

ABSTRACT :-

Driving automation technology is attractive for the road freight transport sector since driverless trucks (DL-trucks) may drastically reduce driver costs, increase truck utilization and improve road safety. Although DL-trucks may bring significant impacts to the transport system, research on the future diffusion and impacts of DL-trucks is scarce compared to passenger transport. In this paper the sociotechnical innovation system developing, diffusing and utilizing DL-trucks in Sweden is analyzed based on the technological innovation systems (TIS) framework. The analysis is based on 20 expert interviews with a total of 23 representatives from 16 actors in the DL-truck TIS in Sweden. The TIS analysis shows that there are significant uncertainties in the timeline, operational capabilities, infrastructure requirements and regulative landscape for a widespread DL-truck deployment. There is a general view among the interviewees that DL-trucks is an important opportunity for Swedish industry and the economy. From a transport system perspective, DL-trucks are expected to bring sustainability benefits but it remains uncertain whether these benefits will be realized and what the negative side effects might be. The development of DL-trucks is heavily influenced by incumbent firms in the truck manufacturing industry but new actors from the telecom sector, energy sector and emerging truck technology companies are entering the area and shaping the development. The current relatively rigid institutions for truck manufacturing and road freight transport will require significant alignment to adapt to DL-truck operations in areas such as laws and regulations, business models and operational practices. The value chain of road freight transport may be disrupted as some of the current key actors, for instance traditional road carriers, could become less relevant in future DL-truck value chains. A critical uncertainty is how and by which actors the setting of requirements, deployment and financing of digital infrastructure for DL-trucks will be done.

KEYWORDS: NODEMCU Esp8266, Motor driver L298N, Sparkle box kit – DC MOTOR kit(100 rpm) with soldered wires, LED lights, Jumper wires.