

# NAVIGATING TIMES OF CRISIS: BIG PICTURE THINKING FOR STRATEGIC MODELLING

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DEC 2025





NEW ZEALAND / LOCAL DEMOCRACY REPORTING

# Climate change activists' Mill Rd legal challenge 'a sign of things to come'

8:44 am on 27 March 2021

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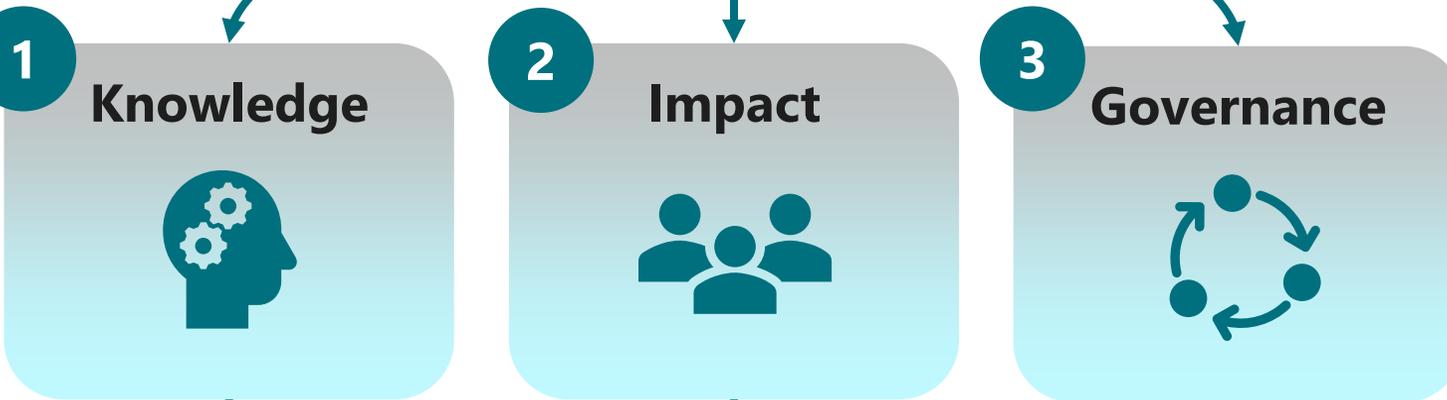
Stephen Forbes, Local Democracy Reporter  
✉ [steve.forbes@stuff.co.nz](mailto:steve.forbes@stuff.co.nz)

# How can strategic transport modelling navigate times of crisis...

**How can strategic transport modelling  
navigate times of crisis...**  
**by using polycrisis thinking?**

# "The Polycrisis"

Crossroads



## Way Forward

# POLYCRISIS

## 2025 Global Risks



Source: [WEF Global Risks Report \(2025\)](#)

## Three frames for public policy in a polycrisis

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GLOBAL RISKS

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Big Law

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July 22, 2025 • By Lawyers Weekly

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## Major summit of philanthropy and social change leaders explores courageous responses to the polycrisis

The Shape Agency



Government of South Australia  
SA Health

Accessibility

Language

Careers

Clinical resources

Conditions

Healthy living

Local Health Networks

Public health

## Disaster and polycrisis planning

# 1 KNOWLEDGE

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# KNOWLEDGE BASE CASE

“

## Base case

A project **appraisal** compares the costs and benefits of doing something (a 'project case') with not doing it (the 'base case').

The base case should identify the expected outcomes of a '**do-minimum**' situation, assuming the continued operation of the network or service under good management practices. We recommend the committed and funded expenditure approach to defining the base case, but recognise that some states and territories use the planning reference case approach.

”

Source: [Infrastructure Australia \(2021\)](#)



# KNOWLEDGE BASE CASE

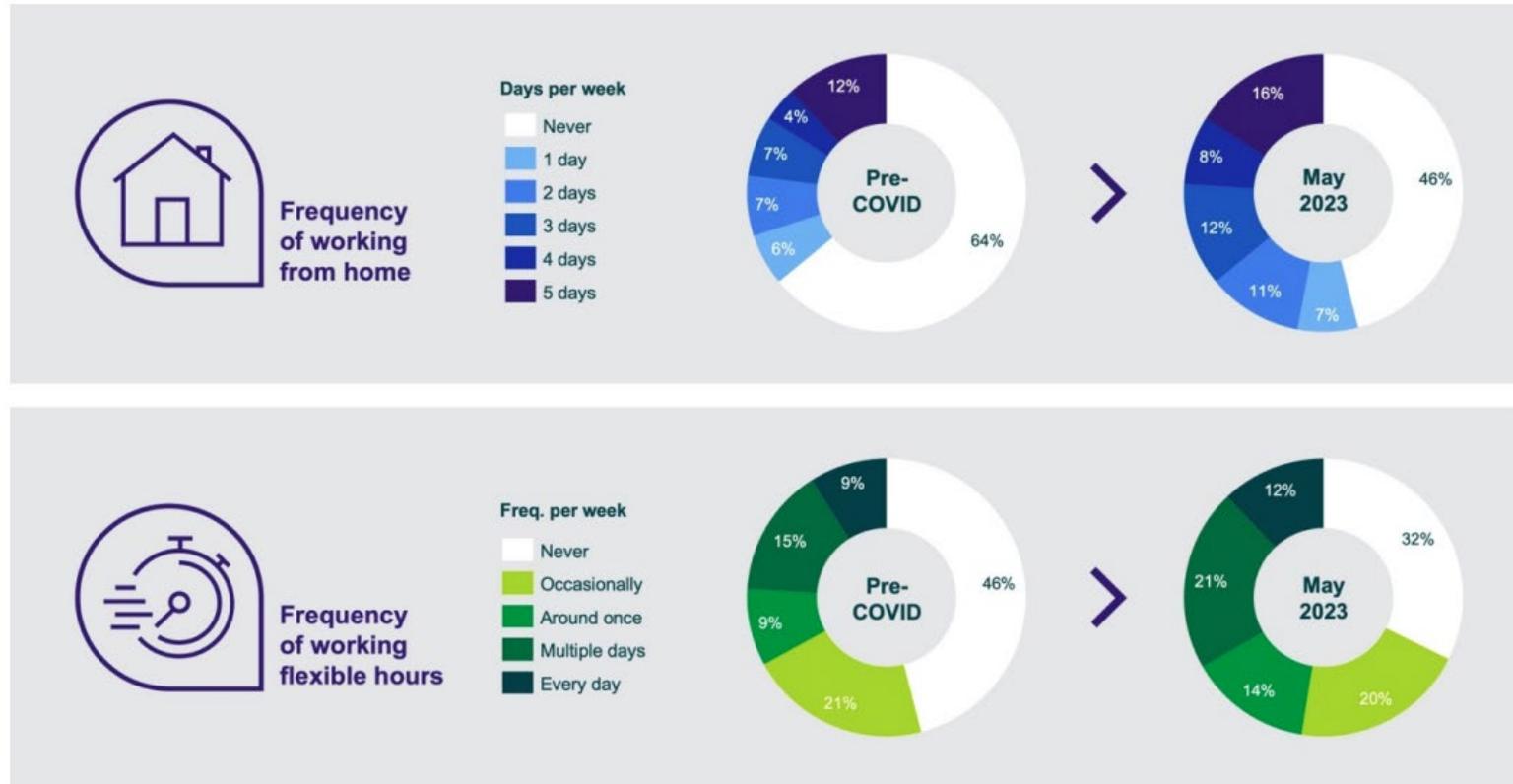


Source: [Stantec \(2025\)](#)



# KNOWLEDGE BASE CASE

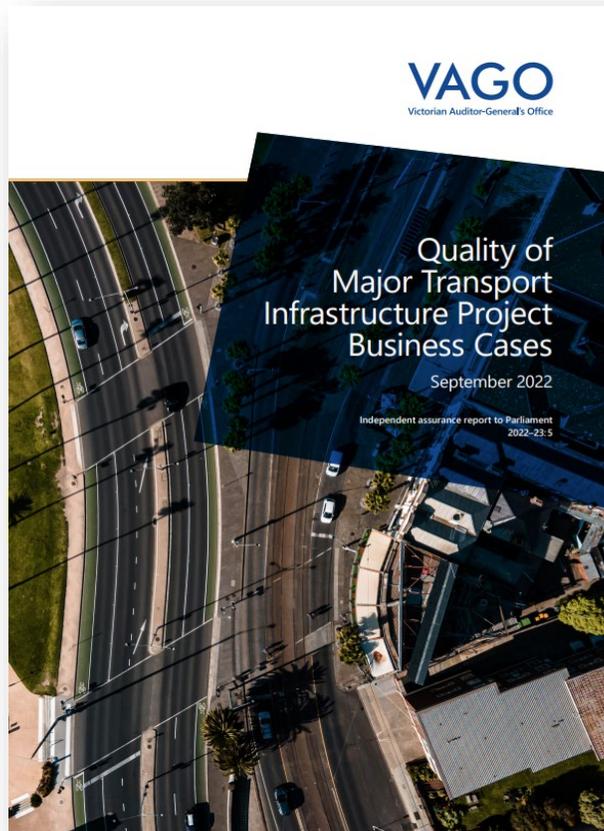
Working from home, and working 'flexibly' continue to be the norm, post-COVID



Source: [PTAANZ \(2024\)](#)



# KNOWLEDGE BASE CASE



## *Commentary on the Melbourne Airport Rail Business Case (2021):*

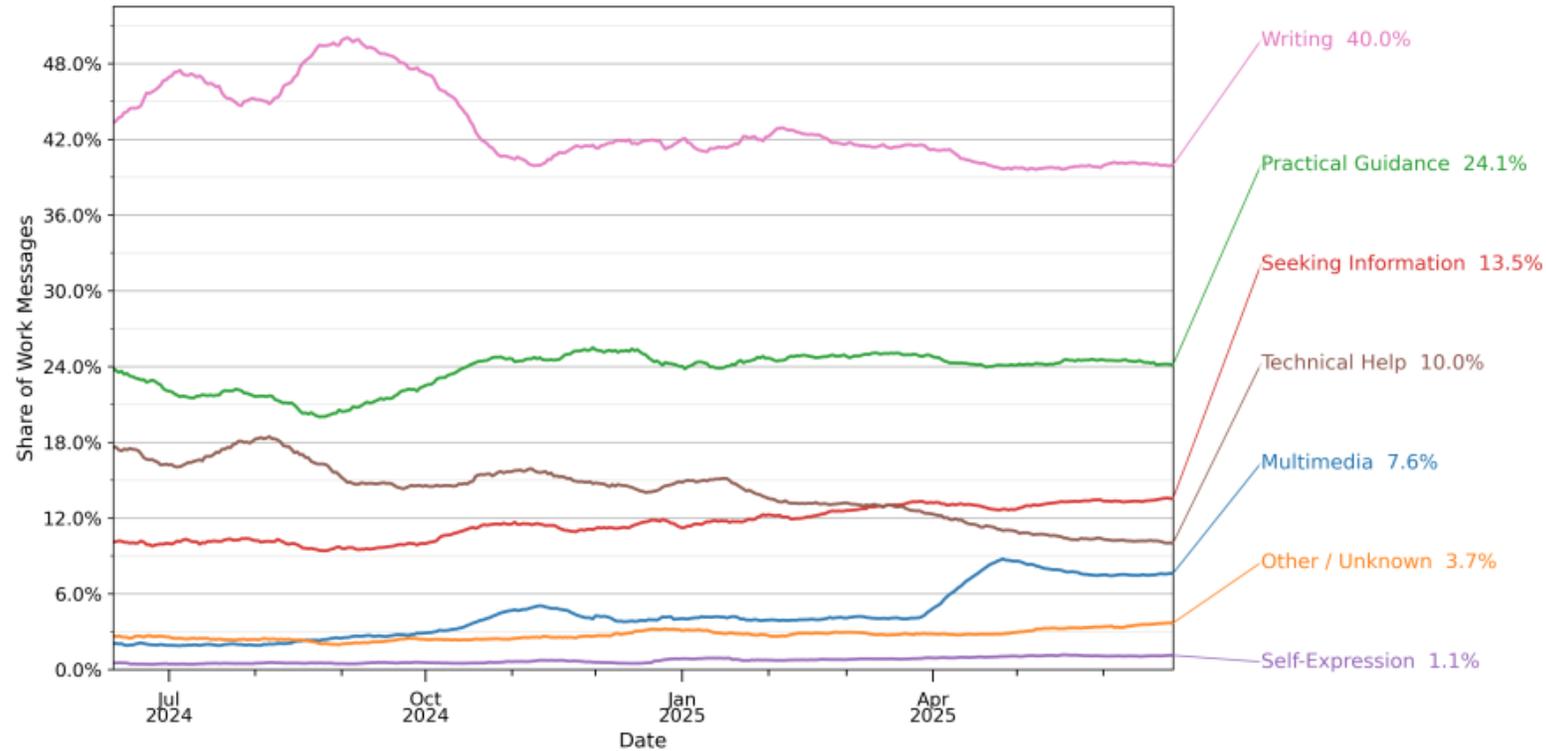
“ The combined effect of these key assumptions results in the business case suggesting that the BAU base case is not well placed to address the problem and that significant intervention is urgently required. However, it is not clear that this is the most credible base case because it would have been equally plausible to assume a core BAU base case that accounted for changed travel patterns resulting from COVID-19 and assumed the construction of the SRL. ”

Source: [Victorian Auditor-General's Office \(2022\)](#)



# KNOWLEDGE

## EMERGING TOOLS & METHODS



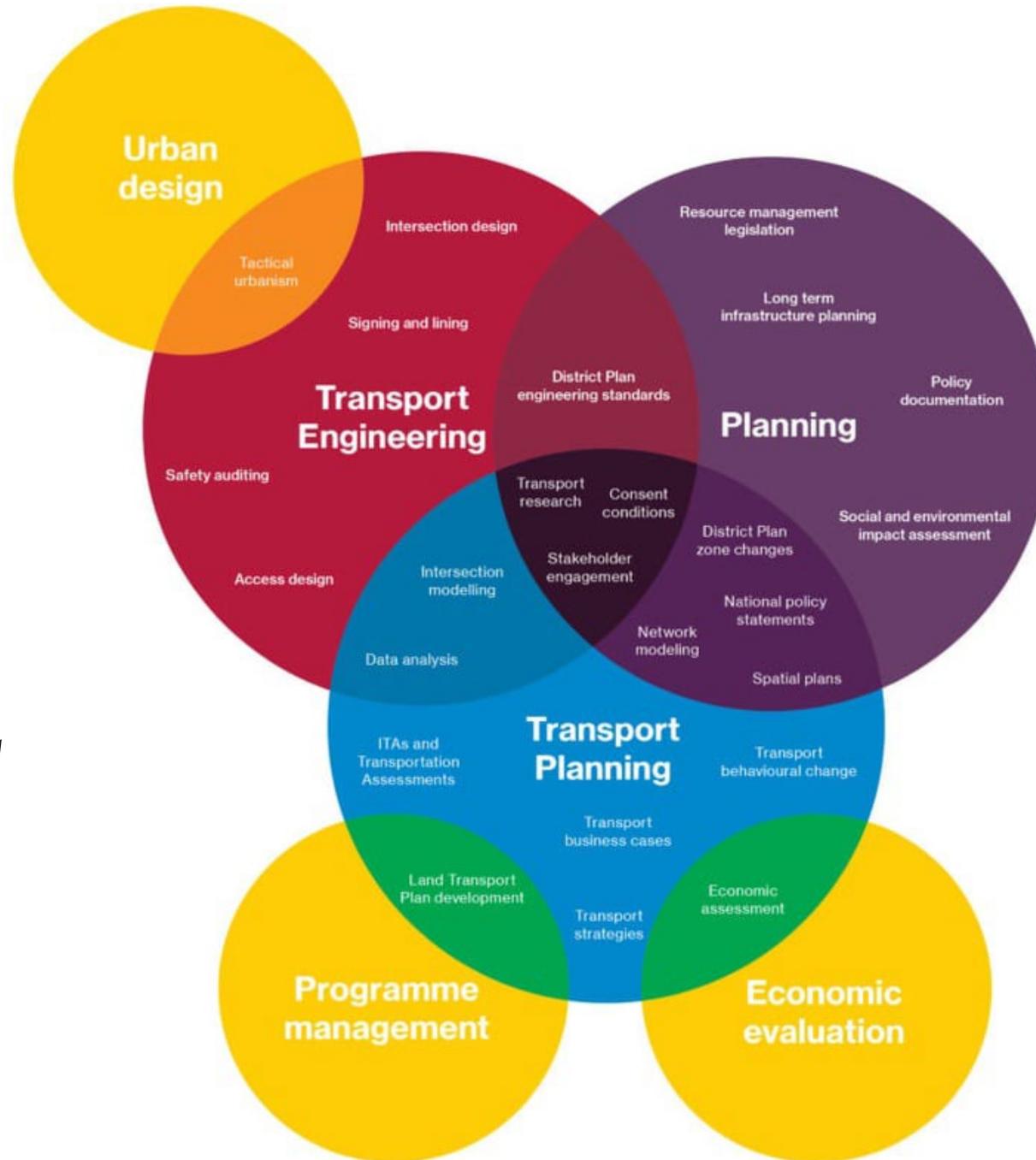
**Figure 8:** Share of **work related** consumer ChatGPT messages broken down by high level conversation topic, according to the mapping in Table 3. Values are averaged over a 28 day lagging window. Shares are calculated from a sample of approximately 1.1 million sampled conversations from May 15, 2024 through June 26, 2025. Observations are reweighted to reflect total message volumes on a given day. Sampling details available in Section 3.

Source: [OpenAI \(2025\)](#)



# KNOWLEDGE DIVERSITY

What other overlaps  
are we missing?

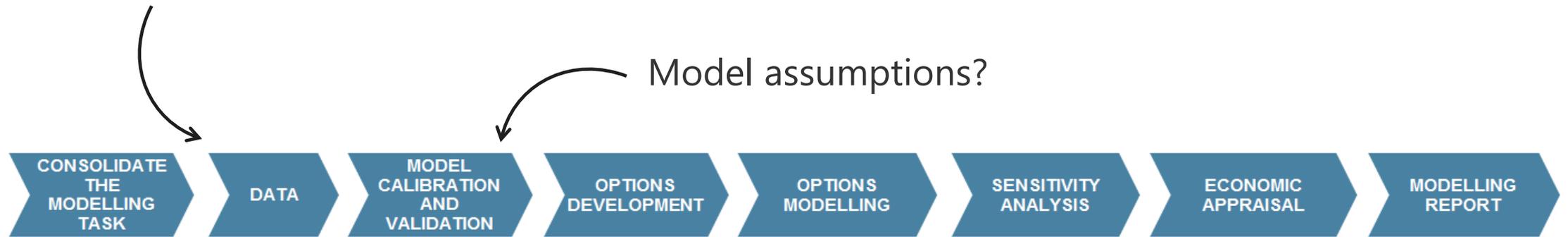




# KNOWLEDGE

## WHERE DOES THIS FIT IN MODELLING?

Existing data and cal/val inputs?



Model assumptions?

**Typical Transport Modelling Process**

Types of sensitivity tests?

## 2 IMPACT

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# IMPACT BIAS

FIGURE 1.2 | Current global risks, by age group

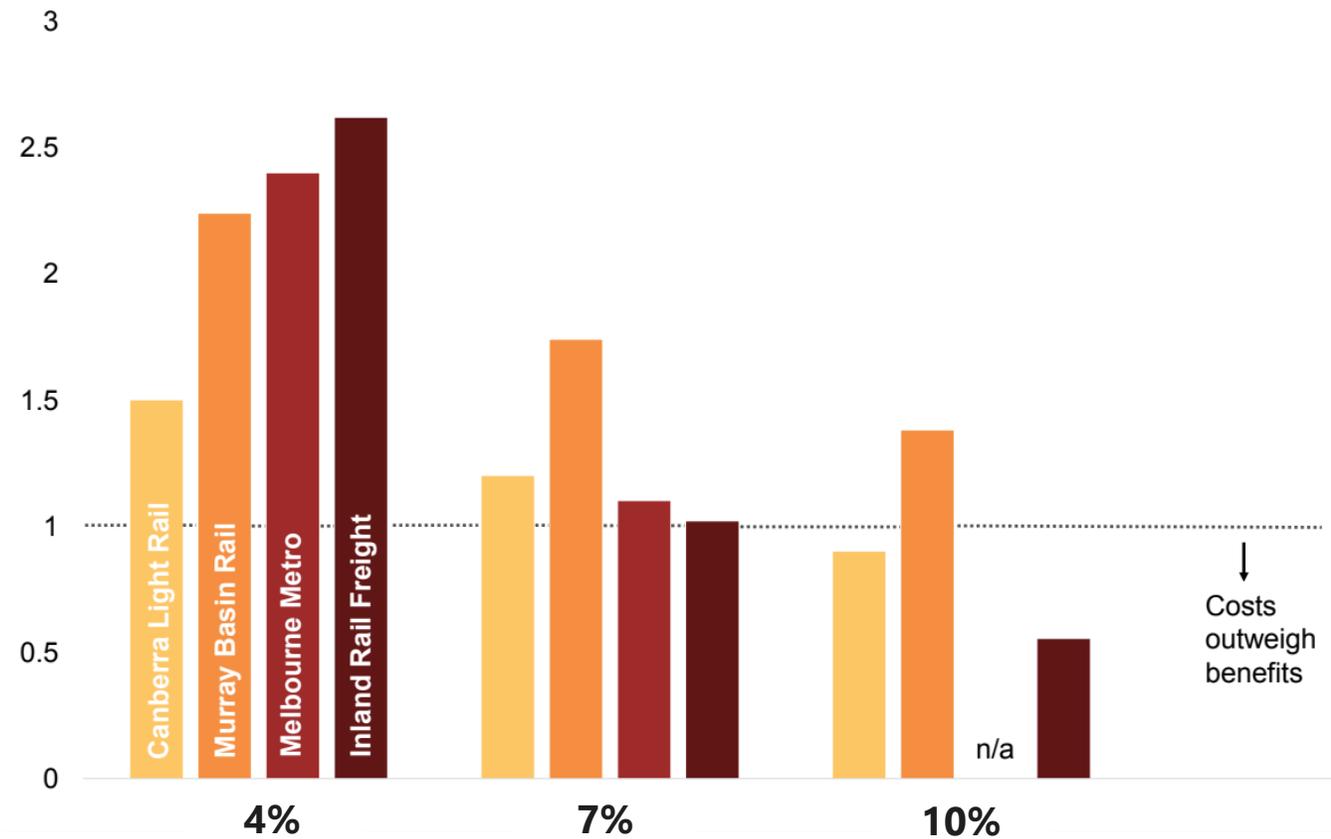
	<30	30-39	40-49	50-59	60-69	70+
1 <sup>st</sup>	Extreme weather events	State-based armed conflict	State-based armed conflict	State-based armed conflict	State-based armed conflict	State-based armed conflict
2 <sup>nd</sup>	State-based armed conflict	Extreme weather events	Extreme weather events	Extreme weather events	Extreme weather events	Extreme weather events
3 <sup>rd</sup>	<b>Economic downturn</b>	Geoeconomic confrontation	Geoeconomic confrontation	Geoeconomic confrontation	Critical change to Earth systems	Societal polarization
4 <sup>th</sup>	Misinformation and disinformation	<b>Economic downturn</b>	Misinformation and disinformation	Societal polarization	Geoeconomic confrontation	Geoeconomic confrontation
5 <sup>th</sup>	Societal polarization	Misinformation and disinformation	<b>Economic downturn</b>	Misinformation and disinformation	Misinformation and disinformation	Critical change to Earth systems
6 <sup>th</sup>	Erosion of human rights and/or civic freedoms	Crime and illicit economic activity	Societal polarization	Critical change to Earth systems	Societal polarization	Misinformation and disinformation
7 <sup>th</sup>	Adverse outcomes of AI technologies	Critical change to Earth systems	Cyber espionage and warfare	<b>Economic downturn</b>	Inequality	Adverse outcomes of AI technologies
8 <sup>th</sup>	Geoeconomic confrontation	Disruptions to a supply chain	Concentration of strategic resources	Debt	Involuntary migration or displacement	Asset bubble burst
9 <sup>th</sup>	Lack of economic opportunity	Involuntary migration or displacement	Critical change to Earth systems	Biodiversity loss and ecosystem collapse	Biological, chemical or nuclear hazards	Biodiversity loss and ecosystem collapse
10 <sup>th</sup>	Natural resources shortages	Lack of economic opportunity	Lack of economic opportunity	Disruptions to critical infrastructure	Cyber espionage and warfare	Biological, chemical or nuclear hazards
11 <sup>th</sup>	Asset bubble burst	Concentration of strategic resources	Adverse outcomes of AI technologies	Erosion of human rights and/or civic freedoms	<b>Economic downturn</b>	Concentration of strategic resources
12 <sup>th</sup>	Decline in health and well-being	Inflation	Erosion of human rights and/or civic freedoms	Inequality	Erosion of human rights and/or civic freedoms	Disruptions to critical infrastructure



# IMPACT DISCOUNTING

Figure 1.2: The choice of discount rate can change whether projects are assessed as worth building, and in what order

Benefit-cost ratio



Source: [Grattan Institute \(2018\)](#)



THE AUSTRALIAN  
**Financial Review Magazine**

Wealth Young Rich

# ‘The biggest divide in Australia is the intergenerational divide’

*Amid the cost-of-living crisis and struggles to get on to the property ladder, it's getting harder to be young and rich these days.*





# IMPACT

## WHERE DOES THIS FIT IN MODELLING?

Identifying the drivers (and blindspots) of the task?



Typical Transport Modelling Process

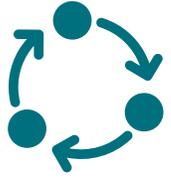
Discounting and weighting?

Source: Adapted from [ATAP T1 Guidelines 2016](#)

### **3 GOVERNANCE & TRUST**

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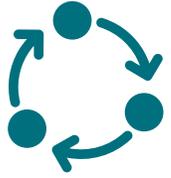


## GOVERNANCE

# 97% of Australians

want government to account for long-term interests

Source: [EveryGen \(2024\)](#)



## GOVERNANCE

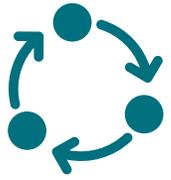
**97% of Australians**

want government to account for long-term interests

**43% of Australians**

believe the Australian Public Service actually do so

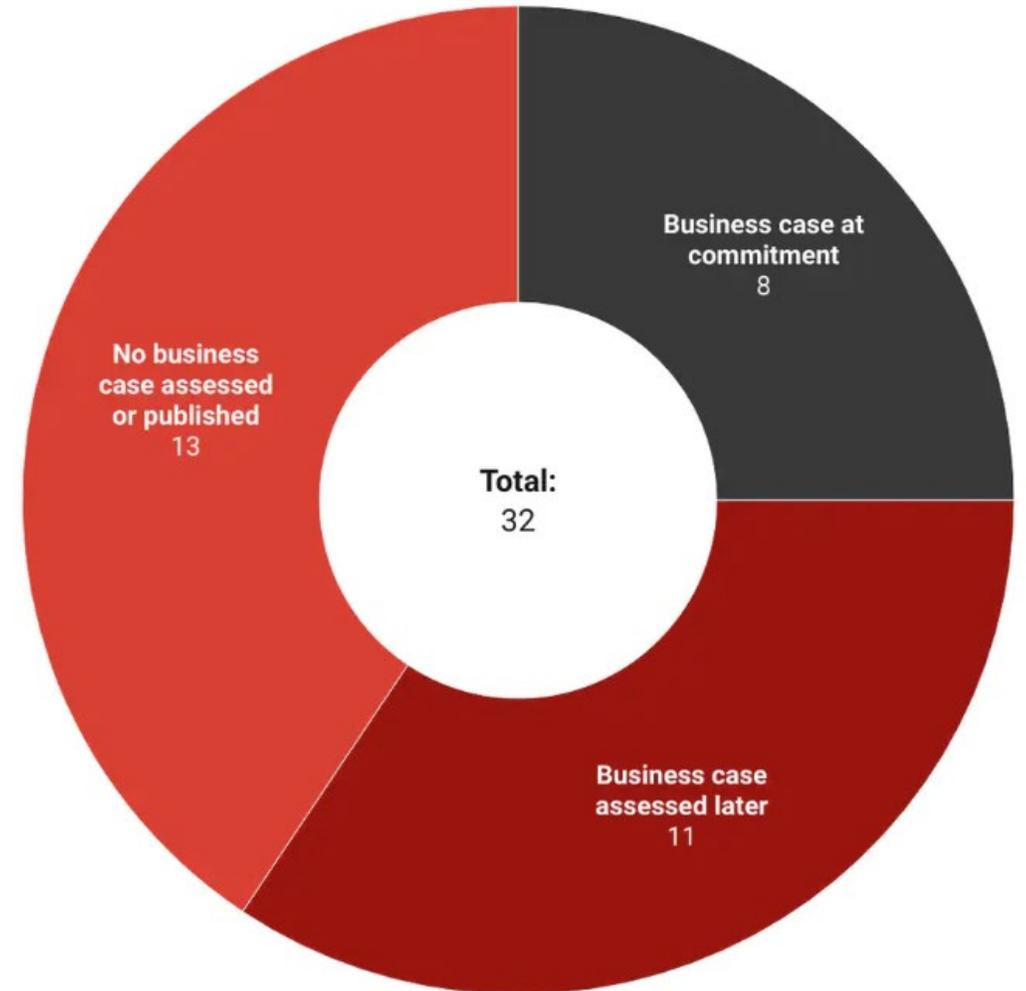
Source: [EveryGen \(2024\)](#) & [OECD, 2025](#)



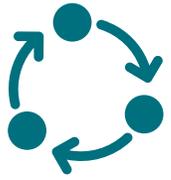
# GOVERNANCE OUR TRACK RECORD?

“ They ain't got no business case ”

Business case status for **32 major transport projects worth more than A\$500 million** with committed funding between 2016-2021



Source: [Grattan Institute \(2021\)](#)



## **GOVERNANCE** **SOCIAL TRUST**

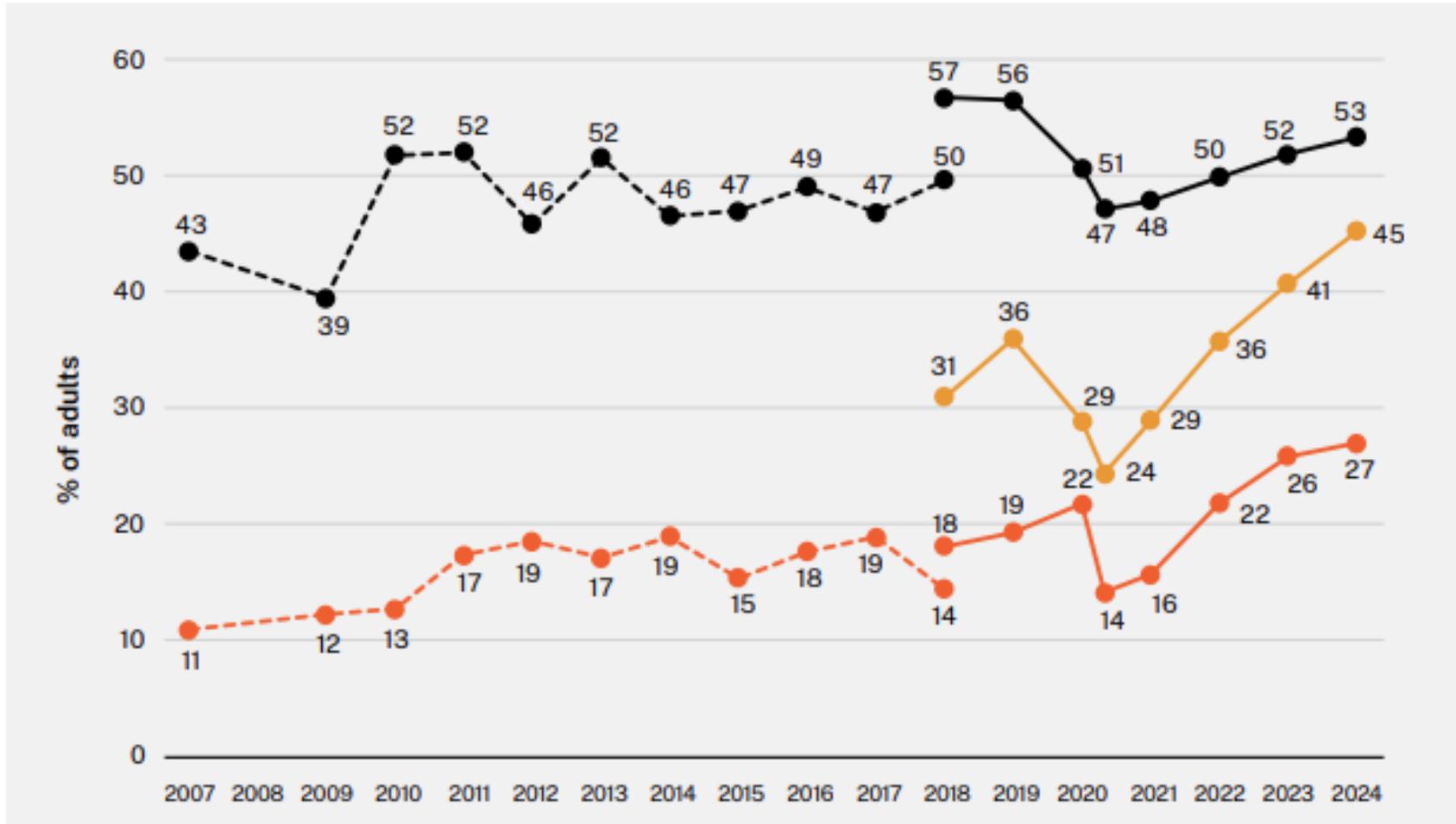
**“** Australians are less trusting and more pessimistic in 2024 **”**

Source: [Scanlon Institute \(2024\)](#)



# GOVERNANCE SOCIAL TRUST

Figure 19 Trust in other people and pessimism towards Australia's future and our own future, 2007 to 2018 (telephone surveys) and 2018 to 2024 (online & telephone)

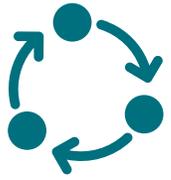


"You can't be too careful in dealing with people"

(Very) pessimistic about Australia's future

"Life in Australia will be worse in 3-4 years"

Source: [Scanlon Institute \(2024\)](#)



# GOVERNANCE

## SMART GOVERNANCE 2.0

**S**

Small +  
Solid

**M**

Modest +  
Multiple  
Perspectives

**A**

Adaptive +  
Anticipatory

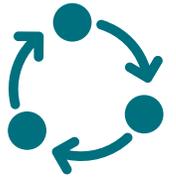
**R**

Responsive +  
Risk-  
concerned

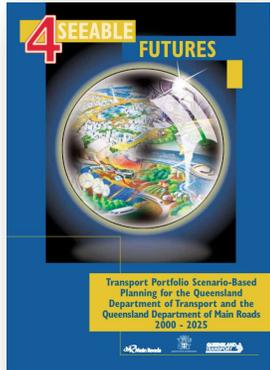
**T**

Timely +  
Transformative

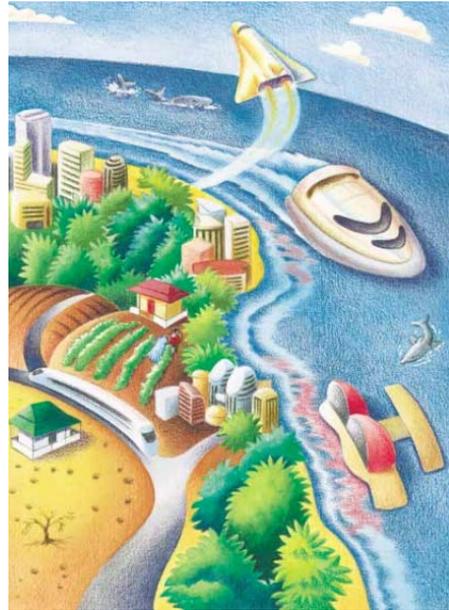
Source: [Okada, 2025](#)



# GOVERNANCE COURAGE & IMAGINATION



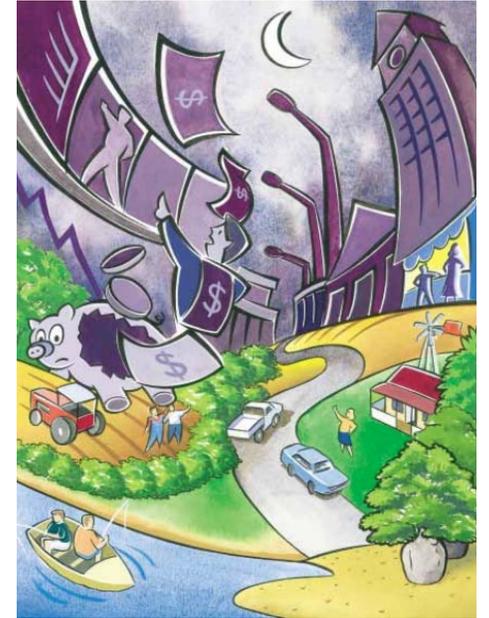
Super City



Coastal Bloom



Carbon Crunch



Global Bust

Source: [Queensland Department of Transport \(1999\)](#)



## GOVERNANCE SPECULATIVE WILDCARDS?

“

A decision was made not to base any of the scenarios on these more speculative wildcards.

People might spend more time debating whether such things as world plague, flying cars or nano-technology are possible, rather than examining how other key drivers could impact on the future.

”

Source: [Queensland Department of Transport \(1999\)](#)



# GOVERNANCE

## WHERE DOES THIS FIT IN MODELLING?

What story (or stories) is the model going to tell?

What scenarios/options do we model?



Typical Transport Modelling Process

How do we tell the story?

Source: Adapted from [ATAP T1 Guidelines 2016](#)

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TPA 2025 | MARIE YSABEL LANDINGIN

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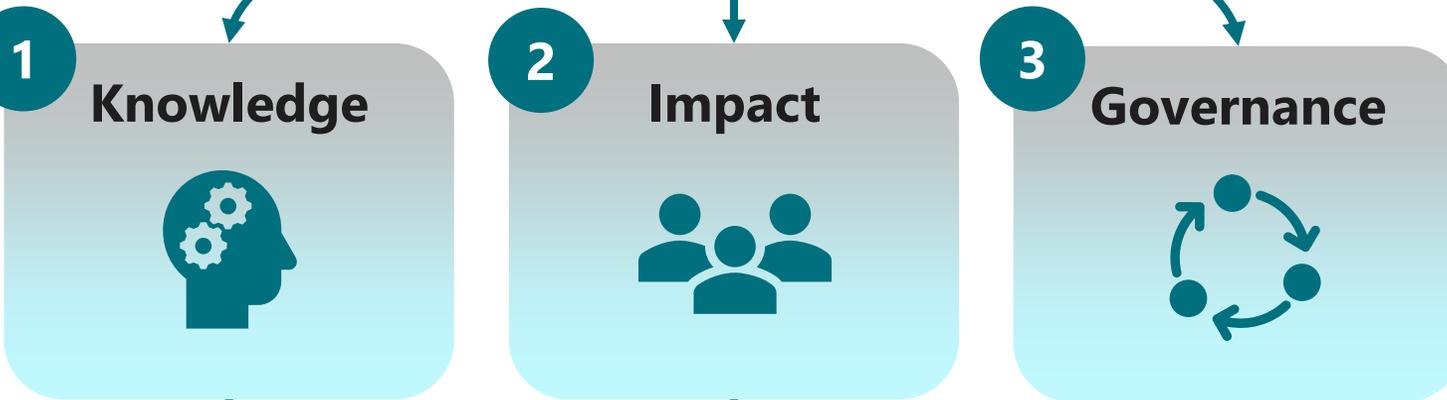
Accessibility

Language

## Disaster and polycrisis planning

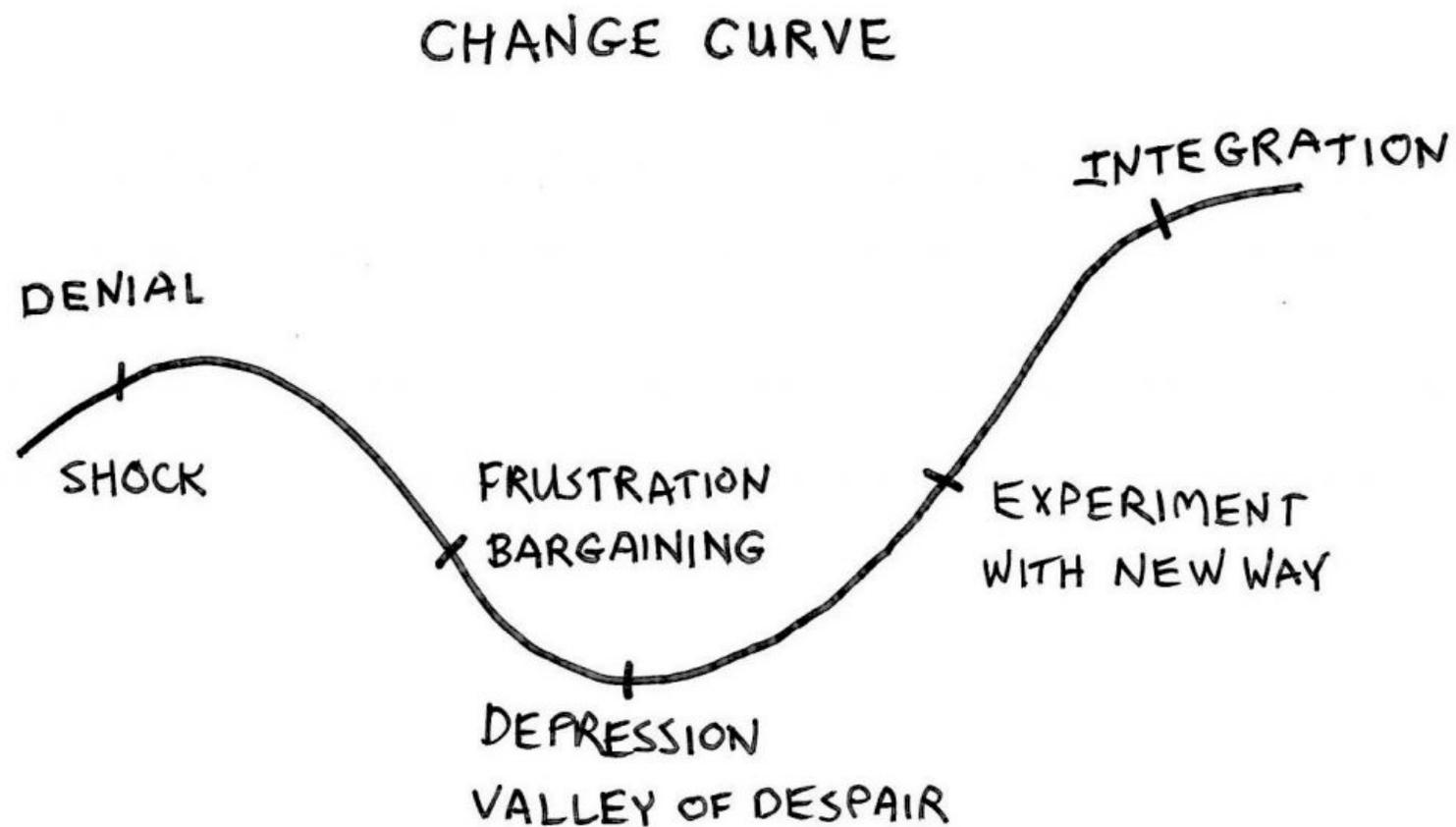
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## Way Forward

# FINAL THOUGHTS



Source: [Konstant, M. \(n.d.\)](#) based on *Kübler Ross' grieving process*

# THANK YOU

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