

# Digital solutions for my transport operations

WHITE PAPER | a partnership



WAVESTONE

May 26, 2023

**France Supply Chain refrains from entering into any discussion, activity or approach, which could, on its part or that of its members and participants, infringe the laws of competition.**

For example, association members (directors, members and employees) should not discuss, communicate or exchange confidential business information, including non-public information about pricing, marketing and advertising strategy, costs and revenues, business terms and conditions, contracts with vendors, including purchasing strategies, supply contracts, sales and distribution programs. This applies not only to formal meetings, but also to informal discussions before, during and after meetings.

This provision also applies to all participants in FSC-organized working group meetings and is reiterated at each opening meeting of a new working group.

Any participant who believes that comments of any kind, made during a meeting, contravene the ethical rules set out above, shall immediately call upon the assembly to put an end to the disturbance, and shall be entitled to demand that the assembly take the appropriate sanctions to put an end to the disturbance. As such, such an incident shall be submitted to the Board of Directors.

# France Supply Chain

- > Enabling Supply Chains to **contribute to a sustainable world** for the planet, people and performance
- > Reinforce the impact of the Supply Chain in the **performance / competitiveness** of their companies
- > Promote the Supply Chain professions to **develop attractiveness and recognition**

450

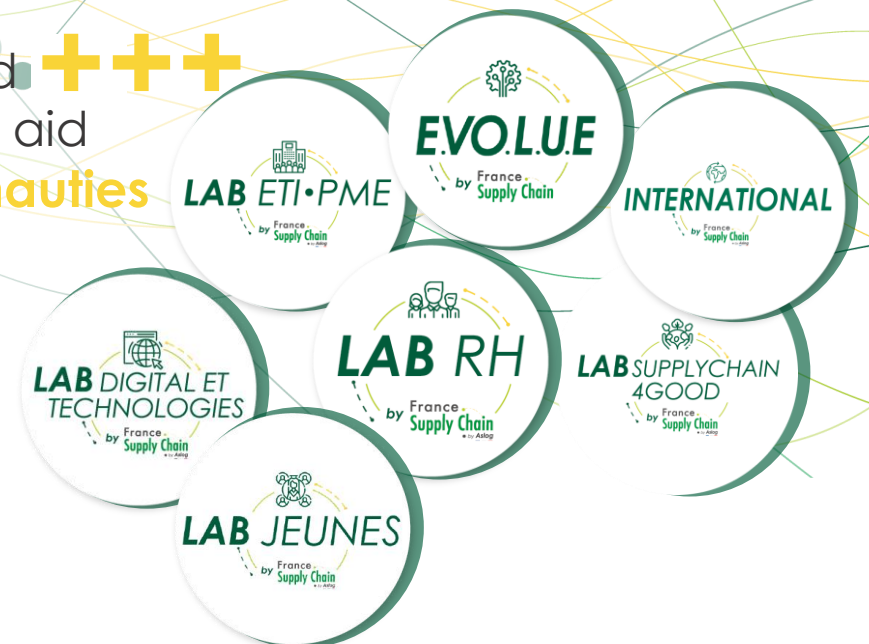
Companies and schools membership

4900

Members

5

Labs and +++  
mutual aid  
Communities





# Introduction by Jérôme Bour, workshop leader

Customer experience, resilience, sustainable performance... **Transportation** is at the heart of supply chain challenges. And to meet these challenges, many companies want to accelerate the **digitization of** their transport operations.

Members of France Supply Chain, this white paper has been designed to help you in this transformation process, to **enlighten your choices** in front of these new uses and solutions. It gives you the keys to understand the possible **solutions**, the **gains** to be expected and the **good practices**. customer,

To do this, this white paper presents :

- a state of **maturity** and **expectations of** companies facing this digital transformation,
- a **radar of** the types of solutions available and the main players,
- guides and advice to **make this project a success** and **get** all the players **on board**,
- the **economic and environmental benefits** of these solutions,
- **feedback** from two major manufacturers.

Designed as part of the  this reference document was made possible thanks to the contributions from  manufacturers, service providers, consultants and solution editors, each of whom brought their expertise to bear on the challenges of digitalizing transportation.

And to go further, the Labs of France Supply Chain are at your disposal. They give you access to a great community of exchange and sharing of good practices!



JÉRÔME BOUR

Président de DDS

## About DDS

As a major player in the digitalization of the supply chain, DDS offers manufacturers, distributors and service providers SaaS solutions for sustainable performance of their sourcing, procurement and transport operations.

# This white paper is made possible by the commitment of our members



**FATIMA-ZAHRA CHERKAOUI**  
Consultante en Supply Chain  
WAVESTONE



**LAURENT DENUIT**  
SCM Transformation  
Director  
ORACLE



**FABIEN GAIDE**  
Directeur Projets Opérations  
DERICHEBOURG  
ENVIRONNEMENT



**GEOFFREY THIERY**  
Consultant senior en  
Supply Chain  
WAVESTONE



**ETIENNE TOURNIER**  
Partnership Manager  
S2PWEB



**RÉMY VERNET**  
Head of Digital Supply  
Chain France  
SAP

# An increasingly integrated and connected supply chain

The Supply Chain has become more and more complex to manage. Equipping yourself with digital tools allows you to offer a more agile, efficient and sustainable logistics.



The evolution of customer expectations, ...

B2C and B2B customers are increasingly demanding with **very specific expectations** on the products and services that accompany them.

Product diversity is increasing with more and more **references to manage at the** supply chain level.

The service offer is built with **multiple delivery modes and points** as well as **shorter and shorter** order-to-delivery times.



economic and environmental issues ...

Consumers and authorities are and will be more demanding on **the carbon footprint** of products.

Thus, reducing carbon emissions from transport or **digitizing processes (paperless)** related to the transport of goods are **levers of competitiveness** between companies.

Finally, **the inflation of fuel prices** or the **shortage of drivers** force companies to optimize their logistics.



transform the Supply Chain and its management ...

The **Supply Chain is internationalized** to optimize the **total cost of the product** (maximizing the filling of trucks, calculating the best route) and to best serve customers with sources of supply and production sites that are often far from consumers.

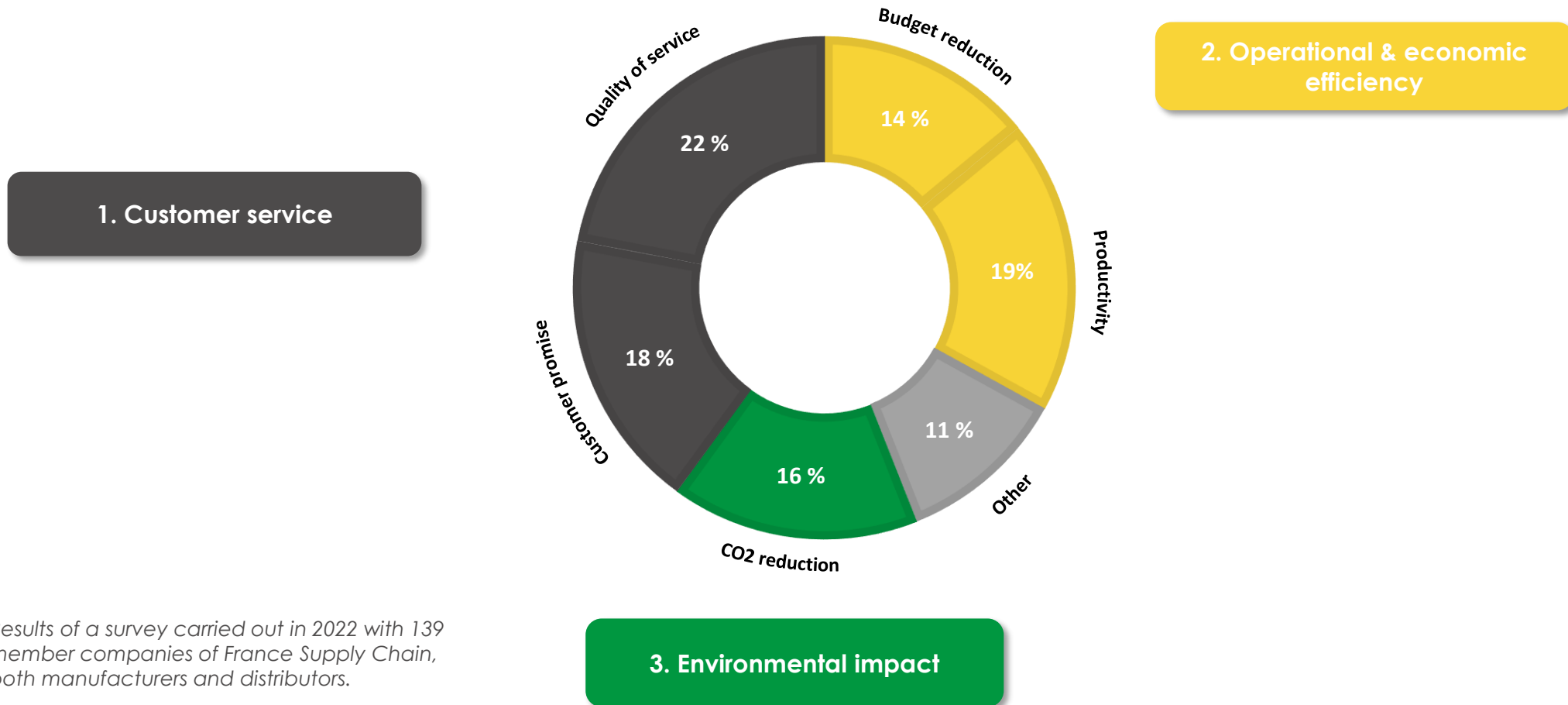
Thus, the structuring of the logistics network is becoming more and more complex and requires **real-time management in** order to anticipate and react to the slightest alert.



and require a mastery of transport and logistics operations

Numerous events and trends have made logistics and transport management more complex (COVID crisis, diversity of flows, re-internalisation, etc.). The need to **control risks** and to adapt to customers' expectations of visibility requires **real-time traceability of** transport and reliability of the ETA in a collaborative and digitalized environment.

# 3 main motivations to adopt transport solutions



Results of a survey carried out in 2022 with 139 member companies of France Supply Chain, both manufacturers and distributors.

# 3 main motivations to adopt transport solutions

## 1. Customer service

By supporting the daily work of logistics managers, these tools provide them with valuable **indicators** such as **truck fill rates**. In a journey where many unforeseen events can occur, technological solutions will serve as **an alert for potential incidents**. They are a guarantee of **better visibility**.

Future transport management tools will guarantee **better traceability**. **Real-time geolocation** of the carrier, and therefore of the product, gives the customer access to several pieces of information, notably on the expected time of arrival of his delivery. This **transparency** minimizes exchanges between the customer and the after-sales service and improves the consumer experience.

## 2. Operational & economic efficiency

These new tools will **automate processes, which will** avoid and correct human errors. The **optimization of the flows** will be maximal thanks to the intelligence of these solutions which will facilitate the decision-making and the maximum use of the means of transport.

**The data is updated** regularly and automatically, which makes it more **reliable**. They are also **more easily accessible and quickly shared**. There is more transparency and better **communication** between the different entities for quick and reliable decision making.

The solutions make data reliable and update it automatically, allowing stakeholders to **control costs and budgets**.

The tools allow with artificial intelligence to **simulate different scenarios** and thus for the managers to choose the best option. The solutions optimize the **management of** activities and costs by selecting the best possible option.

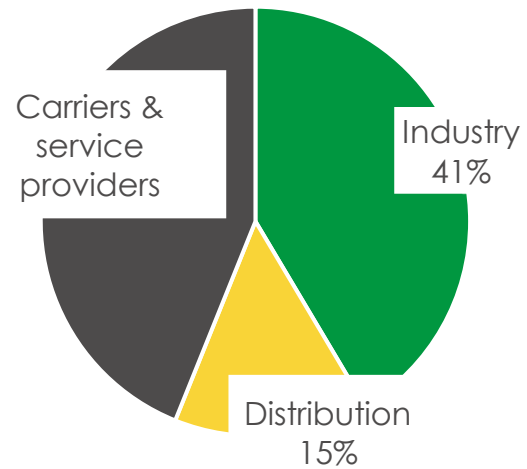
## 3. Environmental impact

CO2 emissions **assessment & management**: The solutions tracking vehicles and products will **calculate the CO2 emissions** of each delivery for each product. This assessment will give a precise figure of the carbon impacts of the company which will be able to take concrete measures more easily and observe the results.

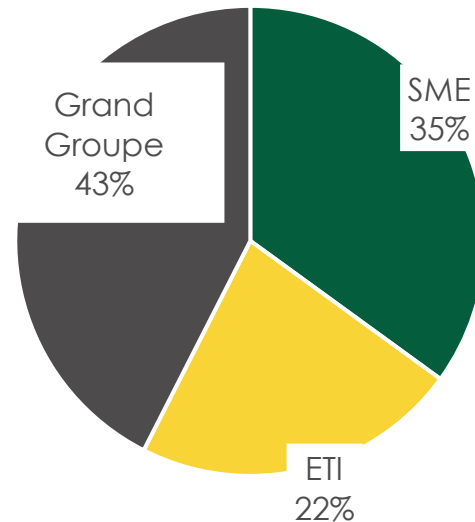
**The measures to reduce** and control the carbon impact will then involve the **optimization of** filling and rounds, the **reduction of empty trips**, the proposal of **alternative** modes of **transport that are** less polluting... These measures are not only ecological but also economic for the company.



# However, there are still obstacles to the digitalization of transport



Profile of the companies surveyed



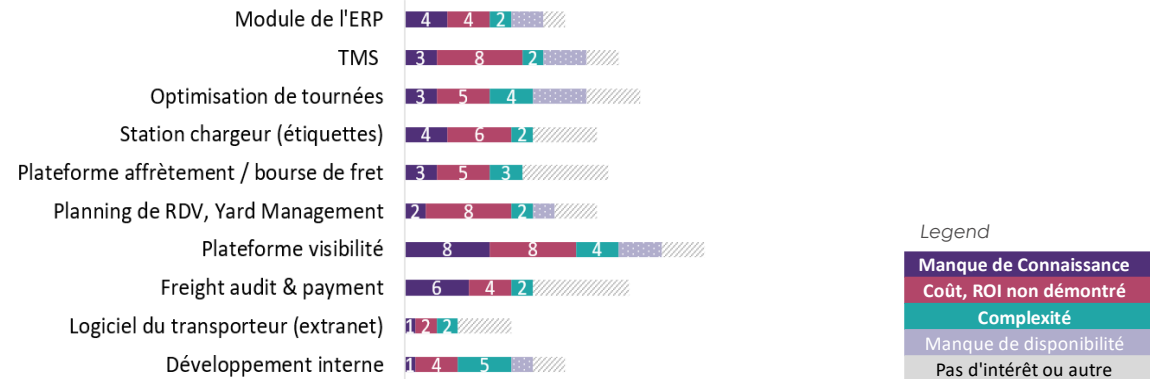
A survey carried out in 2022 with a large sample of companies belonging to France Supply Chain shows that :

- Resistance to the adoption of TMS solutions identified;
- digital solutions that are still not widely used.

# However, there are still obstacles to the digitalization of transport

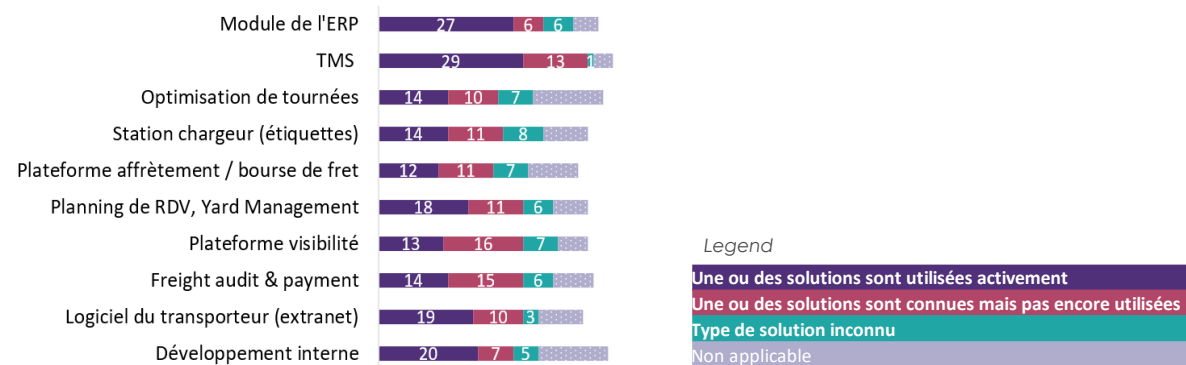
Resistance to the adoption of TMS solutions

- **Lack of knowledge** related to solutions
- **Cost, ROI not demonstrated**
- **Perception of complexity**
- **Choice of TMS** adapted to various needs among existing solutions and **its implementation** in the current IT ecosystem seems complex for some organizations



Digital solutions not yet widely available

- The obstacles identified result in a **low rate of adoption** of digital solutions
- Historically, TMS has been adopted more by **carriers**. However, in the last few years, TMS has become more and more present among **shippers**.
- However, the **chargers** have a relatively **low usage rate** that varies between 15% and 40%.



# Digitization of transport: processes covered

In order to better understand the challenges and opportunities of the digital transformation of transportation, we present here a vision of the processes according to a functional pyramid, which is broken down into 4 key levels: **Strategic**, **Tactical**, **Operational** and **Execution**. Each of these four levels groups the main transport management operations, on which different market solutions can intervene and play a truly key role towards a more efficient, more connected and more sustainable logistics.



# Transportation Solutions Radar 1/2

Radar is broken down into three subcategories: **Steering**, **Specialization** and **Network**. We detail here each of these sub-categories, as well as the advantages and situations in which it is relevant to integrate these solutions. Steering solutions can generally address all the functional levels presented in the pyramid, while specialization and steering solutions are more focused on certain needs.

## Steering

**Shipper TMS:** Management system that meets the various needs of shippers (planning, chartering, booking and billing control of transport). These TMS solutions allow to optimize the transport orders by choosing the best carriers and by distributing the loading orders between them at the best cost thanks to simulations. Finally, the TMS will help the shipper to anticipate his workload.

**Carrier TMS:** Management system that meets the needs of the carrier (fleet and driver management, billing, etc.). These TMS solutions allow to optimize the rounds (by estimating the costs and by following the progress) by taking into account the social constraints (ex: rest hours) and the state of the vehicle fleet (ex: in repair).

## Specialization

**Optimization:** System that allows the optimization of the rounds or the loading (arrangement of the products in the truck). Thus productivity (cost, delivery capacity) and customer requirements (lead time) are improved.

**CMS parcel:** The CMS (Carrier Management System) is a software that allows a shipper to print labels in the format of the carriers, to obtain information on the carriers and to receive information on parcel tracing.

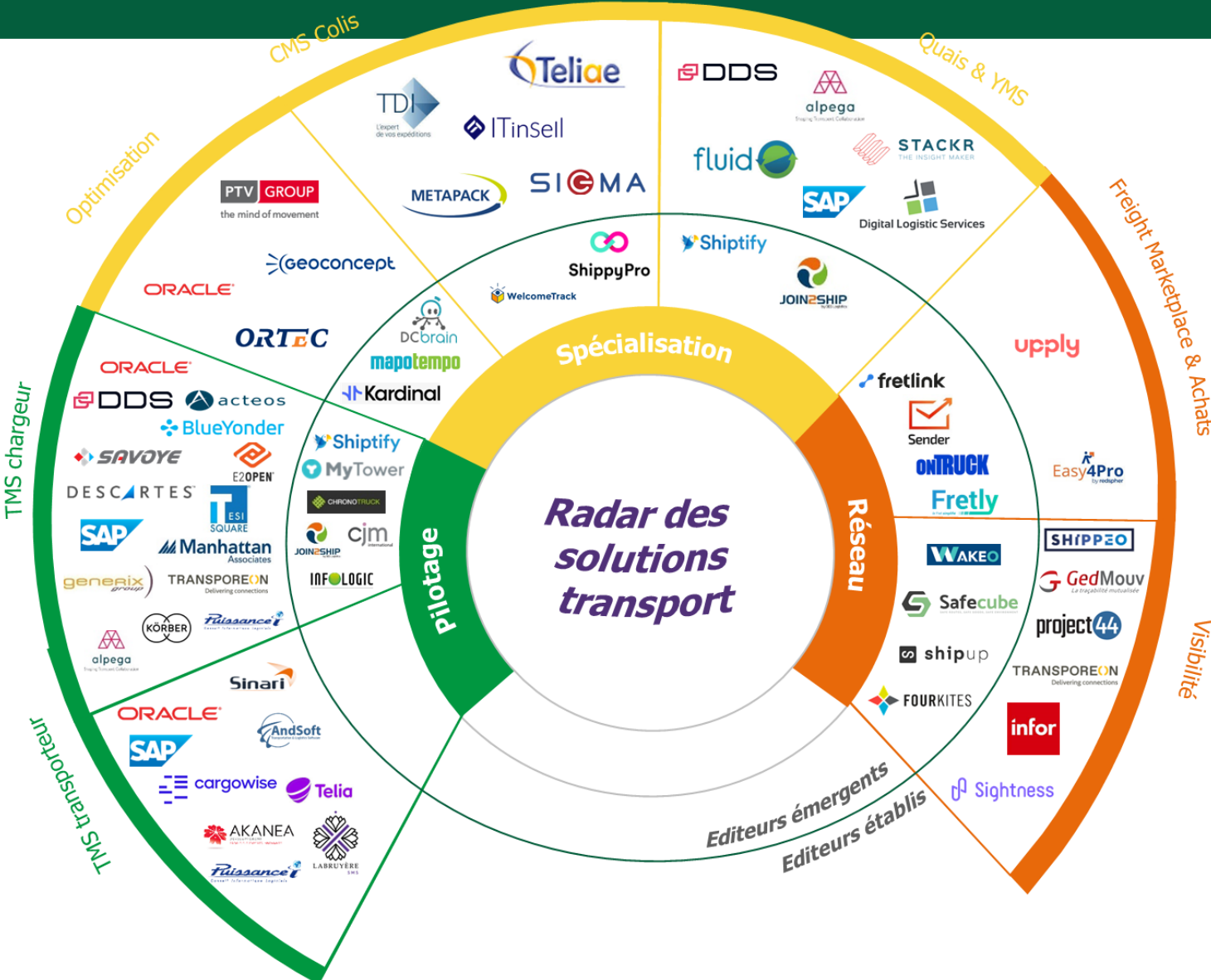
**YMS:** Yard management system that allows to fluidify the traffic around and in the warehouse by planning the flow of vehicles (loading docks, access control, parking, surroundings of the warehouse)

## Network

**Freight marketplace:** Allows to put in competition the actors of transport for a call for tender and the optimization of the purchase of transport multi-criteria. They help shippers choose the best carrier according to product capacity, at the best price. They also help carriers find the products that are easiest to transport and that generate the most revenue.

**Visibility & Analytics:** Provides end-to-end visibility into the transportation of a product, especially for complex supply chains and for multi-partner use (4PL / 3PL / Carrier). This will be used to identify errors and then improve customer satisfaction.

# Radar of transport solutions 2/2



This radar presents the main players in the transportation digitalization solutions market, divided into the 3 categories (Steering, Specialization and Network) presented above.

This radar is not intended to be exhaustive, especially since the market is experiencing strong dynamics with new entrants and consolidations. It is an orientation tool, which completes the process of framing one's needs, in order to identify the best adapted solutions, as well as the possible associated gains.

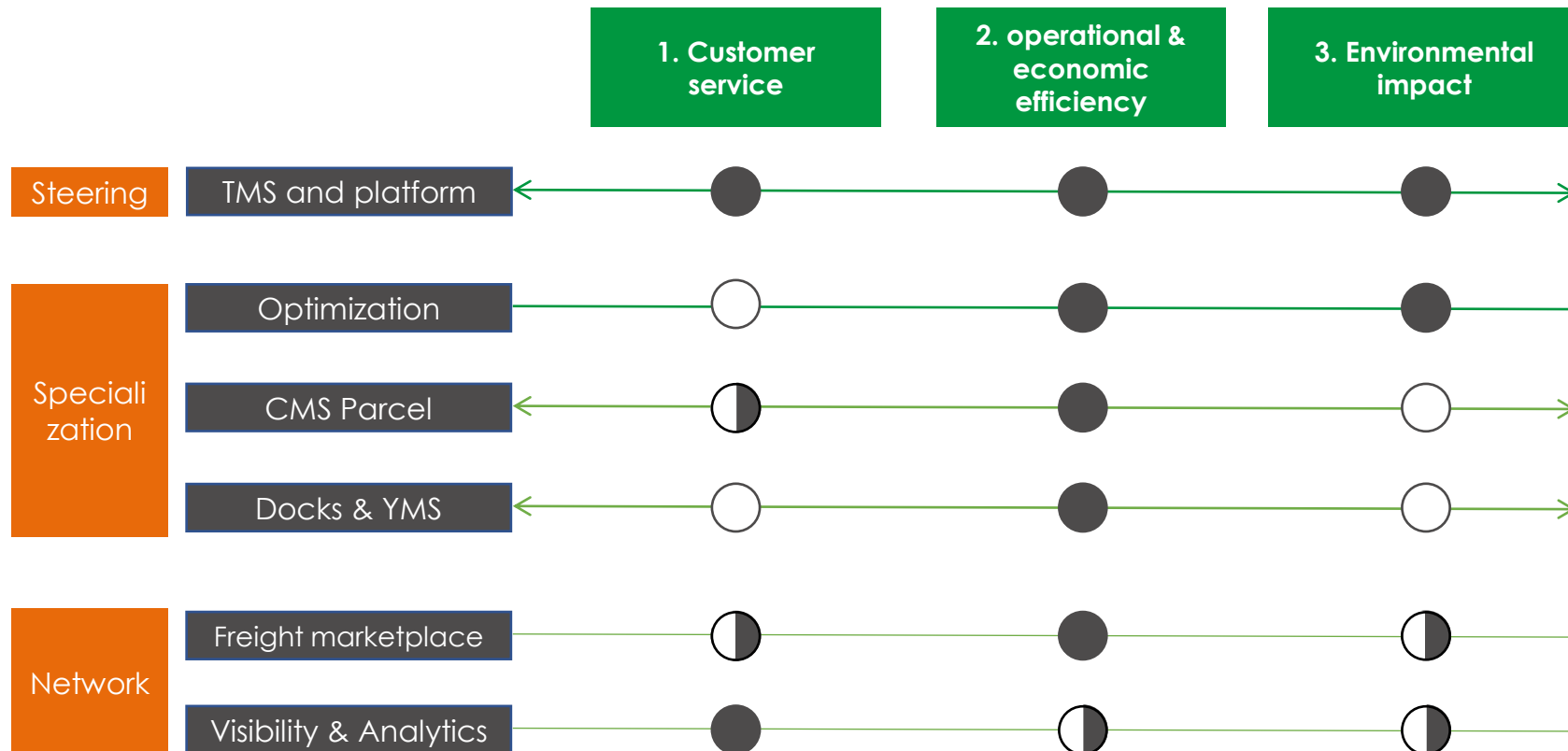


To learn more, watch the webinar replay

# What type of solution should I choose according to my profit objective ?

Given the diversity of solutions on the market, it is important to have clearly defined your gain objectives in order to identify the best possible options. It should be noted that, for solutions with the broadest functional coverage, a modular approach is generally used, which allows you to choose and sequence the modules deployed according to your gain objectives.

With regard to the 3 motivational levers defined above, here is how the different types of solutions are positioned:



- It is generally observed that the TMS brick proves to be an effective first step before going further, and that it is the logical starting point for a large number of shippers
- Nevertheless, there are also more standalone solutions, such as the CMS Parcel, or YMS

# How to successfully scope a transport IS project ? The prerequisites

In the following paragraphs, we propose a certain number of **points of attention to be observed** as well as some **prerequisites** that should be checked before starting the project to ensure its success.

- 1** **Verify the quality of the data**  
It is of course essential to have quality data (reliable and in a standardized format) in order to use a transport solution. Data cleansing and the standardization of databases are often a prerequisite for the implementation of a transport tool.
- 2** **Ensure the availability of project resources**  
The implementation of a transport IS mobilizes a wide range of players (IT architect, developer, cybersecurity manager, transport experts, customer service, accounting, etc.). A workload plan should be drawn up at the beginning of the project to provide visibility on the involvement of each person.
- 3** **Validate internal integration capabilities**  
Several technological solutions are possible to interface internal information systems with those of the carriers. It is necessary to check before the implementation project that the organization has the technologies envisaged (API, EDI etc.)
- 4** **Mobilize external partners, especially transporters**  
An IS implementation project must be planned over time. A transport IS, in particular, mobilizes a certain number of actors external to the organization. It is therefore important to mobilize these players in a timely manner to ensure that the project runs smoothly.

# How to successfully scope a transport IS project ? The prerequisites

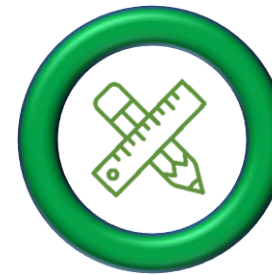
Once the project is launched, it is also essential, during the scoping phase, to pay attention to a certain number of elements that are essential to the success of the project. This **scoping phase** allows you to define the scope of the project and to commit the means to achieve the objectives set and formalized during this scoping phase.

It guarantees the convergence of stakeholders towards a target vision and ensures that all means are made available to the project in order to achieve the agreed operational objectives. Although every project has its specificities, we can observe the following three **key success factors**:



## ***Start with the business need***

The entire project process must target specific business issues and meet a very concrete operational need. It is up to the project manager to define with the business teams the measurable operational indicators that we wish to improve through the project.



## ***Adopt a progressive approach***

A progressive approach allows to involve the partners for a better control of the perimeter and the duration of the project. In order to quickly prove the benefits, a pilot can be organized on a limited perimeter and then consider a wider deployment of the solution(s).

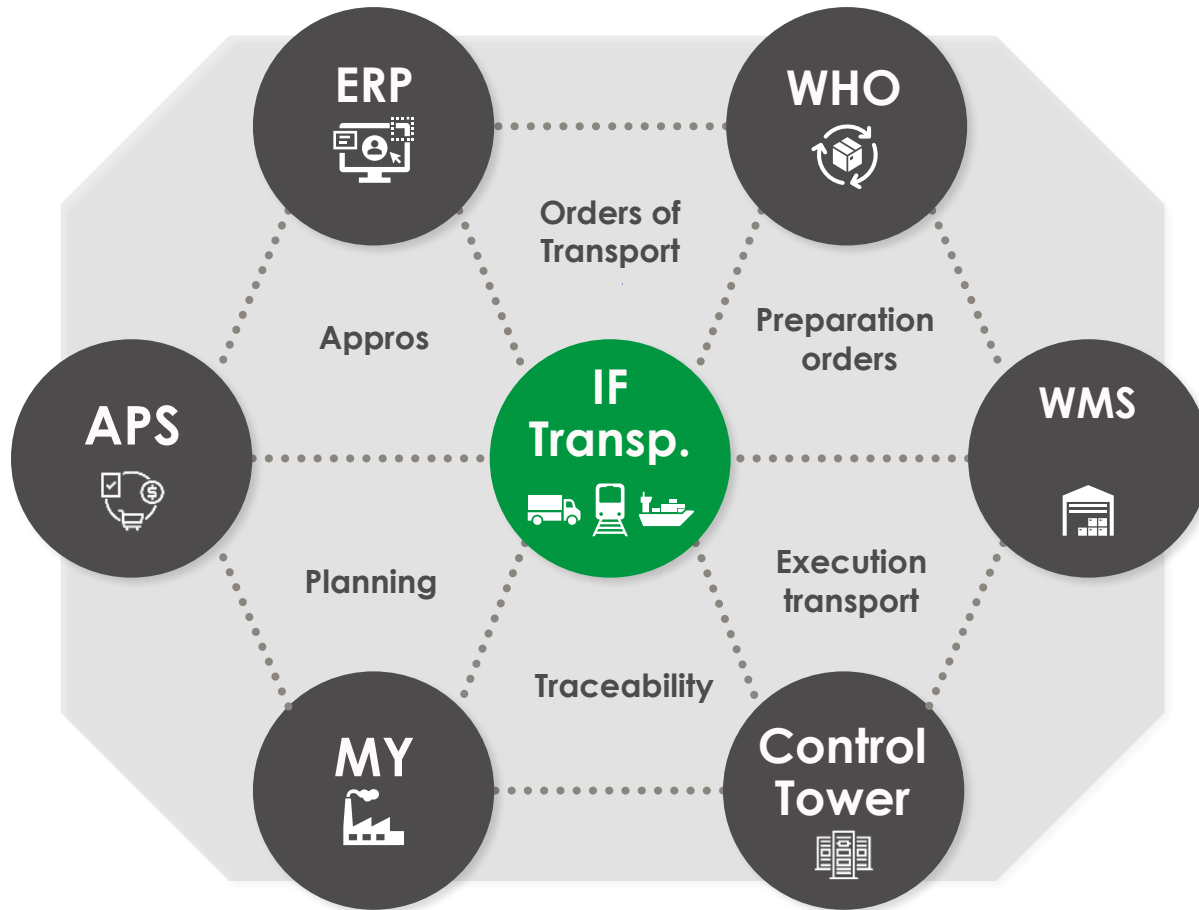


## ***Define the target organization and processes***

Implementing a transport tool is an opportunity to improve or redefine the organization and work processes. This reflection on the organization and transport processes is a prerequisite for the choice of solutions and the implementation project.



# How to integrate transportation into an increasingly complex and intertwined IT ecosystem ?



Among the tools available on the market, transport digitization solutions offer numerous possibilities for integration with a shipper's application ecosystem:

- Automatic integration of the order portfolio to be processed from the ERP or OMS
- Integration with APS or MES to synchronize production and transport
- Exchange of the transport plan with the WMS for a better synchronization of order preparation and transport
- Communication with the ERP or Control Tower about events and alerts related to transport
- Sending to the ERP of the transport provisions and the result of the reconciliation of the carriers' invoices
- Sending the quantities of CO2 emissions from deliveries to CSR monitoring solutions

# Engage your partner ecosystem in a transportation digitalization project

Collaboration between shippers and carriers is a major issue in the digitalization of transport, bringing significant operational and financial gains. The successful implementation of a digital solution and the achievement of the objectives expected by the shipper must necessarily go through a phase of onboarding its own network of partners. However, this phase may come up against various obstacles that must be anticipated and dealt with correctly.



## Existing obstacles

- A **very variable maturity** on the subjects of digitalization:
  - good at the major carriers in the maritime sector, or in the courier / parcel sector;
  - still to be developed on road transport in partial or full loads.
- **Non-homogeneous** digitization of carriers, sometimes varying between the entities of the same carrier.
- A **range of** possible **technical solutions**, with EDI still present in messaging (EDIFACT and INOVERT standards), and an increasing role for visibility platforms.
- An additional complexity when transport partners use **subcontractors**.



## Key success factors

- Favour an 80/20 approach, starting with the **highest volume** carriers
- Avoid the 'Big Bang' effect and **proceed step by step**, progressing feature by feature
- Strengthen and develop the Carrier / Shipper **partnership**
- Integrate information exchange into **contracts** and **progress plans**
- To take on board also its **customers** or **suppliers on the upstream flow**

# The expected gains to convince a General Management

It is important for a transport IS project, as for any other project, to **set an objective of the gains** to be achieved. This objective will enable the success or failure of the project to be evaluated in due course and, if necessary, to identify the areas to be developed to take full advantage of the implementation of a tool. This step is also essential to **convince a general management of the merits of the approach** and to release the necessary budgets for the project.

## 1/ Categorization of the operational gain

We propose here a classification of the operational gains from the implementation of a transport IS, which it is important not to overlook during the project's economic feasibility study. The first level of categorization of benefits is based on **whether or not** the expected benefits are **direct**.

The transport IS can ultimately lead to **direct** cost reductions (e.g. reduction in transport expenses by using a freight exchange to access more advantageous rates) or **indirectly** by avoiding additional costs (e.g. the transport IS saves time on the constitution of transport charges. The time saved can be reallocated to other tasks that will not require additional recruitment)

### Direct gains

Reduction of the transport budget

Reduction of the distances travelled by the clean fleet

Reduction of billing errors through systematic control

### Indirect gains

Respecting the customer promise

Productivity and smoothing of operations

Reduction of CO2 emissions

## 2/ Qualitative business case

In order to highlight the benefits targeted by the project, it is important to list the qualitative issues that may have positive repercussions beyond the transport unit (e.g. better service to customers, better planning of production resources, easier management of activities for management control, etc.)

- Data quality
- Customer promise
- Network and flow optimization: planning, pooling, massification, use of alternative transport...
- Better management of its carriers
- Optimization and smoothing of docking times
- Productivity
- CO2 reduction
- Ability to centralize and federate

## Ranking of Transport features by expected ROI

1 Control of transport invoicing or pre-invoicing

2 Freight exchange / Optimization of transport purchases

3 Optimization of grouping and tours / exploitation of empty returns

4 Optimization of the use of the trailer / Loading assistance

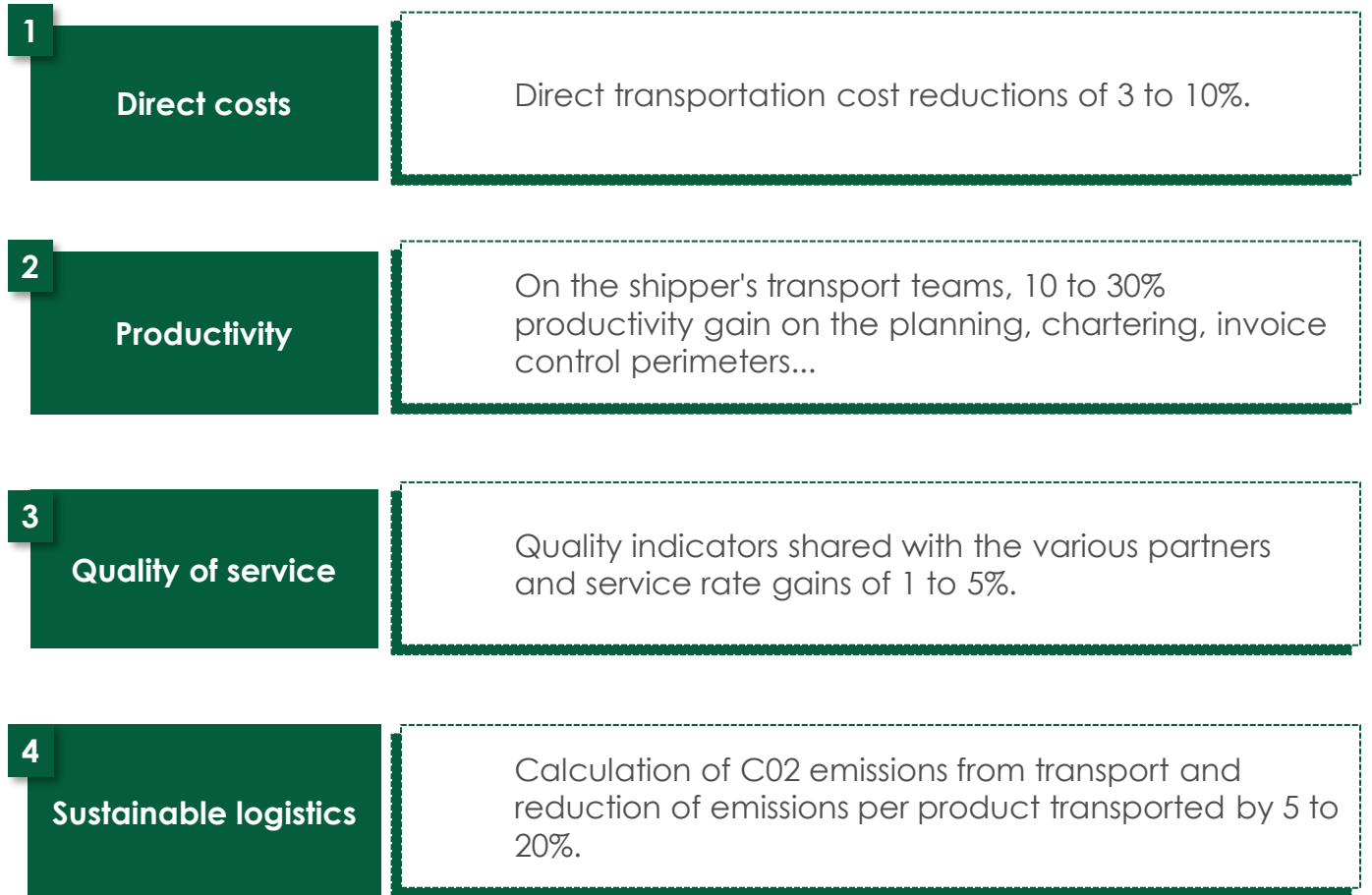
5 Visibility transport / Track & Trace

# A return on investment generally less than one year

Among the important gains of the solutions of digitalization of transport we can quote 4 axes:

1. **Reduction of transportation costs**
2. **Productivity gains for the shipper's transport teams**
3. **Reliability and improvement of delivery service rates**
4. **Reduction of CO2 emissions from shipments**

The return on investment of these solutions is often **less than 1 year**, but depends on several factors such as the type of transport flows or the initial level of maturity.



# The contribution of digital solutions to reduce CO2 emissions

At a time when the climate emergency is becoming more and more pressing, regulations related to carbon emissions from companies will continue to intensify. At the same time, initiatives are being developed to accelerate the transition to a more sustainable economy. One example is the **"Freight 21"** program, which offers shippers a voluntary approach to reduce **greenhouse gas (GHG)** emissions and **atmospheric pollutants** from transport by 5% in three years, based on the four levers identified below. The digitalization of transport is an important means of supporting these initiatives, in particular to **collect and manage data relating to the calculation of emissions** and improve **transport performance**.

## Loading rate



Optimization of palletized loads, delivery conditions, reduction of empty trips, mutualization...

## Means of transport



Optimization of the road mode, use of alternative modes to the road, ability to organize multimodal transport with coordination of pre- and post-haulage

## Distance traveled



Optimization of site positioning, allocation of production and customers, mutualization...

## Responsible purchasing



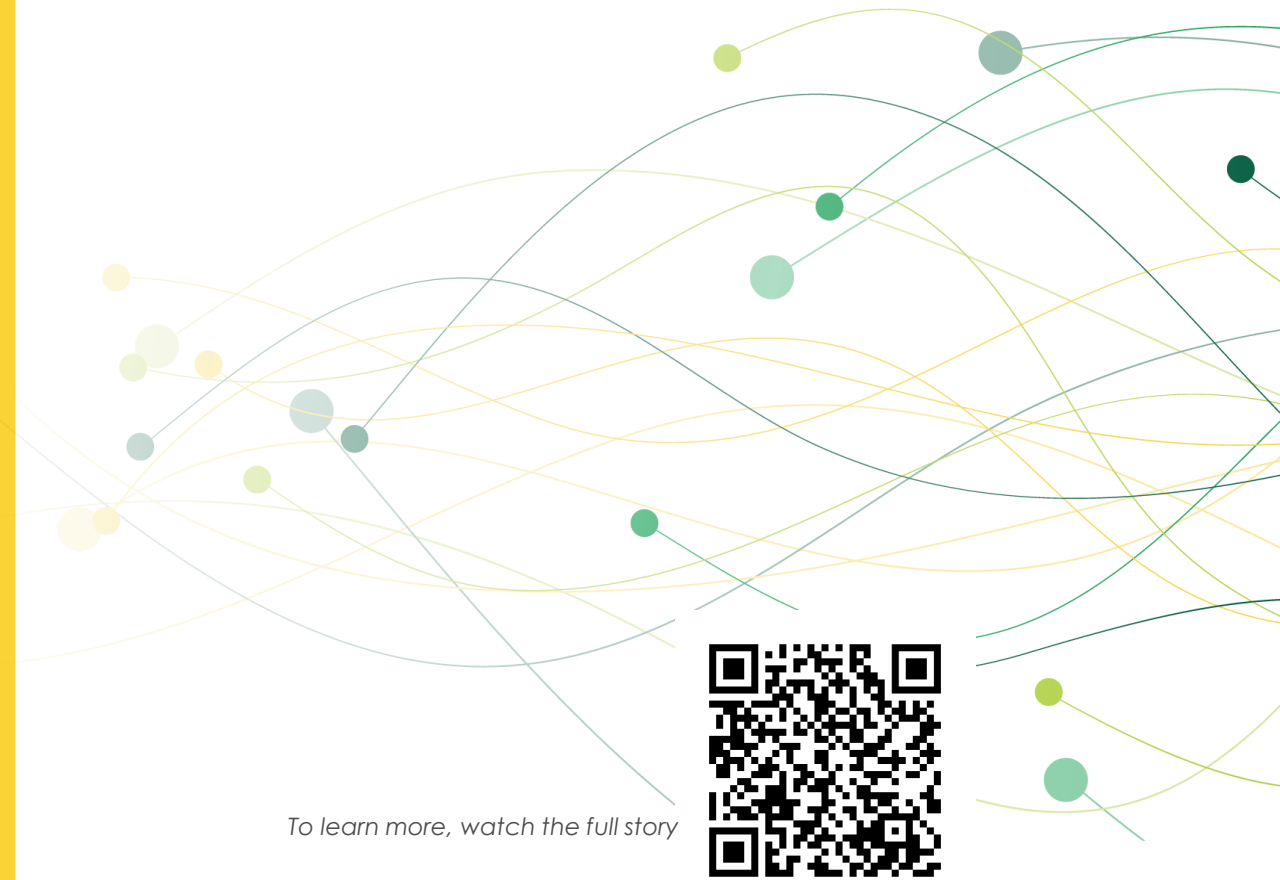
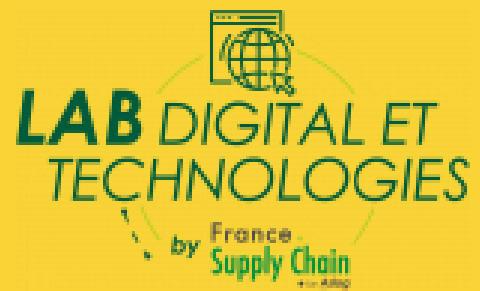
Selection of chartered or certified Objective CO road transporters<sub>2</sub> ...

## Examples of gains

- 10% of the flows in complete by rail-road = 350 tons of GHG reduction
- 5% of flows in alternative motorization to diesel = 100 tons of GHG reduction

# Experience feedback N°1

Lesieur



To learn more, watch the full story



# REX N°1 : Leader in the food industry 1/2

Lesieur is a French food company created in 1908 and leader in France of edible oils which exports in 70 countries

Lesieur has a turnover of 620 M€ with a staff of 552 employees.

The challenge for Lesieur was to cover different types of flows (warehouse supply and customer delivery), using different means of transport (tanker, pallet, maritime export) in order to manage the **2450 transport orders (TO) per month**.

The choice was therefore made for a TMS (Transport Management System) solution **from the publisher Oracle (OTM solution)**. The TMS has been in place since 2019 and allows an automated integration of flows from order reception to pre-invoicing

Maintaining and improving operational conditions and supply chain tools must remain a non-negotiable ambition.

## Scope of the solution:

Once the customer orders are integrated, they are translated into **transport orders (TO)** in the TMS. These TOs are automatically transmitted to the referenced carriers, who confirm that the TO has been taken into account and make appointments with the warehouses.

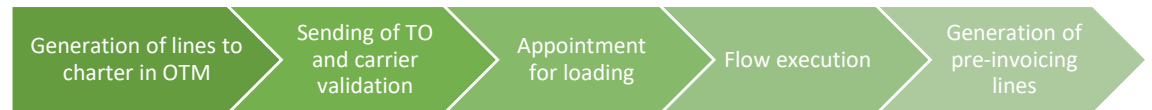
The carriers then execute the transport service according to the defined conditions. In the event that the referenced carriers cannot meet the demand, **the TMS allows, via a search tool, to manually find "spot" transports**

The TMS then prepares the **pre-invoice** which will allow the carriers to confirm it by sending these invoices. Any discrepancies are to be justified by the carrier.

This pre-billing allows to take into account the fuel index and the possible waiting times

## Organization:

A centralized transport unit of 5 people with on-site contacts



## Results obtained:

The TMS platform **saves time** and enables **real-time sharing of information** between carriers, the transport unit and the warehouses, particularly through the scheduling of appointments.

**Great improvement in operational management and quality rate**, especially through automation and integrated process that allows teams to focus on value-added tasks.

**95% of the flows are automated** from order integration to pre-billing. For the other flows, thanks to the **"spot search"** tool, a solution is found in 90% of the cases, which allows an improvement in the quality of delivery service for customers.

The TMS also allows for **better monitoring** thanks to the numerous indicators, including the **carbon footprint declaration**.

# REX N°1 : Leader in the food industry 2/2



“

The management of our transport activities with a TMS allows a better operational execution and a control of our indicators, to optimize our costs and reduce carbon footprint

”

*Thomas Courtois, Logistics & Transport Operations  
Manager Lesieur*

### 3 key success factors:

1. **Change management** with multidisciplinary team meetings in different locations and the creation of a user club with the group's subsidiaries
2. **The proper training of the teams, as well as that of the carriers**, was fundamental to the solution's ability to facilitate daily operations.
3. **Taking into account operational constraints**, in particular the time needed to integrate carriers into the process

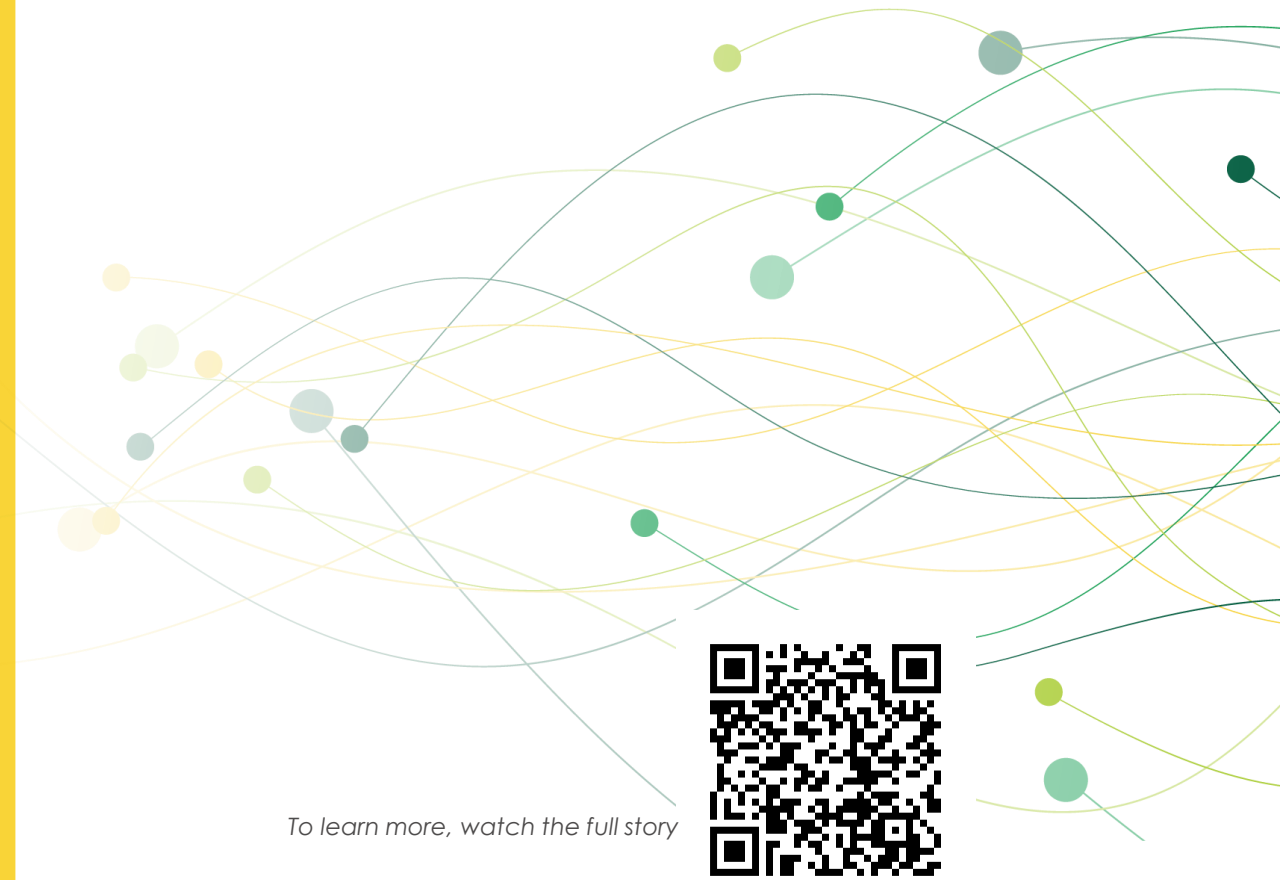
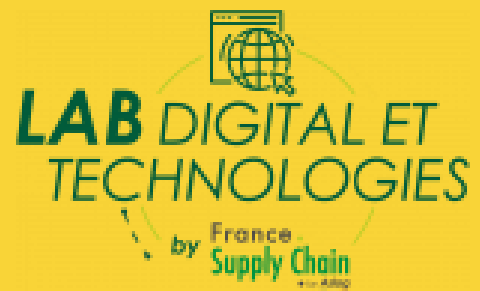
### Next steps in the project:

- Tracking in order to know where the trucks are and to prove that we have delivered at the right time and the right place
- Document management to retrieve dematerialized delivery documents



# Experience feedback N°2

Nexans



*To learn more, watch the full story*

# REX N°2 : Leader in the cable industry 1/3

Nexans is a leader in the design and manufacture of cable systems and services in four main business areas: Building & Territories, High Voltage & Major Projects, Industry & Solutions and Telecommunications & Data. Nexans has **25,000 employees** in **42 countries** and annual sales of **6.1 billion euros**.

The challenge for Nexans was to automate as much as possible the flows (**60,000 OT per year**) in connection with the carriers (**80 regular carriers used, 20 of which cover 80% of the flows**) from the order to the pre-invoicing, with only the exceptions being managed by the transport unit. Secondly, it was necessary to be able to trace the transports as well as possible because of the value of the transported products. The main flows to be managed are road transport of goods but also international flows with maritime transport.

The choice was made for the **DDS TMS (Transport Management System)** solution in **2005** and then for the **Shippeo** traceability solution in **2020**

## Scope of the solution:

Once the customer orders are integrated, they are translated into transport orders (TO) in the TMS. These TOs are automatically transmitted to the carrier chosen by the TMS according to cost / time / service quality criteria. The carrier confirms that the TO has been taken into account and makes an appointment with the warehouses via the TMS. If the selected carrier cannot meet the request, the TMS automatically searches for another available carrier among those listed.

For maritime transport, the TMS allows the management of the entire flow according to the incoterms: pre-carriage, main transport and post-carriage.

The carriers then execute the transport service according to the defined conditions and send the link to the **POD image ("Proof of Delivery")**.

The **TMS** then prepares the **pre-invoice** which will allow the carriers to confirm it by **sending these invoices**. Any discrepancies must be justified by the carrier. This pre-invoicing allows to take into account the fuel index and the possible waiting times.

**BI** allows the **consolidation of information** from the TMS and the SAP ERP for use by management control, purchasing to prepare transport tenders, and sales to respond to customer tenders.

Finally, the **Shippeo** solution, **interfaced with the TMS (which becomes a pivotal point for exploiting transport data)**, allows for **real-time position** and **ETA (Estimated Time of Arrival)** calculation.

# REX N°2 : Leader in the cable industry 2/3

## Organization:

The organization of transport is managed by a centralized transport unit with 5 planners for the 11 French sites for inter-site flows and customer deliveries.

## Results obtained:

Transportation costs have been reduced by approximately 10% over the period analyzed compared to historical levels  
Pre-billing has reduced the number of over-billing cases (e.g.: cancelled transport)

The processing from the order to the confirmation of the appointment is done in 2 hours (up to 1 day before).

The solution allows a better reading of the profitability with indicators by customer or by profit center, which facilitates the work of the financial and commercial staff. The approach is standardized and the indicators are homogeneous, whatever the country.

The tool provides better knowledge of flows, which makes it possible to refine costs with carriers and to give transport buyers elements to help them negotiate. The acceptance rate of the traceability solution by carriers is excellent.

The TMS facilitates interfacing to better collaborate with carriers by providing a reliable vision of operations to improve the quality of service together.



The digitization of our transport operations has enabled us to improve both our efficiency and the quality of service to our customers, while reducing our CO<sub>2</sub>



*Hervé Perrin, Supply Chain Director*

# REX N°2 : Leader in the cable industry 3/3

## Key success factors:

- Precise knowledge of flows, fare data and transport constraints prior to the project
- Mobilization of IT resources at carriers for EDI exchanges
- The strong involvement of purchasing to contractualize new operating modes with carriers

## Next steps in the project:

- Finalize the implementation in Spain and Belgium
- Getting started in Switzerland where the adoption of pre-billing aspects is a sensitive issue
- Deploy more widely in Europe and possibly other areas

# Glossary

## APs

Advanced Planning and Scheduling: Software for supply chain planning. Based on the demand expressed downstream by the company, APS allows the analysis of the capacity of resources (machines, manpower, materials, storage areas) and constraints in order to propose a detailed and adaptable schedule for optimal production. APS automatically makes trade-offs between expected customer demands and available resources.

## Control Tower

Advanced monitoring system that provides real-time visibility into supply chain processes by collecting and aggregating data from multiple sources. Among other things, it enables supply chain decision makers to monitor, analyze and plan logistics activities, detect potential risks and take timely corrective action.

## MES

Manufacturing Execution System: Management control and monitoring system for work in progress in the workshop. The MES keeps track of all the manufacturing information in real time, allows to receive data in direct flow from the control systems, machine supervision and operators

## OMS

An Order Management System (OMS) is an intelligent tool that provides a 360° view of all inventory and order information across all sales channels. OMS is an organizer of flow proposals, with objectives of stock reduction, stock balancing, safety stocks between several warehouses, issuing of multi-site preparation orders.

## WMS

Warehouse management or WMS (Warehouse Management System) covers all the functionalities of piloting and managing warehouse flows, including the management of receptions, storage and inventories, preparations, loading, contract work, cross-docking, load and resource management

# They make our ambitions possible



To stay connected:

**LinkedIn:**

@FRANCE SUPPLY CHAIN by Aslog  
@France Supply Chain Team by Aslog

**Contact:**

[contact@francesupplychain.org](mailto:contact@francesupplychain.org)

ISBN : 978-2-915311-08-2

EAN : 9782915311082

