

The Australian Logistics Council

Industry Data Project

Stage 1 Report

March 2006

Sd+D

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1. EXECUTIVE SUMMARY

1.1. Background

It has long been recognised that there are substantial deficiencies in the availability, usefulness and general management of Australian logistics data holdings. The data limitations must be addressed if the Australian Logistics Industry Strategy is to achieve a sustainable benefit to the industry, customers, in-house operators and governments.

The ALC National Data Working Group commissioned Strategic design + Development to undertake a study on the availability of data to support the priorities of the ALC and the implementation of the Australian Logistics Industry Strategy. The objective of the study is to undertake a data gap analysis and provide costed options to address identified gaps.

Given funding constraints, the project has been segmented into two stages. Stage 1 focused on confirming the conceptual framework for addressing our data needs, and a gap analysis of the data relevant to making the case for logistics. Continuation of the ALC Industry Data Project is dependent on the results of Stage 1 and sufficient funding being secured to meet the needs of the project.

It is critical that the data used to articulate the importance of logistics as an economic activity, sector and industry is credible and comparable with other industries. Credibility and comparability is best achieved through the formal national statistical collections of the Australian Bureau of Statistics (ABS).

Consequently, Stage 1 sought to identify the potential of using the National Accounts as the basis of addressing the data needs of the ALC. Work undertaken in Stage 1 included:

- Comparison of the data collected and published by the ABS for other industrial sectors;
- Review of the limitations of the ABS data in terms of logistics;
- Comparison of logistics data collected by overseas agencies; and
- Comparison of the types of advocacy data used by other non-logistics industry associations.

1.2. Why Develop the Logistics Industry's Data Collections?

Freight logistics is fundamental to the performance of our economy and is essential in matching the production of goods to the demand by industries (as inputs) and households (as private consumption). As such, logistics activities represent a substantial value added economic process contributing approximately 9 per cent to our national gross domestic product (BTE 2001, p. 31).

The competitive supply of logistics services is also a critical to contributing to efficient and effective industrial activity through innovative logistical solutions and reducing the cost of goods and services to households.

Understanding changes in the structure, conduct and performance of the logistics industry is therefore fundamentally important to those demanding logistics services, suppliers of services and to the development of effective logistics policies.

Developing effective logistics policies by Australian governments is essential in terms of the efficient and effective targeting of logistics infrastructure

investment, particularly with respect to the transport network, and in terms of implementing quality land use plans.

Improving our understanding of the Australian logistics industry will also improve the international competitiveness of our logistics services and allow for international benchmarking to be undertaken.

The important questions that require comprehensive data to answer are:

- What is true contribution of logistics activities to national wealth generation, and how does the sector compare to other industrial sectors?
- Given the economic significance of the logistics sector, does the sector receive appropriate government financial support relative to other industrial sectors?
- What is the logistics sector's net government financial contribution and how does it compare to other industrial sectors?
- What are the employment characteristics of the sector and how does the sector compare to other industries, particularly with respect to competition for scarce employees?
- What are the comparative public and private funding contributions to logistics infrastructure and R&D investment?
- What is the value of the logistics market and how does it compare to the value of logistics activities undertaken in-house?
- What changes are occurring in the structure of logistics industry, particularly in terms of concentration ratios in the various logistics sub-markets and in terms of multiple service providers?
- What are the characteristics of freight task performed by individual modes (e.g. value, volume, weight and spatial characteristics)?

1.3. Outcomes of Stage 1

In terms of the development of the conceptual framework, the key outcome of Stage 1 rationale is the realisation that use of logistics data as inputs to market analyses and research is as important as the collection of the required data in the first instance. In this context, having the institutional research arrangements right is equally important as the arrangements for collecting and management of the industry's databases.

Consequently, improving our understanding of the logistics sector requires an analysis of the gaps in both data collection and analysis.

Although taking a holistic approach to the collection, management and use of logistics data expands the intended scope of this project, however it is essential to ensuring any attempt to improve the industry's data holdings are useful in achieving the objectives of the Australian Logistics Council. In this context, Stage 1 identified a substantial variation in the type and volume of logistics data collected in Australia. It was also observed that collection and market research is far less coordinated when compared to the tourism sector.

Consequently, developing measures of the importance of the logistics industry could only be achieved on a partial basis at this stage. However, the Australian situation is not substantially different to the collection and analysis of logistics data in other countries.

An analysis of international logistics data available of the internet demonstrated that there is a large variation in the type and volume of data

collected by national agencies. For example, the data collections of the United States and United Kingdom are more comprehensive than European Union, Canadian and New Zealand collections. South Africa also has a comprehensive collection of internet published logistics data however the data is quite old, as are some of the US and UK data series.

Importantly, there does not appear to be any consistent approach to the measurement of national logistics activities nor in terms of connecting the data collections with the research and analysis of the importance of the industry. The study also observed that most of the collected data and research reports relate to freight transport activities rather than storage data and broader logistical information.

1.4. Conclusions

Conclusions from Stage 1 are:

1. There are no short term solutions to addressing the limitations of the national logistics data collections. For example, achieving the standard of the national tourism data collection would require an alignment of national and international processes, over a decade of multilateral discussions and approximately \$1 million in government funding.
2. Developing estimates of the economic significance of logistics as an activity, sector and industry are best achieved through the formal National Accounts framework. However, to distil logistics related data from the National Accounts will require modifications to the definitions of industry classifications; a resource intensive and lengthy process that has only recently been completed.
3. An alternative approach is the development of a Logistics Satellite Account linked to the National Accounts. Such an account has been developed for the tourism sector but required a substantial financial commitment from the Commonwealth Government.
4. Without modification to the National Accounts and/or the development of a Logistics Satellite Account, improving the existing estimate of the contribution of logistics to Australia's Gross Domestic Product (the BTE's 9% of GDP estimate) would be difficult and resource intensive.
5. The 9% of GDP estimate is credible, is unlikely to have changed substantially and remains a useful advocacy tool. Consequently, the resources that would be required to update the estimate would be better spent on the development of other estimates of economic significance.
6. There is a lack of connectivity between data relating to the supply of and demand for logistics services. Understanding what is driving the need for logistics services and the supply responses to meet those needs is critical to developing a strategic operational and policy perspective of trends in the logistics market.
7. Regardless of the substantial challenges associated with delivering practical outcomes from the ALC Industry Data Project, short term solutions to addressing *some* of the ALC's data needs are possible using existing data collections. Continuation of the Project should be based on targeting 'easy wins' based on a focused strategy to achieve progress within tight funding constraints is required.
8. In addition to what data should be collected there are equally important considerations as to understanding who is collecting, managing, disseminating and using existing data.

Importantly, Stage 1 has identified that it is not just data collection that is needed to improve our collective knowledge of logistics. Also required is a process whereby the data is analysed in terms of its significance for determining the strategic trends associated with the demand and supply of logistics services.

1.5. Recommendations

Based on the outcomes of Stage 1, Sd+D recommends that the ALC should adopt long and short term approaches to improving our collective understanding of logistics. These strategies should be undertaken concurrently.

In the long term, the ALC should:

1. Seek to influence and encourage the development of the institutional arrangements that support the effective and efficient collection and use of logistics data, particularly in terms of improving the logistics analytical and research environment.
2. Seek Australian Government support for reform of the National Accounts framework or the development of a Logistics Satellite Account.

In the short term, the ALC Logistic Data Project should be:

3. Seen as an on-going effort based on a clearly defined strategic plan that is flexible enough so that at any time the Project can be tailored to the availability of funding and the priority needs of the ALC.
4. Expanded in scope to consider not only the gaps in data collection but also the gaps in the management, dissemination and use of logistics data. This re-alignment of the Project would improve the ALC's understanding of the roles and responsibilities of its data stakeholders and more effectively identify the challenges and opportunities to addressing logistics knowledge gaps.

In line with the recommended holistic knowledge management strategy, the immediate priority of Stage 2¹ of the ALC Industry Data Project should be to work with the ALC's industry association stakeholders to:

5. Assess what data is collected by the associations, and how that data is collected, managed, disseminated and used by the associations and their stakeholders; and
6. Provide strategic options for the ALC with respect to influencing and coordinating the role association data bases play in supporting the objectives of the ALC and the implementation of the Australian Logistics Industry Strategy.

Based on the available data held by the industry association stakeholders, Stage 2 of the ALC Industry Data Project should also:

7. Focus on estimating the size of the logistics industry in terms of employment, identifying knowledge gaps in relation to logistics industry employment data and propose strategies for responding to those gaps.
8. Identify and pursue any other advocacy metrics gaps that are already substantially collected by the industry associations (e.g. size of the market in terms of revenues).

¹ A project proposal for Stage 2 is provided at Attachment 2.

9. Propose strategic options for the continued pursuit of data relevant to the needs of the ALC and identify options for establishing appropriate research institutional arrangements that support the objectives of the Australian Logistics Industry Strategy.

Demand Data

Sd+D argues that addressing data relevant to assessing demand trends is as important as improving our understanding of the characteristics of the supply of logistics services. Ideally, demand and supply data should be integrated to clearly articulate what is driving the demand for logistics services and the supply responses to meet those needs.

However, the priority of the ALC Industry Data Project should be on broadening the suite of advocacy metrics that can be used by the ALC to argue the case for logistics. Consequently, Sd+D recommends:

10. At the completion of Stage 2, the need and approach to addressing demand data gaps should be reviewed.

It is the intention of the above recommendations to provide the ALC National Data Working Group with a framework for achieving the original objectives of the ALC Industry Data Project while providing flexibility in terms of matching action with on-going funding and in terms of managing the performance of the consultant or consultants used in the future.

2. INTRODUCTION

2.1. Background

One of the objectives of the Australian Logistics Industry Strategy is to achieve greater government recognition of the significance of the logistics industry and the importance of logistics activities to the Australian economy and community. The achievement of this objective would provide a solid basis for developing better public policies and government responses to issues affecting the logistics sector.

During the development of the Strategy, however, data limitations presented a substantial hurdle to clearly demonstrating the importance of the Australian logistics industry relative to other industrial sectors. There was also limited data on the performance of the industry. The data limitations related to:

- Stakeholder uncertainty with regard to the availability of data, the appropriate data sources and the quality and relevancy of existing data to meet stakeholder needs;
- Inconsistencies in the definitions used for existing logistics related data; and
- The lack of data to measure the key attributes of the industry, particularly in relation to the kind of basic operational data required to develop performance and significance indicators.

These data limitations have far reaching consequences in terms of the effectiveness and efficiency of logistics as an economic activity, affecting logistics suppliers, customers and in-house operators alike. The data limitations also impact on the ability of governments to balance the relative importance of logistics policy to other government policies, and reduce the effectiveness of logistics policies through less than optimal infrastructure investment and economic development initiatives.

Consequently, the first recommendation of the Australian Logistics Industry Strategy relates to the need to clearly define the data required to support the achievement of the industry's objectives. Specifically, the Strategy recommended:

"The freight logistics industry, users of logistics services and government agencies to define data requirements and develop improved ongoing data collections. This will enable the analysis of industry characteristics and trends for the purpose of policy formulation, strategic business decision-making and infrastructure and other investments."

While there are centres of logistics data expertise in Australia (e.g. the Bureau of Transport and Regional Economics), no agency has the expertise and resources to act as a primary source for all data that cover the complex nature of logistics activities. It has been the size and complexity of the task that has been a hurdle to implementing Recommendation 1 of the Strategy.

To re-invigorate progress towards improving industry and government understanding of the logistics industry and logistics activities in Australia, the ALC has established a National Data Working Group and commissioned Strategic design + Development (Sd+D) to complete a detailed scoping study on the availability or otherwise of the data required to analyse the characteristics of the logistics industry, and make recommendations on how to fill any identified gaps.

2.2. Study Scope

The ALC understands that the solution to the industry's data needs is a long term process where broad expertise in data identification, analyses and management must be developed. Therefore, it is essential that this project provides a solid foundation to support future industry data related activities. In particular, the project must deliver an outcome that clearly demonstrates the benefit to ALC stakeholders of supporting an on-going industry data strategy.

However, this project has the additional challenge of delivering a stand alone outcome, namely identifying the data required to support the development of "the case for logistics".

To achieve the short and long term objectives of this project, the study has two key components:

1. Identify and catalogue available data that meet the needs of the ALC and its stakeholders, and expose data gaps; and
2. Propose costed options to address data gaps.

However, in the execution of this study Sd+D has adopted a holistic approach. That is, the underlying principle is that data should not be collected for the sake of collecting the data and that data collection is only one step in the effective development of our understanding of the logistics sector. Equally important are issues related to the storage, management, dissemination and use of the data collected.

Consequently, there is need to prioritise the data requirements, particularly with respect to balancing the benefits the data collection will provide against the cost of collection, storage and dissemination, and the effectiveness of the data in terms of its usage. To this end, the project addresses the requirements of the ALC in terms of:

1. Identifying what data needs to be collected and why;
2. Options for collecting the data; and
3. What to do with the data once is collected.

In doing so, the project has been split into two stages:

- Stage 1 develops the rationale for what should be collected, and focuses the data gap analysis on data relating to the significance of the logistics industry and logistics activities to the national economy.
- The detail of Stage 2 will be determined subsequent to the results of Stage 1 and the availability of sufficient funding.

This report presents the findings of Stage 1, providing the foundation for the continuation of the project.

Undertaking Stage 2 is dependent upon a successful outcome from Stage 1 and additional financial support.

2.3. Project Challenges

One of the challenges associated with this type of project is the effort required to process the vast range of potential datasets and data stakeholders. Consequently, it can be difficult to deliver a meaningful outcome that reflects the needs of diverse stakeholders while completing the project within the resources allocated. For example, as much effort can be

expended on finding one key piece of data as can be expended on obtaining many less important data sets.

To ensure that this project delivers a meaningful outcome, the approach to Stage 1 has been based on a transparent process that keeps the project focused on the primary priorities of the ALC, while having some flexibility to extend the scope of the output as resources allow.

Another challenge of this project is the need to manage expectations in terms of the difference between identifying data gaps and the reporting of data that might be useful to the ALC; given the resource constraints of this project it is impossible to do both. That is, the analysis of the data must be limited to its *potential* to meet the needs of the ALC and further analysis would be required to ensure specific data, particularly those relating to performance, are relevant, meaningful and accurate measures for the purposes of the ALC. In many instances, the latter can be significant exercises in their own right.

For example, the three key container stevedoring performance indicators reported in *Waterline* by the Bureau of Transport and Regional Economics are the result of years of developing subject expertise and stakeholder relationships between the suppliers, holders and users of the data.

While the initial focus of the ALC Industry Data Project must be on discovering the availability, location, ownership and suitability of data, if data are discovered that can be used immediately to achieve the objectives of the ALC, such data should be presented as an outcome of the study. By doing so however, stakeholders should be aware that such an outcome represents an ad hoc report and does not constitute an on-going solution to collecting, managing and disseminating data that meets the long term needs of the ALC and its stakeholders.

The latter requires careful consideration of the purpose of specific datasets, an assessment of responsibilities, and the development of negotiation and relationship strategies for stakeholders of each dataset. For example, one data management option would be for a representative stakeholder of the ALC to be responsible for the collection, storage and dissemination of the data. However, as there is unlikely to be no data management model that can be used in all instances, developing a range of tailored options to suit the variety of ALC data needs is critical to the long term success of the ALC Industry Data Project.

3. OUTCOMES OF STAGE 1

3.1. Introduction

The key deliverable of Stage 1 was the provision of a handout to the ALC National Data Working Group to be presented to delegates of the 2006 ALC Annual Forum. The purpose of the handout was to inform stakeholders of the progress of the ALC Industry Data Project by summarising the results of Stage 1. A copy of the handout is provided at Attachment 1.

This Chapter provides the detailed observations, arguments and conclusions supporting the recommendations of Stage 1.

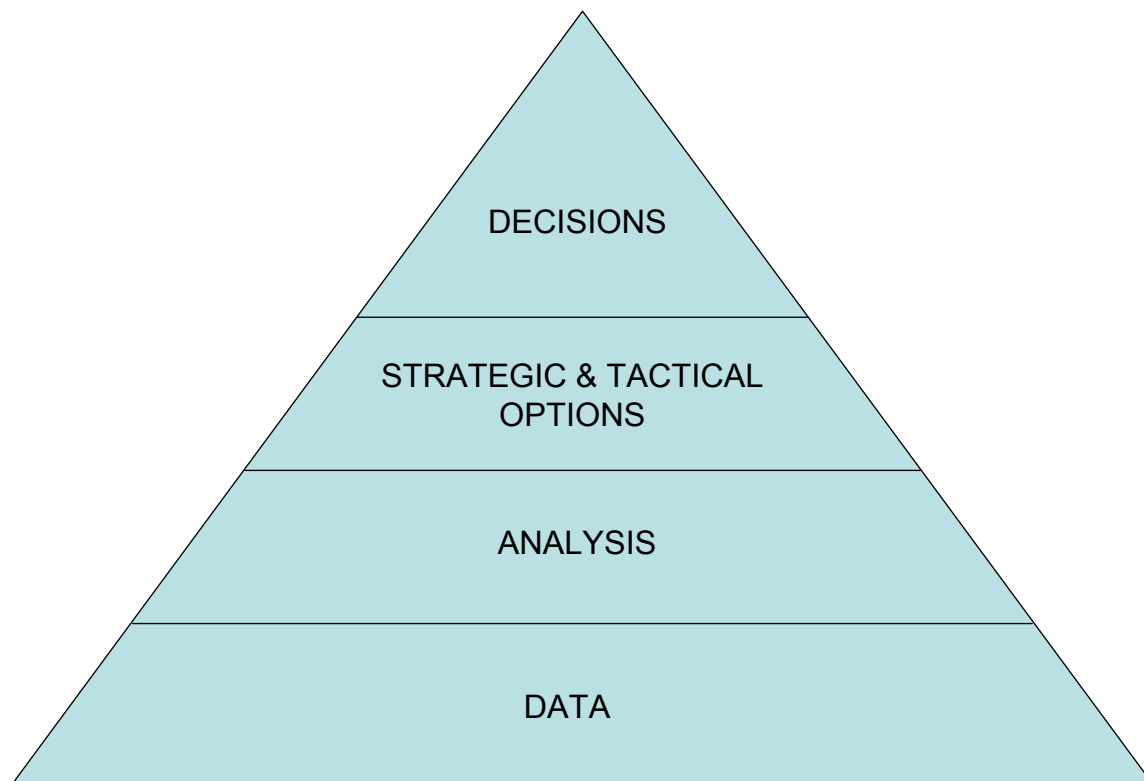
3.2. Conceptual Framework

a) The Role of Data

It is not unusual for organisations to collect masses of data without a clear understanding of how the data might be used or why the data might be useful. But it is an inefficient allocation of resources to collect data for its own sake.

Data plays a dynamic role in supporting the objectives of an organisation or enterprise but data cannot be used in isolation as the basis for making decisions. Instead, data is used as input to analysis, from which potential strategic and tactical options can be identified and a decision made (see Figure 1).

Figure 1 - The Role of Data in Decision Making



Source: Sd+D

The role of data in supporting the decision making process is an important dynamic in considering the needs of the ALC. It is simply not enough to

identify whether or not data exists. Instead, it is equally important to determine how data is used to support the decision making of stakeholders.

How data is used will depend on the type of data and how it is collected, processed, stored and disseminated. In turn, these processes are influenced by the organisational responsibilities of a variety of stakeholders. Figure 2 illustrates the role of data within the cycle of a desired objective being identified and the objective being achieved, and the inter-relationship between decision making (opportunity and threat analysis) and data (knowledge management processes) as described in Figure 1.

Figure 2 - The Data Cycle



Source: Sd+D

Understanding of the roles and responsibilities of the ALC's data stakeholders within the Data Cycle can be determined at the same time as identifying the availability or otherwise of the data needed to support the objectives of the ALC. Although this would result in more resources being required for the initial study than originally envisaged, the total resources required to develop an improved understanding of the logistics sector would be reduced overall by taking advantage of concurrent activity.

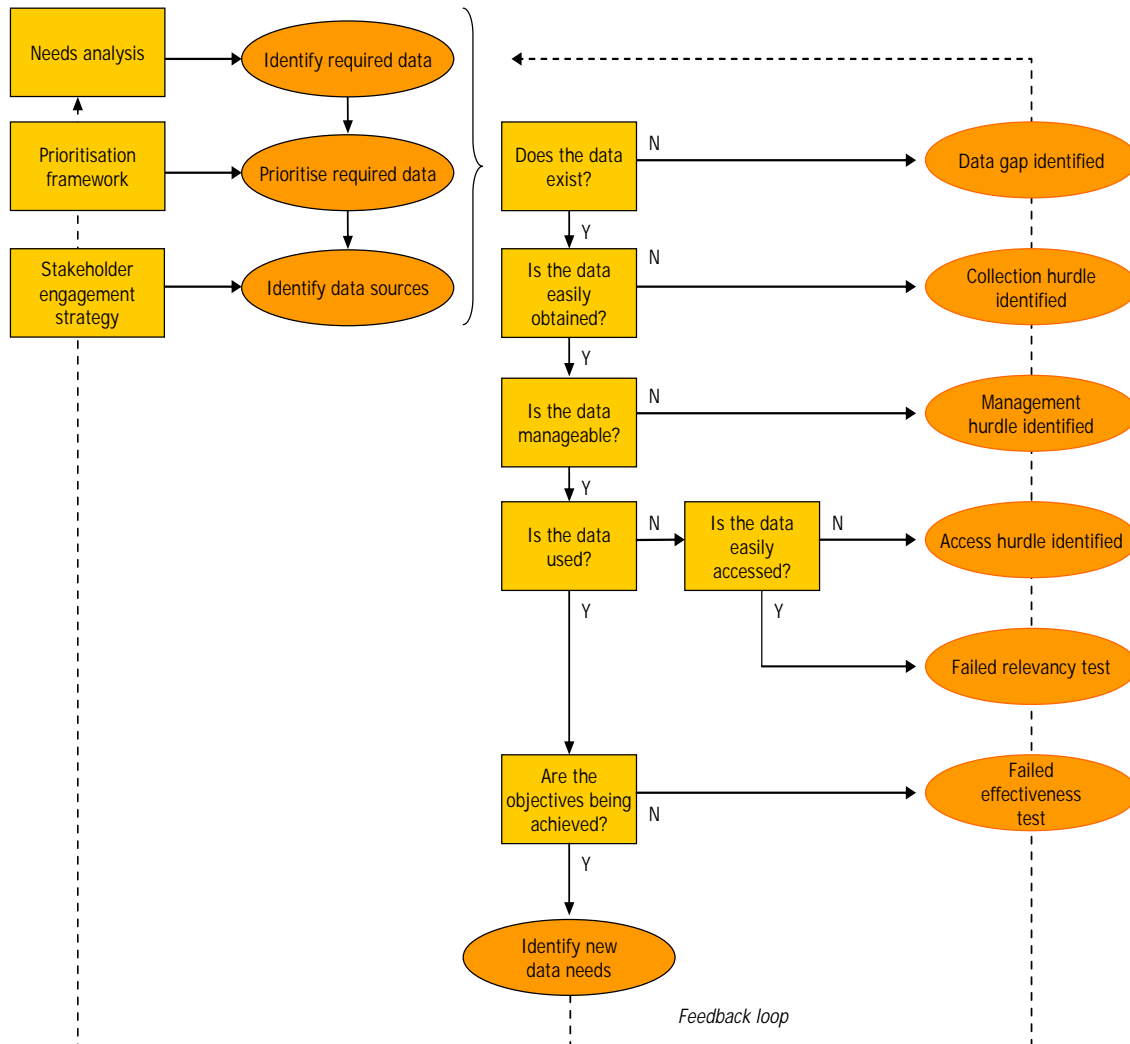
The re-alignment of the ALC Industry Data Project would more effectively improve the ALC's understanding of the challenges and opportunities to addressing logistics knowledge gaps, not just in the short term but would lay

the foundation for sustainable medium to long term improvement in our collective knowledge of the operational and policy issues affecting the logistics sector.

b) Identifying Data and Knowledge Management Gaps

The Data Cycle can be used as the basis for identifying the data and knowledge management gaps that undermine the articulation of the importance of logistics and the operational characteristics of the logistics market, as illustrated in Figure 3.

Figure 3 - Data Criticality Evaluation Framework



Source: Sd+D

By adopting a holistic approach to the collection, management and dissemination of data, breakdowns in achieving the ALC’s data objective can be identified. As such, the identified data hurdles can be used to form the basis of prioritising the ALC’s data and knowledge management strategy and the short, medium and longer term options to maximising the Council’s resources. For example, there may be a net loss in collecting and disseminating data if that data is difficult to manage or is ineffectual in achieving the ALC’s objectives.

It is because of this inter-relational dynamic of data within the decision making and knowledge management processes that Sd+D recommends that the ALC Industry Data Project should be expanded in scope to consider not only the gaps in data collection but also the gaps in the management, dissemination and use of logistics data.

c) The ALC's Data Needs

Essentially the ALC, through the National Data Working Group and the development and implementation of the Australian Logistics Industry Strategy, has already identified its strategic objectives and specifically, its desired outcomes for the ALC Industry Data Project.

Figure 4 illustrates the four types of required by the ALC to achieve its strategic objectives, as interpreted by Sd+D. Within each tier of the hierarchy of data needs the focus of the data may be on a modal or commodity (i.e. logistics chain) perspective. Alternatively, the hierarchy may be applied on a local, regional, state or national basis. The following sections provide a brief description of the purpose and examples of each data type. Table 1 provides a summary of the types of data and benefits of the data to meet the ALC's needs.

Figure 4 - ALC's Hierarchy of Data Needs



Source: Sd+D based on modifications to the ALC Data Working Group's data pyramid and Maslow's Hierarchy of Human Needs.

Table 1 - The Data Objectives

Purpose	Objective	Type of Data	Benefits of the Data
Advocacy	To influence government policies to reflect the needs of the freight logistics sector.	Headline data that are comparable with other industrial sectors and can be used to promote the contribution of the sector to economic and social outcomes (e.g. contribution to GDP).	Improved responsiveness to address public policy challenges and opportunities, including access to a fair share of government infrastructure and research funding. An improved pro-active approach to addressing community concerns.
Strategic Scanning	To create a freight logistics sector that is responsive to changing competition, community and government environments.	Headline data that measure changes in the demand and supply characteristics of the logistics sector (e.g. market shares, infrastructure capacity).	Supports the long term development of advocacy arguments. Identified trends and characteristics provide the basis for improved commercial and government decision making.
Performance	To identify opportunities for improved commercial, network and system performance.	Data that measure the efficiency and effectiveness of freight logistics activities (e.g. intermodal terminal performance, travel times).	Supports the development of strategic scanning data. Allows for the benchmarking of internal performance by private firms. Improves the targeting of public and private investment through the benchmarking of system and infrastructure performance by governments.
Operational Activity	To improve industry and government understanding of why freight flows (demand) and how (supply).	Data that describes the demand for logistics services, expressed in terms of the freight flows, supply chains and channel structures (e.g. commodity statistics). Data that describes the economic drivers of freight flows (e.g. disposable household incomes). Data that describes what logistics assets are used where and when (e.g. truck visits at intermodal terminals).	The fundamental building blocks for applied freight logistics research and the development of performance monitoring data. Improves private and public understanding of the why (demand) and how (supply) of freight logistics systems. Allows the freight logistics sector to be analysed on a system rather than piecemeal basis, resulting in more effective policy development. Allows for improved private and public investments to improve the efficiency and effectiveness of the freight logistics system as a whole. Reduces the ad hoc data burden on industry associations and private enterprises.

Operational Activity

Operational activity data are the building blocks upon which all other data types are formed. For example, productivity (performance) data often consist of combinations of basic activity data (loaded distance travelled over total distance travelled). Similarly, operational data are required to understand market trends (strategic scanning) and for determining the statistics best used for advocacy purposes.

Performance Data

Understanding the performance of the logistics sector in terms of the efficiency and effectiveness of both in-house and outsourced activities is critical to developing a world class industrial sector. Performance data is also important in assisting governments in effectively targeting their policies and investment decisions.

Examples of performance data include the benchmarking of warehouse and intermodal terminal operations, asset utilisation (e.g. road network congestion), and service reliability.

For performance data to be effective, how something is measured must accurately reflect the intended behaviour or operation that the performance measure is trying to influence. For example, trying to improve the intermodal service provided to road transport operators by measuring truck turnaround times from gate-to-gate may have little impact on service if there is congestion and subsequent queuing at the gate.

Consequently, performance data can require substantial resources in terms of developing the appropriate analytical techniques and data sources to achieve the desired outcomes.

Strategic Scanning

While advocacy data tends to be externally focused, strategic scanning data tends to be internally focused and relates to data that assists in understanding market trends. Strategic scanning data allows operators and governments to develop an appreciation of where the market is going, who is getting there first and what the implications may be commercial strategic and operational plans and government policies.

Importantly, from an ALC leadership perspective, strategic scanning data should integrate both demand drivers and supply outcomes; that is, the data should collectively demonstrate why freight logistics supply responses are occurring.

Examples of strategic scanning data include market shares, the relative significance of logistics chains (e.g. in terms of volume and value) and spatial data to understand changes in demand on the national network.

Advocacy Data

Advocacy data relates to that data which can be used to articulate the importance and/or significance of logistics as an activity, sector, industry and enterprise. For example, employment and revenue data may be used to demonstrate economic significance respectively in terms of the size of the sector or market.

Other examples of advocacy data may relate to a social objective such demonstrating the sector's occupational health and safety performance

relative to other industrial sectors. Advocacy data may also include data that demonstrates the importance of an individual operation at the local level; addressing concerns of the local community or in gaining support from local council for a particular development.

Determining the availability of otherwise of logistics advocacy data, or data that makes the case for logistics, was the focus of Stage 1 of the ALC Industry Data Project. The following section examines the issues related to the availability of advocacy data.

3.3. Advocacy Data

a) Introduction

For advocacy data to be effective they must be:

- Comparable (e.g. with other industrial sectors and/or internationally);
- Credible (e.g. based on reputable research); and
- Relevant to the public policy debate.

Consequently, the best source of data for the use of advocacy purposes is the Australian Bureau of Statistics.

b) Comparability and the National Accounts

Typically, the advocacy data used by other industrial sectors is drawn from the National Accounts published by the Australian Bureau of Statistics. The National Accounts use a definition of industrial sectors called the Australian and New Zealand Standard Industrial Classification (ANZSIC) which is based on the International Standard Industrial Classification of All Economic Activities or ISIC for short.

The biggest hurdle to articulating the importance of the Australian logistics sector is the comparability principle. ANZSIC is not particularly useful because:

- "The objective when developing an industrial classification is to identify groupings of businesses which carry out similar economic activities. ...the categories should reflect as realistically as possible the way in which activities are actually organised within business units" (ABS Catalogue No. 1292.0). Consequently, in-house logistics activities will not be measured where a business integrates its logistical activities with other businesses activities.
- The statistical units for Division I: Transport and Storage, do not distinguish between freight and passenger transport activities for rail, air and water modes, while storage is limited to grain and other not already stated. Similar classification issues are found with the services to transport statistical units. Confidentiality issues are typically the reason for the lack of disaggregation.

It is these definitional difficulties that forced the then Bureau of Transport Economics to adopt a multi-step approach to estimating the contribution of logistics activities to GDP (the 9% figure). While the BTE's analysis was credible, there remains a question mark over the accuracy of the base data used due to the definitional difficulties.

An alternative to using the National Accounts as the fundamental source of advocacy data and the basis for developing the logistics sector's national data holdings more generally is the development of by the ABS

of what is referred to as a satellite account. Such an account has been developed for the Australian tourism sector and provides insights into the potential development of a Logistics Satellite Account.

c) The Tourism Satellite Account

Tourism, like logistics, is a derived demand. That is, the tourism sector consists of goods and services being supplied as a result of the decision to take a holiday not, for example, the decision to buy petrol for using the family car on a holiday. Consequently, tourism is not recognised as an industry since the National Accounts are based on industry definitions relating to the supply of goods and services².

To overcome the definitional limitations of the National Account structure, the ABS received additional Commonwealth funding to produce a Tourism Satellite Account (TSA).

Satellite accounts are a relatively new national accounting construct designed to measure emerging economic activities of national importance such as tourism, information technology and the environment (DITR 2002). Satellite accounts are separate but linked to the National Accounts and as such the TSA has credibility as a measure of the significance of the tourism industry.

While the development of a satellite account for the logistics industry is appealing, it must be recognised that the development of the TSA first required international agreement to a standard definition of tourism to be used by national statistical agencies. This international process took approximately 10 years from the point of recognition of the need to a common definition to the finalisation of the definitional structure of the TSA model.

It is also important to recognise the substantial resources required to develop a satellite account. The Australian TSA also cost nearly \$1 million to produce, a cost jointly funded by the Department of Industry, Tourism and Resources and the ABS. The TSA is published every three years as the resources required to publish annually are prohibitive. However, research by Tourism Australia, for example the indirect contribution of tourism, which supports the development of the TSA is published annually.

d) Alternatives to a Logistics Satellite Account

The international procedural issues and the substantial funding required to develop a Logistics Satellite Account are constraints to achieving the logistics sector's national data needs in the short term. Also a constraint is the necessity to secure sufficient Federal and State government support for the on-going research that is integral to the continued development of the satellite account (for example, the household and tourist surveys conducted by Tourism Australia cost over \$3 million per year).

While the development of a logistics satellite account would be ideal, and should remain a long term priority of the ALC, a short term strategy to measure the significance of the logistics sector and improve the logistics sector's data holdings more generally is required.

² A clear example of the implications of using supply industrial definitions for both tourism and logistics is fuel. The National Accounts will measure the significance of fuel an output of the petrochemical industry rather measuring the use of the fuel by tourists (e.g. petrol in cars and avgas in airplanes) and logistics operators (e.g. diesel in trucks and bunker oil in ships).

Sd+D is of the view that since resources to continue the ALC Industry Data Project are limited, those resources that are available should be used to maximum effect in terms of targeting key data sets that are relatively easy to identify and produce, while expanding the overall availability of industry through concurrent activity.

In this context, using resources to improve the existing 9% of GDP metric would be a waste; the resources to do so would be substantial while the BTE's estimate remains sufficiently robust in terms of construct and timeliness, to be continued to be used as a key advocacy metric.

It is also important to appreciate that the data required to develop the GDP metric further is broad based (i.e. must cover all aspects of logistics sector, including in-house operations). Leaving aside the resources required to analyse the data, identifying potential sources of this data would represent a substantial project in its own right since not all of the ALC's potential data stakeholders have yet been identified.

For the above reasons, Sd+D recommends that other examples of data that could be used for further developing the case for logistics should be the next focus of the ALC Industry Data Project. To assist in determining what type of advocacy data should be targeted, a comparison of the advocacy data used by other industries was undertaken.

e) Comparisons with Other Industries

The advocacy data used by other industry associations was analysed to develop an understanding of potential strategies to deliver data that supports the case for logistics. Table 2 indicates the types of advocacy data currently being used in Australia, the main being:

- The level of industrial production;
- The size of the market (measured in terms of revenues); and
- The value and volume of exports generated by the industry.

Table 2 - Advocacy Data Used by Other Industry Associations

Association	GDP	Production	Employment	Revenue	Exports	Other
National Farmers Federation	✓		✓	✓		✓
Australian Dairy Corporation	✓			✓	✓	
Meat & Livestock Australia		✓		✓	✓	
Australian Pork Limited		✓		✓	✓	
RiceGrowers' Association of Australia		✓	✓	✓	✓	
Australian Petroleum Production & Exploration Association		✓				✓
The Australian Coal Association		✓	✓		✓	
Australian Institute of Petroleum		✓			✓	
Australian Aluminium Council		✓	✓		✓	
NSW Minerals Council		✓		✓	✓	
Qld Resources Association		✓			✓	
Australian Information Industry Association	✓			✓		✓
Australian Retailers Association			✓	✓	✓	

Sources: Association websites.

While the number of industry associations surveyed is not exhaustive it is sufficient enough to provide useful insights;

- The use of the GDP metric is not as wide spread as was anticipated;
- Determining an appropriate definition of logistics production is complex and may necessarily result in a useful metric that can be measured;

- While the employment metric is not as widely used as production and export metrics, it is a more suitable metric to describe the importance of logistics than production measures. Also, employment in the logistics sector has been the subject of past research, particularly with respect to transport activities;
- Revenue data is difficult to obtain for commercial confidentiality reasons when there are few firms operating in a sector. This is the case in logistics for rail, shipping and port activities;
- In the current climate of record trade imbalances, export revenue generated is a very pertinent measure of an industry's significance. While determining the trade balance in logistics services may be difficult due to the definitional issues associated with the National Accounts, a robust estimate would be a powerful descriptor of the competitiveness of Australian logistics suppliers. The metric could also be used to demonstrate the importance of Australian logistics suppliers in terms of maximising the export dollars earned on physical exports and minimising the value of income spent on physical imports.

f) Comparisons with Other Nations

A review of the internet published data collections of other national transport agencies was undertaken. A search for more general national logistics data was also undertaken. The selected national sites were; the United States, United Kingdom, Europe, South Africa, Canada, New Zealand and the OECD. A list of the internet sites viewed and some indicative statistics are provided at Attachment 1³.

In general, it was found that the Australian situation is not substantially out of step with overseas developments. This conclusion was based on the observations that:

- There was a substantial variation in the type and number of national data series published on the internet. The collections of the US and UK were the most substantial, and although the published South African data sets were also comprehensive (e.g. including in-house and outsourced data), the data are dated.
- Even in the case of the US and the UK, the primary focus of the data was on transport activity data. However, there are differences in terminology and it is often unclear as to definition of some statistics.
- The US data collections appear to be aligned to the regulatory requirements for company reporting, while the UK data are focused on supporting policy objective of reducing road transport congestion, modal shifting and reduced emissions.
- There are instances of attempts to measure the significance of the logistics sector. However, there does not appear to be a comprehensive nor coordinated approach to the estimates, particularly when compared with work in the tourism sector. There is also a question of whether or not comparison of the national significance data estimates would be comparing like with like. Nevertheless, the US does appear to pay greater attention to

³ To undertake a comprehensive analysis of other national logistics data collections would be the equivalent of undertaking this study of Australian indicators for each nation. Such an undertaking is not possible within the existing funding constraints.

improving the estimates of national logistics costs in the context of US gross domestic product (Macro Sys 2005).

With a number of data sets being out of date, and the general publication of data without complementary commentary or analyses, the extent that the data collections are being used to further the interests of the logistics industry and/or develop effective logistics policy is questionable.

3.4. Summary

Based on the above observations, it is clear that collection, management, dissemination and analyses of the data required to articulate the importance and operational characteristics of the Australian logistics industry is a complex challenge requiring substantial time and financial resources.

The importance of a holistic approach was highlighted during consultations with Tourism Australia; while substantial resources are devoted to the collection, management and analysis of the data, there are some issues relating to the dissemination of the results of these efforts. Consequently, Tourism Australia is now focusing its attempts to maximise the impact of its data collections by improving the dissemination of its data.

There is also the challenge of managing stakeholder expectations of what is possible and worthwhile in an environment of limited resources. Meeting the logistics industry's data needs cannot happen overnight and that an ongoing effort from many stakeholders will be required to deliver effective outcomes for the industry and sector. It is important therefore to approach the task in a way that focused, achievable and tailored to the funding available at any given time.

Consequently, Sd+D recommends that the next stage of the ALC Industry Data Project should focus on sector and industry employment data so that the complexities of establishing a collection, management, dissemination and analyse regime (knowledge management environment) can be fully explored.

A holistic approach focused on employment data would effectively test the feasibility of developing an efficient and effective logistics knowledge management environment and provide a clearer understanding of the requirements of the relevant stakeholders in terms of the resources and responsibilities.

4. CONCLUSIONS AND RECOMMENDATIONS

There are no short term solutions to addressing the limitations of the national logistics data collections. For example, achieving the standard of the national tourism data collection would require an alignment of national and international processes, potentially a decade of multilateral discussions and approximately \$1 million in government funding.

The tourism sector also provides an example of the importance of taking a holistic view to developing the logistics sector's data and knowledge management environment. It is significant that the tourism sector not only receives substantial government support for the collection, management and dissemination of tourism data, the sector is also well supported by Commonwealth, State and Territory, and private research institutions. The depth of the tourism sector's institutional research arrangements increases the sector's capacity and capability to articulate its importance and meet the operational data needs of its stakeholders.

Developing estimates of the economic significance of logistics as an activity, sector and industry are best achieved through the formal National Accounts framework. However, to distil logistics related data from the National Accounts will require modifications to the definitions of industry classifications; a resource intensive and lengthy process that has only recently been completed.

An alternative approach is the development of a Logistics Satellite Account linked to the National Accounts. Such an account has been developed for the tourism sector but required a substantial financial commitment from the Commonwealth Government.

Without modification to the National Accounts and/or the development of a Logistics Satellite Account, improving the existing estimate of the contribution of logistics to Australia's Gross Domestic Product (the BTE's 9% of GDP estimate) would require substantial resources that may be better used to acquire other advocacy data metrics. In the meantime, the 9% of GDP estimate is credible, is unlikely to have changed substantially and remains a useful advocacy tool.

There is a lack of connectivity between data relating to the supply of and demand for logistics services. Understanding what is driving the need for logistics services and the supply responses to meet those needs is critical to developing a strategic operational and policy perspective of trends in the logistics market.

Regardless of the substantial challenges associated with delivering practical outcomes from the ALC Industry Data Project, short term solutions to addressing *some* of the ALC's data needs are possible using existing data collections. Continuation of the Project should be based on targeting 'easy wins' based on a focused strategy to achieve progress within tight funding constraints is required.

Although Sd+D believes that a knowledge management strategy will need to be developed to address important considerations such as stakeholder responsibilities for collecting, managing, disseminating and using logistics data, it may be a premature move to do so at this stage. Sd+D is also cognisant that ALC stakeholders want to see action rather than another strategy. Consequently, Sd+D does not recommend that the development of a formal and detailed data strategy be an immediate priority of the ALC.

Importantly, Stage 1 has identified that it is not just data collection that is needed to improve our collective knowledge of logistics. Also required is a process whereby the data is analysed in terms of its significance for determining the strategic trends associated with the demand and supply of logistics services.

4.1. Recommendations

Based on the outcomes of Stage 1, Sd+D recommends that the ALC should adopt long and short term approaches to improving our collective understanding of logistics. These strategies should be undertaken concurrently.

In the long term, the ALC should:

1. Seek to influence and encourage the development of the institutional arrangements that support the effective and efficient collection and use of logistics data, particularly in terms of improving the logistics analytical and research environment.
2. Seek Australian Government support for reform of the National Accounts framework or the development of a Logistics Satellite Account.

In the short term, the ALC Logistic Data Project should be:

3. Seen as an on-going effort based on a clearly defined strategic plan that is flexible enough so that at any time the Project can be tailored to the availability of funding and the priority needs of the ALC.
4. Expanded in scope to consider not only the gaps in data collection but also the gaps in the management, dissemination and use of logistics data. This re-alignment of the Project would improve the ALC's understanding of the roles and responsibilities of its data stakeholders and more effectively identify the challenges and opportunities to addressing logistics knowledge gaps.

In line with the recommended holistic knowledge management strategy, the immediate priority of Stage 2⁴ of the ALC Industry Data Project should be to work with the ALC's industry association stakeholders to:

5. Assess what data is collected by the associations, and how that data is collected, managed, disseminated and used by the associations and their stakeholders; and
6. Provide strategic options for the ALC with respect to influencing and coordinating the role association data bases play in supporting the objectives of the ALC and the implementation of the Australian Logistics Industry Strategy.

Based on the available data held by the industry association stakeholders, Stage 2 of the ALC Industry Data Project should also:

7. Focus on estimating the size of the logistics industry in terms of employment, identifying knowledge gaps in relation to logistics industry employment data and propose strategies for responding to those gaps.

⁴ A project proposal for Stage 2 is provided at Attachment 2.

8. Identify and pursue any other advocacy metrics gaps that are already substantially collected by the industry associations (e.g. size of the market in terms of revenues).
9. Propose strategic options for the continued pursuit of data relevant to the needs of the ALC and identify options for establishing appropriate research institutional arrangements that support the objectives of the Australian Logistics Industry Strategy.

Demand Data

Sd+D argues that addressing data relevant to assessing demand trends is as important as improving our understanding of the characteristics of the supply of logistics services. Ideally, demand and supply data should be integrated to clearly articulate what is driving the demand for logistics services and the supply responses to meet those needs.

However, the priority of the ALC Industry Data Project should be on broadening the suite of advocacy metrics that can be used by the ALC to argue the case for logistics. Consequently, Sd+D recommends:

10. At the completion of Stage 2, the need and approach to addressing demand data gaps should be reviewed.

It is the intention of the above recommendations to provide the ALC National Data Working Group with a framework for achieving the original objectives of the ALC Industry Data Project while providing flexibility in terms of matching action with on-going funding and in terms of managing the performance of the consultant or consultants used in the future.

5. REFERENCES

ABS 2003, *Measuring Australia's Economy, 7th ed.*, Australian Bureau of Statistics, Canberra.

BTE 2001, *Logistics in Australia: A Preliminary Analysis*, Bureau of Transport Economics, Canberra.

BTRE 2005, *Australian Transport Statistics*, June, Bureau of Transport and Regional Economics, Canberra.

DITR 2002, *Research Report No. 1: The Australian Tourism Satellite Account*, February, Tourism Division, Department of Industry, Tourism and Resources.

MacroSys 2005, *Logistics Costs and US Gross Domestic Product*, prepared for the US Federal Highway Administration and Department of Transportation by MacroSys Research and Technology, Washington DC, http://ops.fhwa.dot.gov/freight/freight_analysis/econ_methods/comp_lit/sec_3.htm

6. ATTACHMENT 1: SELLECTED INTERNATIONAL STATISTICS

6.1. United States

- a) Department of Transportation
<http://www.dot.gov/>
- b) Bureau of Transportation Statistics
<http://www.bts.gov/>
- c) Significance of the Industry
http://ops.fhwa.dot.gov/freight/freight_analysis/econ_methods/comp_lit/sec_3.htm
http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/05factsfigures/index.htm
- d) Rail Freight (2004 in review)
<http://www.cbo.gov/showdoc.cfm?index=6350&sequence=0>

6.2. United Kingdom

- a) Department for Transport
www.dft.gov.uk/transtat

6.3. Europe

- a) Spending on roads and infrastructure (% of GDP)
http://themes.eea.eu.int/Sectors_and_activities/transport/indicators/supply/TERM19,2002/TERM_2002_19_AC_Infrastructure_investment_final_draft_August_2002.pdf
- b) Comparisons with US and Canada
http://ops.fhwa.dot.gov/freight/freight_analysis/euro_scan/index.htm

6.4. South Africa

- a) Department of Transport
<http://www.transport.gov.za/library/docs/stats/2001/statistics.html>
- b) State of Logistics Survey (significance of the industry)
<http://www.csir.co.za/websource/ptl0002/docs/news/Summary%20-%20First%20State%20of%20Logistics%20Survey%20for%20SA%202004.pdf>

6.5. Canada

- a) Transport Canada
T-FACTS (transport statistics)
<http://www.tc.gc.ca/pol/en/T-Facts3/main.htm>

- b) NTK's and tonnes (full database of Canadian statistics)

<http://www.tc.gc.ca/pol/en/T-Facts3/main.asp?id=9&table=05-Table9&file=rail&Lang=&title=RAIL%20%20-%20Output>

- c) Overview of Canadian trade and transport

<http://www.oemc.ca/2005pdfs/Logistics.pdf>

[http://strategis.ic.gc.ca/epic/internet/indsib-logi.nsf/vwapj/Logistics%20-%20Supply%20Management%20Industry%20Overview%20and%20Statistical%20Profile.pdf/\\$file/Logistics%20-%20Supply%20Management%20Industry%20Overview%20and%20Statistical%20Profile.pdf](http://strategis.ic.gc.ca/epic/internet/indsib-logi.nsf/vwapj/Logistics%20-%20Supply%20Management%20Industry%20Overview%20and%20Statistical%20Profile.pdf/$file/Logistics%20-%20Supply%20Management%20Industry%20Overview%20and%20Statistical%20Profile.pdf)

6.6. OECD

- a) Road Freight

<http://www.oecd.org/dataoecd/30/49/2732085.pdf>

6.7. New Zealand

- a) NTKs and Tonnes by Mode

<http://www.ltsa.govt.nz/research/reports/283.pdf>

Table 3 - Indicative National Logistics Data Holdings

	A	B	C	D	E	F	G
1				Country of Comparison			
2	Activity Measures	UK (2004)	Canada (2005)	USA (2004)	EU-15 (1997)	NZ (2003 estimates)	South Africa (03/04)
3	NTKs - total	250 b			2,870 b	26,609 m	
4	NTKs - road	160 b	86.9 b (2002)		1,254 b	19,450 m	185 b
5	NTKs - rail	21 b	317.5 b		240 b	3,853 m	111 b
6	NTKs - water	59 b			1,288 b	3,200 m	
7	NTKs - pipeline	11 b			88 b		
8	NTKs - air		2.3 m (2000)			106 m	
9	Tonnes - total	2,218 m		16,568 m**	38.7 b (derived)	137 m	745 m tonnes
10	Tonnes - road	1,831 m	294 m	11,988 m**	26 b	117 m	920 m*
11	Tonnes - rail	102 m	334.6 m	2,425 m**	5 b	14.8 m	185 m*
12	Tonnes - water	127 m	331.2 m (1999)	1,247 m**	0.2 b	4.9 m	
13	Tonnes - pipeline	158 m			7.5 b		
14	Tonnes - Air		851,000 (2000)	24 m**		0.3 m	
15	Average Haul (kms)					(derived)	
16	Average Haul - road	87 kms			110 kms	166 m	200
17	Average Haul - rail	206 kms			245 kms	260 m	600
18	Average Haul - water	467 kms			1,430 kms	653 m	
19	Average Haul - pipeline	70 kms			170 kms		
20	Traffic Intensity Index					353 m	
21	Average Payloads for HGV's	9.3 tonnes					
22	Lading Factor	57%					
23	% of HGV's (owned vs hired/reward)	hire = 2/3rds = 680m tonnes	hire = 89% (1996)				
24	Count of HGV's	440,000	580,000				
25							
26	Significance Measures	UK	Canada (2005)	USA	Europe	NZ	South Africa
27	% of GDP		29%	8.6%			14.7%
28	size of market (\$)		\$50 b*	\$USD 1 trillion*			R 180 billion
29	size of market - road		\$21 b*				R 105 billion
30	size of market - rail		\$8.5 b*				R 11 billion
31	size of market - other		\$20.5 b*				R 14 billion
32	Export Market		EUR 350 b (1997)		EUR 936 b		
33	International Freight Tonnage Lifted	440 m tonnes					
34	# Employees	1.7m	400,580** (1996)				
35	# of SME's						

7. ATTACHMENT 2: ALC ANNUAL FORUM HANDOUT

THE ALC DATA PROJECT

EXECUTIVE SUMMARY

The ALC Data Working Group commissioned Strategic design + Development to undertake a study on the availability of data to support the implementation of the Australian Logistics Industry Strategy.

The Project consists of a data gap analysis and will provide costed options to address any identified data gaps.

Stage 1 of the project focused on confirming the conceptual framework for addressing our data needs, and a gap analysis of the data relevant to making the case for logistics.

Progress to date has included:

- A comparison of the data collected and published Australian Bureau of Statistics (ABS) for other industrial sectors;
- A review of the limitations of the ABS data in terms of the logistics sector;
- A comparison of logistics data collected by overseas agencies; and
- A comparison of the types of advocacy data used by other industry associations.

Key Messages

Key messages from Stage 1 include:

- There are no short term solutions to addressing the limitations of the national logistics data collections;
- The ability of the tourism sector to promote itself is grounded on the comprehensive data collections supported by the Federal and State governments. Achieving the standard of the national tourism data collection would require an alignment of national and international processes, over a decade of multilateral discussions and hundreds of thousands of dollars;
- Short term solutions are possible using existing national data collections, supplemented with industry association data and data from other sources such as the Bureau of Transport and Regional Economics (BTRE);
- In addition to what data should be collected there are equally important considerations such as who will collect, manage and disseminate the data; and

Importantly, Stage 1 has also identified that it is not just data collection that is needed to improve our collective knowledge. Also required is a process whereby the data is analysed in terms of its significance for determining the strategic trends associated with the demand and supply of logistics services. The opportunity exists to develop a reinforcing process that will ultimately deliver a comprehensive logistics data collection. But the start must be made.

Stage 1 has demonstrated that we are in a chicken and egg situation. We will need to secure government support for the development of a comprehensive national logistics data collection that will provide a credible source of data to make the case for logistics. But to achieve that support, we need data now that makes the case for logistics.

Should sufficient funding be secured, Stage 2 of the project will use the foundation provided by Stage 1 to target the data most easily identified and collected to provide the basis for articulating the importance of the logistics sector. While such data will not be perfect, it will demonstrate that progress can be achieved in delivering data that is useful to operators, customers and governments.

DID YOU KNOW IN 2006/07?

The Australian logistics sector:

- Adds more value to the Australian economy than any other industrial sector, and that the fashion and apparel chain has the highest proportion of logistics value-added;
- Is the 3rd largest employer and has the highest proportion of professionals with more than one tertiary qualification;
- The average age of employees in the sector is 45 and it is estimated that by 2015 there will be a shortfall of 150,000 employees;
- Government investment in logistics infrastructure increased by 15% over the past 12 months, with the vast majority of additional funding directed to the rail network;
- Over the same period however, the industry's net government contributions increased by 18%; and
- Private investment in logistics infrastructure increased by 20% over the past 12 months, with the vast majority of additional funding directed to warehousing.

The logistics market:

- Is 2nd largest market in Australia but has the lowest export to domestic market ratio of all Australian industries;
- For every \$1 of Australian export earnings, \$0.25 goes to foreign suppliers of logistics services;
- The fastest growing market segments are water, fuel and electronic distribution, while the slowest growing market segments are overnight parcels, and milk and fertiliser distribution;
- The average return on assets for the industry is 4.8%, with general road freight having the lowest return on assets (0.5%) and air freight having the highest return on assets (9.8%);
- Over the past 12 months, fuel costs have risen by 25% but labour costs have risen by 28%.

BACKGROUND

The above statistics are fictitious.

The fact is we have very little industry knowledge. We are yet to be able to articulate the economic significance of the logistics sector. Nor do we know the underlying trends in terms of changing demand and how the industry is responding.

If we are to achieve the objectives of the Australian Logistics Industry Strategy, particularly with regard to developing a freight logistics industry that is internationally competitive and responsive to the needs of customers and the community, we must improve our collective market intelligence.

After all, if we don't know where we are how do we know where we are going?

THE ALC LOGISTICS DATA PROJECT – A FIRST STEP

The Australian Logistics Industry Strategy seeks to achieve greater government and community recognition of the significance of the logistics sector, particularly with respect to the importance of logistics activities to the Australian economy.

Articulating the significance of freight logistics sector requires a defensible argument based on quantitative evidence that is comparable with other industrial sectors.

At the operational level, data are also required to analyse the opportunities and challenges facing the sector and individual firms.

However, it has long been recognised that there are substantial deficiencies in the availability, usefulness and general management of Australian logistics data holdings, and while there are centres of transport and logistics data expertise in Australia (e.g. the Bureau of Transport and Regional Economics), no agency has the expertise and resources to act as a primary source for all data that cover the complex nature of logistics activities.

The data limitations must be addressed if the Australian Logistics Industry Strategy is to achieve a sustainable benefit to the industry, customers and in-house operators. It is the purpose of the ALC Data Project to identify the specific datasets that should or could be collected to support our needs.

However, one of the challenges of the ALC Data Project is the effort required to process the vast range of potential datasets and data stakeholders. For example, as much effort can be expended on finding one key piece of data as can be expended on obtaining many less important data sets.

Regardless of the challenges, the ALC Data Project is a vital first step in articulating the importance of the sector and developing our collective market intelligence.

CONCEPTUAL FRAMEWORK

Although the Project is essentially a data gap analysis, developing strategies for addressing identified data gaps cannot be done in isolation of the resources required to collect, store and disseminate current datasets.

Consequently, there is need to prioritise the solutions to addressing the data needs of the ALC's stakeholders based on a holistic approach to collection, management, dissemination and usefulness. For example, a second best solution utilising existing datasets may be a more cost effective option than pursuing the perfect dataset.

A holistic approach to addressing the logistics sector's data needs is based on answering the following questions derived from Figure 1:

1. What are the desired outcomes and objectives of the ALC and its stakeholders and what data would address these needs?
2. Does the data exist and what are the collection options?
3. What will be done with the data once is collected?
4. Who will be responsible for the collection, processing, storage, dissemination and review of the data?

Figure 1 – The Data Cycle

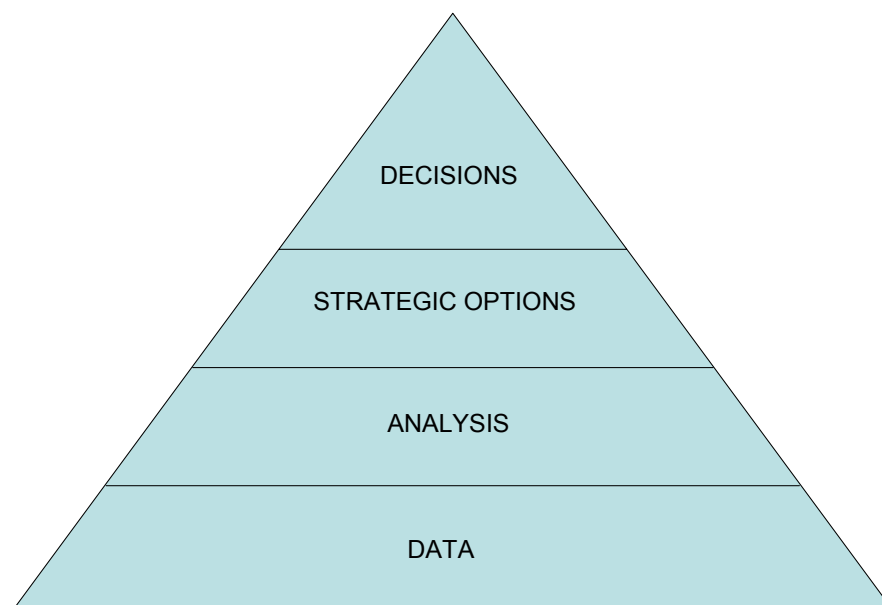


Source: Sd+D

It is also important to recognise that data in itself is only useful if it serves the purpose of improving our understanding. In this respect, the analysis of the data is equally important as its collection. Understanding how the data will be used to support the development of strategic options upon which decisions by industry and government can be made is an important element of the ALC Data Project.

The relationship of data collection to decision making is illustrated in Figure 2.

Figure 2 – Data and the Decision Tree



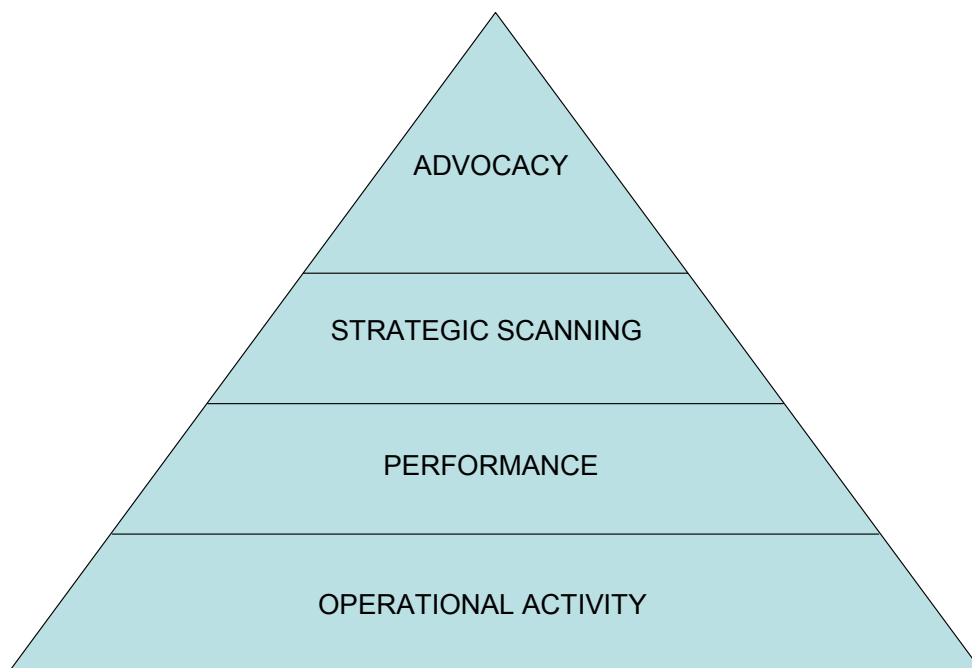
Source: Sd+D

WHAT DATA WOULD MEET OUR NEEDS?

There are many datasets that could support the needs of the ALC and its stakeholders. However, it has been the size and complexity of the task of identifying useful data sources that has been a hurdle to implementing Recommendation 1 of the Australian Logistics Industry Strategy. Consequently, it is essential to prioritise the data project in terms of the strategic needs of the sector.

The ALC and its stakeholders have already identified the sector's strategic objectives through the development and on-going implementation of the Australian Logistics Industry Strategy. Based on this, the ALC Data Working Group developed a draft framework that describes the type of data that would support those objectives. This framework has been further developed to form a hierarchy of data needs as shown in Figure 3.

Figure 3 – Hierarchy of Data Needs



Source: Sd+D based on modifications to the ALC Data Working Group's data pyramid and Maslow's Hierarchy of Human Needs.

Table 1 illustrates how the hierarchy of data needs relates to the objectives of the ALC and its stakeholders, a description of the types of relevant datasets and the benefits that could accrue to industry and governments from the collection of such data.

Table 1 – The Data Objectives

Purpose	Objective	Type of Data	Benefits of the Data
Advocacy	To influence government policies to reflect the needs of the freight logistics sector.	Headline data that are comparable with other industrial sectors and can be used to promote the contribution of the sector to economic and social outcomes (e.g. contribution to GDP).	Improved responsiveness to address public policy challenges and opportunities, including access to a fair share of government infrastructure and research funding. An improved pro-active approach to addressing community concerns.
Strategic Scanning	To create a freight logistics sector that is responsive to changing competition, community and government environments.	Headline data that measure changes in the demand and supply characteristics of the logistics sector (e.g. market shares, infrastructure capacity).	Supports the long term development of advocacy arguments. Identified trends and characteristics provide the basis for improved commercial and government decision making.
Performance	To identify opportunities for improved commercial, network and system performance.	Data that measure the efficiency and effectiveness of freight logistics activities (e.g. intermodal terminal performance, travel times).	Supports the development of strategic scanning data. Allows for the benchmarking of internal performance by private firms. Improves the targeting of public and private investment through the benchmarking of system and infrastructure performance by governments.
Operational Activity	To improve industry and government understanding of why freight flows (demand) and how (supply).	Data that describes the demand for logistics services, expressed in terms of the freight flows, supply chains and channel structures (e.g. commodity statistics). Data that describes the economic drivers of freight flows (e.g. disposable household incomes). Data that describes what logistics assets are used where and when (e.g. truck visits at intermodal terminals).	The fundamental building blocks for applied freight logistics research and the development of performance monitoring data. Improves private and public understanding of the why (demand) and how (supply) of freight logistics systems. Allows the freight logistics sector to be analysed on a system rather than piecemeal basis, resulting in more effective policy development. Allows for improved private and public investments to improve the efficiency and effectiveness of the freight logistics system as a whole. Reduces the ad hoc data burden on industry associations and private enterprises.

PROGRESS TO DATE

The ALC Data Project has been divided into two stages, reflecting the limited availability of existing funding. The focus of Stage 1 of the ALC Data Project has been on assessing the availability of advocacy data. Stage 2 will build on Stage 1, particularly with respect to expanding the data gap analysis to other types of data (e.g. strategic scanning and performance data) as well as providing options for addressing identified data gaps, and the collection, management and dissemination of industry data more generally.

Stage 2 cannot proceed without additional financial support.

Advocacy Data

The advocacy data used by other industry associations was analysed to develop an understanding of potential strategies to deliver data that supports the case for logistics. Table 3 indicates the types of advocacy data currently being used in Australia, the main being:

- The level of industrial production;
- The size of the market (measured in terms of revenues); and
- The value and volume of exports generated by the industry.

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Association	GDP	Production	Employment	Revenue	Exports	Other
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Meat & Livestock Australia		✓		✓	✓	
Australian Pork Limited		✓		✓	✓	
RiceGrowers' Association of Australia		✓	✓	✓	✓	
Australian Petroleum Production & Exploration Association		✓				✓
The Australian Coal Association		✓	✓		✓	
Australian Institute of Petroleum		✓			✓	
Australian Aluminium Council		✓	✓		✓	
NSW Minerals Council		✓		✓	✓	
Qld Resources Association		✓			✓	
Australian Information Industry Association	✓			✓		✓
Australian Retailers Association			✓	✓	✓	

Sources: Association websites.

For advocacy data to be effective they must be:

- Comparable (e.g. with other industrial sectors and/or internationally);
- Credible (e.g. based on reputable research); and
- Relevant to the public policy debate.

Comparability and the National Accounts

Typically, the advocacy data used by other industrial sectors is drawn from the National Accounts published by the Australian Bureau of Statistics. The National Accounts use a definition of industrial sectors called the Australian and New Zealand Standard Industrial Classification (ANZSIC) which is based on the International Standard Industrial Classification of All Economic Activities or ISIC for short.

The biggest hurdle to articulating the importance of the Australian logistics sector is the comparability principle. ANZSIC is not particularly useful because:

- "The objective when developing an industrial classification is to identify groupings of businesses which carry out similar economic activities. ...the categories should reflect as realistically as possible the way in which activities are actually organised within business units" (ABS Catalogue No. 1292.0). Consequently, in-house logistics

activities will not be measured where a business integrates its logistical activities with other businesses activities.

- The statistical units for Division I: Transport and Storage, do not distinguish between freight and passenger transport activities for rail, air and water modes, while storage is limited to grain and other not already stated. Similar classification issues are found with the services to transport statistical units. Confidentiality issues are typically the reason for the lack of disaggregation.

It is these definitional difficulties that forced the then Bureau of Transport Economics to adopt a multi-step approach to estimating the contribution of logistics activities to GDP (the 9% figure). While the BTE's analysis was credible, there remains a question mark over the accuracy of the base data used due to the definitional difficulties.

An alternative to using the National Accounts as the fundamental basis for developing the logistics sector's data holdings is the development of what is referred to as a satellite account.

The Tourism Satellite Account

Like the logistics, tourism is also not recognised as an industry within the National Accounts structure. However, the ABS produces a Tourism Satellite Account (TSA) which measures tourism and the development of the TSA provides a useful study with respect to the potential to develop such an account for the logistics sector.

Satellite accounts are a relatively new national accounting construct designed to measure emerging economic activities of national importance such as tourism, information technology and the environment (DITR 2002). Satellite accounts are separate but linked to the National Accounts and as such the TSA has credibility as a measure of the significance of the tourism industry.

While the development of a similar satellite account for the logistics industry is appealing, it should be recognised that the development of the TSA first required international recognition of the need to define tourism as a standard industry classification. This international process took nearly 10 years from the point of agreement on a common definition to the adoption of a TSA model.

The Australian TSA also cost nearly \$1 million to produce, a cost jointly funded by the Department of Industry, Tourism and Resources and the ABS. The TSA is published every three years as the resources required to publish annually are prohibitive. However, research by Tourism Australia which supports the development of the TSA is published annually.

Alternatives to a Logistics Satellite Account

The international procedural issues of developing a logistics satellite account are constraints to achieving the logistics sector's data needs in the short term. Also a constraint is the necessity to secure sufficient Federal and State government support for the initial development and on-going research (for example, the household and tourist surveys conducted by Tourism Australia cost over \$3 million per annum).

While the development of a logistics satellite account would be ideal, an alternative short term strategy to measure the significance of the logistics sector is required in the meantime.

Sd+D is currently of the view that the existing BTE 9% of GDP metric is sufficiently robust to be continued to be used as a key advocacy metric. Additional metrics such as employment and market size could be developed using data currently available from the National Accounts, supplemented with data from industry associations and others such as the BTRE. Confirming this view will be the focus of Stage 2 of the ALC Data Project.

IMAGINE...

Western Sydney, 3 March 2026

The Federal Minister for Industry and Logistics opens a new intermodal and warehouse precinct called Logistics Central; the largest precinct of its kind in the southern hemisphere providing state-of-the-art intermodal, warehousing, cross-docking and in-transit manufacturing services.

We know Logistics Central is state-of-the-art because the Australian Centre for Logistics Research (ACLR) has benchmarked Australian logistics services against international operations.

The ACLR is funded by governments and industry, and provides basic strategic advice to governments through the Australian Transport and Logistics Ministers Council and to industry through the Australian Logistics Council. ACLR reports annually on the state of the Australian logistics sector, including demand (freight flows) and supply measures. The data collected by ACLR is supplied by operators through industry associations and is made available on request, for a fee, to logistics consultants and other research bodies.

The Federal Government enthusiastically supports Logistics Central because it reduces national logistics costs by addressing the lack of integration between Australia's domestic and international chains, an issue identified through the logistics chain mapping work undertaken by ACLR. Also, the consolidation of logistics activities into Logistics Central allowed the Government to identify arterial freight routes and develop investment plans to keep pace with expected freight growth. At the same time, the key corridors could be protected from urban encroachment.

But after decades of difficulties in developing major Australian logistics facilities, how could Logistics Central be developed, from inception to operation, in record time?

The CEO of OZterminal, the operator of the precinct's rail terminal, says that the market intelligence provided by ACLR allowed the company to anticipate the commercial opportunity before metropolitan growth closed the window. Detailed publicly available data also allowed the company to develop strategies to address expected community concerns. Most importantly, the comprehensiveness and accuracy of the data gave the company confidence to seize the initiative and attract a portfolio of stakeholders, including major customers to present the proposal to State and Federal Governments.

NSW State Government support was achieved because the data supported accurate modelling of the characteristics of the road, rail and storage tasks, including the economic drivers that will determine future logistics needs. This allowed the Government to model the economic and social impacts of the development on a state wide basis, including the identification of where

compensatory payments would be required to offset local impacts and where the State would have a strong argument for obtaining national funding.

Agreement between Federal and State governments was quickly reached because the various agency models of the implications of the Logistics Central project were based on commonly recognised data.

At the operational level, local trucking operators say they don't mind paying an extra toll to access the Logistics Central precinct. The revenue raised and its expenditure on infrastructure improvements associated with the precinct is published annually. Road performance indicators such as average travel times between the precinct and key origin and destination points within Sydney are published on a quarterly basis, as are performance indicators of the services provided by Logistics Central operators.

Customers are also excited by Logistics Central. Modelling of Australian logistics costs on an individual chain basis indicates that not only will Logistics Central deliver direct cost and service benefits, but it will also allow rationalisation of their distribution systems to be accelerated, further reducing costs.

At the opening ceremony the last word is left to the Chair of the Australian Logistics Council:

"Logistics Central represents the culmination of sophisticated planning based on comprehensive and accurate data, analyses and research. However, this project could not have been conceived and developed so quickly twenty years ago. Then we knew very little about our industry, but overtime we came to appreciate the value of publicly available data that allowed the characteristics of our sector to be quantified and analysed."

"We now know that logistics activities represent the highest proportion of value-added to our economy. Governments now recognise that the market for logistics services is Australia's largest and most complex market. But the complexity of the sector is no longer a constraint to our understanding its importance to our economic and social well being."

"Our current understanding is the direct result of taking up the challenge of developing a data strategy that supported the needs of logistics operators, customers, governments and other stakeholders. While the strategy took time to develop and even longer to implement, we now have clear arrangements and lines of responsibility for the supply, management and dissemination of the data that supports our strategic and tactical objectives."

"As a consequence, we can now demonstrate to customers what a 1% reduction in total costs across their logistics chains will mean to the performance of their individual businesses. Similarly, we can now tell governments what the benefits of their investments will be in terms of increased exports, employment and business activity, on a national, state and local basis. Consequently, we now stimulate government policy developments rather than react as we did in the past. We also now received our fair share of government infrastructure, facilitation and

research funding; spending government surpluses is no longer focused on tax cuts, health and education."

"But most importantly, by working together we can use the market intelligence generated from the ALC knowledge management strategy to grow domestic and international trade and by doing so, grow our logistics industry. It's a virtuous circle."

8. ATTACHMENT 3: STAGE 2 PROPOSAL

8.1. Introduction

Sd+D recommends that Stage 2 of the ALC Industry Data Project should be modified to take into account the conclusions drawn from Stage 1 of the Project. This Attachment provides a draft project proposal for consideration of the ALC National Data Working Group.

8.2. Study Purpose

It is proposed to undertake Stage 2 based on a holistic strategy to improving our current and ongoing understanding of the logistics industry.

In effect, the scope of Stage 2 would be broadened in terms of considering not only gaps in the collection of logistics data but would also consider gaps in the effective management, dissemination and use of logistics data. At the same time, however, the scope of the project would be limited to focusing on the determining the size of the logistics industry and sector in terms of employment, and if possible, the size of the market in terms of revenues.

The objectives of Stage 2 are to determine:

1. The size of the logistics industry in terms of employment; and
2. Gaps in the collection, management, dissemination and use of freight logistics employment data by key ALC stakeholders.

Stage 2 will also incorporate an audit of the type of data sets currently being collected by industry association stakeholders of the ALC.

8.3. Context

Stage 1 of the ALC Industry Data Project identified employment data as a priority advocacy target for the ALC, to be used to complement the existing 9% of GDP metric.

Stage 1 also argued that data availability is not a guarantee that we understand the industry. That is, while a stakeholder may produce data relevant to the ALC's needs, it may be that the data is produced at intervals that are not useful. Similarly, data may be collected by a stakeholder but the stakeholder is unwilling to release the data.

Similarly, the suitability of the data to meet the needs of the ALC will also depend on the purpose of the data (why it is collected) and how it is collected and used. Therefore, Stage 1 also recommended that a holistic approach to improving the logistics sector's data holding be adopted, with the identification of data gaps expanded to breakdowns in the collection, management, dissemination and use of relevant data.

Consequently, it is recommended that Stage 2 contribute to developing estimates of the size of the logistics sector in terms of employment while also identifying the roles and responsibilities of the key ALC stakeholders in relation to employment and other logistics data holders. The latter will provide the basis for developing strategies for collecting, managing, disseminating and using other support data in the future.

8.4. Conduct of Stage 2

Sd+D proposes to undertake a stock-take of the data collections of the ALC's industry association stakeholders⁵, namely:

- Association of Australian Ports and Marine Authorities
- Australasian Railway Association
- Australian Federation of International Forwarders
- Australian Shipowners Association
- Australian Trucking Association
- Customs Brokers and Forwarders Council of Australia
- Shipping Australia.

Although the identified industry associations are freight transport centric, focusing on these stakeholders provides the opportunity to deliver tangible outcomes that also provide a stepping stone to developing the ALC National Data Working Group's appreciation of the challenges and opportunities in achieving its objectives. This approach also allows progress to be achieved by tailoring the work program to suit the availability of funding.

The stock-take of industry association data holdings will compare and contrast the data management strategies of the associations and evaluate the key data sets used by the associations in terms of the following attributes:

- Relevance and effectiveness
- Reliability (in terms of timing and quality)
- Accessibility, ease of collection, processing and storage; and
- Direct costs and third party data burden.

The output of the Stage 2 will include:

- Raising awareness of the ALC's industry association stakeholders of the ALC data project, progress in improving our collective awareness of the industry and sector, and develop closer cooperation between the associations in pursuing their mutual data interests⁶.
- A summary of the type of data currently collected and published by the associations. This summary will include the most recent statistic for each data series held by the industry associations.
- The study will use the stock-take of the industry association data holdings to determine options available to the ALC and the industry associations to maximise the effectiveness of the collection, management, dissemination and use of data that to support the strategic objectives of the ALC. These options will also indicate potential roles and responsibilities of each stakeholder as part of implementation plans for key data sets.

⁵ Preliminary work on this stock-take for the modal associations has already commenced, utilising a graduate placement in the ALC under the supervision of Sd+D.

⁶ The stakeholder engagement process will include the ABS and BTRE as it would be inappropriate to develop industry knowledge management strategies without their involvement.

- Employment data held by the industry associations will be supplemented with data from other sources (e.g. ABS) to determine as much as possible the size of the logistics sector in terms of employment, and provide options for filling any employment data gaps.
- The development of options with respect to the roles and responsibilities in the ongoing collection, management, dissemination and use of logistics employment data.
- Recommendations for progressing the ALC Industry Data Project into the short to medium term.

Stage 2 will also develop implementation plans for the data identified as supporting the strategic objectives of the ALC. These plans would include a list of existing statistics collected during the industry data audit and in terms of addressing gaps in the knowledge management processes associated with data, Stage 2 will identify:

- The purpose of the data;
- Responsibilities and resources required for collection, storage, maintenance and distribution of the data;
- Key milestones, outcome indicators and review mechanisms; and
- Stakeholder engagement strategies and project management mechanisms.

8.5. Costings

Taking into account coordinating stakeholder consultations, the elapsed time for the project will be approximately 6 to 7 weeks.

Table 4 provides Sd+D's quote for the completion of Stage 2, being \$44,680 including GST and travel. This includes the originally agreed Post ALC Forum payment of \$5,080.

Taking into account coordinating stakeholder consultations, the elapsed time for the project will be approximately 6 to 7 weeks.

Table 4 - Stage 2 Cost Estimates

Stage 2	Hours	Cost
<i>Post ALC Forum consultation</i>	<i>Hrs</i> 26.0	\$ 5,080
<i>Inception meeting</i>	<i>Hrs</i> 4.0	\$ 780
<i>Initial contact and briefing of associations</i>	<i>Hrs</i> 8.0	\$ 1,560
<i>Association data audit</i>	<i>Hrs</i> 40.0	\$ 7,800
<i>Incorporate association data into an industry database</i>	<i>Hrs</i> 50.0	\$ 9,750
<i>Association stakeholder engagement</i>	<i>Hrs</i> 30.0	\$ 5,850
<i>Compare and contrast association strategies</i>	<i>Hrs</i> 10.0	\$ 1,950
<i>Incorporate supplementary employment data</i>	<i>Hrs</i> 16.0	\$ 3,120
<i>Report writing</i>	<i>Hrs</i> 24.0	\$ 4,680
<i>Steering Committee Consultation</i>	<i>Hrs</i> 16.0	\$ 3,120
	<i>Hours</i> 224.0	
	<i>Hourly rate (GST inclusive)</i>	\$ 195
	<i>Consulting costs including GST</i>	\$ 43,690
	<i>Provisional travel and accomodation</i>	\$ 1,000
Total costs including GST		\$ 44,690