



Logistics Association of Australia Ltd

SUPPLY CHAIN MANAGEMENT: APPROACHES IN THE US AND CANADA OBSERVED DURING THE 1999 LAA INTERNATIONAL STUDY AWARD

The following is the first in the series of excellent articles from Emma Stringer, winner of the Logistics Development Award 1999 sponsored by CHEP Australia and supported by Morgan & Banks.

During my trip for the Logistics Association of Australia's International Study Award through the US and Canada, I was fortunate to visit several firms with leading logistics practice, and I also absorbed lots of theory. Theory came from two main sources: the Siemens' North American Supply Chain Management seminar conducted at Michigan State University (MSU) and the Council of Logistics Management (CLM) Conference held in Toronto. I also learned about how best-class firms are putting logistics and supply chain management into practice during my visits to firms in the US and Canada – Campbell Soup, Kodak Eastman, The Home Depot, Procter and Gamble, Sears and Welded Tube Mills.

The names of the firms are not particularly important. We all know logistics is a universal practice which can be applied to any form of business. What I want to show to you throughout this, the first of six articles, is what I learned overseas. Several of the points of interest are going to be obvious in theory, but have stood out for me as being key characteristics of the top-class firms I visited.

The main areas which I will address over this series include:

- Enterprise Resource Planning systems (ERP) implementation
- E-commerce
- What differentiated good from best logistics practices
- Strategic issues
- Supply chain management

This first article addresses supply chain management. It is divided into two sections – what I have learned in theory and what I have learned in practice.

Supply chain management theory – using the balanced scorecard approach to measure supply chain performance

I gained interesting insights into supply chain management theory from a Supply Chain Management seminar organised by and at The Siemens' North American Supply Chain Management seminar conducted at Michigan State University (MSU) and at the Council of Logistics Management Conference.

Supply chain management was defined in a strategic perspective by MSU as when management attempts to strategically position a firm by aligning supply chain capabilities to gain or maintain competitive advantage. This practice of aligning capabilities involves integration and partnership, not just communication.

This partnership perspective allows the supply chain to integrate and be effective, and a competency for all partners involved, rather than simply become an adapted version of logistics.

Objectives of supply chain integration were neatly summarised in the MSU seminar:

- rapid response
- variance reduction and control
- minimum inventory
- transportation consolidation
- reduced duplication and redundancy
- quality and life cycle support.

MSU acknowledged that these theoretical objectives are hindered by reality – integration barriers, such as organisation structure, inventory ownership, information technology, knowledge transfer capability, and performance measurement systems.

The last of these integration barriers, performance measurement systems, was addressed at a session at the CLM conference. This session at the conference appealed to me because I had realised that of the firms I visited, each had adopted performance measurement systems which included measures such as inventory turnover, on time delivery, order fulfillment, data accuracy, customs clearance, and proactive communications. Yet, while these firms had recognised the importance of performance monitoring and rewards, I often wondered how firms determine what exactly they should measure, and often it seemed that several measures were used simply because they were readily accessible on an information system.

One session at the CLM conference proposed a more precise approach to determining what firms should measure in the supply chain in order to ensure the measures assisted in supply chain integration. Two PhD students from the University of Miami (one studied logistics and the other studied accounting), Peter Brewer and Thomas Speh, proposed adopting the balance scorecard approach for measuring supply chain performance.

The balanced scorecard approach to measuring performance was originally designed to measure firm performance with both financial and non-financial measures. It was essentially a rebellion against the unbalanced, single-sided view of financial performance measures.

Kaplan & Norton (1992) in the Harvard Business Review proposed that firm performance should therefore consider goals and measures from four perspectives:

- customer perspective
- innovation and learning perspective
- financial perspective
- internal business perspective.

These speakers at the CLM conference proposed that the goals of supply chain management should be tied into each of the four perspectives of the balanced scorecard approach. From this, they proposed four slightly adapted perspectives to be considered when measuring supply chain performance:

- customer perspective
- inter-organisational innovation and learning perspective
- financial perspective
- business process perspective.

Each of these perspectives was assigned four goals and measures for each goal. The measures are only suggestions of what should be used.

<i>Customer perspective</i>	
<i>Goals</i>	<i>Measures</i>
• Customer view of product / service quality	1. "Number of customer contact points."
• Customer view of timeliness	2. "Relative customer order response time."
3. Customer view of flexibility	• "Customer perception of flexible response."
4. Customer value	• "Customer value ratio."

<i>Inter-organisational innovation and learning perspective</i>	
<i>Goals</i>	<i>Measures</i>
• Product/process innovation	1. "Product finalisation point."
• Partnership management	2. "Product category commitment ratio."
3. Information flow	• "Number of shared data sets/total data sets."

4. Threats and substitutes	<ul style="list-style-type: none"> • "Supply chain switching costs."
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<i>Financial perspective</i>	
Goals	Measures
• Profit margins	1. "Profit margin by supply chain partner."
• Cash flow	2. "Cash to cash cycle."
3. Revenue growth	<ul style="list-style-type: none"> • "Customer sales aging report."
4. Return on assets	<ul style="list-style-type: none"> • "Return on supply chain assets."

<i>Business process perspective</i>	
Goals	Measures
• Waste reduction	1. "Supply chain cost of ownership."
• Time compression	2. "Supply chain cycle efficiency."
3. Flexible response	<ul style="list-style-type: none"> • "Number of choices/avg response time."
4. Unit cost reduction	<ul style="list-style-type: none"> • "Cost as a % of end customer revenue."

The speakers discussed a measure and goal from each perspective. Naturally, a firm has several supply chains, and they recommended that each supply chain is measured. The results must be benchmarked against competitors and world-class firms to ensure supply chain management effectiveness.

I thought their talk was very interesting and provided a neat, justified framework to help firms ensure they are actually accountable for ensuring supply chain management occurs. It seems that all too often firms believe they have embraced supply chain management after they change the title of their logistics manager to supply chain manager. Perhaps this supply chain management performance measurement system could help firms ensure that supply chain management is actually occurring.

Supply chain management practice Of the firms I visited, those with what I judged as the most effective supply chain management techniques shared one important characteristic – integration along the supply chain. The firms viewed the players in their supply chain as more than vendors, customers and so on - they viewed them as partners.

For example, The Home Depot is a massive chain of hardware stores with \$40 billion sales last year, and is opening an average of 3 stores each week. The firm was experiencing inefficiencies its supply chain with its stock ordering system.

Each of the 880 Home Depot stores was ordering from more than 9000 vendors on average for each store. Each store has only 3 doors for receiving goods from all of these vendors, therefore, they must be coordinated for it to work. At the moment, when stores make their orders, they individually ring their vendors. This meant that vendors were getting calls from 880 different Home Depot stores, as often or as little as each of The Home Depot stores liked. Order fill rates from vendors to stores were not good, and costly, less than full truckloads were being used.

To solve this problem, The Home Depot implemented Calculated Computer Assisted Ordering (CCAO). CCAO was designed for vendors with EDI. The CCAO was designed by The Home Depot and is an inventory management system. It is designed to keep the store in stock by looking at the past 12 months of demand, comparing this to the previous year, and giving a suggested order quantity. The system automatically orders to vendors when stocks are not sufficient. The store can override this (this was demanded by the stores to the IS dept and shows how the centre "supports" the stores).

The CCAO provided the following benefits: in stock situation has been a lot better, and much less sporadic ordering has occurred (it gets the store on schedule and more familiar with inventory). The orders are received by the transit facilities, and the vendor gets contacted only once from the transit facility instead of by every store.

Other examples of supply chain integration efficiencies included:

- a firm established focus groups along one supply chain which was full of inefficiencies and conflicting relationships. The solutions greatly reduced order cycle time; and
- All firms were attempting to establish real-time visibility across their entire supply chain to know where product was and when. This seemed like one of the most difficult task firms were embracing and none of them appeared to have achieved much in this project yet. This was hindered by incompatible information systems across the supply chain.

One of the most surprising points of interest was that only approximately fifty percent (at the most) of each firm's partners in the supply chain had adopted EDI. Faxes and phone calls were still highly prevalent.

One session at the CLM conference discussed the generally low level of EDI adoption. The speaker attributed it to the complexity of setting up the fields and need to decide with the party you wish to communicate to how to structure the information to be communicated along the supply chain. He had much higher hopes for a new computer language, called XML. The advantage of XML, he claimed, was that it enabled communication of data as in EDI, yet without the need to firstly defining with the receiver how the information will be structured. XML, rather, carries a description of how the information is

structured with each document, eliminating the need to talk to the other firm first. This means that XML documents, he claimed, will therefore be able to be sent to anyone, anywhere, anytime, without the EDI structure set up.

The most surprising thing I learned about supply chain management is that I thought I would be coming back saying how there is this great new technology in use, but I have really seen good priorities, good underlying visions and missions and effective processes. Really, the effective companies are succeeding in integration, and this is what is making them world-class.

If you would like any more information about any of the issues I have raised in this article, I would be happy to help. You can email me at:
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