

The New Logistics Management Paradigm: The Impact of Today's Trends

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Logistics, as defined by the Council of Logistics Management, "is that part of the supply chain process that plans, implements and controls the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption in order to meet customers' requirements." To make this happen, transportation, distribution, warehousing, purchasing and order management organizations must execute together. This is no small task, especially in an environment that is becoming increasingly demanding, with customers expecting their products to be delivered as quickly as possible and according to their exact specifications.

Most experts talk about inventory and shipment visibility as the key to successful logistics execution. But, when asked to define visibility, those same experts give a fancy response that in plain English means knowing the status of "in-transit" shipments or inventory. Unfortunately, the reality is that knowing the status of something once it is already in-transit adds no value to the supply chain.

What many companies fail to realize and understand is that there are four conditions that are changing the way companies are thinking about visibility and the logistics operation as they struggle to meet the ever-increasing customer demands:

- **The Internet B2B Economy:** A dramatic transformation in the use of the Internet for business transactions between companies
- **Reverse Logistics:** The management of returned products to distributors, manufacturers or retailers; a fifth of all purchased items are returned annually
- **Real-time Logistics Event Management:** The need for accurate and timely management of information in order to maintain on-time deliveries, reduce inventory levels and ensure that the right product is in the right place at the right time
- **Technology Solutions Provide Visibility:** New logistics event management technologies to gain real-time visibility into logistics operations; ensure a more accurate, efficient and effective flow of goods; reduce costs and increase customer satisfaction

The four conditions outlined above have significantly changed the role and expectations of the logistician. Companies must radically adapt their logistics management strategy in order to compete in today's tumultuous marketplace, marked with ever-decreasing turnaround times, increased competition and lower profit margins. This article focuses primarily on how these conditions are affecting logistics today, with a particular emphasis on the new technologies that are improving the flow of goods. There are numerous companies in the marketplace that offer technology solutions claiming real-time visibility into inventory levels and logistics; unfortunately, what most offer does not match up with what businesses really need to improve costs and customer satisfaction.

The Internet B2B Economy

There has been explosive growth in business-to-business (B2B) transactions via the Internet. According to Forrester Research, the B2B e-Commerce segment of the economy will grow to \$2.7 trillion by the year 2004. AMR is even more optimistic, predicting that the market will reach \$5.7 trillion during the same

time period. Forrester predicts that as much as 20 percent of all transportation transactions will take place over the Internet by 2004. With this dramatic growth in Internet-based transactions, “e-logistics” has created new categories of logistics management providers including:

- **Fourth Party Logistics (4PL) firms:** Organizations that manage the full scope of logistics services for companies by aggregating and coordinating the services of multiple logistics service providers
- **Logistics Exchanges (LX):** Internet-based marketplaces for the buying and selling of logistics services, management of logistics content, and the optimization of logistics activities
- **Logistics Visibility Providers (LVP):** Internet-based service providers that capture data from logistics service providers; cleanse, verify and analyze the data; and report on logistics activities to facilitate total supply chain visibility

All of these providers rely on the Internet in some way to provide a service to a business organization. However, it is difficult to determine who participates in which category and who really delivers the functions they promise.

Reverse Logistics

Typically, a fifth of all purchased items are returned to the manufacturer, distributor or retailer in a process that can shed up to 85 percent off of their original retail value. In the year 2000, the total value of returned merchandise was estimated at \$60 billion by IDC, while the cost of handling returns stood at \$40 billion. With such a high price tag, companies must decide if managing product returns is part of their core competency.

IDC predicts the returns-management outsourcing business in online markets will soar from \$1.2 billion in 2000 to \$7.5 billion by 2004. At a recent National Association of Purchasing Management seminar, it was presented that the top five reasons for electronically-generated orders not meeting customer expectations are:

- Late delivery
- Wrong product/quantity
- Not shipped at all
- Technical problems
- Returns

If it is true that 90 percent of these issues could have been avoided in the first place, then logisticians must focus on the root cause. In order to improve this process, companies need real-time visibility into what is actually going to be shipped compared to the customer’s request. This leads to the need for real-time event management.

Real-time Logistics Event Management

In today’s market, you now have three to 100 times the departmental interdependencies across organizations, international borders and myriad systems. But, if even a small component of the process can be managed well, significant improvements will be gained. Consider the fact that total supply chain management costs typically account for eight to nine percent of sales, according to benchmarks from the Performance Measurement Group, LLC. The largest single driver of this is logistics. Typical benefits from integrating the supply chain range from 28 percent to 60 percent improvement in delivery performance and inventory reduction, to 10 percent to 30 percent improvement in capacity realization and fill rates. Therefore, the potential money savings from real-time logistics visibility is staggering.

The combination of supply chain complexity and market conditions puts even more pressure on manufacturers to provide the right amount of products, at the right time, for the lowest possible price. A few factors have made this increasingly difficult. There have been many recent inventory debacles as a result of the inability of ERP systems to properly forecast demand and prevent inventory build-up. In addition, the lead times for producing products has shrunk dramatically. And finally, most organizations now outsource manufacturing of components to third- party organizations. Our current connected economy has drastically changed the role and operations of transportation. As a result, the logistics management departments must try to perform transportation ‘miracles’ on a daily basis in order to meet these monumental goals. Transportation professionals can meet most of these demands, but at what cost? Every dollar spent at this point is a decrease in net profitability. That is a significant concern for companies. It becomes an even bigger concern if what was shipped was shipped out incorrectly and has to be returned or routed differently.

In this collaborative economy, enterprises have to acknowledge the increased role of transportation management and how to use technology to their best advantage. Figure 1 compares ‘old school’ logistics with the logistics of today.

Figure 1

	‘Old School’ Logistics	Logistics Today
Orders:	Predictable	Variable, Small Lots
Order Cycle Time:	Weekly	Short OTD/Daily or Hourly
Customer:	Strategic	Broader Base
Customer Service:	Reactive, Rigid	Responsive, Flexible
Replenishment:	Scheduled	Real-time
Distribution Model:	Supply-driven (Push)	Demand-driven (Pull)
Demand:	Stable, Consistent	More Cyclical
Shipment Type:	Bulk	Smaller Lots
Destinations:	Concentrated	Geographically Dispersed
Warehouse Reconfiguration:	Weekly/Monthly	Continual, Rules-based
International Trade Compliance:	Manual	Automated

Source: AMR

One additional aspect of logistics that needs to be covered is that of in-transit inventory. In-transit inventory has gone from a taboo subject to one of strategic value – just-in-time (JIT) replenishment on wheels. If managed properly, in-transit inventory can reduce customer lead times and distribution network costs. The down side is, without appropriate technology and integration into TMS or OMS, optimization and visibility into in-transit inventory can be a nightmare. Many e-logistics companies and software providers state that with real-time visibility into in-transit inventory, the enterprise can be proactive in meeting customer requirements by:

- Returning the load,
- Redistributing or rerouting the load, or
- Shipping the right product or short supply in expedited fashion.

The result is that the customer gets what they ordered, but at a significant cost to the enterprise. There is technology that exists today to manage customer requirements before the product is shipped. In logistics management, from the raw materials procurement to the customer destination, value or cost is added along the way. To correct a deviation from the original customer requirements as it approaches its destination is a very costly proposition; not only in terms of dollars but in terms of time. There is a solution. It is real-time logistics event management using some of the leading edge technology solutions available today.

Technology Solutions Provide Visibility

Very few companies can compete on price alone. Speed, accuracy and completeness with which orders are filled and delivered are the sustaining differentiators in today’s fast-paced economy. Effectively managing events is key. The solution is real-time logistics event management. Logisticians must gain real-time pre-shipment visibility and proactive event management before shipment. But be warned – some technology providers state they have “visibility” to facilitate proactive tendering and management of all freight through to the final destination – what they are really talking about is managing product in-transit. How can redirecting and addressing supply imbalances once the product is in-transit be proactive? *Once a product is in-transit, it is too late.*

There are solutions available that provide visibility through a collection of real-time, Web-based data and analytics. These solutions help to manage the logistics process between buyers and suppliers, while eliminating costly discrepancies between purchase order, sales order and shipping information. By eliminating these variances and inconsistencies in anything from quantities and shipping locations to ship dates, part numbers and freight terms, logistics providers can:

- Eliminate missed shipments
- Eliminate shipment discrepancies
- Improve profit margins by inputting more accurate and timely data into optimization tools
- Enable the reduction of inventory carrying costs for the customer
- Support customers’ efforts to reduce inventory investments
- Significantly reduce product returns
- Improve customer satisfaction through:
 - Improved delivery reliability
 - Improved efficiencies in your customers receiving operations
 - One version of the truth for dispute resolution

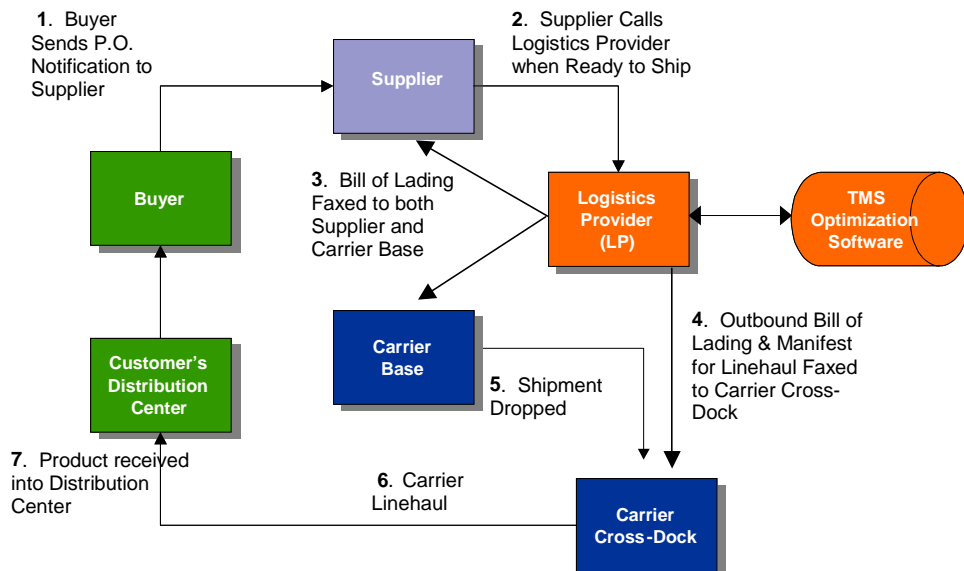
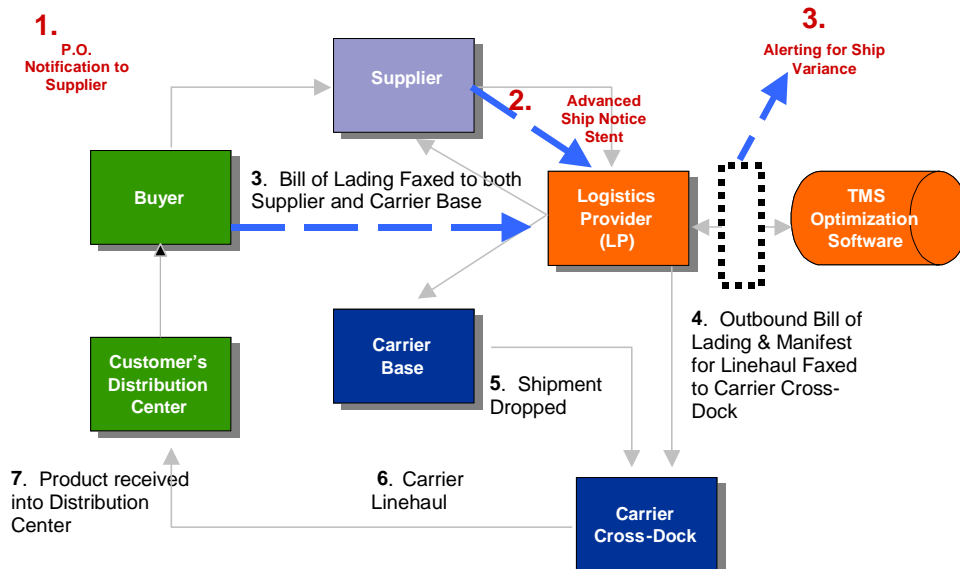


Figure 2 Typical Logistics Workflow reposition figure 2

Figure 2 depicts the typical outsourced logistics workflow. Figure 3 shows an enhanced event managed visibility workflow solution. This solution extends into the supply chain and integrates with the existing logistical systems. Visibility happens this way:

- As the buyer processes the purchase order, the PO information is sent by line item to a standards-based hosted platform. *Reference Point 1.*
- As the shipment is picked, packed or staged at the Supplier, the data is sent to the same platform. *Reference Point 2.*
- Alerts on pre-defined information inconsistencies will be automatically sent to appropriate users for corrective action on a real-time basis before input into the TMS or the product being shipped. *Reference Point 3.*

Figure 3 Logistics Workflow with Visibility Solutions



More advanced technology will provide alerts on business rules and document cardinality violations. For example, a shipping document cannot find reference to a sales order number. Or a primary key field is missing that will impact analytic views later on. In these two examples, alerts would be sent to the appropriate individuals for review and resolution.

The ability for logistics managers to gain visibility into the buyer's purchase order and compare that data to the pre-shipment information from all suppliers through exception or event management is of significant value to this market. It takes a truly proactive approach to managing logistics. What comes out of this process is a significant improvement in the flow of goods to the customer.

In addition, this technology will arm the logistician with the following capabilities:

- Exception management – enabling the logistics group to manage by exception
- Reduction of inventory carrying costs for the customer by improving shipment reliability
- Alignment with the customer's effort to reduce inventory investments
- Provide one version of the truth for dispute resolution
- Improved customer service by enabling:
 - Improved scheduled delivery reliability
 - Improved efficiencies in receiving operations

Figure4 Typical Alerting Scenarios

- Time horizon not available
- Over or under shipments by line item
- Shipment date is before requested ship date on PO
- Shipment date is past requested ship date on PO
- Shipment FOB location not the same as purchase order
- Shipment freight terms not the same as purchase order
- Purchase order ship to ID is different then shipment ship to ID
- Shipment ship from location is different then purchase order ship from location
- Shipment date is later then cancel PO date
- Carrier is not the same as that designated in the PO
- Carrier name is blank

In today's volatile economic climate, logistics management is becoming more important than ever before. Getting the right amount of goods to the right place at the right time is critical, especially in an age when budgets are tight and customers demands are unpredictable and unforgiving. In the best of times, logistics managers only execute 80% of the time. However, in tougher economic times, this margin for error is too high. Logistics management is evolving in significant ways to address these problems. Internet utilization, combined with the proliferation of reverse logistics and the impact of technology advancements in real-time logistics event management and visibility, are fundamentally changing the role of logistics management in organizations. In order to succeed in today's global marketplace, companies must be ever cognizant of these trends and develop a logistics management strategy that capitalizes on the best-of-breed technology solutions available today, so that they can meet the demands of their customers today and be well prepared for the future.

