Technical Report

Contestable Freight
Trends and Implication for Governments

Working Paper 1

Ackchai Sirikijpanichkul
Research Associate

and

Luis Ferreira
Professor

School of Urban Development
Faculty of Built Environment and Engineering
Queensland University of Technology (QUT)

February 2006
1. Introduction

Freight transport adds no value but more cost to the freight it carries. They have direct influence on the cost of commodities and, as a result, the price of living. Therefore, all of the freight actors try very hard to maximise freight transport efficiency aiming at minimising overall transport and operation costs. Nevertheless, in the world of competition, what manufacturers try to achieve is not only cost but also time minimisation. Higher demand for movement of part-finished goods to reduce inventory costs leads to a higher number of time sensitive freight movements in the recent years.

Aside from air transport which is an expensive mode for carrying very time sensitive freight over a long distance e.g. international level, road is a less expensive and more popular choice for less time sensitive freight over short to medium distance e.g. local and regional levels. However, increasing truck traffic piles up undesirable burdens to road users and community, including air pollution, traffic congestion, pavement deterioration, traffic safety, and sustainability etc. Consequently, the authorities try to seek for contestable alternatives to road-only mode which include road-rail intermodal.

This report aims at providing a comprehensive review of the recent trends and policies of freight transport, particularly of time sensitive and contestable freight, in Australia and around the world.

1.1 Logistics Industries

Logistics industries can be classified into outsourced and in-house services. The former is sub-divided into four different areas including general freight, time sensitive freight, third party and fourth party logistics as illustrated in Figure 1.1.
Types of time sensitive freight services with their descriptions and examples are expressed in **Table 1.1**.

### Table 1.1 Time Sensitive Freight

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Range of Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Express</td>
<td>A time-definite delivery of freights (usually on the basis of overnight priority, same day, next day, and international services) which involves a process of pick-up, consolidation, deconsolidation, and delivery to final destination.</td>
<td>- Priority (track-and-trace system), - Parceline (retail business), - Fashion, - Just-in-time items, - Perishable products, - etc.</td>
</tr>
<tr>
<td>Courier</td>
<td>A door-to-door and fixed schedule delivery services mainly in inner city areas.</td>
<td>- Important documents, - Office support, - Technical services, - etc.</td>
</tr>
</tbody>
</table>

Third party logistics provides the outsourced warehousing and distribution services to support the supply chain management of the client companies. It may be supervised and managed by the fourth party logistics to enhance cost efficiency. General freight is composed of all freight services excluding time sensitive freight, third party and fourth party logistics.

### 1.2 Contestable Freight

For land transport, truck-rail intermodal provides fast, reliable, and visible services with range of weight and value of the freight carried and it is considered to be contestable with truck-only mode over longer distance as supported by Figures 1.1 and 1.2.

![Figure 1.1 Freight Transportation “Service Spectrum”](Source: AASHTO (2006))
Figure 1.2 Relationships among Transport Cost, Distance and Modal Choice  
(Source: Adapted from Rodrigue, J-P et al. (2006))

However, it is found that the average value per ton of cargo carried by truck is almost a triple of those carried by rail as illustrated in Figure 1.3. It may imply that there is still a large space for rail to improve, especially in reliability and security, to make truck-rail intermodal contestable with truck-only mode for time sensitive freight in the future.

Figure 1.3 Average Trip Lengths and Average Value per Ton of Cargo by Mode of Freight Transportation  
(Source: Adapted from AASHTO (2006))
2. Trends in Freight Demand

The main factors that contribute to the growing needs of time sensitive freight logistics include, Mayne (2002) and UPS (2004),
- globalization and international trade,
- trend towards outsourcing non-core activities including logistics,
- trend towards smaller more frequent shipment (time sensitive supply); just-in-time inventory; and direct-to-customer business,
- dynamic factors including the pace and risk of obsolescence; speed-to-market and consistent; satisfactory customer experiences,
- information technology e.g. bar-coding; electronic data interchange (EDI); web based ordering and tracking capabilities; automatic data capture; routing management and inventory track-and-trace visibility etc.

3. Government Strategies and Actions

A number of initiatives have been identified and proposed by Queensland Government to manage the impact of freight traffic in urban areas, particularly along the Brisbane Urban Corridor as listed in Table 4.1.

Table 4.1 Freight Initiatives Proposed by Queensland Government

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Initiatives by Queensland Government*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Management</td>
<td>Time- and budget-consuming but necessary to accommodate the growth of region-wide freight demand.</td>
<td>- upgrading road and rail networks to improve their capacity;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- protecting freight transport corridors;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- supporting strategic investment in priority freight routes;</td>
</tr>
<tr>
<td>Demand Management</td>
<td>Less time- and budget-consuming, necessary for keeping the balance between freight movements (demand) and capacity of the freight network (supply) especially in a congested environment, e.g. urban areas.</td>
<td>- land use planning strategies;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- identifying priority freight routes;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- integrating planning for economic uses and freight transport;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- managing access, priority and operation of the routes;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- applying new technologies including fibre optic communications, satellite tracking of heavy vehicles and traffic signal timing (coordination).</td>
</tr>
</tbody>
</table>

Source: *SEQIPP (2005)

Demand management applies either Soft including land use planning and intelligent transport system (ITS) or hard measures including freight regulation and restriction, pricing strategies. As there are many freight actors getting involved implementation of the latter approach tends to be politically sensitive. Therefore, it must be carried out progressively with intensive care to avoid the controversy that may arise afterwards. Public hearing may be useful to receive the response of the freight actors and prepare necessary alternatives for them. Public
relation is also important to make the freight actors alert and aware of upcoming measures to avoid the unexpected abrupt changes. As most of the supply management is well prepared by every authority. The next sections of this report will focus on the demand management policies applied in the interstate and international practice.

References


