

A futuristic car is shown from a side-front perspective, driving through a tunnel. The tunnel walls are lined with glowing blue lights, creating a sense of depth and motion. A digital network overlay of white lines and nodes is superimposed on the scene, particularly concentrated in the upper right quadrant, symbolizing connectivity and technology. The overall color palette is dominated by cool blues and greys.

Transportation Technology Outlook and Trends

Connected – Autonomous
Shared – Electric

APTA Expo
Atlanta, GA.
October 2017

AECOM

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- About AECOM
 - Trends in Mobility
 - What we're seeing
 - What we're thinking
 - Project Delivery
 - What we're doing
 - Technology and Infrastructure Ecosystem

AECOM: Design. Build. Finance. Operate.

Key Stats

\$18B revenue (TTM) **7** continents **87K** employees **150+** countries

Diversified
Markets

- Transportation
- Facilities
- Federal / Support Services
- Environment / Water
- Power / Industrial
- Oil & Gas

Full DBFO
Capabilities

- Design & Consulting Services
- Construction Services
- Management Services
- AECOM Capital

TRENDS

*Intelligent transportation is the
next technological revolution*

-ITS America, 2017



REGULATION/
POLICY



CONNECTED /
AUTONOMOUS



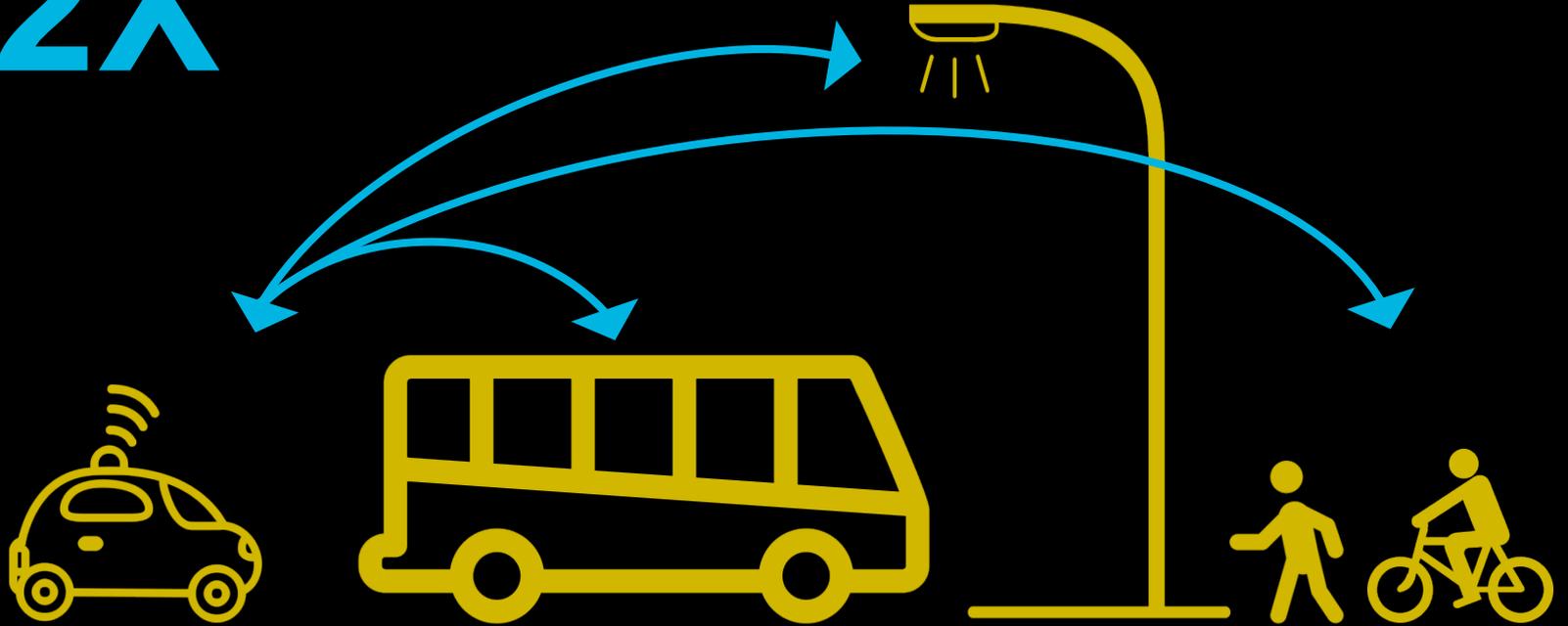
SHARED



ELECTRIC



V2X

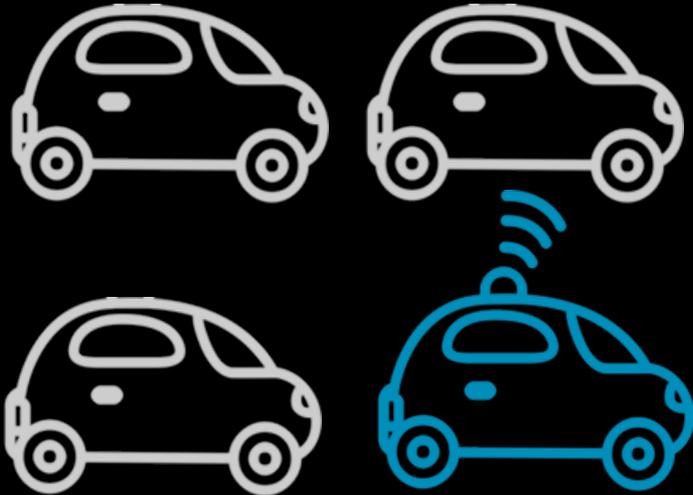


Vehicles communicate with other vehicles, infrastructure, and other users

AUTONOMOUS

4

years until there will be
autonomous vehicles on the road
(Ford)



~40

years for full fleet conversion
(Victoria Transport Policy Institute)



90%

accident reduction (AAA)



\$190b

saved per year in U.S. by 2050
(McKinsey)

50

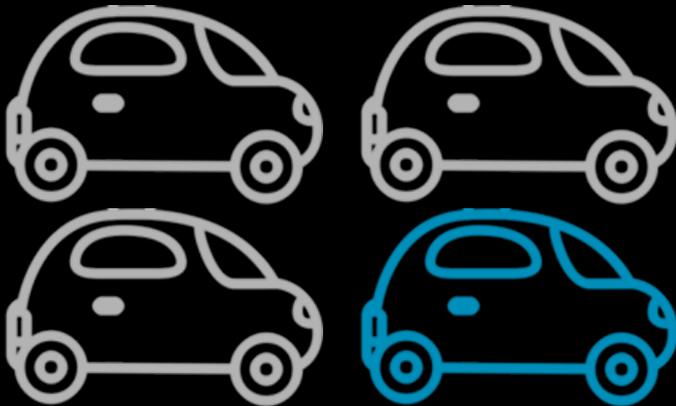
minutes saved per day (McKinsey)

2,200

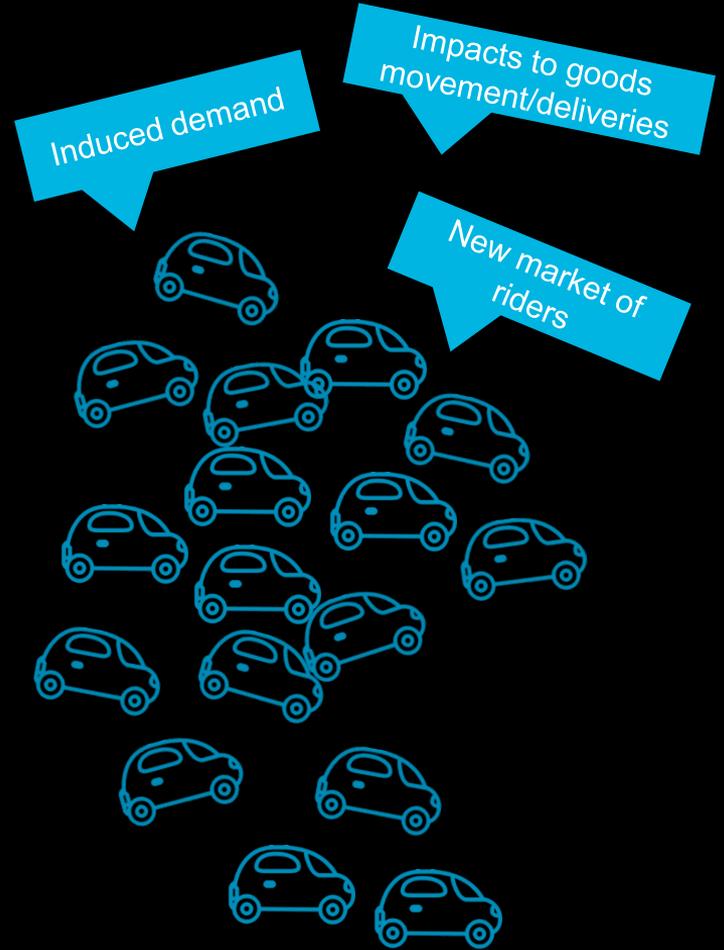
square miles of parking need reduced
(McKinsey)

80%

fewer cars
(MIT/NY, ITF/Lisbon, VDV/Stuttgart)



OR



SHARED



Car/Ride Share

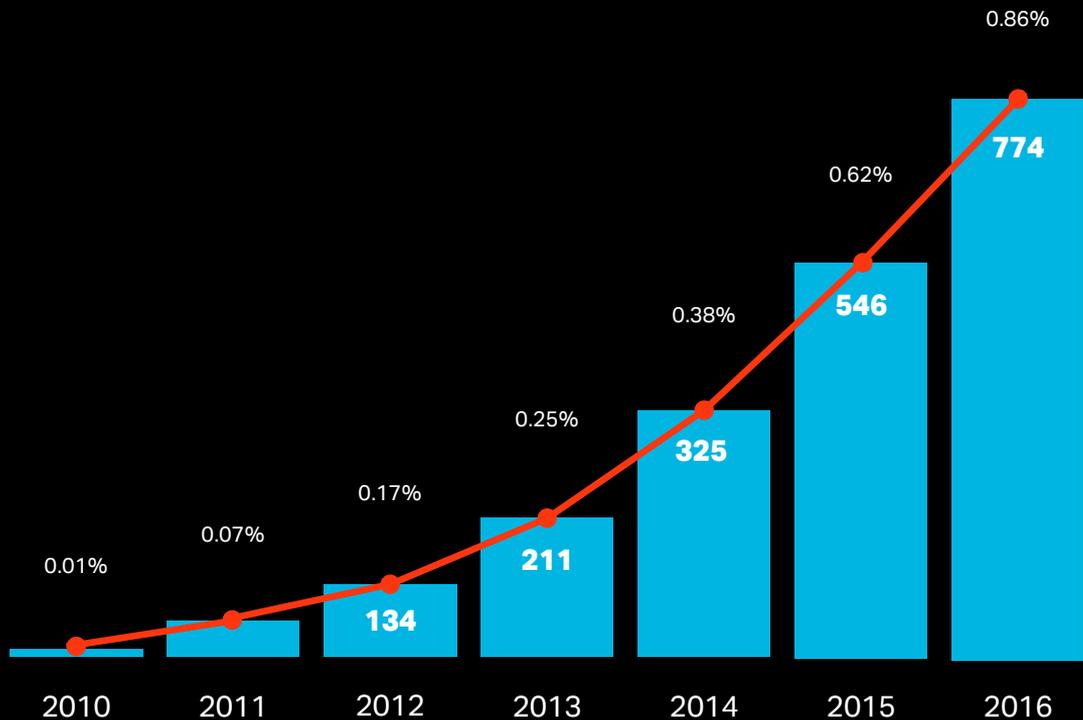


Bike Share



Ride Share

ELECTRIC VEHICLE GROWTH



GLOBAL EV STATISTICS

2016 EV SALES



774K

2016 GROWTH



42%

EVs ON THE ROAD



2M

EVs ON THE ROAD BY 2017



3.1M

EV OEMs



>40

BATTERY COST REDUCTION



50%

ELECTRIC BUS TECHNOLOGY GROWTH



98% of world sales of electric buses are in China



- LA Metro pledge for Electric Fleet by 2030
 - Full cycle Zero-Emissions
- Antelope Valley Electric Bus Fleet by 2018
- \$15B Volkswagen Settlement

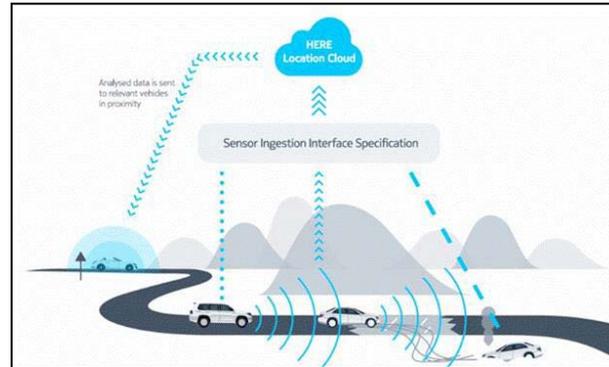
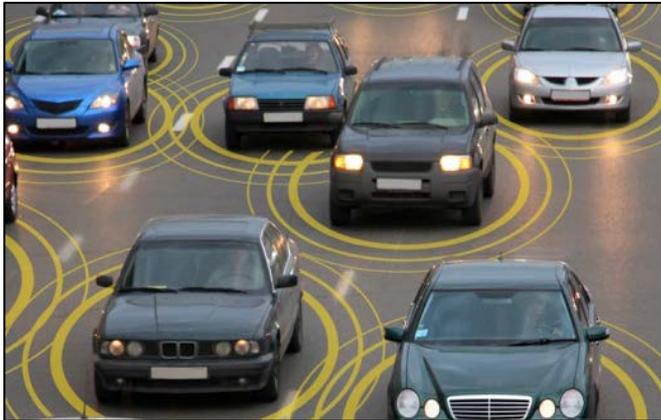
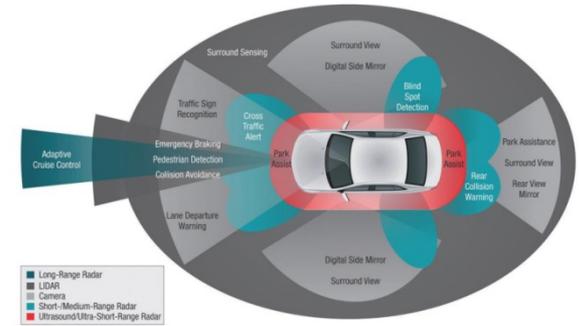
PROJECT DELIVERY

- Readiness & Policy Plans
- Infrastructure
- Pilot Projects
- Shared Vehicles
- Electrified Vehicles & Roadways

Readiness & Policy Plans

Projects in:

- Michigan (connected vehicle data applications)
- New Zealand (CAV state of readiness)
- Tennessee (Incorporate CAVs into long-range transport plan)
- Dubai (AV shuttle safety plan)
- Miami (AV vision plan)



Infrastructure

Automotive Test Facilities

- General Motors
 - Facilities Maintenance
 - Program Management
 - Construction Management

EV Manufacturers

- Confidential Clients
 - Design/Build Services



Pilot Projects

Project

- Evaluate vehicle manufacturers and select a site location to conduct testing of an autonomous bus for transit use.

Objective

- Test autonomous vehicle capabilities in cold weather conditions.

Goals

- Identify challenges and solutions to using autonomous vehicles in cold weather conditions.



Shared Vehicles

Project

- Los Angeles Metro mobility hubs needs assessment and operating plan.

Objective

- Expand access to job training and educational opportunities for low-income individuals.

Goals

- Recommend locations for mobility hubs that combine bike share, car share, transit, and on-demand shuttle services.



Electrified Roadways

Projects

- Inductive lanes infrastructure in Colorado.
- Civil design for EV freight trucks in a heavily congested corridor in the LA region.

Objectives

- Solve range anxiety for EVs.
- Accelerate EV adoption rates.

Goals

- Reduce fossil fuel use.
- Reduce operating cost.





TECHNOLOGY + INFRASTRUCTURE ECOSYSTEM

CONNECTED/
AUTONOMOUS

SHARED

ELECTRIC



Image via:
Wall Street Journal



THANK YOU

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