TRINITY LOGISTICS

Transportation Industry Whitepaper

Special Report to Shippers

What is a TMS?

What can it do for your organization?

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What is a TMS?
A Guide to a Growing Trend in Transportation Management

Summary

A transportation management system (TMS) is a software program that allows companies to manage their entire supply chain (including their internal logistics department, suppliers, warehouses, carriers, vendors, etc.). When they were first introduced, though, the traditional TMSs were very expensive and cumbersome to install which made them only practical purchases for the Fortune 500s. However, with the recent launch of the on-demand TMSs, even the smaller companies can now take advantage of such functions as automation, optimization, visibility, and reporting to develop more efficient logistics processes which could save them both time and money.

Types of Transportation Management Systems (TMS)

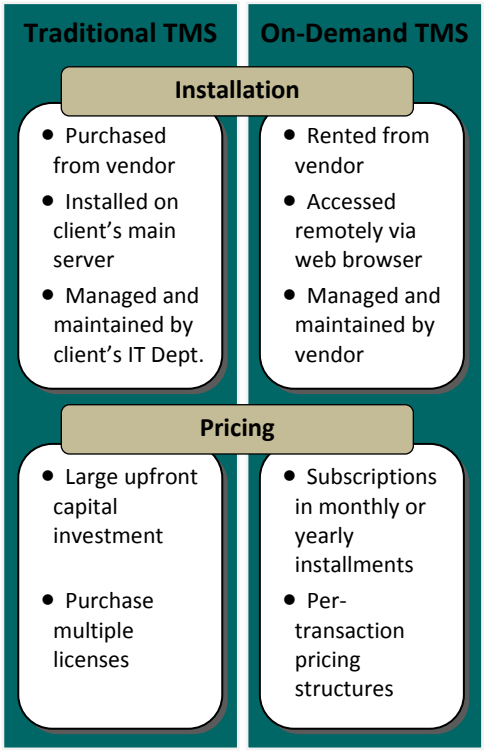
There are two types of Transportation Management Systems (TMS)—traditional "license and install" models and the increasingly popular "on-demand" (or SaaS, software-as-a-service) models. While both models have basically the same functions, there are some key differences of which serious TMS researchers and shoppers should be aware in order to make informed and sound business decisions regarding the type of system that is best for their company.

Difference in Installation

The most obvious difference between the traditional TMS model and the on-demand TMS model is installation. Traditional TMS models are purchased from a software vendor and are installed on the client's main server. In order to set up users, the client must purchase multiple licenses and load the program on each user's internal computer. The software is then managed and maintained by the client's IT department. Usually upgrades to the latest software version are required every 3-5 years.

On-demand TMS models, on the other hand, are "rented" from a software vendor and therefore require no installation on the client's server. Instead, users can access the system by logging in from any internet connection with their secure username and password. In addition, since the system is managed and maintained by the vendor, issues with the system are often handled via phone support and updates occur constantly and automatically.

Figure I.
Traditional TMS vs. On-Demand TMS



Difference in Pricing Structures

The other major difference between the traditional and the on-demand models is cost. A traditional TMS usually requires a large upfront capital investment to purchase the license for the software from the vendor. On-demand models, on the other hand, are often offered via two different types of pricing structures. The first is a subscription-based pricing structure where the client pays for the services in fixed monthly or yearly installments.

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The second is a transactional-based pricing structure where the client only pays a small transactional fee for each order they move through the TMS.

Types of TMS Providers

There are basically two types of TMS providers—software vendors and 3PLs. Software vendors sell their TMS software to the client to use internally. 3PLs sell their TMS software in conjunction with their logistics experience as either a freight outsourcing opportunity or a consultation service.

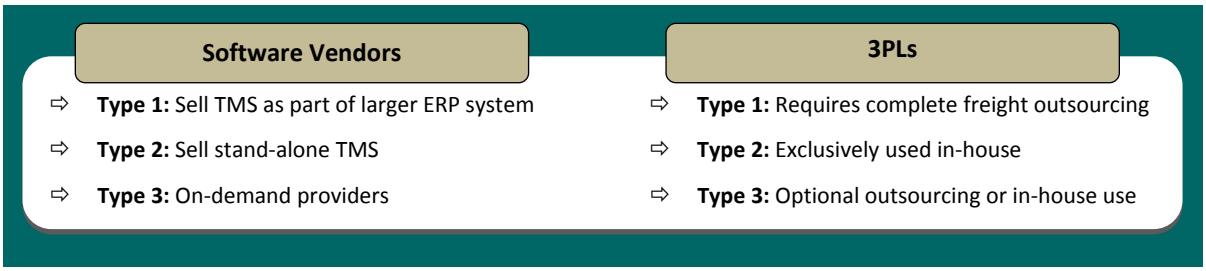
Software Vendors

Software vendors can be broken down into three types. The first are the large vendors that offer the TMS as part of a bigger enterprise resource planning (ERP) system. The second type is the stand-alone vendors that offer a separate licensed TMS solution that will need to be installed on the client's main server but can be integrated into an existing ERP system. Finally there are the vendors that provide an on-demand solution via the internet (no installation required) that can also be integrated into an existing ERP.

3PLs

Similarly, there are also three different types of 3PLs. The first are those that require their clients to outsource their entire logistics operation to the 3PL in order to receive access to their TMS. The second are those that provide the client with full operational access to their TMS, while acting as their logistics consultant. The third are the 3PLs that allow the client to choose between completely outsourcing their logistics operations and driving the TMS themselves internally with the 3PL acting as their logistics consultant. Most 3PLs offer the "on-demand" TMS to their clients but there are some that offer a licensed version instead.

Figure II. Types of TMS Providers



Common TMS Functions

Although there are some differences between the various transportation management systems (mostly with the user-interfaces and functionality to an extent), there are some functions that are shared by almost all. Most TMSs can automate manual processes, optimize shipments, provide visibility into freight spend, and generate financial and operational metric reports.

Automation

How It Works

One function shared by the best-in-class transportation management systems is the ability to eliminate manual processes that can be performed automatically. By integrating the TMS with the company's existing enterprise resource planning system (ERP), order information can be automatically transferred from one system to the other preventing the need for dual shipment entry. Once the shipment information is in the TMS, companies will have

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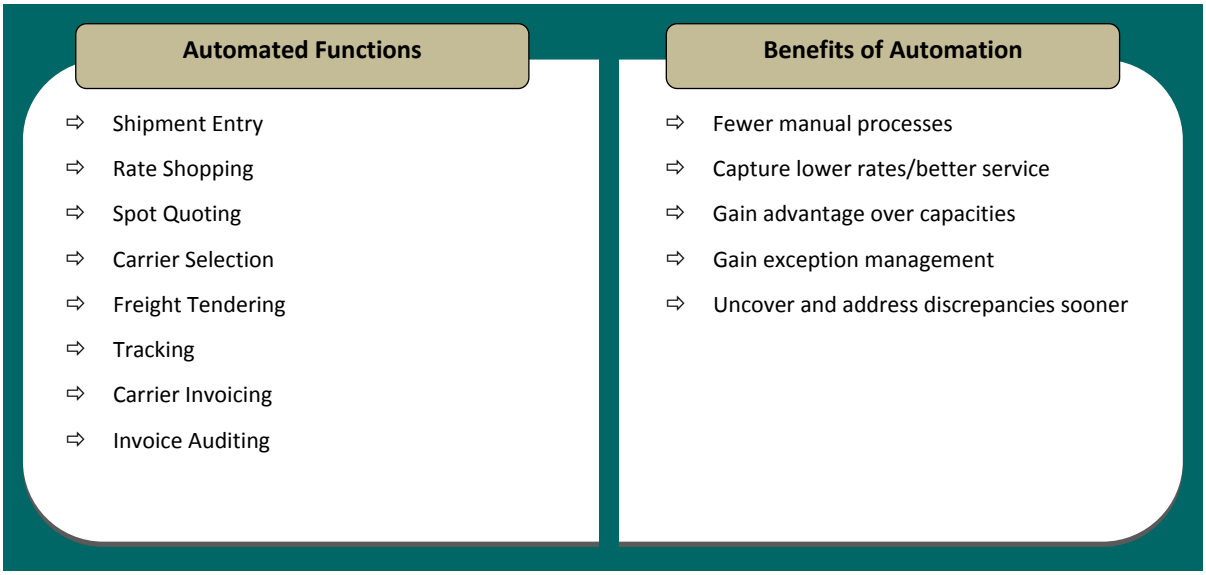
the ability to perform all of their procurement processes automatically (including rate shopping contracted carrier rates, requesting spot quotes from multiple carriers, selecting a preferred carrier based on rate or service, and waterfall tendering of the freight until it's accepted) through various configurations in the TMS. Once a carrier has been secured, tracking and carrier invoicing/auditing can also be performed automatically by setting up EDI (electronic data interchange) communication between the TMS and the carrier's system.

What It Means

By automating manual processes with a transportation management system, companies could potentially save hours of manual labor per shipment by eliminating the dozens of phone calls and emails usually required to obtain rates, secure a carrier, and track a shipment. Companies could also secure lower carrier rates and better service by automating the carrier selection process because the system can be configured to always choose the lowest cost or best service carrier. In addition, because the entire process is automated, the freight is tendered to the carrier more quickly, which increases the probability of capturing the preferred carrier's capacity sooner than those companies without a TMS.

Companies will also find benefits in automating their tracking and invoicing via EDI. By automating the tracking, companies will gain the ability to manage by exception—meaning they will only need to be actively involved if there is an issue with the shipment. By automating the invoicing, companies will gain real-time visibility into their freight spend which can help them to uncover and address discrepancies more quickly.

Figure III. TMS Automation



Optimization

How It Works

Another common function among most transportation management systems is the ability to analyze a batch of shipments based on a variety of sophisticated parameters in order to determine the most cost-effective route plan. The best-in-class TMSs can make recommendations based on least-cost mode analyses (including parcel, less than truckload [LTL], truckload, and intermodal), shipment consolidation opportunities (including multi-pick or

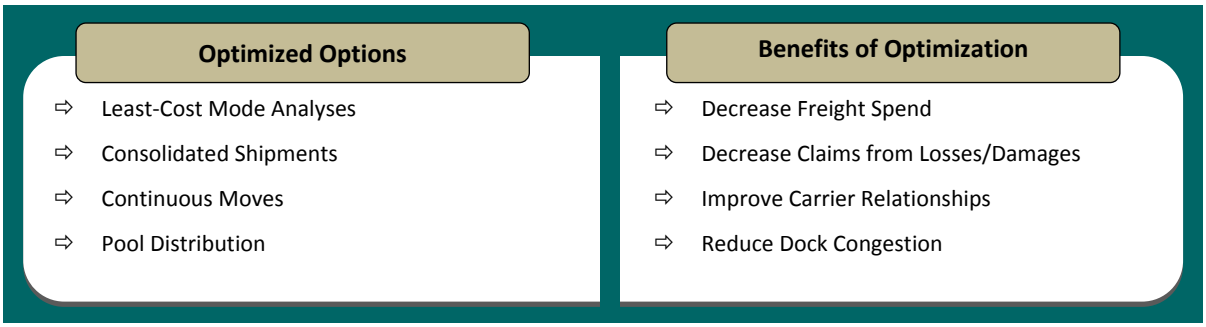
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multi-stop loads), continuous move opportunities , and pool distribution opportunities while accounting for such factors as due dates, mileage, vehicle weight, stops in transit, and out-of-route parameters.

What It Means

Optimal routing recommendations can save companies money on their freight spend in multiple ways. First of all, there are many advantages to consolidating LTL shipments into a single truckload shipment. Companies can capture a single truckload rate which will often be cheaper than the combination of multiple LTL rates. Companies can also gain exclusive use of a trailer thereby decreasing the risk of freight getting lost or damaged because it is being handled less frequently and by less people. In addition, companies can reduce congestion on their docks because they are loading a single trailer rather than waiting for multiple trucks. By creating continuous moves, companies can improve their relationships with their carriers because they are providing them with constant employment and valuable backhauls which will usually result in lower rates. By creating pool distribution points, companies are able to ship multiple orders in a single truckload from one point to be distributed by a trusted less-than-truckload (LTL) provider from a more centralized point, thereby reducing transportation costs.

Figure IV. TMS Optimization



Visibility

How It Works

A transportation management system can provide visibility in multiple ways. Best-in-class TMSs can provide user visibility, supply chain visibility, and freight spend visibility. User visibility comes from setting constraints upon each user's login in order to control the amount of information that user has access to. The higher up the user is in that company's supply chain, the fewer constraints they will have placed upon them and the more access they will have. Supply chain visibility comes from providing each member of the supply chain (including suppliers, warehouses, carriers, vendors, etc.) with the ability to update their portion of the shipment in order to provide accurate real-time visibility into the shipment's status. Freight spend visibility comes from generating advanced reports that are able to analyze freight costs by any parameter desired (i.e. shipper, receiver, lane, carrier, items, etc.) and drilled down into all factors contributing to the rate (including fluctuating fuel costs or accessorial charges like detention and labor to name but a few).

What It Means

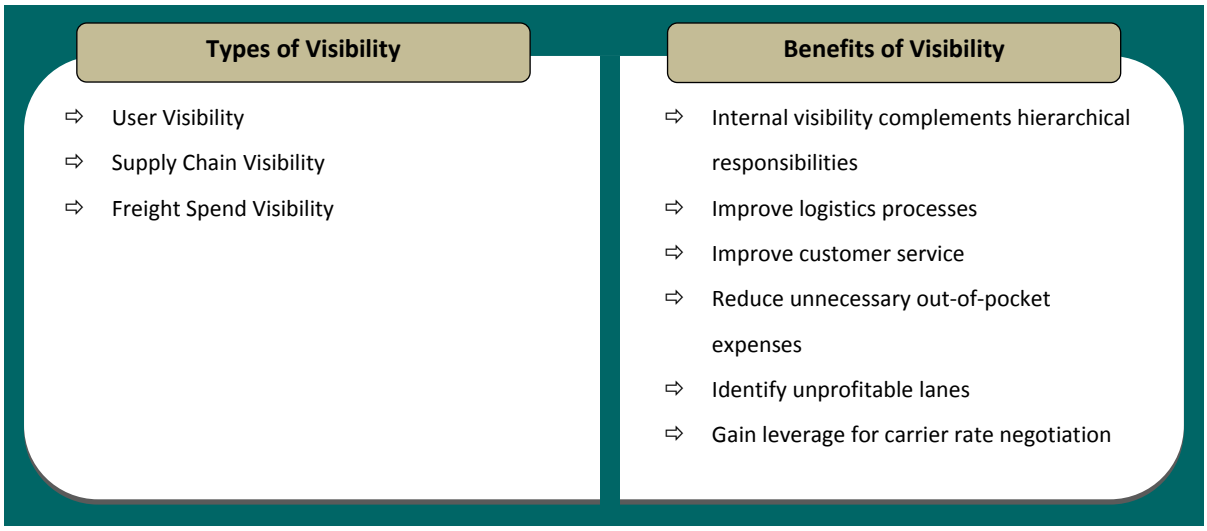
There are many benefits to creating visibility across a supply chain. Different levels of internal visibility means that executives and managers will have the ability to oversee each portion of the transportation process either individually or holistically while the logistics personnel will only be able to access information that directly relates to their responsibilities. This means those people that need to monitor and hold people accountable will be able to do so, while others will not become overwhelmed with a lot of information that does not pertain to them. By

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providing system access to outside supply chain members such as suppliers, carriers, and vendors, each partner will be able to more accurately plan for their portion of the shipment which could reduce expensive production costs and excessive accessorial charges as well as improve customer service.

Freight spend visibility has many benefits within itself. By analyzing freight spend by lane, companies can determine which of their lanes are not profitable based on transportation costs. Analyzing accessorial charges based on receiver could identify expensive trends in detention charges or high labor costs. Analyzing accessorial charges by carrier could identify frequent or high priced accessorial fees. Identifying company-wide shipment volumes and rates could provide leverage when negotiating carrier contracts.

Figure V. TMS Visibility



Reporting

How It Works

Most transportation management systems will be able to generate basic reports that can summarize general transportation information. Best-in-class TMSs, however, can generate advanced reports that actually drill down into the very core of the specific logistics metrics that effect a business's bottom line. Examples of basic reports include freight spend totals, shipment statuses, and shipment volume reports. Advanced reports are more sophisticated and can include accountability reports, analyzed freight spend reports, lane analysis reports, and carrier performance reports to name but a few. In addition, in the best-in-class TMSs, the reports are usually dynamic and the information can be easily filtered, summarized, and graphed based upon the user's requirements.

What It Means

Reports are an important tool utilized by most companies to identify areas of both successes and setbacks. Once these areas are identified, companies can take advantage of this information by adjusting their business practices to create more successes and overcome their setbacks. However, because most companies do not possess the necessary technology to analyze their logistics processes in this manner, they often end up wasting a lot of money on unnecessary expenses. Below are a few examples of how the various advanced reports mentioned above could potentially reduce a company's overall freight spend.

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Accountability Reports- With accountability reports, companies can hold every member of their supply chain accountable for controlling costs. For example, they will have the ability to determine if their lowest-cost carrier is being used at all times by their internal personnel; they will be able to determine if late arrivals by their carriers are resulting in unnecessary fees; and they will also be able to determine if extensive loading/unloading times by their suppliers and vendors are causing unnecessary detention charges.

Analyzed Freight Spend Reports- Analyzed freight spend reports allow a company to evaluate their freight spend based on a number of parameters including customer, shipper, receiver, item, lane, carrier, dates, etc. Having the ability to monitor freight spend in this way ensures that all causes of lost profits are being immediately identified and addressed.

Lane Analysis Reports- Lane analysis reports can help companies analyze fluctuation in rates by lane which could help them to predict trends in their freight costs so they can either prepare for the changes up front or(if possible) try to prevent them altogether through carrier rate negotiations.

Carrier Performance Reports- Carrier performance reports can help companies identify poorly performing carriers that are not only costing them money by accumulating late fees, but also revenue from customers they lost due to poor customer service.

Conclusion

In a world filled with competitive markets, it is important for every company to have the tools that will help them operate more efficiently while keeping costs down. Many companies will adopt technology in order to obtain these results for their sales, accounting, customer service, and human resources departments, but often overlook their logistics department. With functions such as automation, optimization, visibility, and reporting, a transportation management system can help companies to obtain these same optimal results for their logistics department as well.

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