
Changing perceptions: how next-generation video technology is improving safety and reducing risk for commercial fleets

Resistance to driver-facing cameras is waning as intelligent dash cams address privacy concerns and transfer power to drivers

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Abstract

100-150 words

This article examines the challenge of improving road safety in commercial vehicles and presents Lytx's vision of the solution. In particular, we discuss next-generation video technology, which is becoming a vital in-cab assistant for fleets, trusted by drivers and capable of transforming road safety across the continent.

Keywords

Telematics; video; driver safety; FNOR; dash cams

Lytx is on a mission to ensure that no commercial driver is ever the cause of a collision. However, in 2017 alone, there were 25,000 road deaths in Europe,¹ with the EU estimating that human error is to blame for 95% of accidents². We believe we can change those statistics through intelligent, in-cab technology that empowers drivers to recognise and reduce their own risky behaviours.

This article will examine the issue of road safety in commercial vehicles and present our vision of the solution. We will begin by looking at current road safety in Europe and at some of the measures relating to telematics that governments and industry are already taking to improve this. We will then discuss why a cultural change is now taking place and how traditional attitudes to telematics and cameras are beginning to shift in the light of new technologies. Finally, we'll explain how intelligent dash cams can proactively identify risk and, in doing so, become a vital in-cab assistant for fleets, one that is trusted by drivers and capable of transforming road safety across the continent.

Government-led changes in Europe

The safety record of commercial vehicles has been a particular cause for concern throughout Europe. Eurocities and Polis, two bodies which represent several cities in Europe, noted that commercial trucks represent 2% of all vehicles on the road but are involved in 14% of road fatalities. Around 3,300 people were killed in collisions involving trucks in 2018, and in 2020 it was estimated that around 25% of road

¹ Road Safety Facts EU (2022) <https://roadsafetyfacts.eu/road-safety-what-progress-has-been-made/>

² European Parliament (2021)

<https://www.europarl.europa.eu/news/en/headlines/society/20190410STO36615/road-fatality-statistics-in-the-eu-infographic>

deaths in the EU involved a truck³. With light commercial vehicles (LCVs) used for last mile delivery, it is likely that the overall figure for fatalities involving commercial vehicles is significantly higher.

As a result, many governments have begun to move toward telematics. Italy has historically had one of the highest incidences of road accidents in the EU. As part of the solution, the country's government made telematics compulsory in new vehicles. It also insisted that insurers should offer a dedicated telematics insurance option⁴ – and that, by law, insurance for those with a telematics solution in place should be cheaper. Fatalities fell from 5,669 in 2006 to 2,395 in 2020 as a result⁵.

In Germany, road deaths decreased by 7% from 2018 to 2019. It may be no coincidence that this decrease is matched by the equally steady growth of the domestic telematics market, which is predicted to attain a revenue of \$7.74 million by 2030, up from \$1.4 million in 2019, with a growth of around 17%.⁶

There are still some countries in which the picture is not so positive, however. While telematics technology is permitted in most jurisdictions, it's not always the same story for cameras. Portugal, for example, has regulations in place that discourage the use of dash cams. And yet an EU 2021 report into road safety statistics notes that in the country there are 52 road deaths per million people⁷, far higher than the EU average of 44 per million⁸.

The industry is playing its part

Change within the industry is partly being driven by the growing sense among major manufacturers that they have a role to play in helping to reduce road deaths. Vehicles manufactured by BMW, Citroen, Mini, Subaru, and Tesla all come with the option to install dash cams, and Volvo has said that these will soon be present in all of the company's models⁹. The EU is stipulating that a number of new technologies become standard in new vehicles, with a particular focus on those that can improve the direct vision of bus and truck drivers and remove blind spots¹⁰.

A revised EU General Safety Regulation¹¹ also calls for technology that warns of driver drowsiness and distraction. There is no practical way to do this without using a camera or a lens, and Volvo has said that it will add monitoring systems which not only detect a lack of steering input, but can also identify when drivers have their eyes closed or show slow reaction times.

³ European Transport Safety Council (2019) <https://etsc.eu/berlin-paris-and-london-demand-safer-trucks/>

⁴ Fitch Wire (2017) https://www.fitchratings.com/research/insurance/mandatory-telematics-no-game-changer-for-italian-insurers-04-08-2017?utm_source=slipcase

⁵ European Transport Safety Council (2020) <https://www.efa-eu.com/wp-content/uploads/ETSC-14-PIN-2020.pdf>

⁶ Reported by BusinessWire (2021)

<https://www.businesswire.com/news/home/20210129005464/en/Germany-7.74-Billion-Automotive-Telematics-Integrated-Embedded-and-Tethered-Market-Analysis-and-Growth-Forecast-to-2030---ResearchAndMarkets.com>

⁷ European Transport Safety Council (2020) <https://www.efa-eu.com/wp-content/uploads/ETSC-14-PIN-2020.pdf>

⁸ European Commission (2021) https://transport.ec.europa.eu/2021-road-safety-statistics-what-behind-figures_en

⁹ Car Magazine (2019) <https://www.carmagazine.co.uk/car-news/tech/volvo-driver-cameras/>

¹⁰ Automotive News Europe (2019) <https://europe.autonews.com/automakers/eu-make-speed-limiters-driver-monitors-mandatory>

¹¹ Fleet Europe <https://www.fleeteurope.com/en/safety/europe/features/driver-distraction-main-killer-so-eu-kills-distraction?a=DQU04&t%5B0%5D=Safety&t%5B1%5D=Telematics&t%5B2%5D=Volvo&curl=1>

As owners of private vehicles begin to accept such measures, the tide of public opinion is changing towards technology that monitors risky driving. And as car makers manufacturing for the European domestic vehicle market respond to initiatives such as the EU's 'Vision Zero' which aims for zero road deaths by 2050¹², companies such as Lytx are doing the same for commercial vehicles worldwide.

Of course, the big automotive manufacturers are not the only ones exploring how technology can reduce risk on the road. Although Lytx has been creating solutions to keep drivers safe for more than 24 years, we are continually exploring how video dash cams – powered by machine vision, artificial intelligence, and other advanced capabilities – can be used differently. One way we're doing this is by helping the insurance industry to move beyond First Notification of Loss (FNOL).¹³

FNOL is the traditional way of recording the cost of accidents and describes the initial report made to an insurer after damage to an insured asset – in this case the vehicle. It is the perfect example of reactive management with action only taken after the incident. Insurance premiums inevitably increase as a result. In the best-case scenario, only the vehicle has suffered damage and will stand idle until fixed. In the worst-case scenario, the incident has resulted in a physical injury or even a fatality.

Instead, Lytx offers insurers First Notification of Risk (FNOR) technology. This proactive approach empowers drivers, who can be alerted of risks in real-time* – allowing them to adjust their behaviour in the moment and prevent incidents from occurring. With this approach, commercial fleets are gaining insight into 'hidden risk' in their vehicles *before* something happens, not just reactively after it has happened. This insight can then be used to provide driver coaching and professional development where needed.

Technology that can win over the drivers

Despite the links between telematics usage and falling road deaths, some opposition remains and many drivers are still wary of in-cab technologies. When asked to give evidence to a Parliamentary enquiry in 2016, the UK's Unite trade union said of traditional telematics devices that "the 'spy in the cab' is being used by employers to monitor drivers and on some occasions to bully them into doing more and faster".¹⁴ When it comes to video telematics, drivers' fears about privacy can be even more pronounced.

These concerns are understandable. Nobody wants to feel that a "big brother" figure is watching them or that a manager is examining their every manoeuvre on the road. However, without these technologies, it's near impossible to reduce distracted driving and prevent other behaviours that can lead to road accidents. The good news is that video telematics technology is now at a stage where it can be used to strike a balance between a driver's privacy and their safety. The key to this has been to restrict the sharing of information to a minimum – and where possible to establish a direct communication between the driver and the technology.

And yet the use of in-cab cameras operating in conjunction with a road-facing lens is now offering additional functionality and flexibility for both drivers and fleet managers.

¹² European Commission (2021) https://transport.ec.europa.eu/news/european-commission-welcomes-launch-global-plan-un-decade-action-road-safety-2021-2030-2021-10-28_en

* Subject to available cellular network coverage

¹³ Lytx (2021) <https://resources.lytx.com/surfsight-infographics/fnor-vs-fnol>

¹⁴ UK Parliament <https://publications.parliament.uk/pa/cm201617/cmselect/cmtrans/68/6805.htm>

The technology that we have developed at Lytx is a powerful combination of machine vision (MV) and artificial intelligence (AI). MV+AI work together like a smart set of eyes that will scan both the internal and external environment of the vehicle to show what's really going on, rather than just reacting to accidents that have already happened. For example, the technology can identify that a driver is looking down at a mobile phone, or that they have failed to put on their seatbelt. MV identifies the behaviour while AI determines how risky that behaviour is.

If risky behaviour is detected, these technologies can provide audible or visual in-cab alerts which allow the driver to auto-correct. By coaching the driver in the moment, they are addressing risk immediately and, just as importantly, helping to grow a safety culture. Additionally, intelligent dash cams can prove after an incident that a driver was in fact blameless, detecting for example that they were paying attention, looking at the road and not at their phone, that they were alert, and were wearing their seatbelt.

As well as alerting the driver to their own risky behaviour, our solutions can be configured to only record footage or alert managers if a behaviour is being repeated frequently. Further respecting driver privacy, our solutions can even be configured to detect risky behaviour and notify the driver without recording them at all.

A practical approach that works

Approximately 21% of companies¹⁵ who use driver-facing dash cams say that they did not enter into dialogue with their drivers at all, which makes it easy to see why there is some wariness. But our own research has also picked up on operators who took a different approach. Over 65% of the operators we surveyed explained to their drivers that the cameras' function was to exonerate drivers from false claims. Unsurprisingly, this message received a positive response from drivers.

The following examples demonstrate how this can work in practice.

Flogas is a supplier of liquid petroleum gas based in Leicester which has been using intelligent dash cams since 2015. In the three years after the technology was first adopted, the company saw a 43% reduction in collisions and a 45% reduction in collisions and near collisions combined. This is a clear demonstration that the cameras help keep its drivers safe. Flogas further believes that driver coaching, facilitated by reviewing driving footage, has helped with staff retention.

National Express, the UK's largest coach operator, is using the same system to improve driver behaviour and road safety. One of the ways in which this is being achieved is through National Express's Driver Excellence Programme which uses data to recognise and reward good driving. In particular, it highlights those who have delivered outstanding professional work in safety and driving skills.

A positive future for all road users

The increasing adoption of video and the work already being done by manufacturers suggests that a cultural change is taking place. We are beginning to see the conversation moving to *when* they are to be installed in cars, not *why*.

¹⁵ Commercial Motor (2021)

https://www.commercialmotor.com/sites/default/files/cameras_white_paper_from_commercial_motor_and_motor_transport_v2.pdf

We are still a long way off our desired outcome of having a world in which no commercial driver is the cause of a collision. And we are equally far removed from the EU's 'Vision Zero'. Both are still a theoretical ideal. But the fact that these targets exist shows that more people are starting to think about how technology can affect road safety, and how a proactive FNOR-based approach can help every fleet operator keep their teams safe when out on the road.

When behaviour that seems as minor as checking a mobile can have deadly consequences, everyone has a duty to act if they have the technology to do so. Lytx has that technology and expertise, but moreover, we believe in making change happen. We can help every individual to become a better driver and to avoid accidents. The stakes for all of us, for our friends and our families, have never been higher.