

Collaborative Logistics

Phase 1 – Abridged Report
July 2018



Trading Partner Forum (TPF)

The Trading Partner Forum (a forum of the Australian Food and Grocery Council) brings together fast moving consumer goods (FMCG) suppliers and retailers in pursuit of business practices that contribute to driving growth, delivering efficiency and improving availability across the end-to-end value chain, benefiting suppliers, retailers and shoppers, without impeding competition.

The objective of the TPF is to enhance and optimise the end-to-end value chain by collaborating (without infringing competition law) to:

- Identify opportunities to drive growth;
- Improve availability;
- Deliver efficiency enhancements across the value chain; and
- Establish business enablers and standards across the industry.

It aims to deliver outcomes that benefit the retailer, the supplier and the shopper with a focus on the Australian FMCG/Supermarket Retail sector whilst considering synergies with the New Zealand sector.



GRA Supply Chain Pty Ltd

GRA is Australia's premier expert consulting firm specialising in supply chain and logistics strategy, planning and execution.

About us:

GRA was founded in 1997 and is Australia's premier specialist supply chain consulting firm. Our team has extensive commercial supply chain and logistics experience across a broad range of industries and at all levels of the process, both strategic and operational. For the last two decades, we have worked with over 200 organisations to turn their supply chains into a competitive advantage.

Our Team:

Our team has extensive commercial supply chain and logistics management experience across a broad range of industries and at all levels of the process, both strategic and operational. Having worked within industry as practitioners to implement supply chain initiatives, we have first-hand insight into our clients' requirements and challenges. This makes us uniquely qualified to help our clients achieve their goals.

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Supply Chain Strategy,
Planning & Execution

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Introduction

The objective of the Collaborative Logistics Project is to provide thought leadership aimed at provoking positive change within the industry through highlighting opportunities for industry wide collaboration in physical logistics, which will ultimately enhance the value proposition for the industry's shared customers, shoppers and consumers.

In early 2018 a qualitative and quantitative study was undertaken by GRA on behalf of The Trading Partner Forum (TPF) into the current levels of capacity utilisation in the supplier-retailer warehousing and transport network, with a focus on shared supply chain components (primarily the storage and movement of goods between supplier and retailer). The study, which included surveys, empirical data, interviews, and local/global desktop research also investigated rationale behind the current state structure for physical logistics in the industry and opportunities and impediments to collaboration. Finally, respondents shared their perspective on future outlooks and challenges in the area of physical logistics for the decade ahead.

The study formed Phase 1 of The Collaborative Logistics Project, and resulted in a detailed management report being provided to the TPF's Executive Committee (consisting senior executives from supplier and supermarket retailer/wholesaler companies) which identified a broad array of opportunities and challenges in regards to achieving industry-wide logistics collaboration in; **1. the current state**, and **2. the future**. The TPF Executive Committee are utilising the detailed report in identifying priorities for Phase 2 of the project, and intend to progress the work on behalf of the industry in 2018/19.

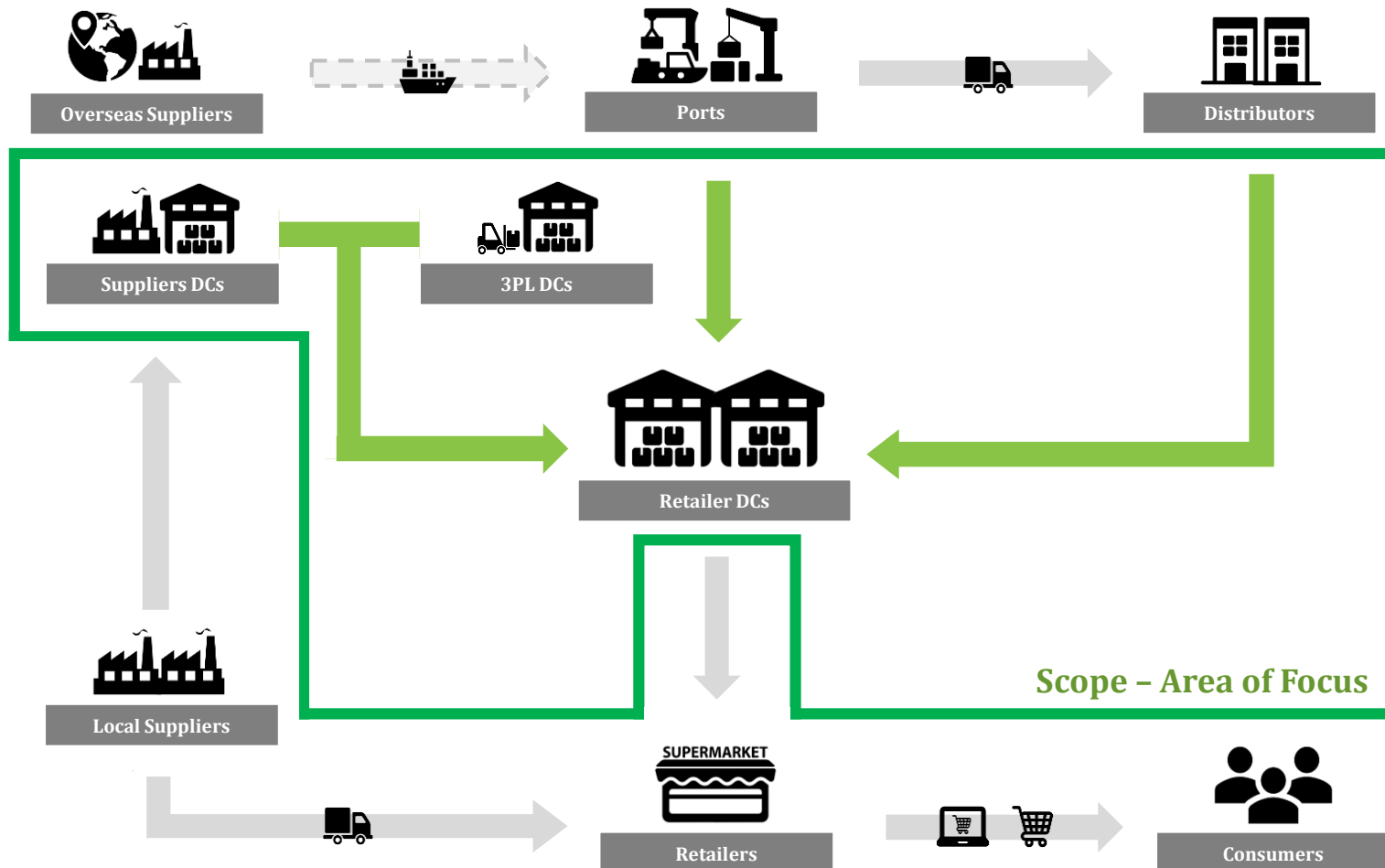
This **abridged** report is being released to industry both in order to keep the industry abreast of the TPFs work in this area, but also, importantly, as a thought and discussion starter among industry participants both within their own businesses and with trading partners. The TPF suggests readers utilise this high-level abridged report to consider what the current state and future opportunity for collaboration in physical logistics might look like:

- Within your own company
- With trading partners and/or peer companies
- At the industry level

The Trading Partner Forum Executive Committee wish to recognise the work of GRA in undertaking the Phase 1 study for this project.

Scope

Project Phase 1 scope was to identify and examine opportunities and challenges in Australian Grocery transport and warehousing, specifically across the areas highlighted within the green boundary below:



Supply Chain Types in Scope

Ambient



Air-Conditioned



Chilled



Frozen



Supply Chain Outcomes Sought

By assessing the current state of transport, warehousing, opportunities to drive greater capacity utilisation across the network to deliver national productivity and greater customer value will be identified.



Transport



Warehousing



Collaboration



Capacity Utilisation Opportunities



National Productivity



Customer Value

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Current State Assessment – Summary

Taking an industry-wide view, the survey and data analysis highlighted excess capacity in both warehousing and transport across the Food & Grocery industry.

Overall, the current state of utilisation highlights an opportunity for greater alignment in the industry as currently perspectives on capacity are often intra-company only.

Retailers and Suppliers, by taking a broader view, can help deliver efficiencies in the supply chain to improve overall value for the consumer. Consider:

- If we have too much capacity, how can we best leverage this?
- If we have too little, what are the alternatives to increasing fleet capacity or storage space?

In this **Current State** section of the report we examine where demand and supply gaps may exist across geographies and temperature requirements – and call out potential opportunities for industry-based solutions.



Warehousing and Transport Capacity Utilisation



Retailer

Data insights



Data suggested that there is an opportunity for Retailers to play a greater role in the broader Supply Chain to increase overall industry utilisation levels.

Supplier

Survey insights



Some suppliers are at capacity with plans to invest in more, whilst others' capacity is underutilised. This highlights an opportunity for suppliers to collaborate and drive efficiencies.



Current State Assessment – Opportunities

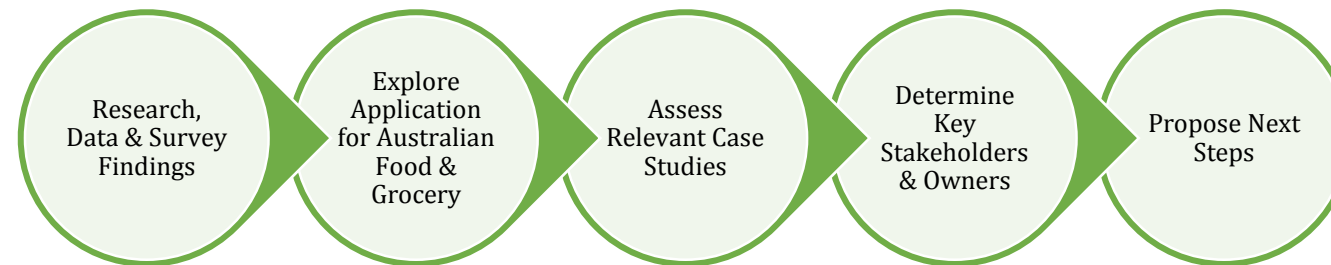
Opportunity # 1 – Driving Primary Freight Arrangements (PFA) further to improve industry transport utilisation

Opportunity # 2 – Collaborative Freight Arrangements (CFA) across Food & Grocery - via information sharing / freight exchange platforms

Opportunity # 3 – Collaborative Freight Arrangements (CFA) to improve backhaul - not limited to Food & Grocery

Opportunity # 4 – Collaborative Storage Arrangements (CSA) – for suppliers – to drive utilisation & cost efficiency

Opportunity # 5 – Collaborative Storage Arrangements (CSA) – for retailers – to expand geographic coverage and food accessibility



Current State Assessment – Opportunity #1

Driving Primary Freight Arrangements (PFA) further to improve industry transport utilisation

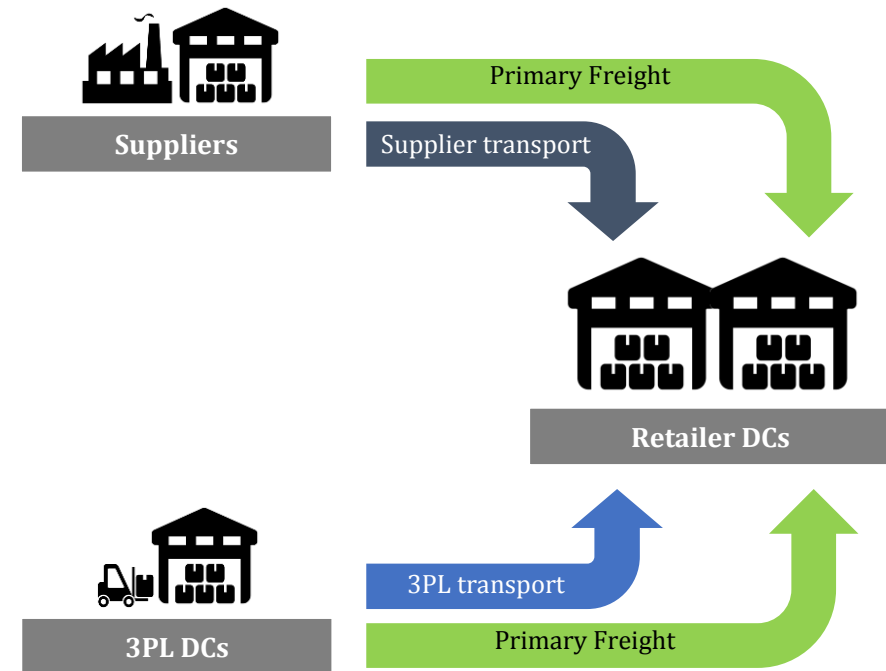
Based on the aggregated transport data provided by retailers, the current state assessment appears to show a **significant and potentially underestimated (in terms of perception) opportunity to improve inbound transport utilisation rates** into Retailer DCs.

Taking an industry lens, there appears to be significant **opportunity to consolidate** smaller loads for inbound movements to Retailer DCs. If the above hypothesis holds, this would be even more attractive for tier 2 & 3 suppliers and improve their overall transport capacity utilisation.

Given the above, enhancement of **Collaborative Primary Freight Arrangements (PFAs)** between retailers and suppliers, from an industry perspective, could potentially benefit all parties (including end consumers) by optimising transport costs and reducing capacity wastage.

Opportunities:

- Identify specific retailer/supplier primary freight opportunities based on common freight routes and geographical positioning
- A supportive program to help suppliers on-board themselves into Primary Freight Arrangements with Retailers

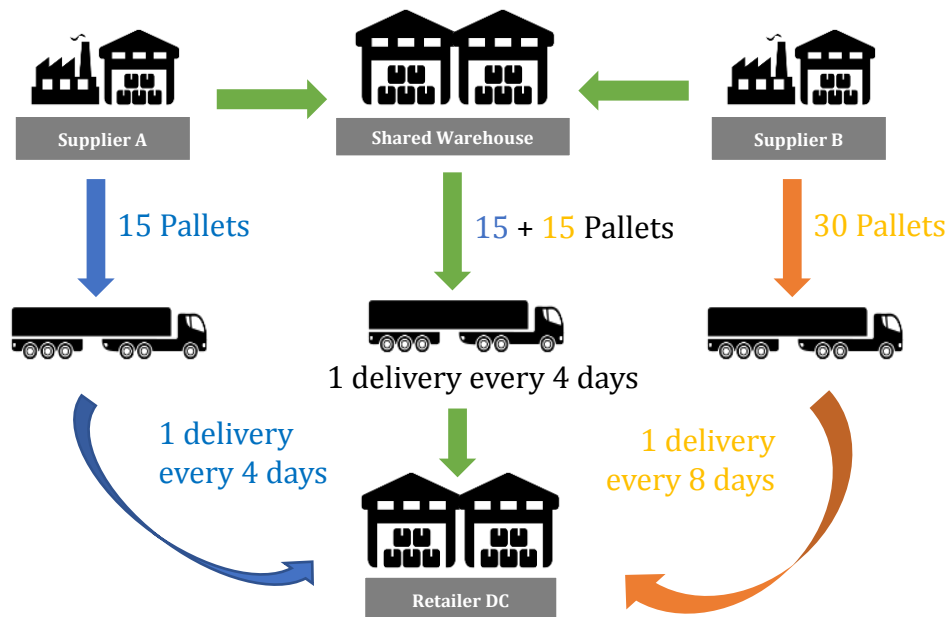


Current State Assessment – Opportunity #2

Collaborative Freight Arrangements (CFA) across Food & Grocery - via information sharing / freight exchange platforms.

Freight Consolidation is a key element to improving transport utilisation rates. Often, however, in obtaining consolidated freight movements, suppliers may trade-off the frequency, timeliness and the most direct route. Greater levels of Collaborative Freight Arrangements (CFA) – horizontally across food & grocery – is likely to enable **optimal trade-offs between frequency, consolidation and direct movements.**

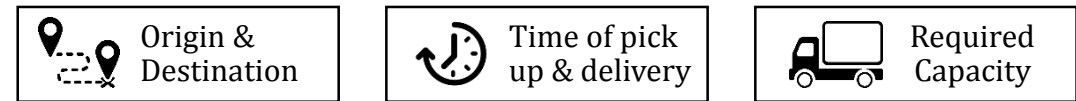
Example of Collaborative Freight Arrangements (CFA)



Collaboration between Supplier A and Supplier B enables increase in delivery frequency to Retailer DCs.

Through Collaborative Freight Arrangements, suppliers who are geographically close to one another (origin), are able to consolidate freight movements and schedules based on destination (which are likely to have a high degree of commonality – given Australia’s retail landscape).

CFA is not only limited to suppliers as it can also be applied to retailers. Collaborative Freight Arrangements can be compared to the simple ‘car-pooling’ concept, in that CFA requires similarly simple information that can be shared via those subscribed to the CFA platform:



This typically is most effective if the arrangement also involves shared warehousing – although this is not a must have.

‘Exchange’ type platforms are becoming increasingly common – even in personal transport, e.g. Uber Pool.

Opportunities:

- ❑ Potential partnerships can be formed with suppliers & retailers based on similar geographies (i.e. origin and destinations)

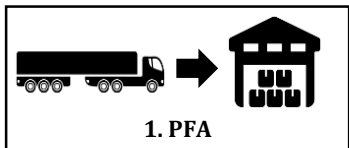
Current State Assessment – Opportunity #3

Collaborative Freight Arrangements (CFA) to improve backhaul - not limited to Food & Grocery.

Optimising Primary Freight Back-haul for the industry will have to go beyond supplier to supplier CFA. This is a combination of opportunities #1 and #2, which identifies the case for **further improvement in backhaul along the East Coast of Australia.**

The centre of gravity for Food & Grocery supply locations appears to be in the South Eastern part of the country. There is a fairly distinct concentration of manufacturers in the South-East (particularly in Victoria). It is easier to maintain higher utilisation levels for north-bound movement when compared to south-bound (Primary Freight Back-haul) movements.

To improve overall freight network efficiency – a targeted effort to optimise backhaul would encourage:



Matching the volume of North / South Transport can help unlock capacity constraints currently facing the network

~ Survey Respondent (Supplier)



The utilisation rate of the NSW to QLD route, on both ambient and temperature controlled transport, is notably higher than the QLD to NSW route. This represents a sizeable opportunity to improve south-bound backhaul through transport collaboration

Opportunities:

- Which industries and specific companies have south-bound movements? Can we approach them with a view to explore collaboration opportunities?

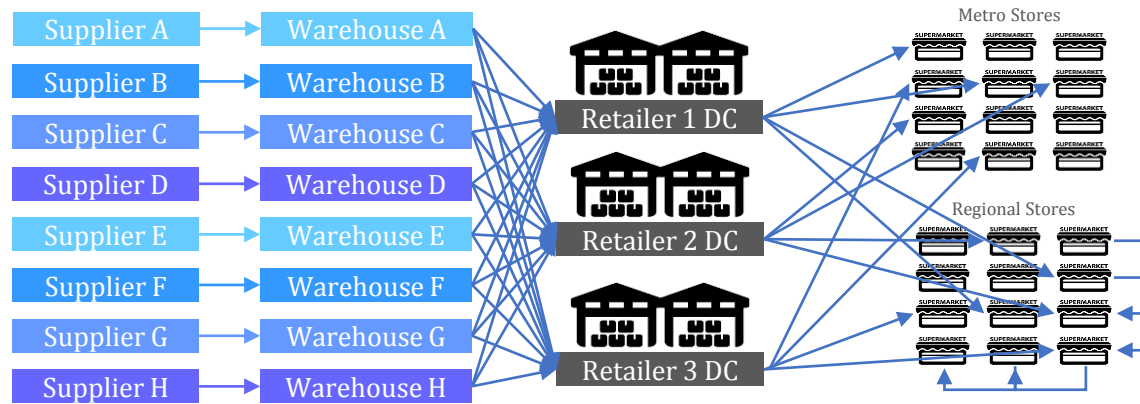
Current State Assessment – Opportunity #4

• **Seasonality call out:** Average vs. Peak Demands should be taken into consideration when proposing potential partnership opportunity as seasonality may influence compatibility of Collaborative Storage Arrangements.

Collaborative Storage Arrangements (CSA) to drive utilisation & cost efficiency for suppliers

Leverage existing storage infrastructure between suppliers, rather than introducing new ones. Where alignment exists on specific product profiles and handling requirements, **collaboration & co-investment opportunities may enable greater levels of automation and infrastructure for suppliers.**

Common ‘As-Is’ Situation – Individual Consolidation Efforts

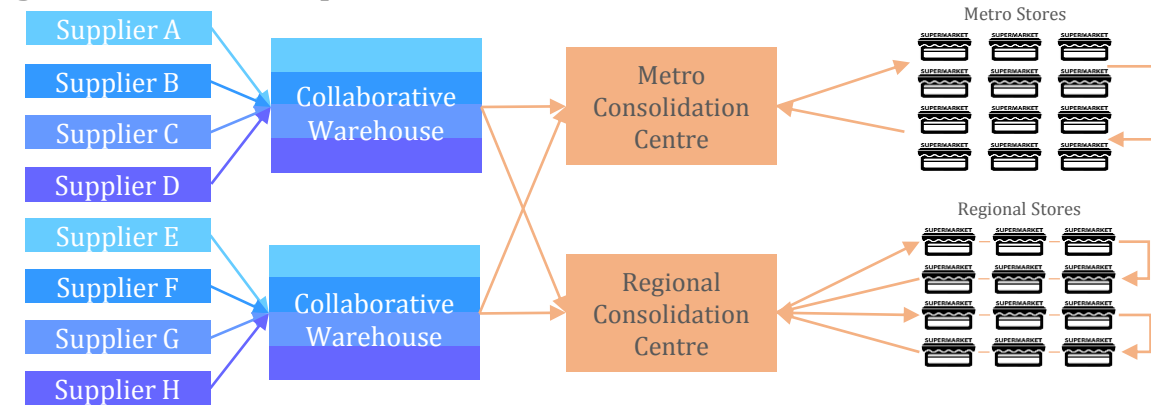


Note, store delivery is out of scope.

Characteristics of the common ‘As-Is’ Situation

- Each supplier has its own warehouse(s) and each retailer has its own DCs
- The supplier ships its products to each of the retailer DCs.
- A retailer ships the products from its distribution centre to each of its stores.
- There is limited physical supply chain collaboration taking place among suppliers, among retailers, and between suppliers and retailers.

Integrated Model – Example of Horizontal Collaboration



Note, store delivery is out of scope.

Characteristics of the Horizontal Collaboration Integrated Model

- Suppliers with similar product profile or located in the same geographical area may have a collaborative warehouse, possibly run by a 3PL provider.
- Products will be cross-docked at consolidation centres (a shared infrastructure among retailers), enabling Full truckloads (FTL) to be realised more easily.
- Transport (FTL) from the consolidation centres will be shared and goes to the stores of the different retailers via ‘Point-to-Point’.

Opportunities:

- ☐ Suppliers in similar locations and similar product profiles could develop a co-located facility to reduce overall costs and provide greater benefits economically & socially.

Current State Assessment – Opportunity #5

Collaborative Storage Arrangements (CSA) – for retailers – to expand geographic coverage and food accessibility

In analysing storage capacity vs. demand geographies for the entire industry – there appear to be key imbalances in the current network. This opportunity explores Collaborative Storage Arrangements (CSA), to close such demand / supply imbalances through co-invested expansion.

Purposefully located storage is critical for Australia as transportation costs can vary significantly between geographic zones. The table below is from a Cost-to-Serve analysis that GRA carried out for a client, showing how **freight costs as a % of sales increases exponentially** when we compare urban and rural areas:

Metro	Regional	Country	Remote
7.6%	11.1%	14.1%	61.1%

The study highlighted, some areas with significant population centres are more than 10 hours drive from the nearest Retailer DCs (e.g. North QLD and Darwin).



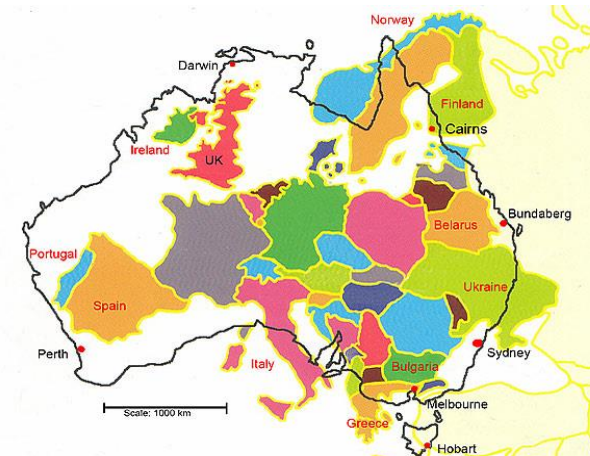
Compared to metro areas, this has likely resulted in:

1. lower levels of store shelf life due to transit times
2. increased mark downs due to transit times
3. high reliance on 3PLs to effectively service these areas
4. lower levels of responsiveness

Australia poses significant geographical challenges for transport providers due to its have low population density and long distances between major centres. This is in addition to the challenges of natural fluctuations in retail demand. Significant volume and market penetration are therefore required for organisations to enter into a region (which not always possible).

Comparison between Australia and Europe:

	Area	Population	Population density
Australia	7.7M km ²	24M	3.1 per km ²
Europe	10.2M km ²	743M	72.8 per km ²



Opportunities:

- ☐ Identify locations of interest for a storage HUB in Northern Australia (likely North QLD) and explore funding options across retailers, government and interest groups.

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Future Outlook – Summary

Research has shown that **the rate of change in the Food & Grocery logistics industry is high** and is forecast to increase at a rapid rate, given the plethora of technological innovations in the pipeline. There also appears to be significant distribution pressures across the network, with suppliers, retailers and 3PLs alike endeavouring to find their place in this ever increasingly competitive market.

Nonetheless...

- There is a lack of consensus among industry participants with regards to the future outlook for Food & Grocery logistics and which areas should be prioritised therein
- There is overall awareness from suppliers of the value of collaboration, as well as a willingness to contribute
- However, the industry needs to find alignment on collaboration priorities, while core competencies and maturity levels vary across businesses and functional specialties, and the ability to execute is unclear

The study findings suggest:

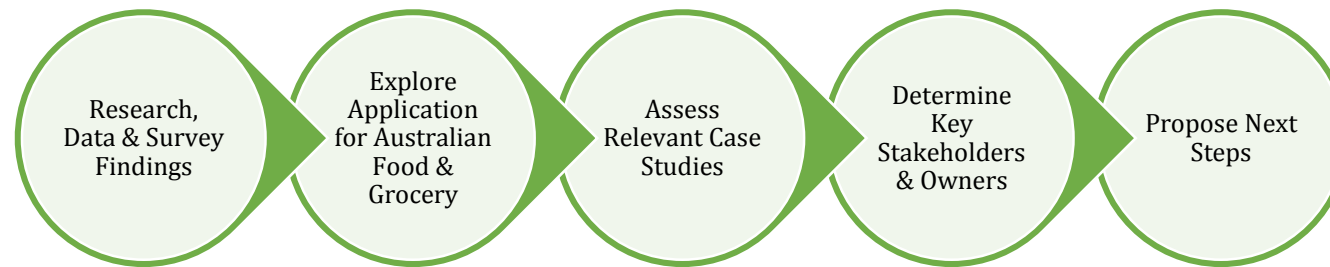
In addressing issues such as congestion levels, the industry as a whole should turn **to technology and collaboration in an effort to drive higher utilisation** whilst continuing to push for improvements in supporting infrastructure (e.g. Cold-chain capabilities in Rail).

However, there remains a level of **uncertainty** on how new technologies and platforms will shape warehousing / transport and what impact regulation is to have on the sector. Thereby, **organisations are less incentivised** to 'try things' and individually invest in these technologies.

Through education and broad campaigning, the industry might leverage a newly aligned '**Common Vision**' to drive future partnerships, coordinate investment and in turn, improve the industry's collaborative logistics execution capabilities

Future Outlook – Opportunities

- Opportunity # 6** – Industry strategy & regulation alignment and establishment of a ‘common vision’ for transport & warehousing collaboration
- Opportunity # 7** – Help shape the regulatory environment, particularly in anticipation of new technologies that will benefit transport & logistics
- Opportunity # 8** – Push for improvements in infrastructure – particularly Australia’s rail.
- Opportunity # 9** – Address road congestion not by increasing capacity but via looking to technology & collaboration to drive utilisation
- Opportunity # 10** – Design & roll-out a supplier program to improve the industry’s collaborative logistics execution capability



Future Outlook – Opportunity #6

Industry alignment and establishment of a **'common vision'** to help facilitate future transport & warehousing collaboration

The research suggested that the industry lacks some degree of alignment on future outlook and the major challenges facing the industry in the coming years. As a result, decision making appears to be disconnected and without consideration of the broader effects on the overall network.

Data from the project's phase 1 survey suggested there are opportunities to share existing excess capacity in warehousing, with the majority of respondents planning to increase their capacity.

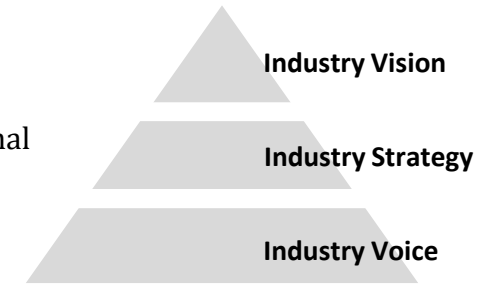
In today's era of the 'sharing economy', the need for additional investments could potentially be reduced or avoided if suppliers collaborate with each other to share more assets, thereby reducing wastage and overall costs.

Industry participants need to have a clear understanding of the current industry landscape before collaboration initiatives can be prioritised and agreed. Unified views will facilitate alignment on the industry's future outlook and help realise the benefits of a collaborative approach. Once alignment has been achieved, a strategy and execution plan based on the industry 'common vision' may be used to drive future partnerships, coordinate investment and help shape the regulatory environment in which it operates.




Future Outlook – Opportunity #7


In addition to facilitating collaboration, industry alignment is also important in helping deal with key issues that involve negotiations with external stakeholders or regulatory bodies. Industry participants with aligned views on these issues may come together to wield a stronger collective influence over regulatory bodies, ensuring that its best interests are protected.




Some examples of industry wide issues that could involve negotiations with regulatory bodies include:



 Infrastructure related
<ul style="list-style-type: none">• Determining the location of future intermodal terminals• Possibility of dedicated truck lanes on major freight routes• Improving existing infrastructure with limited capacity (e.g. Ports)

 Technology related
<ul style="list-style-type: none">• Regulations surrounding the use of new technology (e.g. drones, autonomous vehicles etc.)• Financial incentives or rebates to adopting new technology

 Safety / Environment related
<ul style="list-style-type: none">• Carbon tax regulations• Curfews placed on operations in urban areas• Ensuring safe operating conditions for truck drivers

Technology is providing a **tremendous stream of innovations** primed for revolutionising the logistics industry. Among the most anticipated and relevant are autonomous vehicles, platooning, robotics in warehousing, use of UAVs/drones in last mile deliveries and data analytics. However, it appears that the **potential benefits of these technologies are yet to be realised** as many organisations are simply **not prepared to take on the risk** and invest individually, given the degree of **uncertainty** on how they will be treated by the regulatory bodies. By having industry aligned positions on key issues, there is a better opportunity to work together in **helping shape the regulatory environment** through combined lobbying and campaigning – instead of allowing regulations (or lack of) to **act as a constraint** on the successful adoption of these new technologies.

Future Outlook – Opportunity #8

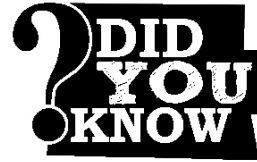
Push for improvements in infrastructure – particularly rail.

Rail is a much more efficient means of product transportation than road, especially for interstate and long-haul routes. Unfortunately, **rail transport is underutilised by the industry**. The current state of Australia’s rail infrastructure does not provide adequate reliability or schedule availability, as cited by several respondents in the survey.

The establishment of a national rail network in Australia has been difficult due to incompatibility of different track gauges used across the country. Interstate connectivity only began around 20 years ago, but nation-wide standardisation is yet to be achieved as state regional rail services still retail different track gauges.

The Australian government has recently committed \$8.4 billion to the Inland Rail project. Set to be completed in the next ten years, the Inland Rail will increase freight chain options, enhance productivity and provide capacity for the next fifty years to service the east coast freight market¹.

Rail infrastructure improvements, such as the Inland Rail Project and having a standardised national rail network would greatly benefit the industry. It would enable greater transport efficiency through decreased delivery times and lower transport costs.



Rail is up to **four times more fuel efficient than truck**

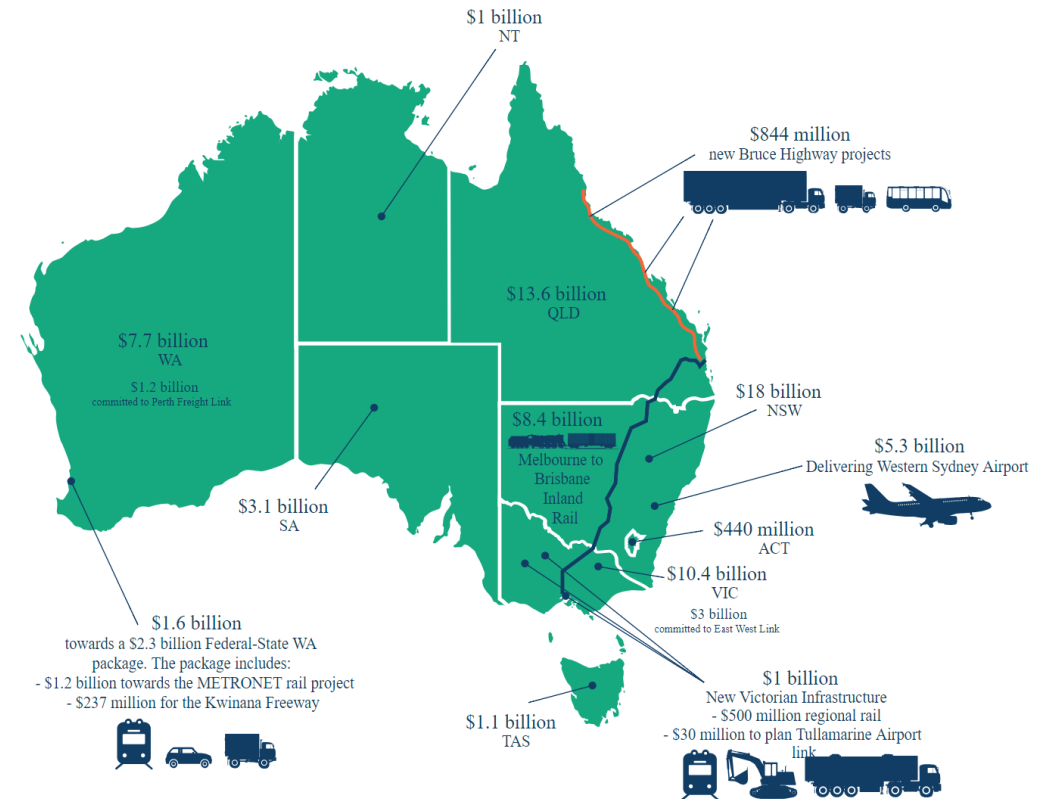
Moving more freight by rail reduces road congestion: **One train can carry as much freight as ~300 trucks**

On just **1 litre** of fuel, a train can move **1 ton** of freight **198 kms**

Moving freight by rail rather than truck **reduces greenhouse gas emissions by 75%**

Inland Rail Route


- Melbourne Port to Brisbane Port
- Double stacking capability
- Reduces rail costs by \$10/tonne
- <24hrs rail transit time
- 750,000 less tonnes of carbon than road




Future Outlook – Opportunity #9

Address road congestion rather than by increasing overall transport capacity (and thus adding to current congestion problems), by exploring ways similar technologies could be adopted to help increase capacity utilisation rates and reduce wastage.


Road congestion, particularly in metropolitan areas is set to increase significantly over the next ten years – **avoidable cost is set to double by 2030. Congestion negatively impacts the industry** in both business and social costs:




Increased transit time for products



Increased delivery time variability



Higher fuel consumption



Poorer air quality

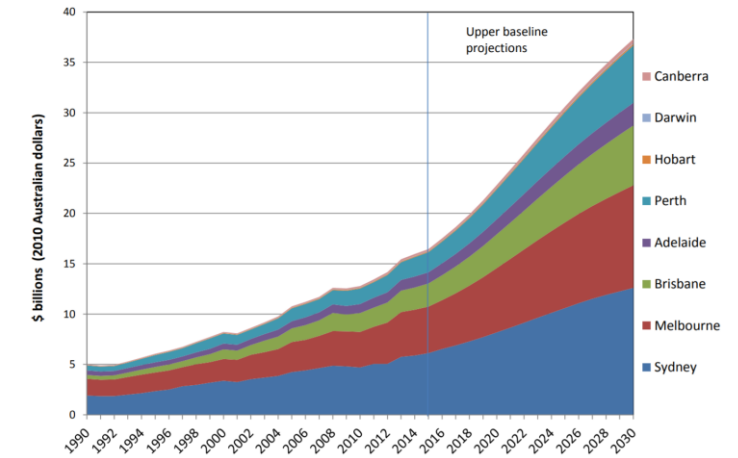
As the majority of supplier manufacturing facilities are located in NSW and VIC, and retailer DCs are mostly situated on the outskirts of capital cities, the forecast increase in metropolitan road congestion, particularly in Sydney and Melbourne, is likely to have a **continued and significant negative impact on transport efficiency.**

The Cost of Road Congestion

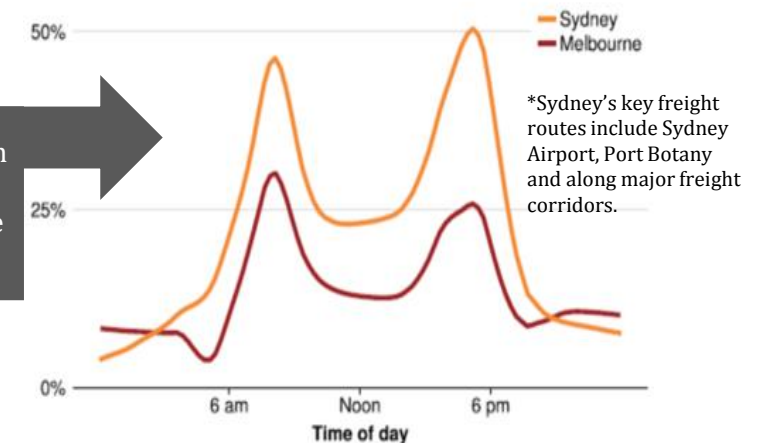
- In 2015, the avoidable cost of congestion for Australian capital cities was approx. \$16.5 billion, of which \$9.5 billion related to business time costs and extra vehicle operating costs, and \$1 billion in extra air pollution costs
- By 2030, this cost is estimated to reach between \$27.7 and \$37.3 billion
- Congestion in Sydney and Melbourne is significantly higher than other Australian cities

Through collaboration – can we encourage more delivery outside of congestion hours?

Upper baseline projections of avoidable social cost of metropolitan congestion



Increase in travel times relative to free flow traffic, key freight routes*



*Sydney's key freight routes include Sydney Airport, Port Botany and along major freight corridors.

Future Outlook – Opportunity #10

Deliver a program for suppliers to improve the industry's collaborative logistics execution capability

- Many Project Phase 1 Survey responses flagged *Collaboration in Forecasting between Suppliers and Retailers* as being a key enabler to improving utilisation levels across Transport & Warehousing.
- Similarly, respondents acknowledged that *Improvements in Planning Capability* is required in the industry.



Supplier's perspective, the results highlight – there is both (1) an awareness of the benefits of collaboration and (2) a willingness to collaborate.

Supplier 'ability to execute' can vary significantly based on the size of the supplier, its supply chain process maturity, and investment in IT systems.



Retailer's perspective, there has been significant investment in Supplier Collaboration via Supplier Portal's only to find that the industry as a group lack the "capability" to leverage the Collaboration Process effectively and realise returns.

The opportunity thereby is to standardise collaborative processes across the industry and upskill suppliers to effectively utilise Retailer provided information.



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Ten opportunities have been identified in Phase 1 of the project as noted previously:

Current State Assessment Opportunities

1. Primary Freight Arrangements (PFA)
2. Collaborative Freight Arrangements (CFA) with Suppliers
3. Collaborative Freight Arrangements (CFA) across Industries
4. Collaborative Storage Arrangements (CSA) with Suppliers
5. Collaborative Storage Arrangements (CSA) with Retailers

Future Outlook Opportunities

6. Industry Alignment – Future Outlook & Strategy
7. Industry Alignment - Regulation & Technology
8. Transport Infrastructure and Congestion – Rail
9. Transport Infrastructure and Congestion – Road
10. Supplier Capability

These 10 opportunities are now being reviewed by the TPF Executive Committee in more detail and we look forward to sharing news of the next project phase with industry stakeholders in due course.

End Report