Catapult Whitepaper:

The Changing Role of Technology in Managing the Logistics Process

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Not too long ago it was very common for companies, even large ones, to manage their supply chain through manual processes. With logistics operations being so integral to profitability, the inevitable result was a hit to margins and the bottom line as supply chains were slow to adapt to the constant disruptions that exist in the global marketplace. Costs increased, while customer satisfaction remained stagnant or decreased. These issues remain for many companies today, but change is happening as smart organizations are increasingly turning to technology to play a greater role in managing their logistics processes.

Issues with Manual Process Management

The fact remains that manual processes negatively affect all areas of logistics management. They cause time to be wasted or lost and isolate involved parties when communication is needed most. Time delays hinder teams from making important, informed decisions quickly. Without communication, information, and timely decision making, the supply chain is brittle and slow.

Symptoms of inefficient processes across various supply chain functions include:

- Spreadsheets everywhere; reporting is slow and data is dirty

- Lack of company wide compliance policy; fines and disclosures are routine

- Opaque freight rate contracts and inability to calculate or audit costs accurately; total landed cost is unknown

- Manual data entry errors

- Little visibility into inventory whereabouts or levels; no shipment track and trace

- Cost overruns on warehouse labor due to surges in orders or uneven deliveries

- Excessive detention and accessorials; unknown or misunderstood surcharges and GRIs

- Wasted space, empty miles, inability to consolidate freight or change modes to lower costs and meet delivery deadlines

- Shipping documents created manually, limited status updates, delay in receiving proof of delivery

- Dissatisfied customers due to low on time delivery, out of stocks, and high cost to serve

- Lack of auditing or data mining; analytics are reactive instead of predictive

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Overall, manual work makes the entire supply chain less transparent and clogs communication between parties needing to share information. Some companies tried to fix these problems by buying software or creating home grown systems to manage specific processes while leaving other processes totally manual. It was rare for any one company to view technology as a way to manage their entire logistics operations.

The Changing Role of Technology

Several major events occurred that changed how companies view technology and highlighted the importance of adopting technology to manage their supply chain efficiently. These events include disruptions such as the recent port strike on the U.S. west coast and the 2008 recession.

The recession's impact was a true game changer as it disrupted the financial stability of the entire world's economy. With less money flowing and fewer customers buying, the cost of manual processes became excruciatingly clear. Customers became pickier and companies that implemented supply chain systems sooner gained a competitive edge. Companies were forced to realize that outdated, time consuming manual processes must be eliminated across the supply chain as a whole rather than being band aided one by one as issues cropped up. This led to a growth in the adoption of supply chain management systems.

What are supply chain management systems? Simply put, they are a group of applications that automate the common functions of the various logistics processes. These systems exist to streamline, track, and communicate information across many involved parties in the life cycle of freight movements. Each system can be categorized by the type of technology they offer based on their intended use within the supply chain.

Types of Supply Chain Operations Technology

1. Rate Management
Rate management or contract management software allows logistics service providers, such as freight forwarders, to manage complex freight contracts as well as create quotes and respond to tenders faster. Shippers also use similar technology to calculate rates, as well as gather lane and mode data along with historical shipment volume and estimated costs. The systems themselves facilitate bidding by removing the need for spreadsheets and storing bid changes and contract versions. Accessorials, GRIs, surcharges, and detention fees can also be calculated accurately for auditing against planned costs and the carrier invoice.

2. Trade Management
With a trade management software, companies ensure products meet regulatory compliance requirements at a global level avoiding customs detention or incurring fines. They determine classifications for items at an early stage and can help in identifying opportunities to reduce duties. An important piece of trade management functionality is calculating total landed cost easily. Many systems also offer modules that help manage licenses and can automatically determine the correct license for assignment to the shipment. Auditing is simplified by allowing employees near real time access to the shipment.

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3. Warehouse Management (WMS)

A WMS is a system that keeps track of inventory and directs warehouse operations. They capture the data needed for measuring performance and tracking metrics such as inventory carrying costs. In terms of operations, they create tasks for all the daily work within the warehouse like put away, storage, pick-pack, hazmat storage and handling, cross-docking, kitting, tagging and cycle counts and audits.

4. Transportation Management (TMS)

The TMS is a system that handles all the aspects of shipment execution. It performs load optimization, tenders shipments to carriers, receives and stores shipment status updates for communication back upstream, generates shipping documents (Bill of Lading or manifests), captures proof of delivery, and uses actual shipment history to calculate carrier scorecards for performance reviews.

5. Simple Track & Trace

These are systems that provide limited portal based inquiry access to the status of a shipment either via third party system (freight forwarder or carrier) or through limited query access to the TMS.

6. Yard Management

Yard management systems track the location of trucks, trailers, and ocean containers in the yard. They are used to identify inventory not yet received and to reduce detention fees through accurately time stamping the receipt of shipment as well as accurately tracking the amount of time and labor for loading or unloading trailers.

7. Visibility

Broad visibility comes from systems that connect the previously mentioned applications and provide an entire picture of the shipment movement. Visibility systems are especially important in the international supply chain because they consolidate important information about the entire movement of freight from multiple parties and disseminate this information. For example, in an ocean shipment, a visibility system can track the vendor's PO confirmation, tell if any freight has been short shipped, capture freight forwarder and broker updates, capture ocean carrier status updates from the TMS, and incorporate data from the WMS showing the actual receipt. In this example, many parties interested in the movement can access the data even when these parties are internal departments in silos or external to the process – such as your customers.

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The benefits of adopting supply chain technology are:

• Efficiency gains that reduce operating costs and reduce transit times

• Greater flexibility and responsiveness to supply chain disruptions

• Increased communication among all parties involved leads to better and faster decision making.

• Company-wide compliance with government import/export or legal requirements

• Improved customer satisfaction through higher service levels, earlier and more open communication, and lower cost to serve

• Gain in competitive advantage with the ability to offer a faster, resilient, and transparent supply chain

• Improved service provider performance through timely and accurate measurements

• Continued improvement through on-demand data analysis and data mining to analyze trends, find and remove bottlenecks, uncover inefficiencies, and monitor estimated costs against actual costs for better management

Conclusion

Logistics process management can benefit greatly from new technology with tangible results like streamlined operations, lower costs, and higher customer service levels.

Adoption of technology is increasing as companies seek more ways to gain a competitive advantage. Challenges remain however, as no one system does it all. This makes data exchange and system interoperability all the more important. The global business climate continues to evolve with the expectation that logistics processes will be leaner and improve the bottom line — not just be a cost center. It is proven that these expectations can be met through increasing the role technology plays in managing logistics processes.

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