SUBMISSION TO
NEW SOUTH WALES PRODUCTIVITY COMMISSION

TRANSPORT INFRASTRUCTURE

Transport and Logistics Centre

27 November 2019

Introduction

The Transport and Logistics Centre (TALC) Limited was established in 2000. It acts as a "think tank" for new ideas in capability building in transport and logistics. As a not-for-profit company TALC provides its services on a cost recovery basis. It is here to serve the industry. Our work is independent and driven by our values - collaboration, empowerment and innovation in all things.

We advise, assist and facilitate projects, programmes and ideas. The primary focus of our work is capability building in transport and logistics. TALC was initially established in 2000 in NSW, and then funded in part by the NSW and Commonwealth Governments from 2004 to 2013. We have enjoyed bipartisan support since 2003. We have also worked closely with private companies, industry associations and trade unions on industry related projects within our mandate. In 2007 TALC became an independent not-for-profit research and consulting group. Since 2013 TALC has been active in all sectors of the supply chain in Australia – especially road freight, rail, maritime and aviation.

The NSW Productivity Commission Roundtable on Transport Infrastructure

The Chair of TALC Limited, [redacted], was invited to attend this roundtable on 6 November 2019. During the comprehensive discussion a number of key issues surrounding productivity in transport were raised that were of interest to TALC. Amongst these were:

- The extent to which new investment in transport infrastructure has been properly planned, and the extent to which detailed business cases (including productivity estimates) have been made and taken into account when the NSW Government makes its decision to proceed

- The extent to which sustainability and non-financial investment criteria are taken into account in the planning process

- A general discussion of the appropriate governance arrangements for planning and implementation of major transport infrastructure projects in NSW

Given that the Commission will no doubt receive detailed and expert submissions on a range of these and other issues, TALC will focus on four (4) related matters that go the heart of improved productivity in NSW transport infrastructure – matters around which TALC has been active in research and policy development over the last decade:

- The need for a whole-of-State strategy for transport and logistics in a period of disruptive technology and business model changes (redefining future needs)

- A new look at the idea of “supply chains” across Australia (Supply Chains 2020 - from the Australian Logistics Council)

- An successful and sustained case study example of collaborative infrastructure development in NSW (the Hunter Valley Coal Chain Coordination model)

- A closer look at a key NSW shipping port as a case study of an urgent, current and vital dimension to longer term productivity gains in the State (Newcastle)

Chapter One: Towards a Freight Strategy for New South Wales – A Discussion Paper from 2011 – Back to the Future Part 3[1]

This 2011 TALC Discussion Paper, originally prepared for the NSW Freight Advisory Council, starts from the position that freight logistics must now be seen as part of a global supply chain network. Freight networks consist of multiple visible and invisible economic, social and political connections over time and space- all of which combine to give a working system. Both Sydney and NSW must be seen as polycentric regions, and consideration must be given to sources of friction and blockage, from economic, social, environmental, skills and industrial perspectives as well as geographical ones. This has profound implications for any freight logistics strategy for NSW. It has intergenerational implications for funding, infrastructure and people. The Paper remains current almost a decade later. It is even more critical in 2019 as we consider the massive investments being made in transport infrastructure across the State and the nation in the coming decade.

Planning to solve the wrong problems?

On the surface developing a freight logistics strategy for NSW appears relatively straightforward. There is the Sydney metropolitan region and there is the rest. In the Sydney region the focus is on moving freight in and out of Port Botany. Road congestion is the main proxy measure for efficient freight movement. Fix this problem and you have a strategy. In fact, nothing could be further from a strategy. Port Botany is a symptom of a wider freight logistics problem in NSW; it is not the cause of the problem.

For over 30 years the NSW Government's focus has been on Sydney metro passenger transport. Freight logistics has been seen as a "given" in the economic geography of the Sydney region, and the rest of the State. The billions of dollars of investment in infrastructure in passenger transport have been across all modes – rail, road, maritime and aviation. From clearways to freeways, airports to shipping ports, the funding has focused on moving people around, not freight.

In the last 30 years our understanding of freight logistics has grown enormously from the simplistic view of trucks, trains and transport hubs. The latest view of freight logistics is as part of a global supply chain network. Building more roads, rail and bridges is not alone the basis for productive supply chains – in some cases it may make things worse.

Reframing the issues

We need to go back to basics if we are to create a successful freight logistics strategy for NSW – including the places outside of the Sydney-Newcastle-Illawarra regions. The first thing we have to do is redefine the task. In this we have a solid base of international and local, practical and intellectual endeavour. We should embrace the new ideas, and seek the high ground of the dialogue with all key stakeholders – government, community and business.

Private sector companies and the "owners of freight" have led the way through the application of SUPPLY CHAIN MANAGEMENT thinking to freight logistics some decades ago. This idea is all encompassing and has impacted on the way companies do business around the world: *...the comprehensive management of value added processes and interactions including all components and activities that are dedicated to the manufacturing, processing, marketing and finally consumption of commodities* (Gattorna 1990)[2]

[1] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1785965
[2] Gattorna, J *The Gower Book of Logistics and Distribution Management* (1990)

In that wider global context we may define freight logistics as: *...the process of planning, implementing and controlling the efficient cost effective flow and storage of raw materials, in-process inventory, finished goods and related information from point of origin to point of consumption for the purpose of confirming to customer requirements* (Council of Logistics Management 1986)[3]

The critical point in these definitions is that they take us away from traditional "transport" solutions to moving freight around NSW and Sydney. They introduce the idea that freight logistics is concerned with a wider network of "flows" in the community and the economy – flows and movement from producer to customer. The transport "place", whether it is a shipping port, rail terminal, intermodal terminal or warehouse is no longer the focus of the logistics process. Yet the focus remains on place:

"The NSW freight network is made up of ports, shipping channels, airports, prescribed airspace, roads, rail lines, pipelines, intermodal terminals and freight-related precincts. …..the majority of freight is moved by road. The major exception is coal, which is generally transported by rail. In addition, almost half of NSW agricultural produce is moved by rail".[4]

Governments need to move from a strategy to maximise the internal efficiency of places e.g. Port Botany, Enfield, Moorebank, or Minto to a strategy to maximise the efficient "flow" of freight from producer to customer. Compared with the former, more traditional shape of the freight transport system, the evolution of supply chain management and the related emergence of the logistics industry is mainly characterised by four properties:

- First, a fundamental restructuring of goods merchandising by establishing integrated supply chains with integrated freight transport demand.

- Second, whereas transport was traditionally regarded as a tool for overcoming space, logistics is critical in terms of time. This was achieved by shifts towards vertical integration, namely subcontracting and outsourcing, including the logistics function itself.

- Third, according to macroeconomic structural changes, demand-side oriented activities are becoming predominant. While traditional delivery was primarily managed by the supply side, current supply chains are increasingly managed by demand

- Fourth, logistics services are becoming complex and time-sensitive to the point that many firms are now sub-contracting parts of their supply chain management to third – or fourth party logistics providers. These providers benefit from economies of scale and scope by offering integrated solutions to many freight distribution problems.

Given these changes in the very basis of freight logistics across the world, and the subsequent flow on to NSW, it is unlikely that a long term strategy to "fix" the freight issues in NSW will be found in traditional transport planning models. In fact, an adherence to traditional transport models may make the long term situation worse over time.

"There are opportunities to improve freight efficiency by shifting some commodities away from road transport to:

• rail, which is well-suited for transporting containerised freight, such as agricultural exports and construction materials, over longer distances

• coastal shipping, which is well-suited for transporting construction materials and other bulk freight".[5]

[3] Council of Logistics Management *What's it All About?* (1986)
[4] NSW Government Freight Plan 2013-2020
[5] Ibid.

For example, it may be possible to resolve the road congestion at Port Botany if (and that is a big "if") 40% of containers could be carried by rail not road. However, it is likely that this will only push the congestion issue away from the Port and recreate it in another place in the Sydney region. Fixing a blockage in a complex "flow" based system requires a deep understanding of the entire system, and not just one element of it.

Urban Planning and Freight Logistics – the interconnected system

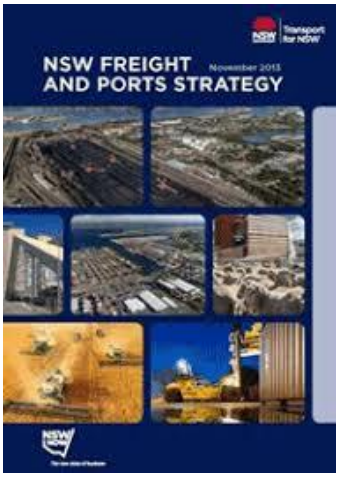
Recent work has led many experts to believe that city and urban environments have forever altered because of the global and changing nature of freight logistics and supply chain management. Traditionally cities and regions have been conceived as "marketplaces" in which goods and services are traded, and communities evolve around the marketplace.

However, recent analysis suggests that cities and regions have become "staging posts" in a wider flow of goods and services between and cross urban areas, regions, and nations. The notion of a "perpetual flux" replaces the spatial notion of cities and regions as "places of place". They are now "places of flows"[6].

This may at first sound very academic and abstract, but it has an immediate and vital impact on any planning or strategy discussion concerning the future of NSW. If we see NSW as a series of "places" linked together by transport modes, we will move in the direction of physical movement of goods between defined and fixed spaces and places. If however we envisage NSW as a complex network of "flows", and then the spatial constraint is lifted. Freight logistics becomes a series of relationships between functions and activities, not bounded by space and time.

If we look closely at some of the spaces in NSW e.g. Port Botany, Moorebank, we can see that when we get past the physical form of the space, the freight networks consist of multiple visible and invisible economic, social and political connections over time and space – all of which combine to give a working system (or not).

A Freight Logistics Strategy for NSW must address all these connections and the flows that make up the overall State wide system: Instead of conceiving cities as either bounded or punctuated economic entities, we see them as assemblages of more or less disanciated economic relations with different intensities at different locations. Economic activity is now irremediably distributed. Even when economic activity seems to be spatially clustered, a close examination will reveal that the clusters rely on a multiplicity of sites, institutions and connections, which do not just stretch beyond these clusters, but actually constitute them.



[6] Hesse, M *The City as a Terminal* (2008)

Chapter Two: Supply Chains 2020 – the Australian Logistics Council[7]

In 2011 the national Australian Logistics Council undertook at project to redefine the nature and scope of supply chain models in Australia, as a deliberate move away from a narrow focus on modal transport thinking. The project set a new benchmark for thinking about transport infrastructure. It began with an examination of the global changes re-shaping the supply chains across Australia.

Key forces and influences identified that were re-shaping the supply chain of the future included:

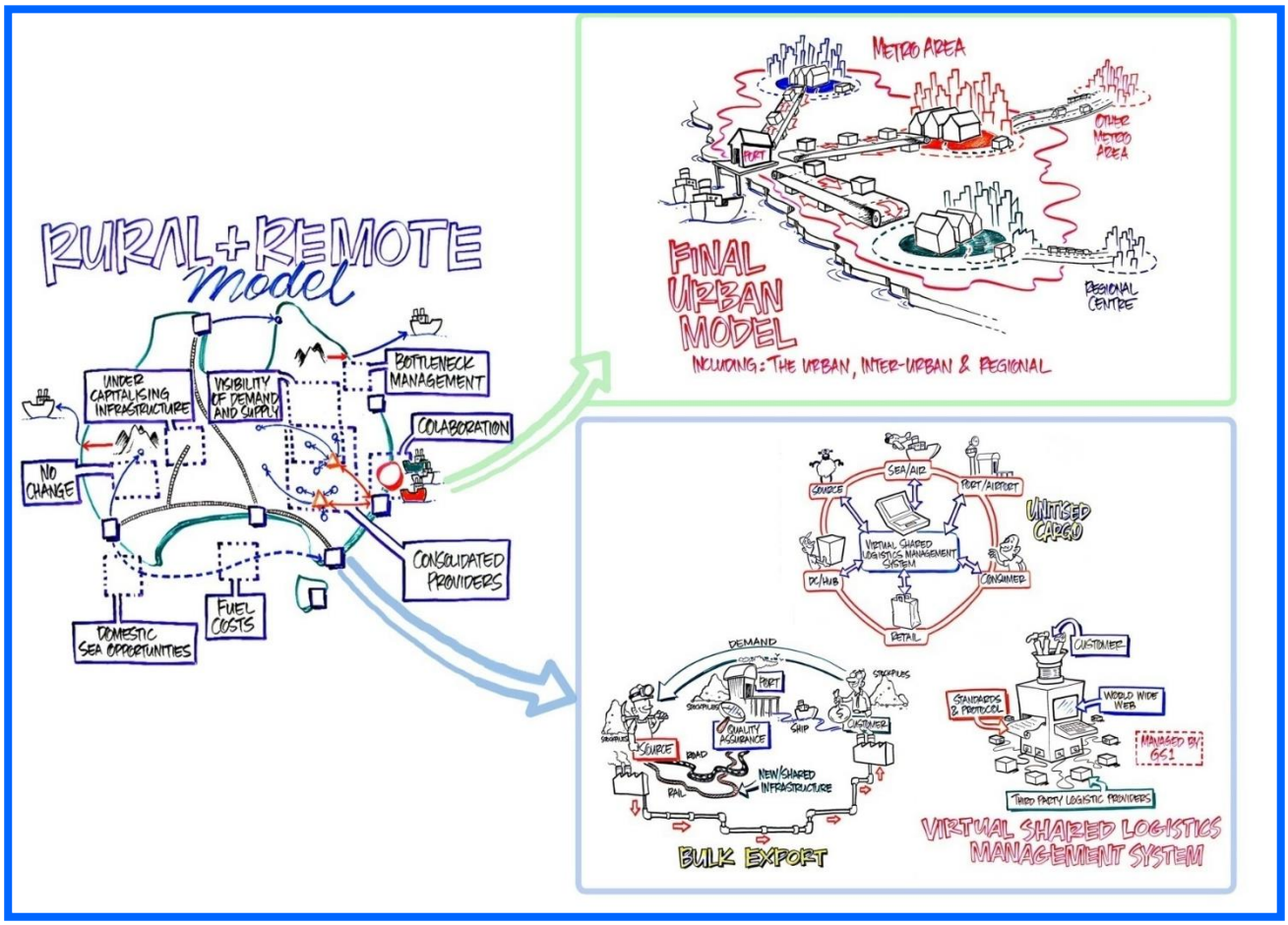
- External economic, environmental, social and political pressures are combining and growing in influence to force stakeholders to reconsider existing business model assumptions;
- Impending risks to the continuity of energy supplies require stakeholders to recognise the commercial, economic and social sustainability impacts that will need to be addressed;
- Emerging internal pressures from across the T&L industry are driving participants to challenge existing business and technical operating assumptions in search of competitive advantage; and
- Global supply chain trends are placing new pressures on regulatory frameworks. A failure to adapt will see the T&L industry lose cost efficiency, value effectiveness and environmentally sustainability; all of which would have an adverse impact on the international competitiveness of the Australian economy.

Having completed a drafting of potential future Australian supply chain models the project identified a number of recommendations that would be required to support and enable the development of future supply chains, these were:

- Recognition that various supply chain modes operate in Australia and the impact of future strategies need to be explored in the context of these supply chains e.g. urban, regional, rural and remote as well as bulk and unitised freight;
- Nationally significant infrastructure support is required for T&L to be able to develop productive future supply chains and to support sustainable national outcomes;
- Appropriate and progressive urban planning is required to balance community, commercial, transport and freight needs, especially in our major cities;
- There is opportunity for the industry to collaborate and innovate new business solutions; adopting more collaborative ways of working. This will require regulatory reform to be aligned with industry reform across all Commonwealth, State and Local Government jurisdictions;
- New models of competition may deliver long term commercial viability beyond the T&L industry and may positively impact all other industry sectors e.g. retail, services and manufacturing;
- Innovative technologies will be required on a large scale e.g. Information and Communication Technologies (ICT) have the potential to build new economies of scope and scale;
- Reframing of supply chain design and thinking will accelerate solution development e.g. looking at novel technical solutions that may inspire further economic opportunity;
- To be positioned to reflect broader stakeholder needs a balanced scorecard of measurements is required taking into account energy usage, carbon impact, and freight volumes. Supporting effective implementation of the measurements will require new reporting tools and technologies; and

[7] *Supply Chains 2020,* Australian Logistics Council 2010

- Establishment of pilot demonstration projects in all key areas will be required to explore practical actions that can lead to changes in supply chain practices.



Specific External Global Forces – lessons from Europe – Future Supply Chain 2016[8]

The European Future Supply Chain 2016 project worked to define and explore the external forces that stakeholders believed would continue to influence and shape the future direction of European supply chains, these included:

- **Economic trends: new markets and a new economic balance**: Brazil, Russia, India, China, Africa and Korea will be major markets to consider in the coming years. Each of these markets will evolve at a faster rate than that experienced by economies in North America and Western Europe. There will also be changes in the balance between local and global sourcing;
- **Ecological trends: sustainability and the scarcity of natural resources:** Sustainability will be a prime consideration for future scenarios. The industry will need to convince consumers that it is operating in an ecologically responsible manner. The 2007 Bali Treaty and other political initiatives are challenging the industry to define breakthrough solutions by 2020. Preserving energy, raw materials and other resources including water will become crucial aspects in future supply chains, as costs will likely remain volatile and supplies will continue to dwindle;
- **Demographic trends: ageing and urbanisation;** the future will be dramatically changed by shifting demographics, such as the ageing of Western countries and the increase in urban population. For example, it is projected that 51.3% of the world's population will be urban by 2010;

[8] http://www.bestufs.net/

- **New technology trends: explosion of information**: Moore's Law will continue to scale the effects of new technologies in ways never before seen. For example, RFID technologies will play a big role in the future. In addition, the adoption and use of new technologies by consumers and shoppers (in home, in stores, on-the-go) will grow rapidly; and
- **Regulatory trends: new rules, new compliancy:** In addition to consumer pressure and companies' own growing emphasis on corporate social responsibility, governments will enact more regulations, particularly targeting areas such as sustainability. This will be undertaken by government and regulatory bodies at different levels: local, national and international. In addition, some current labour regulations may need to be repealed (for example, for more flexible working times) to allow infrastructures to be used to their full capacity with less stress on the environment.

These forces also apply to Australia and New South Wales.

Industry Trends Driving Change

A number of key industry trends were identified that will affect the future of supply chains, particularly in the areas of consumer behaviour, information flow and product flow. The key difference between external forces and industry trends is that the industry has a greater ability to shape the change.

Examples of industry trends included:

- **Consumer behaviour: driving the value chain;** Consumers and shoppers will continue to become more demanding and empowered. In fact, they will become active partners in the supply chain and will directly drive product development and replenishment. They will increasingly interact (including ordering and buying) via different channels (online, in-store, mobile) and will require other delivery mechanisms besides the stores, including neighbourhood distribution and home delivery;

- **Product flow: redesigning supply chains;** New industry challenges necessitate new supply chain solutions. Urban structures will require special attention. Current transportation and infrastructures are increasingly congested and hamper the required service levels. In addition, energy prices and government regulations (for example, relating to city distribution) will have a significant impact on transportation. The industry will need to rethink how products are distributed; and

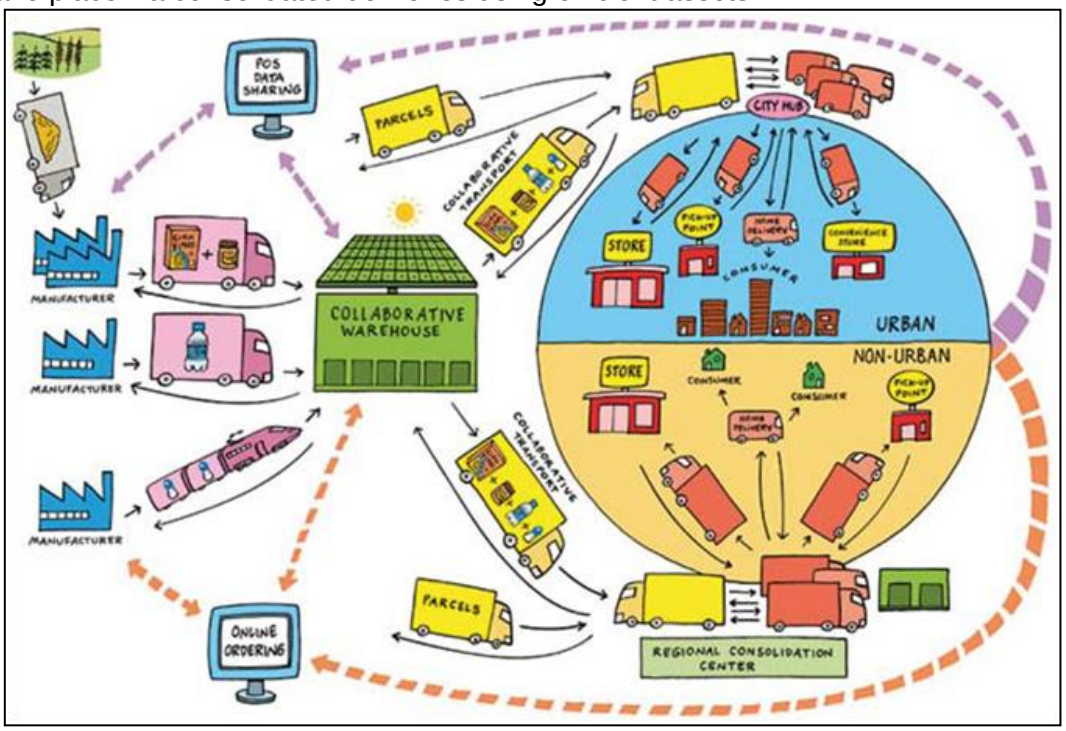
- **Information flow: managing complexity through transparency.** Supply chains in the future will be even more complex than they are today. Companies will need to determine how best to work together to effectively match supply with demand. Open information sharing will be an important foundation to help companies anticipate dynamic consumer demands. Collaboration should focus on areas of common interest, without affecting the competitive positioning of companies. This will also become a competitive advantage to organisation that successfully adapt.

The workings of the Future Supply Chain

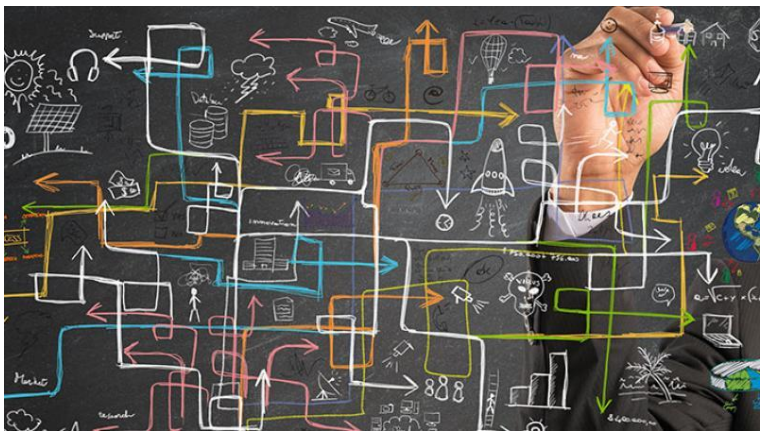
- The future model will be based on multi-partner information sharing among key stakeholders: consumers (the originators of the demand signal, either from home or from a store), suppliers, manufacturers, logistics service providers and retailers;

- After production the products will be shipped to collaborative warehouses in which multiple manufacturers store their products;

- Collaborative transport from the collaborative warehouse will deliver to city hubs and to regional consolidation centres;
- Warehouse locations on the edge of cities will be reshaped to function as hubs where cross-docking will take place for final distribution;
- Non-urban areas will have regional consolidation centres in which products will be cross-docked for final distribution; and
- Final distribution to stores, pick-up points and homes in urban and non-urban areas will take place via consolidated deliveries using efficient assets.



This is complex because the issues are complex – there is no simple path to improving freight and logistics productivity



Chapter Three: Collaborative Infrastructure – the Hunter Valley Coal Chain Coordination Model[9]

Creating successful national freight and logistics infrastructure is exceedingly complex and often problematic:

- How do we know when we are getting value for money e.g. does it actually enhance national productivity?
- What are the alternative forms that might deliver better results e.g. road versus rail?
- Just how efficient is the specific infrastructure project over its life e.g. operational and volume efficiencies?

These and other questions demand that we gain a better appreciation of any proposals for building national infrastructure.

To make matters even more complicated, there is also an often understated or sometimes unspoken need to view national infrastructure in the wider economic, environmental and social contexts of the economy and the society in which it operates. Major infrastructure is more than design, funding, systems and tools. It has a human dimension, multiple business and organisation relationships, regional and urban planning, community impacts, environmental issues, political possibilities and more.

The development and operation of major infrastructure projects have seen some extremely successful outcomes, and less-than-optimal results. Some projects have experienced significant construction delays, cost blow outs and performance failure during the operational phase.

Major infrastructure projects are usually physically large, absorb large amounts of capital in one geographic location, and hopefully add significant value to the national economy and quality of life of the population. The movement of freight and goods around Australia is a key dimension to infrastructure development. Such projects include: major road extensions; heavy rail expansion; new and expanded export and general shipping ports, and; new and expanded airports.

Passenger transport is a similar but different order of things in terms of infrastructure projects — the two cross over in many places e.g. major roads and shared rail, air and maritime facilities. However, as a large and diverse island nation our maritime, aviation and land transport freight and logistics infrastructure is vital to our future economic and social success.

[9] https://www.hvccc.com.au/Documents/20130515%20HVCCC%20Brochure.pdf

This Submission briefly examines principles drawn from a study of successful projects, primarily the Hunter Valley Coal Chain Coordination Company (HVCC) which has seen spectacular improvements in the volume and efficiency of coal exports from the Port of Newcastle in New South Wales.

The HVCCC is a successful case study of voluntary collaboration that arose in a bulk commodity supply chain which evolved over a period of eight years from a simple joint train path planning function, to agreement on 'third party' coordination of supply chain movements, to which all parties to the collaboration are bound:

Approximately 35 coal mines owned by 11 coal producers	**Coal haulage distances of up to 380 kilometres**	**More than 31 points for loading coal onto trains**	**Four Rail Haulage Providers delivering to three Coal Terminals**	**The movement and loading of more than 1400 coal vessels/year from the Coal terminals through the Port of Newcastle**

The results are spectacular and directly attributed to the creation of the HVCCC. From 80 million tons per annum (TPA) exports, the coal chain topped 100 million TPA in 2013 and is on target to maintain 160 million TPA by 2020 with minimum additional capital spend. It is the introduction of collaborative principles that has made the difference, driven by the people who work in the coal chain.

HVCCC operates as a company limited by guarantee and its purpose and role is to plan and coordinate the daily operations and long term capacity alignment of the Hunter Valley Coal Chain. Its Board meets twice yearly and represents: Hunter Valley coal producers; the Australian Rail Track Corporation (which is responsible for the Hunter Valley track maintenance under the terms of a sixty year lease let by the NSW government); port service providers (Port Waratah Coal Services and Newcastle Coal Infrastructure Group) rail operator service providers — Pacific National and QR, Port of Newcastle and; Port Authority of New South Wales.

The authority of the HVCCC derives from the decision of the coal supply chain operators in the Hunter Valley to cede planning programming and scheduling authority to a 'third party' (the Coordinator) in order to ensure confidence in supply chain capacity for both short and long term planning of supply. The information upon which planning and programming take place is provided by the participants themselves based on contractual arrangements between themselves and their various customers.

Daily, weekly and monthly movements of coal are scheduled and programmed by the company and models of future capacity requirements and needs are developed and are able to be actioned by the participants. The confidence in the information on which the modelling done by the HVCCC is based has facilitated increased capital expenditure, increased supply chain capacity and provided performance feedback to the whole of the land side supply chain.

The argument is made here for a much greater degree of collaboration and inclusion in design, building and operation of major infrastructure projects.

Managing Complexity

Traditional approaches to freight and logistics infrastructure development and management often focus on:

- The importance and priority of the build in the national interest,
- The physical and technical dimensions of the operation (systems and tools),
- Capital costs (source and application of funds), and

- Return from investment of the 'build' and its subsequent operations.

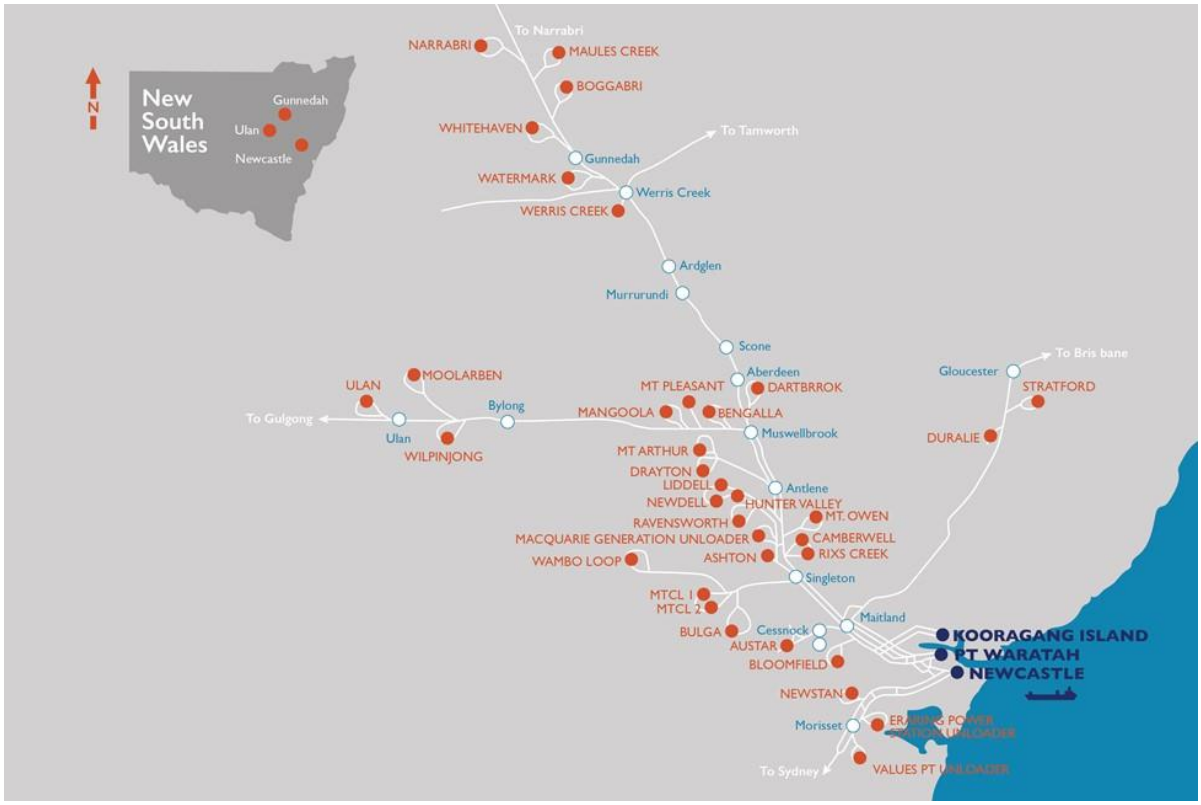
This particular focus derives from the preponderance of interest in matters such as:

- Sources and costs of capital,
- Alternative uses of both capital and land requirements, and
- The costs and benefits of infrastructure development in the wider society and economy.

Most critical, the focus tends to be on optimisation of each separate stakeholder's interests — commercial and technical — and not on the total infrastructure build and operation. This is necessarily a limited view of the project, based on narrow financial and investment policy considerations.

An alternative approach argues that arrangements for representing and combining the joint interests of the freight transport industry, or for collaborating along supply chains, can be a key means of facilitating more efficient and effective modes of operation. While some such arrangements already exist in Australia, policy makers are now looking more carefully as to whether more should be facilitated or encouraged, subject of course to the provisions of the Trade Practice Act. Examples include grain, ports, intermodal transfer points, and most notably bulk commodities such as coal.

More generally, an obvious starting point for considering collaborative arrangements is that we rely on people as managers, owners, operators, residents, workers and citizens to work in and on a project, business or other joint activity. Entities or companies, jurisdictions or inanimate objects don't collaborate — people do. These organisations and entities are put into the service of a collaborative project or infrastructure by people or their agents acting in a specific role, in pursuit of some self-interest or defined commercial and political goals. It is critical to always keep this in mind.



Chapter Four - Future Ports 2050 – the Port of Newcastle Dilemma – a classic case study

Almost all the world's trade moves via the oceans on ships. Ports handle around 90% of the global trade. All the worlds vital raw materials like energy, metals and minerals travel through Ports as well as everyday consumer goods. In 2017 10.7 billion tonnes of trade moved through Ports globally.

As an island nation, Australia is dependent on shipping for both international trade and domestic freight movements (coastal trading). As such, our major ports and related infrastructure provide the key locations for supply chain activities servicing both bulk and container facilities.

There are 70 regional and national ports across Australia.

Australia conducts 98% of its trade through Ports. Every day Australian Ports move $1.2 billion of trade. Ports are central to Australia's supply chain. Proper connections between Ports and the rest of the country reduce the cost of living for Australians and increase the competitiveness of our exports. Most consumer goods arrive in containers including electronics, furniture, food and medicine.

Australian Ports move 8 million shipping containers every year and the number is increasing.

The private sector is the major player in port operations and investment, with the regulatory framework set by government. State and territory governments have responsibility for land use planning and controls, including for ports, their adjacent land areas and connecting transport systems. Local government also makes decisions that affect ports, including on matters such as planning requirements and local road access. State or territory governments have historically owned port authorities; however there is a trend toward privatising these assets on a long-term lease basis.

Automation and Ports

Although ports have adopted automation more slowly than comparable sectors, notably mining and warehousing, the pace is now starting to accelerate. Automated ports are safer than conventional ones. The number of human-related disruptions falls, and performance becomes more predictable.

Yet the up-front capital expenditures are quite high, and the operational challenges—a shortage of capabilities, poor data, siloed operations, and difficulty handling exceptions—are very significant. A 2018 McKinsey survey indicates that while operating expenses decline, so does productivity, and the returns on invested capital are currently lower than the industry norm.

Nonetheless, successful automated ports show that careful planning and management can surmount these difficulties: operating expenses could fall by 25 to 55 percent and productivity could rise by 10 to 35 percent. And in the long run, these investments will lead the way toward a new paradigm—call it Port 4.0—the shift from asset operator to service orchestrator, part of a larger transition to Industry 4.0, or digitally enabled efficiency gains throughout the world economy. Port 4.0 will generate more value for port operators, suppliers, and customers alike, but that value isn't proportionally distributed across ports and their ecosystems. Innovative business models and forms of collaboration will be required to realize this vision.

Big ships trend and Australia's ability to respond

Port capability

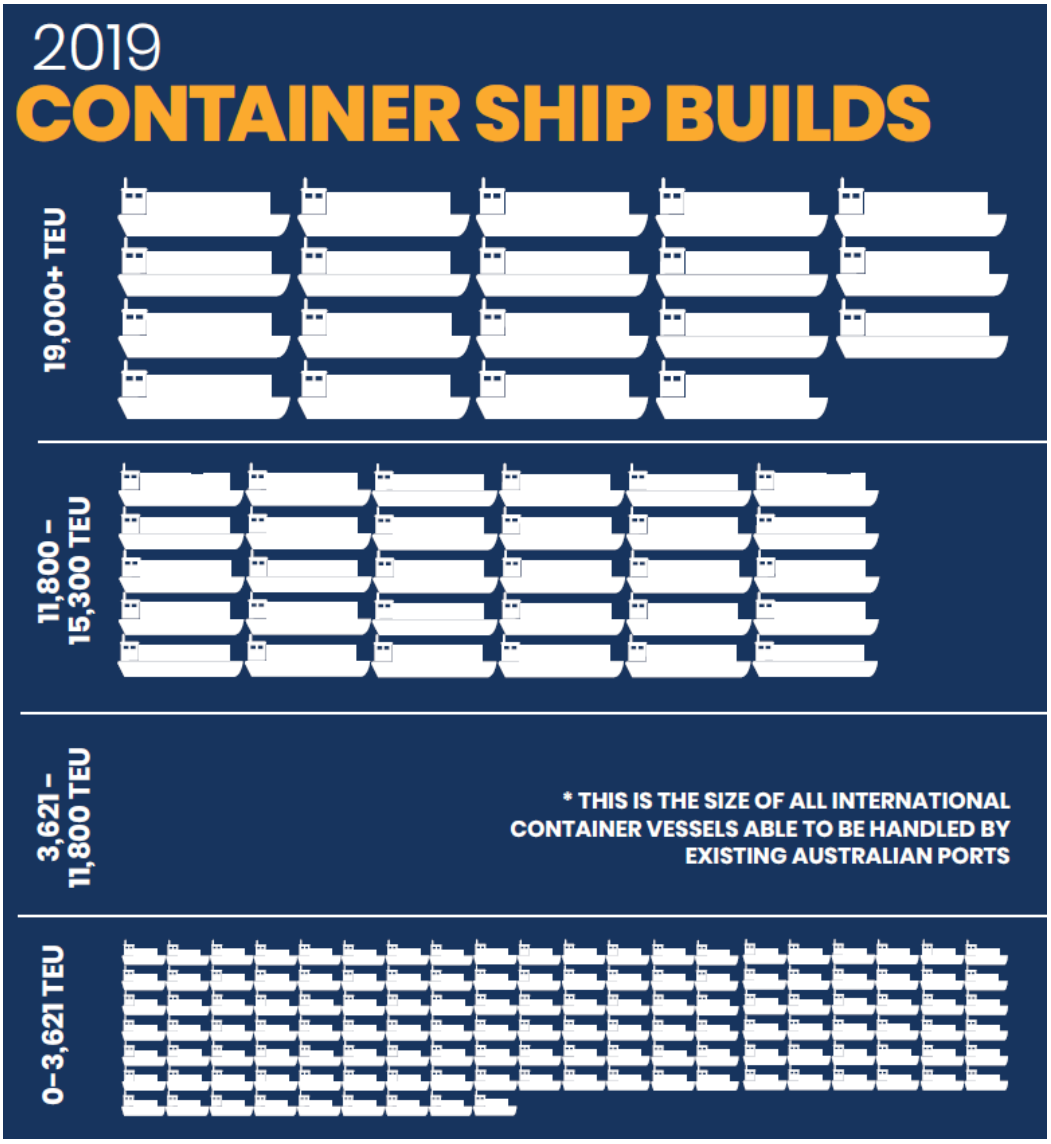


Image source: Port of Newcastle
Data source: www.bimco.org/news/market_analysis/2019/20190219_2019_01_container_shipping

Since its invention in the 1960s, shipping containers have been used to provide simplicity and flexibility in freight transport. Shipping lines are extracting more efficiency from the supply chain by moving to bigger ships. Data from Lloyd's List Intelligence, which echoes other available research, shows that the workhorse of global shipping is now carrying more than 11,000 standard shipping containers (or twenty-foot equivalent units, TEU).

While Australian ports cannot handle a ship that size, these vessels account for more than three-quarters of new global capacity. They are being built at four times the rate of those considered by Australian ports to be "large". The largest category – the Ultra Large Container Vessel (ULCVs) – represents capacity for between 14,000 TEU and as high as 23,000 TEU. This is more than four times the size of the Australian average. These ULCVs already make up more than half of all new build capacity.

This new capacity will bypass Australia. Australian ports are not able to accommodate ships of this size. There are many barriers – some insurmountable, others requiring radical planning and expensive public investment. Container ships are growing in size, but so too is the overall volume of containerised freight. Even our agricultural products are increasingly moving by containers because of the superior quality controls and end-to-end management that enables small parcels of food products to reach far-flung parts of the world without needing expensive handling equipment. Rail will be critical in managing that supply chain.

Australia's readiness for ULCVs

Global containerised shipping is shifting towards larger vessels to obtain cost efficiencies. A fundamental principle of global shipping is that the cost of transporting a container falls as vessel size increases. This reflects the considerable economies of scale associated with shipping. Australia is unable to benefit from these potential cost reductions and efficiency improvements due to the inadequacies of its container ports and associated landside transport limitations.

Australia is currently capable of accommodating container ships size up to a maximum of approximately 8,000 TEU to 10,000 TEU at both the Port of Melbourne and Port Botany. Supply chain efficiency has a disproportionately large impact on competitiveness and welfare in Australia compared with other countries.

The ongoing growth in containerised trade is placing pressures for expansion at Australia's major ports. Current total port throughput at Australia's east coast container ports equals 7 million TEU. Given current growth, this means that port capacity expansions are needed as soon as 2032. In principle, container port expansions should be preferred in locations where the upfront costs plus

the costs along the entire supply chain over time are minimised. This requires consideration to be given to:

- any channel related costs to support containerised trade;
- upfront wharf-side investments that may be needed;
- landside investments to support an increase in container movements; and
- the implications for adjacent road and rail networks, and particularly road congestion.

Port of Newcastle

The Port of Newcastle is a major Australian trade gateway handling 4,600 ship movements and 166 million tonnes of cargo each year. With its annual trade worth more than $29 billion to the New South Wales economy, the Port enables businesses across the state to successfully compete in international markets.

Port of Newcastle completed a study in 2017 that concluded that, by facilitating the export of Hunter Valley/NSW coal, the port provides the following benefits to the community:

- $2.9 billion revenue;
- 8,243 FTE jobs;
- $812m household income; and
- $1.45 billion contribution to Gross Regional Product (GRP)

With a deepwater shipping channel operating at 50% of its capacity, significant port land available and enviable access to national rail and road infrastructure, Port of Newcastle is positioned to further underpin the prosperity of the Hunter, NSW and Australia. As custodians of the region's critical asset, Port of Newcastle is diversifying its trade as it strives to create a safe, sustainable and environmentally and socially responsible Port that realises its potential. The Port of Newcastle has land availability, channel capacity, and leading rail and road connectivity that will enable it to facilitate the development of new energy import and export opportunities. The Port is supportive of all trade opportunities, in particular those that have the potential to create employment for the wider

community and enable the region's diversification from coal. This should be self-evident to Government.

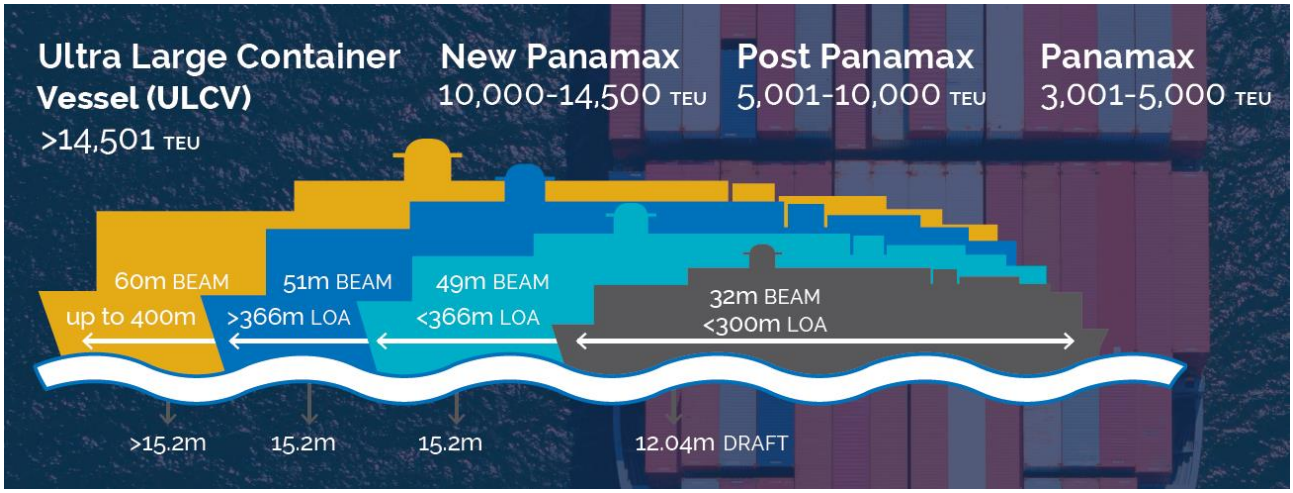
Container opportunity in Newcastle

As global shipping evolves towards the use of Post Panamax size ships, in the coming years, Port of Newcastle will be home to the only deep-water port in Australia able to handle these ultra large vessels, regardless of whether they are carrying bulk commodities, such as coal, or containers. The global trends are undeniable; Asia's demand for our products will continue to grow, ships are getting bigger and there is no other port on the east coast capable of handling them. As part of their diversification plans the Port of Newcastle is planning a privately funded, fully automated container terminal at an estimated cost of $1.8 billion. Subject to NSW Government policy change, the terminal could begin operating in 2023-24.

The Bureau of Infrastructure, Transport and Regional Economics (BITRE) forecasts that container trade in Australia will increase by between 172 and 205 per cent across each of the five major Australian container ports to 2032-33. The highest growth across the east coast of Australia is expected to be in Brisbane, followed by Adelaide, then Melbourne and Sydney. Australian ports are only currently able to handle container ships up to around 8,000 TEU to 10,000 TEU, fully loaded. Some East Coast ports handled two 9400 TEU ships during 2019, industry analysis suggests that these vessels were restricted by a range of factors including draft, width, height and air draft, in some cases restricted to daylight hours and required favourable wind conditions. These ships were used to test the ability of Australian ports and stevedores to handle vessels of this size.

Existing container ports on the east coast are forecast to reach capacity between 2032 and 2052, without expansion. While existing container ports have plans in place for expansion to meet expected growth in containerised trade, it is not certain that existing expansion plans are desirable as increased throughput at existing ports would add to congestion in highly urbanised areas.

Multi-purpose Deepwater Terminal (Newcastle Container Terminal) information



Source: Port of Newcastle

The Port of Newcastle has developed the concept for a staged container terminal development at its Mayfield site – the largest and best-connected vacant port land site on the eastern seaboard of Australia. The full development costs of the proposed $1.8 billion container terminal will be met by private equity who will carry the financial risk. Together with direct water frontage and potential for deep water berthing, the Multi-purpose Deepwater Terminal represents a once in a generation opportunity within the Port of Newcastle. The Mayfield site has the capacity for a 2 million TEU per

annum multi, coupled with a shipping channel that can already accommodate vessels up to 10,000 TEU, with the capability of even larger vessels with some ancillary channel modifications. Port of Newcastle's plans are for a fully-automated and electrified multipurpose deepwater terminal capable of efficiently handling Ultra Large Container Vessels (ULCVs). These vessels carry more than 14,500 TEU. The port also expects to cater for New Panamax vessels, which typically carry between 10,000 and 14,500 TEU.

Newcastle is an efficient option for importers and exporters in northern, western, north western and far western NSW. A Newcastle Container Terminal would deliver substantial cost savings for NSW exporters and importers, save the NSW government billions in infrastructure spending and help reduce Sydney road and rail congestion – subject to a change in NSW Government policy. This should be self-evident.

Benefits of Multi-purpose Deepwater Terminal

Modelling undertaken indicates that there is up to $400 million of government funded infrastructure costs could be avoided and also see a reduction in truck movements through Sydney and Brisbane key freight routes. The Port of Newcastle's existing heavy rail network is operating at around 60 per cent and runs direct to berths. PON is targeting a 50/50 split between rail and road working with the Hunter Valley Coal Chain Coordinator which runs the most efficient rail freight network in the world. PON's catchment already generates 500,000 full TEUs each year – the number that could avoid travelling through congested Sydney. Currently 16.5% of NSW container imports end up in the Hunter and Norther NSW. 28.8% originate in the Hunter and Northern NSW. A container port at Newcastle would avoid 750,000 truck trips in Sydney by 2050 – subject to a change in NSW Government policy. This seems to be self-evident.

(Not the Port of Newcastle)

The Final Chapter – Possible Conclusion – Innovative Government and Collaborative Infrastructure – the keys to long term productivity gains

Building transport infrastructure is exciting. Local and international financial institutions, governments at every level, architects, civil engineers, builders, systems experts, project managers and service operators – everyone loves transport infrastructure. Such projects are usually physically BIG, absorb large amounts of capital in one place rather than many small funding lumps scattered around the countryside, they often look impressive and frequently add significant value to the national, State and local economies and quality of life of the population all in one project. Major road extensions, heavy rail expansion, new and expanded export and general shipping ports, new and expanded airports – you can see them, touch them and take photos of them – transport infrastructure ticks all the best political and economic boxes.

Transport infrastructure is also exceedingly complex, and often problematic. How do we know when we are getting value for money e.g. does it actually enhance national, State and local productivity? What are the alternative forms that might deliver better results e.g. road versus rail? Just how efficient is the specific infrastructure project over its life e.g. operational and volume efficiencies? These and other challenging questions demand that we gain a better appreciation of any proposals for building transport infrastructure.

There is also an often understated or sometimes unspoken need to view transport infrastructure in the wider economic, environmental and social context of the economy and the society in which it operates. Major transport infrastructure is more than design, funding, systems and tools. It has a human dimension, multiple business and organisation relationships, community impacts, environmental issues, political possibilities and more. Thus to fully appreciate the totality of transport infrastructure we need to examine a multiplicity of very human relationships, organisation forms, urban and regional planning issues, and networks of vested interests; and the full range of social interaction from individual needs to community aspirations. Only then can we truly say that we understand major transport infrastructure, and only then can we make the best use of it to improve the productivity of the nation and the State.

Collaborative Transport Infrastructure

There are set of basic policy principles for organisational and community cooperation that can enhance the operational productivity of freight transport and logistics infrastructure in Australia. These principles are underpinned by a logic model that assumes more collaborative forms of organisation, governance and community engagement will act as drivers towards enhanced productivity of the infrastructure currently in place, and future infrastructure projects as they come on line.

TALC refers to this logic model as “collaborative transport infrastructure”.

The key principles are:

Principle One: Collaboration as a basic business practice and economic dictum must be reflected in all present and future freight transport and logistics infrastructure spend in Australia in order to enhance the productivity of our national assets

Principle Two: Collaboration must have a clear, specified purpose related to improving freight transport and logistics which is ‘mode neutral’ and which includes public interest considerations of safety, sustainability and efficiency.

Principle Three: Collaborative arrangements must be able to raise substantial capital on their own account in order to realise major projects. They must have their own internal benefit-cost logic, rather than relying on support for its own sake.

Principle Four: There must be high levels of technical expertise and advice available during the period of the collaborative arrangement.

Principle Five: Project selection and evaluation for the purpose of collaboration must be technically competent, open and publicly accountable.

Principle Six: Commonwealth, State and/or Local Government involvement is essential to assure high standards of accountability and inclusion of public interest considerations where matters of the wider community are involved.

Principle Seven: Key groups with freight interests across all modes must be included in the collaborative arrangements where they interface, intersect or coordinate with each other.

Principle Eight: Collaboration must be able to draw on freight customer expectations and requirements (the owners of the goods) as part of the policy deliberation process.

Principle Nine: Innovative forms of collaboration should be explored where the project has created new forms of physical and organisational infrastructure. There is no one size fits all approach to successful collaboration.

The challenge

Traditional approaches to transport infrastructure development and management focus on the physical and technical dimensions of the operation (systems and tools), capital costs (source and application of funds) and returns from investment of the ‘build’ and its subsequent operations. This particular focus derives from the preponderance of interest in matters such as sources and costs of capital, alternative uses of both capital and land requirements, and the costs and benefits of infrastructure development.

Such approaches also risk ignoring constraints which arise from community views. These can be strong in relation to industrial development activities and freight transport that goes along with this. Importantly, the modern information technology which can improve freight technical efficiency also enables views from the community to be more rapidly developed and more firmly expressed.

While many 'strategies' emphasise objectives and goals as part of 'problem identification', to address problems on the ground it also is necessary to deal with constraints. A failure to do so may result in delays or in some cases an inability to reap the full productivity potential of infrastructure used for industrial purposes. Strategies can also presume or create a further constraint – in effect that there is a 'zero-sum' game in which participants can only compete, and can only make gains at the expense of others.

This Submission offers a new way of thinking in relation to lessening constraints through cooperative rather than competitive action – collaboration. It is similar to what is elsewhere described as 'its social license to operate'. The concept of a 'social license to operate' underpins the principles for engagement with communities and stakeholders which have been developed by the Ministerial Council of Petroleum Resources (MCMPR).

This Submission supports an approach to infrastructure development primarily associated with the freight transport and logistics sector and draws on notions of 'collaboration' between the interests directly associated with the sector and the wider community in which it must operate. It argues for a closer examination of institutional arrangements and approaches to aligning the fragmented interests of the freight transport and logistics industry as means of developing a more responsive, coordinated and cooperative form of arrangements for dealing with the problems associated with a growing transport and logistics sector whose interactions with the wider community require an approach which maximizes safety, sustainability and industry innovation.

The MCMPR approach to defining the community or communities with which the sector must engage has two dimensions; the 'local or host community' which is applied to those people living in the immediate vicinity of an operation (whether indigenous or non-indigenous) who may have cultural affinity with, a claim to or direct ownership of an area affected by an operation, and the 'affected community' which refers to members of a community affected by a company's activities. The effects identified by MCMPR include cultural, spiritual, economic, environmental and political effects.

Under current arrangements Australian jurisdictions are implicitly expected to deal with the effects of community views about freight. This has the potential to reduce the ability of the freight industry to learning about, and contribute the easing of constraints to productivity. This matter has received attention in other countries including the United States.

Arrangements for representing the interests of the freight transport industry, or for collaborating along supply chains, can be a key means of facilitating the learnings and approaches. While some such arrangements already exist, policy makers are now looking more carefully as to whether more should be facilitated or encouraged, subject of course to the provisions of the Trade Practice Act. Examples include grain, ports, intermodal transfer points, and most notably coal.

More generally, an obvious starting point for considering collaborative arrangements is that it is people as managers, owners, operators, residents, workers and citizens who determine to collaborate on a project, business or other joint activity. Entities or companies, jurisdictions or inanimate objects don't collaborate, rather they are put into the service of a collaborative project or infrastructure by people or their agents acting in a specific role, in pursuit of some self-interest or defined commercial and political goal.

Collaboration between commercial entities and the wider community in which they operate or between jurisdictions or a combination of all those dimensions, is therefore understood in this context as the activity or process that enables relationships to be built around issues and interests and includes the establishment of satisfactory means of resolving conflicts and differences that inevitably arise when otherwise competitive or conflicting organisations are engaged in a joint enterprise.

It is argued in this Submission that collaborative arrangements may be brought about as a result of deliberate public policy that could either encourage, or in some circumstances, mandate, and their formation. The process whereby public policy determines an approach requiring more collaborative arrangements between the freight transport and logistics industry and the wider community in which it operates, as well as requiring more cooperative arrangements within the industry to improve productivity, may be described as 'collaborative transport infrastructure'.

Redux: The scope of this Submission – Complexity and Collaboration

'Freight transport and logistics' refers to a range of activities performed by entities (largely profit making) having both private and public stakeholders. The term is used to describe the movement and handling of goods and materials, from inputs for production to point of sale for consumers and subsequent waste disposal, and includes associated reverse flows such as product and equipment returns and recycling. The activities occur in a variety of industries as well as existing as a branch of economic activity (sector) in its own right.

The term 'infrastructure' for the purposes of this Report refers to the physical infrastructure enabling freight transport and logistics activities and is understood to consist of capital goods including but not limited to, roads, rail, ports, bridges, warehouses and terminals.

'Infrastructure' may also refer to platforms, networks or arrangements which facilitate an endeavour. In this context, 'infrastructure' refers to rules, codes, institutions or arrangements governing interactions for various social political or commercial purposes and the required interactions may be virtual or may occur in real time and space.

The term 'collaboration' may be defined as a purposeful relationship in which all parties strategically choose to cooperate in order to accomplish a shared outcome.

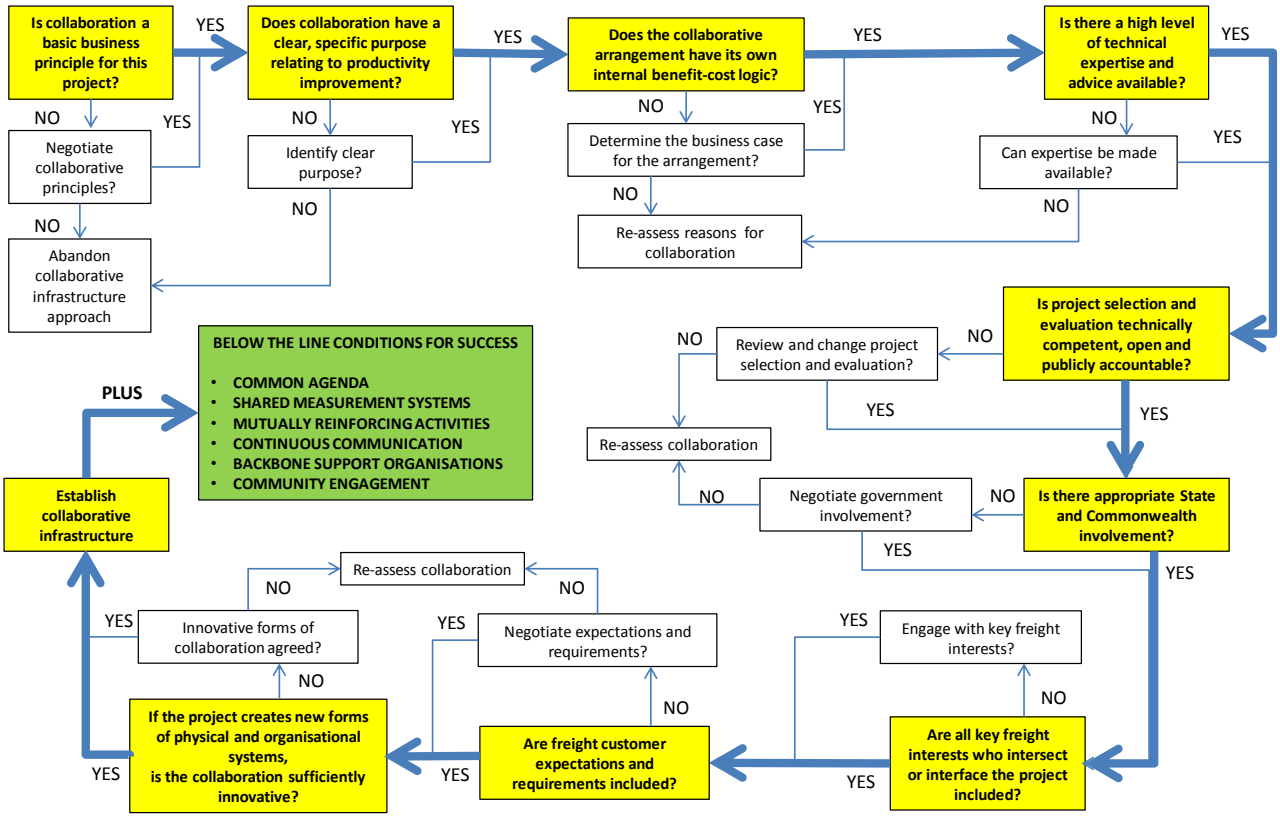
For the purposes of the arrangements examined in this Submission, the term 'collaborative transport infrastructure' may also be appropriate as a means of conveying a description of the ways and means various bodies have employed to bring some focus and tractability to the issues and problems of improving the overall performance of the freight transport industry. It will be used to refer to the platforms, arrangements, institutions and/or networks that facilitate the capacity of freight transport actors to cooperate with each other in order to meet the expectations and aspirations of the wider community in which they operate.

It is understood in the context of this Submission, that collaboration between commercial entities and/or between those entities and between them and the wider community in which they operate will revolve around issues and interests rather than finding some notion of 'common ground' as some kind of virtuous outcome in and of itself. It requires a purposeful and productive outcome in terms of the infrastructure itself – why it was built, and why it is important to the economy and the community at large. It may also need to involve a means of satisfactorily resolving conflicts and differences that inevitably arise. The approach adopted here assumes a plurality of interests, conflicts about ends, (at least at the beginning) and assumes that collaboration works best to improve productivity when there is a sense of mutual benefit among the parties, efforts are made to reflect public needs and concerns, and there is a clear means of resolving differences.

It is argued in this Submission that the realisation of a policy which incorporates this approach to dealing with conflicts of interests and claims, requires institutional arrangements that establish the 'ground rules' for engagement, but that permits sufficient flexibility of operation to permit collaborative engagement in the range of dimensions dictated by the geographic, spatial and jurisdictional dimensions in which freight transport operates.

The approach to the design of an appropriate institutional framework for effective collaboration between communities and industry that meets cooperative norms of inclusion and empowerment has been adapted from the work done by others on strategies for planning in fragmented communities[10].

COLLABORATIVE FREIGHT INFRASTRUCTURE – FLOW CHART



The basic elements are as follows:

- Everyone operating in the particular dimension/space within which the infrastructure is defined, needs a chartered right to be involved, to influence, to be heard, and to challenge the exercise of power
- Elected and appointed representatives (politicians and managers) have a duty to attend to the concerns of their communities (business, social and personal) and to pay attention to these communities and the environment beyond their immediate remit in space and time
- Access to resources including space, time, information, data, skill, relational links and social capacities need to be guaranteed. Access to capital investment for major infrastructure projects to redress those adversely affected by policy initiatives adopted by majorities must be available, as well as access to capital to improve or enhance the productive capacity of the infrastructure spend

[10] Hull, D; The Use of Collaborative Organisation to Develop More Productive Freight Transport and Logistics Infrastructure Solutions in Australia. http://ssrn.com/abstract=2001078 (2012)

- A set of policy principles or criteria for establishing the basis of the engagement are important because they encourage critical thinking and stress quality
- The institutional design has to specify a clear distribution of roles and responsibilities between the commercial parties, the wider society, the local/regional community, technical experts, and different levels of governance, with a strong emphasis on subsidiarity
- Machinery for dispute resolution needs to be established. This includes the conventional system of courts as well as informal consensus, mediation, arbitration, informal hearings and other types of alternative dispute resolution.

Implications for policy

In the last decade the focus of both analysis and systems in freight transport and logistics has shifted towards concepts and metaphors of "flows" and "processes" in which digital information, scheduling, management and logistics as a profession are paramount. The understandings of freight as less a collection of capital goods and buildings and more as a 'system' or 'process' has also lead to the growth of metaphors to describe the sector and its activities; i.e. 'supply chain', 'freight flows', 'pipelines', 'nodes', and 'end-to-end systems'.

While many contemporary understandings and descriptions of the freight transport and logistics function lean heavily on metaphors related to the flows of cyberspace and the digital technologies that enable real time coordination of activities and information across unbounded space, the reality is that both the transport infrastructure and the activities it enables, takes place in bounded spaces (roads, rail lines, localities, regions) shared with a great number of people who, although not directly involved in the activities, are impacted greatly by them, and who in turn impact on the capacity for freight activities to realise efficiency and effectiveness (including environmental and financial sustainability) , to varying degrees.

Contemporary metaphors of logistics as 'flows' has been adopted by commentators such as Hesse[11], who argues in detail that the logic of freight transport and logistics activities is driving the ex-urban development characteristic of contemporary (particularly United States) urban conurbations. He argues that there is a direct relationship between the 'production' of contemporary urban space and global supply chains and proposes that freight logistics has developed as an independent 'actor' whose responses to shifting patterns in global supply chains is driving changes in land use patterns. He proposes that these developments are removing democratic control and accountability over land use issues and urban planning increasingly out of reach of public authorities, and immune to local community preferences and aspirations. Hesse develops the notion of the 'polycentric region' to describe the networks and patterns of settlement and development which is driven by the needs and requirements of the freight logistics industry.

The thesis was developed based on an examination of two case studies-The first case study examined an attempt to 'plan' and 'channel' freight logistics as an 'industry driver' for the development of the Berlin-Brandenburg Region and the second case study examined the effects on local communities and land values of an ambitious project to remove much freight activity way from valuable port space around the San Francisco Bay Area in favour of the development of 'inland ports'.

The central argument developed is that because freight logistics configure and reconfigure traffic 'flows' in response to the requirements for least cost and most efficient solution, they are unstable, contingent and highly responsive to impediments such as traffic jams, poorly designed modal interface and general problems in land use rules and regulations that impede its activity. The direct link between contemporary production processes located globally, and the imperatives of the

[11] Hesse, M op.cit.

distribution networks they create, means that these activities are highly resistant to traditional notions of spatial or time based restrictions.

The conclusions he draws from the two case studies is that this' resistance' requires new approaches to ensure a more democratic approach to aligning the requirements of freight activities with the needs and aspirations of communities for amenity, skilled jobs and human scale development.

Hesse's central argument concerning the intractable nature of balancing contemporary freight requirements with traditional notions of governance around land use patterns is illustrated to a degree by the call to integrate freight logistics activity in regional planning decisions by Regional Development Australia (RDA) (Sydney).

In contrast to Hesse, RDA (Sydney) treats freight logistics activity as a 'derived demand'. RDA's response to the Metropolitan Strategy notes that freight transport infrastructure requirements need to be provided for as part of any planning strategy for Sydney. The RDA Submission recommended that freight strategy must *"involve considerable consultation with both the freight and transport industry but also the community at large…Freight corridors need to be identified and procured as part of the strategy"*

However the difficulties in identifying a mechanism or framework for that process is identified in by RDA which notes the numerous public and private agencies responsible for infrastructure investment management, and further identifies escalating diseconomies due to lack of investment and resources, poor alignment between city planning and infrastructure priorities, poor coordination between three tiers of government, and lack of integration between different infrastructure networks and modes . To a large extent the problems and difficulties of dealing with freight logistics as a planned component of a regional development strategy supports Hesse's thesis concerning the 'resistance' of commercial freight activities to traditional notions of regional planning and governance.

The argument for building collaborative infrastructure

The discussion above of both Hesse's thesis and the comments made by RDA (Sydney) about the need for long term planning for freight transport requirements are provided as a means of illustrating rather pessimistic views concerning the capacity of either public authorities or private interests to better align the commercial realities of freight transport with the wider community in which it operates.

The case for 'collaborative transport infrastructure', rests on a clear need to include people – their roles in business and as citizens, personal and professional interests, preferences, aspirations and needs, into considerations of freight transport and logistics activities; these activities include the infrastructure required for its operation, the space its activities and platforms, occupy, and the local, regional and national requirements of the communities it affects.

Consideration of freight transport and logistics, (both the capital goods and the activities these facilitate) needs to include people not simply as individuals but as expressions of various group identities which overlap. People interact with freight transport activities and its infrastructure in the following ways, usually in more than one dimension:

- As managers and owners of the infrastructure
- As the owners of the freight being carried via the infrastructure
- As policy makers at the local, State and national level
- As elected and appointed representatives of sectional and community interests
- As residents in the local area
- As users sharing local space with freight transport i.e. road, rail, air and sea
- As members of a local or regional community in which a land terminal or sea port operates

- As employees with an interest in safe and skilled and well paid employment, and
- As citizens with an interest in a safe, sustainable and innovative freight transport and logistics sector.

It follows that there are a range of social, political and economic dimensions that need to be included in any complete consideration of the physical and capital infrastructure that underpins freight activities. It is very difficult to achieve any kind of progress or change in a liberal democratic society, in the absence of shared understandings and agreements on processes for dealing with and resolving, conflicting interests and aspirations. The alternative is to embark on a range of 'selling strategies' to impose an 'expert' solution on government, communities and quite often the owners and operators of the infrastructure as well.

The technical, operational and commercial activities undertaken in or around the freight infrastructure frequently involve complex interactions between freight entities themselves, where matters arise that require a framework for resolving differences in the interests of the community and the industry participants themselves. This can involve matters to do with funding, movement of goods, provision of services, competing interests in the marketplace, relations with shareholders and more. Substantial and ongoing disputes can arise when competition is unleashed in new areas, especially where global export markets, and challenges between commercial interests become warlike and intractable.

The interactions between and amongst the freight industry and the wider community are also various. However the issues that create most difficulties for the owners and managers of the infrastructure, elected and appointed representatives, the wider community and the industry in general are adverse interactions that include, but aren't limited to, matters such as car commuters sharing road space with large freight trucks, disturbances in amenity and environment occasioned by the activities of sea ports, airports and terminals, and increases in noise levels occasioned by the operations of all these facilities.

For the freight industry adverse impacts from the lack of a structured approach to community industry interaction includes, but is not limited to:

- restrictions on expansion of landside activities of major ports in urban environments where long standing communities resist further encroachments of freight operations
- 'last mile issues', where the most efficient and effective road transport options are limited by the resistance of local communities to large road transport vehicles operating a certain hours, or indeed, at any time; and
- limitations on the capacity of rail to realise its optimal efficiencies as a result of unresolved local amenity issues, or the requirement to share infrastructure with commuter rail which has precedence during particular hours of the day

The general safety, amenity, environmental and property value conflicts which arise from many activities integral to the freight transport and logistics function, are largely treated as 'external', 'after the fact' issues by the industry and its various 'actors'. The absence of either a theory or policy framework for ensuring that the industry properly engages with the broader community within which it must operate, means that innovation, productivity and the general effectiveness of the industry will remain hostage to external forces, largely outside its own control and oversight.

Overview of contemporary issues

The institutional representation of general freight transport and logistics industry interests is complex in the Australian context, and includes overlapping membership of various organisations, as well as an array of federal and state statutory authorities and departments. Industry coordination is performed largely by organisations with corporate memberships who perform the role of representing the interests of their members to governments, usually federal and state, and (less usually) local government.

Internal coordination issues arising in the sector, for example a common communications system that might allow truck/train intermodal coordination, are frequently left to the adjudication of various government agencies, rather than being resolved by an industry based authority that has the capacity to coordinate various proposals and come up with a solution that can be adopted as a 'code' by the relevant section/s of the industry.

To date there has been no discussion or proposal for 'managing' the interactions of the various dimensions of freight transport and logistics with the wider community who are affected by its operations, in a way that structures industry accountability directly to communities and their interests, even though freight infrastructure is an important aspect of overall federal government attempts to develop an open, transparent and economically sustainable approach to national infrastructure investment.

The capacity of the infrastructure required for freight transport and logistics operations to deliver returns required by investors (public or private) will increasingly rely on the ability of the 'owners' and/ or operators to engage productively with each other to optimize asset and service productivity, and to positively engage with the wider communities which may be affected by its operations, but whose cooperation is vital if the industry is to be able to operate safely, sustainably and efficiently.

All stakeholders benefit from an efficient and effective freight transport and logistics industry, but the effectiveness and efficiency of the industry must be shared with the community in more ways than simply reduced transport costs. For this to happen there needs to be a model for building coordination between the interests and aspirations of the freight transport and logistics industry and those of the broader community, including in particular, those communities directly affected by its operations, the public agencies who may provide funding for the business in the national interest, and the private investors who seek a reasonable rate of return on their funds.

TRANSPORT AND LOGISTICS CENTRE

The purpose of this Submission is to outline ways in which a working model of 'collaborative transport infrastructure' could be developed which can take account of at least three dimensions in which the industry operates:-national, regional and the specific spaces occupied/affected by particular parts/stretches/nodes that a freight logistics network comprises.

The approach incorporates assumptions as follows:

- Since the sector operates nationally, a national approach to codes and modes of behaviour may need to be developed, which is able to be flexible enough to deal with local and regional variations
- The impacts of freight transport and logistics operations are regional as well as local in scope, and often involve operational, coordination, commercial, social, political and environmental concerns which are not confined to a specific locality

An effective form of collaboration in the Australian context would therefore enable enhanced cooperation through national, regional and local (place specific) dimensions, and produce outcomes that:

- increase the efficiencies and effectiveness from collaboration within the operations of the project
- reflect aspirations for accountability and transparency in its operation as part of a nation building framework
- enhance regional amenity and development, and
- ensure the 'learnings' from collaborations in those dimensions are incorporated into a national collaborative dimension, or a NSW dimension at the very least

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