# ADAS AND CVT SYSTEMS

## Charting the Channel Evolution

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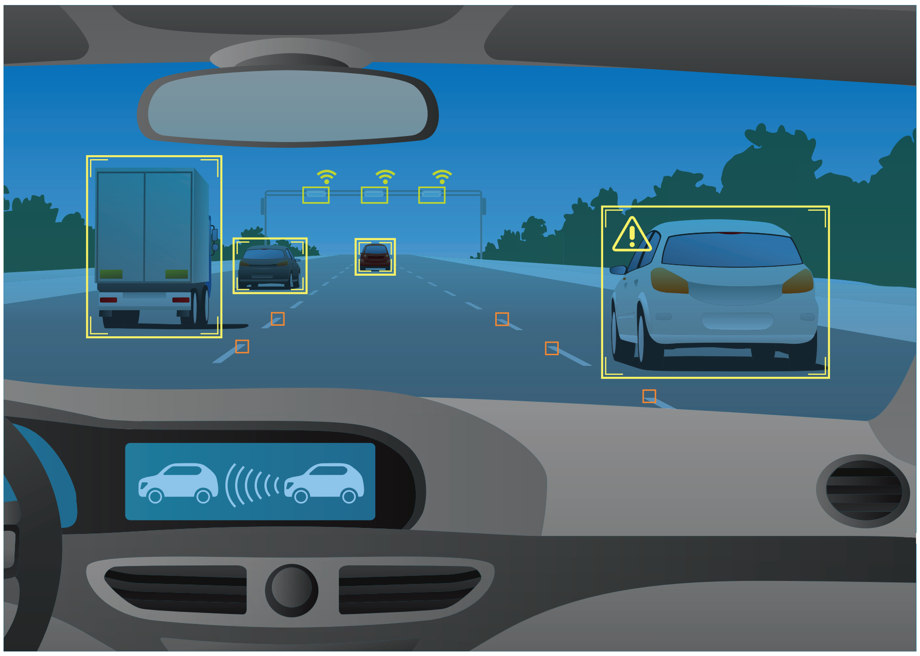


**Advanced driver assistance systems (ADAS) are bringing a host of changes to the aftermarket. To embrace these opportunities, channel and service providers must plan now to acquire the proper education, equipment and skilled personnel to truly thrive.**

**SEMA research indicates that the U.S. aftermarket for advanced driver assistance systems (ADAS) and connected vehicle technologies (CVT), although still in its infancy, can be expected to grow into a $1.5 billion industry within the next five years. With so much at stake in these rapidly emerging technologies, SEMA has made identifying ADAS/CVT opportunities for association members a key priority.**

The supplier landscape for these technologies is currently limited, spelling plenty of growth potential for new participants ready to enter the marketplace and stake out a strong presence in multiple product categories. In the meantime, channel and service providers must start now to acquire the proper education, equipment and skilled personnel if they are to successfully adapt to this changing market and truly thrive.

On the consumer side, slow early adoption of ADAS/CVT products is now moving toward greater awareness and demand for performance safety enhancements. The aftermarket is uniquely positioned to help meet that demand, especially in older or lower-trim vehicles that can benefit from such passive systems as parking assistance, forward collision warning and blind-spot detection, among others. As the industry grows in its ability to offer more innovative ADAS/CVT solutions, SEMA-led research by Ducker Worldwide and the Center for Automotive Research expects significant evolution in supplier/sales channels.

In this third installment of our eight-part *SEMA News* series highlighting key "SEMA Advanced Vehicle Technology Report" findings, we take a look at the anticipated reshaping of those channels. An interview with SEMA Vice President of Technology John Waraniak examining the hows and whys of such transformations can be found on p. 112. Readers are also encouraged to download the full report at www.sema.org/avt-opportunities.

### Channel Evolution

The channel structure for ADAS/CVT technologies is expected to evolve over the next five to 10 years to eventually emulate the present specialty aftermarket structure. OEM vehicle dealers currently hold an advantage in access to original ADAS equipment and data, which is normally specially calibrated to each vehicle make and model. However, legislation such as the Right to Repair Act and other advancements by aftermarket suppliers will open the ADAS/CVT channel structure to parts chains and independent specialty shops. That will stimulate broader ADAS participation among aftermarket consumers. As that change progresses, SEMA forecasts that vehicle dealers who now control 10% of sales and service will see their share of the market cut in half. Meanwhile, retail and online parts chains are forecasted to grow to 35% market share, with independent service providers settling into 60%. (See charts ADAS/CVT Channel Evolution.)

## Independent Repairers

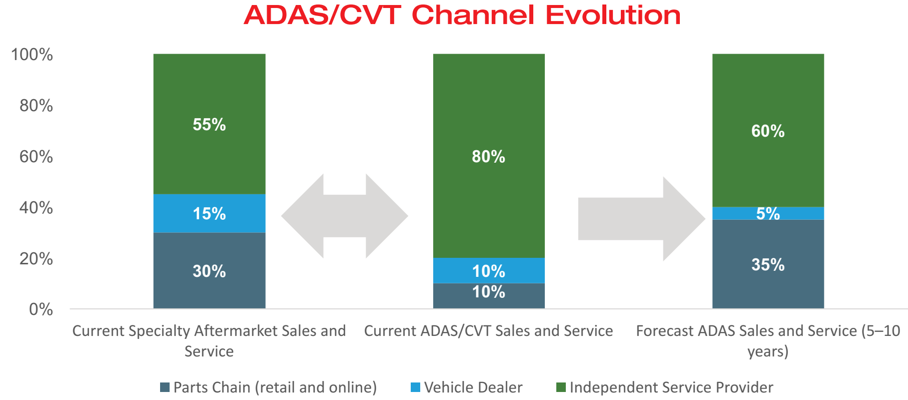
In the coming decade, independent repairers will have a growing presence in the aftermarket channel structure. While that channel/service structure will mature and include specialty dealers/suppliers and upfitters, changing technologies will impact the profile and skills required of shop and retail personnel. The necessary skill sets will come to include deeper knowledge of OE systems and diagnostics, testing and calibration abilities, and wide-ranging technological knowhow.

## Value Chain Analysis

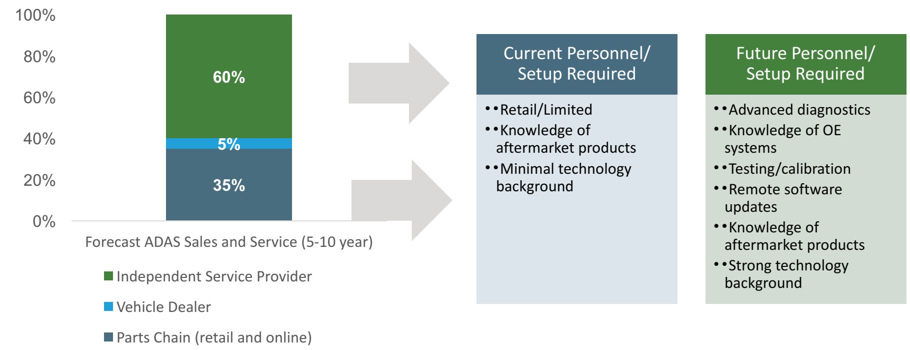
Even though aftermarket ADAS products are relatively new, market participants indicate strong margins that will continue to grow with technology and supply-chain advances. Computer and mobile semiconductor and component manufacturers are presently the principal suppliers of cameras, chips, processors, sensors and other key parts for multiple ADAS systems. Specialty and established infotainment manufacturers have dominated the early entrants in the ADAS aftermarket manufacturing channel startup. As both aggregators and producers of ADAS technologies, they have concentrated mainly on rearview cameras, forward-collision warning, blind-spot monitoring and lane-departure warning systems. Among channel participants, gross margins (as defined by total revenue minus the cost of goods, divided by sales revenue) have been extremely good for chain parts entities (approximately 40%), other/independent outlets (approximately 60%) and OEs (approximately 50%).

## Supplier Landscape

Zeroing in on the supplier landscape, SEMA research indicates that leading market participants currently account for the majority of the ADAS aftermarket (see chart ADAS Market Revenue Segmentation). That is mainly due to their ability to leverage a comprehensive product offering within multiple product categories. The




■ **SEMA research predicts that ADAS/CVT aftermarket sales and service channels will evolve over the next five to 10 years to eventually emulate the current specialty aftermarket structure.**




■ **While the channel/service structure will certainly mature to include specialty dealer/suppliers and upfitters, the profile and skills required of their personnel will also evolve alongside increasingly sophisticated ADAS/CVT technologies.**

market revenue segmentation breaks down as follows:

- **Comprehensive/Leading Market Participants:** These are composed of manufacturers with $100 million in ADAS revenue participating in multiple product categories with market-leading positions in those segments. Product categories include passive parking assistance, blind-spot monitoring, collision avoidance, lane-departure warning, automatic emergency braking, lane-centering and lane-keeping assistance, and traffic-jam assistance. These participants currently account for 40% of ADAS market revenue.
- **Secondary Market Participants:** These are manufacturers with less than $100 million in ADAS revenue but also participating in multiple product segments with secondary positions. Product categories include camera-based systems (for blind-spot safety, 360 surround, etc.), blind-spot detection, lane-departure warning and forward-collision warning. These participants account for 30% of ADAS market revenue.
- **Specialized Market Participants:** Theses are manufacturers focused on a single ADAS product segment holding a leading or secondary market position within that segment. Product categories include head-up displays, GPS, and rearview-assist cameras. These participants account for 30% of ADAS market revenue.

SEMA research also finds that a full 60% of aftermarket ADAS sales are currently comprised of fleet applications. Fleets are more likely to utilize ADAS due to safety concerns over a large vehicle population, with ADAS providing protection against rising insurance rates.

However, individual end users are forecasted to increase in their share to 50% of the market by 2021. This growing share will be the result of increasing familiarity with ADAS technologies. (See chart ADAS Aftermarket End-User Segmentation.)

## Regulatory Impact

Like other industry segments, the regulatory climate surrounding ADAS has an impact on the migration of these vehicle technologies into the aftermarket. Government mandates, especially, will play a key role in the adoption of systems at the OE level. Here are some examples at a glance:

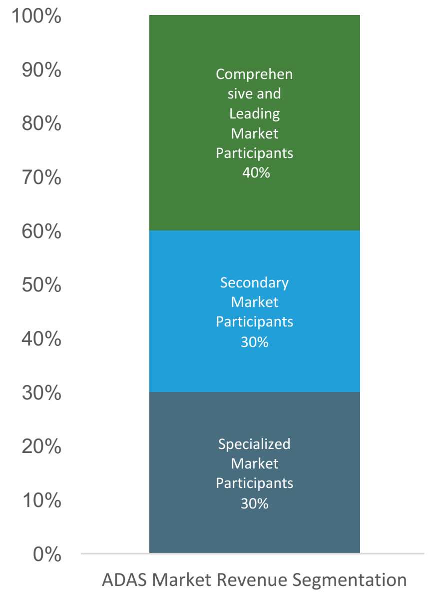
- Currently there are no regulations or proposed mandates in the United States pertaining to forward-collision warning, lateral-collision avoidance, night vision or head-up display. However, all of these systems fall under the recall authority of the National Highway Traffic Safety Administration (NHTSA) if defective. For the time being, that means aftermarket providers can avoid strict regulation, making these systems easy entry points for new participants.
- Electronic stability control (ESC) is mandated by Federal Motor Vehicle Safety Standards (FMVSS) No. 126. Vehicles not covered by the mandate need not comply with FMVSS even if retrofitted with ESC. These systems also fall under NHTSA's recall authority. For the aftermarket, there is a low barrier of entry for late-model vehicles.
- Backup cameras are now mandated by U.S. Department of Transportation (U.S. DOT) NHTSA FMVSS No. 111, with full phase-in as of May 1, 2018. This will affect the aftermarket by increasing consumer awareness and demand for this equipment on older-model vehicles that fall outside the mandate.
- Auto emergency braking, anti-lock braking, traction control, advanced cruise control and similar specialty enhanced performance systems currently are unregulated but are indirectly impacted by FMVSS No. 126. In fact, the U.S. DOT NHTSA has denied a petition for rulemaking. However, modification of braking systems to 2012 or later vehicles must remain compliant with FMVSS No. 126. Again, this means a low barrier of regulation for aftermarket entry, but the complicated nature of integration for these systems integration remains a barrier.
- Dynamic headlights fall under FMVSS No. 108 and are not allowed in the United States. The regulation requires headlamps to consist of high- and low-beam lights. NHTSA can enforce this regulation when headlamps cause excessive glare or confusion for other drivers. Due to these legalities, there is no aftermarket presence in this category.

## Reading the Data

To sum up, the supply and sales channels for ADAS/CVT technologies are already evolving, and there is space for new participants with low barrier of entry. Participants in this market are currently seeing strong margins that should continue to grow over the next decade. Moreover, the regulatory atmosphere is favorable for growth.

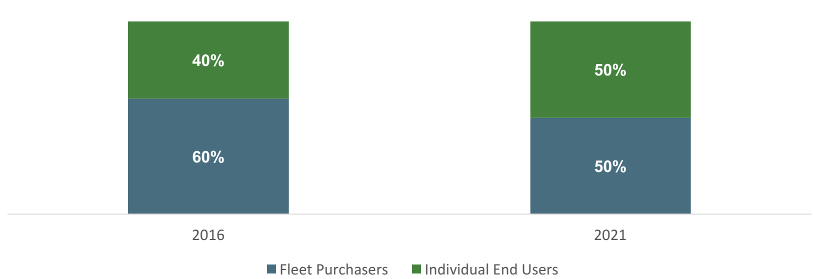
While OEMs, dealerships and tech companies currently control much of the marketplace, that landscape will soon change. Within the sales and service channels, independent repairers and retailers are poised to take more of the ADAS market share in the near future. To do so, however, personnel must acquire new technological skill sets and become conversant in these advanced systems. Regardless, ADAS/CVT systems will inevitably impact every segment of the aftermarket, so now is the time to evaluate your business readiness for the ADAS/CVT revolution.

### ADAS Market Revenue Segmentation (by Market Participant Type)




■ **Revenue segmentation among Comprehensive/Leading, Secondary and Specialized market participants is currently split 40%, 30% and 30%, respectively.**

### ADAS Aftermarket End-User Segmentation




■ **Within the supplier landscape, leading market participants currently account for the majority of the ADAS aftermarket, as they are able to leverage a comprehensive product offering within multiple categories.**

### Stay Informed!

The tremendous potential ahead for the specialty-equipment industry is detailed in the "SEMA Advanced Vehicle Technology Opportunities Report." To download your copy, go to www.sema.org/avt-opportunities.

For additional information about ADAS technologies and how they may impact your business, visit the SEMA Garage Vehicle Technology webpage at www.semagarage.com/services/vehicletechnology.