The winners and losers in the race for driverless cars

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Credit: Haley Black from Pexels

The ridesharing service Uber is pretty close to getting the go-ahead in almost all states and territories in Australia, with Victoria set to follow Queensland in introducing new legislation.

In the short term, [Uber](#) has committed to creating tens of thousands of new jobs in Australia. Many thousands of jobs have already been created and your typical Uber driver speaks positively of being empowered in a flexible working arrangement.

But we know Uber has other plans. Like almost all large [car](#) and technology corporations such as Toyota, Ford and Google, Uber is investing heavily in self-driving technology. It's already [testing its driverless technology](#) in Pittsburgh, in the US. A rival, nuTonomy, has also started [trials of driverless taxis](#) at a Singapore business park.

With drivers contributing a large fraction of operating costs, removing them through automation has an enormous commercial motivation.

If companies solve the technological problems and successfully navigate the government policy landscape, millions of transport-related jobs worldwide are at risk, including Uber and taxi drivers, truck drivers, posties and fast food delivery drivers, just to name a few.

This is just one in a stream of events where technology is changing society. Each of these events has an immediate impact on society.

What if we step back from Uber's short-term aim and examine who are likely to be the big winners and losers in this technological arms race for driverless cars.

Public vs private research

Universities are winners and losers. While the large-scale hiring of researchers from [US university Carnegie Mellon to Uber](#) became public in 2015, [top researchers, especially young ones, are moving](#) to self-driving car and artificial intelligence (AI) corporates and start-ups.

While in the past universities have performed much of the critical research leading to technological breakthroughs, this is less likely to be true in the age of self-driving cars.

Current autonomous car research is extremely resource intensive. Fleets of development vehicles must be maintained and large teams of engineers must be employed. There are also mind-blowing amounts of data to be stored and processed using massive computer resources.

Some universities have remained connected. For example, Toyota has funded research at the [University of Michigan](), [Stanford]() and [MIT]() to the tune of almost one hundred million dollars.

But many universities have [lost their top talent](). A brain drain itself does not have to be a long-term problem, if some of those researchers eventually come back to share their experience or establish collaborative relationships with industry.

However, the stakes are so high and commercially important that meaningful collaboration between corporations and universities is arguably getting rarer in the robotics research area.

It is also a problem if none of the most exciting researchers and teachers are left at universities to educate and inspire the next generation of robotics engineers.

The car culture of the future

If society transitions successfully to an ownerless car culture where cars are summoned upon demand, there are potential huge environmental benefits.

Properly implemented, self-driving cars will drive in a more fuel or

energy efficient manner. Networked car fleets will further reduce energy consumption by reducing traffic congestion.

The biggest potential environmental win is simply from having far fewer cars in existence. It is estimated that you can meet a typical city's current transport needs with a much smaller fleet of shared pool cars compared to the current privately owned car system.

It is not hard to conclude that if there will be far fewer cars in the future then the world may need fewer car manufacturers or that current car companies will make far fewer cars.

It is quite conceivable that a number of today's large automotive companies will not exist a decade after [self-driving fleet cars dominate the roads](link).

This may be one of the reasons it seems that every major car maker is racing to develop this new technology. It is simply survival of the fittest.

With fewer people needing to learn to drive, there will be less demand for driving instructors.

The trend in developed countries is that [fewer young people are learning to drive](link). Many simply do not see the point in spending time and money learning to drive when they can simply get out their phone and call an Uber.

This trend is especially true in highly urbanised areas, where ride services are most plentiful and where the cost and hassle of owning a car is often highest.

We the consumer

As consumers, we are likely to both win and lose. Potential monopolies are a risk; in the US this isn't currently a problem due to fierce competition between ride sharing companies such as Uber and rival ride-share operator Lyft.

Uber is currently the dominant ride sharing option in Australia so only time will tell whether real competition will occur.

Improving the safety of car occupants and pedestrians is also a potential big win for consumers, especially if better autonomous driving systems can make a dint in the thousand-plus annual fatalities in Australia and the more than a million deaths annually worldwide. If the technology works, reducing fatalities including those caused by drink driving and fatigue, is fantastic for everyone.

Your transport experience itself may or may not improve. One of the big, less glamorous motivating factors around self-driving cars is that we spend a comparable amount of time in our cars as on the internet. The company that gets significant market share in this space may choose to monetise your driving time with ads (something you already experience in some taxis).

Consumers may be faced with the unenvious choice of paying a hefty no ads premium charge fee, or being deluged by ads that they can't turn off or mute.

When you first get into an autonomous ride-sharing car, who do you think will be in control? Perhaps Arnold Schwarzenegger's 1990 movie Total Recall gives us a glimpse of what the future may hold (language warning).

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