



# Collaborative Logistics Handbook



## Foreword

Collaborative logistics is a system where several market players located in the same geographic area share a solution for the **logistics requirements they have for flows of goods ultimately headed to the same destination.**

Each company's requirements in the area of collaborative logistics are different. There is no pre-defined scheme. Each collaborative logistics solution is unique due to the various organizations involved, the flows and the locations of sites. Collaborative logistics may take many forms and may be used throughout all or part of the company.

**Collaborative logistics solutions have been developed and implemented for several years now and recent changes have increased the pace of this development.** ECR France Managers ranked this theme as the No. 1 priority in a survey conducted in June 2010 and Supply Chain Managers confirmed this was their top priority in June 2012. This Handbook covers several aspects related to updating of existing practices and changes to the basic logistics model applicable today.

Several studies and reports have been performed by ECR on this topic:



Future Supply Chain 2016: This report was published in 2006 to provide a future outlook on the sector as seen by relevant operating, manufacturing and distribution companies. The information provided analyzes the trends in mass consumption worldwide over the next ten years, with local applications of cooperation between manufacturers and distributors.

[https://dl.dropbox.com/u/31613662/gci\\_caggemini\\_future\\_supply\\_chain\\_2016\\_report.pdf](https://dl.dropbox.com/u/31613662/gci_caggemini_future_supply_chain_2016_report.pdf)

Manual of Good Practices – "2012 Supply Chain: Pooling, Multi-modal and Flow consolidation". This report offers a tool kit for players committed to optimizing their supply chains, with common definitions, alternative logistics systems, KPIs, sample specifications for shared transport and warehousing, etc.

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2



mutualisationlogistique.com web site: Web Site available free of charge designed for manufacturers, distributors and logistics service providers based on a detailed mapping system of logistics sites, with over five-hundred warehouses listed, in order to encourage collaborative logistics solutions among market players. [www.mutualisationlogistique.com](http://www.mutualisationlogistique.com)

The ECR 2013 Collaborative Logistics Barometer: the objective of this survey is to measure the level of knowledge and maturity of these practices, obtain quantitative and qualitative data on current collaborative logistics initiatives, difficulties and obstacles to implementation, forecast and actual gains.



## Introduction

Collaborative Supply Chains among manufacturers, distributors and logistics service providers are more than ever at the forefront of corporate priorities and have led to the emergence of new practices in managing supply flows which can create value.

The number of collaborative logistics projects has increased significantly over the last few years as a response to the announced hike in the cost of road transport, the intention of distributors to significantly reduce their own inventories in the supply chain and the shared objective to improve service level quality. Integrating the protection of the environment has also become a common concern. New organizations to handle flows have been created and there are several types of collaborative logistics methods to date. In its latest Collaborative Logistics Barometer, ECR identified roughly twenty collaborative logistics hubs that are up and running and thirty projects in progress being used for all categories of products initiated by manufacturers, distributors and logistics service providers.

ECR has identified four main reasons to consider a collaborative logistics project on today's market:

- **Respond to new market demands:** inventory reduction, service level quality improvement. Reducing inventory is a long-term trend in addition to being a consequence of the amendment to the French Law on the Modernization of the Economy. Increasing the frequency of deliveries will contribute to decreasing shortages on store shelves.
- **Controlling transport costs:** the explosion of transport costs for any company that has to ship goods (increase in the price of diesel fuel, future French tax on Heavy Vehicles, insufficient vehicle load rate) has forced manufacturers to find ways to optimize their logistics requirements. Together we can do better, more and at a lower cost.
- **Anticipating market changes:** as citizens become more and more environmentally responsible, they accept environmental and noise pollution less and less – sales are increasingly impacted by the company's image.
- **For smaller companies, to promote greater distribution of their products,** in particular directly at points of sale.

3

A collaborative logistics project **creating value** is a long-term, extensive process which requires that a certain number of factors come together within the company:

- **Involvement of the general management:** collaborative logistics is part of corporate strategy and requires that partners be strongly involved
- **Compatibility of products and delivery locations:** temperature, storage conditions, warehouse, and sometimes this may include specific store departments, etc.
- **Geographic proximity for outgoing flows**
- **Patience and perseverance.**

Although each collaborative logistics project is different and there is no pre-defined scheme, meaning that the gains forecast must be assessed case by case, the **added value** of implementing collaborative logistics solutions **has been recognized** by all of the players on the market (source: ECR 2013 Barometer). Generally speaking, collaborative logistics makes it possible to optimize on three levels:

- **in terms of transport costs** thanks to improved truck loads and better organization
- **in terms of service level** thanks to better turn-around time made possible with more frequent deliveries
- **in terms of inventories** thanks to decreased batch-sizes delivered by each manufacturer participating.

On the other hand, collaborative logistics may lead to the following drawbacks which must be dealt with right from the beginning of the project:

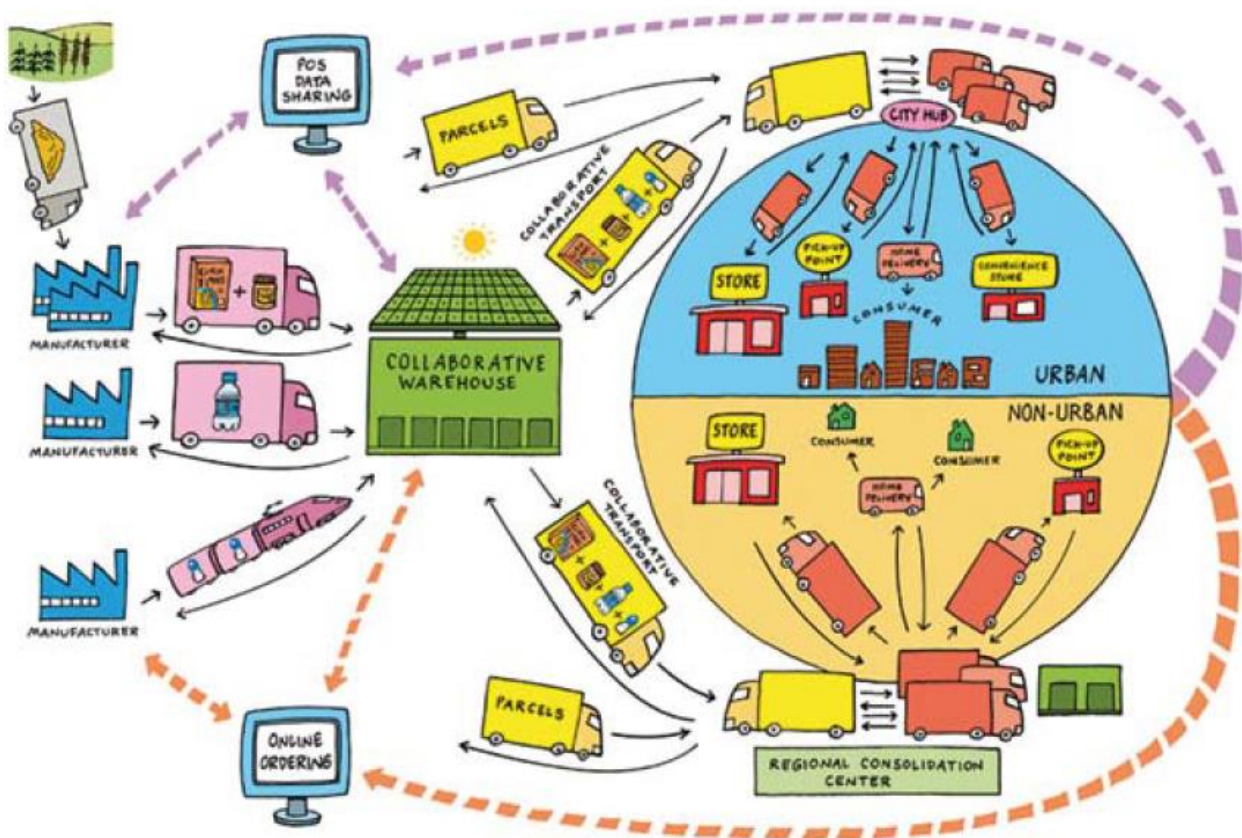
- **Increased organizational complexity:** the partnership approach often requires specific operating rules (organization, skills, supervision – often referred to as "piloting" - and monitoring).
- **Increased operational loads** due to more complicated orders shared by several market players
- **Potential upgrading of IT systems.**

For collaborative logistics solutions to be efficient, companies need to take into consideration the entire logistics chain, i.e., the extended supply chain, and compare the expected benefits (reduction of transport or storage costs) to the increased cost generated by greater complexity on the operational level. Efforts to align the stakeholders involved should also not be neglected or underestimated.

The objective of this Handbook is to describe existing collaborative logistics solutions and to provide companies interested with the required practical information to make a decision to initiate such a system. The "collaborative logistics tool kit" is a useful addition to this Handbook, offering practical data sheets that can be used on the operational level.

As a reminder, this handbook has been designed within the framework of ECR's Vision of the Future Supply Chain (see diagram below). We hope that it will be useful for the market players already committed, regardless of their size, to optimizing the supply chain.

source: "Future Supply Chain 2016" Report, Global Commerce Initiative



## Index

<b>INTRODUCTION .....</b>	<b>2</b>
<b>INDEX .....</b>	<b>5</b>
<b>GLOSSARY OF TERMS USED .....</b>	<b>6</b>
<b>DESCRIPTION OF COLLABORATIVE LOGISTICS SOLUTIONS.....</b>	<b>9</b>
<b>HOW TO START UP A COLLABORATIVE LOGISTICS PROJECT .....</b>	<b>13</b>
1. <b>ADVISABILITY STUDY .....</b>	<b>14</b>
1.1 <b>HOW TO FULLY UNDERSTAND WHERE YOU ARE STARTING FROM.....</b>	<b>14</b>
1.2 <b>IDENTIFY THE RIGHT PARTNERS .....</b>	<b>15</b>
1.3 <b>PERFORM FEASIBILITY AND IMPACT STUDIES .....</b>	<b>16</b>
2. <b>APPROVAL OF THE PROJECT.....</b>	<b>18</b>
2.1 <b>SCOPE .....</b>	<b>18</b>
2.2 <b>OBJECTIVES AND RISKS .....</b>	<b>18</b>
2.3 <b>CRITICAL POINTS.....</b>	<b>19</b>
3. <b>TECHNICAL CONDITIONS ON THE OPERATIONAL LEVEL.....</b>	<b>20</b>
3.1 <b>INVOICING METHODS.....</b>	<b>20</b>
3.2 <b>IT SYSTEMS REQUIRED .....</b>	<b>21</b>
3.3 <b>CONTRACTUAL ASPECTS.....</b>	<b>22</b>
4. <b>START-UP ON THE OPERATIONAL LEVEL.....</b>	<b>24</b>
4.1 <b>APPROVAL OF START-UP .....</b>	<b>24</b>
4.2 <b>PILOTING THE PROJECT .....</b>	<b>24</b>
4.3 <b>VERIFICATION OF THE ECONOMIC MODEL .....</b>	<b>24</b>
<b>ANNEXES .....</b>	<b>25</b>



## Glossary of terms used

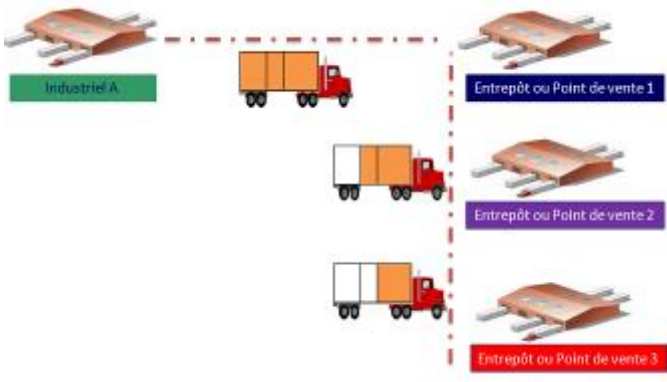
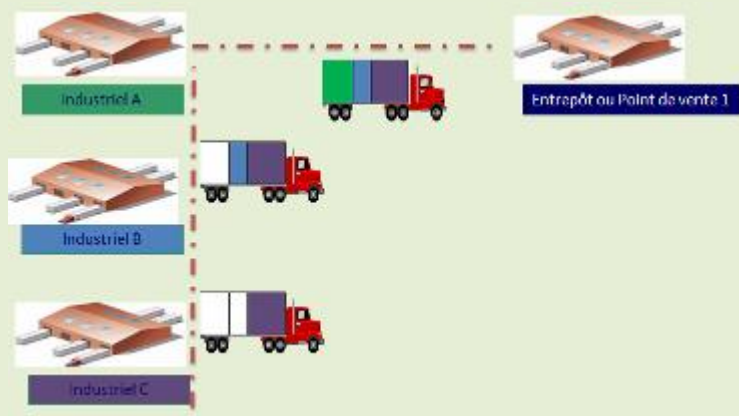
The definitions, main acronyms and terms used in the field of collaborative logistics have been clarified by the Working Group in order to ensure the use of common terminology understood by all market players involved.

### Acronyms:

<b>CC</b>	Consolidation Center
<b>DDC</b>	Distributor's Distribution Center
<b>IS</b>	Information System
<b>MDC</b>	Manufacturer's Distribution Center
<b>POS</b>	Point of Sale

### Definitions:

<b>Collaborative logistics</b>	Pooling of resources (transport, warehouse, software) aimed at reducing the aggregate demand of these resources or increasing their effectiveness for the partners. Contrary to an ordinary consolidation process, collaborative logistics naturally requires that several market players be involved.
<b>Consignment stock</b>	This refers to vendor-owned inventory allocated to a customer. Depending on the case, this inventory may be stored in a shared warehouse, a DDC or a point of sale.
<b>Consolidation Center</b>	This is the term used for a shared warehouse provided by a distributor in order to consolidate the flows coming from suppliers and optimize replenishment of its own stores (downstream consolidation center) or its distribution platforms (upstream consolidation center). Suppliers store their inventories of goods in a shared warehouse for a single customer (for example, a Carrefour supermarket consolidation and collaboration center) where orders are prepared up until they are shipped from the consolidation center. These goods are therefore advance inventory stored off-site by the distributor.
<b>Inventory in advance / off-site inventory / "vendor managed inventory"</b>	This refers to vendor-owned inventory shifted to a link further down in the supply chain. This system may be used on a multi-customer basis. Depending on the case, the inventory may be stored in a DDC or a shared warehouse.
<b>Logistics service provider (3PL)</b>	Economic player performing a certain number of logistics services (transport, warehousing, distribution) on behalf of its customer(s). They offer to implement services needed on the operational level to manage the Supply Chain and company's flows on a daily basis. This service provider in the logistics chain is the one with the responsibility for ensuring a varying level of logistics services depending on its customers' requirements. They are often "transport organizers" or "SSM (Shared Supplies Management) Coordinators".
<b>Logistics service provider (4PL)</b>	These types of providers can be full-fledged partners in the logistics processing chain. They offer software packages and applications suited to the activities of the distribution chain and their objective is to assist the three categories of standard players: the shipper or consignor

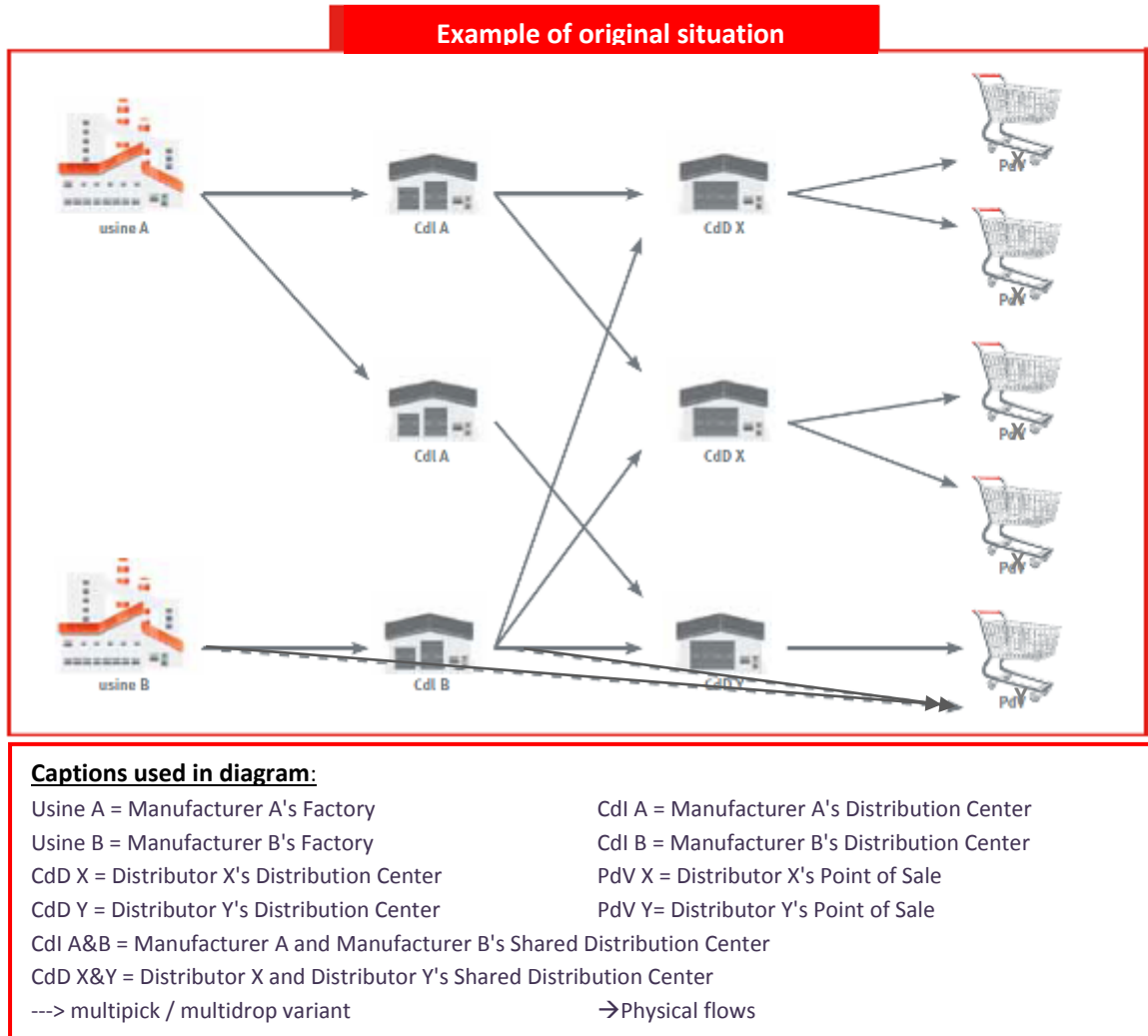
	<p>(1PL), the end customer (2PL) and the logistics service provider (3PL) by planning and coordinating the flow of information among them. They are often known as "transport service organizers", "flow organizers" or "SSM Coordinators".</p>
<p><b>Multidrop (deconsolidated deliveries)</b></p>	<p>This system consists of delivering flows of goods loaded at the same place of dispatch in the same vehicle to several delivery locations that have a close geographic location or which are located along the same transport line. These delivery locations may be single customer or multi-customer. To be efficient, the multidrop system requires a focus on planning the itinerary and pick-up and unloading times.</p> 
<p><b>Multipick (consolidated deliveries)</b></p>	<p>This system consists of pooling goods being shipped to the same delivery location (distribution center or point of sale) coming from several places of dispatch (several warehouses or several factories of one or more manufacturers). To be efficient, the multipick system requires a focus on planning the itinerary and pick-up and unloading times.</p> 
<p><b>Partnership</b></p>	<p>A partnership involves two or more companies or entities that decide to team up and cooperate to reach a common goal. It makes it possible to create synergies, to take advantage of shared requirements, to pool resources and deal with difficult situations together, etc.</p> <p>The relationship between the parties is made formal via a contract or cooperation agreement that clearly defines the responsibilities, roles and financial contributions of each party.</p>
<p><b>Pooled transport</b></p>	<p>A collaborative approach to organizing transport among several manufacturers and/or distributors and in certain cases, a logistics service provider for the purpose of optimizing physical transport and improving the load rates of delivery vehicles. This system involves sharing the loading and delivery schedules.</p>
<p><b>Pooling</b></p>	<p>Method to manage supplies where several manufacturers agree to deliver one or several distributors together from a single logistics site (shared warehouse or consolidation center). This makes it possible in particular to optimize storage, transport and vehicle load rates and the</p>

	turnover downstream, as well as upstream from the shared warehouse. Logistics service providers are often involved in this type of organization.
<b>Principal</b>	The Principal is the party that contracts for the supply of services, i.e., the party having legal liability.
<b>Shared warehouse</b>	This is a warehouse shared by several partners. Multi-manufacturer warehouses have become a common practice and multi-distributor warehouses are currently in an experimental phase.
<b>Shipper (consignor)</b>	The party that entrusts others (freight forwarder/shipping agent, transport operator/shipper) to carry its goods to a specified destination.
<b>Upstream-downstream transport</b>	These two ambiguous terms always need to be defined: coming from / going to – for example, upstream from the DDC / downstream from the DDC. At ECR France, without more specific information, we understand "upstream transport" to mean transport between a manufacturer's warehouse and the distributor's warehouse and "downstream transport" as transport between the distributor's warehouse and retail stores.



## Description of collaborative logistics solutions

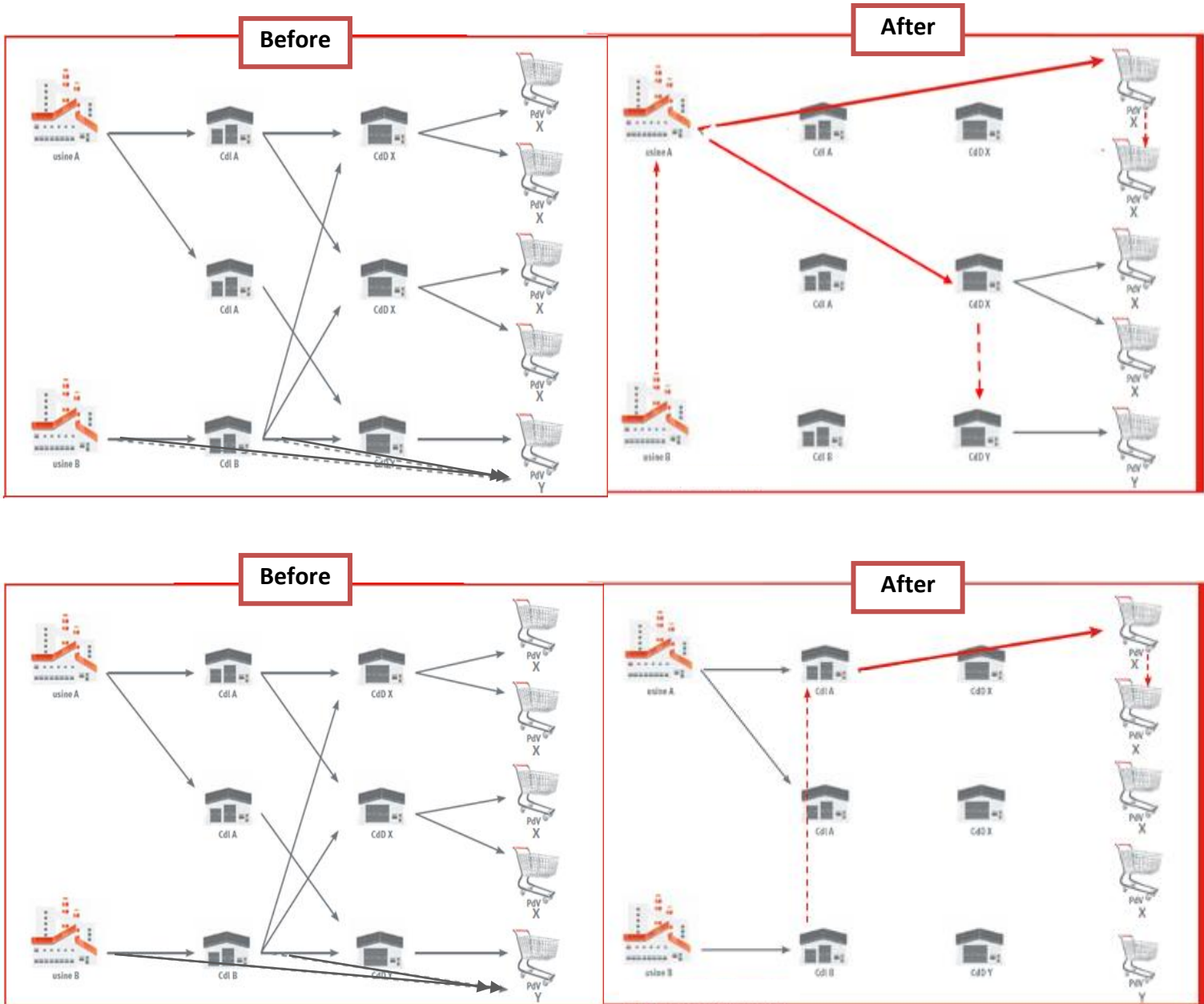
The standard logistics scenario for dry goods products and several other products of mass consumption is: factory – MDC – DDC – POS. In this standard scenario used for products of mass consumption, just as for potential optimization scenarios presented below, industrial warehousing and distributing may be ensured directly by the company or be outsourced.



The scenarios described below are designed for the purpose of helping companies identify various alternative scenarios based on their own current logistics organizations. For each scenario, examples of roll-out are given to the extent possible.

The objectives, scope of application, limits and conditions of implementation of these scenarios are detailed in the section "How to start up a collaborative logistics project".

## Example of shared transport scenario

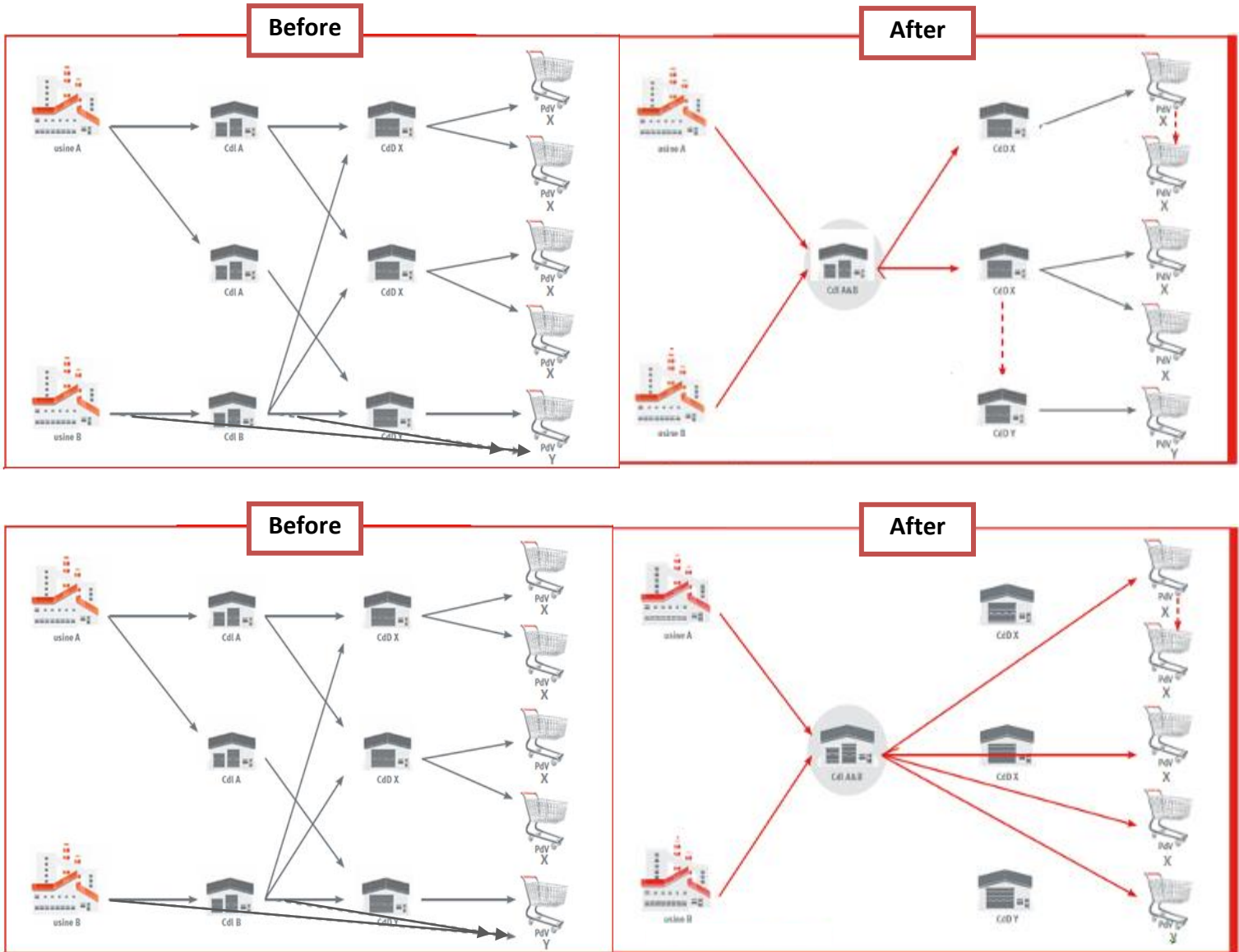


Shared transport is a collaborative approach to organizing transport among several manufacturers and/or distributors and in certain cases a logistics services provider, for the purpose of optimizing physical transport by pooling flows.

Multipick and Multidrop are two types of sharing systems that have complementary aspects and they may be used together. It is possible to aggregate optimization of transport both upstream and downstream using the Multipick – Multidrop variant: trucks will load flows from several manufacturers at several sites and deliver several distributors at several distribution centers. However, the increased complexity of managing delivery orders, truck load organization and the additional costs of multiple handling operations need to be taken into account when working on projects.

Shared transport may be used at all links in the logistics chain (Factory –MDC – DDC – POS).

## Example of shared warehouse scenario

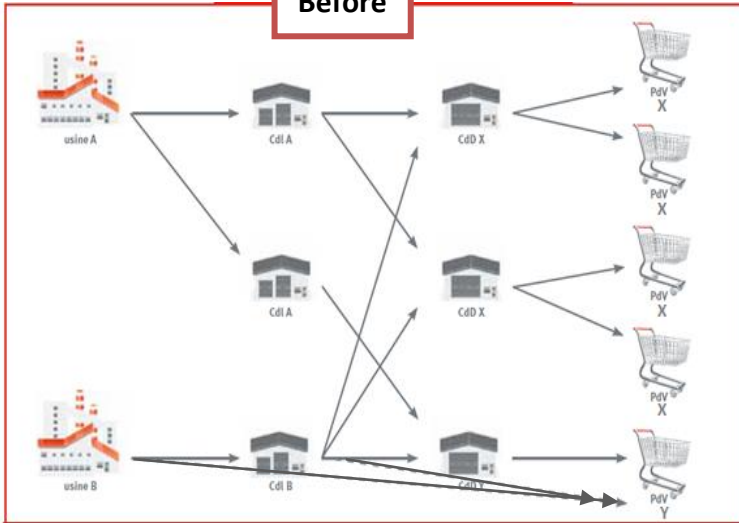


In these diagrams, the warehouses of Manufacturers A and B have been replaced by a shared warehouse used to deliver the distribution centers of the two Distributors X and Y or the stores of these two retailers directly.

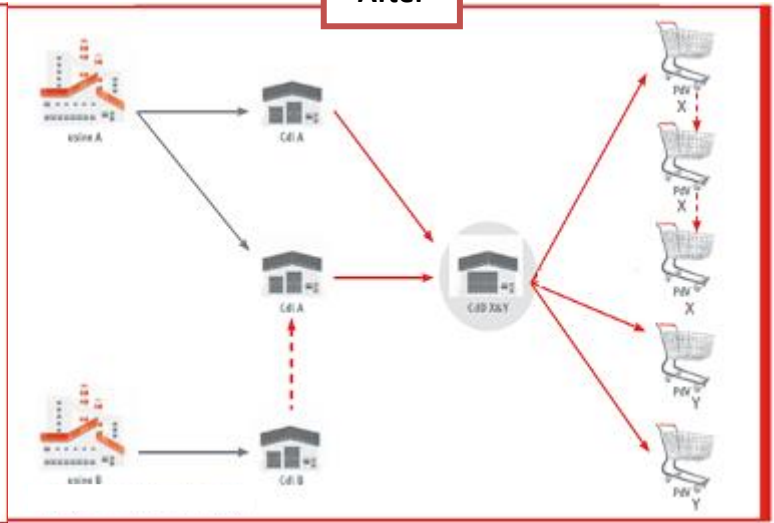
This scenario is frequently used for collaborative logistics systems among manufacturers to deliver distribution centers.

## Example of shared warehouse scenario

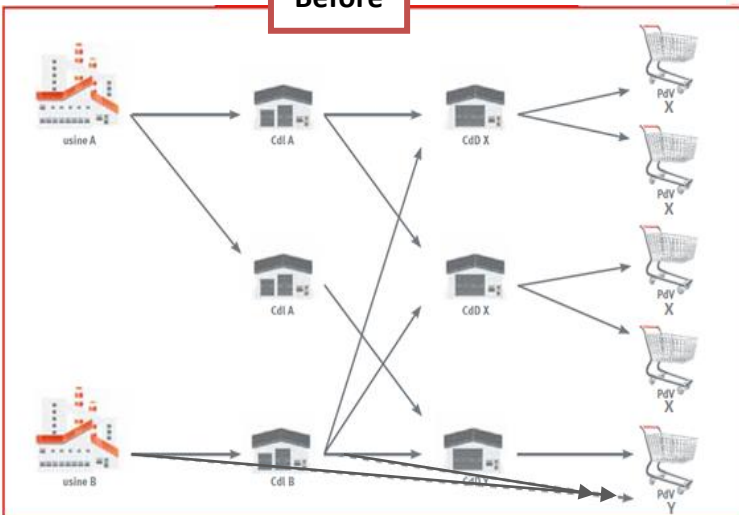
**Before**



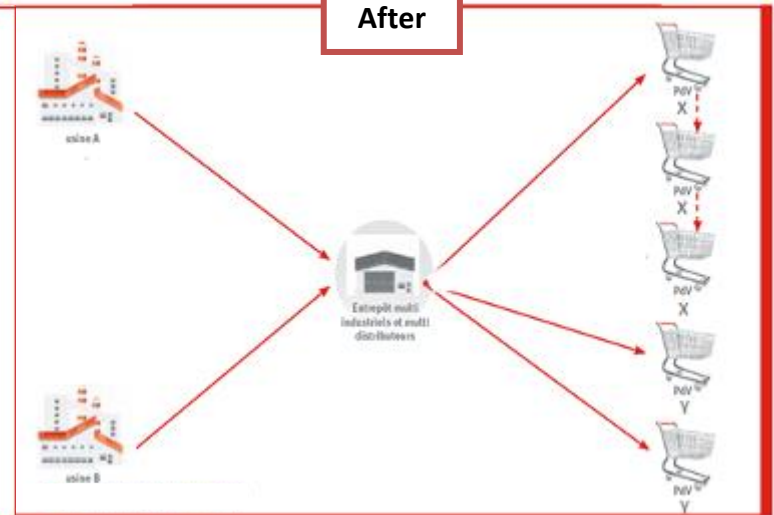
**After**



**Before**



**After**



In these diagrams, the warehouses of Distributors X and Y have been replaced by a shared warehouse used to deliver the points of sale of these two retailers. Products may transit through an industrial warehouse or be delivered directly from the factory.

This scenario is currently being used in OOH (Out of Home) foodservice and by certain service companies such as Logismark, as well as in connection with multi-channel and cross-channel flows. For competing retailers, it is preferable to go through a logistics service provider.

## How to start up a collaborative logistics project

Based on the last 10 years of experience companies have with collaborative logistics, it can be seen that they usually start out with a logistics solution in the area of transport – and the idea of a shared warehouse is the logical result that normally follows.

The table below shows the various stages of implementation involved in a collaborative logistics solution. The action taken need not be in sequence and it is necessary to go back and repeat these stages particularly during project preparation. Details on each one of these stages are provided below so as to provide companies that are interested in starting up a collaborative logistics project have all the information they need, including practical data sheets that are handy on the operational level. The information and advice given is a result of the experience and input of the Working Group and is based on feedback companies have given on experience with collaborative logistics solutions they have implemented over the last ten years.

Stage	Action
<b>Advisability study</b>	
1	Fully understand the initial situation
2	Identify the right partners
3	Perform feasibility and impact studies
<b>Project approval</b>	
4	Define the project framework: scope – objectives and risks – critical points to be monitored
<b>Technical conditions on the operational level</b>	
5	Invoicing methods
6	IT systems required
7	Contractual aspects
<b>Operational start-up</b>	
8	Approval of start-up
9	Schedules – planning
10	Review of economic model



## 1. Advisability study

As a general rule, implementing a collaborative logistics solution on the operational level takes more time than most companies think. Many different factors can trigger the project – demand coming from a distributor, relevant location geographically, financial necessity. In all cases, the framework of the future collaborative logistics system must be well defined in terms of scope and risks involved.

In order to do so, it is essential to fully understand where you are starting from, the current organization and operation of your logistics chain and the areas that need improvement. Based on this, objectives need to be set: increased sales opportunities, decreased operating expenses, maintaining jobs for the local labor pool, etc.

The next step is to identify one or several partners. A selection may be based on the fact they do business in the same product sector, due to a particular affinity or close geographic location, etc. Preliminary studies must be performed to determine the compatibility of the potential partners(s) selected in order to assess the feasibility of the collaborative logistics scenario, the frequency and timing of deliveries, IT systems and to identify potential difficulties and solutions to resolve them.

Before doing anything, it is absolutely essential to have the General Management on board. Collaborative logistics is part and parcel of corporate strategy and this vision must also be shared by those in charge of the Commercial and Supply Chain functions, before going on with a more detailed study.

### 1.1 How to fully understand where you are starting from

Implementing a collaborative logistics solution of any type requires a full understanding of your own logistics organization. The solutions that make it possible to optimize the supply chain by way of collaborative logistics systems are naturally not the same for all types of products or even for all manufacturers in the same product category, or for that matter, all manufacturers and distributors or all geographic locations, etc.

Each company has its own logistics system and specific methods in terms of how the organization already manages its own flows. These diverse systems and the various pieces that would have to be put together in order to organize flows must be understood before contemplating the study of pooling them.

The data required to assess the initial situation include:

- The logistics system for products: outgoing and incoming locations, upstream-downstream loading centers, delivery lead times
- Quantitative data on physical flows: volumes, seasonality
- Contractual commitments: in-house logistics or service provider
- Commercial data: General Sales conditions, General Purchase Conditions, Quantity scales
- IT systems used: WMS, TMS
- Logistics costs

It is also necessary to define the risks inherent in a collaborative logistics project. The following points need to be defined:

- The potential behind collaborative logistics systems: which products in the range, which part of the network, for which customers?
- Development strategy: opportunities for improvement
- Objectives sought: controlling costs, responding to a customer's strategy, improving service level quality.

## 1.2 Identify the right partners

When developing a collaborative logistics project, the first stage is to identify the ideal partner(s). This is one of the most difficult aspects when starting up a project of this type. 43.8% of companies experienced difficulties in identifying the right partner to start up the project (source: ECR 2013 Barometer). ECR France, in partnership with Diagma launched a web site ([www.mutualisationlogistique.com](http://www.mutualisationlogistique.com)) as an initial response to this problem. This collaborative web site is designed to encourage companies to find collaborative logistics solutions among them and to help them swiftly initiate relevant contact thanks to a customized search engine. The web site makes it



possible to identify one or several partners compatible in terms of geographic location. Collaborative logistics projects often start up between two manufacturers. The more players involved, the smoother flows will be, making it possible to optimize the profitability of collaborative logistics systems. The web site [mutualisationlogistique.com](http://mutualisationlogistique.com) provides a detailed map of logistics sites, with over 500 warehouses listed, in order to promote collaborative logistics solutions among market players.

Some of these market players can also help you find the right partner. We have identified the various types of players and the role they may play when implementing collaborative logistics solutions:

- Third-party logistics (3PL) providers offer to implement operating services to manage the Supply Chain and pooled flows coming from companies on a daily basis. This is the service company in the logistics chain that is responsible for ensuring a more or less essential part of its customers' logistics requirements.
- Fourth-party logistics (4PL) providers are full-fledged players involved in logistics chain processing. They offer computer software adapted to activities in the distribution chain and their objective is to assist the three types of usual players: the First-party logistics (1PL) provider as the shipper (consignor), the Second-party logistics (2PL) provider as the end customer and the Third-party logistics (3PL) service provider by planning and coordinating the flow of data among them. They are often known as "transport service organizers" or "transport flow organizers or integrators".
- Companies offering solutions to make available systems allowing pooled data flows to be managed while maintaining the required confidentiality.
- Consultants offering specialized, comprehensive Supply Chain Management services to manufacturers and distributors. The consultant's job is to help companies design, set up and operate the most efficient system for supply, production, delivery and if necessary return of their products to end users via a collaborative logistics system.
- Chambers of Commerce and Trade Associations (associations for the promotion of logistics, local chapters of trade federations, etc.) can provide support with methodology or even financing (subsidies) to help with start-up of collaborative logistics projects.

These various roles are often played by one and the same company that makes available logistics resources (warehouse), together with the IT solutions required to operate a collaborative logistics hub.

## 1.3 Perform feasibility and impact studies

Generally speaking, studies to determine the opportunities involved are part of an iterative process to search for the right partner(s) and analyze potential flows. Studies performed must be designed and evolve progressively as exchanges are engaged in and more thought is put into the project.

### 1.3.1 The objective behind the feasibility study

Whether you are contemplating a collaborative logistics project at the warehouse or transport level, performing feasibility and impact studies are an essential first step that will enable you to:

- Validate the feasibility of the project
- Identify critical points to be resolved
- Assess the required investments
- Define the impact on your current network.

For **the feasibility study**, the following features of potential partners' logistics organizations need to be analyzed in order to determine compatibility, based on the initial scenarios described above:

- **Type of products: ambient temperature, positive or negative refrigeration, other criteria**
- **Seasonality: complementarity, counter-seasonal products, impact of promotional campaigns**
- **Logistics scenarios: identical delivery locations**
- **Flow organization: times of pick-up and delivery, frequency of deliveries**
- **Volumetrics: Vehicle load rates**
- **IT systems.**

### 1.3.2 Data and operating methods to be shared for the purpose of the feasibility study

This is one of the sensitive points involved in the strategy behind collaborative logistics projects and requires approval at general management level. 31.3% of respondents mentioned that sharing information was a barrier to collaborative logistics projects (source ECR 2013 Barometer). This reflects the fear companies have of losing confidential information, particularly when competing companies are involved. However, these fears can be alleviated by becoming more familiar with the data and operating methods shared.

In connection with a collaborative logistics project involving transport or warehouses, companies naturally only exchange basic information on the operating level regarding physical flows (volumes, shipments, etc.) and no financial information whatsoever.

Sharing information on the operating level on physical flows is further regulated by non-disclosure agreements signed between companies. Moreover, the data exchanged is secured in many cases via a third party, i.e. a logistics service provider or forwarder, which ensures confidentiality of the data processed. This trusted third party must act as a facilitator when setting up a collaborative logistics solution, even and especially among competing companies.

For more details on data that need to be shared to perform the feasibility study, [see Practical Data Sheet No. 1 in annex.](#)

### 1.3.3 Invent scenarios and define the way you could share supply chain management

This preliminary analysis, which must take into account the specific features of each partner, will make it possible to identify ways to change current supply chain networks and to define potential collaborative logistics scenarios. This preliminary analysis will also pinpoint any **critical points that could constitute a barrier and that will need to be overcome**. For example, if the potential partners' delivery times are different – one usually in the morning and one usually at night - collaborative logistics will only work if the distributor is involved and if a common delivery time can be defined.

This analysis, giving an outlook of the aggregate requirements, will then make it possible to set up one of the three following operating methods

- Collaborative opportunities for consolidating orders
- Collaborative supply chain management, led by the manufacturer
- Collaborative supply chain management, led by the distributor.

For more information and examples of collaborative supply chain networks that can be led, see Practical Data Sheet No. 2 in annex.

### 1.3.4 The objective behind the impact study

**The impact study** will go on to help quantify and qualify the various scenarios, both from a financial and organizational standpoint, as well as on the labor and environmental levels.

The following areas need to be analyzed through this study:

- Financial and operational assessment: additional costs (preparation, handling, etc.), savings (transport, storage, etc.), impact on service level quality and customer relations
- Identification of investments and/or modifications required in IT systems and organizations (labor impact)
- Environmental impact: reduction of CO2 emissions, corporate image.

All of these studies will enable you to identify the most relevant scenario for all of the potential partners together and also correspond to the collaborative logistics project business plan, which will have to be presented for approval before starting up the project on the operational level.

## 2. Approval of the project

At this stage, the business plan for the collaborative logistics project is now ready to be presented to the General Management of each partner for approval.

The business plan must contain the required information to make a decision to roll out the project, including scope, objectives, risks and critical points. Just as with any project, a schedule for implementation will need to be drawn up to ensure and monitor a smooth roll-out.

### 2.1 Scope

By definition, collaborative logistics may apply to different business lines and different links in the whole chain. Before embarking on such an adventure, the scope of the collaborative logistics solution needs to be defined jointly by the players involved, i.e., will it cover transport and/or storage, apply to all or part of the flows of each partner, etc.

Collaborative logistics solutions may be set up for all types of products, regardless of their physical characteristics (heavy, light, controlled temperature, ambient temperature, etc.), volumetrics (quick or slow turnover) and fluctuation of demand (seasonality, promotions, regularly stocked products, etc.).

The optimization of transport can be further enhanced when heavy products are put together with light-weight products thus maximizing the total weight transported. Likewise, logistics pooling is interesting for products with opposite seasonality.

Finally, collaborative logistics between competing companies may be more promising as their products have the same physical characteristics and same delivery destinations, but is often a more sensitive issue due to the reluctance to strike up a partnership with a competitor.

### 2.2 Objectives and Risks

Objectives must be defined for each partner – first on an individual basis and then together. The partners must share the same vision. Even if the individual objectives of each partner are different (reduction of inventory, increase in delivery frequency, response to customer demand, etc.), their objectives must be complementary.

Common objectives, such as improving service levels, must be shared by all the partners involved: manufacturers, distributors and logistics service providers.

Once the objectives have been defined, the potential risks associated with implementation and the potential benefits in terms of savings must be assessed, focusing on the following points:

- Controlling logistics costs by better optimizing organization
- Improving service levels thanks to greater delivery frequencies
- Decreased inventory, in particular due to greater delivery frequencies
- Less arrivals at destination and limited congestion at delivery platforms on the condition products are consistent
- Maintaining jobs in the geographical areas of production
- Reducing the impact on the environment
- Improving the quality and freshness of products by speeding up flows.



At the end of the day, the impact of the collaborative solution must be positive. To the extent possible, risks should be calculated throughout the entire logistics chain.

Discriminating criteria must then be defined that could potentially prevent the collaborative logistics project from starting up on the operational level.

For more details on defining objectives and quantifying risks, see Practical Data Sheet No. 3 in annex.

## 2.3 Critical points

Critical points that could block the project and potential issues of concern with logistics organizations must be identified upstream, as well as areas where each partner will have to take particular precautions.

Examples which illustrate this:

- *The first year the system is set up, manufacturers must anticipate less sales turnover for certain types of products due to inventory reduction as they switch from a traditional ordering system to Shared Supplies Management (SSM).*
- *Companies must foresee and anticipate strategic changes impacting their partners, such as a merger, acquisition, sale, decrease in volumes, etc. or the possibility that one of the partners may pull out due to a take over, for example.*
- *Discussions should take place early on regarding how exceptional events will be managed: holidays, annual schedules, companies shut during vacation periods, managing physical inventory periods, etc.*
- *The compatibility of products and warehousing requirements must be identified.*
- *Rules on sharing of costs must be clearly defined.*
- *Many other additional examples may be given...*

The partners must focus on the solutions that can be found in connection with these critical points.

For more details on critical points and solutions that can be found, see Practical Data Sheet No. 4 in annex.

## 3. Technical conditions on the operational level

### 3.1 Invoicing Methods

#### 3.1.1 Transport

When engaging in a shared transport project among manufacturers, the rules for invoicing transport costs must be determined in advance. If the shared transport corresponds to a "multi-pick" system managed by the distributor, no transport invoicing will be required for "ex-factory" prices, but may be an issue with transport systems where distributors ensure transport services but invoice the shipper ("franco presté").

It is preferable for all the partners to have the same relative weight. The companies will have to be invoiced by the transport companies *pro rata* to the number of pallets stacked floor-up based on the group rate. While complying with competition rules, partners in a logistics pooling solution may issue a joint call for tender even if they are competitors.

Invoicing for transport costs may be computed:

- based on fixed batch sizes
- based on quantities shipped
- based on quantities ordered.

Experience shows that the first two options do not give full satisfaction. Over time, sharing costs based on fixed batch sizes will not work and sharing costs based on quantities shipped (actually transported) often gives rise to disputes because the truck load may not always be optimized and inventory shortages at one manufacturer's site may impact the cost paid by the others.

20

For collaborative transport projects, we recommend sharing costs on the basis of quantities ordered and not shipped, which is a solution that will work over the long term.

#### 3.1.2 Warehousing

For a shared warehouse project, rules on invoicing of storage costs, reception, preparation and shipping need to be defined – not to mention additional costs related to organizing the shared warehouse, including turnover rates, management of more complex documentation, etc.

For shared warehouses involving a significant number of stakeholders, such as Consolidation Centers for example, a rate schedule may be used, rationalization of prices being of the utmost importance for the service provider and the distributor.

For shared warehouses, we recommend that warehousing costs be determined for each company based on their shipments and that this be defined by contract. Each stakeholder in the collaborative system will receive its own invoices and pay for use of the shared warehouse based on rates negotiated in the agreement with the service provider.

## 3.2 IT systems required

Setting up a simple collaborative logistics project for transport, i.e., sharing transport with fixed batch sizes or organizing pick-ups, does not make any specific demands on IT systems.

On the other hand, in the case of more complex systems to share transport or warehousing, communications and data exchange are a prerequisite as they are basic conditions for the project to succeed regardless of exactly how it is designed. Likewise, IT systems will have to use the same language in order for them to be able to communicate.

We recommend Electronic Data Interchange (EDI) to promote technological convergence on the market that would ultimately benefit us all. We recommend following the technical specifications for the GS2 standard.

Choosing a technical system needs to be based on existing IT systems, each partner's requirements and specific market features.

Technical solutions for collaborative logistics management exist on the market, such as:

- Collaborative Portals / Web Platforms: A collaborative portal is an interactive platform to store and consult data using SaaS (Software as a Service) which makes available a number of digital resources and services accessible to an entire community of users. It is truly your own unique work place, customized for you and secure with structured and targeted access to corporate data.
- TMS software: Transport Management System or "TMS" software covers a consistent set of basic functional components including decision-making authority on the strategic, tactical, operational and execution levels, providing a software solution for scheduling and executing external physical flows and therefore transport of goods.
- Collaborative replenishment software (SSM-VMI): These systems pool all data required to replenish the distributor's inventory in stock (current inventory, outgoing inventory, shortages, in progress, etc.) for all products (multi-industry) in the same system. The objective is to have a straightforward view of the distributor's aggregate requirements that will have to be replenished. A super-user approves the order offer taking into account products needed which have priority.

In most cases, collaborative logistics management does not require that all participants have the same IT system, but alignment on certain specific points is necessary. We recommend that light-weight, adequate and specific tools be used (collaborative portal / SSM software) to exchange data among partners and not to change all the IT systems so as to avoid migrations and computer upgrades that can take a long time to implement.

## 3.3 Contractual aspects

It is important to keep in mind that the purpose of implementing a collaborative logistics solution has nothing to do with an agreement between undertakings that would hinder each partner's freedom on the commercial level, but rather, constitutes a system to improve logistics practices which in no way runs contrary to competition law. Partners in a collaborative logistics project do not communicate or exchange any confidential commercial data.

Collaborative logistics may be at the initiative of:

- manufacturers: companies among each other, members of an Economic Interest Grouping (EIG), etc.
- distributors: consolidation centers, off-site advance inventory, multipick system, etc.
- logistics service providers: collaborative logistics hubs.

The most common legal frameworks used include:

- EIG: Creating a grouping makes it possible to use a third-party vehicle to pilot the project on an operational level. The grouping is in charge of all activities required in connection with negotiating and organizing the shared logistics services.
- Bilateral partnership agreement between shippers consigning the goods.
- Bilateral agreement between shippers and a logistics service provider: each partner in the collaborative logistics pool enters into an agreement with the service provider in charge of the collaborative logistics system and agrees to a certain duration of warehousing services.
- Three-party agreement between shippers and a logistics service provider.
- Agreement between the logistics service provider, the manufacturer and the distributor (for example, Consolidation Centers).
- Partnership agreement between a manufacturer and a distributor.

A formal method to organize a collaborative logistics pool does not necessarily require a contract and can also take form via an exchange of rules of good practices between the partners.

For collaborative logistics pooling projects, we recommend that each shipper enter into a bilateral agreement with the logistics service provider and that the shippers be bound simply by a partnership agreement defining good practices among the partners.

### 3.3.1 Operating rules

Regardless of the legal form the collaborative logistics project takes, it is important to define the roles and responsibilities of each partner in connection with collaborative logistics for both transport and warehousing. Although the prevailing principle is partnership, the involvement of a third party – transport service organizer or logistics service provider – may be necessary. In this case, the data related to orders, number of pallets and all information for the project to run smoothly will be supplied directly to this third party.

Collaborative management of transport capacities remains one of the tricky points with collaborative logistics on the operational level. How to arbitrage among partners using the right rules must also be decided, with rules designed to settle inevitable disagreements on the operating level, in particular regarding sharing the volume of truck loads.

For example, computing the number of pallets stacked floor-up for each manufacturer is a complex task. One way of dealing with this is to define in advance how to round off quantities of stacks or pallets for each product.

These operating rules will provide a framework for your collaborative logistics solution to get up and running. Just like there are laws to ensure good labor relations, to organize life in the community, impose behavioral standards and express society's values, operating rules will make it possible to govern the way the partners will operate their logistics solution together. This stage is crucial because without rules, there are no limits and no framework to rely on in the event of a disagreement.

A dispute settlement agreement is thus an integral part of these operating rules and will make it possible to quickly settle any potential issues. It should be based on a simple, common-sense method:

- Identification of the problem
- Implementation of the dispute settlement agreement
- Dispute resolution.

Partners need to think pro-actively and define the procedure in the event of a dispute (who does what? how will we go about it?) before a dispute arises. Defining a dispute resolution procedure is decisive and makes it possible to anticipate those issues that may pose a problem and to settle them if necessary on an amicable basis. In particular, this procedure can provide an answer to the eternal question: "what are we supposed to do with this 34<sup>th</sup> pallet?"

The operating rules must cover the principles behind daily flow management, including piloting orders, arbitrage and inventory management.

For large-scale collaborative logistics projects, we recommend that manufacturers call on a logistics service provider to act as a "flow coordinator" to supply services either on a material level or IT level. This coordinator can facilitate the drafting of operating rules by bringing up the right questions so as to make the right decisions and by pointing out the areas that absolutely require alignment.

For more details on Operating Rules, [see Practical Data Sheet No. 5 in annex](#)



## 4. Start-up on the operational level

### 4.1 Approval of start-up

The start-up date to go live on the operational level must be decided together by all of the partners in the logistics pool after having signed, as applicable, agreements, codes of conduct and operating rules. Roll-out conditions must also have been defined specifying those stages that require particular attention.

Start-up on the operational level can also be an opportunity to hold an event bringing together the managers of each entity to witness the commitment of all partners to the collaborative logistics project.

### 4.2 Piloting the project

Start-up on the operational level should be managed in the same way as with a pilot project – with a roll-out schedule and daily tracking of changes in organization and flows. During this stage, monitoring and adjusting the processes will need to be ironed out. Support via in-house communications or even training sessions may be necessary in certain organizations.

During this life cycle of the collaborative logistics project, the partners involved must focus on corrective action to be taken if any problems arise. It is also important to share results of performance indicators to ensure that the objectives set are achieved, such as for example:

- Upstream and downstream service level rates
- Vehicle load rates
- Inventory levels
- Consistency of the algorithm ("leftovers" on platform)
- Causes for disputes
- Others.

After this stage, monthly monitoring of problems arising in operations using conference calls or live meetings must take place between the relevant departments of the partner companies to ensure objectives are met and to implement corrective action.

### 4.3 Verification of the economic model

In the medium term, we recommend that an assessment of how the collaborative logistics system has been operating be performed in order to ensure that objectives are met when expected. This assessment should be done by each partner on an individual basis.

We recommend that such an assessment be conducted at least once a year for the purpose of verifying that the economic model of the collaborative logistics solution is continuously being reworked to the benefit of all partners. This makes it possible to adjust the model or to anticipate the exit of a partner for whom the logistics pooling solution is no longer relevant: poor-quality forecast in terms of gains, volumes, etc.

## ANNEXES

Practical Data Sheet No. 1: Preliminary Study: information and processes to be exchanged

Practical Data Sheet No. 2: Examples of piloting collaborative supply chain networks

Practical Data Sheet No. 3: Risks involved in collaborative logistics

Practical Data Sheet No. 4: Critical points

Practical Data Sheet No. 5: Operating Rules

# Practical Data Sheet No. 1

## Preliminary study: information and processes to be exchanged

### Prérequis de la mutualisation

Volonté au plus haut niveau de management et de la direction générale	Travailler sur l'ensemble de la chaîne logistique avec tous les acteurs	Compatibilité des flux et proximité géographique
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### Prerequisites to the collaborative logistics project

Project supported at the senior management and executive level	Work on the entire logistics chain with all players involved	Compatibility of flows and geographic proximity
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This Data Sheet lists the information and processes we recommend should be exchanged for the purpose of conducting a preliminary study. This type of data may be shared among manufacturers, with the logistics service provider or the distributor based on the decision of each party involved.

When the collaborative logistics solution will be piloted by an outside service provider, data is exchanged by each partner individually with this third-party logistics provider, who is there to guarantee the confidentiality of such data.

### Information to be shared

Compulsory		"Nice to have"
Data	Operating methods	
<ul style="list-style-type: none"> <li>- Mapping of warehouses (Manufacturer / Distributor / Logistics Service Provider)</li> <li>- Volumetrics (weekly volume over one year) in pallets stacked floor-up</li> <li>- Profile of orders</li> <li>- Seasonality</li> <li>- Delivery frequencies</li> <li>- Average vehicle load rate of manufacturers</li> <li>- Logistics requirements of manufacturers</li> <li>- Weight of different manufacturers in the hub</li> <li>- Duration of current contracts</li> </ul>	<ul style="list-style-type: none"> <li>- Type of preparation (stacks, emission stacks, etc.)</li> <li>- Delivery lead times (D+1, D+2, etc.)</li> <li>- Order management terms and conditions</li> <li>- Pallet management terms and conditions</li> <li>- Operating schedule (date order prepared, date shipped)</li> <li>- Transport restrictions (height, stackability, etc.)</li> <li>- Manufacturing restrictions</li> </ul>	<ul style="list-style-type: none"> <li>- Cases where deliveries cannot be shared (ex.: promotions with full trucks)</li> <li>- Managing exceptions</li> </ul>

## Practical Data Sheet No. 2

### Examples of piloting collaborative supply chain networks

#### Prérequis de la mutualisation

Volonté au plus haut niveau de management et de la direction générale

Travailler sur l'ensemble de la chaîne logistique avec tous les acteurs

Compatibilité des flux et proximité géographique

#### Prerequisites to the collaborative logistics project

Project supported at the senior management and executive level

Work on the entire logistics chain with all players involved

Compatibility of flows and geographic proximity

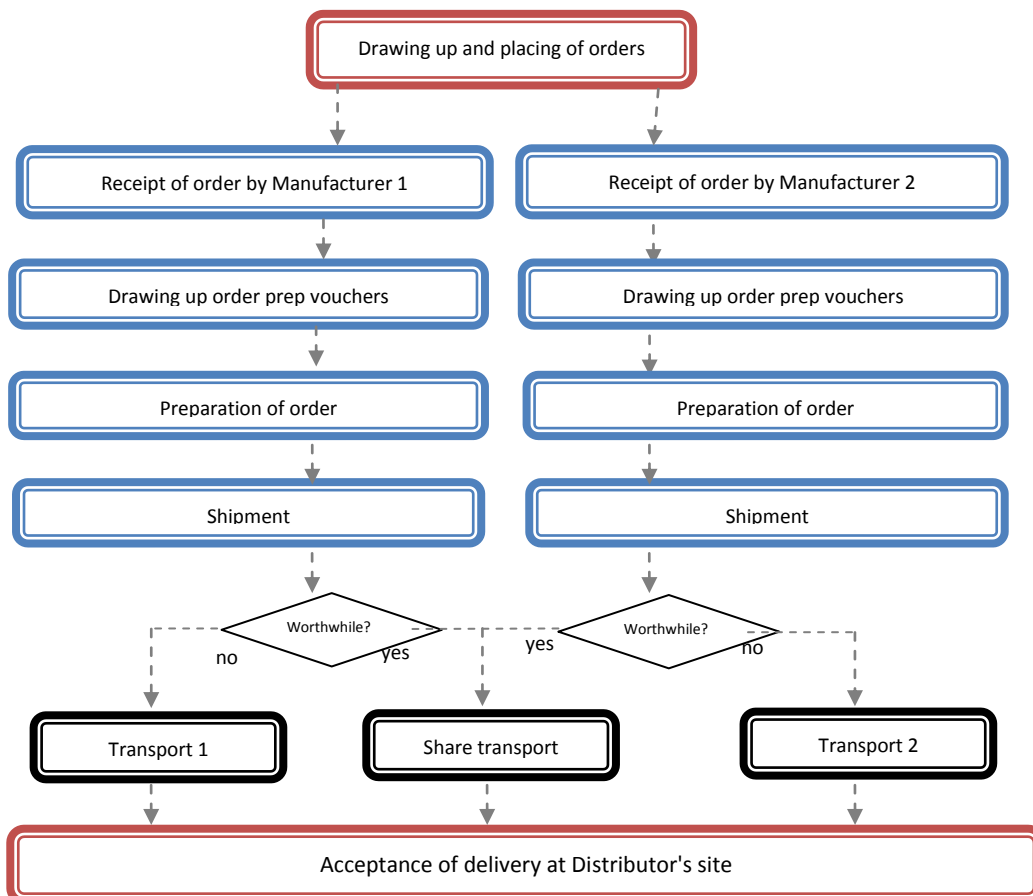
This data sheet presents the three collaborative logistics operating methods, which are:

- Collaborative opportunities for consolidating orders
- Collaborative supply chain management, led by the manufacturers
- Collaborative supply chain management, led by the distributor

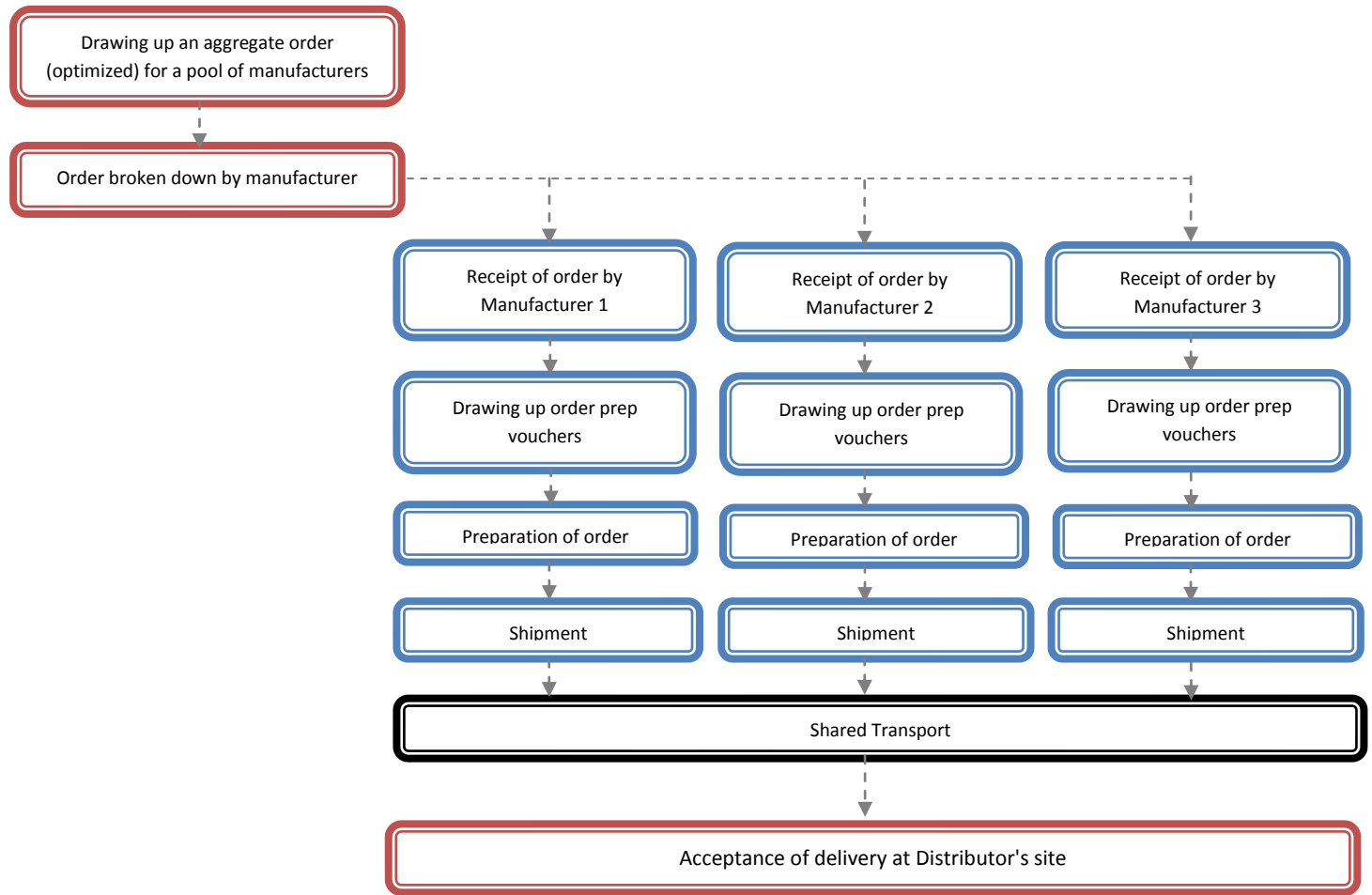
Caption:

- = Performed by the distributor    - - - - -> = Data flow
- = Performed by the manufacturer
- = Performed by the logistics service provider
- = Performed via the portal

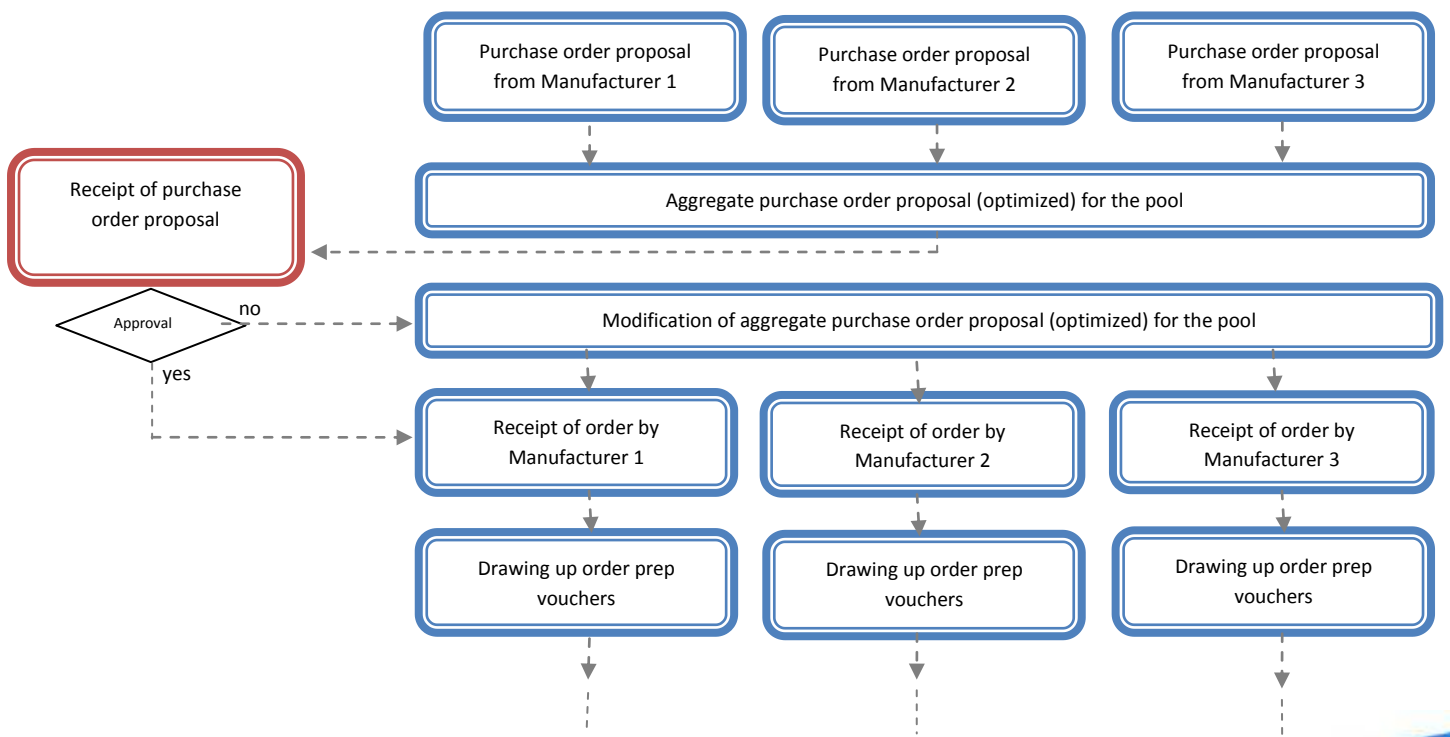
#### Collaborative opportunities for consolidating and pairing of orders – Examples of processes



**- Collaborative supply chain management, led by the distributor – Example of process**



**Collaborative supply chain management, led by the manufacturer – Example of process**







## Practical Data Sheet No. 4

### Critical points

#### Prérequis de la mutualisation

Volonté au plus haut niveau de management et de la direction générale	Travailler sur l'ensemble de la chaîne logistique avec tous les acteurs	Compatibilité des flux et proximité géographique
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#### Prerequisites to the collaborative logistics project

Project supported at the senior management and executive level	Work on the entire logistics chain with all players involved	Compatibility of flows and geographic proximity
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This data sheet provides an overview of all the critical points reported by stakeholders involved in collaborative logistics projects: manufacturers, distributors and logistics service providers.

The estimated level of criticality is given in the table below. Recommendations are also offered to resolve these points which could potentially block the project.

Critical points	Transport sharing	Warehouse sharing	Criticality	Recommendations / solutions
<b>Manufacturers :</b>				
- Acceptance by the customer to pool orders	X		Depends on customer strategy	Alignment with customer strategy, Convince customer.
- Acceptance by suppliers to prepare all orders on a national level for one distributor	X	X		
- Organization of delivery schedule	X	X	High	Work upstream on aligning schedules.
- Piloting and synchronizing flows	X	X	High	Synchronize and align transport, Optimize loads, Work with a logistics service provider.
- Managing volumetrics	X	X	High	Strong communication and exchange of forecast transport schedules, Regular updates.
- Optimizing orders	X	X		Define rules on stacks /pallets, Establish stability rules with customer.
- Adapting supply units	X	X	High	Control stabilization of picking rates and related costs to prepare orders, Set supply parameters.
- Coordinating transport	X	X	High	Work with a logistics service provider, Define operating rules.
- Piloting orders	X	X	High	Alignment between partners and customer.
- Defining operating rules	X	X	Medium	Share and exchange, Alignment of rules.
<b>Distributor:</b>				
- IT system		X	High	Alignment of IS and referencing and code systems.

- <b>Optimizing orders</b>	X	X	High	Alignment of order algorithms, Alignment of Quantity scales, Reason based on stacked pallets.
- <b>Managing surplus</b>	X	X	High	Management rule to be established before setting up collaborative logistics, outside of promotions, no surplus.
- <b>Adapting supply units</b>	X	X	High	Control cost increases related to acceptance of deliveries, placing in storage and store preparation, Adjust procurement parameters.
- <b>Unloading platforms</b>	X	X	Medium	Identify product compatibility and warehouse limits.
- <b>Organizing by category / store department</b>	X	X	Medium	Identify warehouse limits, rather than limits based on store shelf.
- <b>Delivery schedule</b>	X	X	Low	Have a transport coordinator for scheduling purposes.
<b>Logistics service provider:</b>				
- <b>Striking an economic balance (ensure economic model remains worthwhile)</b>	X	X	High	The new system must be profitable for all stakeholders, Anticipate potential changes in delivery frequencies, Take into account all costs to determine profitability (managing documentation, decreased productivity, turnover rates, etc.).
- <b>Optimizing truck loads</b>	X		High	Management rules to be defined ("leftover pallets"), Identify and share a key indicator (stacked pallet, volume), Optimize loads using crossbars or specific arrangements with the distributor (not taking into account manufacturer frequencies), Piloted via SSM or distributor.
- <b>Stackability of products</b>	X		Medium	Management rules to be defined, Technical solutions exist (double deck, etc.).
- <b>Algorithm for pallets stacked floor up</b>	X		High	Select IS upstream, Align algorithms in the manufacturers' and service providers replenishment systems.
- <b>Transport and warehouse resources</b>	X	X	Medium	Identify availability of warehouse and transport resources, Pay attention to off-balanced flows and locations where manpower is lacking.
- <b>Coordinating transport</b>	X	X	Medium	Rationalize the number of players.

## Practical Data Sheet No. 5 Operating Rules

### Prérequis de la mutualisation

Volonté au plus haut niveau de management et de la direction générale	Travailler sur l'ensemble de la chaîne logistique avec tous les acteurs	Compatibilité des flux et proximité géographique
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### Prerequisites to the collaborative logistics project

Project supported at the senior management and executive level	Work on the entire logistics chain with all players involved	Compatibility of flows and geographic proximity
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This data sheet lists several items that you may want to include in the operating rules that will define how the collaborative logistics pool will be managed.

Here are some examples of useful aspects to be covered:

- Scope of collaborative logistics solution
- Piloting of orders and rules defined and explained by each supplier to the relevant distributor (rules on computing pooled orders, quantitative procurement rules)
- Commitment to service levels (lead time, frequency rates, reliability, etc.).
- Piloting transport (coordination) and scheduling deliveries with the distributor
- Synchronizing IS (and hosting), software to be implemented to allow communication between the existing systems of all stakeholders (manufacturers, logistics service provider/transport company, distributor).
- Detail responsibilities and the rules and procedures for dispute resolution
- Determine performance indicators for the collaborative logistics project: whether or not a qualitative and quantitative service level quality record will be kept among all stakeholders: distributor, logistics service provider, manufacturers
- Principles related to confidentiality
- Managing changes in the scope of the pool (entry or exit of a partner).

Here are some examples of information that should not be included:

- Consideration received for shared deliveries negotiated with customers
- Commercial strategy
- Price of products
- General Conditions of Purchase/ General Conditions of Sale
- Individual results
- Any information making it possible to identify market shares or the commercial strategy of one of the principals or other competitors.