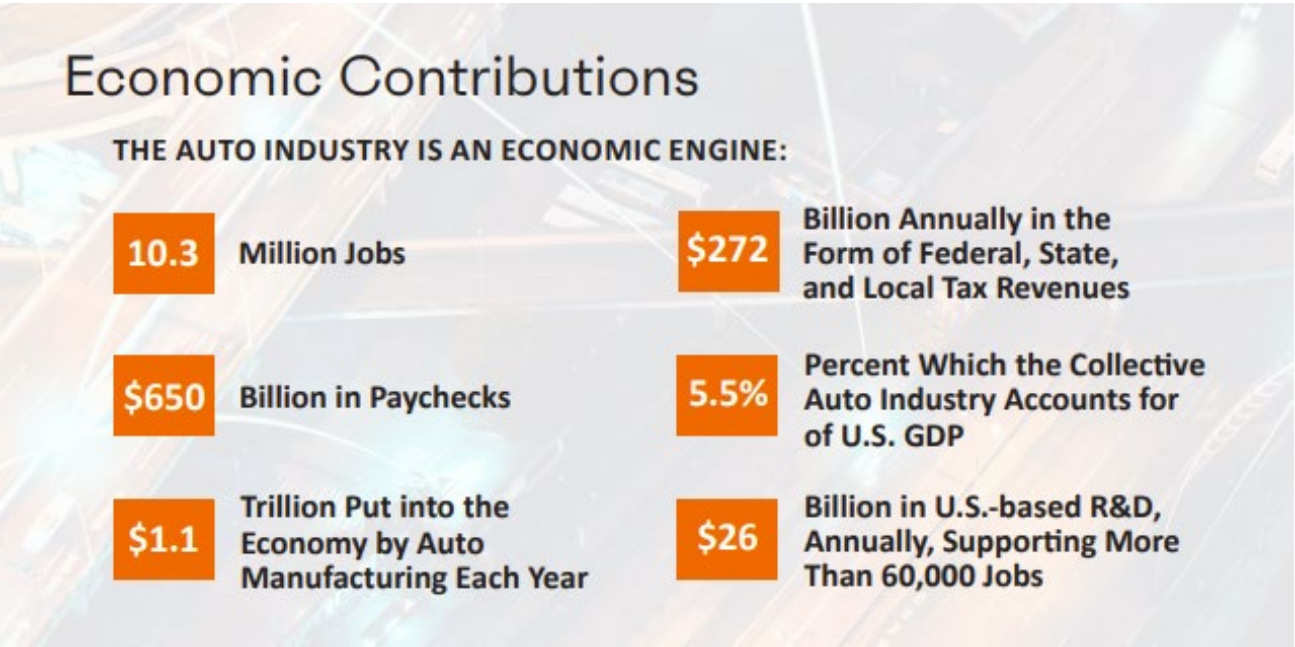
ALLIANCE FOR AUTOMOTIVE INNOVATION

The Automated Future – What is at Stake?

Leadership in automotive technology has underpinned a century of U.S. economic growth. Maintaining and enhancing U.S. leadership in automotive innovation and manufacturing is not just about the future of the auto industry – it is about the nation's global competitiveness and economic security. The nations that lead the development and adoption of innovative technologies, such as electrification, connectivity, and automation, will also shape supply chains, define global standards and, potentially, reshape the international marketplace



Foreign competitors are moving quickly to close the gap in U.S. leadership in automated vehicles. In recent months, multiple countries have approved deployments of highly automated vehicles (Level 3 and higher), including the launch of a driverless taxi service by Chinese AV developer, Baidu, in Beijing.

Automation and Automated Vehicles (AVs) are central to this transformative moment for personal mobility.

- **Safety:** The National Highway Traffic Safety Administration (NHTSA) has found that 94 percent of car crashes are attributable to human choice or error. Supplementing or even replacing the human driver with advanced sensors and other technology can dramatically decrease the frequency and severity of these crashes. Unlike conventional human drivers, AVs can't get distracted, drive impaired or fall asleep at the wheel.

- **Societal and Economic Benefits:** AVs and new mobility service models also open the door to countless social and economic opportunities, including
    - increased mobility for older adults and people with disabilities,

- reducing traffic congestion,
- reducing emissions,
- and fostering investment and economic growth.

- With all those benefits, no wonder some predict a potential global market of $8 trillion for AV technologies.[1]

Today, the U.S. is at the forefront of AV innovation and American companies are market leaders in AV development. According to KPMG, the U.S. is home to the headquarters of 420 AV companies, 44 percent of all companies tracked for their annual Autonomous Vehicles Readiness Index.[2] AV companies in the United States are safely testing vehicles in California, Arizona, Nevada, Texas, Florida, Michigan, Pennsylvania and elsewhere, and are making significant investments to carry that forward. **As technologies mature, however, companies need a pathway to scale their development.** That is why a responsible federal framework for the safe development and deployment of AVs in the United States is so important – to preserve U.S. leadership in this life-saving and life-changing technology and ensure U.S. innovations benefit the U.S. public, society, and economy.

> *…automated vehicle technology is coming, its advancing very quickly, it is something that holds a potential to be transformative and I think in many ways policy has not kept up.*
>
> – Secretary Pete Buttigieg, January 21, 2021

While the U.S. is well positioned to continue its long-standing leadership in automotive innovation, we cannot be complacent. Across the globe, nations are backing bold commitments with government investments and supporting policies. As evidenced by experience in other sectors – such as information and communications technologies – as well as the current EV battery supply chain, falling behind global competitors presents long-term risks to U.S. competitiveness and economic security.

Foreign competitors are moving forward with plans to support development of AV technologies. Across Europe, nations are adopting policies supportive of AV testing and development. For example:

- Germany is passing a Level 4 law (amending road safety laws and type approval regulations) on May 28th;

[1] https://www.cnbc.com/2020/02/05/gms-cruise-values-autonomous-vehicle-industry-at-8-trillion.html

[2] https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/07/2020-autonomous-vehicles-readiness-index.pdf

- The French Council of Ministers passed an ordinance on April 14th to amend road traffic laws to permit AVs, with type approval requirements to follow by September of next year;
- The UK recently legalized ALKS, and it's Law Commissions are actively engaged in consultations on Level 4; and,
- the European Commission has kicked off the process to revise EU-wide type approval for Level 4 and projects it will be done in 2022.

Perhaps the greatest long-term threat to U.S. leadership on AV technologies is China. While currently well behind in the research, testing, and development of these technologies, China is moving swiftly to close the gap with other global leaders in AV innovation.

- Last year, the Chinese government released their national intelligent vehicle strategy. This national strategy was coordinated across 11 governmental departments and reflects a unified national approach to AV development.
    - The plan specifically calls for accelerating AV development, removing regulatory barriers and enhancing direct coordination with industry.
    - The plan also includes specific goals for scaling commercialization of automated vehicles by 2025.

- Companies like Huawei have made clear they intend to pull ahead in the self-driving race, taking advantage of the COVID-induced downturn and leveraging regulatory barriers against us.

- Despite U.S. leadership, Chinese companies are catching up:

    - In collaboration with the Chinese government, a leading Chinese AV developer, AutoX, announced this past December that it would be removing safety drivers and remote assistance operators from its fleet of vehicles in Shenzhen.

    - Just this month, Chinese AV developer Baidu launched a driverless taxi service in Beijing

    - In fact, three of the seven AV developers approved for testing in California are Chinese companies – including Baidu and AutoX

The nations that lead the development of AVs will have the potential to guide the development of international standards, control supply chains, and define international markets. In a technology like automated vehicles, this could have implications far beyond transportation. AVs are directly tied to the development of artificial intelligence systems. As noted in a recent report by CSIS:

> The AV sector is a critical lynchpin to U.S. leadership in Artificial Intelligence (AI). In 2019, the AV industry led all other AI sectors as a destination for global investment. As autonomous vehicles (AVs) move toward commercialization, the regulatory environment

can be a source of advantage. Yet, in the global AV race, Beijing currently holds the regulatory advantage due to its commitment to being a first-mover in AI and AV, giving Chinese companies more freedom to test vehicles and collect valuable data. In order to compete with China, the United States must adopt a regulatory framework that allows space for US companies to continue to gather additional data of their own that can be used to innovate and keep pace with competitors.[3]

The U.S. has an opportunity to advance global leadership in developing these revolutionary technologies and new mobility business models through a national approach that reduces uncertainty and paves the way to long-term success.

> *As the potential for deployment on public roads approaches, the successful transition and adoption of AVs, which will be dependent on scaled development, in both China and the United States will hinge on more than this initial approach around testing. China's top-down policy implementation, direct support for development, and close involvement by the central government could provide it with an edge in AV development. Coherent regulatory frameworks supported by a national interest in becoming an "AI leader" may foster a more innovation-friendly regulatory environment in China. In contrast, regulatory fragmentation in the United States might slow deployment (CSIS)*

That is why last year we released the *Policy Roadmap to Advance Automated Vehicle Innovation.*

The Roadmap outlines the auto industry's AV policy priorities and includes fourteen specific recommendations that can be implemented by federal policymakers over the next four years to facilitate the testing and deployment of AVs at scale. These recommendations are focused on reforming regulations, harmonizing policies, and laying the foundation to achieve longer-term objectives – including expanding the number of exemptions that DOT can provide on a case case-by by-case basis--with safety oversight and full enforcement powers--which can then provide the data necessary to support future Federal Motor Vehicle Safety Standards for AVs.

[3] https://www.csis.org/analysis/ai-strategies-and-autonomous-vehicles-development