How driverless transport could bring an end to commuter rail strike misery

January 19 2017, by Chris Ebbert

It's not easy being a rail passenger in Britain. In recent months, London and south-east England have regularly ground to a halt in a series of rail and Underground strikes, disrupting the lives of millions.

A newspaper headline even claimed that the situation was so dire that commuters might be hired by one firm – Southern Rail – to drive the trains themselves. Recent reports suggest that some kind of resolution may soon be in sight in that dispute, but as technology advances apace, do transport networks really need staff at all?

With a self-driving bus, the Navya, arriving on the streets Las Vegas, the first in the US to operate on a public road, we may be approaching a future in which public transport networks could be run, efficiently, by machines. Indeed, London's Docklands Light Railway (DLR) network has been operating as a driverless service since 1987 – and 99% of services leave on time.

There rages, however, an embittered debate about how comfortable people may feel entrusting themselves to an automated decision maker. It seems to represent a new, psychological frontier of a kind we have never before encountered.

> The Navya Arma is a driverless shuttle: https://t.co/2LE9XUJ5py #Autonomous pic.twitter.com/Pf0nip01rd
>
> — Autoblog (@therealautoblog) January 8, 2017

Whenever machinery is introduced to complete tasks traditionally done by humans, both public and professionals are often sceptical – especially when those machines can make decisions on our behalf. But while decision-making machines used to be little more than a theoretical issue, a philosophical debate even, we now have the technology to make them a fact of life.

There are vehicles lurking in corporate R&D hangars whose decision-making abilities on the go are superior to our own, and they are being tested by brands such as [Tesla, Volvo, BMW, Mercedes-Benz, Lexus, Audi, and Rolls-Royce](#).

A new age

So what is stopping their wider introduction? The key term used by innovation management experts for how ready a society is for change is "[Absorptive Capacity](#)". This can be likened to the ability of a sponge to absorb liquid, or, in our case, a society to absorb innovation. This absorptive capacity can be influenced by factors such as people's knowledge and experience of the subject at hand; if there is little of both in society, then that society is likely to react coolly to a proposed innovation.

In other words, if we don't know enough about how something works we are less likely to embrace it. And how do we get to understand new things if their makers are tight-lipped about how they work? This is one of the biggest obstacles facing the implementation of a far-reaching driverless transport network.

Accidents involving new technology don't help in the trustworthiness stakes – as the [recent crash of a Tesla car](#) in autopilot mode demonstrated. The accident caused people to question the safety of self-driving vehicles, even though they are far [safer than human drivers](#), who

cause 94% of accidents in the US. Indeed, human error accounts for [far more accidents than mechanical failure](link).

We live in times where our technological capabilities greatly surpass the understanding most of us have of them. If only a few of us understand how a telephone works, we can safely assume that even fewer comprehend what goes on inside a computer. We simply don't know anymore how stuff works – so how can we trust it?

But we [should](link). Machines are more predictable than humans, since they don't have minds of their own, and their suitability for a given task can be established in controlled environments before they are released into the wild. With humans, you never really know what they'll do next.

Redefining normal

It is [frequently argued](link) that mechanised brains may not be able to improvise the way humans can, making driverless vehicles easy prey for unforeseen adversity. While this is true, the other side of the coin is that an ability to improvise in odd circumstances may be less valuable than an ability to always respond accurately within a set framework of normal situations. Normal situations, after all, occur at a far higher frequency. In short, a truck or train capable of doing the right thing every time in a normal context is better than a truck with the ability to evade a zombie apocalypse if it happens. They are also less likely to go on strike.

Besides, the wealth of experience gathered by human operators can now be programmed into the circuits of all [driverless vehicles](link), creating a high level of ability to understand and react to situations we will never have among human drivers.

All things considered, a vehicle operated by a well-programmed computer is set to be superior to a human operator in all but the most

unusual situations – which are far less likely to occur than those which frequently trip up human operators. It is very doubtful that any computer in charge of operating a vehicle will ever get distracted, suicidal, angry, irrational, or drunk. It will never act malevolently, it won't be texting on its smart phone when it shouldn't be, or be having an argument with its passenger. And it probably won't get creative and attempt to impress or scare another vehicle operator.

It would seem logical to assume that the level of technology required for running a comparably simple operation like a train on tracks between stations is there. The biggest obstacle is our will.

Indeed, the barrier between us and a new, reliable world of driverless transport may only be our inability to understand – and feel comfortable with – the technology. It will take experience to build that trust, and the chance for this to happen has arrived with the Las Vegas driverless bus.

Perhaps it's time to get on board.

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