Surplus Humans

APTIA
Industrial Arm of the Bus Industry Confederation
moving people

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Robotics is an interdisciplinary branch of engineering and science that includes mechanical engineering, electronics engineering, computer science, and others. Robotics deals with the design, construction, operation, and use of robots as well as computer systems for their control, sensory feedback, and information processing. Robotics means autonomous machines.

Humanics is the subject or study of human affairs or relations, especially of the human element of a problem or situation as opposed to the mechanical.

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What do we know so far about this phenomenon?

- It is happening – not if, but when. Australia is at the forefront of the technology.
- Whenever it happens there will be a significant transitional period in the replacement of vehicles and humans.
- It will have a substantial impact upon the current labour force which changes and, for those who still have jobs, significant retraining. Making robots will be a major industry for humans at least until robots start to make themselves.
- There is uncertainty about what role humans, if any, should play in autonomous vehicle transport i.e. as an observer, supervisor or attendant. Each discipline will have a different job specification and responsibility.
- There is divided opinion as to how much safer these autonomous vehicles will be and whether the public will be prepared to place their safety into the hands of a robot.
- Most cost benefit analyses indicate that although the vehicles may be more expensive other costs will reduce such as labour costs, maintenance costs, fuel costs and insurance costs.

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The case for autonomous vehicles:

- Viewed over time technological advances historically produce social divides – generating wealth and new opportunities for some, while creating unemployment and disadvantage for others.
- Today, technological disruption occurs so frequently and rapidly that it is considered the norm. It has been described as the perfect storm creating unique conditions and involving greater faster and different transition that previously experienced (Flinders University)
- The Australian and New Zealand Driverless Vehicle Initiative (ADVI) is the peak industry advisory body that services the wide ecosystem of automated vehicles across Australia and New Zealand. Most State Transport Departments, Airports, EasyMile, Universities and major suppliers such as Volvo have signed up.
- Australia has signed up as a global leader in driverless vehicle.
- ADVI's role is to inform and raise awareness of the lifestyle benefits of autonomous vehicles and economic opportunities that come with it, which they value at $95bn a year.

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The case against autonomous vehicles:

- Some say the introduction of autonomous vehicles will reap carnage upon the labour force which will be substantially reduced, retrained into unsuitable jobs and paid at lower wage rates. It is widely recognised that an older workforce such a bus driver would not transition easily to a new paradigm.
- Humans may be a surplus cost to the potential savings as companies fight for profit margins. Drivers are the biggest expense for transport companies as they sleep and take vacations, whereas their autonomous replacements don't.

(Wolf Richter – the Wolf Street Blog)

- Organisations of collective workers want their voices to be heard by calling upon a rethink of automation and a recognisation that when people lose their jobs, real families get hurt, even if , in the abstract, other jobs are created.
- Michael Caine the National Secretary of the TWU has already cited transport as a clear and early example of the future of work by claiming that digital platforms only circumvent protections for workers.

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BIC'S involvement:

- BIC is a player into the issue of autonomous vehicles and as stated there are two current parliamentary inquires which are trying to provide a balance to the introduction of autonomous vehicles

"The introduction of driverless buses in the Mass Transit Trunk Services segment, if accepted by the community, will cause a reduction in the existing driver workforce."

"The transition to the new driverless technology will need to be managed in a way that provides for an ageing workforce to be naturally retired or retrained to take in new roles that will emerge."

- BIC noted that the retraining and redeployment of older workers is likely to pose challenges for the individuals involved and for employers faced with potential redundancy costs.
- BIC recognises that the costs of redeployment or redundancy is a significant cost which will need to be factored into bus service contracts by relevant State Governments.
- BIC also questions the job description, wage conditions, training and accreditation needed by an employee who continues in the industry following transition.

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The burning question?

“How does the new technology earn a social license to overcome the widely accepted general discomfort some may feel about having a robot/ computer take control of their mode of transport?”

i.e. when does an autonomous vehicle no longer require a human on board

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Do we need Humans in autonomous transport?

- On January 15, 2009 US Airways Airbus A320, whilst taking off from La Guardia Airport NY flew into a flock of geese, which knocked out the engines.
- The on board automation algorithms of the Airbus A320 could not provide a safe landing for the disabled aircraft and resigned the passengers and crew to a crash landing and certain demise.
- Captain Chesley ‘Sully” Sullenberger took over manual controls and landed the aircraft on the water in what became known as the ‘Miracle on the Hudson.”

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Do we need Humans in autonomous transport?

- The incident on US Airways Airbus A320 prompted the Vice President for production development for Boeing to state:

“Automation won’t be applied until our planes are as adept at handling a mid-air crisis as that confronted by captain Chesley Sullenberger.”

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Do we need Humans in autonomous transport? (Sully has the last words)

“We have to account for what we cannot know yet. We have to allow for the unknown unknowns and we have to decide if there will be the possibility of human intervention in case technology isn’t doing what we want, or what is best for the situation.”

“Technology has to be so good, so resilient, so adaptable and so reliable that human intervention is never necessary. That’s a very, very high bar. The more you take humans out of engagement with the process the less likely you will be able to intervene. If that’s the case then you must make it so they never have to.”

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A robot walks into a bar, orders a drink, and lays down some cash. Bartender says, ‘Hey, we don’t serve robots.” And the Robot says, “Oh, but someday you will.”

The lazy or busy future dog owner could load their dog into a driverless vehicle at home and send it off to the dog park. No more the owner walking the dog.