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CAPITALIZING ON EMERGING TECHNOLOGY IN THE AUTOMOTIVE AND MOBILITY SPACE

December 9, 2020

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Agenda

Section 01 – Introductions

Section 02 – Electric Vehicles

Section 03 – AV Federal Legislative and Regulatory Initiatives

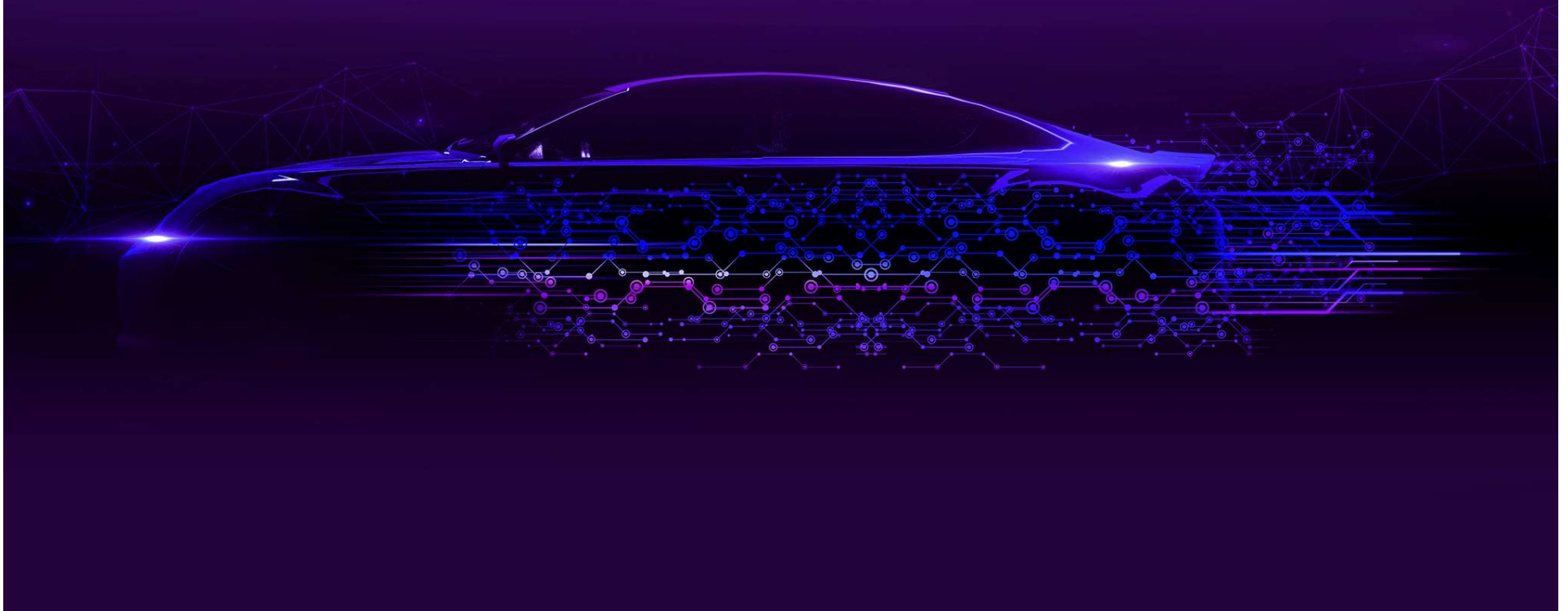
Section 04 – AV State Legislative and Regulatory Activity

Section 05 – IP and Emerging Technology

Section 06 – Antitrust and Emerging Technology

SECTION 01

INTRODUCTIONS



Today's Presenters



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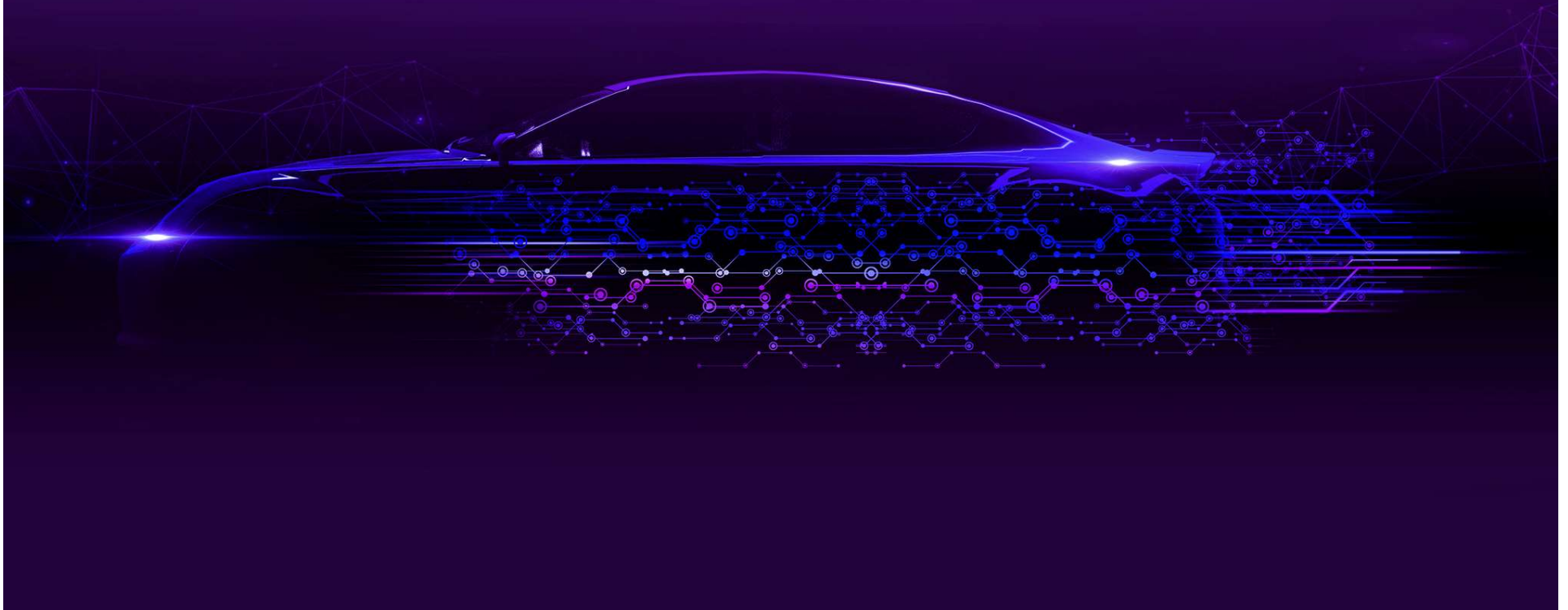


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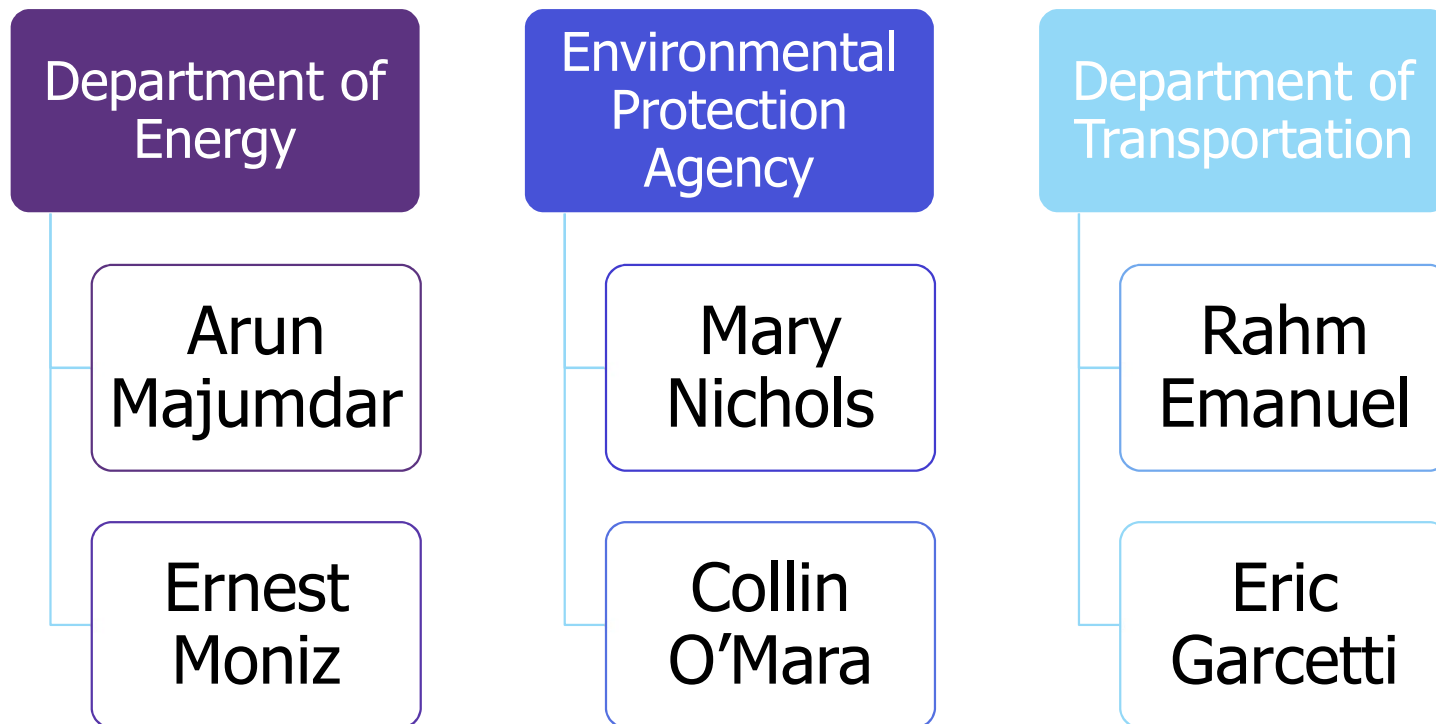
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SECTION 02

ELECTRIC VEHICLES



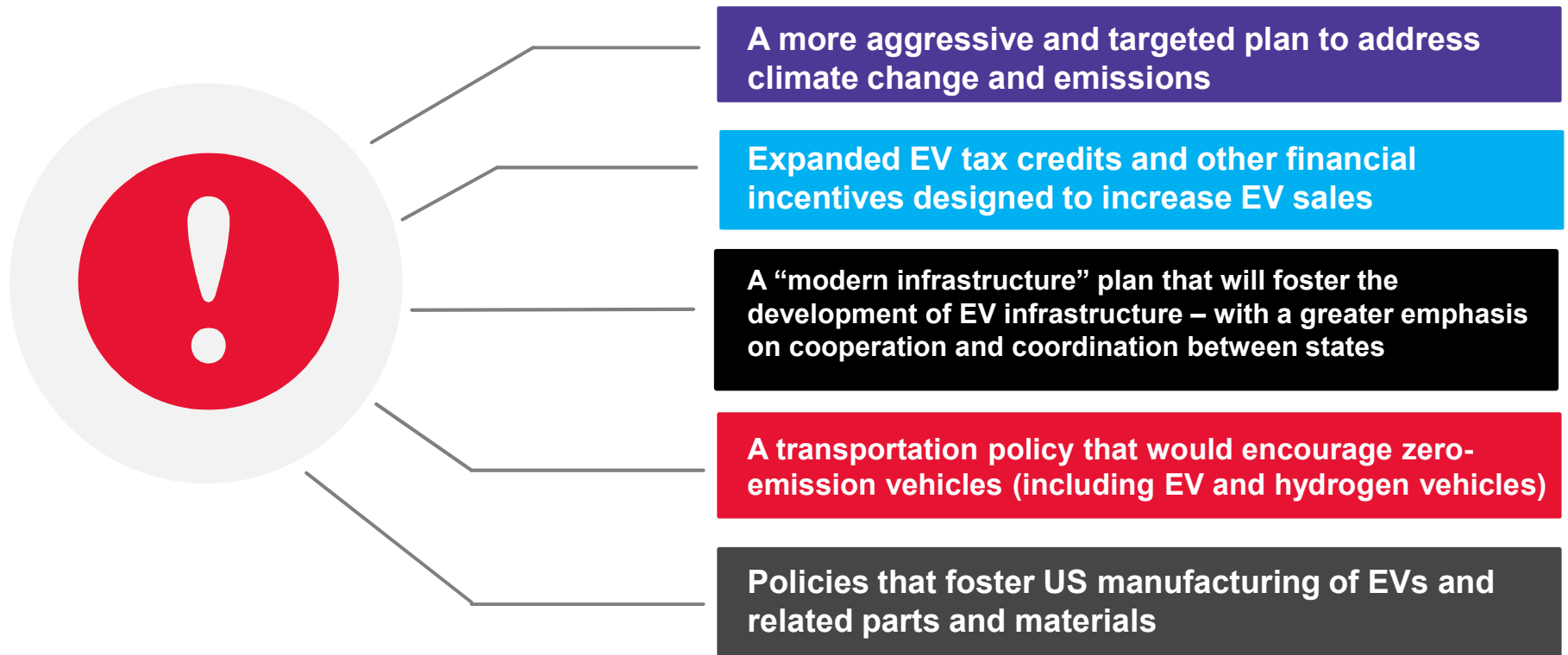
New Leadership Will Bring a New Focus to EVs



Current State of the Market

- EV sales are growing – expected to hit 10% of global passenger vehicle sales by 2025, 28% by 2030, and almost 60% by 2040 (Electric Vehicle Outlook 2020, BloombergNEG)
- The number of EV charging stations is growing – there are currently 2,625 Level 1 Chargers, 85,846 Level 2 Chargers, and 16,972 DC Fast Chargers nationwide (DOE Alternative Fuels Data Center)
 - But, significant investments and growth in charging infrastructure will be required. Compare the current national levels to New York alone, which has created an incentive program to hopefully install approximately 54,000 Level 2 Chargers and 1,500 DC Fast Chargers
 - CA currently has approximately 15% of US Level 1 Chargers, 33% of Level 2 Chargers, and 32% of DC Fast Chargers

Things to Look for Under the New Administration



CAFE Standards and Vehicle Emissions

The incoming Biden Administration is also anticipated to enact more stringent US Corporate Average Fuel Economy (CAFE) standards and the roll-back enacted under the Trump Administration will be reversed

- An Obama-era rule required 5% annual increases in efficiency, which was replaced by a rule requiring only 1.5% increased in efficiency

California's emissions requirements may gain further traction among automakers

- GM announced, in late November, that it was withdrawing from litigation over California's right to set independent emission

Hydrogen Vehicles

- The Biden Administration's climate and emissions goals are likely to also result in a greater focus hydrogen vehicles in the United States
- Hydrogen vehicles face similar challenges to EVs – adoption and infrastructure build-out
 - There are currently only a handful of hydrogen fuel-cell vehicles available (Toyota, Honda, Hyundai)
 - There are only 63 hydrogen fueling stations in the United States, and only 45 of those are retail stations that are open to the public. 43 of the country's 45 retail hydrogen stations are located in California.

SECTION 03

AUTONOMOUS VEHICLES - FEDERAL LEGISLATIVE AND REGULATORY INITIATIVES



Autonomous Vehicles – Federal Legislative Initiatives

2016

- AV Policy

2017

- SELF DRIVE Act (H.R. 3388)
- AV Policy 2.0
- AV START Act (S. 1885)

2018

- AV Policy 3.0

2020

- AV Policy 4.0
- NHTSA AV Test Initiative
- NHTSA ANPRM re: safety framework

Federal Legislative Initiatives

“Safely Ensuring Lives Future Deployment and Research in Vehicle Evolution Act” (**SELF DRIVE Act – H.R. 3388**)

First major attempt at AV legislation. Passed unanimously in the House, but failed to receive traction in the Senate.

“American Vision for Safer Transportation through Advancement of Revolutionary Technologies Act” (**AV START Act – S. 1885**)

Companion bill to SELF DRIVE Act; excluded self-driving trucks from bill.

Passed the Senate Commerce Committee, but was not acted upon by the US Senate.

Road ahead?

House lawmakers have stated their intention to renew efforts to pass an autonomous vehicle bill come January.

Autonomous Vehicles – Federal Regulatory Initiatives

2016	<ul style="list-style-type: none"> • AV Policy
2017	<ul style="list-style-type: none"> • SELF DRIVE Act (H.R. 3388) • AV Policy 2.0 • AV START Act (S. 1885)
2018	<ul style="list-style-type: none"> • AV Policy 3.0
2020	<ul style="list-style-type: none"> • AV Policy 4.0 • NHTSA AV Test Initiative • NHTSA ANPRM re: safety framework

Federal Regulation of Autonomous Vehicles – Regulatory			
<p>AV Policy (September 2016)</p> <ul style="list-style-type: none"> • Under the Obama administration, the National Highway Traffic Safety Administration (NHTSA) issued first policy on autonomous vehicles (the AV Policy). 	<p>AV Policy 2.0 (September 2017)</p> <ul style="list-style-type: none"> • Issued under the Trump administration; widely regarded as a continuation of the existing guidance. 	<p>AV Policy 3.0 (October 2018)</p> <ul style="list-style-type: none"> • Expanded scope of autonomous vehicles to include all surface on-road transportation systems. 	<p>AV Policy 4.0 (January 2020)</p> <ul style="list-style-type: none"> • Joint effort between USDOT and White House CTO. • Coalition across federal agencies and commissions. • Stronger emphasis on safety, modernization, tech neutrality; updated guidance on privacy, cybersecurity, patents, and accessibility.

Autonomous Vehicles – Federal Regulatory Initiatives (cont'd.)

2016

- AV Policy

2017

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2018

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- NHTSA ANPRM re: safety framework

Federal Regulation of Autonomous Vehicles – Regulatory (cont'd.)

NHTSA AV Test Initiative (June 2020)

- New test tracking tool intended to provide public with direct and easy access to information about testing of ADS-equipped vehicles, information from states regarding activity, legislation, regulations, local involvement in automation.

NHTSA ANPRM re: development of ADS safety framework (November 2020)

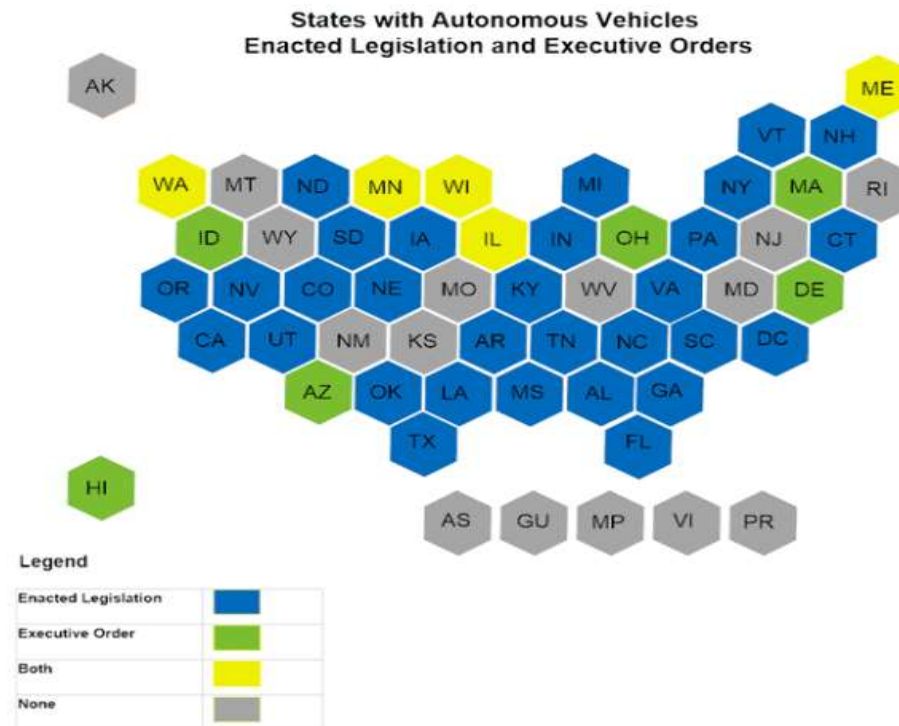
- NHTSA announced intentions to seek public comment on possible framework of safety standards and principles for ADS-equipped vehicles.

SECTION 04

AUTONOMOUS VEHICLES - STATE LEGISLATIVE AND REGULATORY ACTIVITY



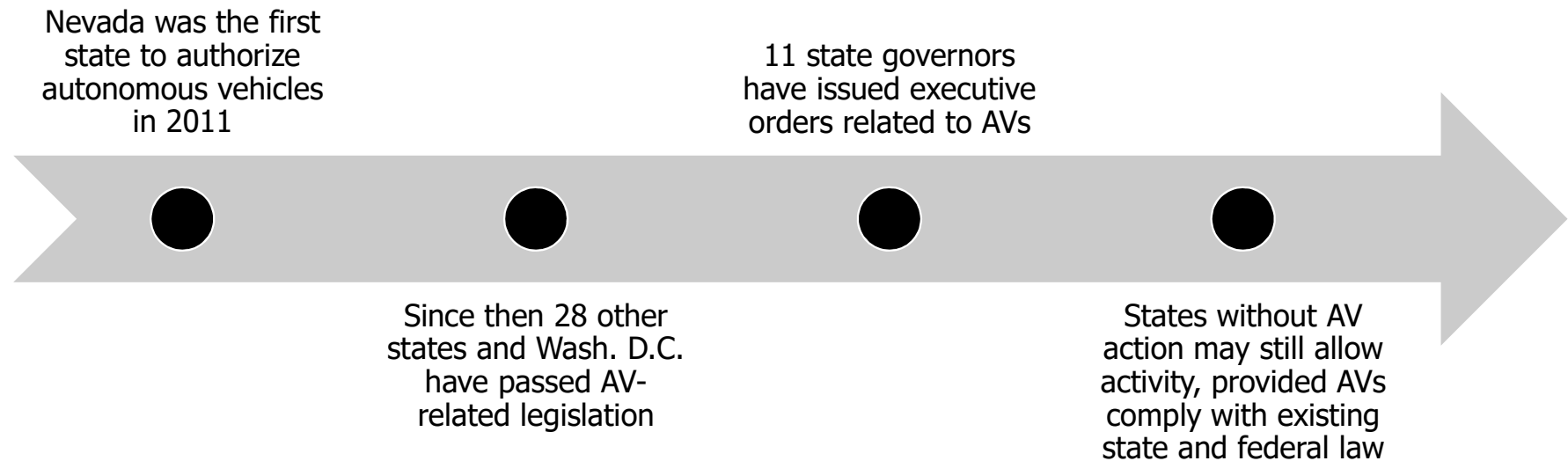
AV State Legislative and Regulatory Activity



Source: <https://www.ncsl.org/research/transportation/autonomous-vehicles-self-driving-vehicles-enacted-legislation.aspx> (current as of 2/18/20)

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AV State Legislative and Regulatory Activity



Arizona – State “Legislation”

- Executive Order 2015-09
 - Directing agencies to “undertake any necessary steps to support the testing and operation of self-driving vehicles on public roads in Arizona.”
- Executive Order 2018-04
 - Removed requirement that safety driver be present
 - Pledges AZ to keep pace with emerging technology
 - Directs Dept. of Public Safety to work with law enforcement on first responder protocols for AVs in emergency and traffic enforcement situations
- First state to:
 - Enact executive order supporting testing and operation
 - Allow commercial self-driving taxi service (launched by Waymo in various cities)
- 600+ vehicles and more than a dozen companies testing on public roads

Pennsylvania AV “Legislation”

Pennsylvania law does not explicitly regulate AV testing

- As a result, localities control AV regulation

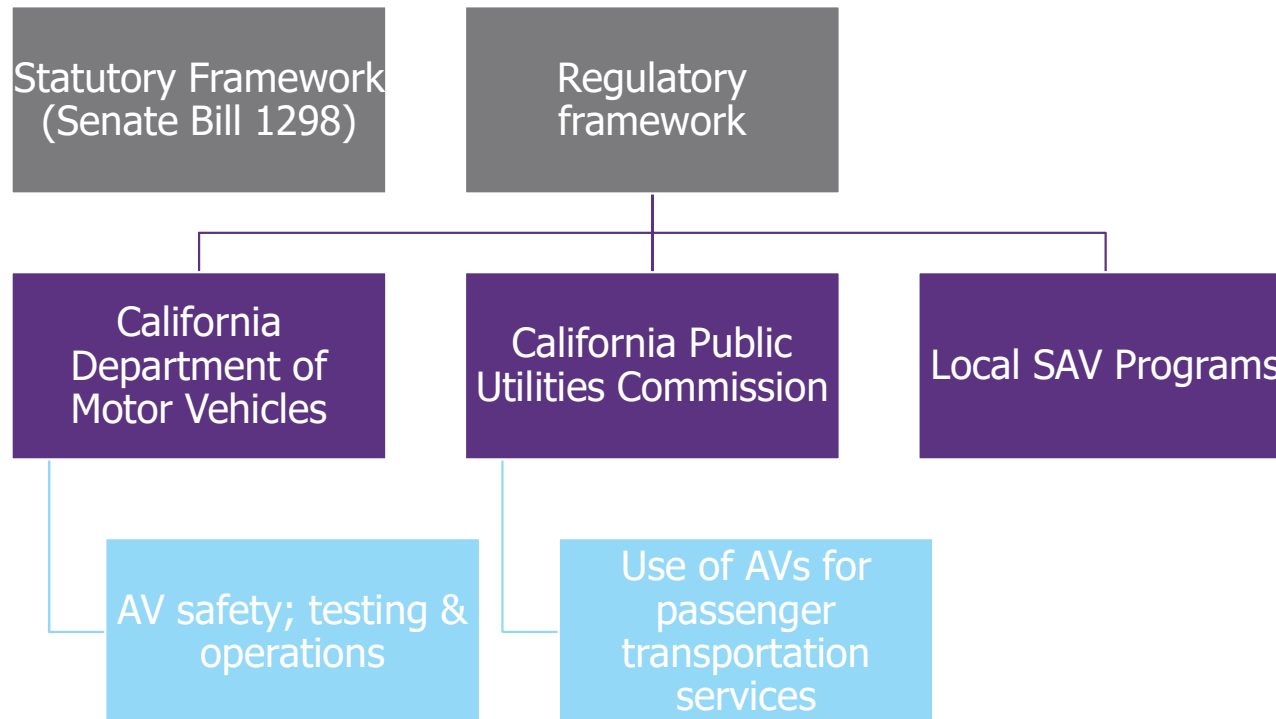
Pittsburgh has become a hotbed for AV testing

- Friendly regulatory climate and local gov. incentives
- Aptiv, Argo AI, Aurora Innovation and Uber test in the city

HB 1958 (2018) is closest PA gets to AV regulation

- Established regulations on truck “platooning”
 - Group of vehicles operated by humans traveling at electronically coordinated speeds
- Defined “highly automated work zone vehicle”
 - Received \$60m in federal grants for research on safe integration of AVs in work zones
- Created “Highly Automated Vehicle Advisory Committee” to report on AV activity in state

California Legislation



California Legislation

**SB 1298 (Padilla,
2012)**

**ADDS DIVISION 16.6 (§ 38750 ET
SEQ.) TO THE CALIFORNIA
VEHICLE CODE**

AUTHORIZED AV TESTING ON PUBLIC ROADS

**REQUIRED DMV TO ADOPT
REGULATIONS TO ADDRESS:**

- Requirements related to insurance
- Application and permitting process for drivered and driverless AVs
- Testing, equipment and performance standards

California Regulatory Framework

- California Public Utilities Commission Adopts Commercial AV Framework
 - Decision 20-11-046
 - Authorizes two commercial passenger transportation programs
 - “Drivered” and “Driverless” Deployment Programs
 - Authorizes AV companies to accept monetary compensation
 - Authorizes shared rides
 - Requires AV deployment permit from CA DMV to participate
 - Quarterly Reporting Requirements
- Nod to electrification: Adopts goal of reducing GHG emissions, but does not mandate EV fleets. Commissioner Shiroma called the deployment programs “important steps to support our study of how autonomous vehicle fleets can be leveraged to support the grid as a demand side management resource, dovetailing on our efforts to incorporate transportation into the electric sector.”

SECTION 05

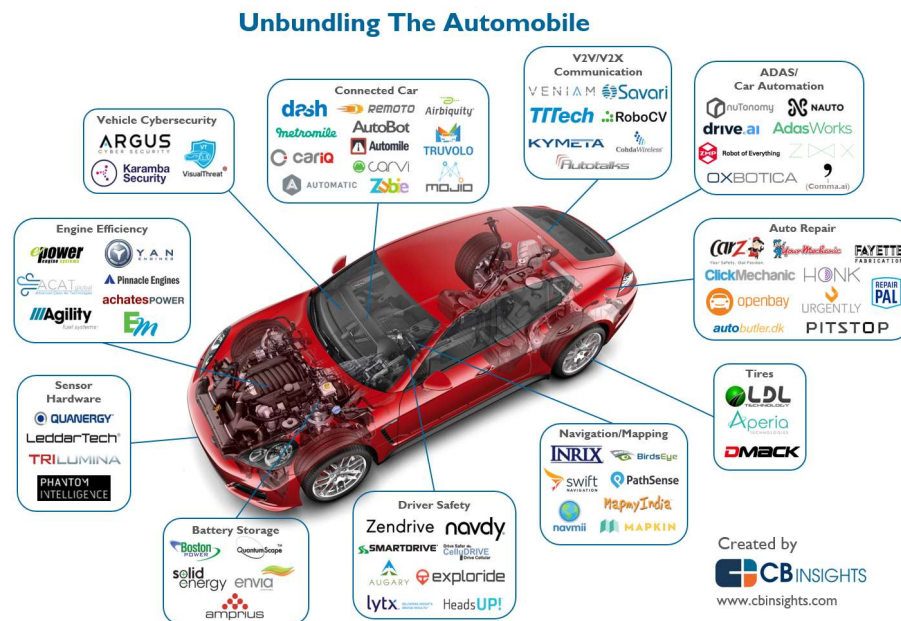
IP AND EMERGING TECHNOLOGY



Patents

- US Patents provide a right to exclude others from making, using, selling, offering for sale, or importing protected inventions
- Utility Patents
 - Utility cover new articles of manufacture, machine, chemical composition or process
 - Examples: Lidar for autonomous vehicles, infotainment systems, battery technology
 - David Hall, inventor of 3D Lidar, recent inventor of the year. He has over 30 patents and his company Velodyne Lidar Inc. supplies many manufacturers with Lidar sensors.

The Anatomy of Autonomous and Connected Vehicles

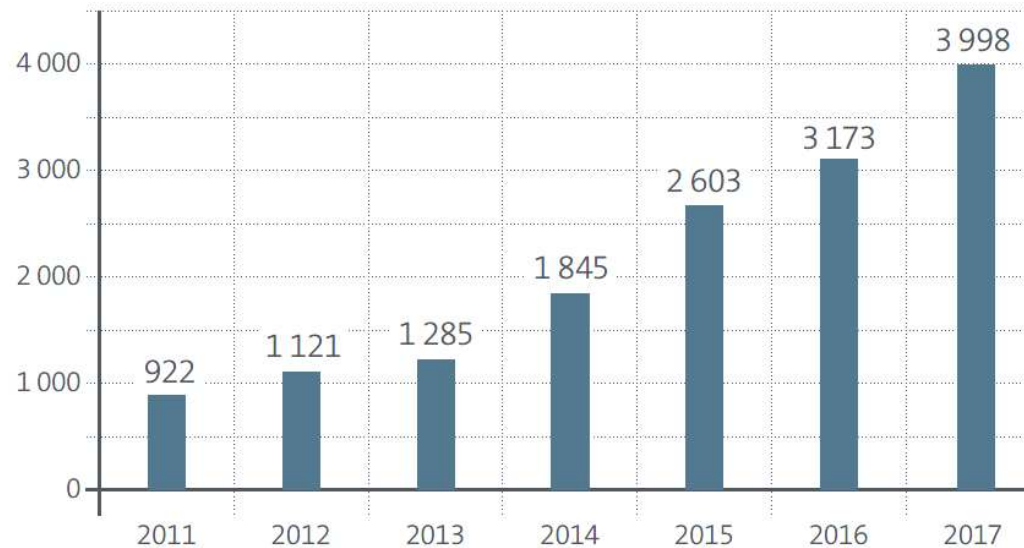


Source: <https://cbi-blog.s3.amazonaws.com/blog/wp-content/uploads/2016/05/1-unbundling-car.png>

- Central Computer
- V2V/V2X Communication
- Infotainment
- Global Positioning System (GPS)
- Cameras (Video)
- Light Detection and Ranging (LIDAR)
- Sensors (Hardware/Software)
- Ultrasonic Sensors
- Aftermarket Repair
- Battery Storage

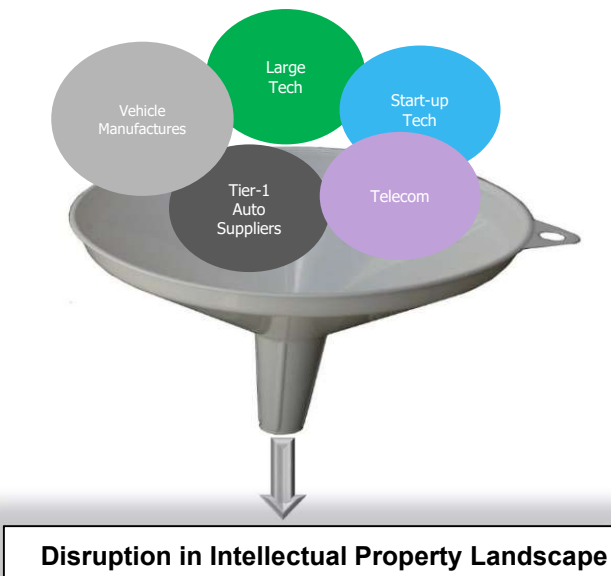
Autonomous and Connected Vehicle Patent Applications

SDV patent applications at the EPO 2011-2017

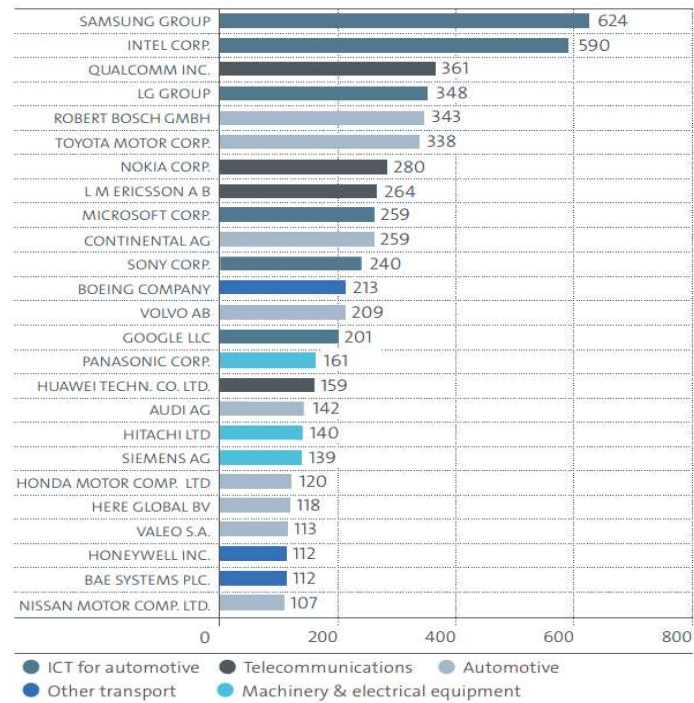


Source: EPO

Intellectual Property Landscape for Autonomous and Connected Vehicles



Top 25 SDV applicants at the EPO 2011-2017



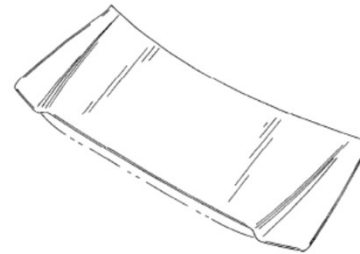
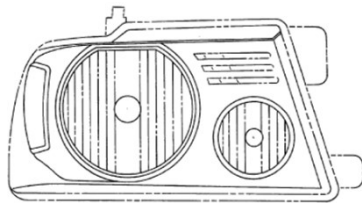
Source: EPO

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 - Utility cover new articles of manufacture, machine, chemical composition or process
 - Examples: Lidar for autonomous vehicles, infotainment systems, battery technology
 - David Hall, inventor of 3D Lidar, recent inventor of the year. He has over 30 patents and his company Velodyne Lidar Inc. supplies many manufacturers with Lidar sensors.
- Design Patents
 - Cover ornamental designs on articles
 - Designs on shape of cars and car parts, user interfaces such as infotainment displays
 - Recent litigation surrounding the use design patents to cover the shape of car parts.
 - [Automotive Body Parts Association \("ABPA"\) v. Ford Global Technologies, LLC, Case No. 2:15-cv-10137 \(E.D. Mich. Feb. 20, 2018\)](#)

Patents

- Autobody Parts Association brought a declaratory judgment action against Ford on behalf of its members. Ford brought infringement suits on F-150 auto body parts against members of the ABPA:



- ABPA argued that there is no design patent protection for functional shapes and that autobody parts are always functional.
- The Court disagreed, finding the look of a vehicle matters, and protection with design patents is appropriate.

Trademarks and Trade Dress

A **trademark** is a word, phrase, design, sound, color, shape, scent, etc., or combination (not all countries recognize all these forms), which is used in trade with goods to indicate the source of the goods and to distinguish them from the goods of others.

- In 1985 there were about 75,000 names trademarked in the automotive space.
- Today there are 800,000.
- Can be difficult to find a name and localize it in markets around the world.

A **trade dress** is similar to a trademark except that it protects a product's physical appearance, including its size, shape, color, design, and texture

- Trade dress applies to the shape and appearance of vehicles.
- Land Rover has sought trade dress protection for the Land Rover Defender.
- Billionaire Ineos founder Jim Ratcliff is building a "Defender" inspired vehicle

Trade Secrets and UTSA

- Uniform Trade Secrets Act (UTSA) – Adopted in every state except NY
- Under UTSA, “Trade secret” means information, including a formula, pattern, compilation, program device, method, technique, or process, that:
 - derives independent economic value, actual or potential, from not being generally know to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and
 - is the subject of efforts that are reasonable under the circumstances to maintain its secrecy
- Trade secrets can potentially be used to protect confidential business plans, technologies, software source code, schematics, etc.
- Mobility of employees can create trade secret issues when an employee goes from one automotive company to another
 - Zenimax v. Facebook (\$600 million verdict)
 - Waymo v. Uber
 - Tesla v. Zoox

Copyrights

- “Copyright protection subsists, in accordance with this title, in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”
- Copyrights do NOT cover useful works
- “Bundle” of Exclusive Rights of Copyright Owner
 - Reproduction (Copies)
 - Create Derivative Works
 - Distribution
 - Publicly Display or Performance
- Inexpensive and easy to obtain
- Copyrights cover software, pictorial and sculptural works.
- Digital Millenium Copyright Act Protects automotive software and circumvention of protections.
- Computer Fraud and Abuse act also protects automotive software from hacking
- Right to repair is a countervailing trend in conflict to some extent with DMCA

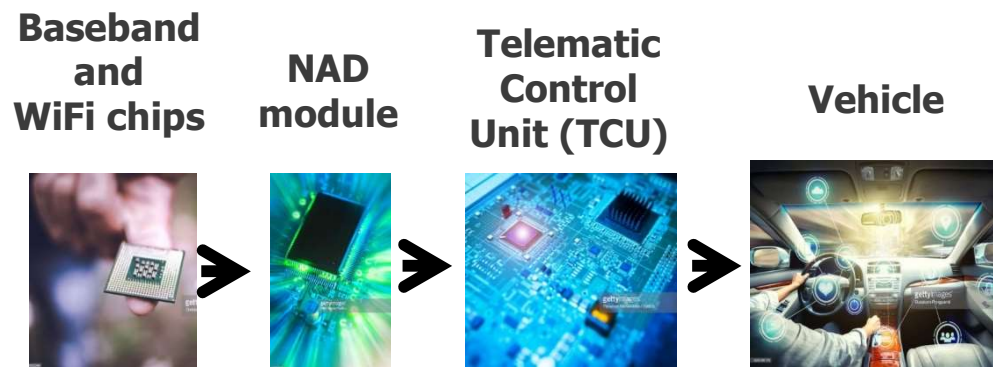
IP Trends in Automotive

- Patent Filings on Electrification of Vehicles are way up
- First patent pools are starting to appear in the automotive space
 - Avanci, LLC offering first patent pool on connected cars.
 - BMW, and recently Audi, Porsche reportedly licensees
 - MPEG LA is licensing patents on EV charging stations.
 - Pools offer aggregated sets of patents for a single price
 - Generally must be tied to a standard to pass antitrust scrutiny
- Wireless players are seeking to sell patent licenses to automotive players
 - Nokia v. Daimler dispute at European Commission
 - Raises SEP issues
 - Licensing vehicle makers is a change from licensing suppliers

SEP, FRAND and the Automotive Value Chain

Fair, Reasonable and Non-Discriminatory

The Automotive Value Chain



FRAND and the Automotive Value Chain

GENERAL PREMISE: Owners of SEPs must generally agree to give a commitment to license these patents to on FRAND terms as a condition for inclusion of their technology into the standard.

COMPETING VIEWS

- | | |
|---|---|
| <ul style="list-style-type: none">• SEP owners should be free to choose at which level of the supply chain they grant licenses (e.g., finished product makers or manufacturers of components)• SEP owners should be able to offer use based licenses and charge different rates depending on the end use made of the SEP (even if technology covered by the SEP is the same) | <ul style="list-style-type: none">• SEP owners are obligated to license any willing licensee regardless of the level of the supply chain in which the potential licensee is situated• The technology covered by the SEP fulfils exactly the same role in any standard-compliant product regardless of its end-use because the function of the technology covered by the SEP is defined by the standard |
|---|---|

Additional Licensing Trends in Automotive

Licensing of technology from software vendors to established players

- Microsoft, Google
- Infotainment systems and connected cars

License On Transfer for Patents

- Google led program
- Ford, GM, Honda members
- Seeks limit disruptive aspects of patents when transferred from one company to another

SECTION 06

ANTITRUST AND EMERGING TECHNOLOGY



Capitalizing Through Collaboration



EFFICIENCIES

- Pool resources and technical know-how
- Combined production capacity to meet initial low demand
- Risk mitigation



STANDARDS

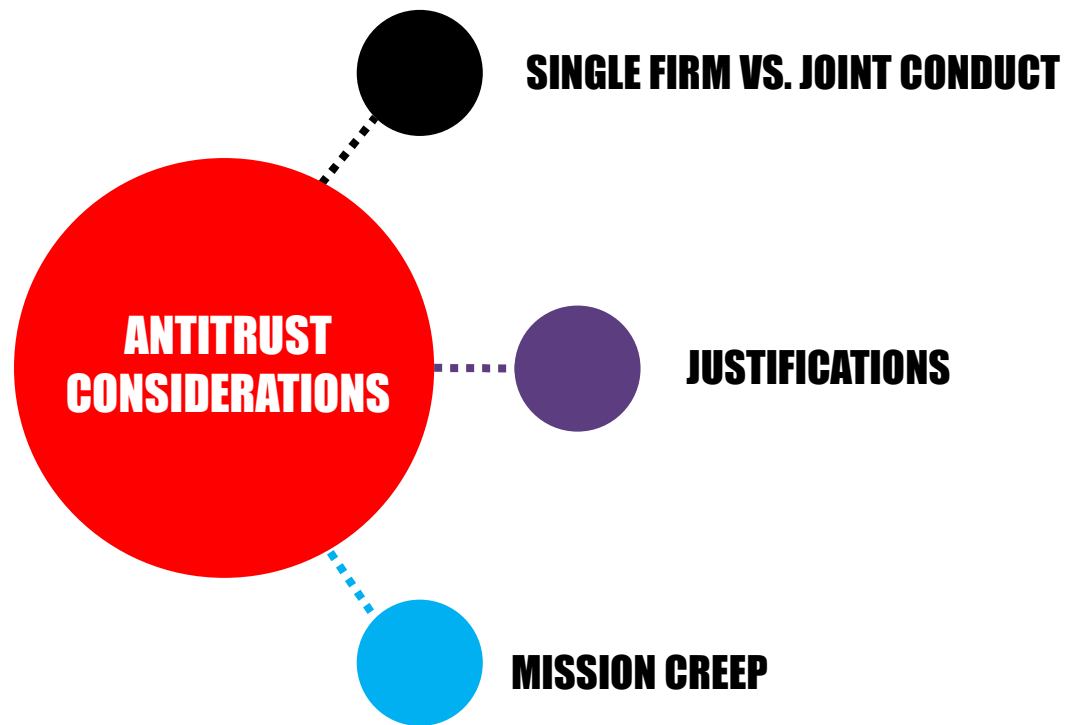
- Create new markets or ecosystem
- Promote greater adoption of new technology
- Facilitate interoperability
- Reduce costs



JOINT PETITIONING

- Leverage alignment among industry players
- Strength in numbers
- Reduce costs

Navigating the road when collaborating with competitors



Antitrust Basics: Coordinated Action

***Per Se* Illegal**

Conduct so pernicious, the only question is whether it happened (*e.g.*, price-fixing, horizontal market allocation, agreements to not compete for employees, bid-rigging)

Sherman Act § 1:

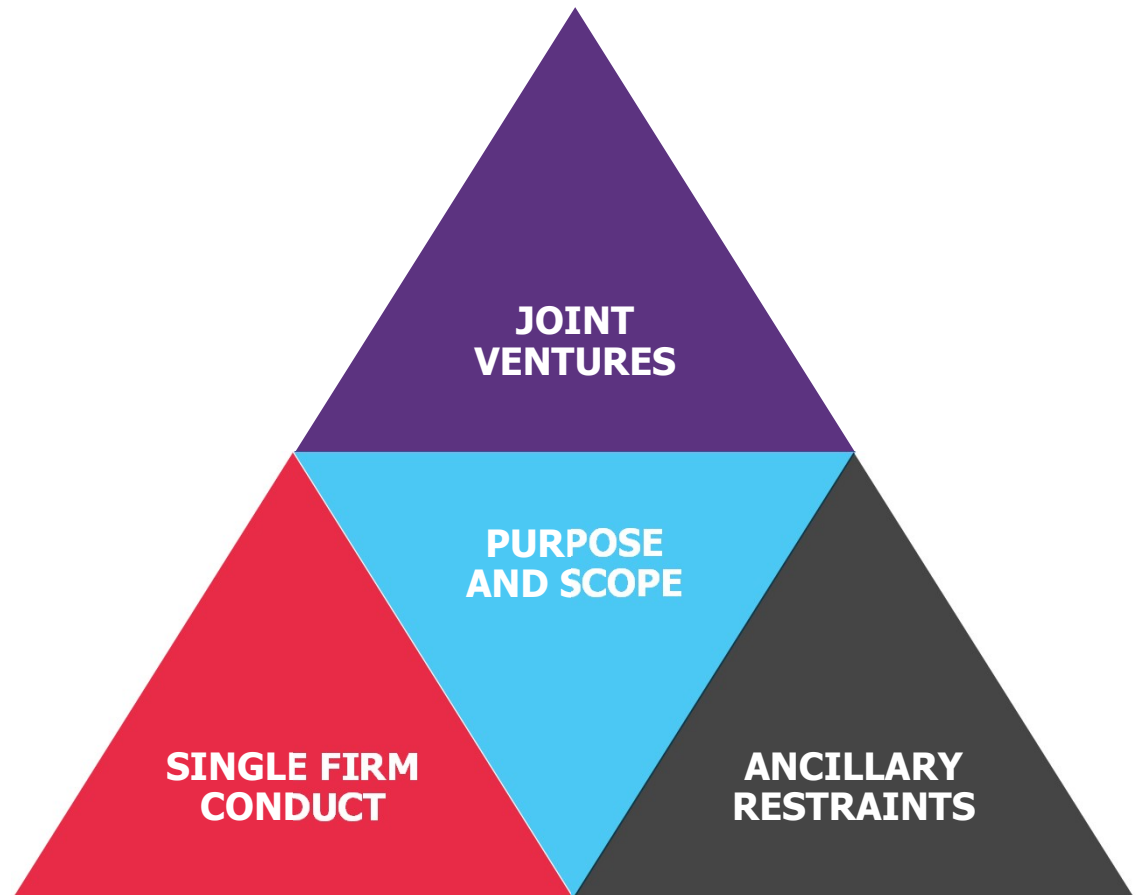
“Every contract, combination . . . , or conspiracy, in restraint of trade or commerce . . . , is declared to be illegal.”

Rule of Reason Analysis

Considers justification for conduct, weighs an agreement’s pro- and anti-competitive effects

JOINT VENTURES

When businesses who otherwise compete pool their capital, and share the risk of loss and the opportunity for profit, they are typically regarded as a single firm competing with other sellers in the market



SUMMARY

HYPOTHETICAL CASE STUDY: CHARGING STATION JOINT VENTURE

DETAILS

- Hypothetical fact pattern based on *Texaco v. Dagher*, which was about a JV that sold gas to gas stations.
- Competitor A and Competitor B create a joint venture to sell EV charging equipment to charging stations in the western United States. The competitors agree to pool resources and share the risk and profits of the new joint venture. The JV sells the charging equipment at one price, but it is sold under the original competitors' brand names.
- The FTC and state AGs of California, Hawaii, Oregon, and Washington reviewed the JV and approved it after it was first formed.
- By setting a single price and selling under their original brand names, are the competitors engaging in price-fixing that is *per se* illegal under the antitrust laws?

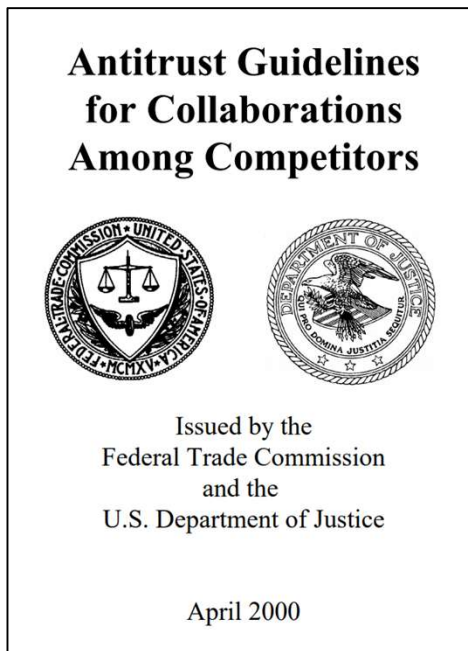
Rule of Reason Analysis

**ANTICOMPETITIVE
EFFECTS**



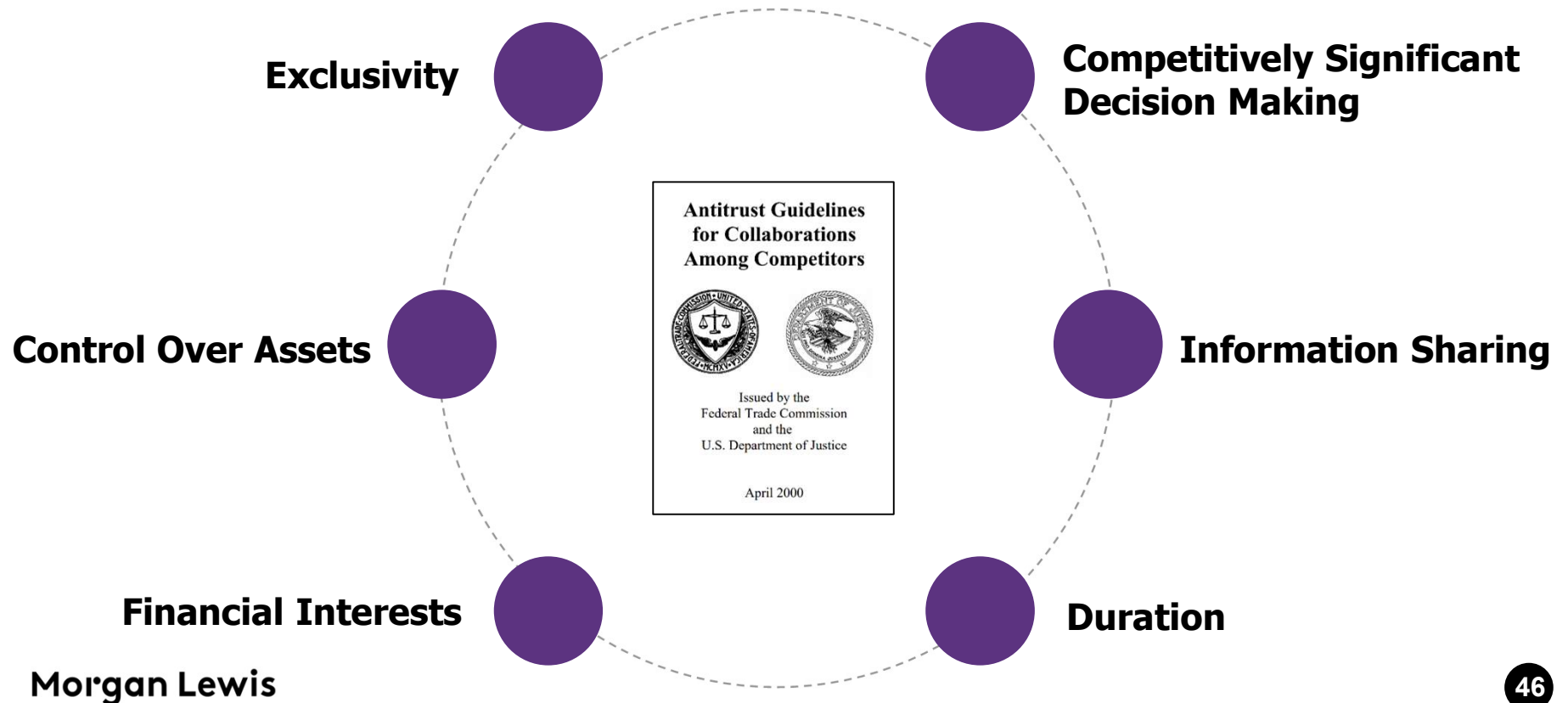
**PROCOMPETITIVE
BENEFITS**

Rule of Reason Analysis of Competitor Collaborations



- Flexible and context-specific inquiry
- Evaluate business purpose
 - Does it cause obvious anticompetitive harm?
- Define relevant market(s) and calculate market share range
 - Low range: collaboration itself
 - High range: sum of the collaboration plus its participants
- Safety Zone:
 - Agencies rarely challenge collaborations where market shares collectively account for 20% or less of relevant market
- If shares raise red flags:
 - evaluate effect of potential market entry or expansion
 - consider other factors regarding the collaboration

Rule of Reason Analysis of Competitor Collaborations



Business Review Letter

Formal Request

Investigation

Letter Issued

FORMAL REQUEST

- Business review process begins when a firm submits a formal request to the DOJ

INVESTIGATION

- DOJ opens an investigation and may research market conditions and conduct interviews
- Relies mostly on the factual representations of the firm requesting review
- Guidance is based on the facts explained in the request, so little incentive to withhold information

LETTER ISSUED

- DOJ issues a letter stating one of three things
 - No intention to challenge the proposed conduct
 - Intends to challenge the proposed conduct
 - Cannot make a decision based on the facts in the request or the conditions of the market

SUMMARY

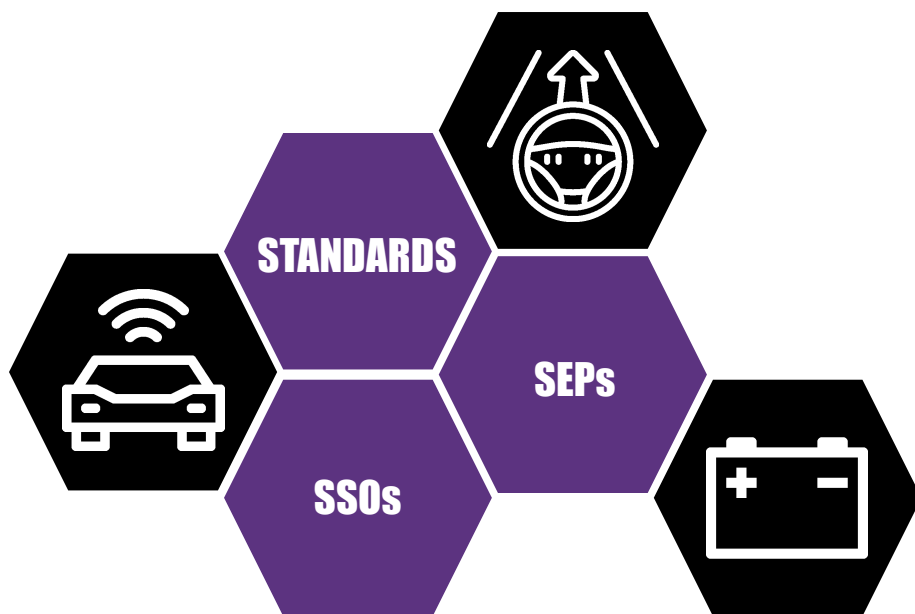
CASE STUDY: BUSINESS REVIEW LETTER

AVANCI 

DETAILS

- DOJ identified procompetitive benefits of joint patent pool
 - Facilitates licensing
- DOJ identified potential anticompetitive effects (but believed these were sufficiently mitigated):
 - Price fixing and tying concerns limited by exclusion of substitutes and essentiality review
 - No exclusivity because bilateral licensing and joint licensing allowed outside pool
 - Potential competitive harm from field of use restriction outweighed by potential efficiencies
 - Limited access to competitively sensitive information

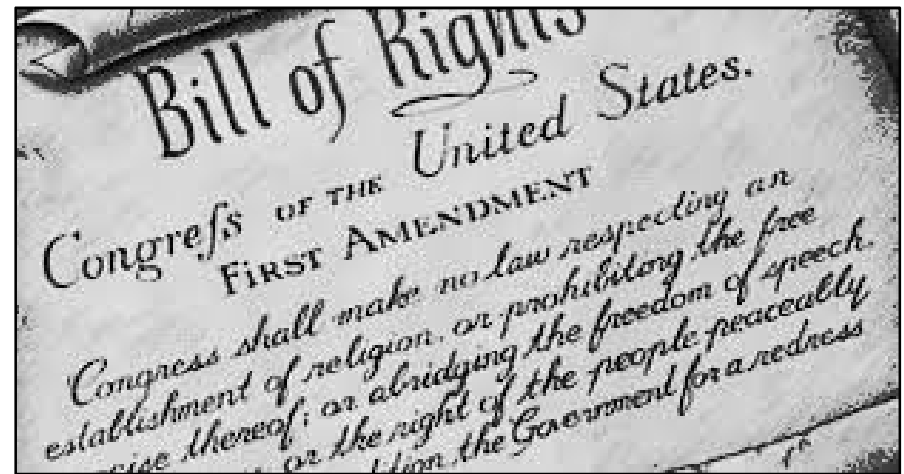
Standards Setting



- Industry standards can be an economic engine
 - Facilitate interoperability of products and networks
 - Increase innovation and efficiency
 - Reduce costs and encourage market entry
- Typically occurs in the context of Standard Setting Organizations (SSOs)
- Main concern is standard-essential patents (SEPs)
 - Disclosure of IP during standard setting process
 - FRAND Commitment?
 - “Hold up”: The ability of an IP holder to extract more favorable licensing terms after a standard is set

Joint Petitioning/Lobbying

- Collaborating for the purpose of petitioning a government department (e.g., agency, legislature, court) is immune from antitrust liability
 - Document the purpose and scope
 - Apply safeguards on exchange of information
- Note: The immunity is not a bar to discovery



Questions?

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THANK YOU

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Our Global Reach

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