Accelerating the Adoption of Advanced Driver Assistance Systems (ADAS): "Tech-Celerate Now" Phase 1 Report

BACKGROUND

The Federal Motor Carrier Safety Administration (FMCSA) partnered with leading trucking industry associations[1] to initiate the "Tech-Celerate Now" program, focused on accelerating the adoption of advanced driver assistance systems (ADAS).

OBJECTIVES

The purpose of this report is to inform stakeholders, USDOT, and industry trade associations of the progress made in promoting the adoption of ADAS. This final report:

- Summarizes Phase 1 activities, including research on barriers to adoption, development of training and educational materials, development of recommended practices for fleet owners/operators, and execution of a national outreach campaign.

- Provides an assessment of impacts on ADAS awareness, perception, and adoption. This includes the survey methodology, a summary of the Baseline survey results, and details of the Year One post-outreach campaign survey results.

METHODS

In order to identify and address potential market barriers, Tech-Celerate Now began by assessing acceptance levels through the development of the "Baseline" survey.

Baseline survey findings and input from the industry advisory committee informed the development of outreach strategy and messaging. This outreach prioritized the education of both carriers and drivers to positively influence acceptance according to a five-point Likert scale of awareness and attitudes toward ADAS technology. Another "Affiliates" survey was distributed to ADAS technology suppliers and the findings were used to corroborate information and data collected in the Baseline survey.

Messaging focused on product information, efficacy, and industry impacts. Outreach channels included both print media, broadcast media, and the internet. The materials and outreach products were highlighted at industry events, news articles, press releases, webinars, and meetings. Notably, the outreach efforts included both focused stakeholder groups at meetings and webinars as well broad market outreach to over three million listeners through radio channels with good access to the truck driver population.

A second "Year One" post-outreach survey was developed, tested, and distributed as a follow-up to the Baseline survey. The Year One survey served as a program evaluation assessment; it documented changes over time in the awareness, perceptions and adoption levels described above. While other unrelated activities in the ADAS marketplace may have influenced carriers and drivers, the survey results were analyzed to examine the Tech-Celerate Now program's potential influence in adoption factors in the driver and motor carrier executive groups.

The analyses of both surveys document the impacts associated with the Tech-Celerate Now program.

FINDINGS

Table 1 summarizes the "Tech-Celerate Now" Phase I findings.

Table 1. Summary of findings.

Finding	Description
Awareness and Perception Improves	Significant differences in awareness of 11 different ADAS technologies were noted in pre- and post-outreach program surveys of carriers and drivers.
Increase Focus on Drivers	Higher awareness and positive perception were found among carrier executives than drivers for ADAS technologies. Adoption levels for carriers reflect an awareness that truck drivers have concerns about the use of active safety systems, the primary concern being that ADAS may take control away from drivers. Carriers are hesitant to implement technologies and programs that might hurt driver recruitment and retention, having consistently ranked "driver control is compromised" as one of their top concerns.
Outreach Channels Matter	All outreach formats and tools had some positive impact, but communications and meeting presentations through industry associations generated the largest response. Since driver acceptance (and influence from experiences shared in peer-to-peer exchanges) plays a large role in adoption, these outreach channels are most likely to assist in both gathering and sharing information that will support ADAS enhancement and adoption decisions.
Warning Systems Still Considered Beneficial	While the program primarily focused on active safety systems, the warning systems included were still viewed as beneficial by both carriers and drivers; carriers had considerably higher positive perceptions of safety improvements for these systems.
ADAS Adoption is Increasing	ADAS technology adoption by carriers and truck drivers have generally increased, with certain technologies having a more substantial increase. Carrier survey respondents reported an increase in average adoption level from 23.7 to 26.6, along with an increase of 8 percent in the category representing widest adoption. In the driver survey, the average adoption level across technologies was 18.8 in the Year One post-outreach survey as compared with 12.8 in Baseline. The proportion of drivers reporting the highest adoption level was also higher by an average by 8 percent over Baseline results.
More Emphasis is needed on Insurance Education & Industry Participation	Both truck drivers and motor carriers identified "lower insurance rates" as a primary motivator for adopting ADAS technologies. However, commercial auto insurance utilizes loss history and crash history to establish rates, and increased safety via adoption of ADAS requires multiple years of crash and safety data—post-adoption—to positively impact insurance costs. Future activities could include engagement with the insurance industry to identify messaging and new strategies for addressing carrier and driver needs for insurance cost relief.

CONCLUSIONS

Phase I research identified technical, market, and other barriers to adoption of ADAS and made progress in supporting future adoption through outreach activities and development of supporting resources for carriers and drivers. The survey analyses identified factors and trends showing the differences in perceptions across drivers and carrier executives for each ADAS technology and assessed the influence of outreach efforts on measures such as awareness. Survey results showed higher ADAS awareness levels in those who had been reached by Tech-Celerate Now and evidence that some ADAS purchase decisions were positively influenced by the program. The project results provide a better understanding of factors influencing ADAS adoption and perceptions.

To read the complete report, please visit: https://rosap.ntl.bts.gov/view/dot/73052

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