Driverless trucks: Taking hold of the wheel

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With all the recent attention on driverless cars one would be forgiven for thinking that autonomous vehicles were a novelty item. Yet, driverless trucks have been used in mines and ports for some time now. In 2016, a US start-up boasted its first commercial delivery (of beer cans) using a highly automated truck. The on-board system handled all the motorway sections of the journey without a driver. It is likely that trucks will be the first fully driverless vehicles on our public roads.

The first objection that comes to mind is the safety of these vehicles, for they are not failsafe. Driverless enthusiast Joshua Brown, for instance, died last May after putting his Tesla into autopilot mode. Accidents like his fuel scepticism that computers and sensors can drive better than humans can. But aside from that, driverless vehicles are also dogged by numerous legal issues, most notably: who is to blame when there is an accident?

Still, automation opens up many opportunities, and together with international bodies governments are working to adapt industry regulation and road rules to the wholly new idea of what it means to drive a vehicle. The European automotive industry allocates a large part of its e44.7 billion research and development (R&D) budget every year to connected and automated driving. In the space of just four years, this has yielded amazing advances in computing power, software and sensor technology. Computers now recognise over 96% of physical objects and human faces. They are now being trained to recognise and rapidly respond to a huge array of real-world situations on our roads.

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The appetite for driverless technology is likely to grow as it becomes available. According to Daniel Veryard, an economist with the International Transport Forum (ITF), driverless trucks on long-distance routes cost 30% less than conventionally manned trucks. Not only do drivers represent the biggest chunk of operational costs, they need rest breaks. Driverless trucks can operate day and night without having to stop, except for refuelling.

Veryard also points out that driverless trucks are a solution to the current shortage of qualified drivers. The ITF estimates there are nearly six million professional heavy truck drivers employed in the US and Europe now. Projections show that 6.4 million truck drivers will be needed by 2030, yet fewer than 5.6 million will be available. The trucking industry faces a dilemma. Right now, it still needs to hire drivers due to the current shortage. Yet doing so adds to the number of people who will have to transition to new jobs when driverless technology is adopted. For drivers or would-be drivers, the future of trucking will be interesting, but there will be fewer jobs.

The ITF is looking at how driverless road freight transport can develop over the next two decades. It is also studying its impact on labour. Driverless trucks address the problem of driver shortage in the long term and offer a way to gradually replace retiring drivers. However, the transition to driverless trucks is likely to reduce demand for drivers at a faster rate than the supply shortage. Veryard estimates that of the projected 6.4 million driver jobs needed in 2030, between 3.4 and 4.4 million will become redundant if driverless trucks are deployed quickly. This means that between over two million drivers across the US and Europe could be directly displaced by 2030. For businesses and displaced workers alike, large-scale and rapid adoption would be highly disruptive.

To ease the transition the road freight transport industry will have to put in place a retraining scheme for redundant drivers. This may be challenging. While truck drivers are typically flexible, self-reliant and able to concentrate for long periods, they tend to be older and have less formal education. Finding and re-training for alternative jobs will be particularly difficult with displaced drivers competing with workers displaced from other sectors undergoing automation.

Then there is the problem of how to finance retraining. One idea being floated is partial financing via a permit scheme. Following a driverless vehicle safety approval process by the relevant authority, an electronic certificate is issued. Governments could auction these permits to road freight operators. Proceeds from permit sales could be used to fund transition arrangements for displaced drivers, such as retraining programmes or income replacement payments.

The number of government permits issued each year would be set in consultation with a temporary advisory board that includes representatives from labour unions, road freight businesses, vehicle manufacturers and government. The board would also advise the government in developing a policy mix that fairly

distributes costs, benefits and risks from automated road haulage. Balancing costs and benefits will require data on the demand for driverless operations and developments in the labour market. If demand for permits is high, permits will fetch high prices (or be sold in large volumes), generating strong revenue for active labour market programmes, which policy makers should put in place sooner rather than later.

Though rapidly accumulating computing power suggests labour will be increasingly superseded in trucking, new demands will arise, and new jobs too. Trucks may become driverless, but the future shouldn't be. *Clara Young*

Visit the International Transport Forum at https://www.itf-oecd.org

References

Managing the Transition to Driverless Road Freight Transport http://dx.doi.org/10.1787/0f240722-en