Improving road safety through technology

Implementing and leveraging technology in New Zealand's commercial driving sector

NZI has been insuring New Zealand businesses for more than 165 years, keeping pace with the challenges, opportunities, and risks faced by companies, including those in the commercial motor vehicle sector.

One of the core elements of NZI's business is its dedicated Fleet Risk Management team. The team works collaboratively with fleets around the country to create safer workplaces, improve driver performance, and help businesses leverage data and analytics to run more efficiently. The NZI team looks to identify trends that could help explain why accidents occur and therefore, how businesses could mitigate their risks.

A key trend the Fleet Risk Management team have been monitoring is the rapid evolution of safety technology and the extent to which this is being adopted into commercial fleets. Technology is now embedded in modern vehicles, aiding driving with manoeuvring, alerting and assisting drivers when they become distracted or when fatigue sets in. But, out on the road, is the technology helping our drivers as intended?

NZI set out to uncover how technology is impacting New Zealand's commercial drivers — from trucks and haulage through to courier and fleet cars. Qualitative and quantitative research has been carried out to determine how knowledgeable and receptive commercial drivers are to the new technology. In addition, the research looked at how fleet risk managers are supporting drivers with these advanced safety features.

Even with these advances in technology, there will continue to be a range of vehicles with varying levels of technology on the road, with an average vehicle age in New Zealand of 14.3 years for light vehicles and around 18 years for trucks.[1] Other questions were also explored as part of this research including, how long will it take for this technology to filter through? How will this mix be managed? And will older drivers adapt and embrace new ways of driving?

The research has been supplemented with expert testimony from NZI's Fleet Fit partners and industry professionals who share a commitment to reducing risk and improving safety on New Zealand roads.

Research was conducted independently by Martelletti Consulting who interviewed fleet managers and light commercial fleet drivers during November and December 2021.

[1]Ministry of Transport, Fleet Statistics 2020

Our Experts

Oliver Jepson
NZI, National Motor Manager

Oliver Jepson, NZI's National Motor Manager, specialises in Commercial Motor Insurance, tailoring insurance and fleet risk management solutions to some of New Zealand's largest motor fleets. Oliver joined the NZI Motor team in 2017 and has over 20 years of insurance experience. Prior to joining NZI, he was the Head of Motor at Zurich New Zealand and has held various senior motor underwriting roles with Lumley Insurance and Vero Insurance.

Oliver has a keen interest in motorsport and vehicle technology and spent his earlier years working as a professional camera operator, filming motorsport across the country. Now, his passion is to work with customers and brokers to find the best commercial motor and fleet risk management solutions for their business.

Charles Dawson
AutoSense, Chief Executive Officer

Charles has extensive experience in driver training and road safety, previously developing a business around practical driver training in Taupō, and managing FleetSafe NZ, a sophisticated driver education programme.

Charles now heads up AutoSense which provides driver and safety solutions geared towards commercial drivers. AutoSense is the New Zealand distributor of Guardian by Seeing Machines, world-leading technology that prevents driver fatigue and distraction-related events in real time.

Greg Murphy
AutoSense, Ambassador

Greg Murphy – former professional racing car driver turned road safety advocate.

Road safety is something Greg is passionate about, and his ambassadorship with AutoSense provides an opportunity to increase awareness of driver distraction and fatigue – two of the key factors in road accidents.

Gary Geeves
AMI MotorHub, Chief Executive Officer

Gary Geeves is the Chief Executive Officer at AMI MotorHub, a motor vehicle repair facility set up specifically for IAG NZ customers.

He has over 35 years' experience in the vehicle repair industry and has developed a thorough knowledge of the complexities of modern vehicle repairs.

From 1987 to 2016, he was the owner of Smart Collision Repairs, and was appointed chairman of the New Zealand Collision Repair Association, serving from 2009 to 2013. He was the New Zealand Business Development Manager, Capital S.M.A.R.T Repairs New Zealand from 2016 to 2019 and was a member of the NZ i-Car Board and on the NZ apprenticeship MITO review committee for Collision Repair.

He was awarded a lifetime achievement award and life membership to the Collision Repair Association of New Zealand.

Dom Kalasih

Ia Ara Aotearoa Transporting, Manager Policy and Safety

Dom, Ia Ara Aotearoa, Transporting New Zealand's General Manager Industry, has considerable knowledge surrounding health and safety and regulatory compliance. In addition to his mechanical engineering background, Dom has more than two decades of experience in road transport safety including roles as a senior engineer, heavy vehicle safety advisor, and logistics manager.

James Smith

National Road Carriers Association, Chief Operations Officer

James has extensive industry knowledge of the transportation industry with over 40 years of experience within New Zealand transport. James holds qualifications in Crash Investigation from the Institute of Police Technology and Management, as well as Strategic Studies from Lincoln University.

Kelly McLuckie

Success Formula, Senior Consultant

Kelly has over 20 years' experience in transport, logistics, and construction. Passionate about helping businesses solve leadership and management issues, Kelly has developed key skills to help customers understand and develop their team and business culture, plan and manage change, leadership training and more.

Kelly is the co-developer of the safety culture and leadership program 'Traction' which works with leaders to move their organisation to the next gear. Backed by qualifications in HR and change management, Kelly can help trouble shoot a wide range of business problems and get a great outcome.

Tony Warwood

EROAD, Executive General Manager

Tony, EROAD's Executive General Manager, leads the ANZ business, delivering great customer service and business growth in both Australia and New Zealand. With over 13 years in EROAD and previous work in the heavy transport industry, Tony has developed a detailed view of the sector.

Peter McKenzie
NZ Bus, Executive Director

Peter has an extensive background in the bus industry across Australia and New Zealand having worked as an operator, industry advisor and consultant to Government and local authorities for over 20 years. Peter has previously held senior executive positions in both private and publicly listed passenger transport organisations. As a consultant, Peter has completed several complex and high-profile projects in Australian capital cities and in New Zealand. Peter's executive role at NZ Bus focuses on assisting the management team on strategic projects and liaising with key stakeholders on business and transport development initiatives.

Greg Pert
Tranzliquid, Managing Director

Greg joined the road transport industry as an owner operator 35 years ago. In 2000, the family-owned company grew into a large fleet operator on a contractual partnership with Gull Petroleum. Today, Tranzliquid Logistics is a logistics and transport operator, with a fleet of tankers delivering mostly fuel and bitumen related products throughout NZ, mainly in the North Island, servicing a multitude of companies. The business remains family-owned and operated.

Greg is a former chairman of the Road Transport Forum board and is a member of Transporting NZ. He is a member of the Petroleum Industry Transport Safety Forum (PITSF) and a chartered fellow member of the Chartered Institute of Logistics and Transport (FCILT).

Kathy Schluter
Fuso NZ, Group Sales Manager

Kathy has extensive senior management experience in the transport industry and other sectors. Joining Fuso from telematics specialist EROAD, Kathy played a large part in EROAD's success as channel sales manager and brings the same drive into Fuso. Passionate about making the industry safer, Kathy is dedicated to making the industry safer and enhancing the reputation of a career as a professional truck driver.

Part One:
The impact of technology on distraction

Distraction is a major cause of preventable accidents on NZ roads.

Commercial drivers, many of whom are on the road more than other motorists, use company vehicles as their mobile offices, creating more opportunities for distraction.

The attention of modern drivers is often drawn to their devices and away from the road. Drivers text messaging are 23 times more likely to have an accident, and being distracted for just 4.6 seconds at 90km an hour is equivalent to driving the length of a rugby field blindfolded.[1] The consequences can be devastating.

318 people were killed in crashes in 2021 on New Zealand roads, indicating that road deaths remain stubbornly and tragically high, despite pandemic lockdowns.[2]

Oliver Jepson
NZI

National Motor Manager at NZI, Oliver Jepson, says that distraction is a big issue for fleet operators and customers. “We insure everybody — from taxi operators right up to some of the biggest fleets in New Zealand. We frequently talk with our customers to better understand the issues they face.” According to Jepson, one thing that fleet operators and customers consistently say is that they see a significant number of people being distracted behind the wheel. “There’s a huge amount of concern for the environment that they’re operating in. What we aim to do is make fleet operators and our customers aware of what they can proactively do to reduce risk from distraction, such as implementing driver assist technology and getting their team involved in training programmes.”

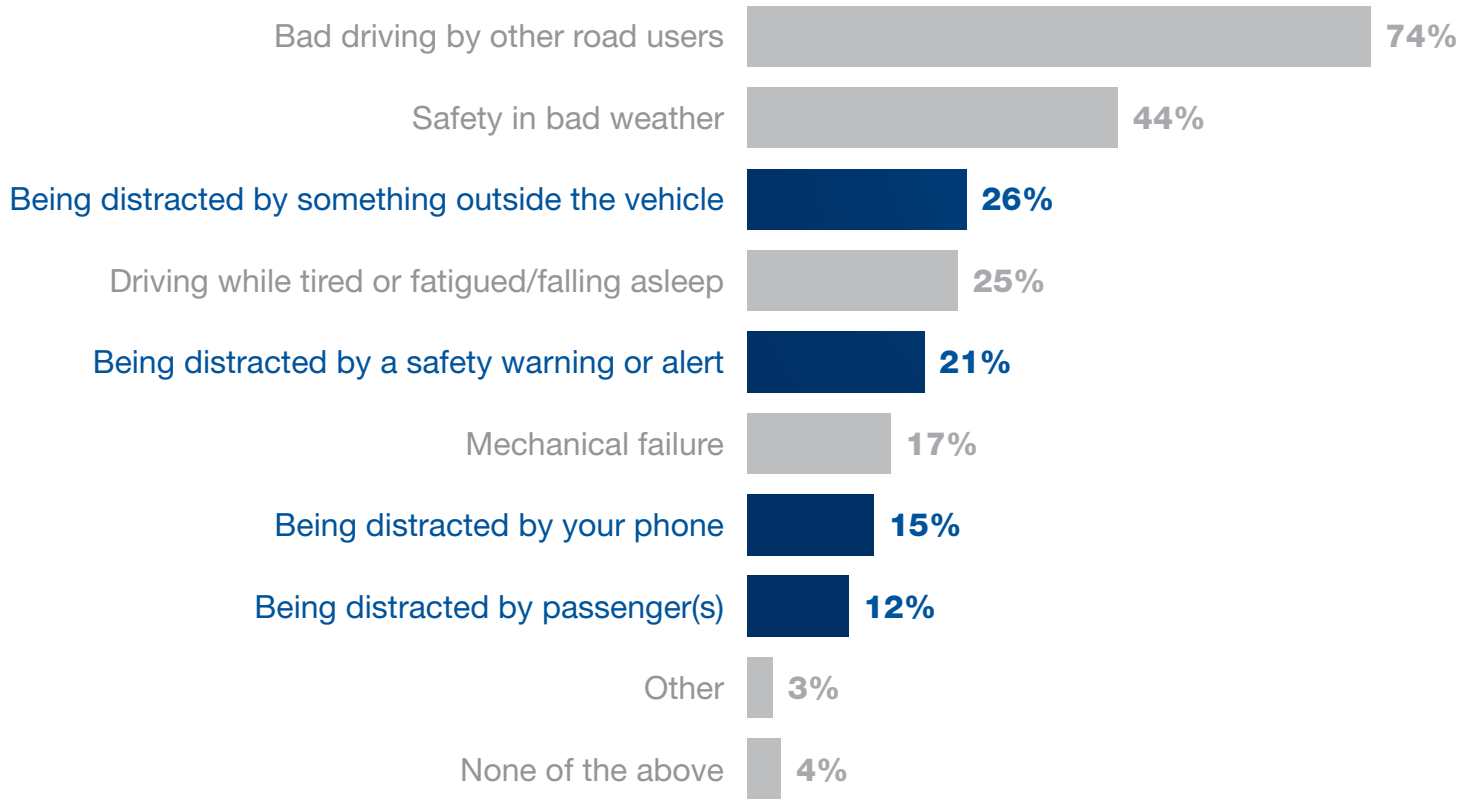
Jepson says the tools his team traditionally use to support the heavy vehicle sector also apply well to light commercial fleets. In Jepson’s experience, a lot of customers don’t think that there’s a distraction risk in light vehicle fleet driving, because of the comparatively few hours most do behind the wheel. “The reality is that distraction is a risk in light commercial as well. NZI’s Fleet Risk Management team are working with light vehicle fleets by putting together claims analyses and conducting safety awareness seminars, in-person and virtually. These seminars talk to the risk, or the cause, behind those more frequent claim types, which, consistently, is distraction.”

The research undertaken by NZI highlights these concerns around distraction.

> “I think it’s easy to say distraction is the key issue when driving a vehicle.”
>
> *Fleet Manager*

Drivers were asked to describe their major concerns when out on the road. As expected, there were some core concerns around other road users and safety in bad weather. Among the other responses were repeated concerns about distraction from things outside the vehicle, especially other drivers, but also from things within, such as phones, vehicle technologies, or passengers. A fifth of respondents cited safety warnings or alerts from vehicle safety technology as a potential distraction.

Driver concerns



> "Other drivers on the road not paying attention or using a phone while driving are my biggest concerns. I see too many people texting while driving."
>
> *Fleet Driver*

According to Jepson, the evolving technology is proving a great asset in tackling this issue of distraction, but there is also the possibility that some drivers may feel the features are too complicated, which might lead to disengagement. "ADAS, which stands for Advanced Driver Assistance Systems technology, has advanced a great deal, helping drivers reassert control and react to dangers on the road. It automates and enhances aspects of driving to correct human error, much of which occurs due to distraction. These advances are positive, but drivers need to be trained to use the technology effectively to gain the full benefit."

[1]New Zealand Transport Agency, Distraction 2021

[2]Ministry of Transport, 2022

Part Two:
Understanding the benefits and challenges of technology

Vehicle manufacturers and after-market suppliers are working to reduce the number of accidents on the road by developing sophisticated aids to support safer driving. Such technology includes lane assist, adaptive cruise control, reversing cameras, adaptive braking, lane-departure warnings, GPS systems and in-vehicle cameras.

As vehicles become increasingly complex, is this technology well understood and useful for drivers? Or is it just seen as a blinking light or beep from the dash that can potentially distract us?

Oliver Jepson outlines the risks. “It is possible to become complacent in a modern vehicle because it’s so easy to drive. You’ve got power steering, cruise control, it sits beautifully on the road, so you get a sense that it’s the safest thing in the world. But if there is a sudden situation, like a difficult lane change or potential collision, then the technology, if not properly understood, might start reacting in ways that aren’t familiar to the driver and could be more distracting than supportive.”

Many manufacturers now have a higher level of standard technology in their vehicles, and that is having a positive effect. However, Jepson believes there is a lack of understanding around how the technology works and therefore, some reservations about using it. “Many drivers don’t like any suggestion they won’t be in control of the vehicle. Some drivers immediately turn off that additional protection because they don’t like the interruption it brings to their driving style.”

Along with these reservations there are training and implementation challenges to consider. Many drivers are overwhelmed with the options, unsure how to choose which would serve them best.

Proper training is not always given to drivers. Jepson explains, “when picking up a new lease vehicle, the driver might be shown some features like synchronising their phone. However, a more detailed vehicle induction is often not provided, and the driver isn’t introduced to the safety technology, collision warnings and other vital details that pop up on the dash. Until you have seen them, felt them, and understood what is happening to trigger the technology, the benefits might be missed.”

Statistics from US research conducted by the Insurance Institute for Highway Safety show the reduction in various types of accidents that have occurred in vehicles with particular ADAS technologies.[1] Given their efficacy, there is a clear motive to educate drivers around their use.

Reduction in accidents

Forward collision warning

27% Front-to-rear crashes

20% Front-to-rear crashes with injuries

9% Claim rates for damage to other vehicles

17% Claim rates for injuries to people in other vehicles

44% Large truck front-to-rear crashes

Blind spot detection

14% Lane-change crashes

23% Lane-change crashes with injuries

7% Claim rates for damage to other vehicles

9% Claim rates for injuries to people in other vehicles

Rear automatic braking

78% Backing crashes (when combined with rearview camera and parking sensors)

10% Claim rates for damage to the insured vehicle

28% Claim rates for damage to other vehicles

Forward collision warning plus autobrake

50% Front-to-rear crashes

56% Front-to-rear crashes with injuries

14% Claim rates for damage to other vehicles

24% Claim rates for injuries to people in other vehicles

41% Large truck front-to-rear crashes

Lane departure warning

11% Single-vehicle, sideswipe and head-on crashes

21% Injury crashes of the same type

Rearview cameras

17% Backing crashes

Rear cross-traffic alert

22% Backing crashes

According to NZI's research, most fleet managers said they gave ADAS a high weighting when purchasing or leasing new vehicles due to its ability to protect their employees. However, it was a mixed picture when it came to understanding the benefits and comprehending how it works.

"It isn't something I am very familiar with myself. I couldn't tell you exactly what I have in my own vehicle and definitely not in the fleet vehicles."

Fleet Manager

"I know a reasonable amount about it, but I wouldn't say I'm an expert. We're putting pressure on our supply partners to see when we're going to have that technology."

Fleet Manager

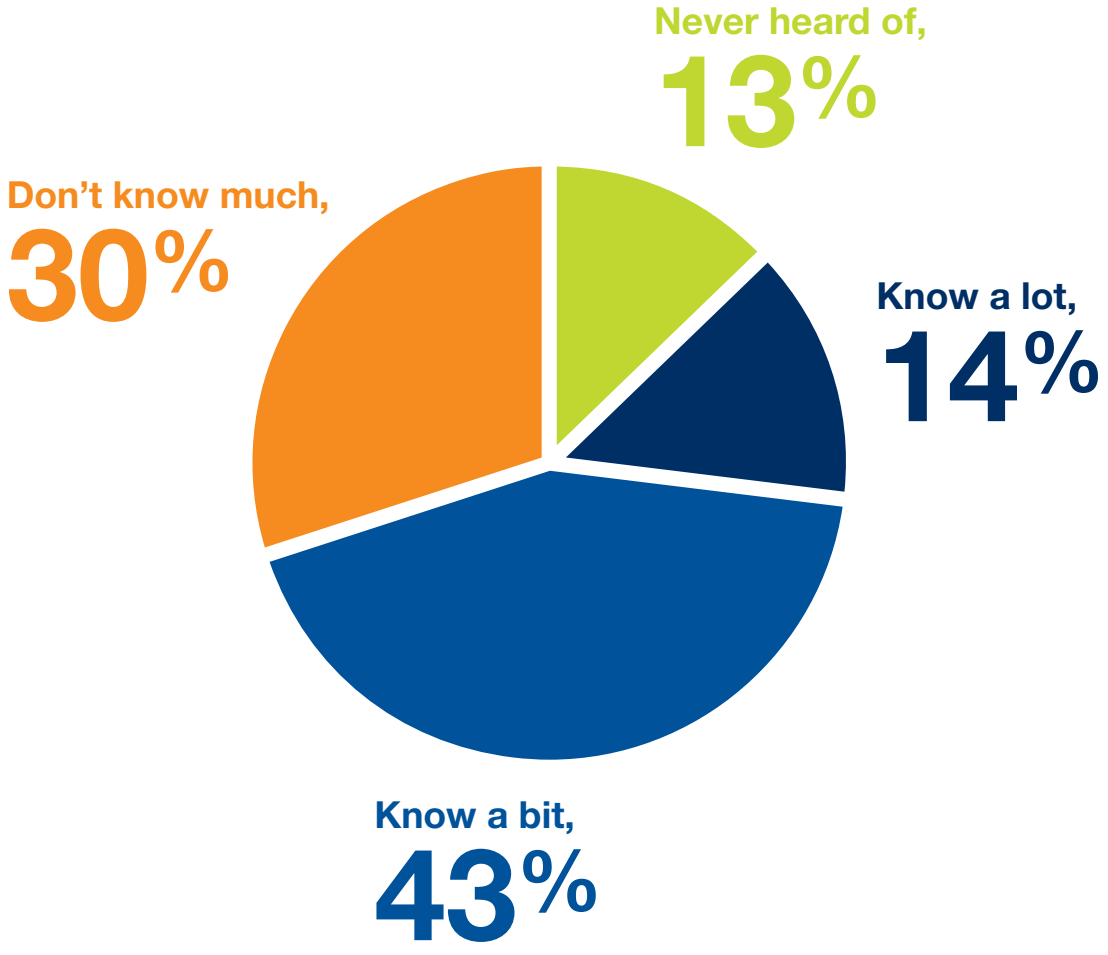
The research showed a stark difference between the opinions of fleet drivers and fleet managers on ADAS. Drivers speak of a lack of knowledge, training, usage and even trust of ADAS, and some uncertainty about how and whether to ask for help.

> "I really don't understand much about ADAS. It is horrible when something beeps or flashes, [it's] very distracting especially when I really don't know what it means. I haven't got much of it in my own car, which does not help at all."
>
> *Fleet Driver*

> "I worry about not knowing enough about the ADAS in my fleet car. I am a bit scared to ask for help because I don't want to look stupid."
>
> *Fleet Driver*

Fleet Drivers: How much do you know about ADAS?

The research reveals that aside from the commonly used reversing camera, knowledge of safety features among drivers is limited. Nearly half (43%) of surveyed drivers knew little or nothing of ADAS, and an equal percentage responded that they knew only a bit. This is a discouraging statistic, given that a limited understanding of the technology can potentially be counterproductive in a dangerous situation.

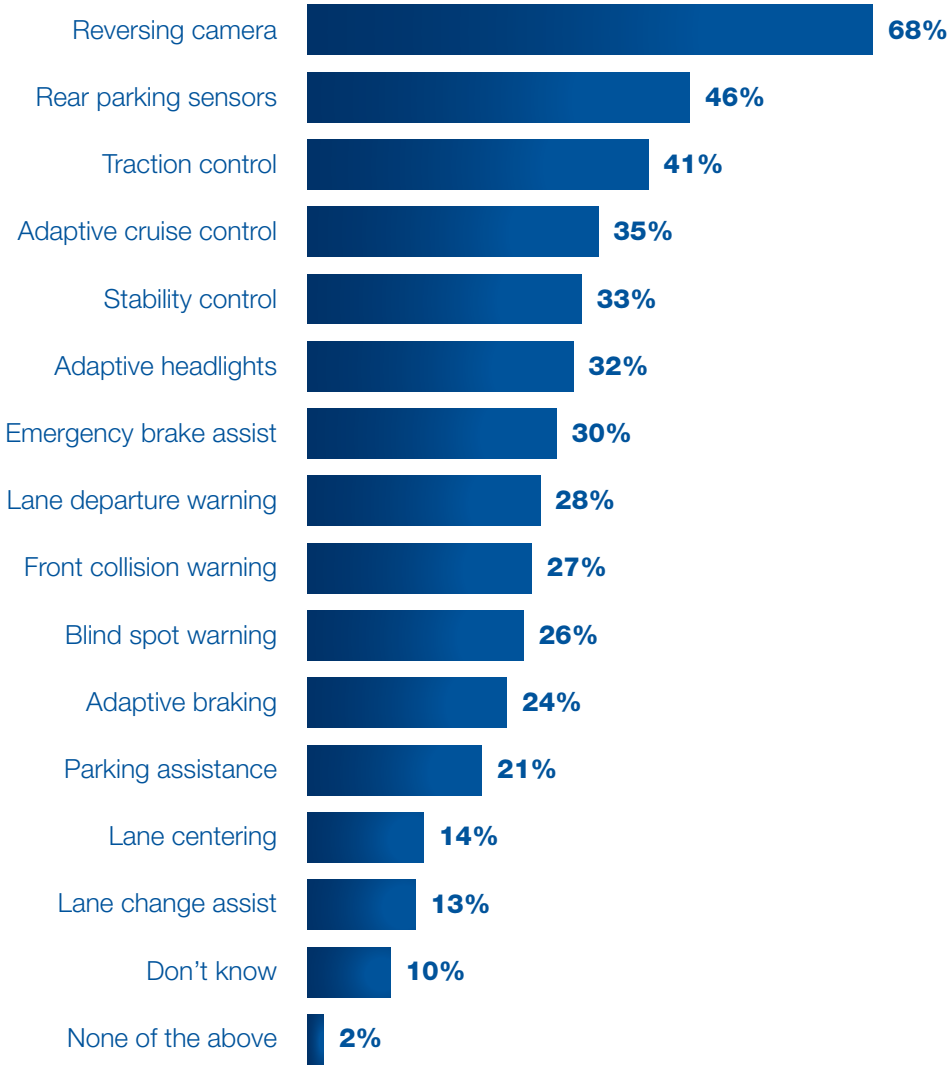


“There’s no question ADAS is a very good thing and improves driver safety. But you need to understand it in order to use it properly. I am lucky because I love cars and technology and can work things out. But some of my colleagues really struggle.”

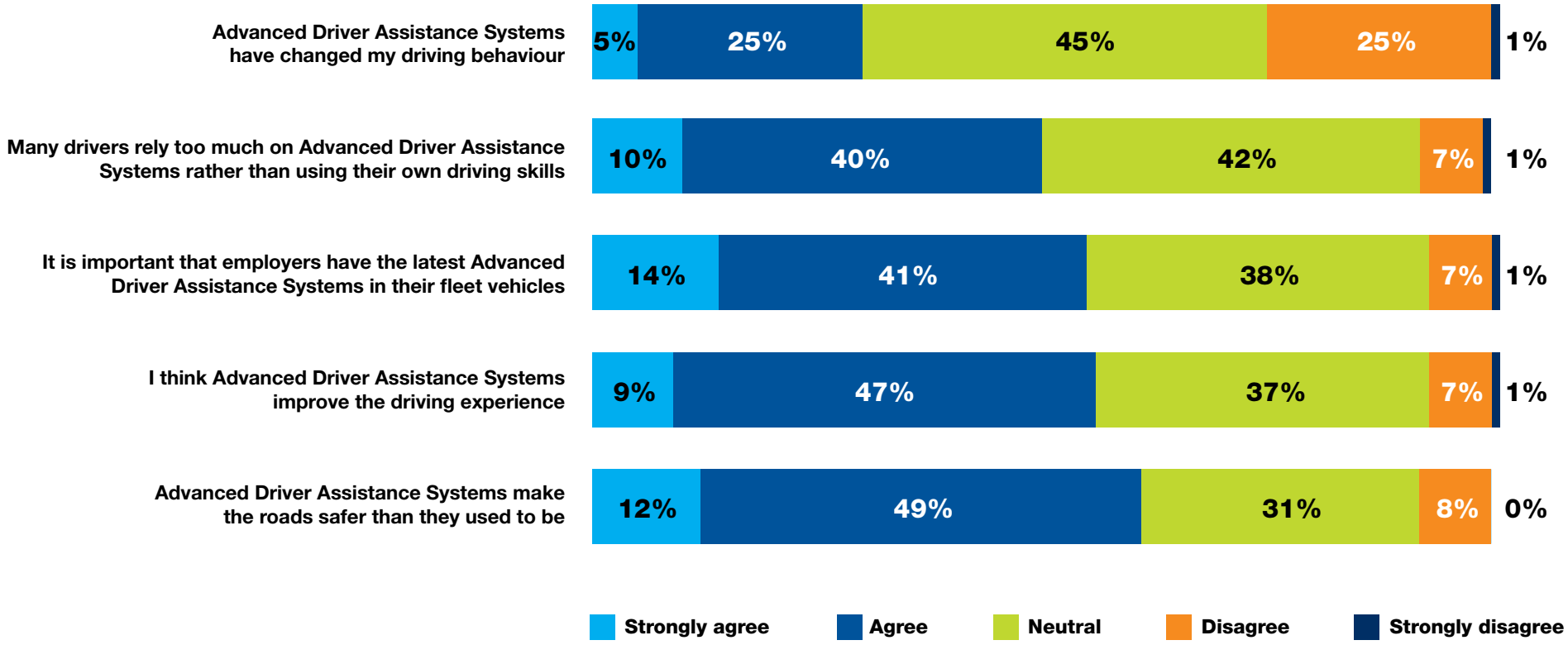
Fleet Driver

What ADAS Technology do you have in your fleet vehicle?

Fleet drivers were asked to describe the extent of ADAS technology they had in their fleet vehicle. Whilst reversing cameras are common, most other safety features weren't, or drivers were unaware their vehicle had these capabilities.



Most drivers felt positive about ADAS saying it makes the roads safer, improves the driving experience, and that it is important employers have the latest features in fleet vehicles. However, that positivity didn't fully correspond with their own experience, with only three out of ten saying that ADAS had changed their personal driving behaviour.



James Smith
National Road Carriers Association

The commercial road transport fleet has an indispensable role transporting almost 93% of New Zealand's total freight by weight.[2] James Smith, Chief Operating Officer at National Road Carriers, believes technology, when engaged with correctly, can play a vital role in helping keep heavy vehicle drivers safe on the road and freight moving, but that many drivers are still hesitant about using it. "The industry needs to work hard to publicise and promote the benefits and change the mindset around technology. We need to listen to what our drivers are saying about the technology and address any concerns they may have. They work in challenging environments requiring a high degree of concentration and decision-making, meaning care needs to be taken before adding another device to their workplace."

Smith believes heavy vehicle drivers need more training and understanding of how to use technology. At the same time, New Zealand's infrastructure has some way to go when it comes to some of the ADAS features. "Some of the advanced technology seems to operate quite functionally in Europe. With New Zealand conditions, there are a few issues to resolve. Some roads and lanes are too narrow and there are some false markings on the road so lane assist may pick up ghost lines. Even in a car, the lane-to-lane centre assist relies on being able to clearly see the markings. So, I think there's some work we need to do to roading infrastructure before the technology can be fully appreciated."

It will be quite some time before all vehicles are fully autonomous and infrastructure is completely developed to support it. For the foreseeable future, drivers will remain very much in charge of and responsible for their vehicles, which further emphasises the importance of not being overly reliant on ADAS and seeing it instead as an important support tool.

Dom Kalasih
Ia Ara Aotearoa
Transporting

Dom Kalasih, Manager of Policy & Safety at Ia Ara Aotearoa, Transporting New Zealand, works to support the road transport industry in key areas including attracting a sustainable workforce, safety and compliance, and advocacy across government.

Kalasih identifies how technology improvements have led to greater safety in the commercial transport industry. “The improving performance in heavy vehicle road safety is due in part to legislation over the last twenty years for trucks to meet a minimum stability criteria, the requiring of improved brake technology, and changing the testing of truck brake effectiveness. Another factor has been new trucks with greater safety performance and features such as electric retarders, traction control and emergency braking.”

Kalasih sees potential for greater streamlining of the manufacturer to supplier to client relationship. In his view, there isn’t yet clear enough communication from manufacturer to driver. “In terms of introduction and integration of technology, problems between suppliers, fleet managers, and drivers are often due to the fact the team rolling out the “solution” has not sufficiently engaged the end users, i.e., the drivers.” To Kalasih, those training the end user aren’t always doing a sufficient job. “The supplier does not provide enough support, or has understated what it takes to deploy and implement the technology.”

“Technology, in Kalasih’s assessment, needs to be made for the user. “If it needs vast amounts of explanation, then it’s not good technology. For fleet managers, it’s about getting a handle on where to put their investment and get a good return, and not let themselves be misled by parties that might be more commercially driven than focussed on managing driver risk – fleet managers more than anyone should understand what solutions work and which don’t.”

Dom Kalasih

Kathy Schluter
Fuso NZ

Kathy Schluter, General Manager of Sales at Fuso, says the assistive technology hasn't been in the New Zealand market for long when it comes to heavy vehicles. "A number of operators will be renewing their fleet every eight to ten years, and not all manufacturers had it initially, so it's going to take time to filter through into the New Zealand market. I would say the current statistics about tech-awareness will be significantly different in even a year's time."

Schluter recounts how the team at Fuso were determined to try and increase the safety and level of support for truck drivers on the road by pushing the industry towards safer vehicles with a standardised package of ADAS systems. "Given the position that we play in the market, we had the opportunity to change the way New Zealand drivers used safety features on the road, compelling competitors to move towards that as well, so that we could actually change the outcomes on our roads. We recognised quickly that this was not just putting another driver into yet another new truck. This was coaching, managing that process, doing an in-depth handover, explaining the safety features and providing messaging to the customers' organisations."

Much of this determination comes from experiences out on the roads. "We tested our Shogun trucks when they came onto the market. One of our testers was out with a driver. The driver had an old model pull out in front of him. The tester asked, "What do you think the consequences would have been, had those brake assist safety features not been on the truck?" He said, "The other driver would have been dead, no question about it." He also said, "We would have lost our driver — not as a fatality, but due to the unfolding circumstances. The driver would have come back, because that's what they all do. They get back on the horse and they keep going. But then within three months, they would have been gone. Because after any major incident, the drivers do tend to leave, or it starts impacting on them psychologically." This speaks to the broader value of those safety features, and the importance of the drivers being trained by professionals.

Charles Dawson
AutoSense

Charles Dawson is Chief Executive Officer at AutoSense, which provides simulator training and is the New Zealand distributor of Guardian by Seeing Machines, an in-cab camera that uses sensors to monitor and alert drivers to signs of fatigue and distraction.

"Awareness and alertness are critically important on the road," Dawson says. "If at any point a driver starts losing focus or getting distracted, it raises the risk of incidents. Even dedicated and experienced drivers can have lapses." Guardian intervenes when set thresholds are exceeded, helping drivers recognise their own potentially dangerous behaviours as they happen. "Guardian, accurately and in real-time, measures a driver's attention to their environment, assesses their degree of drowsiness and ultimately detects if the driver has passed a threshold of risk." In-cab interventions for driver fatigue and distraction are activated immediately. "There's no doubt," Dawson adds, "that in fleets where we've fully deployed Guardian, there's been substantial reductions in distraction and fatigue events."[3]

Tony Warwood
EROAD

An important step forward in reducing the confusion around technology is the emergence of single devices with multiple driver-centric applications. This means, instead of having an array of different boxes and sensors in a cab, potentially from different manufacturers, the technology can be streamlined and integrated without being obtrusive.

This is the mindset and practical approach of Tony Warwood, Executive General Manager at EROAD, whose products consolidate features into more concise video and telematics technology. “This makes it easier to implement and cost effective to operate,” Warwood says. “Rather than having multiple connections into the cab and then having to squeeze in the driver.”

For Warwood, it often comes down to whether a company uses a carrot or stick approach to technology. “What we see is the companies that get the biggest driver behaviour change are those that offer some form of incentives to change, the carrot side of things that sees the drivers incentivised and engaged, versus those that get the technology and wave a report in front of a driver’s face saying you’ve done this or that wrong.”

Another feature of modern technology is its capacity to improve business profitability by efficiently managing compliance matters. “All that work can be dealt with electronically in the background,” Warwood says. “The RUC process, for example, can be automated.” A reduced administration workload potentially frees up resources and management time to focus further on safety.

Another element is legal and reputational benefits for drivers. “This is valuable when you’ve had a complaint made about the driving of a certain vehicle, for example, and the company has a look at it through the technology and can prove the driver was actually doing the right thing.”

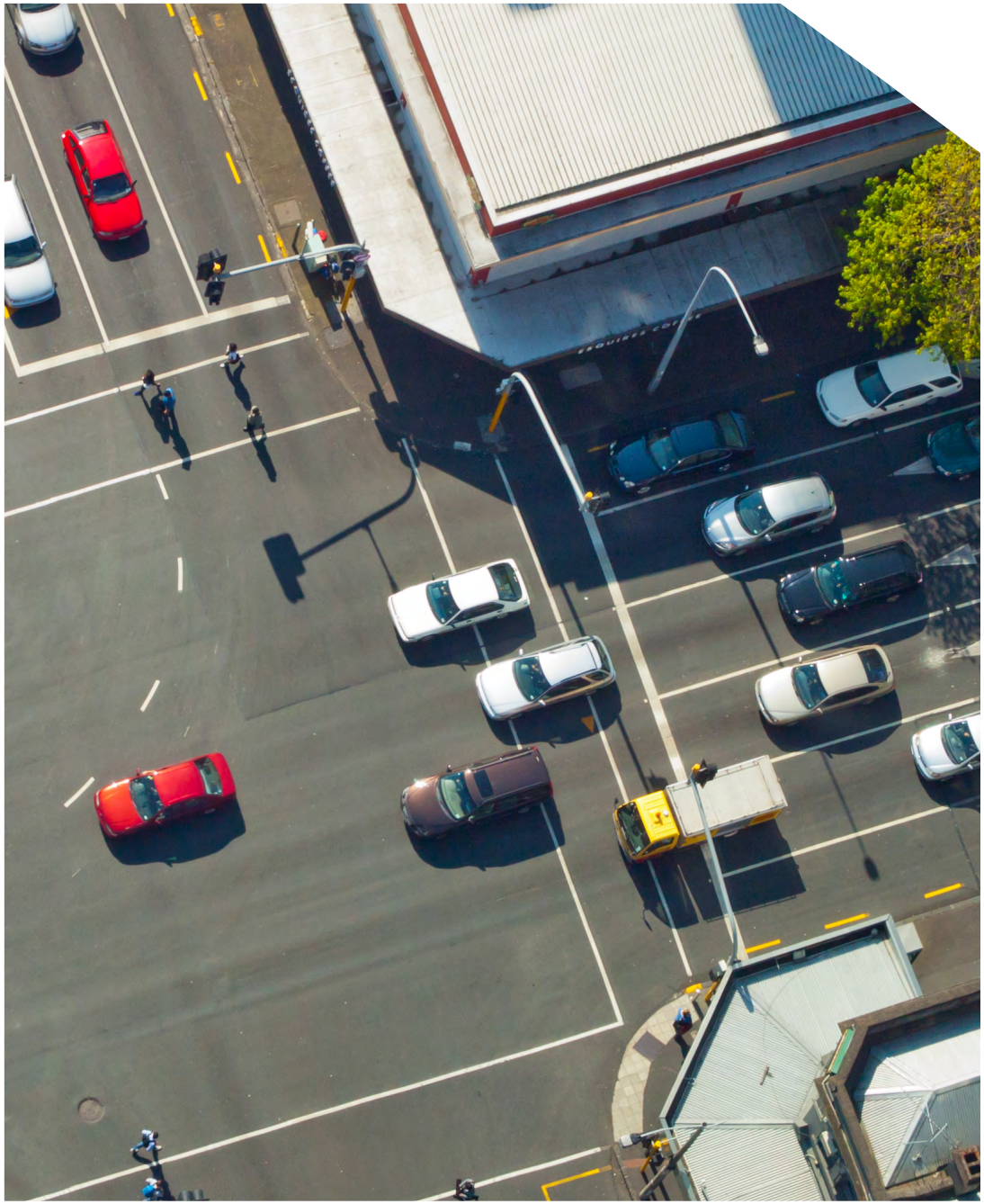
Warwood sums up the differences and similarities when it comes to vehicle types. “When we first deal with the light vehicle fleets, a lot of the fleet managers take a deep breath as they realise how some of their vehicles are being driven, they are not governed by the same regulations. At the end of the day, whether light or heavy, good technology is going to be beneficial.”

[1]Insurance Institute for Highway Safety

[2]Ministry of Transport Freight Demand Study 2019

[3]Seeingmachines.com/guardian

Part Three:
The need for training and education



NZI has been insuring Kiwis for more than 160 years and in that time has seen technologies advance from the old Bedford trucks and hand-cranks, to hydrogen powered trucks and the adoption of EVs into commercial fleets.

ADAS is now playing an increasing role in our driving, yet NZI's research indicates there is substantial work to do in making drivers fully aware of the benefits and how this technology should be used. NZI has been helping businesses to navigate these changes through its Fleet Fit Programme, which is designed to improve driver performance, assist businesses to run more efficiently through data, analytics and insights, and provide additional employee training.

Oliver Jepson
NZI

Oliver Jepson has heard of instances where wariness towards technology has prompted impractical responses. “One anecdote that speaks to such scepticism is a truck driver who, not knowing what the technology was for and suspicious it might be recording him, opted to put his hat over the Guardian in-cab camera.” Making this potentially life-saving technology useless. “Another driver purchased a modern car and would push the start button before going through half a dozen menus on the dash to turn off all the safety systems he didn’t like or understand.”

According to Jepson, getting the best results out of these technologies involves a collaborative effort across the industry. “From the supplier end, with reps at dealerships, through to third party seminars and courses, to in-house approaches among businesses, there are several avenues for drivers to be trained and educated in the new technology. This training helps to develop a positive attitude toward such safety features, so that they become second nature.”

In the research, many fleet managers felt strongly that all employers should offer driver training. The point was made that employers would not let staff use critical equipment without training and a fleet vehicle should not be thought of any differently. Some talked about the value of regular refreshers and assessments.

> "We offer regular driver training. There is a national programme and also budget available for local training. Every month, one or two branches offer training — but it is not compulsory. If specific driver training need is identified, then we'll find whatever course is required."

Fleet Manager

The research responses from fleet drivers implied positive attitudes toward ADAS technology, but a lack of clarity and established conventions around training and education.

> "My employer only recently realised that they needed to offer driver training and training in how to use the vehicle's ADAS features. It has been a real gap. I am really looking forward to it because I believe it will make me a better and more confident driver."

Fleet Driver

Training from sales personnel and suppliers when taking on a new vehicle

57%

have not had any training in how to use ADAS in the fleet vehicle they drive

Over half, (57%) of fleet drivers said they received no training from sales personnel and suppliers when taking on a new vehicle.

72%

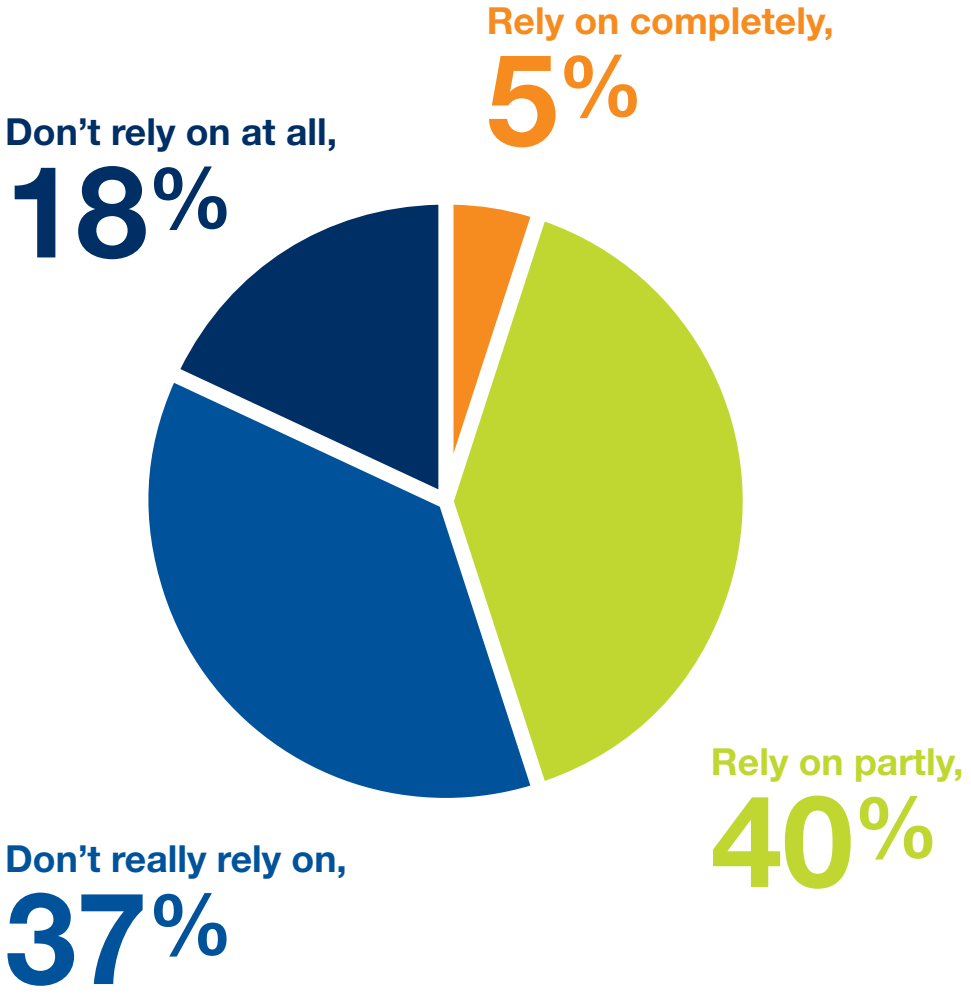
say they have not had any driver training as part of their employment

Nearly three quarters (72%) of drivers surveyed said they had not received any driver training as part of their employment.

The research findings also raise issues around potential over-reliance on the technology, with 40% of respondents saying they rely on it partly, and 5% completely.

> "I think having all these features encourages people to take a more 'laid back' approach to driving and rely on them when they shouldn't. In a way they encourage distractions like the use of mobile phones being 'ok' because the car will look after you."
>
> *Fleet Driver*

> "I make sure I stay alert. It is good to have these features, but I am still the driver!"
>
> *Fleet Driver*



The research also uncovered some concerning gaps where drivers understood certain technology, but their preference was to ignore, or even disable it.

9/10 understood
Adaptive Cruise Control
very or quite well, but

2/10 had disabled it

8/10 understood
Lane Departure Warning
very or quite well, but

1/4 had disabled it

8/10 understood
Lane Centering well or
quite well, but

1/4 had disabled it

In addition to these supportive features, some drivers were disabling technology with clear safety benefits that ought to be left on:

1/10 had disabled
Traction Control

1/7 had disabled
Stability Control

1/7 had disabled
Adaptive Headlights

These findings — that drivers are not merely ignoring some technology but actively going through the process of disabling it — come from a mix of motivations: a preference for more independent driving; a perception that the technology is distracting or counter-intuitive; and a sense that roading infrastructure, especially in terms of lane markings, might not be sufficiently developed for technology such as Lane Departure to function smoothly and reliably.

Charles Dawson
AutoSense

For Charles Dawson, Chief Executive Officer at AutoSense, this issue of technology being installed but not well explained or comprehended is a hurdle to be overcome. He refers to Guardian by Seeing Machines, an in-cab camera that uses sensors to monitor and alert driver to signs of fatigue and distraction. “There is the issue of how to get past that barrier of having such an item sitting there in the cab,” he says. “We get all this material to the managers and owners of the company, and they respond that it is fantastic. But they may overlook showing it to the drivers. With a greater dialogue, we can emphasise that Guardian is not CCTV, cannot be accessed remotely, and is using sensors and image processing technology to identity fatigue or distraction in order to support drivers.”

In the last couple of years, AutoSense have created a programme called Eyes Up NZ. “Essentially, it’s designed to get information across to the end users, the drivers. What we’re really aiming to do is work with the depot managers who look out for the drivers on a daily basis, and train and educate them.” These managers are given practical resources to bring back to their drivers. “Rather than it just being something pinned up on the noticeboard, it could be online material or a short presentation or webinar.”

Greg Murphy
AutoSense

Former racing car driver Greg Murphy has partnered with AutoSense as part of his work to improve road safety. He believes both initial and ongoing training are vital elements in keeping our commercial drivers safe on the road. He has concerns around driver skills regressing or people becoming overly reliant on these support technologies.

“We have technology supporting driving, but there are issues if you’re not reinforcing that these are support tools, and you’re not going to show people how to use the technology productively and to the extent that they were designed to be used. This results in some people understanding only a little bit of it and relying on it outside its actual useful parameters.”

For Murphy, the benefits of this technology in potentially changing outcomes shouldn’t be at the expense of actually teaching people and instilling in them the attitude to do the right things. To him, this grows harder as drivers are expected to absorb more and more information. “With so many new features becoming common in commercial fleets, proper and regular training is needed to understand it all, and drivers need to experience it in a practical sense, not just theoretically.”

He sees the Guardian in-cab camera as proactive technology that can save lives. “The proof is in the videos. The data doesn’t lie. We’ve done a lot of work to get some good information out there, a lot of seminars, and a lot of videos to showcase what the technology is about.” Despite the technology’s tangible effect on safety, a lack of understanding of its purpose and features can inhibit its use. “We put to bed a lot of negative connotations around what its actually doing, emphasising that it’s a genuine support mechanism for the driver.”

Greg Pert
Tranzliquid

Having a positive and practical approach to integrating technology, and creating a strong culture around it, has contributed to many businesses not only becoming more competitive, but also becoming employers of choice. One such business is Tranzliquid Logistics, which provides bulk fuel and bitumen transport along with container delivery to their customer network throughout New Zealand. “We chose our vehicles because they are premium,” says Greg Pert, Tranzliquid’s Manging Director. “We order these vehicles with all the safety features, which allows us to set a standard in the industry.”

Tranzliquid champions the value of these safety features and ensures each driver understands the benefits of why and how to use them. “We have our own procedures and culture that we’ve developed. After 25 years, we know what works. We place a great emphasis on safety and mitigation technology. We train our operators to use this tech for what it’s designed for, and if an operator says oh, that’s interfering, can we turn it off? We will say that these are the tools we have given you for our business and they’re really good, so let’s maximise the value that we’ve been given.”

Most of Tranzliquid's truck fleet has been standardised. "It's a great risk-management mitigation tool in itself," Pert says, "because when we do operator training it makes it easier to get them to hop from one truck to the other. There is a slight flip-side to this, in that some of this stuff is quite intuitive, especially some of the interventionist electronics that we apply. If you learn to drive with it, it eventually starts understanding how you operate a vehicle. As an example, I might pop into a vehicle and the prior guy might have a different driving style, and it takes me a while to settle that vehicle down to where it reverts to a smoother motion. In the future you might have your own profile, you get into the new truck and it's almost like you have your own pre-sets for your driving behaviour and the truck adapts to that."

Pert says, "The technology helps keep our operators safe, and helps to make the vehicle more efficient. There's a value chain back to you as an overall cost."

Pert believes the investment in vehicle safety features and in Tranzliquid's safety culture and values has had a positive benefit, maximising the safety of his established team of operators and assisting the business secure good new operators amidst the shortage in the industry.

Part Four:
Implementing new technology

A substantial amount of technology can be put into vehicles, but if the drivers don't understand the intent and there aren't strategies around implementation and training, then that may lead to uncertainty. If unfamiliar technology is triggered, it may potentially add further distractions during a moment when the driver is reacting or adapting to something on the road.

Another consideration is the lifecycle and spread of vehicles throughout fleets. There are fleets comprised of vehicles owned by the company, others with all leased vehicles and some a mix of owned and leased. Most New Zealand fleets will have a wide range of vehicles, with drivers contending with different levels of safety technology.

Kelly McLuckie
Success Formula

Kelly McLuckie is a senior consultant at Success Formula in New Zealand, which specialises in supporting businesses to integrate new technology and develop best-practice safety cultures. In her role, she has seen the frequent disconnect when it comes to implementing new technology. “I worked with a transport operator, where they inserted new iPads into the trucks and found none of the drivers were using them. They were reverting back to the paper forms. When we got the driver feedback, it turned out the mounting bracket was not correctly installed, and the iPad would jiggle and constantly turn off and the drivers had to turn it back on again and log back into the system. When the company was shown, they then spent a modest sum and solved the problem.”

For McLuckie, another gap is differing mindsets about the technology. “I know some operators that drive until fatigue and distraction monitoring tools, like Guardian, cause the seat to start shaking and that’s when they pull over, versus a different fleet where the approach is to pull over before you think the seat might shake. There are enormous differences, and implications, for those two mindsets.”

In McLuckie's view, talking to drivers or showing them a diagram isn't sufficient. You need to allow them to touch the technology and try it out properly. "If drivers get picked up for speeding or fatigue and you as a manager come down like a tonne of bricks, then there's a likelihood they might resent the technology. However, if you say 'Hey, I see that you had an instance of fatigue, I'm checking in with you', it creates a different conversation." McLuckie believes a positive mindset shift would involve acknowledging that fatigue and distraction are human and can often be a symptom of someone who's working incredibly hard. "If you can share real life stories, and footage with your other drivers and say, this driver was out on the road at three in the morning, they had this lapse, you know, it's okay for us to show you because they're a professional, we're supporting them; that is the best way to show people what we're using the technology for."

McLuckie believes its important to consider how technology and data will be managed over time. "Installing technology to set-and-forget will not achieve a good culture or sustainable safety benefits. Fleet managers need to consistently monitor the reports and information from their safety systems and use it as an opportunity to keep safe driving practices front of mind."

McLuckie also sees the merits of incentivising drivers. "Various technologies are being implemented to try to rank drivers, identify who is driving really well and then give them incentives. It's a way of acknowledging their professionalism. You can show them graphs about how things are progressing each month, and celebrate improvement, both in individual performance, and as a collective effort."

McLuckie now identifies a flow-on dynamic from contractors to subcontractors. "With a lot of small business owner drivers or subcontractors, it is frequently the case that the larger fleet or company has put in rules and regulations around the contracts. This means the subcontractors must have certain safety technologies in order to win the contract. So, when it comes down to winning that contract or not, these small to medium business managers are going to reassess their technology requirements, and I think that's going to lead to a big shift."

Adopting EVs

Amidst this rapid evolution in technology, there is an enthusiastic, but gradual movement towards EV vehicles. “Over the last few years,” Oliver Jepson says, “there’s been a number of vehicle manufacturers investing heavily in electric and hybrid technology in an effort to operate more sustainably.”

New Zealand is well placed to benefit from electric vehicles because more than 80% of electricity is generated from renewable sources and there is enough supply for widespread adoption of EVs. Our high levels of renewable energy mean the emission reduction benefits of EVs are greater than in most other countries.[1] The majority of electric cars have high ANCAP safety ratings, thanks in part to them coming equipped with much of the latest in crash-avoidance technologies preinstalled.[2]

“We’re having “Green Fleet” discussions and want to be more environmentally friendly; but it will be a slow and gradual change.”

Fleet Manager

Worldwide EV sales rose 41% in 2020 despite car sales being down 16%.[3]

Sales of electrified vehicles in New Zealand in 2021 grew by 94% year on year.[4]

As of March 2022, there were 42,522 EVs registered in New Zealand.[5]

Peter McKenzie
NZ Bus

Peter McKenzie is an Executive Director at NZ Bus. In 2021, NZ Bus implemented 12 new EV vehicles onto the City Link service in the Auckland CBD as part of a 4-year decarbonisation programme to introduce 152 EV vehicles onto AT Metro services across Auckland.

The team see this as the smoothest introduction of a vehicle they can remember. “The drivers are in,” Peter says. “They’re excited to be part of the programme.” Differing aspects or features of EV vehicles have not raised any issues for the drivers. “As far as acceptance and operation of the vehicle itself, it’s been seamless,” Peter says. “Now all of our vehicle replacement programme is based on an EV platform.”

Whilst the fundamentals between a diesel and an EV are similar, there are a few differences to account for. “The drivers are given a presentation to show them the basic principles of how the EV side of the vehicle works. They go through a classroom exercise and then they get out in a vehicle with a trainer for an on-road familiarisation. Drivers adjust to the braking system pretty quickly and we haven’t had any pedestrian issues because of low noise. But the vehicle management display on the dash is newer and can take a bit more time to understand.”

In terms of implementation, they are relying more and more on their own people. “We get in technicians to assist with the vehicles. But, we now have our own training staff in house. So, it’s a train-the-trainer type concept. Our trainers have been through these programmes before and then, they take on the role of inducting new drivers.”

Oliver Jepson
NZI

Oliver Jepson describes NZI's own journey transitioning toward EVs. "At NZI (and as part of a wider IAG initiative), we've recognised the future is with EVs and are looking to ensure a smooth transition of our entire fleet of about 250 cars to electric and hybrid vehicles over the next few years."

NZI appointed six 'early adopter' employees to drive a personally assigned EV, to learn more about these vehicles before NZI rolled them out to the rest of their fleet. "There's been great feedback so far," says Jepson, "with charging at home proving a breeze as the car dashboard lets you know where the car is up to in the charging process. Even though public charging took a bit of time for our early adopters to get their heads around, it's working well." Early data has been positive. "Our drivers have managed to reduce their carbon emissions by over 80% so far. The EVs are also costing far less to run, and have fewer moving parts, meaning fewer repairs and lower servicing costs."

Adding EVs to your fleet can greatly benefit your business and the environment. When considering the change, Jepson outlines practical steps from NZI's team to help ensure the transition goes smoothly and safely.

"Look at your existing business travel," Jepson says. "Consider how vehicles are used, how far they travel and how frequently they are on the road. This will help inform your decision around the type of vehicles required." Hybrid vehicles may be another option to consider. "EVs provide the best carbon reductions, however a hybrid vehicle could be a better option if long distance, towing, or off-road travel is regularly required." In addition, consider how drivers will charge the vehicles. "This may be done at home, at the business premises or publicly," Jepson says. "If charging at the business premises, it should be carried out in an appropriately designated space."

NZI is available to help small businesses and large corporates alike assess their needs and benefit from the transition to EVs.

[1] Ministry of Transport Electric Vehicles

[2] Drivinginsights.co.nz

[3] International Energy Agency 2021

[4] Motor Industry Association

[5] Ministry of Transport

Part Five:
Repair costs and insurance impacts

By upgrading your fleet to modern vehicles with ADAS, you would likely be improving your risk profile, helping to keep your drivers safe and meet your PCBU obligations around vehicle safety.

These advantages might be offset by the requirements that come with repairing and replacing the sensitive and interconnected technology. Whilst these vehicles have proven themselves safer overseas, the parts are becoming increasingly specialised, and in addition to being costly to source they require a more skilled workforce, which means they are becoming costlier to install. The need for increased training, time investment and skilled workers can increase costs and time off the road.

Gary Geeves
AMI MotorHub

Gary Geeves, Chief Executive Officer at AMI MotorHub, understands these complexities and deals with such technology each day at his repair facilities. “Modern vehicles are more expensive to fix in terms of smaller accidents,” he says. “The cost is in recalibrating ADAS correctly. You don’t just have to repair it. You’ve got to recalibrate it. The process we use when we’re ringing up the dealerships for parts, is to ask them if it’s an ADAS vehicle, and then get a pre-scan before we strip it out. That’ll tell you whether there are faults and whether a part needs to be replaced.” At the end of the process, there then needs to be a recalibration of all the interconnected parts. “The manufacturers have all these laser cameras, which help diagnose the ADAS technology. But because of where they put the sensors in the vehicle, the recalibration for the braking, the stopping and the parking is different for every car.”

Geeves explains how multifaceted these procedures have become. “Even if you replace a part, you have to recalibrate it and reset it, because one piece of the ADAS system needs the corresponding others. For example, you could see 360 degrees around the car, and how that works is they’ll have five cameras around the car which build the picture to give you a bird’s eye view.” The costs associated with repairing such technology can therefore be substantial. “Something as minor as a simple bumper bar job may need a recalibration that could range from $300 to $1,000. Even taking a bumper off and putting it back on a car could mean that it needs to be recalibrated. So, it doesn’t even have to be damaged.”

Some vehicles are relatively cheap to purchase, but when damaged, due to the availability and price of parts, it can be more cost effective to write the vehicle off than repair it. “You might pay half the price of the car when restoring or buying frontal parts for a vehicle with ADAS equipment. From a sustainability perspective, we do everything we can to try and repair rather than write off a vehicle. It’s not because they’re too complicated, or too dangerous to repair. It’s just sometimes too expensive to repair with all the ADAS equipment in there.” The rising cost of repairing these vehicles reflects not only the extent of the technology, but also the technical precision required with a discrepancy of just a couple of millimetres potentially meaning 200 meters further down the road at certain speeds.

Alongside these changing dynamics, there are comparative costs to consider when it comes to EVs. Geeves mentions, “electric cars tend to cost more than gas-fuelled vehicles to purchase. But they save money on maintenance in the medium term due to fewer moving parts requiring less routine maintenance.”

Oliver Jepson
NZI

“Be it a conventional vehicle or an EV,” Oliver Jepson says, “ADAS technology, when understood and used properly, will make a positive difference. With a safer vehicle on the road, you may see a reduction in frequency of losses. This is ideal for everyone: better technology leads to safer team members out on the road, which has the flow on effect of attracting staff to a pro-technology, pro-safety work culture.” The balance here is that whilst there will be less claims, they will cost more to repair. “When we rate premium, we look at claims cost per repair and the frequency of claims,” Jepson continues. “Reducing frequency by increasing safety in the vehicles is sometimes offset by a higher average cost of repair. It’s almost like one comes down, the other comes up. There might be an underlying improvement to your fleet’s performance in terms of claims frequency, which means less accidents and less time off the road. But if the average cost of those claims has gone up, your premium may not decrease to account for that.”

Businesses may therefore view employee safety and retention as the most compelling benefits of ADAS technology.

Part Six:
What's next for transport and technology?

What are we seeing overseas that could come to NZ in the coming years? How will the culture around technology change, and how will training evolve and be integrated into modern driving?

From our research, fleet managers are keen to see more ADAS technology that continues to help remove the risk of human error leading to incidents. Fleet managers are also proactively exploring options around fleets and sustainability but acknowledge it may be a gradual process.

Charles Dawson
AutoSense

For Charles Dawson at AutoSense, conducting formal sessions involving state of the art simulator training is an efficient way to improve fleet safety and productivity. “This technology can produce evaluations customised to a company’s common driving situations and simulate accidents the fleet may be having.”

Dawson expects to see training improvements with increasingly realistic simulators. “The next stage in simulator technology includes Extended Reality, where the real and virtual surroundings blend closely. Lighting scenarios and the vehicle’s surroundings with other vehicles or pedestrians will be simulated more realistically, as will motion capabilities.” In addition, simulator-based driving environments might become more varied to enhance young driver training, in closed-course, residential and challenge scenarios.

Gary Geeves
AMI MotorHub

In the future, driving will become more related to the smart technology with which we typically interact. The vehicle itself will evolve as an environment, and the journey as an experience. “We’ve been told by the manufacturers they’re really trying to make a vehicle a journey, almost an entertainment centre, so it is more than just a motor car,” Gary Geeves at AMI MotorHub says. “Because it’s a computer, and able to talk to different cars, police and emergency responders in the future will be able to come up behind a vehicle and turn it off, or make it veer to the side to create a clear path. In Europe, they’re much more advanced with some of these elements. It’s really about vehicles talking to each other.”

Oliver Jepson
NZI

On the journey to these technological marvels becoming common, Oliver Jepson sees a natural improvement in vehicles and safety technology on our roads, brought in part by higher standards in the industry and a desire for greater efficiency and fewer emissions. “Hydrogen, particularly green hydrogen, presents an attractive opportunity for the heavy transport industry to rapidly reduce carbon emissions. It is a ‘here and now’ solution in terms of the clean energy mix.”

Another thing Jepson believes we are going to be seeing more is better quality vehicles coming through on the second-hand car market from overseas. “As the emission standards and similar initiatives increase, that will bring up the age of the vehicles that you can import, leading to a natural improvement over time in terms of vehicles, with the safety technology in them, without necessarily being brand new purchases. There aren’t many companies,” he adds, “that are going to buy a vehicle which is under a five-star rating as the minimum, in terms of safety levels.”

Conclusion

Technology is a reality of modern life. In an industry like the commercial transport sector, integrating and maximising the potential of such technology is a significant element in helping to keep drivers safe and reducing the number of accidents. However, enjoying all the benefits involves recognising a key finding in this report: whilst a large percentage of drivers believe it is beneficial to have such technology in their vehicle, and that it makes the roads safer, their personal knowledge and use of ADAS is limited.

A significant percentage of drivers reported little or no driver training as part of their employment. Many have never experienced the sophisticated technology available today. Benefiting from the technology means making sure drivers are properly introduced to it, which can involve seminars, courses, or visits from distributors and specialists.

To prevent driving skills declining due to an increasing reliance on such technology, it needs to be reiterated that, for the foreseeable future, the technology should be viewed as a means to support drivers and to regain control of a vehicle, rather than something that is going to prevent or 'bail them out' from incidents.

The research suggests that companies who take it upon themselves to procure and insist on the use of ADAS technology as a part of their safety culture tend to acknowledge good driving behaviour and set standards that enhance the safety of their people, making them an attractive employer-of-choice in the industry.

Lastly, the EV space presents a promising picture of what the wider, older transport fleet may look like in the future when it comes to advanced technology being standard. There is a clear benefit to businesses to support drivers with the adoption of EV technology.

NZI's National Motor Manager, Oliver Jepson, believes we are on the right road. "Some businesses are rising to the challenge of ensuring their drivers are receiving the right training and support they need to understand ADAS technology, especially as it becomes more prevalent in the small to medium vehicle space." However, there is still some way to go. "Our research indicates that a significant number of fleet drivers have had little to no training, there is still some way to go before the technology is fully utilised and appreciated."

NZI is committed to supporting the commercial motor sector through a period of rapid change and is regularly evolving its Fleet Fit programme to provide tools and education that help businesses adapt and improve. The transport industry is a vital pillar of the economy, and NZI will continue to collaborate with industry specialists and partners to increase efficiency and support safe driving.