roads australia

Transport your Career

Project Report
2023 Fellowship Program

CAREER PATH AHEAD

Prepared for
Roads Australia Future
Leaders Committee

Presented by
Group Won (Group 1)

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1.1 Project Question

In May 2023, the Roads Australia (RA) Emerging Leaders Committee set the question for the 2023 Fellows Project. This is outlined below:

"What is one technical innovation that we can introduce to our industry that will help us achieve RA policy objectives and open-up opportunities for new streams of talent in our workforce?"

Following discussion, it was clarified the intent of the question is to focus on initiatives for bringing new streams of talent into the workforce in the transport industry, to address capacity constraints, particularly around the delivery of large-scale infrastructure projects.

1.2 The infrastructure skills shortage problem

We believe the RA question for the 2023 Fellows Project reflects the labour shortage concerns currently being echoed around the transport industry. The labour shortage issue partially stems from the fact that the rate of investment by Australian federal and state and territory governments, along with the private sector, in the infrastructure sector is at an all-time high.

> An **additional 248,000 skilled workers** will be required to successfully execute the pipeline of projects.
>
> Infrastructure Australia[4]

As of November 2022, another "high watermark" in infrastructure investment has been set with an allocation of $254.8 billion of general government expenditure over the four years to FY2025-26[1].

While both State and Federal Governments are undergoing a review of the projects in the infrastructure pipeline, which has created some uncertainty in the market, the total amount of construction activity Australia-wide is expected to peak in FY24 before softening, with a renewed activity expected towards the later end of the decade[2]. As recognised by RA, this unprecedented level of activity is creating capacity issues within the labour market.

In Infrastructure Australia's latest market capacity report, industry identified labour scarcity as the single biggest issue faced by construction companies[3]. As we discuss

further in Chapter 3, at its peak, the labour shortage is expected to reach 248,000 people in 2023[4]. This shortfall in labour is having, and will continue to have, significant impacts on the transport industry and its execution of the project pipeline.

1.3 Our Inspiration

As our team reflected on the question posed by RA and we were inspired by conversations we had during the RA Fellowship Event. These conversations highlighted the significant range of experience our peers and mentors had acquired throughout their careers, and the fact that in a surprisingly large number of circumstances, no single path reflected the 'traditional or linear' progression within their respective disciplines. Overall, it was clear that many people had navigated their careers through extremely varied paths, as illustrated in Table 1.1. Some mentors had backgrounds in communications and the energy sector, and within our Fellowship team we had diverse backgrounds, including Matt with a degree in Marine Biology and Candice who has one in Psychology.

Table 1.1 Example Career Paths informing our project concept

	ANDREW HEAD **First role of your Career:** Press Secretary & Policy Advisor, NSW Parliament (Bach, of Arts – Communication / Politics) **Roles within industry:** Senior Consultant - Government policy, Senior Manager – PWC, Group Executive (Strategy, Development, M&A) – Transurban, Group Executive – NSW - Transurban **Current Role:** CEO Westconnex – Transurban
	MATTHEW CASSIDY **First role of your Career:** Graduate Environmental Officer (Bach. Marine Biology) **Roles within the industry:** Environmental Coordinator, Site Civil Engineer, Project Manager, Project Development Manager, Senior Associate (Advisory) **Current Role:** Senior Project Manager – TSA - Ryde Hospital Redevelopment
	CANDICE CAMACHO **First role of your Career:** Communications Graduate (Bach. Arts - Psychology, Bach. Business) **Roles within industry:** Communications and Engagement Manager, Interface Manager, Completions Manager, Operations Manager. **Current Role:** Operational Services Director - Acciona - Western Harbour Tunnel

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1. Infrastructure Partnerships Australia, Australian Infrastructure Budget Monitor 2022-23
2. Austroads, Australia and New Zealand Roads Capability Analysis 2022-2032 (September 2023), p12.
3. Infrastructure Australia, Infrastructure Market Capacity 2022 Report, (December 2022), p12 Infrastructure Market Capacity Report, Infrastructure Australia, 2023, Page 62
4. Infrastructure Australia, Infrastructure Market Capacity 2022 Report, (December 2022), p62

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The transport industry offers a range of career paths, but we believe there is a shortage of skilled workers. This is due, in part, to a lack of emphasis on transferable skills. By focusing on these skills, we can better attract and retain people in the industry. To address this issue, we created a response based on four key pillars:

1. **People:** People are the foundation of the transport industry, and its future. We need to help individuals understand the opportunities available within the industry and how to navigate their careers effectively.
2. **Communication:** Effective communication is crucial in the transport industry. We need to showcase the industry and its opportunities to attract and retain people. As Camilla Drover noted at the Roads Australia Summit 2023, "There is a need to showcase our industry to attract and keep people."
3. **Transferable skills and competencies:** Skills and competencies are transferable across industries and within the transport industry. By recognising and emphasising these skills, we can better compete for skilled resources.
4. **Artificial Intelligence (AI):** AI can currently be used to identify and map relevant skills and competencies from job profiles. This can help us better understand the breadth of opportunities within the transport industry.

We used these pillars to develop a platform to help individuals navigate their careers in the diverse roles available in the **'transport universe'**.

1.4 Our vision

Our aim with the Transport Your Career platform is to showcase the vast array of opportunities available in the transport industry and provide a handy career planning platform for individuals to navigate their careers in Transport. We believe that this platform will bring about the following benefits:

- Boost retention rates in the transport industry, increasing experience levels
- Attract new talent with transferable skills from other industries
- Highlight the potential of transferable skills to ease the Industry's skills shortage
- Promote diversity and inclusivity within the transport industry.

1.5 Overview of our solution

While the linear progression of roles within the transport industry is widely known, For example, working in construction as a contractor, a Site Engineer would generally progress to a Project Engineer, a Senior Project Engineer, then a Project Manager. There are often untapped opportunities outside of this conventional path. Our team has devised a comprehensive solution to address this issue – a digital platform called Transport your Career. By leveraging Artificial Intelligence (AI), this platform would offer a personalised assessment of possible employment opportunities based on the user's skills and knowledge.

Whether a recent graduate, an industry expert looking to switch to another field, or a C-Suite executive seeking to explore new opportunities, Transport your Career will assist individuals at all levels. Here's what the Platform could do:

1. Identify your transferrable skills based on your previous roles and information provided
2. Suggest potential career paths within the transport industry, regardless of your starting point
3. Map out a comprehensive plan for career progression across the industry

See Figure 1.1 for a user-friendly overview of how the Platform works.

Figure 1.1 Overview of the platform user experience.
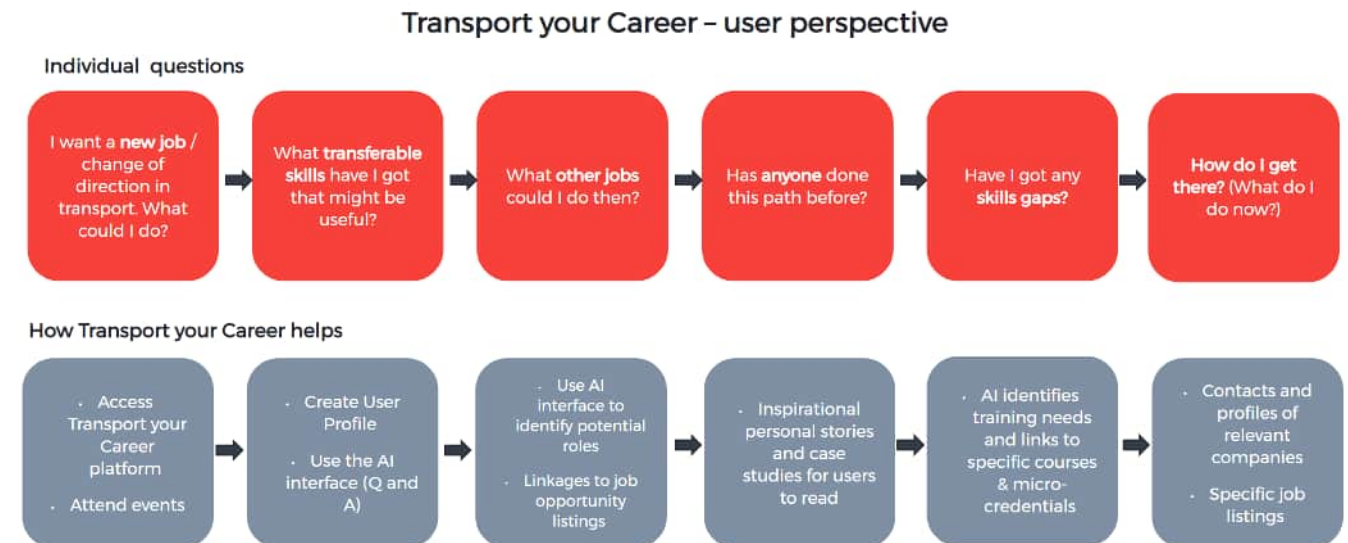
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1.6 Alignment with the brief

We have broken down the question posed by RA for the Group Project into its key components and outlined how they have been addressed in Table 1.2.

Table 1.2 How our approach addresses the RA project question

| Aspect of project question	How it is addressed by the Transport your Career solution
Technical Innovation	• Use of innovative AI tool and data bank as part of the Transport your Career platform. • Throughout our report, we explore opportunities about how to best develop the AI aspect of the Platform, information required, and how it will be used
Addressing RA Policy Objectives	• The key RA policy priority addressed by the proposal is capacity, including: getting the right people to join our industry; creating a visible pipeline by defining what skills we need and attracting on this basis and creating workforce resilience by identifying people with the right values and skills and by identifying potential skills and credentials they could build to prepare them for future needs of the industry. • Other Roads Australia policy objectives are addressed indirectly by our proposal which will attract a more diverse workforce are: optimise the use of our roads for environmental, social, economic and cultural outcomes and decarbonisation of the economy through integrated transport and the efficient use of energy and resources.
Opening up new streams of talent to address the skills shortage	• The labour shortage will not be resolved by simply moving individuals who are already working in the transport industry into new roles. More critical to addressing this shortage will be opening people's eyes to the breadth of opportunity within the transport industry by highlighting people's transferrable skills. • Demonstrate how transferrable skills and/or micro-credentials can be used to bring "outsiders" into the transport industry.
Clear implementation roadmap (commercially viable and scalable)	• Through our discussions with specialists and potential users we have developed a feasible and useful solution, identified funding streams, highlighted multiple avenues for scalability and prepared a clear implementation plan in Chapter 6.
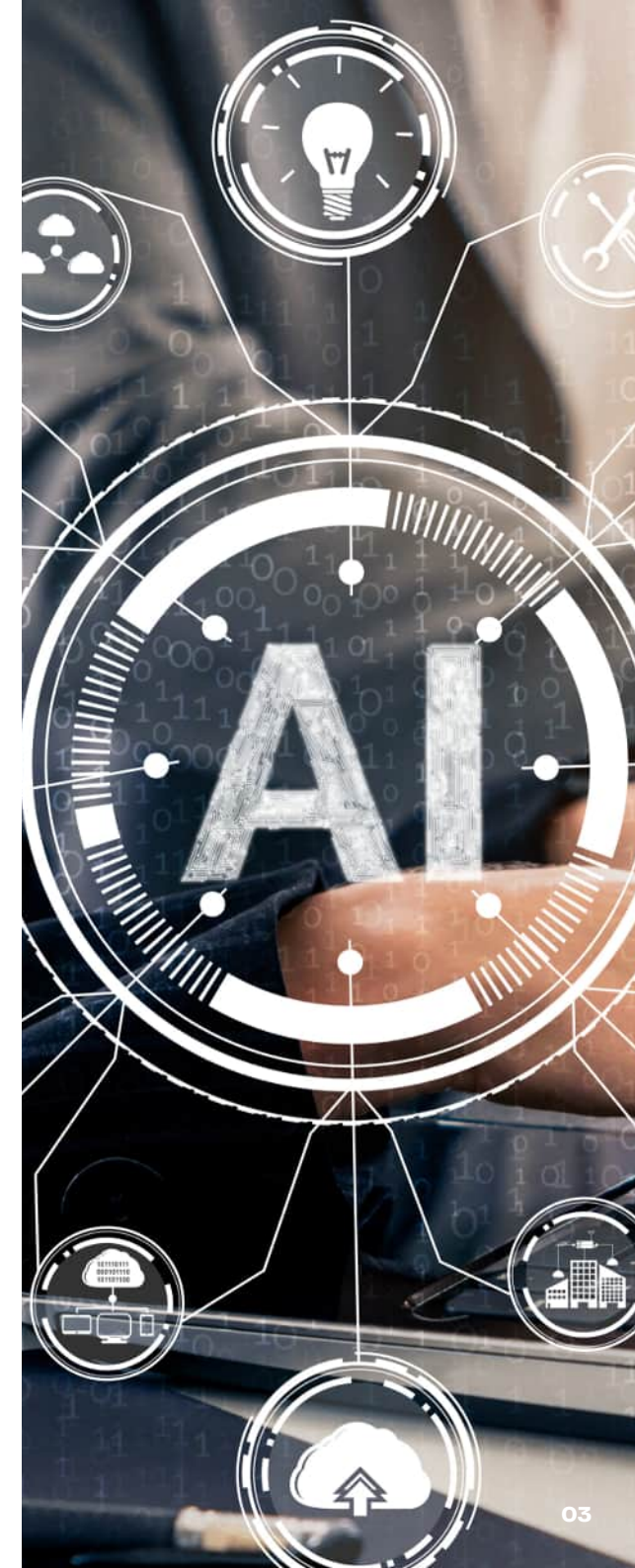
02 Methodology

In our project, we adhered to the methodology illustrated in Figure 2.1. This guided us through the research, development, and refinement stages of our proposed solution to the problem presented in Chapter 1. A full breakdown of actions in this methodology is available in Appendix 1.

Figure 2.1 Our methodology to address the RA question and develop our solution

Category	Scoping	Planning and research			Development		Finalisation
Purpose	Solution Development	Literature Review and Context	Artificial Intelligence	Industry Survey and Engagement	Digital Platform Development (Mechanics)	Marketing Strategy (Dynamics)	Reporting
Key Outputs	• Scoping Paper • RA Emerging Leaders Committee Feedback	• Literature Review: Chapter 3	• Details of AI part of Transport your Career platform: Chapter 5 • Implementation Roadmap: Chapter 6	• Survey results commentary: Chapter 4 • Industry and user feedback on tool: Chapter 5	• Transport your Career platform: Chapter 5 • Implementation Roadmap: Chapter 6	• Marketing and communications: Section 5.3 • Evaluating Effectiveness: Section 6.1	• Final project report: This Report
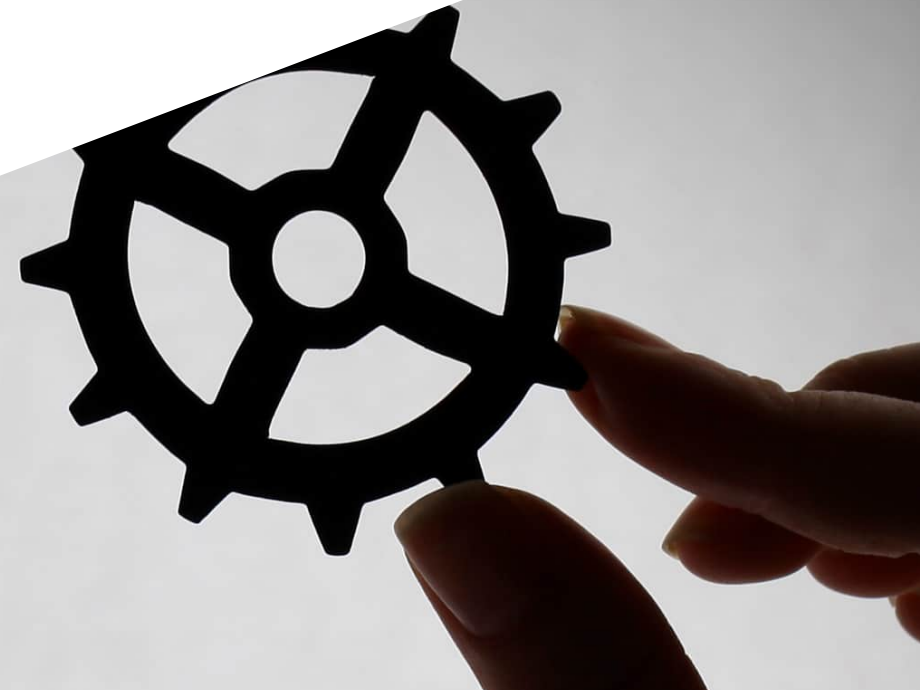
03 Literature review and context

3.1 The skills shortage in Australia

3.1.1 Labour shortage in the Infrastructure Sector

Australia nationally has been experiencing an unprecedented wave of investment in public infrastructure projects, and transport is an important part of the broader infrastructure sector. According to Infrastructure Partnerships Australia a total of $254.8 billion in general government expenditure has been allocated to infrastructure over the four years to FY2025-26, which was a three per cent increase over the previous year's allocations6. According to Infrastructure Australia in December 2022, "The projected demand for major public infrastructure over the next five years has grown by $15 billion in the past 12 months"7.

Inevitably, the increase in investment means there is an increased demand for labour, which has led to the current labour shortage being experienced by the transport industry. In December 2022 Infrastructure Australia stated that "as of October 2022, public infrastructure projects (including small projects) face a shortage of 214,000 skilled workers. This is projected to grow to a peak shortage of 248,000 people in 2023, 128% of the projected available workforce."8 More recently, Austroads highlighted that in most states and territories around Australia the construction sector continues to face a tight labour market, and it is likely that this will continue, to varying degrees, throughout the current decade.9 The report states "While new supply is expected to outstrip attrition in the industry, strong demand over the next two years for Australia will see the greatest capacity strain on the country's workforce as publicly funded activity booms."10

The labour shortage concerns are also reflected in media coverage of this issue over the last few years, with major news outlets reporting on labour shortages and the impact on major public infrastructure projects throughout Australia.11

In addition to the work by Infrastructure Australia, the Australian Government recently release a white paper on its' Working Future, Jobs and Opportunities. In this paper, the Australian Government identify that "the Australian economy and labour market will be shaped by five forces – population ageing, rising demand for quality care and support services, expanded use of digital and advanced technologies, climate change and the net zero transformation, and geopolitical risk and fragmentation."12

Further to this a key Priority in the Australian 10-point Roadmap is the "Planning for our future workforce", where the Government is setting out to coordinate skill priorities and meet workforce needs in the context of the the five economic forces. The Australian Government recognises it can not achieve its Roadmap alone. Progress will require strong partnerships and collaboration with and between governments and employers including large, medium and small businesses. 13
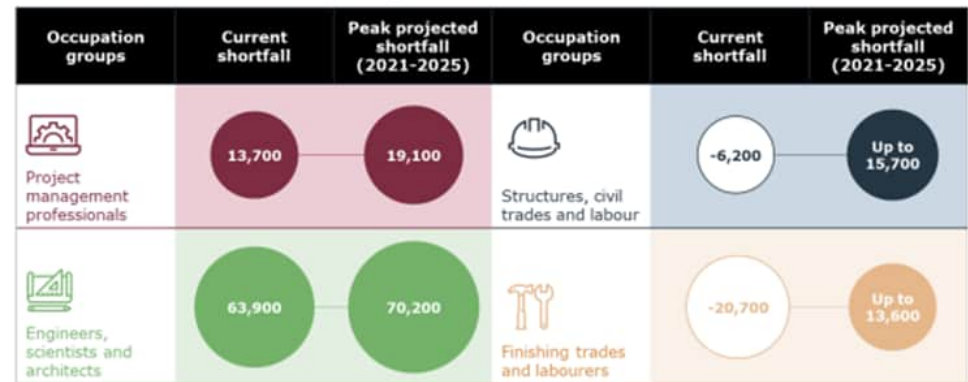
3.1.2 Key roles facing labour shortage issues

While the data clearly suggests that there is a labour shortage in the Australian public infrastructure sector, certain occupation groups appear to be suffering more significant shortage issues than others.

Table 3.1 is extracted from Infrastructure Australia's Infrastructure Market Capacity report outlines projected shortages by occupational group.14

Table 3.2 (overpage) from the same report which outlines with more granularity the types of roles that are likely to be in shortage.15 For example, project management professionals are an occupation group that is likely in shortage, with the particular roles of procurement specialist and construction supervisor to be some of the roles that are specifically in shortage.

Table 3.1 Projected shortages by occupational group

Occupation groups	Current shortfall	Peak projected shortfall (2021-2025)	Occupation groups	Current shortfall	Peak projected shortfall (2021-2025)
Project management professionals	13,700	19,100	Structures, civil trades and labour	-6,200	Up to 15,700
Engineers, scientists and architects	63,900	70,200	Finishing trades and labourers	-20,700	Up to 13,600

Note: Analysis shows the highest total difference between demand and supply for an occupation group in any month between 2021 and 2024.
Source: Nous Group commissioned by Infrastructure Australia (2021)

6. Infrastructure Partnerships Australia, Australian Infrastructure Budget Monitor 2022-23
7. Infrastructure Australia, Infrastructure Market Capacity 2022 Report (December 2022), p25
8. Infrastructure Australia, Infrastructure Market Capacity 2022 Report (December 2022), p62
9. Austroads, Australia and New Zealand Roads Capability Analysis 2022-2032 (September 2023), p47
10. For example: Sydney Morning Herald, Shane Wright, 'Big Build cut down by shortage of works, cost blowouts', October 2021; SBS News, Biwa Kwan, 'Migration boost needed to remedy major skilled labour shortfalls, report finds', October 2021; Infrastructure Magazine, Rebecca Todesco, 'Skilled construction worker shortage to reach critical levels, August 2022; Sky News, Lucy Gray, "Huge issue': Severe Queensland labour shortages threaten future of $67billion in infrastructure projects ahead of Brisbane Olympics', March 2023; Australian Financial Review, Ronald Mizen, 'No new road, rail projects for 'next 10 years' without major cuts', September 2023.
11. Australian Government Working Future: The Australian Government's White Paper on Jobs and Opportunities, 2023
12. Australian Government Working Future: The Australian Government's White Paper on Jobs and Opportunities, 2023
13. Australian Government Working Future: The Australian Government's White Paper on Jobs and Opportunities, 2023
14. Infrastructure Australia, Infrastructure Market Capacity (October 2021), p104, Table 4
15. Infrastructure Australia, Infrastructure Market Capacity (October 2021), p105, Figure 64

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3.1.2 continued

Table 3.2 Types of roles likely to be in shortage

	Role shortages within occupations that are likely in shortage	Role shortages within occupations that are unlikely or potentially in shortage
Project management professionals	• Procurement specialist • Purchasing officer • Construction supervisor • Procurement officer • Senior procurement officer	• Risk and compliance manager • HSE advisor • Safety advisor • Senior strategic planner
Engineers, scientists and architects	• Senior software engineer • Senior estimator • Environmental advisor • Senior environmental advisor • Ecologist • Application support analyst • Head of engineering • Geologist • Hydrogeologist • Principal geotechnical engineer • Electronic engineer • Senior signalling engineer • Telecommunications engineer • Building inspector • Building certifier	• Mechanical engineering technician • Automation tester
Structural and civil trades and labour	• Joiner • Apprentice carpenter • Concreter • •Crane operator • Driller • Blast hole driller	• Multi combination driver • Grader operator • Dozer operator • Reach forklift driver • Excavator operator • Backhoe operator • Final trim grader operator
Finishing trades and labour	• Electrician • Industrial electrician • Electrical supervisor • Industrial painter • Apprentice painter • Powder coater • Linesperson • Tiler • Wall and floor tiler	• Diesel fitter • Fitter • Mechanical fitter • Drainer • Electrical trade assistant • Maintenance plumber • Pipefitter • Solid plasterer

It can be seen from the data in Tables 3.1 and 3.2 that engineers, scientists and architects are one of the areas where the shortfall in labour will most significantly impact the industry. The engineering shortage is particularly relevant for the transport sectors.

While it cannot be used to explain the shortage as a whole, part of the problem appears to be that engineers are performing work outside of their areas of specialisation and training. Infrastructure Australia shows that both an analysis of job advertisement data and stakeholder feedback suggest that use of engineers for work outside of their areas of specialisation and technical training are contributing to the labour shortage issues. Infrastructure Australia stated in 2022:

"In particular, there has been a rise in the number of engineering, science, and architecture positions requiring social media skills for community and client engagement, and budgeting and project management skills. This indicates that these workers are being asked to do work outside of the specialisation – work that could be done by project managers, marketers and other occupations with smaller shortages.

This accords with stakeholder feedback that a litigious industry environment and the use of engineering specialists (often senior) for contract management is lowering productivity and exacerbating labour shortages because senior engineers are spending time on contracts, clients, and engagement rather than specialised engineering work.

Consultations also indicated that the industry is beginning to adjust in other areas, particularly by looking to paraprofessionals to assist engineers with work that can be done with skills that are transferable or specialised but easily trained. Expanding efforts to hire paraprofessionals will be a key piece for enabling the existing engineering workforce to be used effectively and giving them experience in their specialisation quickly."[16]

It is also evident that Project Management Professionals are another area with significant shortfall in labour. Project management professionals commonly perform roles requiring planning, procurement, risk management and compliance.

16. Infrastructure Australia, Infrastructure Market Capacity 2022 Report (December 2022), p68

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### 3.1.3 Transferrable skills in roles experiencing shortage

Two key occupation groups that are subject to significant labour shortage issues (engineers and project managers), we then examined the types of skill sets required for these roles. Infrastructure Australia has identified three fundamental skill categories that are crucial for most roles. These skills and comptency categories are:

- **Generalist:** These skills encompass universal abilities, including communication, and problem-solving, these are transferable to many occupations.
- **Technical:** These skills are specific to practical tasks that are required for numerous professions, such as stakeholder management, quality assurance, and control.
- **Specialist:** These skills are unique to certain professions and necessitate specific qualifications or accreditations. Construction-related specialist skills are often industry-specific, such as engineering, construction management, and construction labor skills.[17]

Generalist and technical skills have a higher degree of transferability than specialist skills. Occupations that prioritise generalist and technical skills are more easily transferrable between industries than those that require specialist skills. For instance, engineers are not easily substituted with workers from other occupational groups or industries due to their heavy reliance on specialist skills.

Figure 3.1 depicts the percentage of skill mentions in 2021 job advertisements that are generalist, technical, or specialist by occupational group. The chart shows that project management professionals have high levels of generalist skills (42%) and are therefore easier to retrain from other occupational groups or industries. In contrast, engineers require a high level of specialist skills (56%), making it much harder to adopt the same approach [18].

Figure 3.1 Skill percentages by category and occupation group
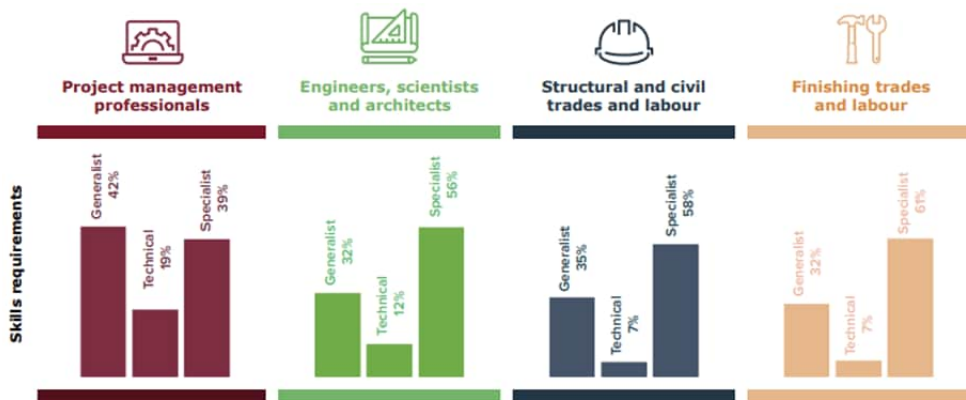
There are two key where transferrable skills were effectively used to create value:

- Cushman & Wakefield, a commercial real estate company, identified the applicability of military service skills, including leadership, project management, engineering, strategic planning, and machinery maintenance. The company recruited from an underutilised talent pool, thereby utilising the skills in an entirely different industry and roles.[19]
- Virgin Atlantic loaned its furloughed flight attendants to UK hospitals to assist with customer care.[20]

These two examples demonstrate how transferrable skills from differing industries can be utilised, works are far more capable of stepping outside their usual jobs to add value in new ways.

3.1.4 Importance of skills & competency frameworks in the Digital Age

As the world increasingly embraces digitisation, automation, and regenerative practices, industries and workforces must also adapt to remain relevant, efficient, and effective. Our research into transferrable skills and AI tools revealed that one way to achieve this is through the use of skills and competency frameworks.

These frameworks outline the specific skills, competencies, and behaviors required for individuals to perform their roles effectively within an organisations.[21]

By focusing on personal skills and attributes, competency-based platforms can help individuals and recruiters better assess transferable skills and behaviors, regardless of their career background.[22]

In addition to the skills and competencies categories mentioned in Section 3.1.3, the Chartered Institute of Personnel and Development identifies a set of 'meta' competencies. These are the competencies required for high-potential individuals that organisations or industries want to attract, promote, and develop in the future.[23]

A study by Deloitte Insights (2022) found many organisations worldwide are embracing skills-based frameworks as a response to industry changes and the broader marketplace. Such frameworks move away from traditional job-based organisations that focus on specific tasks, experiences, and knowledge.[24]

17. Infrastructure Australia, Infrastructure workforce and skills supply report (October 2021), p15
18. Infrastructure Australia, Infrastructure Market Capacity 2022 Report (December 2022), p67, Figure 26
19. Indeed, "Want to hire better amid the 'Great Realization'? Focus on skills," The workplace report, Wall Street Journal, July 2022.
20. Harvard Business Review, April 22, 2020; James Asquith, "Grounded flight attendants are being redeployed to hospitals in coronavirus battle," Forbes, March 30, 2020
21. Chartered Institute of Personnel and Development, Competence and competency frameworks factsheet, December 2022
22. Chartered Institute of Personnel and Development, Competence and competency frameworks factsheet, December 2022
23. Chartered Institute of Personnel and Development, Competence and competency frameworks factsheet, December 2022
24. Deloitte Insights, The skills-based organisation: A new operating model for work and the workforce, 2022

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3.1.4 continued

According to the study, organisations that adopt these new skills and competency-based frameworks are:

- 107% more likely to place talent effectively
- 98% more likely to have a reputation as a great place to grow and develop
- 98% more likely to retain high performers
- 97% more likely to have a positive workforce experience
- 57% more likely to anticipate change and respond effectively and efficiently
- 52% more likely to innovate
- 49% more likely to improve processes to maximize efficiency
- 47% more likely to provide an inclusive environment.[25]

Based on the Deloitte study, a shift to skills and competency-based assessment for talent placement ensures that organisations create value for workers as human beings, becoming more human-centric. Refocusing work around the people doing it and the skills required to do so – and supplying the necessary skills training – can also increase employability.[26]

This would be the starting point for the development of the Transport your Career platform, identifying a baseline Competency framework for the industry, based on the existing frameworks being developed by the variours industrys and organisations within our industry. Some examples of these frameworks are included in Table 3.3

Table 3.3 Industry competency frameworks

Discipline area	Framework Description
Commercial	UK Government Commercial Framework
Community & Stakeholder Engagement	iap2 Quality Assurance Standard
Engineering	Construction Engineering Guidelines EA Stages 1 and 2
Environment	CIEEM Competency Framework
Generic	NSW Public Sector Capability Framework
Safety	IOSH Competency Framework
Sustainability	GreenComp

Understanding the transport industry frameworks would allow us to recognise the key competencies required as a basis for entry into the industry at any level. This can then be built on with the experience of individuals, new skills and competencies that we may not have in the industry to meet policy needs, generate innovation and address skills gaps both current and future.

The Transport your Career platform's AI tool could be programmed to recognise these skills and competencies through surveys, CVs, and other profiling tools provided by individuals interacting with the Platform matching individuals to the skills and frameworks within the AI algorithms.

To build a industry that rewards ability and behaviour over pedigree, organisations must make verified skills and competency data portable across different workplaces. Currently, most worker skills data remains with their previous employers, making it difficult to transfer to new roles. Some organisations, like the Navy, have developed platforms to help workers capture their skills and experiences.[27]

Recently, the Australian Government's published their Working Future White Paper that identifies that an adaptable workforce means workers have both a strong core skillset relevant to all jobs and a well-developed set of specialist skills applicable to emerging work needs. To upskill for the fast-paced evolution of roles and the changing industry mix, workers need an adaptable skills system which is responsive to demand. These skills and competencies would be catured in a skills passport.[28]

This is where a platform like Transport your Career can assist, collecting this data industry wide and allowing people to bring it with them from role to role within the industry once their profiles are established.

25. Deloitte Insights, The skills-based organisation: A new operating model for work and the workforce, 2022
26. Deloitte Insights, The skills-based organisation: A new operating model for work and the workforce, 2022
27. Deloitte Insights, The skills-based organisation: A new operating model for work and the workforce, 2022
28. Australian Government Working Future: The Australian Government's White Paper on Jobs and Opportunities, 2023

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3.2 Recruitment and retention challenges

3.2.1 Recruitment challenges due to perceptions of the industry

The recent Jobs and Skills Australia departmental Labour Market Update[29] states that the construction industry is currently facing an 'Annual Recruitment Difficulty Rate' of 65%, one of the highest (by industry) in Australia. More anecdotally, Infrastructure Australia states that stakeholders have reported difficulty recruiting and retaining employees at a junior level due to pre-conceived notions of what working in the industry involves[30]. Perceptions of the job and career opportunities are some of the factors believed to be causing the skills shortage.

One of the critical functions of our Transport Your Career platform is to address this issue by demonstrating the variety and depth of career pathways available in the transport infrastructure sector (see Chapters 4 and 5).

3.2.2 Gender diversity opportunities

Female underrepresentation has long been an issue affecting the construction sector. Women currently make up less than 12.7% of the workforce in construction occupations[31].This disparity is well demonstrated by Figure 3.2 which looks at the occupation groups that are relevant to public infrastructure[32]. It is important to note that the percentages as shown in this graph relate to the occupation group as a whole, not just the construction sector.

Within the construction sector the female participation in these occupation groups is even lower. For example, project management professionals appear to have a larger proportion of women than other infrastructure-relevant professions (36%), however a large percentage of workforce in those occupations working outside of construction (44%).

Figure 3.2 Diversity disparity in occupational groups within public infrastructure
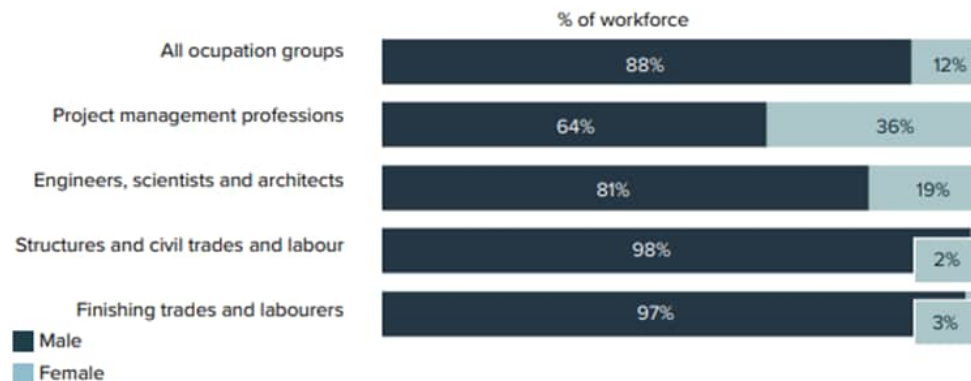
In contrast, construction management as a sub-occupation has a female workforce of 8% which aligns with industry commentary on female participation[33]. Similarly, while the engineering occupation group looks like it has only 19% female workforce, this percentage is skewed by the fact this group include architects, landscape architects and environmental professions which represent a significant portion of the aggregate percentage[34].

Following the Jobs and Skills Summit 2022, the Australian Government committed to a number of different mechanisms to address gender parity issues within Australia. This includes requiring businesses to impose and report on measurable targets to improve general equality in organisations and reporting on the gender pay gap[35]. These initiatives require increased company engagement on the gender diversity issue which we believe is complimented perfectly by our Transport your Career platform.

Addressing the gender imbalance demonstrated by these statistics would give the public infrastructure sector an opportunity not only to address issues with the labour shortage, but to create long term resilience within the industry through greater gender diversity in the workforce. We believe our Platform could play a role in this area by marketing our Platform to female-focused industry organisations, which would hopefully provide more females with visibility of the breadth of opportunity within the transport industry.

As part of our Fellowship program we were given the opportunity to participate in a tour the M6 Project. We were lucky enough to hear from the project's lead for diversity and inclusion who outlined a few of the programs utlised on the project to increase female participation. One such program was the CPB Women in Construction Program. Our Platform could be used as part of this program to demonstrate the career paths for these women once they have completed their training. This serves to address both recruitment issues and retention issue by outlining future opportunities for these women to progress once inside the industry.

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29. Jobs and Skills Australia, Labour Market Update (September 2023), p19, Figure 12
30. Infrastructure Australia, Infrastructure Market Capacity (October 2021), p117
31. Infrastructure Australia, Infrastructure Market Capacity (October 2021), p114
32. Infrastructure Australia, Infrastructure Market Capacity (October 2021), p115, Figure 72
33. Infrastructure Australia, Infrastructure Market Capacity (October 2021), p116
34. Infrastructure Australia, Infrastructure Market Capacity (October 2021), p116
35. Infrastructure Australia, Infrastructure Market Capacity 2022 Report (December 2022), p82

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3.2.3 Additional recruitment challenges

- **Participation by underrepresented groups:** From our discussions with recruitment teams, we understand there to be a number of groups that remain underrepresented in the industry, for example, first nations people.
  - Our Transport your Career platform could be used to promote the transport industry sector to underrepresented groups. It has the potential to highlight opportunities within the transport industry that those groups may otherwise have been unaware of.
- **Unconscious bias:** Our discussions with recruitment teams also highlighted that recruitment can be hindered by a unconscious prejudice by hirers against people who may not have the specialist skills they are used to seeing, but who would otherwise be perfect for roles due to their generalist skills being very transferrable.

3.3 Examples of AI use in identifying skills and upskilling

AI can be used to help identify skills or competencies of a job applicant from their career profile, e.g., CV (curriculum vitae) against a set criterion, e.g., job profile. AI-powered tools can analyse and extract relevant information from the CV, such as educational background, work experience, skills, certifications, and achievements. By leveraging natural language processing (NLP) techniques, machine learning algorithms, and semantic analysis. AI can assist in the recruitment process in several ways:

- **Keyword analysis:** AI algorithms can identify keywords and key phrases related to specific competencies mentioned in the CV. For example, if a job posting requires "project management" skills, the AI tool can identify and highlight instances where the applicant has mentioned project management experience or related keywords. Conversations with recruitment professionals did note this is sometimes a limitation of the AI systems which use an overly simplistic focus on key words.
- **Skill extraction:** AI can automatically extract and categorise skills mentioned in the CV. By analysing the text, AI algorithms can identify technical skills, soft skills, languages, tools, or technologies mentioned by the applicant.
- **Semantic analysis:** AI tools can analyse the context and meaning of sentences or paragraphs in the CV to gain a deeper understanding of the applicant's competencies. This analysis helps identify the level of expertise, relevant experience, and transferable skills.

- **Matching and ranking:** AI algorithms can compare the identified competencies from the CV with the required skills mentioned in the job description. This matching process can provide a quantitative measure of how well the applicant's competencies align with the job requirements. The results can be used to rank or shortlist candidates based on their suitability.

Currently there are several popular platforms on the market such as Cegid Talentsoft, Skillate, Textio and Sovren. Our approach is to develop a similar platform dedicated to the transport industry in Australia.

In addition, companies like DHL36 are turning to AI-powered skills engine to help identify capabilities across their company and match skills to people to jobs and pinpoints potential skills gaps. By embracing this AI-led skills technology, they found themselves able to:
- Proactively reduce skill gaps
- Save money on external recruitment expenditure
- Provide more visibility to their internal recruiters and
- Create a sense of purpose among their employees.

Within Australia the National Rail Skills Hub has a 'Careers in Rail' site37, the Hub aims to increase diversity in the rail industry, with a focus on nationally recognised skills. The site applies some of the same principles as outlined in our Platform, allowing people to learn more about different career paths in rail, details of training courses and profiles of people in the industry. This approach does not include an AI interface, and it is unclear how well used it is. Learnings could be taken from this approach in the development of a similar approach to the transport industry more widely.

The platform Seek has recently launched a 'career compass' tool38, which is a relatively simplified version of our proposed approach. Users answer a series of basic questions about their background and career goals and are provided with some very high level career recommendations. Our approach outlined in Chapter 5 is more sophisticated than this one, and would therefore deliver a more customised and more useful output. As discussed in the recommendations, we recommend collaboration with Seek in the next steps of platform development.

36. https://www.ft.com/partnercontent/cornerstone/dpdhl-turns-to-ai-to-uncover-skills-gaps.html#:~:text=DPDHL%20turned%20to%20a%20skills,and%20pinpoints%20potential%20skills%20gaps.
37. https://www.railskillshub.gov.au/careers-in-rail
38. https://www.seek.com.au/career-advice/compass/activity

03 Literature review and context

3.4 How the literature supports our approach

We believe this literature demonstrates the value that our Transport your Career platform can provide, including the following:

- Our Platform can be used to encourage individuals who are working outside of the transport industry to move into the industry. The data demonstrates that one of the key occupation groups experiencing shortages are project ·management professionals. The data also demonstrates that it is possible to recruit individuals to fill these roles from outside the industry due to the higher percentage of generalist skills and competencies (as opposed to specialist skills) needed to perform these roles. Our Platform will focus on both technical and generalist skill sets, our Platform would help identify career pathways within this occupation group for individuals outside the industry who possess the relevant generalist skills.

- Our Platform can also be used to encourage career mapping for those with more specialist skills. Engineers comprise one of the shortage areas, but at the same time many engineering roles have a greater dependency on specialist skills, our Platform could be used to re-direct engineers from adjacent industries (such as mining or commercial construction) into the transport industry.

- Our Platform can be used to identify skills gaps, offer training options to ensure that our workforce is adaptable to the upcoming changes faced by the market.

- The data also highlighted that some labour shortage issues are being exacerbated by engineers being used to perform roles that don't take advantage of their specialist skill set. If engineers can be redirected into roles that maximise use of their specialist skills, space is freed up in the occupation groups that don't rely as heavily on these specialist skills. This presents a perfect opportunity for our Transport your Career platform to be deployed to target people outside the industry who possess the relevant generalist skill sets to fill these roles.

Our literature review was further supported by the findings from the online survey we conducted as part of our project. In particular, the survey results highlighted the varied career paths people have taken within the transport industry and the possibilities for non-linear career paths within this industry. This is discussed further in Chapter 4.

JESSICA ROBERTSON, SENIOR LEGAL COUNSEL - UGL LIMITED

CAREER PATH SUMMARY
Law and Communications Degree > Graduate Lawyer (private practice) > Solicitor (private practice) > Senior Associate (private practice) > Legal Counsel (in-house) > Senior Legal Counsel (in-house)

A LAWYER TRANSPORTED TO THE TRANSPORT INFRASTRUCTURE INDUSTRY
When I chose my combined law degree, I did not expect to finish with a strong drive to pursue a legal career but I was pulled towards the intellectual challenge of law. While admitted in Australia, I originally practiced in Canada in private practice. My focus on construction came by accident - one of the firm's major clients was undertaking a significant upgrade of State's electricity infrastructure and I was pulled onto the project along with a number of the other junior lawyers. This experience served me well, when I returned to Australia and commenced a role in the Major Projects team at Herbert Smith Freehills, an Australian law firm, where I primarily worked on PPPs and other government infrastructure projects. My next two roles have been at UGL, where my focus has increasingly been in major transport projects. While I did not actively choose to take this path, I have been incredibly lucky to end up working in transport infrastructure – and area that I find challenging and interesting, and which I also feel passionately about.

KATIE MCELHONE, NATIONAL ENVIRONMENT & SUSTAINABILITY MGR - FULTON HOGAN

CAREER PATH SUMMARY
Civil Engineering student > Project Engineer > Safety and Quality Manager > Management Systems Analyst/Advisor > Quality Engineer > State HSQE Manager > State Quality and Environment Manager > National Environment and Sustainability Manager

AN ENGINEER WHO TOOK THE ROAD LESS TRAVELLED
I chose to do Civil Engineering because I am creative, love solving complex problems and diving into details. It helped I was pretty good at maths too! My vision was to build bridges but I "fell into" the asphalt industry through a family friend and chose to stay. I had the first of my three children in my late 20s and upon returning to work I found the responsibilities of caring for little humans clashed with the expectations of site-based work. Rather than leave, I used the mobility within the industry and the company to refocus my career, going down the path of functional support for the operations. This provided me with the flexibility I needed but also great career progression as I was not competing with all the other engineers for the coveted management roles. I found this area of work also better aligns with my core values and way of working. I never would have thought I would be where I am today when choosing my degree, but I was allowed to adapt, discover myself and grow within what is a very diverse industry.

04 Career and skills analysis

4.1 Overview of survey and purpose

To help understand how we can attract more people to the transport industry, it was important to understand more about the people currently working in transport – why they came into the industry, what they like about it, and their key skills. In order to collect insights and views from people who are currently working or who have ever worked in the transport industry, we designed a short online survey addressing these points. We also developed profiles for our fellowship team, to reflect a shortened version of personal case studies we intend to have on our Transport your Career platform.

The survey was live for around three weeks in August to September 2023, and received a total of 63 responses. These spanned a range of genders, years of experience, locations and technical backgrounds. 57% of those who replied identified as male, and 39% as female, representing a higher/lower percentage of the overall split of around 27% of women in transport39. The majority of replies were from NSW (57%), followed by Vic (23%) and Qld (7%).

Most survey respondents had been working more than 15 years. There were a small number with less than 5 5 years' experience (5%) and 10 to 15 years (6%), with most in the over 25 years' experience category (27%). 93% of respondents considered themselves as currently working in the transport industry. The largest share of these people currently working in transport classified themselves as working on multi-modal solutions (45%), followed by roads (28%) and then rail (25%).

4.2 Recruitment into the transport industry

Survey respondents have a high level of academic qualifications, with 82% holding a Bachelor's degree or higher. 45% held a Bachelor's degree, 39% a Master's degree and 7% a PhD.

Survey respondents' qualifications were in a wide range of technical areas. Although most had qualifications in civil engineering (39%) followed by business and finance (32%) there were also a wide range of other qualifications represented (e.g., teaching, health sciences, forest engineering, electronics and creative arts), showing the high level of diversity in the workforce. Other engineering disciplines (e.g., electrical and mechanical engineering) made up 24% of respondents. This shows the diversity of people working in transport.

The primary reason people undertook their qualifications was passion and interest (72%), followed by career advancement and opportunities (41%) and personal fulfilment and achievement (36%).

For 53% transport and infrastructure was the first industry they worked in, showing 47% had come from another industry, highlighting the potential for relevant transferable skills. There was a spread of a few people coming from many other industries, with the most from mining, resources, oil, gas and energy (4 people), tourism and hospitality (3 people), and architecture, buildings and urban design (3%). There was also representation across diverse backgrounds including creative arts (1 person), financial services (2 people) and health and medical services (1 person). This further highlights people from diverse backgrounds can enter and perform in the transport industry, and there is opportunity to increase this using our Platform.

4.2.1 Why people join the transport industry

Respondents were asked why they chose to work in the transport industry, and their responses were analysed and categorised. The largest group of 31% of respondents said they effectively 'fell into it', noting it was an 'accident', that they 'fell into it' or 'it chose me'. This is also supported by 12% of people who said they work in transport because of the opportunities which were available. This theme demonstrates a low degree of intentionality and potential to encourage people to more pro-actively choose transport.

24% of people noted their interest in the area or a related area, including being "fascinated by trains as a kid". Another important point was the complexity and challenge presented by projects in the industry, which was an important factor for 19% of people. People commented on the exciting and dynamic nature of the industry and its breadth which allows for a wide range of opportunities.

Survey Snapshot

63	Responses
39%	Female
93%	Work in transport today
45%	On Multi-modal projects

Qualifications of respondents

39%	Civil engineering
32%	Business and finance
24%	Other Engineering

Others include teaching, health, sciences and Creative Arts

Why people work in transport

31%	Fell into it
24%	Interest in the field
19%	Challenge and complexity
45%	Making a difference

39. https://www.ntc.gov.au/project/national-women-transport#:~:text=Aim%20of%20the%20initiative&text=Women%20make%20up%20around%2027.4,15.9%25%20as%20against%2013.9%25.

04 Career and skills analysis

4.2.1 continued

The other key theme notes by 11% of people was the ability to "make a difference" and have a positive impact on people's lives. These aspects of the breadth of the industry, its complexity and the ability to make a difference can be marketed as part of the promotion of transport and the Transport your Career platform, and are contained within our proposed key messages (see Chapter 6).

Respondents were asked what they find interesting about working in transport. Emphasising these factors in the Transport your Career platform and associated marketing campaign could help to support recruitment to the industry. Answers given can be summarised into five main themes:

- **Variety and complexity:** The highest theme (45% of responses) identified was related to the complexity and diversity of transport projects. This included the evolving nature of transport and relevant technology, the size and the interface with stakeholders. Problem solving: Related to the above, 7% of people specifically mentioned the ability to solve complex problems.
- **Making a difference**: 29% of respondents noted the ability to make a difference to how people travel. This included reducing emissions, promoting suitability and the ability to make better communities.
- **Technical points:** 9% of respondents mentioned specific technical reasons they found their transport career interesting, including working on multi-level intersections and procurement processes.
- **People and colleagues:** 7% of respondents noted commented on this, including friendships, colleague and client relationships.

Emphasising the complexity and variety in transport, the chance to solve difficult problems and make a real difference are likely to help support more people entering the industry (see Section 5.3 – Marketing and Communications).

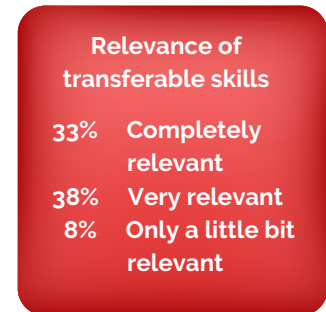## 4.2.2 Experience in other industries

As mentioned above, 47% of survey respondents had come from another industry, and others had work for some time in another industry. Respondents were asked which other industries they had worked in. The most common other industry was mining and resources (16 people), followed by education and research (15 people) and industries not listed (15 people). There was also good representation of people with experience in renewable energy, financial services and tourism and hospitality (10, 9 and 9 people respectively).

Experience in other industries

16	Mining and Resources
15	Education and Research
47%	Started career outside Transport

Also people from renewable energy, financial services and tourism and hospitality

This demonstrates the potential to shift from other industries into transport successfully, which our Transport your Career platform can help reinforce and increase.

4.2.3 Transferrable skills

The survey respondents were asked the top three skills for people working in the industry. The top three were identified as **collaboration** (selected by 61% of people), **problem solving** (53%), **communication** (45%). Critical thinking was also identified by 34% of people and planning by 23%. Skills such as influence, respect and prioritisation all received less than 10%. Understanding these key skills is helpful to inform identification of people from other industries who may be well suited for a career in transport, and to inform marketing approaches.

Relevance of transferable skills

33%	Completely relevant
38%	Very relevant
8%	Only a little bit relevant

People who were not currently working in transport were asked how relevant their transferable skills were to the transport industry. Of the 24 who responded to this, 33% said their skills were completely relevant, and 38% said they were very relevant. Only 8% said they were only a little bit relevant. This shows the high level of transfer between transport and other industries, though this may be biased as the survey was aimed at people who had worked in the transport industry and would have gained relevant skills.

4.3 Career mapping

Based on the findings of the survey, we undertook some illustrative career path mapping, to show the wide variety of paths which people have taken into and within the transport industry. This helps demonstrate the value of transferable skills within the industry, something which our Platform can help highlight and allow people to recognise more openly to navigate their careers. This concept is developed further in Chapter 5.

04 Career and skills analysis

Figure 4.1 shows a series of outline 'traditional / linear' career paths, with technical, project management and business management streams. As discussed in Chapter 3, it is possible to move between the project and business management streams using generalist and technical skills (e.g., project management), however the specialist skills needed for roles such as engineering and planning make it harder to move into these areas without relevant qualifications or experience.

Figure 4.1 Possible career paths in the transport industry

'Traditional / linear' career paths	Technical Paths	Project Management Path	Business Management Path
	Graduate Engineer / Planner	Project Controller	
	Engineer / Planner	Project Manager	
	Senior Engineer / Planner	Senior Project Manager	
	Engineering / Planning Lead or Manager	Project Director	Team Leader
	Technical Lead	Program Director	General Manager
			Director / Executive Director
		Career Path Shifts	COO / CTO / CFO
			CEO

Note: Can apply to many different engineering / planning disciplines (e.g. Design, asset or traffic engineering and transport or urban planning).
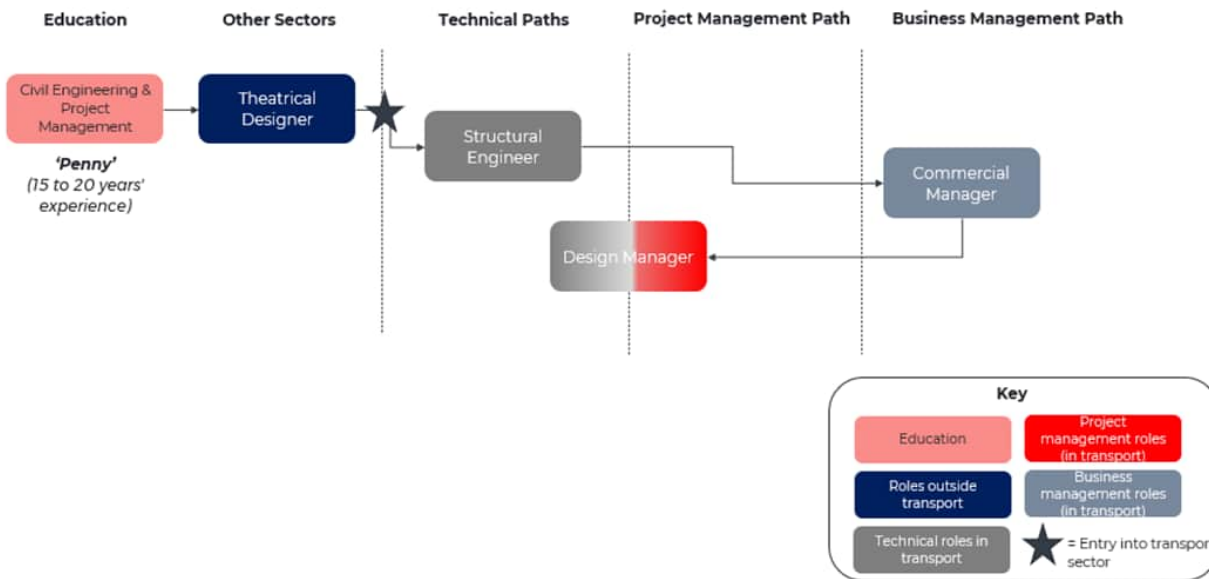
04 Career and skills analysis

Figure 4.2 shows an example career path from a survey respondent ('Penny'), who moved into the transport industry relatively early in their career and switched between different paths. After her degrees in Civil Engineering and Project Management, Penny worked for 8 years overseas as a Theatrical Designer. She moved back to Australia and re-joined the transport industry, taking on a Structural Engineering Role. Later, Penny worked as a Commercial Manager, before taking on a Design Manager role combining her technical and project management skills. This example shows the ability to move from other industries into transport, and between technical and non-technical roles. Our Platform will make it easier for people to make these moves, by better highlighting the options available to them.
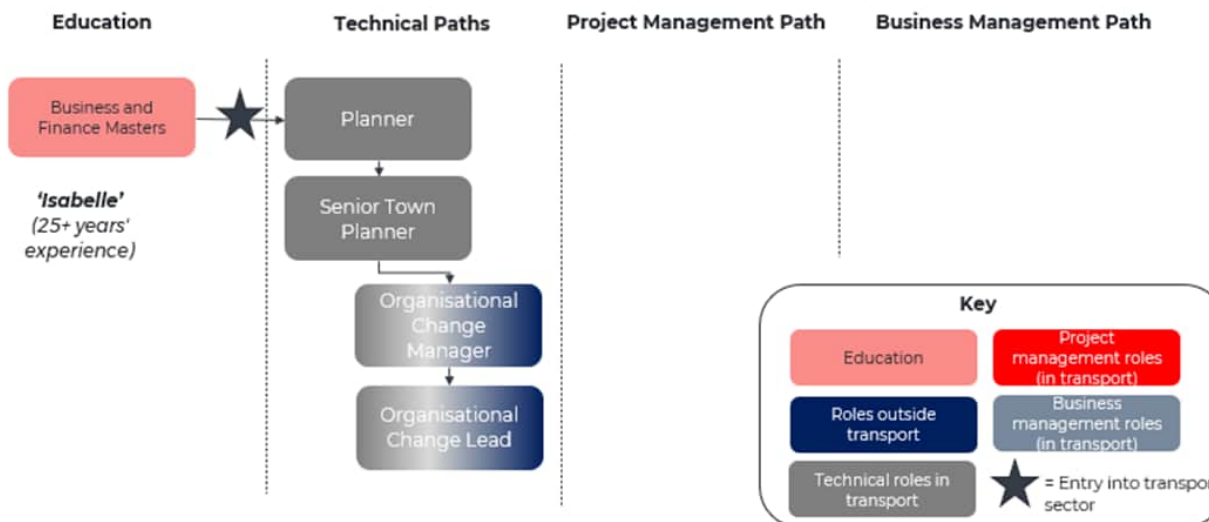
Figure 4.3 shows Isabelle, who did a Business and Finance masters, and began her career as a Planner and then a Senior Town Planner, with links into the transport industry. After around 10 years she changed focus into Organisational Change Management, with a focus on both the transport industry, and other industries (e.g., water, energy, financial services and education). This is an example of a relatively technical career path, with a shift in focus from one discipline (planning) to another (organisational change), both of which can be aligned to the transport industry and use a number of transferable skills. This also demonstrates people working in transport do not need to have an engineering background and cover a diverse range of areas. Our Platform and the marketing campaign and key messages around it will highlight this.

04 Career and skills analysis
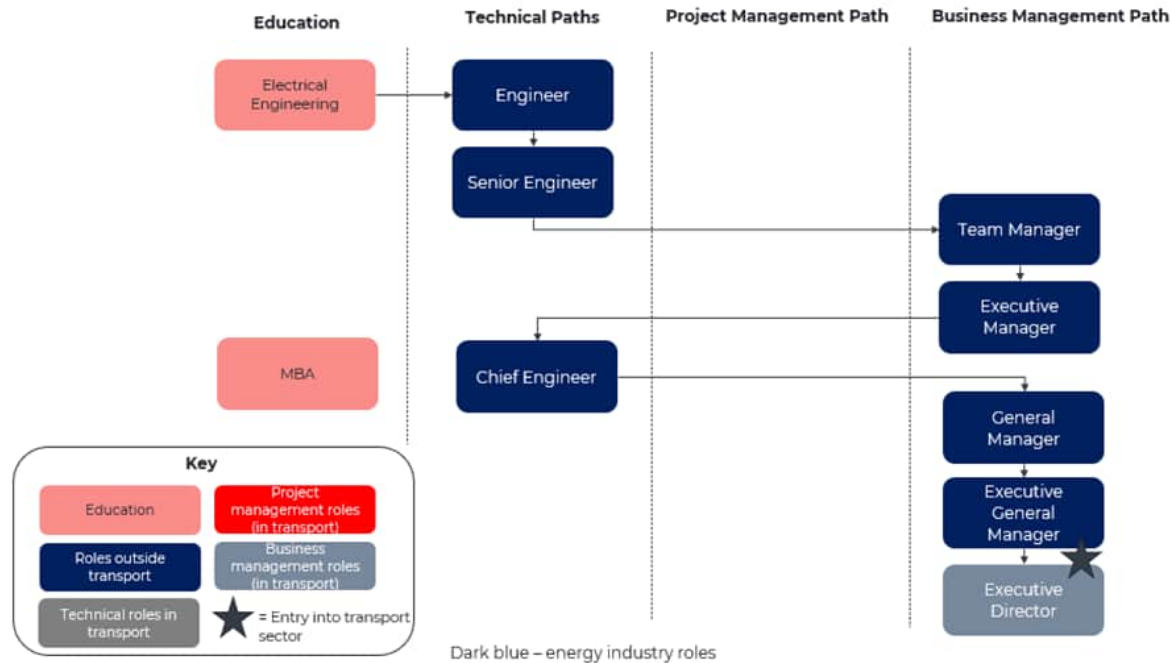
The final example, shown in Figure 4.4 shows Jasmine, who has over 25 years' experience and came to transport later in her career. She spent 15 to 20 years working in the energy sector in a range of technical and business management roles and supported her career progression by completing an MBA. Using her executive leadership skills from the energy sector, she moved into transport to take on a role of Executive Director. This highlights that there is potential for people to move into the transport industry at all stages of their careers, and that people develop a wide range of transferable skills across different roles.

4.4 Career changes and retention in transport

50% of survey respondents said they had made a significant career change during their working lives. Some of the reasons given for a career change included: seeking new challenges, renumeration and financial security, global mobility and working internationally, not having to regularly relocate, making a difference and passion.

People were asked if they were considering a career change from transport (see Figure 4.5). A relatively low number of people suggested they were actively thinking of a career change – 13% said they thought about this a lot and 2% said all the time. The most common response was 44% of people who said they sometimes thought about a career change from transport. 19% of people said they would never leave transport, and a further 23% suggested they are relatively stable. The Transport your Career platform can help people considering a change to understand what options are available to them within the transport industry, and support retention which will help address the skills shortage.

Figure 4..5 Career change consideration in transport

16
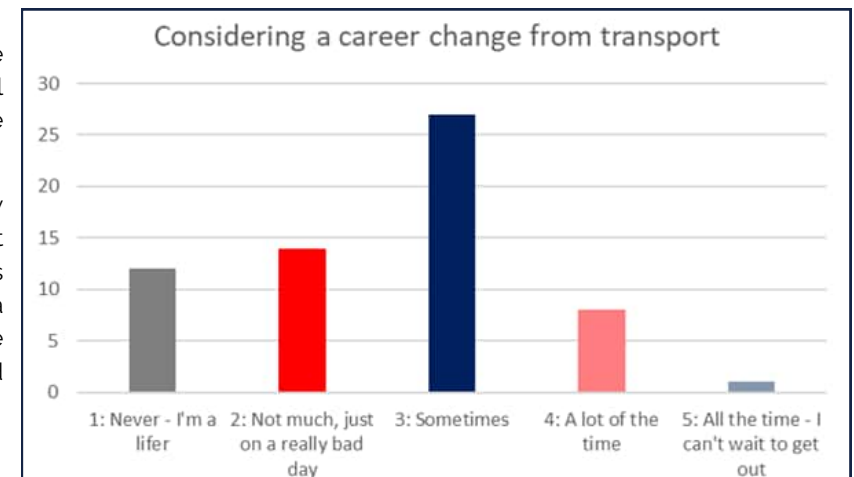
04 Career and skills analysis

4.4.2 Retaining existing people in transport

Survey respondents were also asked what is important to keep them working in transport, to help identify how to support retention in the industry. There were a wide variety of answers. The two most common answers related to the themes of (1) complexity and variety and (2) making a difference which were identified as important reasons for people to join the transport industry. A number of people commented about the need for ongoing complex, ambitious and challenging projects and a variety of opportunities to keep them in the industry. Others noted the importance of the ability to create better places including planning for people, not cars, decarbonisation and more sustainable transport. These themes will be worked into our communications plan, as set out in Section 5.3.

Some other responses to supporting retention in the industry included seeing results (including projects getting built), competitive salaries, career progression, getting more women in senior roles as role models and improved flexible ways of working.

The survey also asked about any trends respondents had observed in people leaving the industry and ideas to address this. The most comments mentioned that long hours, a high stress environment and burnout are driving a shift away from the industry, along with poor flexibility, including for women returning form maternity leave. There were also a number of comments related to 'disillusionment' particularly related to 'non-car transport planners and engineers', including concerns about the level of Government commitments in this area and the industry's willingness to accept innovation.

There were no specific inclusivity questions in the survey, though a couple of respondents commented on this. A female Engineer from NSW with 5-10 years' experience mentioned gender bias as a trend for people leaving the industry. A female with an Engineering background from TAS and 20-25 years' experience mentioned age discrimination as a factor affecting retention. These issues are further discussed in Chapter 3.

ELLY SHORT, SENIOR PRINCIPAL TRANSPORT PLANNER - NET ZERO, WSP

CAREER PATH SUMMARY
PhD student and course assistant > Graduate Transport Planner > Transport Planner > Senior Transport Planner > Principal Transport Planner > Business Development Manager [Road maintenance] > Senior Principal Transport Planner (Net Zero) and Team Leader

GLOBAL MOBILITY AND SHIFTING TO A FOCUS ON NET ZERO

After my Geography degree and PhD, I started with a fairly traditional transport planning career, moving up the levels and between the public sector (TfL in the UK), contracting and consulting. In 2012 I got a bit disillusioned with long-term strategic projects without tangible outcomes. I looked into a career change, and ended up moving from the UK to Sydney, Australia taking on a role as Business Development Manager managing tenders for large road maintenance, asset management and ITS contracts. This was something I had done for about a year in the UK and enjoyed. It was a great experience an used a lot of my transferable skills around influencing and managing people, working in a multi-disciplinary team to incredibly challenging deadlines and translating technical information for non-technical audiences. After 5 years doing that and a spell of maternity leave, I had the time and space to reflect, and moved back into transport planning. I now have a strong focus on decarbonisation, which I am incredibly passionate about.

LAANG SHYH LEE, DESIGN MANAGER, GAMUDA

CAREER PATH SUMMARY
Civil engineering student > Graduate Engineer > Structural Engineer > Senior Design Engineer > Design Manager

ENGINEERING YOUR CAREER PATH

After obtaining my Master's degree in Civil Engineering, I embarked on my professional journey as a graduate engineer in the field of road infrastructure. My primary focus was on highway design and road safety audits. As my career evolved, my passion for structural design drove me to transition into a role as a structural engineer with a company specialising in tall building design. Years later, the opportunity to be part of Malaysia's flourishing mega infrastructure projects, notably the Klang Valley Mass Rapid Transit (KVMRT) project, coupled with my desire to contribute to the nation's development eventually led to me joining the design and build contractor in the transportation industry. Upon successfully completing my assignment on the KVMRT project, I was mobilised to continue my career journey in Sydney, where I currently contribute my expertise to yet another monumental transport infrastructure project, Sydney Metro West. Being involved in mega projects brings me a sense of fulfillment and they definitely are the highlights of my career.

05 Transport your Career platform

5.1 What is the Transport your Career platform?

We are proposing to develop a platform called "Transport your Career". This is a web-based digital platform powered by AI that will serve as a communication tool to allow individuals to navigate their careers and understand roles they are suited for in the transport universe. The Platform would have three key goals:

1. To map out potential career paths within the transport universe based on the Platform's data bank, including both linear and non-linear career paths.
2. To identify the user's transferrable skills based on their previous roles and then demonstrate how these skills could be used across different disciplines and sectors within the transport industry.
3. To identify job opportunities the user could pursue within the industry, potentially in occupation groups outside of the linear career path.

We believe that by increasing people's knowledge of the career possibilities available in the transport industry, this will increase the industry's ability to attract and retain talent. It will also give the industry the opportunity to diversify its labour market by attracting people who may not otherwise have considered a career in transport.

From a practical perspective, the Transport your Career platform will consist of two key elements:

- **"Mechanics" (the AI tool and web platform):** This comprises the online platform which users interact with, which will be backed by an AI interface containing a data bank of information on relevant skills (general, technical and specialist skills (see Chapter 3 for a definition of these different categories) and career paths.
- **"Dynamics" (marketing and communication):** This element comprises the marketing and promotion of the Platform to targeted audiences, including campaigns, events and potentially a wider cultural change program related to recruitment practices.

Figure 5.1 outlines the key elements of our Platform. We elaborate further on both the mechanic and dynamic elements of the Transport your Career platform in sections 5.1 to 5.3.

Figure 5.1 The Transport your Career platform - conceptual overview
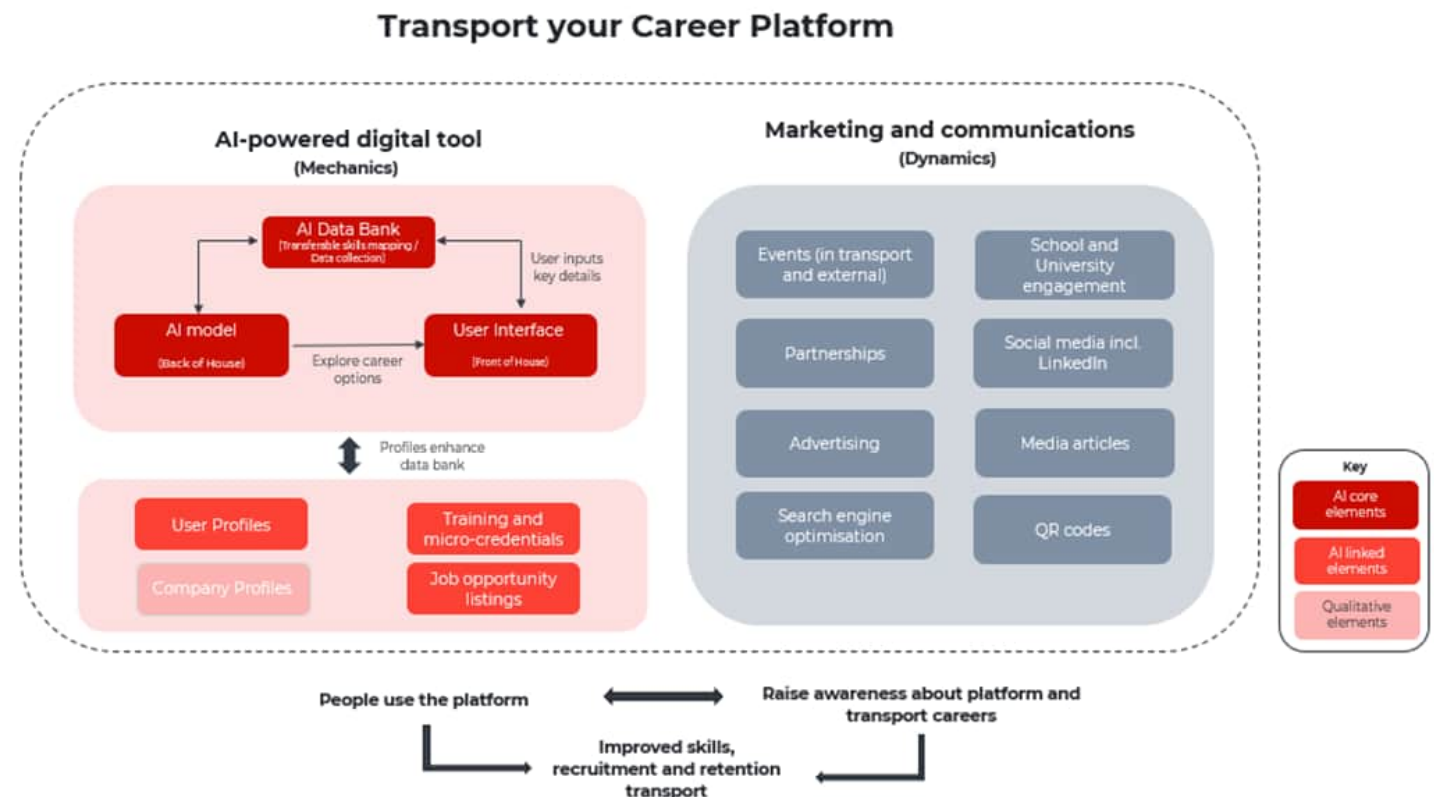
05 Transport your Career platform

5.2 Mechanics: The AI tool

### 5.2.1 How does the Transport your Career platform work?

The transport industry is constantly evolving, which means that people need innovative solutions to navigate their professional journeys effectively. To address this complexity, the Transport your Career platform has been developed as a powerful tool to assist individuals in discovering and charting their career paths within the transport universe. With the help of AI, the Platform can identify both linear and non-linear career paths that maximise the use of an individual's generalist, technical, and specialist skills as identified in Chapter 3.

Here's how the Transport your Career platform works:

- The AI-powered platform is tailored to the transport industry, supported by a databank that contains information on the types of roles available within the industry, along with the generalist, technical, and specialist skills required to perform these roles. The AI is "educated" to identify the types of transferrable skills that are valuable to specific roles in the transport industry, making it easier for users to explore and identify potential career paths.

- The user interface is online, accessible via the Transport your Career website. The website features a Q&A style message box that allows for two-way interaction between the user and the AI.
  - Users can ask questions such as "How do I become a Project Manager?", "What are my potential career paths based on my current role?" or "What are the current opportunities based on the skills I have acquired to date?"
  - The AI will then respond with a series of questions like "What is your current role?", "What skills do you have?" and What interests you in transport?" to gain a better understanding of the user's individual experience, such as their education background, current career experience, and future aspirations. There will be an option to upload PDF documents (e.g., a CV) to reduce the time spent on the Q&A process

- Using the information provided by the user in conjunction with the AI's databank, the Platform maps out potential career paths within the transport universe, including proven linear and non-linear progressions within the industry.

- As part of the career path mapping, the platform identifies the user's transferrable skills and any skill gaps that may exist for potential future roles.
  - Additionally, the platform could offer links to micro-credential courses (which may potentially be offered by RA members) to help users close any skill gaps identified for certain roles.

KIM - CASE STUDY OF A POTENTIAL TRANSPORT YOUR CAREER USER
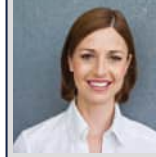
CAREER PATH SUMMARY
Kim, holds a degree in Interior Design, has spent the last seven years steadily advancing towards the Lead Designer position in the building industry.
She however nurtures a strong desire to transition into the transport industry some point in her career, primarily driven by her ambition to work in large infrastructure projects. However, given her long-standing background in the Interior Design industry, she is unsure where to commence this new journey, lacking any prior exposure to the transport industry.

USING THE PLATFORM TO EXPLORE A SHIFT INTO TRANSPORT

In her current role, Kim possesses a solid technical understanding of sustainability-friendly materials and takes charge of material procurement and contract execution with manufacturers in her capacity as Lead Designer. These responsibilities have substantially honed her project management skills and heightened her financial acumen. Kim's role necessitates close collaboration with on-site personnel during the installation of her façade designs. Kim has considered whether she might enjoy being more directly involved on construction sites, rather than primarily working in an office setting.

Upon discovering the Transport your Career platform, she decided to explore this possibility further. Kim interacts with the Platform whereby she identifies her educational background, current work experience, and future aspirations. The Platform then presents several potential career paths, as depicted in Figure 5.2. Notably, one of the roles recommended by the Platform was that of a Sustainability Manager, for which there were job openings at both UGL and Acciona.

As a bonus, Acciona is able to offer internal micro-credential training programs related to sustainability design and management in the context of transportation, which could prove invaluable for Kim as she looks to address some of the skill gaps identified by the Platform.

With the help of the Transport your Career platform a previously distant career in the transport industry has now become a tangible possibility for Kim.

Figure 5.2 Potential career paths illustrated using the Transport your Career platform
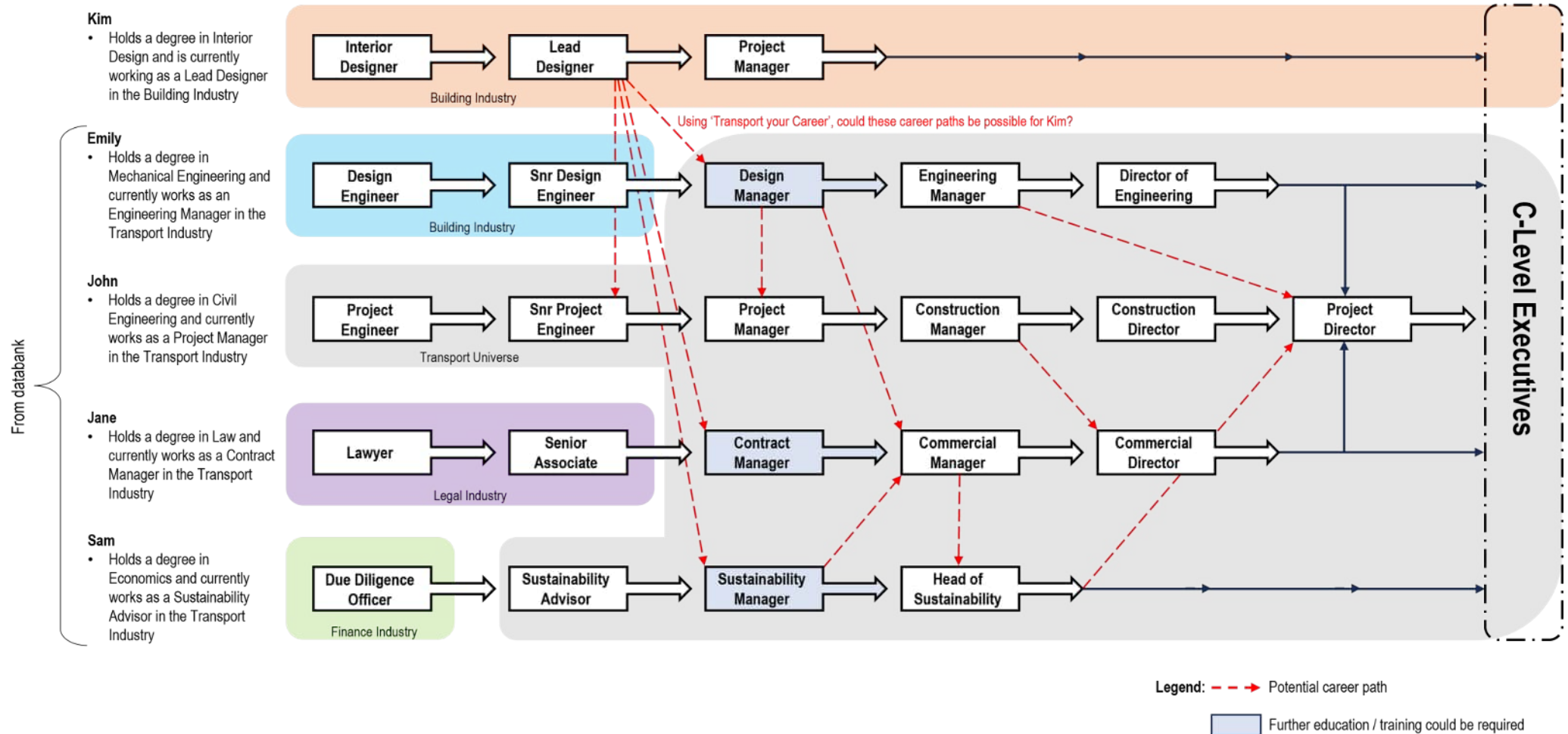
05 Transport your Career platform

5.2.2 What other features could be included on the platform?

In addition to the potential outlined above, the Transport your Career platform is could potentially include a number of complimentary features to maximise its benefits and usage. For example:

- **User profiles:** This would allow individuals to input profiles with their career to date and key transferable skills. This could be done via a CV upload, manually using a question-based approach or a combination of both. People would also be able to identify select priorities for their next career move, ranging from more traditional criteria like salary and location, to other factors like working on a large project or based on an organisation's Environmental, Social and Governance (ESG) position.

- **Company profiles:** Profiles of companies within the industry where people may consider a future role. The Platform could scale visibility of a company on the Platform through different membership levels – i.e. companies pay a higher fee to have a more detailed profile.

- **Job opportunity listings:** Once the individual interacting with the site has been provided with their career path mapping by the AI, the Platform could provide links to job openings relevant to that career path. For example, if the career path identified sustainability manager as a potential career opportunity for that individual, the Platform could link to job advertisements for any sustainability manager roles at RA member organisations (for example, it could link through to the Seek job advertisement).

- **Case studies and career stories:** Like the profiles included within this report, detailed real life stories and case studies of people's career paths could be included. These would focus on 'non-linear' career paths to showcase the wide range of opportunities available, and have a strong focus on under-represented groups in the industry to support an increase in diversity (for example, women, Indigenous Australians, part-time workers).

- **Training opportunities (including micro-credentials):** As touched on above, we believe it would be beneficial for the Platform to include relevant training opportunities, so that people can work towards filling any skills gaps they may have. The Platform could utilise and link to existing training projects offered by RA members. The Platform could be developed so that individuals can browse these directly, but the Platform could also recommend to individuals specific courses and training based on their preferred career path.

- **Partnership Opportunities:** The Platform has the potential to be built in collaboration with some of the major recruitment and transport companies within the industry which may also recommend additional features or refinements. This could open revenue avenues for the Platform for future development.

Overall, the Platform will support collaboration between industry partners, government entities and the community. It can also be used to showcase the positive experiences and opportunities awaiting those who might come to work in transport.

5.2.3 How will the Platform be developed?

Artificial intelligence was chosen as the "technical innovation" element of our project due to its capabilities in processing vast amounts of data and generating actionable insights. From our discussions with industry, AI has the ability to process data from a diverse range of sources, such as industry trends, job postings, and user profiles, to provide tailored career recommendations. Furthermore, AI-powered algorithms can adapt and improve recommendations over time as they learn from user interactions, ensuring that the Platform remains current.

The development of this AI-powered Transport your Career platform involves a multi-faceted approach:

- **Data collection and curation:** The first step would involve compilation of a comprehensive transferable skills data bank (competency framework, see Chapter 3) that includes industry-specific information, transferable skill definition, career trajectories, and specific role skills/competency data. There will be a strong focus on transferrable skills, rather than only formal qualifications, which are often the key focus of other recruitment models approaches.

- **Machine learning and AI model development (Back of house):** Experienced data scientists and AI engineers will be engaged to design and implement sophisticated machine learning models. These models will analyse the data to map out career paths, identify transferrable skills, and detect skill gaps accurately.

- **User interface and experience design (Front of house):** User Interface (UI) experts are responsible for crafting an intuitive and user-friendly interface to ensure that individuals can easily interact with the web platform. The AI user interface is the 'chat' type function where users ask questions about future career options, and the AI responds based on the information within the databank. The user experience (UX) will be optimised for clarity and ease of navigation.

05 Transport your Career platform

5.2.3 continued

- **Testing and Iteration:** Rigorous testing will be conducted to refine the AI algorithms and the Platform's overall performance. User feedback will be integrated into the iterative development process to enhance the Platform's effectiveness continuously.

It is important to note that the development of this AI-powered platform involves several intricacies as well:

- **Data Privacy and Security:** Ensuring the privacy and security of user data is paramount. Robust measures will be implemented to protect sensitive information and comply with relevant data protection regulations.
- **Algorithmic Accuracy:** Achieving high accuracy in career recommendations, skill identification, and gap analysis requires the development of complex machine learning models and ongoing refinement.
- **Scalability:** The Platform must be designed to scale efficiently to accommodate a growing user base and evolving industry data.
- **User Engagement:** Encouraging and maintaining user engagement is crucial for the Platform's success. Strategies for user onboarding, retention, and feedback collection will be implemented.

The Platform development process involves a rigorous approach to data, AI model development, user experience, and ongoing refinement to ensure its effectiveness and relevance to the labour market.

5.2.4 Transport your Career platform feasibility

As part of the project we consulted with digital engineering team at Gamuda and an independent AI developer at TSA to assess the feasibility of our proposed Platform. The feedback we received confirms that out concept is feasible. The AI algorithms involved are not especially complex, especially in the context of existing comparable platforms in the market.

Assembling the appropriate team is critical, including a front-end developer (specialising in user interface and JavaScript), a back-end developer (responsible for page logic and cloud technology), and a proficient AI developer with expertise in prompt engineering and conversational models. Validation of results and ongoing iterative refinement will ensure the Platform's accuracy and effectiveness.

We also discussed the practical next steps of developing the concept to bring the Platform to life. We were advised that there are a number of components such as classification of skills sets, ongoing learning parameters, CV input and language

modelling that would need to be undertaken, which we did not have time to explore fully. However, we have outlined the expected next steps in the Implementation Roadmap in Chapter 6.

5.3 Dynamics: Marketing and Communication

5.3.1 Why marketing and communications?

Think of the mechanics and dynamics components of a platform like two puzzle pieces that fit perfectly together. But, to complete the puzzle, you need a marketing and communication strategy that will shout from the rooftops about the Platform's existence and get people excited to be part of the transport universe!

This strategy will be the driving force that increases awareness of the platform, boosts engagement, and draws in more people. Even if people don't end up using the platform, it will still help them make informed decisions about their transport options. So, let's give the platform the spotlight it deserves and spread the word far and wide!

In today's fast-paced world, people are always looking for ways to make their lives easier. A platform that offers seamless and efficient career options is a game-changer. However, without a solid marketing strategy, even the most innovative and groundbreaking platform will struggle to gain traction.

A well-executed marketing and communication strategy can make all the difference in creating a buzz around the Platform. By utilising various channels, such as social media, influencer marketing, and traditional advertising, the Platform can reach a wide audience and generate interest.

In addition, a marketing strategy that highlights the Platform's benefits and unique selling points can help people make informed decisions about their career options. This, in turn, can lead to increased engagement and a growing user base.

So, let's not underestimate the power of a strong marketing and communication strategy. By creating excitement and awareness around the Platform, we can help it reach its full potential and make a career in transport more efficient, accessible and fulfilling for all.

05 Transport your Career platform

5.3.2 Marketing and communications objectives

The objectives of our marketing and communication strategy is to offer everyone in the transport industry and beyond ace career opportunities. Our plan of action includes the following objectives, more detail on the measures of success are available in Chapter 6:

- Create buzz and awareness through social media channels and maximise reach by promoting "Transport my Career" through direct posts.
- Utilise search engine optimization, social media and influencer platforms to drive traffic to our Platform.
- The initial six months will focus on attracting members to create career profiles.
- Keep members engaged through social media campaigns, industry thought leadership content, and recruitment news. Increasing email subscriptions to keep members informed.

Our ultimate aim is to revolutionise the career planning process in the transport industry and beyond.

5.3.3 Target audiences

Our Platform's recent survey results have indicated a high interest in a career planning tool.

To maximise the impact of the new Platform, we recommend targeting five key groups identified in Chapter 4.

1. **Existing talent within the transport industry:** by targeting industry memberships and databases. This group will be targeted to encourage retention within the industry, create a baseline of skills within industry and assist in adaptability of our existing workforce.
2. **The next generation of talent:** specifically university and school students pursuing STEM programs. School leavers and university students will be targeted to increase the interest of new talent early in the transport industry and the opportunities available to them. Focusing on the aspects of the industry appealing to new work entrants and the adaptability of their skills to new industry needs.
3. **Adjacent industries:** such as energy, mining, legal, and finance, whose transferable skills are invaluable in the transport industry. As described in earlier in the report, the capacity concerns for the industry can not be resolved with those we have and new work entrants alone, it is important that we encourage adjacent industries to the Platform to identify the skills and competencies these individuals may have that could translate, transfer or benefit our industry.

4. **Underrepresented groups:** to promote further diversity and inclusivity within the industry. Our Platform can be marketed directly to women's industry groups, thereby targeting this issue at the coalface. Governments are acting with several programs aimed at increasing female participation in trades and infrastructure, including the NSW Government's Construction Industry Leadership Forum (CILF) and Construction Industry Culture Taskforce (CICT). Furthermore, there are a number of industry groups that are focus on female participation including the National Association of Women in Construction (NAWIC). Our Platform could be marketed industry groups that have a focus on first nations participation to highlight potentially unrecognised opportunities first nations people within the transport industry.
5. **Early career planners:** those people in the first 5-10 years of their career. This group will be targeted as this period offers them ample time to cultivate an entirely fresh career trajectory distinct from their current one, and complete any training needed to reskill and meet future needs for the industry.

5.3.4 Messaging

Our messaging has been divided into three distinct categories. Based on the existing and expanding on the messaging and campaigns the target audiences would be familiar with when interacting with the transport industry and its current/existing tools.

Primary Messaging
Our Primary Messaging, which emphasises the career planning opportunities available through Transport your Career. You would see these messages in social media, posters, or banners:

- Are you ready to accelerate your career ? Visit Transport your Career
- What Road will you take? Transport your Career can guide you.
- Make the connection... to your next role. Visit Transport your Career.
- Where can Transport take you? Unveil the answer at Transport your Career.
- Are you prepared? plan your career journey, Transport your Career is the perfect starting point. (Infrastructure Planning)
- Build an outstanding career with Transport your Career (Infrastructure Construction)
- Ready to design a fulfilling career? Transport your Career has the tools. (Infrastructure Design)

05 Transport your Career platform

5.3.4 continued

Secondary messaging

Based on user surveys and our own experiences, we've cooked up some genius messaging for our marketing campaign. Our website, media releases, fact sheets, and career events will all boast these key messages:

- Transport is the ESSENTIAL to society and your work can make a real difference in people's lives.
- Transport is DIVERSE, We're all inclusive, we want to welcome people from all walks of life to our vibrant transport community.
- Transport is CHALLENGING. With tough challenges and endless possibilities, our industry is the perfect playground for those seeking to push themselves and work with a diverse range of people.
- Transport is LONG-TERM, It's a marathon, not a sprint! With a steady stream of work for years to come, you can build a meaningful career in the transport industry.
- Transport is FLEXIBLE, With a range of different paths and opportunities, the transport industry is all about flexibility and choice.

Platform messaging

This messaging would be used to explain what is behind the Platform, to be used for website/platform content, media stories, industry magazines and in all general communications.

- The latest AI technology and machine learning power our Platform, making sure you get the best possible match for your skills and career goals.
- We've got our finger on the pulse of the industry, with thousands of job and role profiles at our fingertips.
- Our skills and competency frameworks are top-notch, ensuring you land in the perfect role for you.

5.3.5 Programs and channels

Key programs to strengthen the Marketing and Communication Strategy would include:

Career Fairs and Expos:

To draw in our target audience to our career planning platform, it's imperative to participate in the relevant fairs and expos. Additionally, we'll emphasize the diversity aspect to generate more engagement.

Industry Partnerships - Training and Market Entry Programs:

Collaborating with industry leaders in industry who are currently running diversity and inclusion programs such as Women in Construction CPB, Indigenous Traineeships ICivil ACCIONA, will strengthen our Platform. Moreover, users can enter their skills gained on these programs to ascertain how they can advance their careers in the transport industry.

This partnerships will be crucial for:
- **Mechanics:** Key integrations into training and recruitment/job seeker platforms.
- **Dynamics:** Key endorsements and buy in to ensure further awareness and engagement with the Platform.

Community Outreach:

Working with Social Enterprise Organizations and JobActives will enable us to identify potential new skills and workforce entrants. By providing them with access to our career planning Platform, we can guide their clients towards upskilling and career opportunities in Transport.

Marketing Strategy - Communication Channels and Programs:

Our communication tools and channels will align with our project vision, marketing objectives, key target audiences, and programs. Furthermore, we'll link our KPIs to each tool to track progress and success. These are outlined in more detail in Table 5.1.
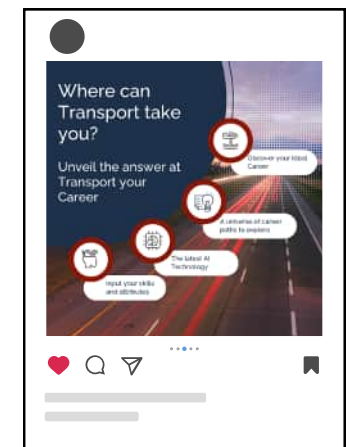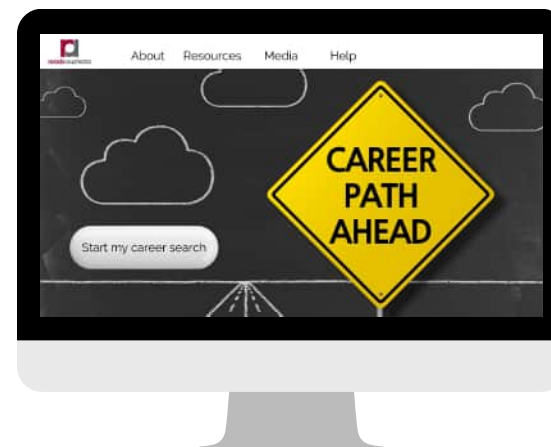
05 Transport your Career platform

Table 5.1, the draft master plan for marketing and communications that'll be put to work at different points in our Platform's life. Keep in mind that while we'll be using all these tools throughout the journey, we'll be honing in on specific goals at different stages.

Table 5.1 Draft Marketing and Communications channel plans

Phase	Pre-Launch	Launch			Drive		Maintain	
Tool	Media	Events	Search Engine Optimisation	Advertising	Social Media	Partnerships	Email Marketing	Video
Purpose	Generate buzz in industry and correctly frame the use of the Platform. Articles for magazines can also assist in developing interest and buzz. Announcement of key achievements.	A launch event will be critical to the tools success where the tone is set and key partners and industry. At later stages, Careers fairs can be used to attract new talent and advance EDI outcomes.	Website to be built with key search engine works such as career, key focus roles ie. Project manager, Adjacent industry terms. These key words can also be used as the basis of Google adwords to increase paid optimisation.	Advertising focused with key messages regarding the tool tailored for the roles we are seeking (see section 5.3.2)	Transport your Career social media profile to be developed. Short sharp and engaging posts including video and imagery to drive views and engagement with the Platform. Short bytes on key social media platforms and with resharing through social media channels	Partnerships with key influencers discussing the tool, capacity shortages, policy reforms and future of transport. Key partnerships targeting audiences like industry, adjacent industries, schools and other digital career platforms will be crucial in the success of the Platform and in creating awareness within key target audiences.	As part of the Platform a membership base will need to be developed to send automated messaging around new opportunities, changes or updates to the Platform and key career planning and industry news. This email marketing will ensure ongoing engagement with the tool	Videos focussed on: How to use the Transport your Career platform. Interviews with key case studies – successful career makers and diverse backgrounds
Channel egs.	Press releases Industry and adjacent industry magazines	Launch event Careers fairs EDI – First Nations careers (ie Koori Knockout) Adjacent Industry Tradeshows Work health and safety Sustainability Technology or Digital.	Serach Engine Rankings (Google and others) Google Adwords and advertising	Key industry magazines Target audience publications and newsletters Online/Digital including Social media	Linkedin, Instagram Industry and adjacent pages and community groups Thought Leaders Recruitment professionals Industry leaders	RA industry members / Corporate members Gamuda Learning Centre Schools/Universities Recruiters Recruitment platforms (Seek / LinkedIn) Community groups/SEO	RA Members New sign-ups to the Platform Partnership maililng lists	Youtube channel – Interviews and case studies Social media clips

05 Transport your Career platform

5.4 What are the benefits of our approach?

5.4.1 Benefits of the Platform

The Transport your Career platform will help people navigate careers in the transport industry, and ultimately help address the skills shortage by both retaining people in transport and bringing across new people. While some initial work has been done to use AI for recruitment purposes, based on our research, there is no platform currently available in the market that is specifically tailored to showcasing the opportunities and transferable skills within the transport industry.

Based on the work completed for this project, we expect our solution to deliver benefits to both individual users, as well as public and private organisations. These include:

- **Encouraging people from other industries into transport:** The labour shortfalls in the transport industry could partly be addressed by bringing in people from adjacent industries with relevant and transferrable skills and competencies. Certain occupations, such as project management professionals, have a higher emphasis on generalist and technical skills, thereby making it easier to transfer individuals in these roles into the transport infrastructure industry. Our survey also identified overlaps with resources in the mining, education and renewables sectors, as well as many others.
- **Improved retention of people within the industry:** By more clearly highlighting the options available to people in their careers, retention within transport is likely to improve. The wider approach of a campaign about raising the profile of the transport industry and the benefits of working in it (e.g., making a difference) will ·also help support retention. A reduction in turnover will in turn help businesses by providing greater continuity of staff and reducing the amount of time and cost needing to be spent on recruitment.
- **Increasing diversity in the transport industry:** Through the marketing and communication approach discussed in Section 5.3, the Platform could also be used to target particular groups to increase diversity in the industry. The Platform could also include a specific section for 'Women in Transport', highlighting successful professional women to inspire others.
- **Helping redirect engineering skills where they are most needed:** While certain occupations rely more heavily on technical skills, such as engineers, the data also suggests that engineers are being employed in roles that do not maximise the use of their specialist skills. On this basis, it is possible that engineers could be redirected to roles that are more reliant on their specialist skills and then backfill the empty roles with people from outside the occupation group or industry who have more of the generalist and technical skills needed for those roles.

- **Improving innovation and productivity:** the long-term introduction of new skills and competencies from non-traditional backgrounds in transport could lead innovations and productivity gains, as people bring new perspectives and ways of working.
- **Increasing learning agility:** by allowing a space to recognise new competencies (meta-competencies, see Chapter 3) needed by the industry and specific roles and identifying the training (eg. Micro-credentials) that may be required in transport in the future learning agility will improve.

5.4.2 Will the Transport your Career platform be useful

We gained user feedback on the Transport Your Career platform both through a series of individual conversations with businesses and the industry survey.

Feedback from industry (Survey results)
As part of the survey, respondents were asked about how easily they could currently navigate their career within the transport industry. Interestingly, of 63 of respondents, only 27% noted there was a clear career path for them. However, 40% said they can 'sort of' navigate their career and 29% said they have just taken opportunities as they came up. This highlights the potential for our Platform to support people in their careers.

Survey respondents were also directly asked if a platform like Transport Your Career would be useful to them understand what opportunities are available to them in the transport Industry (Figure 5.3). Of the respondents, almost 70% said that it would be a useful and assist them navigate their careers. 16% said maybe. This specifically demonstrates the potential of our approach.

Figure 5.3 Survey responses to 'Would you benefit from a platform that would help you navigate a career within the transport industry and recognise your transferable skills?'
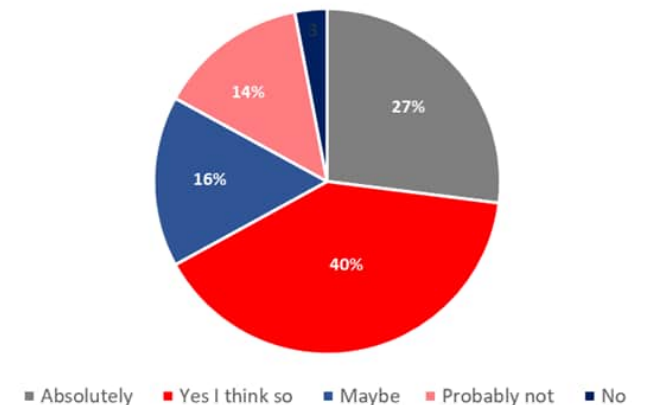
05 Transport your Career platform

5.4.2 continued

One respondent noted there was a lack of information for young people on careers in rail and that more programs aimed at informing people about this early would be beneficial. This highlights the importance of taking an integrated approach to the Transport your Career platform which combines the AI tool with a wider marketing approach, including working with schools and universities to communicate what is possible, as discussed in Section 5.3.

Of those who had received guidance on their careers, most noted that this was through mentoring and sponsorship. Others noted there was a relatively clear path either internally within their companies or within their field. A lot of people noted they had received no specific career guidance, and either followed their intuition or took opportunities when they came up. This highlights the potential for a more proactive approach to supporting people in their careers to both encourage more people into the transport industry, and improve retention.

This feedback demonstrates the potential for our Platform in helping people navigate careers within the transport industry, and verify that it would be useful.

Feedback from recruitment department
To gauge the level of acceptance such a platform would have, feedback was sought during an interview with a recruitment department within one of the team member organisations. Although the primary aim of the Platform is to benefit end users, we also wanted to gain the perspective of those involved in recruitment as important players in addressing the skills shortage, and as potential contributors of funding for the Platform's development (see Chapter 6).

There were three key themes that emerged during the interview that the industry needed to address, which were:
1. Avoiding an ongoing skills shortage
2. Updating the image of the industry and
3. Using technology to help people, open up their potential and changing mindsets of those within the industry.

These themes could be summarised as simply 'challenging the status quo'.

There are a number of ways a platform like Transport your Career could benefit recruitment teams and also highlights hurdles that may be faced in implementation:

- **Recognising the value of non-technical skills**

One of the biggest challenges facing recruiters is finding "a unicorn" or in other words, hiring managers are "stuck in their ways" and looking for like for like replacements to deliver on the expectations of senior management and the customer. Whilst understandable in a high-pressure environment, the recruitment team emphasised the need for balance when selecting potentially suitable candidates and highlighted the value of transferrable skills. The proposed functionality of the Transport your Career platform to increase the focus on the transferrable interpersonal skills or human capabilities of the person really resonated with the team.

- **Technical skills gap**

The technical skills gap cannot be ignored. The recruitment team commented that some candidates from adjacent industries needed only six months training to meet the technical competency gap. The Transport your Career platform has the potential to identify this training for people and guide them on how address the gap. Mindset can be a challenge with hiring managers still reluctant to make this investment, but it was noted during the interview that it is important to weigh up the impact on the wellbeing of the existing team of continuing a vacancy vs having to train someone up. Interestingly, it was highlighted that retention is better for individuals that an organisation invests in to upskill when they didn't meet all the initial role requirements. This indicates that upskilling is a worthwhile investment.

However, whilst this upskilling can help meet the deliverables for a manager or project, it has been observed that the demand for resources means that people entering the industry will not have the time to develop the depth of knowledge and experience as previous generations who spent more of their careers in the same industry. The result of this is "experience is being diluted from generation to generation", something to be mindful of in addressing the immediate skills gap. A large cohort of people are exiting the industry that have the knowledge and experience our industry has built.

Consideration should be given to maintaining a meaningful connection these people through something similar to the Metro Trains Training Academy, to build industry sustainability and potentially encourage the people back to transport at a later stage. Connecting individuals to mentors or experts is something the Transport your Career platform could deliver as a future development.

05 Transport your Career platform

- **Adapting to customer requirements**

One item that could assist in changing mindsets and make it easier for hiring managers to accept people from other industries would be a change in end customer requirements and expectations. End-customer specifications can require a role to have a strict and rigid level of technical experience. An example was given during the interview of a Senior Project Engineer role that required the candidate to have experience working for the customer and also have brownfield site experience. Relaxing some of these expectations would help address skills shortages, and the Transport you Career platform can be used to identify people with relevant non-technical skills.

- **Recruitment costs**

Finally, and importantly, it is important to note the market dominance of existing platforms such as Seek and LinkedIn. Whilst the cost for individual adverts on these platforms is relatively cheap, organisations also have contracts with these providers which have a substantial cost. However, organisations cannot afford to not be on these platforms due to their sheer market dominance. This indicates that the Transport your Career platform would need to work in partnership with these platforms both in terms of data volume and also access to the market. Given the point of difference for the Transport your Career platform is that it would direct people to the transport industry specifically, it's expected there could be a collaborative relationship with other platforms, using their data and directing more people to their platform via strategic advert placement.

5.5 Flexibility and scalability

5.5.1 Application beyond the current skills shortage

We have developed our approach to be flexible and scalable, and to remain viable even after the current skills shortage ends. While it is critical to address the skills shortage in the short term, it is also important to note that the IA Report 2022 identifies the peak of the shortage as occurring in 2023 and that "Shortages are expected to last until at least 2024 based on currently confirmed projects that are primarily focused over the forward estimates. Even if the shortages do not cause delays on projects, the workforce challenges will likely extend further as new projects are confirmed. A conservative estimate shows this could extend out till 2028."

Recent government decisions to cancel significant projects and place other significant projects on hold and under review (e.g. for the national Infrastructure pipeline review) suggests that the current labour shortage issue may resolve earlier than previously anticipated. Further, government changes also could result in the list of upcoming projects taking a different shape or reducing.

It is important to acknowledge that the shortage is likely to come to an end, in which case people may need to be re-deployed, including some of those individuals who have been brought into the industry to address the shortage. As well as helping to address the skills shortage, our Transport your Career platform approach has benefits more widely, and once established can be used on an ongoing basis. Our approach supports opportunities for people to advance their careers by moving within transport, including at times when spending priorities shift and the roles needed change (e.g., during an economic downturn). It also supports people from other industries to join transport at any time, and will bring a wider range of perspectives, and new skills and diversity to support innovation, at any time.

The energy sector is currently undergoing a rapid expansion with the transition to renewables, and increasingly looking to address its own skills shortage. As such, competition for limited people resources will continue to increase. In this context, having a tool to support recruitment and retention in transport, and clear messages around the benefits of the sector to attract people will be increasingly important.

Our Transport your Career platform has multiple other avenues for scalability, including expansion within industry to include different parts of the construction industry (for example, the renewable energy sector).

5.5.2 Impact of future transport trends on demand for skills

The transport industry and the way we travel is also evolving rapidly. With 'future transport' trends such as increasing electrification, automation, focus on decarbonisation, as well as wider industry trends like an increase in computational design and digitalisation, the skills of future transport professionals will continue to evolve. The Transport your Career platform is flexible and will be able to respond to these changing demands with updates to key skills and roles included within the AI data bank over time.

As we enter an era where the country is moving away from non-renewable energy sources, there may be sources of labour available from those industries. For example, as coal-fired power plants shut-down, employees working in that space may be able to be transitioned to other areas, including the transport industry. Again, our Platform could be used to target these individuals and highlight opportunities that sit outside their current area of employment.

06 Implementation

6.1 Implementation roadmap

We have developed an outline implementation roadmap based on our research and learnings to date. We believe the strategic feasibility of the Platform has been demonstrated to the level of detail needed for this project. There are a number of components that would need further refinement in order to arrive at the final product.

We have set out below a structured preliminary seven-phase plan for the conceptual refinement, development, launch, and ongoing management of the AI-powered Transport your Career platform and associated marketing and communication strategy, tailored for the transport industry. Regular evaluation and adjustment of the strategy as needed will be essential to ensure the Platform's long-term success and sustainability. The seven phases are grouped in four stages as illustrated in Figure 6.1.

Phase 1: Planning and procurement
- **Secure initial funding:**
  - Review and refine outline costing information and prepare business case including high level commercial framework (including potential collaboration with existing platforms)
  - Prepare detailed scope and present the proposal to potential sponsors or investors
  - Highlight the value proposition and benefits of the Platform
  - Negotiate terms and secure initial funding to initiate the project.

- **Assemble project management / AI developer specialist team:**
  - Recruit a small, dedicated project management and AI developer specialist team
  - Assign roles and responsibilities to team members
  - Develop a project charter outlining the objectives and scope including success metrics, outline timeframes and KPI.

Phase 2: Data collection and preparation
- **AI data bank development (e.g., competency framework, proven career paths and skills competencies):**
  - Develop data acquisition strategies to ensure comprehensive and up-to-date information
  - Begin data collection efforts, which may include large scale surveys among industry members
  - Begin mapping skills and competencies across industry roles
  - Further explore collaboration opportunities with existing platforms like LinkedIn to access relevant data (for most efficient data bank development).

Phase 3: Platform development
- **AI model development:**
  - AI development specialist team create sophisticated machine learning models and associated algorithms to aid the transferrable skill mapping
  - Build back end AI model - Implement algorithms for career path mapping, skill identification, and gap analysis
  - Test models for real-time data updates and user interactions
  - Ensure and test safety of AI model (data protection and transaction safety).

- **User Interface (UI) design:**
  - Build front end - Engage UX/UI experts to create an intuitive and visually appealing online platform interface
  - Focus on user experience, making navigation and interactions seamless
  - Develop additional website elements (e.g., individual case studies, training module information, company profiles).

Phase 4: Monetisation strategy
- **Commercial framework:**
  - Develop a robust commercial framework to generate additional revenue (see Section 6.2)
  - Consider subscription models (for organisations / industry bodies), premium features, and advertising options
  - Identify key pricing strategies to maximise Platform profitability, balanced with usage and user benefits
  - Undertake a Cost Benefit Analysis of overall Platform based on above scope
  - Secure further sponsorship / partnerships.

Phase 5: Testing and optimisation
- **Testing and feedback:**
  - Conduct thorough testing of the Platform to identify and rectify any issues
  - Launch a beta version / minimum viable product to gather user feedback and insights
  - Continuously iterate on the Platform based on user input
  - Complete User Acceptance Testing

06 Implementation

6.1 continued

Phase 6: Marketing and launch

- **Develop marketing campaign:**
  - Develop a comprehensive marketing strategy to promote both the Platform and wider benefits of working in the transport industry (see Section 5.3).
  - Use digital marketing, social media, industry partnerships, and targeted advertising.
  - Highlight the Platform's unique features and value proposition.

- **Platform and campaign launch:**
  - Launch the Platform to the public after successful beta testing.
  - Run launch events and campaigns (as detailed within marketing strategy) for both the Platform itself and wider promotion of the transport industry
  - Ensure it is accessible across various devices and platforms.
  - Monitor user engagement and Platform performance closely.

Phase 7: Post-launch

- **User engagement and support:**
  - Implement strategies to retain users and encourage ongoing engagement
  - Provide customer support to address user enquiries and issues promptly.

- **Continuous improvement:**
  - Continuously update and refine the AI algorithms for accuracy and relevance
  - Stay updated with industry trends and user preferences to adapt the Platform accordingly.

- **Ongoing marketing and communication:**
  - Continue marketing and communication events to (1) drive users towards the Platform and (2) promote the transport industry as a whole to attract more people.

- **Revenue generation:**
  - Monitor the success of the monetisation strategy and adjust as necessary
  - Explore opportunities for further partnerships and collaborations to enhance revenue streams.

6.2 Implementation timeline

We have developed the above roadmap into an implementation timeline in Figure 6.1 (overpage), with approximate timeframes. Some phases can be delivered concurrently to optimise efficiency. It is crucial to note that the proposed timeline includes a hold point for the acceptance of the outline business case prior to commencing the procurement stage. The business case will serve as the pivotal factor for RA to determine their investment decision, encompassing considerations of scope, cost-benefit analysis, and funding sources. We anticipate that RA will leverage the information presented in this report as the foundation for developing a comprehensive business case to seek funding approval. We estimate that the whole process, from end-to-end, could take around a year, with scalability dependent on the level of resources, budget, and the complexity of the Platform and associated campaign. Importantly, the approach set out in this report is highly customisable depending on RA preferences and priorities.

06 Implementation

Figure 6.1 Transport your Career implementation timeline

'Transport your Career' Implementation Timeline

Preparation of Business Case

Phase 1: Planning and procurement

- Secure initial funding
- Assemble project management and developer team

Phase 2: Data collection and preparation

- Data bank development

Phase 3: Platform development

- AI model development
- User interface design

Phase 4: Monetisation strategy

- Commercial framework development
- Secure additional funding

Phase 5: Testing and optimisation

- Testing and feedback

Phase 6: Marketing and launch

- Marketing campaign development and implementation
- Platform rollout

Phase 7: Post-launch support

- User engagement, support and continuous improvement
- Ongoing marketing & communication
- Revenue generation

Hold point: Acceptance of Business Case

| 2 months* | 6 months* | 3 months* | On-going |

Stage 1: Planning and Procurement

Stage 2: Platform Development

Stage 3: Testing and Launch

Stage 4: Post-launch Support

* = Estimated duration. Scalable depending on resources and funding.

06 Implementation

6.3 Costing and legal

6.3.1 Funding the Platform

AI Development

The cost of creating and maintaining an AI-powered digital platform can vary significantly depending on various factors, including the complexity of the Platform, the size of the user base, the technology chosen and ongoing operational expenses. Based on our discussions with in-house digital engineering experts and software developers, the start-up and on-going cost to develop and maintain an AI-powered digital platform of our proposed complexity is estimated below as a starting point. We recommend a more detailed business case and evaluation be carried out as part of the next steps of the project, to provide greater certainty over the costs. There will also be opportunities to scale the size of the project depending on the available budget.

- **Platform development costs**
  - AI model development: This could cost anywhere from $50,000 to $150,000, depending on the complexity of the AI algorithms and the expertise of the team.
  - User Interface design: Design costs for the IA interface may range from $20,000 to $50,000, depending on the complexity and the number of screens involved. The costs of the wider development of other aspects of the Transport your Career website would also need to be included.
  - Data collection: The cost of data collection could be significant. Using partnerships with platforms like LinkedIn might involve subscription fees or data access fees.

Due to time constraints, we have not completed a comprehensive investigation of all associated costs, and therefore recommend that a business case be formulated to thoroughly assess the following cost items:

- Infrastructure and technology costs, including:
  - Server and hosting (dependent on the platform's scale and expected user traffic)
  - Maintenance and updates
- Marketing, event and launch costs
- Personnel and operation costs, including:
  - Staff costs and overheads (expected to be minimal – i.e., by using existing RA personnel)
  - Transaction and payment processing fees.
- User acquisition and engagement costs
- Legal and compliance costs
- AI model continuous improvement costs.

Business case

We anticipate that an upfront investment will be required to fund a business case to determine the overall preferred approach, scope, commercial viability, and implementation strategy of the Transport your Career platform. A Request for Quote (RFQ) would be written and put to the market for procurement. We have assumed that the upfront costs and management of the business case would be undertaken by RA as this Platform would form part of their Intellectual Property (IP).

Revenue generation

Based on our discussions with our respective companies, it is evident that most organisations in the transport industry are currently heavily dependent on external resources such as LinkedIn and Seek to acquire top talent. It is worth noting that engagement with these platforms can be quite costly, and is an important part of recruitment strategies for many firms, which they see the value of spending money on.

Figure 6.2 Potential funding sources
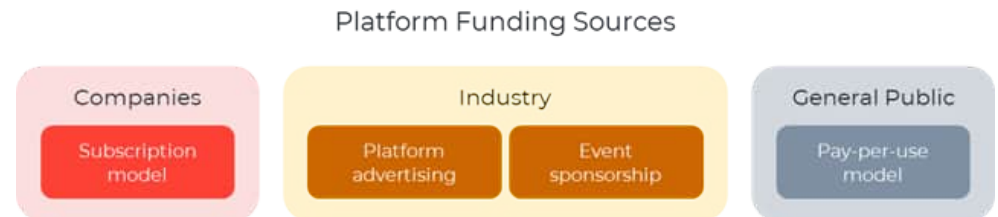
There are a number of potential revenue generation items which could be explored to raise revenue to fund the development and ongoing maintenance of the platform. These are shown in Figure 6.2 and could include a combination of:

- **Subscriptions for RA Member organisations:** We propose membership to the Platform could be included within RA Member organisations' annual subscriptions as part of the overall benefits, or for a small additional fee for a particular 'tiers' of membership. This is with the aim of establishing a long-standing subscription relationship with the RA members.

- **Subscriptions for non-RA Member organisations:** Organisations who are not members of RA could be given the opportunity to access the Platform on a subscription basis. This would help gain access to a wider range of organisations both within the transport industry and outside of it.

06 Implementation

6.3.1 continued

- **Advertising revenue:** This could be through collaborations with key industry stakeholders for advertising purposes on the Platform, or additional fees for either featuring 'premium' job adverts or a higher level of detail in the company profiles.

- **Event sponsorship:** Sponsorship for specific industry events where the Platform is featured.

- **General public access:** The Platform could be opened to the general public with complimentary trial for first time use by any newly registered user. Subsequently the fee structure would be best based on a pay-per-use model (e.g., for a 30 or 60 day window). Any fees would have to be set at an appropriate level, with clearly articulated benefits, to ensure people are willing to pay to use the service and ensure it helps bring in additional skills to the transport industry.

It will be essential to convey to companies that the Platform will not solely assist in the recruitment of new talent but, of greater significance, will also help increase the retention of their existing staff. Employees could use the Platform to explore lateral career transitions within the company, mitigating the likelihood of them departing the organisation or the industry altogether.

6.3.2 Legal and privacy considerations

The key legal risks in relation to our Transport your Career platform relate to data collection and privacy. Depending on how an individual interacts with the digital platform, it may be that the Platform has access to information in relation to that person's name, address, place of work, phone number and other personal information. As with any digital platform or website in Australia, the way this information is stored, processed and managed would need to be in accordance with Australia's privacy laws, including but not limited to the Privacy Act 1988 (Cth).

In addition, the Transport your Career platform would need to establish its own privacy policy. This document would need to be publicly available to the individuals who are accessing the website and would clarify how the website collects, processes and stores (or disposes of) personal information. RA would be familiar with this type of policy given that it deals with personal information about individuals and organisations that interact with its website - for example, when people provide personal information to become members or to attend RA events. We note that RA has a privacy policy available on its website and the one for the Platform is likely to align with this.

The Platform would also need to establish a Terms of Use which would also be publicly available to individuals accessing its website.

This would help to clarify the purpose of the website and set out the rules for usage.

Other factors that would need to be considered include where there was going to be private sector engagement with the website, for example, if job opportunities at specific organisations were linked through the website. In this case, RA would need to consider how the data collection and personal information management would interface with these organisations' own privacy policies.

6.4 AI safety

AI safety is a multifaceted topic that encompasses various perspectives and implications. Some experts worry that AI could become a hazard if used maliciously, programmed to do harm or if it becomes more intelligent than humans and misaligned with our objectives. Other experts argue that AI should be safe and secure throughout its lifetime. Machine learning is vital to AI development and involves feeding computers significant amounts of information and teaching them to recognise patterns. Algorithms are also crucial to AI, as they are lists of rules that the computer must follow in the correct order to complete a task. This will be the foundation of the Transport your Career platform.

So, what are the rules and regulations currently in place? Governments around the world are grappling with how to regulate the rapidly evolving field of AI. The European Parliament has recently voted in favour of the EU's proposed Artificial Intelligence Act, which will establish a strict legal framework for AI, requiring companies to comply. Meanwhile, China plans to mandate that companies inform users whenever an AI algorithm is in use.

How can we verify AI safety? There is no single answer to this question, as different applications and fields may require distinct methods and standards. However, researchers and practitioners have proposed and used various general approaches that could be applied to Transport your Career. These approaches include formal methods (using precise mathematical modeling), testing and simulation (using empirical data and scenarios to evaluate performance and reliability), and transparency and explainability (providing insights into the inner workings, decisions, and outcomes of AI systems).

These methods are not mutually exclusive and can be complemented by other techniques to achieve a higher level of AI safety verification. However, they also have their limitations and challenges, such as scalability, complexity, interpretability, and validity. Therefore, it's essential to carefully select and apply the most appropriate methods for each AI system and its intended use case. This will be further explored during the Platform's development stage.

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6.5 Measuring success

There are a number of aspects which can be considered to evaluate options during the development of the Platform. We suggest a number of options below, in line with the project vision and objectives. They include:

- **Data requirements:** data availability and quality. Does the Platform require a large amount of data? Is the data structured or unstructured? Ensure that the Platform can handle required data types and volumes.
- **Integration capabilities:** Evaluate how easily the Platform can integrate with any existing RA systems, databases, and applications. Compatibility will help with seamless deployment.
- **Scalability and performance:** Consider the scalability of the Platform. Can it handle increasing workloads and data volumes in future? Assess its performance in terms of speed and accuracy.
- **Security and compliance:** Assess the Platform's security measures to protect your data and models. Ensure that it complies with relevant data protection and industry-specific regulations.
- **Supplier reputation and stability:** Research the preferred suppliers reputation, financial stability, and track record.
- **Future-proofing:** AI is a rapidly evolving field. Evaluate the roadmap for future updates and integration with emerging technologies and innovation.
- **ROI analysis:** A comprehensive post-implementation cost-benefit analysis to determine the return on investment (ROI) of the Platform.

The success of the Transport your Career platform once it has been implemented can be measured with user experience and feedback from users. Their insights can provide valuable perspectives on its strengths and weaknesses. Feedback could be gained via pop-ups or more detailed survey. A user-friendly platform can save time and improve the user experience and help attract and retain users.

We also propose Key Performance Indicators (KPIs) to measure market engagement, retention and new starter parameters once the Platform is launched. These could include:

- User satisfaction with the Platform, including the AI interface (via user surveys or pop ups)
- Number of people using the Platform to apply for / secure new roles in the transport industry
- Feedback and satisfaction captured at industry events
- Number of direct visits to the Transport my Career platform each week / month

- Level of brand awareness of the Transport my Career platform online via social media metrics such as reach, views, followers and shares.
- Number of career profiles on the Platform
- Number of email subscribers

All of the above would be revised as part of the overall business case assessment and overall refined scope of the Platform.

PAMELA HENDERSON, HEAD OF TECHNICAL SERVICES - TFNSW

CAREER PATH SUMMARY
Cadet Engineer > Bachelor Engineering (Electrical) > Research Engineer > Consultant – Environmental Services > Project Manager > Manager (multiple roles) > Executive China Light & Power (HK) > Executive Manager – Distribution Services > Chief Engineer (Ausgrid) > General Manager (multiple roles) > Director – Southern & Western Project Office (RMS) > Head of Technical Services (TfNSW) plus several Boards

CIRCULAR ENGINEER FROM ENVIRONMENT, ENERGY, TRANSPORT TO SUSTAINABILITY

I was originally enrolled in a law degree, when an offer of an Electrical Engineer Cadetship in Energy allowed me to be clear that my strengths were in STEM. Although initially seconded to technology research, my first career highlight was to establish environmental compliance to planning legislation, which then quickly led me to deliver the first energy EIS, and I continued into the Project Manager role for delivery. Never shying away from an organisational challenge (and saying yes to the roles that others thought were too complex), I diversified across design, technology enablement, operational management, engineering leadership and customer driven initiatives.

I took the opportunity of relocating my family and career to Hong Kong. Adjusting to another cultural environment broadened my leadership skills, and living with a highly effective public transport system planted a seed of increased interest in transport. I was soon honoured to accept the challenge of Chief Engineer at Ausgrid back in Australia, leading through a significant organisational change and acquisition. I applied my transformational leadership experience into the corporate and customer space, and maintain a view that all engineers need to hear the customer.

I was keen to return to an infrastructure role that had clear customer benefits. I joined RMS to develop and deliver regional roads, and was humbled by the difference our industry can offer for regional communities. Since the TfNSW cluster was established, I have been privileged to lead a large multi-modal cohort enabling extraordinary transport innovations and outcomes. I have circled back to my early career roots, with a strong focus on environment and sustainability, establishing the transformational Sustainable Infrastructure Program which is driving for net zero 2050.

07 Conclusion & recommendations

7.1 Conclusions

Our research project has shown that there is the potential to address the skills shortage in the transport industry using the Transport your Career platform which combines an AI-based career and skills mapping tool, with a comprehensive marketing and communications campaign about both the Platform and careers in transport more widely.

We have shown that the development of the Transport your Career platform is feasible, and feedback from both businesses and the industry survey demonstrates that the Platform will be useful to people in progressing their careers. (see Chapter 5). A high-level roadmap of key practical steps to implement has been provided (see Chapter 6).

The benefits of our approach have been clearly identified, including:

- Showcasing the breath of opportunities viable to people within the transport industry to encourage people from other industries into transport, which will help address the skills shortage
- Improved retention of people within the transport industry through increasing understanding of career options available, to help reduce 'loss of talent'
- Increasing diversity in the transport industry
- Helping focus engineering skills where they are most needed and
- Improving innovation and productivity

7.2 Board recommendations

We have demonstrated the Transport your Career approach is feasible, useful and beneficial. Our recommendations for the next steps by the RA Board are as follows:

1. Discuss the concept at a future Board meeting and agree preferred way forward
2. Develop a preliminary business case and detailed investment and implementation plan, including further scoping of the Platform by people with relevant expertise. We suggest this cover aspects including exploring more details on:
   - Design of the Platform and AI components (using specialist inputs)
   - Platform costings and funding mechanisms
   - Scale and focus of a marketing and communications campaign
3. Explore the potential for a collaborative approach with major industry providers (e.g., Seek and LinkedIn) to improve value for money. This would include discussions on access to information about their user base, and the mutual benefits of a transport specific solution.

We recommend that item 1 occurs in the next 1 to 2 months, followed by items 2 and 3 shortly after. The skills shortage is a current and immediate issue, and as such development of the Platform in the near term will ensure its benefits in addressing this are maximised.
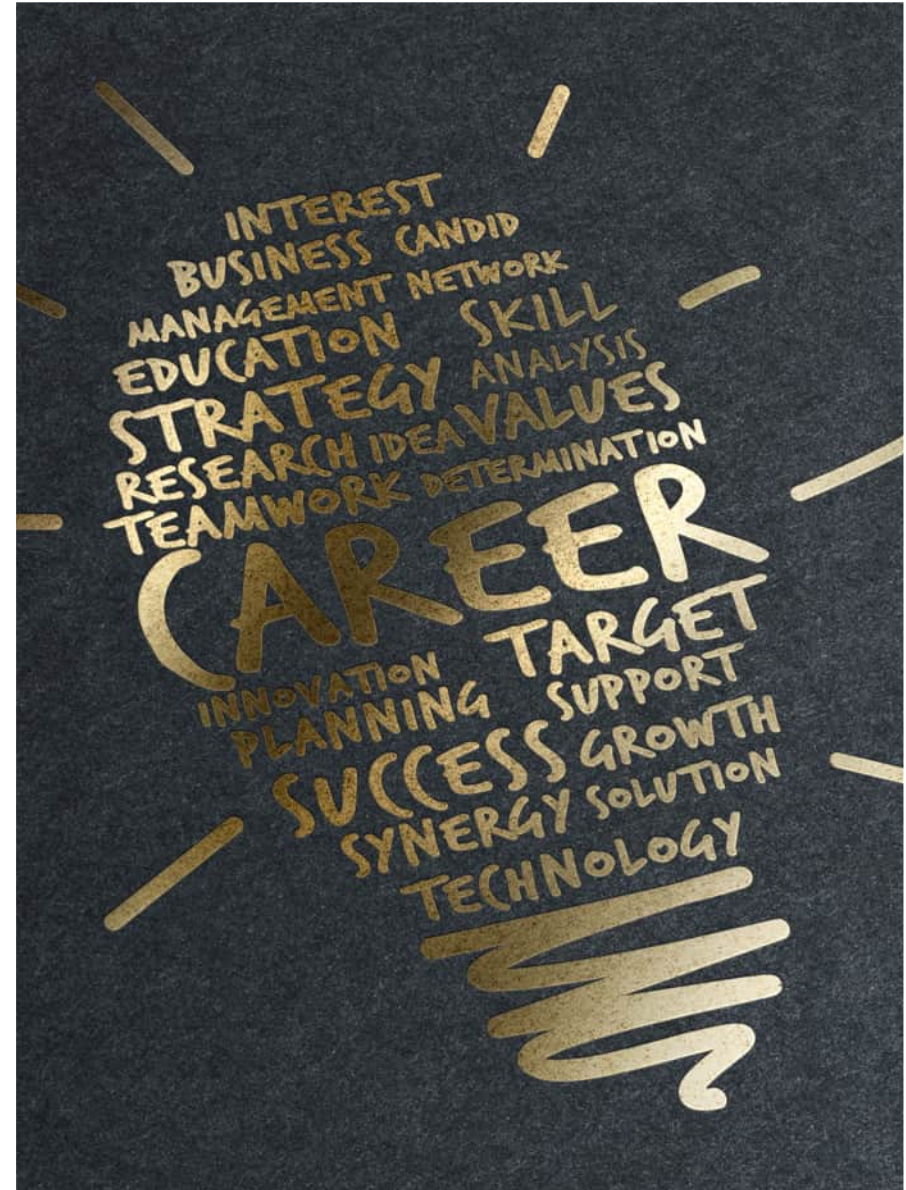
07 Conclusion & recommendations

7.3 Post script: Group Won reflections on the project process

When this project was set back in May 2023, part of the discussion from existing Fellows was that the process of doing the group project was just as important a part of the learning process than the actual report and project outcome itself. In line with that sentiment, we finish this report with some of our learnings and insights from the overall process.

- It was helpful early on to share about our different skills and interests as a diverse team, and think about how to best play to our strengths. We went through the 'norming' and performing' stages pretty quickly, and then a few more times around the cycle as the project went on!
- Working in a flat structure of high-performing (and busy on the day job) peers was a different team dynamic to usual project delivery. Like any project, we had to work through some differing opinions and priorities, and work out how to balance getting the right quality of output for the time available. We're pleased with our results.
- It was hard – though not quite as challenging in terms of delivery as a University group project! The question was a tricky one, and we all learned a lot. We got to know each other really well, but probably didn't have enough coffees, lunches and beers.
- Finally, sticking to a short page-limit target was a challenge too far! We understand it was more a guide than a deal-breaker, have tried to make it very readable, and hope it was worth the extra pages to learn how to 'Transport your Career with Group Won!'

> We would like to acknowledge and thank all the people who provided input and supported us in completing both this project and the RA Fellowship Program. We are especially grateful for our mentors, who have been generous with providing their time, advice and support.

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Appendix 01 - Full methodology

We utilised the methodology described in the table below to conduct research, create, and improve our proposed solution to the project question presented in Chapter 1.

Category		Purpose	Actions Taken
Scoping	Solution development	• Developed strategic plan of our response to the question under Section 1.2 and • Submit to Roads Australian Emerging Leaders Committee for feedback.	• Developed team roles and responsibilities, using each others strengths, establish team meetings • Undertook initial literature review of defined problem and our proposed solution (key topics) • Investigated if the proposed solution is currently in the market • Incorporated feedback from Roads Australia panel and updated approach
Planning and research	Literature review and context	• Obtain a greater understanding of the skills shortage and current market situation and challenges • Determine any key characteristics to consider for the development of the platform • Understand any further opportunities for our solution	• Reviewed of existing reports and research including: • The skills shortage across Australia within the transport industry • The use of cross industry skills-based recruitment – transferable skills • Recruitment and retention challenges faced by the industry • Explored opportunities to develop the digital platform based on the above literature review • Developed a high level understanding of the required future skills sets for the transport industry
	Artificial Intelligence	• Determine a basic understanding of how Artificial Intelligence works • Obtain an understanding of how Artificial Intelligence could be used to as part of our proposed solution, including a roadmap and costings for our proposed solution	• Developed a basic concept of how the platform would be used – Skills mapping • Researched on availability of similar platforms on the market • Investigated how major corporations are harnessing the power of AI technology to improve their business in terms of people retention and upskilling • Identified what are the key features the proposed platform should possess • Researched on how to build up a databank and the most efficient method
	Industry survey and engagement	• Collect real data on people's career journeys within and from outside transport • Gain key insights into recruitment and retention trends in transport • Gain user feedback on Transport your Career concept	• Developed survey questions and issued via Roads Australia, AITPM and Team Won personal networks. Survey was live for three weeks in August 2023. • Held discussions with mentors and contacts about project approach and topic • Held discussions with organisation HR teams on skills mapping and the platform • Wrote up findings and example career paths into the report • Developed profiles of RA Fellows to illustrate diverse career paths and align to the 'people focused' approach with user examples and case studies to be provided on the Transport your Career platform
Development	Digital platform development	• Determine the feasibility of the proposed solution and its outputs • Understand how the platform would need to be developed and the steps involved • Determine the approximate time and costs involved in developing the digital platform	• Undertook workshops with digital engineers – Gamuda Excellence Transformation (GET) Team • Conducted independent review of concept – Razeen Ahmed (TSA) • Developed conceptual outline of how the platform would function (inc back of house / front of house) • Identified potential challenges developing the platform • Determined scalability and commercial viability / explored funding opportunities
	Marketing strategy	• Develop the marketing strategy of how to best communicate the platform to potential users • Determine approach as to how the digital platform will best "showcase the transport industry"	• Developed marketing strategy including key messages • Developed high level framework to evaluate effectiveness of the platform
Finalisation	Reporting	• Research paper – Present a succinct and concise report outlining the teams methodology, research, solution, benefits, implementation plan and proposed recommendations for the RA Board	• Drafted, reviewed and finalised report on Transport your Career solution including implementation roadmap.