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The use of third party logistics services by large Australian manufacturers: current status and trends

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ABSTRACT: Based on a revised questionnaire developed originally by Lieb (1992), an empirical research was conducted to investigate the use of third-party logistics (TPL) services by large manufacturing companies in Australia. Using a sample drawn from Australia's Top 500 companies, the study examined the extent to which TPL services used, the type of logistics services used, the impact of the use of TPL services on customer satisfaction, costs and employee morale of the user companies. The results revealed that about two-third of the companies who have responded use TPL services from one or more TPL providers, and over 85% of the companies were satisfied with the services provided by the TPL service providers. The results also indicated that the most frequently used logistics functions were warehouse management, order fulfilment and fleet management.

KEY WORDS: ***Australia, Manufacturing Companies, Survey, Third Party Logistics Service.***

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1. Introduction

The Australian market for third party logistics (TPL) services continues to be in transition. The outsourcing of logistics services in Australian manufacturing companies remains patchy but some consistent trends seem to be occurring. Although TPL service providers continue to create value within their areas of expertise, only a few of the leading Australian TPL providers deliver comprehensive, integrative solutions that add value throughout the total supply chain service.

We surveyed logistics managers in Australia's leading manufacturing companies regarding their use of TPL services. Their responses provide insights into the changes in depth and scope of logistics outsourcing occurring in Australia. Our survey indicates that the use of TPL service providers is increasing in two ways: first, more firms are beginning to use TPL services and second, more Australian firms are using TPL service providers for more functions along their supply chains, i.e., scope and depth of outsourcing logistic services are increasing.

The results of this study help provide a better understanding of the transition that is still occurring in the marketplace for TPL services. These results confirmed the findings of the previous studies of the use of TPL services in Australia (Dapiran, Lieb, Millen and Sohal, 1996; Sohal, Millen, and Moss, 2002). This study indicated that the trend has changed over the past five years from an increase in usage of TPL services to an increased usage as well as depth of usage of services along the chain.

The next section of this paper provides literature review of some pertinent international studies, namely usage of TPL service providers in Europe and the US and then review is expanded to compare the similar studies of Australian companies using TPL service providers. The subsequent sections describe the research methodology and a present the results of this study. The paper concludes with a discussion on the implication of the findings of this study.

2. Previous surveys in outsourcing logistics services in the US and Europe

The first comprehensive survey of the extent of use of the TPL services was conducted by Lieb (1992). This study surveyed the large American manufacturers to identify i) the extent to which companies outsource their logistics services; ii) specific TPL services used; iii) benefits experienced from outsourcing logistics services; iv) the impact of TPL services on logistics costs, customer satisfaction and v) the trends in using TPL services over time and across nations.

Using the same questionnaire, Lieb and Randall (1994, 1996a) conducted a longitudinal research on the use of TPL services by large US manufacturers. Lieb and Randall (1996b) also conducted research involving the CEOs of leading TPL service providers. Although this study is outside the research focus of our survey it does have some relevance because it found TPL providers were tending to differentiate themselves by specialising in particular industries such as defence, health, automotive and retailing.

Lieb, Millen and van Wassenhove (1993) also compared the use of TPL services between the US and European manufacturing companies which indicated that European companies were significantly more committed and allocated larger logistics budget to their TPL services, as compared to their US counterparts.

The original questionnaire was updated by considering the issues such as the nature of TPL contracts, use of TPL services by large manufacturers to support their e-commerce initiatives, specific IT applications outsourced, and the most significant developments that have recently occurred in the TPL market place. This updated questionnaire was then used to investigate the extent of the use of TPL services by the American large manufacturing companies (Leib and Kendrick, 2002; Lieb and Bentz, 2003).

Peters, Lieb, and Randall (1998) studied the use of TPL services amongst the European companies. The study was undertaken during May-July, 1996, when European industries were reconfiguring their production and distribution facilities in anticipation of the EEC deregulatory impacts. van Laarhoven, Berglund and Peters (2000) conducted a survey among shippers in several European countries involved in outsourcing their transport, warehousing, and other logistics services. This study which is a sequel to a similar study conducted five years ago, observed two major changes: first, that the scope and level of sophistication of the partnerships has increased over the last five years, and second, that the perception of outsourcing by shippers has not changed.

3. Previous surveys in outsourcing logistics services in Australia

Using the Lieb (1992) survey instrument, Dapiran *et al*. (1996) presented the first survey results of TPL services usage by Australian firms. Overall, the results suggested that the Australian companies were comparable to US firms in the usage of TPL services. Fleet management, warehouse management, and shipment consolidation were the most frequently outsourced logistics services. The results also indicated that over one-fifth of the companies who responded characterized their commitment to TPL as extensive, and the impact of TPL on the internal logistics performance and the logistics costs were positive.

Sohal, Millen, and Moss (2002) replicated the study by Dapiran *et al.* (1996) to compare the use of TPL service usage by Australian firms over the period 1995 to 1999. The results indicated notable differences between the two surveys. A significantly higher number of firms were found to be using TPL companies for international purposes, and were signing longer contracts with their TPL service providers.

4. Research methodology

This study is part of a wider research on world class logistics initiated at the University of Sydney, investigating the extent of the use of TPL services in Australian companies. The world class logistics project also examined relationships between world class logistics practices and environmentally responsible logistics, and assessed the state of quality management practices in logistics in Australian companies, and will be subject of future papers. In this study, the survey instrument developed by Lieb (1992) was used with only minor modifications. Similar survey questions were used by two other studies in Australia (Daparin *et al.*, 1996; Sohal, Millen, and Moss, 2002). The sample was drawn from companies listed in Australia's Top 500 companies (Hardwick 2001). Banks and other financial firms, insurance companies, and real estate companies were excluded from the list of Australia's Top 500 companies.

A total of 200 firms were selected for the study. Logistics/Operations managers were identified and sent copies of survey questionnaires, together with a cover letter and a pre-paid reply envelope. In order to maximize the response rate and to avoid non-response bias affecting the transferability of the findings, the following procedure was used: first, companies listed in the database of participants were contacted by phone. The names of the relevant managers and their current contact details were obtained. Where possible, an attempt was made to speak to the relevant manager about the aim and the content of the survey. Then a reminder call was made to the relevant managers approximately two to three weeks after the mail out. Those who had not responded were encouraged to do so, and those who had not received the package were sent a second copy. The survey resulted in 36 responses, a response rate of 18%. This response rate was expected in view of the length and complexity of the survey and was considered acceptable. The response rates in similar studies ranged between 12 and 22% (Bhatnagar, Sohal and Millen, 1999; Lieb and Bentz, 2003; Peters, Lieb and Randall, 1998).

5. Profile of respondents

Figure 1 shows the distribution of employees in the manufacturing companies. A large proportion of the companies (39%) had between 101 and 500 employees. Thirty percent of the companies had over 1000 employees and about one-quarter (25%) of the companies had between 501 and 1000 employees.

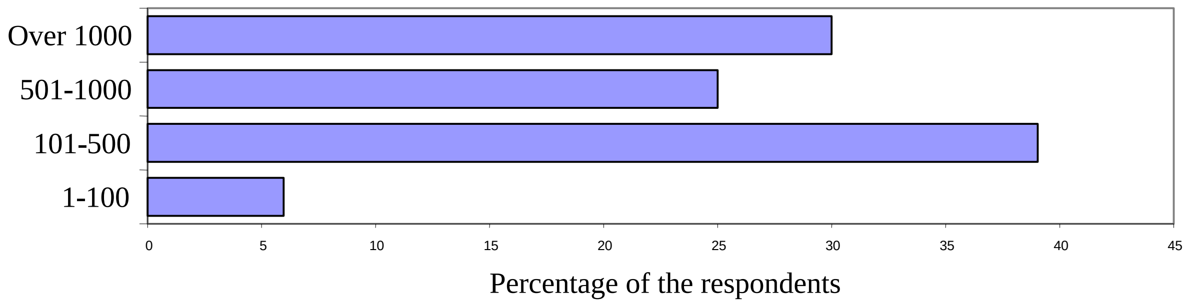

Figure 1: Size of the respondents

The respondents were asked to indicate if their current contracts were less than one year, between one to three years in length or over three years. The results showed that respondents, who used TPL contracts, 61% had been using them for more than three years which is significantly higher than the findings of the Dapiran *et al.* (1996) and Sohal, Millen and Moss (2002) studies. Also compared to the previous two studies, this study recorded a significantly larger percentage of respondents using TPL contacts for less than one year (Figure 2). This is an interesting observation and was not reflected in the previous Australian studies.

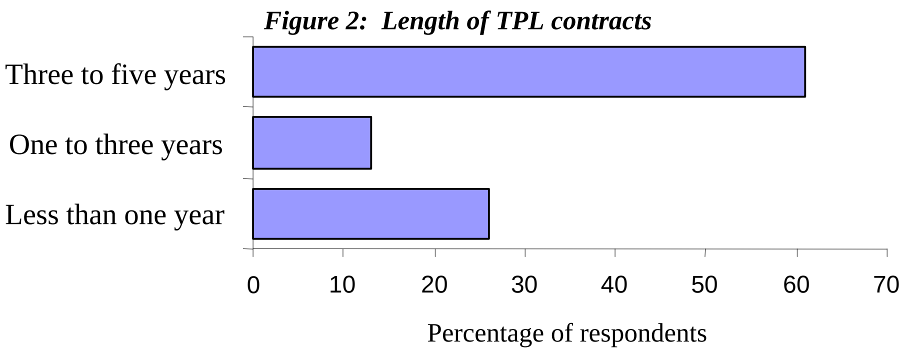

Figure 2: Length of TPL contracts

6. Extent of TPL service use

The results revealed that 66 per cent of the respondents currently use TPL services from one or more TPL providers. Of those companies currently outsourcing logistics services, about three quarters (74%) indicated that their companies use services of more than one contract TPL providers (Figure 3). Compared to the study by Dapiran *et al*. (1996), this study showed a slight increase (from 61% to 66%) in the extent of the use of TPL services. However, this increase is not as significant as in the case of US where the use of TPL services increased from 65% to 83% between 1991 and 2003. This could reflect the expansion of service offerings by providers to users, an increase in specialised TPL services and the competitive nature of Australian companies. This supports an earlier theoretical proposition by Fuller, O'Connor and Rawlinson (1993). They suggested that one important reason for the growth of TPL services is that companies compete in a number of businesses that are logistically distinct due to varied customer needs. Integrated logistic specialists can provide such distinct services more efficiently and effectively by specialising in dedicated assets, technologies and methods of organisation adapted to target specific client/customer requirements. Anecdotal evidence in Australian warehousing and transport industries as well as nation wide integrated logistic provision certainly suggest an increase in the number of firms in this competitive industry.

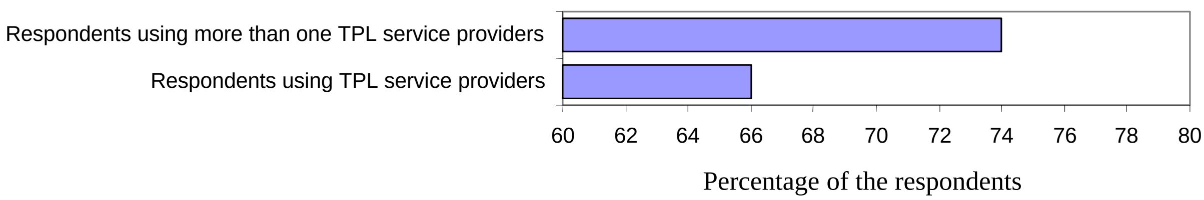

Figure 3: Extent of use of TPL services

The choice to retain more than one TPL providers may reflect the caution of Australian businesses in retaining 'fall back' TPL in the event of terrorist or other uncertainties. The use of multiple contractors may also reflect the specialist nature of logistic providers in Australia. The providers may specialise in only one or two functions such as transport and warehousing and not in other functions that the user may require. Given the small industry syndrome in Australia compared with the US and European industries this feature is quite understandable.

7. Range of TPL Services Used

The typical user of TPL services purchases multiple logistics services and thus the range of services used is quite extensive. The respondents indicated that the most frequently used logistic functions were: warehouse management 64%, order fulfilment 59%, fleet management 41%, product returns, shipment consolidation and order processing all recorded 27% (Figure 4). There appears to be a sharp increase in the use of warehouse management and order fulfilment compared with the previous Australian studies (Sohal, Millen and Moss, 2002; Dapiran *et al*., 1996). Fleet management has fallen but the relationship between fleet management and shipment consolidation has remained consistent. Interestingly the latest U.S. survey shows respondents indicating that the most frequently used TPL services were: freight payment services 72%, shipment consolidation 66%, direct transportation services 62%, and warehouse management 60% (Lieb and Bentz 2003).

Overall changes in the breadth of logistics services may be reflected in the survey questions rather than what is actually being used in the market place. An area for further study in an Australian context would be the use reverse logistics as a service outsourced to TPL providers. Given the flow of domestic goods (excluding exports) that occur between the major eastern coastal cities respondents could favour a high reverse logistic service usage. In the 2003 US Lieb study showed that of all TPL services outsourced, warehouse management had yielded the greatest cost benefits followed by rate negotiations, shipment consolidation, freight payment services and direct transportation services (Lieb and Bentz, 2003). A similar study of Singaporean companies showed that there is a very high degree of commitment to the usage of TPL services (76%) and the most frequently used contract logistics service was shipment consolidation (Bhatnagar, Sohal and Millen, 1999).

Figure 4: The most frequently used TPL services

8. The Impacts from using TPL service providers

Historically, the negative impact that accompanies a decision to use a TPL provider relates to the downsizing of the logistics workforce of the user. This has been shown in Table 1. Fifty-five per cent of participants in this study indicated that the use of TPL service providers had permitted their organisation to reduce the number of full-time logistics positions. It showed that 80% of the users reduced up to 20% of their full time logistics staff. This figure is significantly higher than the results found in the study by Dapiran *et al*. (1996).

Table 1: Full-time logistics employees eliminated through use of TPL services

Percentage of full-time positions eliminated	Percentage of the respondents
0 – 20	80
21 – 40	0
41 – 60	13
61- 80	7
81 - 100	0

This study reaffirmed a consistent consensus that the major positive impact from using TPL services relates to performance (86%), costs (82%), and customer satisfaction (82%). This has been shown in Table 2. However, employee morale has been adversely affected in 50% of users. This finding is not unexpected given the elimination in logistics headcount accompanying outsourcing. The study showed that most users perceive a very positive impact from system performance but this may be indicative that performance measures are anecdotal rather than objective.

Table 2: Assesses impact of the use of TPL services

Areas of impact	Nature of impact (%)	
	Positive & very positive	Negative & very negative
Internal logistics system performance	86	14
Logistics costs	82	18
Customer satisfaction	82	18
Employee morale	50	50

9. Level of Satisfaction with TPL providers

About 86% percentage of respondents claimed that they were satisfied or very satisfied with using TPL providers (Figure 5). Lieb and Kendrick (2003) have observed that an important indication of the satisfaction of the firm with the TPL services is its plans for future usage of such services. This information was captured by asking: 'How would you modify your company's use of contract logistics companies if given complete responsibility for the decision?' Of the companies who responded, 81% indicated they would moderately or substantially increase the use of TPL services. This is shown in Figure 6. This finding is comparable with other regional and international studies (Bhatnagar, Sohal and Millen, 1999; Peters, Lieb and Randall, 1998).

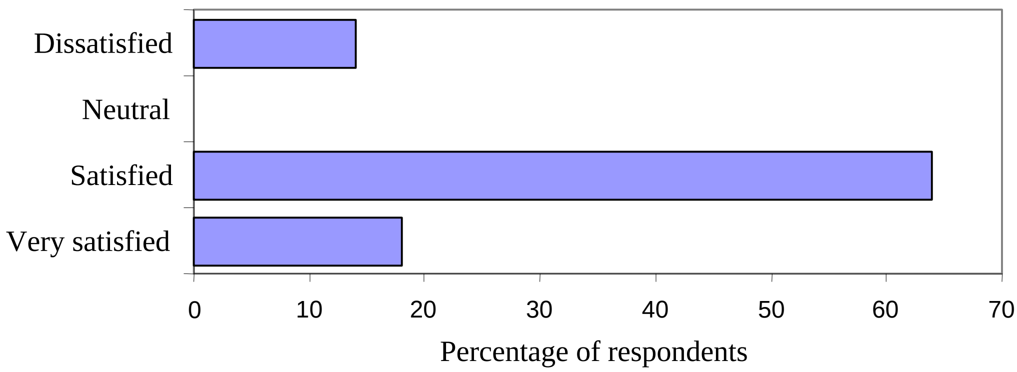

Figure 5: Level of satisfaction with TPL service

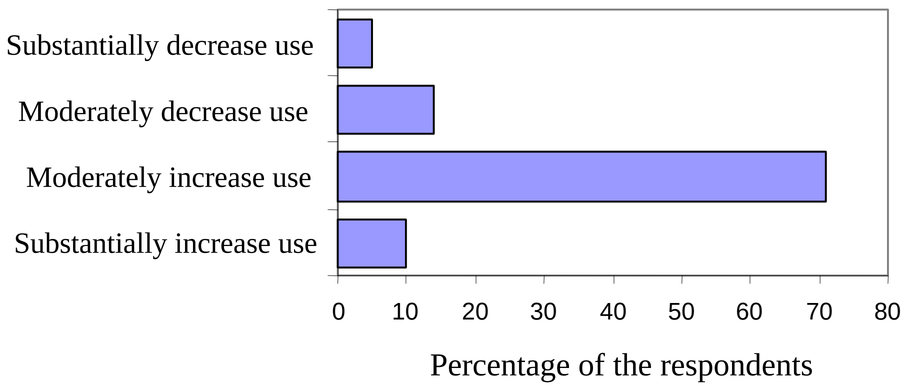

Figure 6: Future usage of TPL services

There has been a number of mergers and consolidation of Australian national TPL providers over the last few years. Many TPL providers are specialising within functions of the supply chain whilst others are attempting to win the one-stop logistic service contracts. Consequently this data shows that usage is increasing and will continue in the future but it does not direct our knowledge to what areas of the logistic services that will be outsourced the most. Also the expected length of future TPL contracts was not indicated.

10. Summary and Implications

This paper has identified a variety of factors that impact on the future use of TPL services, namely: the extent of use of TPL providers, the effect of the usage of TPL providers and future plans on the use of TPL providers. On the whole, a majority of respondents have provided a positive feedback on all factors. Logistics service providers have changed considerably in Australia over the past decade. Many have merged into large national corporations embracing strategic planning, marketing and brand management to respond to changing customer needs. It therefore appears that the environment in Australia is becoming more competitive as this oligopoly becomes tighter.

The study's novel findings have significant implications for future research. We observe that a great many users are relinquishing in-house operations and using TPL service providers. Users also appear to be committed to draw on TPL services with contracts of longer than three years. Furthermore, many users are contracted to multiple contractors. The main TPL services used were warehouse management, fleet management and order fulfilment. Over half of the participants indicated that the use of TPL services have permitted their companies to reduce the number of full-time logistics positions. The level of satisfaction with TPL service providers is high and is reflected in the indication to continue their use in the future. Thus, it appears that the use of TPL services will continue to grow over the next several years.

The nature of TPL services is also changing in that services are continuing to be integrated along supply networks. A mixed system of multiple TPL contracts and retention of some in-house functions such as suppliers of information technology appear to be taking place. Our study has therefore shown not only a marked degree of consistency in findings with previous similar Australian studies but has also uncovered many new implications for future research to consider.

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