DESCARTES™

The 4 key points to take full advantage of a TMS

The smart way to manage your supply chain

Contents

Introduction - A flexible basis needed for success

A transport management system (TMS) is the best way to keep a grip on your logistics supply chain. The software provides insight into transport flows, expected arrival times, transport performance and logistics costs. More comprehensive versions of TMS applications add to this by allowing users to check invoices automatically, automate booking operations, collaborate with suppliers and monitor compliance with commercial agreements between all stakeholders in the supply chain. A TMS is the basis for shippers and logistics service providers when managing multimodal movements of goods in the supply chain.

Focus on 4 aspects of the supply chain

When a company is contemplating investing in a TMS or replacing an existing package, it should focus on four aspects. This is the way to tackle the main challenges of today and the near future. These 4 aspects are:

1. **Transport pricing and allocation**

2. **Visibility**

3. **Sustainability**

4. **Efficiency of execution and collaboration**

Once you have mastered these 4 aspects, you will have a better grip on the supply chain challenges that may arise over the coming months and years. Many supply chains are being disrupted, prices are fluctuating and the importance of sustainability and cooperation is increasing. In this whitepaper we will look in greater depth at how shippers and logistics service providers can benefit from a TMS that gives them control over these 4 aspects.

Managing multimodal supply chain movements

The advantages of a modern TMS are significant. A TMS plays a key role in managing supply chain movements, whether by air, sea, road, rail or combinations of them. When they take a strategic approach to logistics, many shippers still look primarily at the cost aspect. However, there are signs of a shift towards the quality of deliveries. This shift is vital in order to keep customers satisfied.

Transport management software - especially systems with more functions - allows users to make choices based on more and more detailed information. Extended forms of TMS in particular offer users a lot of added value. Shippers who can manage nearly all processes within their TMS platform simply deliver better service to their customers.

Responding to changes in the logistics chain

The software forms the basis for managing companies' logistics processes, which have a major impact on customer and supplier satisfaction. A well-designed TMS that connects readily with chain partners is also a flexible application that will ensure that a company is better placed to handle changes to the logistics chain.

This whitepaper provides insight into the 4 key aspects which are best managed using a TMS. Companies that are willing to invest in a TMS will find that they get a better grip on transport processes, as well as being able to control costs, be more flexible and meet the expectations of customers and suppliers more easily.
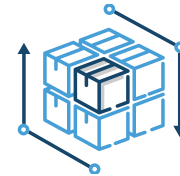
Get a better grip on transport processes, control costs and be more flexible

1 Transport pricing and allocation – From an overview of transport rates to pre-billing

A TMS gives shippers tools to effectively deal with transport pricing and allocation. This is highly important in times when the global picture is one of constant change. Those who have (real-time) insight into freight rates for containers, road transport or air cargo can naturally make better choices. A good TMS makes it possible to obtain this visibility from many different sources while also automating the booking process, making it quicker and easier.

The range of options that a good TMS offers is diverse. For example, for calculating costs on the basis of kilometres travelled, but also for applying a discount. Another example is that a TMS puts an end to the uploading of tariff documents. With a TMS, shippers can gain a quicker overview of carrier rates. This allows them to compare rates and make choices based on both performance and price.

Improved transparency

Understanding rates in the transport sector makes doing business easier and more effective. For instance, data can be exchanged via an automatic link between a shipper's TMS and a carrier's database or TMS. The more data that is accessible, the clearer your picture of what you can base your rates on as a shipper. There is an enormous need for transparency within the supply chain, but not everyone wants to provide it. As a shipper, you take control of the situation using a TMS.

TMS software allows shippers to link up with carriers. This ensures smoother data exchange with these partners in the supply chain, for example concerning rates. However, a situation may arise where you have no rate information or the carrier has no capacity. In that case, you can fall back on the spot market. A good TMS helps you as a shipper to search the spot market for suitable rates. You can then select carriers and send them a link to a transport request. The selected carriers then indicate the rate they would apply for the journey or journeys and what the cost breakdown looks like, including any additional costs and price per kilogram. This gives you enough information to make a decision. As a shipper, you can also offer a level of transparency back to carriers.

Understanding inbound and outbound costs

The TMS is perfectly suited for understanding costs of transport. For example, inbound costs to a factory or a warehouse, but also outbound costs. Both are an important part of the price of a product. A TMS helps keep a precise record of these costs and provides insight into the costs that will be incurred. Correct transport pricing is essential, which is why the finance department also wants to keep a firmer grasp of the costs and the corresponding invoices.

Transport pricing as a prelude to more

Transport pricing is the first step in a series that includes; freight audits, pre-billing and matching. The results of these steps can then be linked to an ERP system. With the calculations performed, invoice verification completed, and insight into what a product does in a specific time, will provide you with tools to make adjustments as needed. This is not a luxury, because invoicing errors are easily made. These processes will remove these errors and save you money. Carriers benefit from good invoice control by getting paid faster. By using the TMS as the basis for collecting transport data, everyone in the organisation sees the same version of reality.

More interaction between supply chain partners

This increased insight also brings a closer relationship with supply chain partners. Pre-billing and invoice control options allow for more interaction. As a shipper, you send a transport order to a carrier and the carrier invoices it after execution. The invoice is checked and you indicate why you agree or disagree with the specification or the total amount. A modern TMS allows you as a shipper to automate invoice checking based on predetermined parameters. If the check is passed, payment follows automatically.

Put an end to unnecessary discussions

The pre-billing function in a TMS provides control and ensures good communication between shipper or forwarder on the one hand and carrier on the other. Pre-billing puts an end to unnecessary discussions and issuing credit notes. If there is any consultation at all, it takes place within the standardised TMS environment and before it can cause any disruption to the invoicing process. If, as a shipper, you can make this process run smoothly, it will boost the ROI of your TMS investment. You save time without incurring any unwanted costs.

A final point in this pricing section is that although price is important when selecting carriers, a TMS like Descartes TMID explicitly offers more selection options. Service and lead time are two other common selection aspects, but in the vast majority of situations, a shipper will use a combination of criteria when selecting a carrier. For example, a TMS gives you a chance to check whether the volume agreements made have actually been met. The on-time-delivery aspect is becoming an increasingly important criteria. The same goes for CO_2 emissions as a distinguishing element.

2 Visibility -
Continuous insight into activities and the ability to respond on time

Supply chain transparency, or visibility, is perhaps the most important topic in the boardroom of shippers and forwarders. Knowing where your goods are, when they are expected to arrive and when you can sell them is massively important. This subject is currently in the spotlight, as logistics chains are regularly experiencing disruptions. A TMS serves as a basis for managing all transport-related data. It is a platform that links the different parties in the supply chain. A company wants to send shipments and for them to be visible. With the right visibility tool, it is also clear which shipment is which and what costs are associated with it. A good TMS also makes it possible to allocate specific costs to the total cost of a product within a shipment. Finally, more and more attention is being given to the ability to retrieve a purchase or sales order's information easily. This makes it immediately clear where a customer's shipment is.

Connections with carriers

A good understanding of the logistics chain starts with yourself. Linking with carriers is step one. By using a fully-fledged TMS as a shipper, you can then also share more data with transporters in a simple and standardised manner.

Sharing transport documents is easy too. Information about dangerous goods, customer opening hours and even instructions on how to approach customers can more easily be passed on.

TMS handles data translation

Of course, there is also a flow of data back from the carrier. This can be in various formats. Sometimes conversion to another format will be required. As a shipper, you should be able to rely on your TMS vendor to provide the appropriate mapping for this data. That way you can seamlessly be informed of what happens during transport and also of any change to arrival time. This new Estimated Time of Arrival (ETA) will be visible. This information can then be shared with other logistics partners so that they can adjust their planning accordingly.

Understanding different modes

Certainly not all TMS software is capable of managing transport data for multiple modes. The vast majority of TMS vendors focus on one or at most two modes. Descartes has a strong focus on different transport modes, including air, sea and road transport. The latter category includes express carriers like FedEx, UPS and DHL Express. Descartes TMS uses data from a range of sources, including carriers. This creates more tracking and tracing options. The TMS then shows as much data and as many updates as possible in the form of messages, for example about a departure, the data required for planning a container and when the container is available for pick-up. Each mode has its own specific characteristics, and the role of the TMS is to make these different flows as clearly visible as possible.

It is often possible to obtain a far better overview of the supply chain than shippers and forwarders would once have thought possible. One way to improve visibility is to closely involve suppliers in goods flows. This may be accomplished, for example, by using a supplier portal, which can give a great boost for inbound visibility. In many cases, that part of the supply chain has been put in the hands of third parties by shippers. A better overview of these flows also reduces the likelihood of trucks just waiting around outside a warehouse. More insight reduces the chance of incurring additional costs and makes logistics planning easier.

Measuring KPIs and creating heat maps

TMS's themselves, or in the form of additional tools such as Business Intelligence (BI), offer the opportunity to dive deeper into the details. For example, to answer management questions, measure KPIs, or to create your own graphs or heat maps. Think of checking the average number of pallets per shipment, the cost per pallet to a certain region or any other question. The data from the TMS is the source for an overview in a BI tool. Performing analyses is important for those who want to know exactly if something is going well or not. How much does it cost to transport something? Is alternative transport possible or is there a chance of increasing the price of a product or service?

Real-time visibility is almost the norm, especially for certain transport modes. This is already available within the Descartes TMS suite. But there is more, such as:

- **Delivering better control and service** through real-time tracking and ETAs for all modes of transport across borders

- **A control tower view across supply chain activities,** from purchase order to proof-of-delivery

- **Real-time visibility for end customers,** while helping to improve control over transport operations and costs

- **An integrated overview of transport, inventory, customs statuses** and performance of carriers/suppliers

- **The visibility platform is** also **supported by Descartes GLN,** one of the largest networks of transport companies and trading partners in the world.

"The TMS gives us insight and allows us to analyse, predict and communicate. There is a continuous real-time overview of shipments. If something is in danger of arriving late, we report it early and our customers can adjust their reception process and downstream deliveries."

*- Shannon Bush,
Transportation Manager, Sun-Glo potato producer*

3 Sustainability -
## How a TMS helps in taking steps towards sustainable transport

Sustainability is rapidly climbing up the priority charts. Nonetheless, there is still a big gap between saying and doing. Many shippers claim that they consider sustainability important, but hardly ever judge logistics service providers on it. There is still little demand for receiving CO_2 data. It is also clear that the difference between saying and doing will diminish. Pressure from consumers and governments will result in more action being taken to ensure more sustainable logistics. That makes a TMS the appropriate application to use as a basis for measuring and processing emissions data and then doing something with it in the form of solutions or services.

Requesting CO_2 data

Anyone who wants to be successful in terms of sustainability will need to be able to exchange data easily with supply chain partners. When selecting a logistics service provider, you as a shipper or logistics service provider can request CO_2 journey data. On top of that, as a shipper you can indicate that you are prepared to pay a higher rate if a carrier can transport a shipment sustainably, and of course vice versa. Carriers who use electric trucks can be given a higher ranking during selection. Exchanging data with chain partners can also lead to better predictions about the emissions for a particular run or the total number of runs agreed with a carrier. If this data is exchanged digitally, it reduces the need for paper documents. Attention to this kind of choice is definitely on the increase. .

Insight into consumption data

One of the most important aspects for shippers is to know what the company produces in terms of CO_2 emissions. This is still often hard to predict. Shippers make promises to consumers and must keep them. Logistics service providers, in turn, are judged on performance and will have to provide information. Integration with other parties in the supply chain can improve the visibility of consumption data. Likewise, freight consolidation can result in the use of fewer trucks and/or fewer journeys. As a shipper, with a modern TMS running in the background, you can ask a carrier more questions and find out which aspects have been taken into account to allow for a reliable calculation of sustainability. Better insight based on more accurate data also leads to more fruitful discussions. The signal to noise ratio in communications between shippers and logistics service providers will improve. Expectations are more likely to be met.
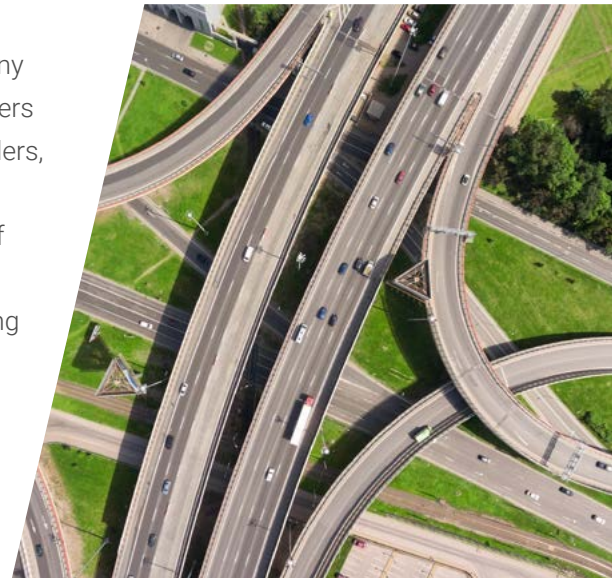
Ultimately, when it comes to sustainability, action starts with digitising information, collecting data and making effective decisions based on that information. Digitalisation opens the door to a clearer view and opportunities to become more sustainable. If not by driving electric, then through smart consolidation. The reports that a TMS can provide form the basis for future sustainability initiatives.

By using Descartes' logistics applications, companies save money every year:

- *727 million litres of fuel*
- *The equivalent of over 4.5 million barrels of oil*
- *61,000 journeys round the world by truck*

4 Execution efficiency and collaboration - Efficient performance and control of the supply chain

Execution efficiency

While transport pricing and allocation, visibility and sustainability are elements that mainly serve to allow strategic improvements, execution is the basis of transport management. If transport has been scheduled, this can be communicated via TMS as a transport order. If you have a TMS that can easily be linked to carriers' own systems, that is a big plus. Transporters can transmit this data automatically. That way, it means less manual work and less chance of making mistakes. Order confirmations, including the administrative steps that follow, are also automated.

Using a TMS efficiently works both ways. It both standardises and improves processes. A specific example of an efficient standardised process is the creation of a compliant label, this makes it easier to exchange data with express carriers. Other important tools that help with execution processes are dock management, yard management, pallet building and loading applications. With dock management, the software allows carriers to reserve a time slot for loading or unloading. The pallet building tool helps to optimise the loading of pallets for trucks and containers. The loading software supports optimised planning for well loaded trucks on the basis of a loading manifest.

It is important to be able to exchange data digitally, regardless of which party in the supply chain it is with: shipper, forwarder or logistics service provider. Not just departure and arrival dates. There is an increasing demand for document sharing between shippers and carriers. Take the consignment note in the form of a digital CMR. A TMS is the central source for processing all operations and data. It does not matter whether the data sharing is via direct interfaces in the form of API or EDI or via portals.

Collaboration

As well as execution, there is a growing interest in collaboration. Logistics chains are less orderly than in the past. In quiet periods, it has proved more efficient to send smaller quantities more frequently. This also meant more links in the logistics chain. At the same time, new players emerged, including e-commerce companies. However, the operations - import/export - remain the same and the underlying role of a TMS is also similar. Put very simply, cooperation in the supply chain between a company and its suppliers can lead to a shipment that your transport department will need to plan.

Some suppliers enter data, directly or via a portal, into a shipper's TMS. That is not burdensome; far from it, it brings all the data together. It is an example of cooperation where a TMS plays an important role. The TMS can also play this role in execution, pre-shipment or planning activities. Who is allowed to do what, is precisely specified in the TMS. The customer's wishes should be the decisive factor in the options that the TMS gives the various chain partners.

The rise of e-commerce has led, among other things, to a more intensive use of portals. TMS data can be used to keep both customers and suppliers informed. Sharing this information can lead to more transparency about where goods are in the supply chain.

.

Dashboards as a complement to TMS

In an ideal situation, growing cooperation leads to an enrichment of the data, including that in the TMS. So it is only logical that demand for analytical tools is increasing. Descartes is responding by building more dashboards. These will allow users to do more than before. Creating a trend overview is easy, but these tools can also be used to perform simulations.

With TMS data, both customers and suppliers can be informed. Sharing this information can lead to more transparency about where goods are located in the supply chain.

Management summary

Supply chains are more complex than in the past. This is not something caused by the COVID-19 pandemic alone. Chains involving shippers, logistics service providers and end customers have many more links than decades ago. End customers also require faster service. These aspects put pressure on logistics chains. Using a TMS increases your grip on transport flows.

Get a better grip on supply chain challenges with a TMS
There are 4 aspects of the supply chain that benefit from the use of a TMS. This is the way to tackle today's and tomorrow's major challenges.

These four aspects are:
1. transport pricing and allocation
2. visibility
3. sustainability
4. efficiency of execution and collaboration

1. Transport pricing and allocation

Understanding rates in the transport sector makes doing business easier and more effective. The more data that is available, the better view you have of what you as a shipper can base your rates on. There is an enormous need for transparency within the supply chain, but not everyone wants to provide it. With a TMS, as a shipper you take matters into your own hands. Improved visibility, along with pre-billing and invoice control options allows for more interaction with supply chain partners. A modern TMS allows you as a shipper to automate invoice checking based on predetermined parameters. If the check is passed, payment follows automatically. The pre-billing function in a TMS provides control. Pre-billing puts an end to unnecessary discussions and issuing credit notes.

2. Visibility

Real-time visibility is almost the norm, especially for certain transport modes. But a TMS does more, such as delivering better control and service through real-time tracking and ETAs for all modes of transport across borders. It also provides a control tower view across supply chain activities. From purchase order to proof of delivery, real-time visibility is created for end customers, while also helping to improve control over transport activities and costs. Finally, a TMS provides an integrated overview of transport, inventory, customs statuses and carrier/supplier performance.

3. Sustainability

Anyone who wants to be successful in terms of sustainability will need to be able to exchange data easily with chain partners. When selecting a logistics service provider, you as a shipper or logistics service provider can request CO_2 journey data. Exchanging data with supply chain partners can also lead to better predictions about the emissions for a particular run or the total number of runs agreed with a carrier. If this data is exchanged digitally, it also reduces the need for paper documents.

4. Efficiency of execution and collaboration
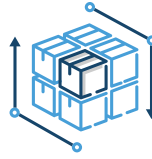
If you have a TMS that can easily be linked to carriers' own systems, that is a big plus. Transporters can transmit this data automatically. This results in less manual work and a lower risk of making mistakes. Order confirmations, including the administrative steps that follow, are also automated. Some suppliers enter data, directly or via a portal, into a shipper's TMS. That way the data is brought together. It is an example of cooperation where a TMS plays an important role. The TMS can also play this role in execution, pre-shipment or planning activities. Who is allowed to do what is precisely specified in the TMS. The customer's wishes should be the decisive factor in the options that the TMS gives the various chain partners.

.

About Descartes Systems Group

Descartes is the world leader in providing on-demand software-as-a-service solutions aimed at improving the productivity, performance and security of logistics-intensive businesses. Customers use our modular software-as-a-service solutions to control, plan, track and measure delivery resources; plan, allocate and execute shipments; review, audit and pay transportation invoices; access global trade data; submit customs and security documents for imports and exports; and complete many other logistics processes by participating in the world's largest collaborative, multimodal logistics community. Our headquarters are in Waterloo, Ontario, Canada and we have partners all over the world.

Find out more at www.descartes.com, and follow us on LinkedIn.

Uniting the People & Technology That Move the World.