



INLAND TRANSPORT:

Draft position on the challenges of the Future of Work

1. The development of better software, smaller sensors and better communications is leading to the increasing digitalisation of the global economy. **Digitalisation in land transport allows the automation of some functions and better control of processes as a whole. It can enable the increased use of remote-control technology.** Many of these technologies could be used to benefit workers and improve conditions, but can also be used to opposite effect.
2. Digitalisation is leading to **increased use of process and employee monitoring technology** because these reduce labour costs. This technology is embedded in equipment, tools or infrastructure and can monitor the physical movements, actions, location, facial expressions, speech and biometrics of workers.
3. These technologies can monitor many aspects of the driving process, such as braking and use of gears, as well as the driver themselves, through monitoring of facial expression and following the movement of their eyes. In some areas drivers are being encouraged to wear fitness monitors. In other areas card readers, mobile phones or tablets keep track of workers' location and can monitor some aspects of their performance.
4. **The data produced by these technologies can be linked to benchmarks that are embedded in algorithms.** These contain gender and racial biases that disadvantage women and non-white workers. These compare workers to their peers, or to an 'ideal' and are linked to rewards or sanctions. They are a labour discipline technology. At the moment workers have no input into these benchmarks or how the technology is used. These technologies hugely increase worker stress levels.
5. Improved communications technologies can also be used to ensure workers like drivers are kept alert, by asking them to fulfil functions at intervals, instead of ensuring adequate rest times.
6. In areas where workers are contracted by a digital or gig economy platform, such as Uber, they are effectively managed by algorithms that determine jobs, pay rates, where the work should be carried out, and that allow the worker to be rated by customers. These algorithms are not transparent to the workers who work under them.
7. The data is produced by workers during their work, and yet it is owned and used either by their direct employer, or by the provider of the technology. And workers have no control over how it is used. This employer-owned data can feed automated decision-making (algorithmic management) and creates an unequal balance of negotiating power.
8. Data is blurring the boundaries between sectors. In Public Transport this is leading to the development of 'Mobility as a Service' (MaaS). In many cities there are Smart City initiatives that may come to affect transport workers through the use of data.
9. The corporate narrative focuses on the potential impact of 'driverless' technology on our roads. However, the existence of successful prototypes and road testing does not imply imminent mass deployment. There are many technical, regulatory, ethical and industrial barriers to be overcome before this technology can be considered safe enough, reliable enough and advanced enough to be mass deployed.

10. On rails automation is more advanced, and in many developed countries there are driverless or driverless-capable passenger trains. In others there are automated freight trains operating with drivers. The trend toward automation will continue to develop although there are still significant barriers to its deployment across areas with multiple signalling and safety systems, and where the environment is complex – such as inter-city lines in highly populated areas.
11. The combination of more effective sensors and communication systems could enable more use of remote-control technology which has the potential to reduce operating costs without the technological limitations posed by autonomous. In public transport the technical limitations could be overcome by separating the vehicles from other traffic, as occurs in BRT systems.
12. Until automated systems can cope with emergencies better than drivers, there will be a barrier to deployment.
13. In railway signalling the deployment of digital technology has led to increased workloads. Signallers now cover much larger areas of track and have to monitor many different trains simultaneously. This parallels the situation in other sectors.
14. In all cases workers need regular practice in order to maintain skills and the capacity for effective intervention in case of need. Regulations should stipulate regular periods of human-in-control operation to ensure this.
15. In logistics the introduction of automated systems disguises the continued need for human labour as part of the process. It is often assumed that existing workers cannot fulfil functions in highly automated facilities, yet experience shows that workers can be trained to effectively use more complex technologies.
16. Across all areas of inland transport workers will be increasingly working alongside machines such as automated forklifts, cranes and other auxiliary machines. Connected sensors will make the work process much more transparent to external observers.
17. The digitalisation of the economy is creating new types of company that can use data to expand across sectors. For example, Uber is moving into freight, Amazon is in freight, LMD, warehousing and shipping.
18. Some important areas of inland transport suffer from labour shortages. Yet the narrative around autonomous vehicles combines with low pay and poor working conditions to dissuade potential workers from entering these areas.
19. The introduction of automated ticketing machines has displaced labour onto passengers and reduced employment in customer-service areas of public transport, with an especially negative impact upon women.

