The Future *of* Transportation Work:

A SUMMARY REPORT – CONCLUSION

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Possible Scenarios

There is no disagreement that technological change will dramatically affect transportation work in coming years, albeit the direction and pace of that change cannot be predicted.

However, one aspect of the future of transportation is relatively certain: there is little doubt that Australians' general demand for transportation services will continue to grow, and likely at a faster pace than the economy as a whole.

Consumers tend to demand more transportation services as their income grows – for both business and personal purposes. They demand a greater range of consumer goods (including those which must be delivered from far away), and they demand greater quantities of personal travel (including tourism).

The increasing length and complexity of industrial supply chains (including global supply chains) also fosters demand for transportation as a business input. This stable, ongoing growth in demand for transportation will help to buffer the disruptive impact of technology and work organisation on employment patterns: it is certainly easier to adapt to change in the context of a growing industry, than one that is shrinking.

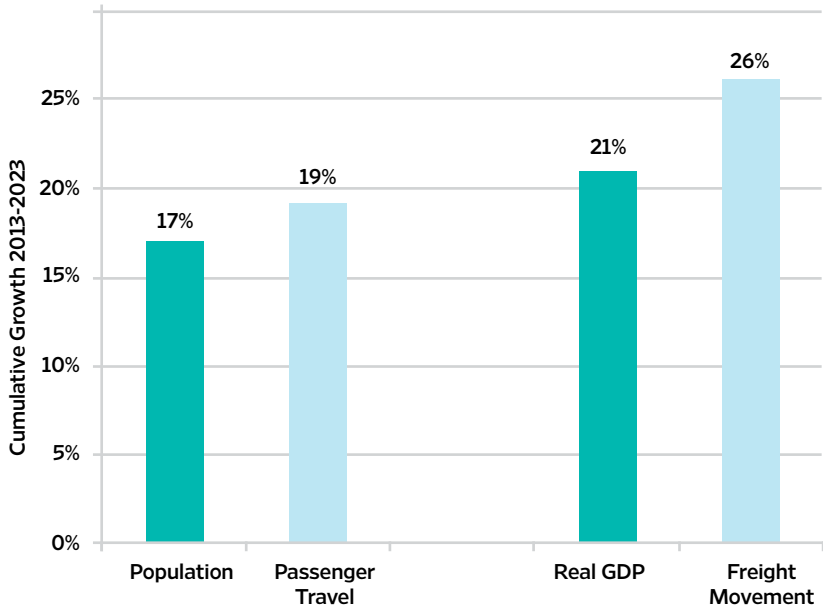
The National Transport Commission has developed forecasts of overall transportation demand, based on economic inputs, demographic projections, and other fundamental drivers.

These forecasts anticipate growth in domestic passenger travel of 19 percent over the coming decade (exceeding population growth), and 26 percent over the same period in domestic freight transportation (exceeding economic growth; see Figure 4). So the overall volume of transportation services production will certainly continue to expand in the years ahead. (see fig.1)

In terms of projecting future changes in transportation employment associated with this robust demand, the task becomes considerably more complicated – given the fundamental uncertainty that exists regarding the pace and direction of technology, and the associated changes in business models and employment relationships.

Point estimates of future employment levels are not credible, given the far-reaching and structural changes that are coming. Instead, we have developed a set of three broad composite scenarios. Each reflects a possible combination of technological and organisational changes in the sector; each is then ascribed a broad

FIG 1 **Forecast Growth in Transportation Demand, 2013-2023**



Source: *National Transport Commission forecast.*

BOX 1

SCENARIOS OF CHANGE

Scenario	Steady Implementation of Change	Faster Implementation Of Change	Deferred Change
Approx. Likelihood:	50%	35%	15%
Elements	Widespread, balanced acoption of labour-saving and labour-replacing technologies. Driverless road transport reaches widespread Tier 3 and 4 automation iwthin 15 years. Major investments in infrastructure, capital, and skills required. Significant changes in allocation of specific jobs, but overall employment across transportation not dramatically affected (may continue growing). Impacts of change manageable with appropriate attention and planning.	Large but uneven outbursts of technological change and business disruption within a shorter time period: as quickly as 5 years. Driverless technology sees far-reaching applications of Tier 4 or higher automation within a decade. Impacts on existing transportation workforce more immediate and difficult to manage through attrition and demo-graphics. Technological unemployment likely, requiring active adjustment measures	Change implemented more slowly than expected, due to technological, regulatory, and social barriers. Slower phase-in and more gradual impacts on transportation workers. Will take 25 years or more for widespread adoption of Tier 3 or 4 driverless systems. Even under this more gradual trajectory, sector still faces significant requirements for training and retraining, workforce adjustment, and regulatory adaptation.

probability. This "scenario" approach is preferred in management strategy, planning, and other forward-looking applications, where the inherent uncertainty of point estimates provides little confidence for the users of forecasts.

These three broad composite scenarios, and their underlying components, are summarised in Box 1. The scenarios differ in their specific content and timing. But there is no case among them in which thorough-going technological change, and equally far-reaching changes in work organisation and employment relationships, can be prevented or avoided. This reinforces the necessity for transportation stakeholders to address change, and prepare for it, instead of waiting to be overtaken by it.

Preparing for Change

Historical experience suggests that epochal shifts in technology and other dimensions of work can be managed without destroying (economic) value and (social) values.

All stakeholders – including employers, workers and their unions, customers and shippers, governments and regulators, financiers and investors, and training and education institutions – have a role to play in preparing the sector to make the most of the change ahead.

To be sure, this means acknowledging that change is inevitable, but recognising equally that it will be shaped by the choices and actions of industry participants and broader social and governmental forces.

Moreover, preparing to manage change will be more successful if it is done jointly by stakeholders through multi-partite processes of analysis, deliberation, and decision-making – rather than being driven solely by the individual actions and preferences of narrow interests within the sector.

We have therefore identified six sets of pro-active measures through which transportation stakeholders could prepare to minimise the costs, and maximise the benefits, of the coming disruptions. These recommendations are summarised in Box 2 overleaf.

BOX 2

PLANNING FOR CHANGE: SIX RECOMENDATIONS

i) FACILITATING MOBILITY: There will be significant new work associated with the advent of new transportation technologies. An obvious response is to assist existing workers to fill new positions by providing notice, support, and access to training and adjustment programs. Financial support from employers and governments will be necessary. Training and adjustment programs need to take account of the advanced age of many transportation workers, and tailor offerings to fit needs of older workers with less formal qualifications.

ii) ESTABLISHING BENCHMARKS FOR SKILLS AND QUALIFICATIONS: New technology-intensive jobs will require a wide-ranging suite of new skills – including design, programming, operation, data management, and more. Specific requirements and qualifications for those skills must be formalized and regulated. Sector stakeholders should work closely with existing bodies (such as the Australian Industry Standards body, TAFEs, and others) to specify and catalogue requirements for new jobs. Transferable certifications will assist workers and employers to identify and acquire needed skill sets, and develop a ready supply of qualified, flexible workers. Strengthening high-quality apprenticeships is also critical.

iii) FACILITATING DECENT RETIREMENT: The advanced age of many transportation workers is an advantage in a time of transition. Downsizing or restructuring can be managed in part by facilitating exit by workers not interested or able to undertake retraining and adjustment. Bridging benefits and early retirement incentives, with government support, ease the transition, and avoid involuntary job losses that would otherwise occur. TWUSUPER can play an important independent role in this process.

iv) NEGOTIATING TECHNOLOGICAL CHANGE: Adaptation is more successful when all parties have a genuine say in how it is implemented and managed. Transportation stakeholders must commit to information sharing, consultation, and negotiation over technological change. Workers and their unions should be notified of plans for new technologies. Discussions should occur regarding timing, scope, and effects of new investments. Opportunities should be provided for early input from workers regarding how change will be managed; collective bargaining should include the terms of technology and its application.

v) BUILDING CONSENSUS: Sector needs a multi-partite, sector-wide approach to analysing challenges and developing inclusive sector-wide responses. Undertake social dialogue among industry participants to maximise benefits of change, reduce costs – and share both costs and benefits fairly. Multi-partite forums (engaging business, workers and their unions, government, regulators, training institutions, financial institutions, and others) will help build relationships among stakeholders, identify future needs, and imagine and implement initiatives to facilitate necessary investments and adjustments.

vi) PROTECTING STANDARDS AND BENEFITS: Changes in work organisation and employment relationships are changing transportation jobs and challenging traditional standards of security, entitlements, and compensation. The use of non-standard employment forms (like contractors and labour hire) imposes unsustainable consequences on workers who are denied stable, decent opportunity. Traditional standards and entitlements should apply to all transportation workers, including in non-standard, independent, or "gig" situations. Regulatory benchmarks and corporate accountability should apply across the supply chain.

Conclusions

This report has highlighted the daunting challenges and uncertainties facing transportation work in Australia. Accelerating technological change is one driver of that change. But other factors are also shaping and reshaping the whole sector, and the lives of the people who work in it – including the trend toward non-standard or precarious forms of employment, which has significantly affected the stability and quality of work. Other forces are at play, as well, including environmental, demographic, and fiscal pressures that will also affect the production and sale of transportation services

However, amidst all this flux and uncertainty, there are also sources of stability and continuity which can impart confidence to stakeholders as they prepare for the coming changes.

Transportation is a crucial contributor to Australia's economic performance and quality of life; that importance is experienced broadly through the whole economy, not just within the transportation sector itself, and this gives transportation providers a legitimate platform from which to demand the attention and support of broader government and society. Moreover, the overwhelming evidence is that demand for transportation services in Australia will continue to grow relatively strongly – faster than population growth and the economy as a whole.

Hence the structural economic and social importance of transportation is not in question. All that is in question is how the sector is managed, in the face of coming change and disruption.

Transportation work will not "disappear." But it will change significantly. And not solely because of technology. Working pro-actively to lift and stabilise the quality of transportation jobs is important to maximising the net social benefits of this vital sector. ■

To read the full report visit: www.twusuper.com.au/the-future-of-transportation-work/