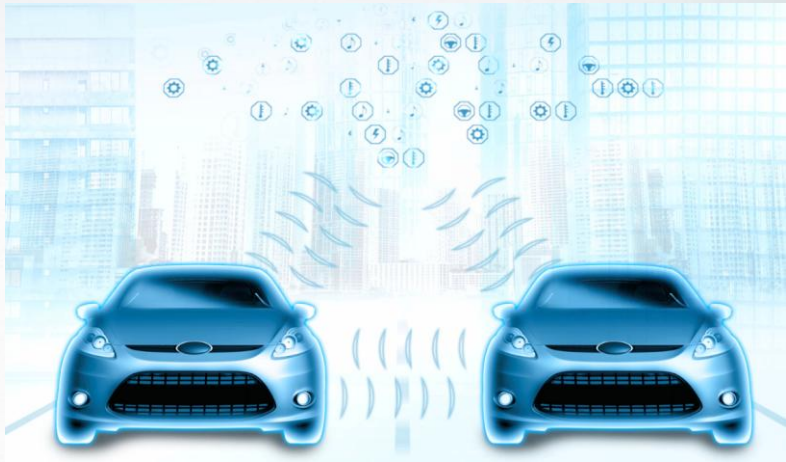
Mobility Networks

- Connected network of all mobility solutions
- Individual ownership remains, but car sharing models are growing at the same time
  - Any vehicle for any purpose
- Various autonomous valet functions
  - Plot and reserve parking space before trip
  - Autonomous parking
  - Smart payment systems working across all different transportation functions



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Challenges

- Respect Privacy
- Adapt Legislation
- Marketing of vehicle-to-x communication technologies at market introduction
  - Customer acceptance
- Security
- Data quality

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Transportation represents and guarantees
freedom, prosperity, power, economic growth

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