# Ecole des Hautes Etudes Commerciales


**Thesis Submitted in Partial Fulfilment of the Requirements for Master's Degree in Commercial Sciences.**

**Major:** Distribution and Supply Chain Management.

**TOPIC:**

# Audit of the setup of an internal control system for distribution logistics.

**Submitted by:**

**SAHRAOUI Dorsaf**

**Supervised by:**

**Dr. BOUKROUH Adel**

**9th Promotion**

**June 2022**

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# List of tables

# List of figures

# List of abbreviations

| | |
|---|---|
| **AFNOR** | French Association for Standardization |
| **AOM** | Advanced Order Management |
| **APS** | Advanced Planning System |
| **ASLOG** | Supply Chain and Logistics Association |
| **QEMC** | Quality and Environment Management Committee |
| **COSO** | Committee Of Sponsoring Organization |
| **CRM** | Customer Relationship Management |
| **DRP** | Distribution Resource Planning |
| **EDI** | Electronic Data Interchange |
| **EPE** | Economic Public Enterprise |
| **ERP** | Enterprise Resource Planning |
| **EVALOG** | Logistics evaluation |
| **IF** | Impact Factor |
| **FIFO** | First In First Out |
| **ISO** | International Organization for Standardization |
| **KPI** | Key Performance Indicator |
| **MES** | Manufacturing Execution System |
| **GMMOG** | Global Materials Management Operations Guidelines |
| **NMR** | Maximum Score Benchmark |
| **NP** | Grade given according to the reference system |
| **CEO** | Chief Executive Officer |
| **SME** | Small and Medium Enterprises |
| **QSE** | Quality, Safety and Environment |

| | |
|---|---|
| **SCE** | Supply Chain Execution |
| **SCM** | Supply Chain Management |
| **SCOR** | Supply Chain Operations Reference |
| **SCRM** | Supply Chain Risk Management |
| **LIS** | Logistics Information System |
| **SRM** | Supplier Relationship Management |
| **SPA** | Joint stock company |
| **SWOT** | Strengths Weaknesses Opportunities Threats |
| **TMS** | Transport Management System |
| **WMS** | Warehouse Management System |

# Summary

# Abstract

Logistics has increasingly become an essential function within the company to ensure customer satisfaction and value creation. Through this evolution, physical distribution represents the most important part of the logistics process, whose objective is to ensure that the product desired by the customer is where it should be, in the quantity and quality expected and at the best cost. To do this, risk- taking is inherent to any company, which implies the implementation of an internalcontrol and risk management system to better manage and steer the variousactivities. An evaluation and a follow-up of the effectiveness of this system is necessary, in this context, the audit appeared as an independent and objective instrument which gives an insurance on the degree of control of the operations and helps the company to reach its objectives.



**Key words:** Logistics function, distribution logistics, internal control, risk management, risks, risk mapping, audit frameworks, audit, information system, transport, warehouse, performance.



# Résumé

La logistique est de plus en plus devenue une fonction essentielle au sein de l'entreprise pour assurer la satisfaction des clients et la création de valeur. Grâce à cette évolution, la distribution représente la partie la plus importante du processus logistique, dont l'objectif est de s'assurer que le produit désiré par le client est là où il devrait être, dans la quantité et la qualité attendue et au meilleur coût. Pour ce faire, la prise de risque est inhérente à toute entreprise, ce qui implique la mise en place d'un dispositif de contrôle interne et de gestion des risques pour mieux gérer et piloter les différentes activités. Une évaluation et un suivi de l'efficacité de ce système sont nécessaires, dans ce contexte, l'audit est apparu comme un instrument indépendant et objectif qui donne une assurance sur le degré de contrôle des opérations et aide l'entreprise à atteindre ses objectifs.



**Mots clés** : Logistique, logistique de distribution, contrôle interne, gestion des risques, risques, cartographie des risques, cadres d'audit, audit, système d'information, transport, entrepôt, performance.



# ملخص

أصبحت الخدمات اللوجستية بشكل متزايد وظيفة أساسية داخل الشركة لضمان رضا العملاء وخلق القيمة .ومن خلال هذا التطور، يمثل التوزيع المادي أهم جزء من العملية اللوجستية، التي يتمثل هدفها في ضمان أن يكون المنتج الذي يرغب فيه العميل هو المكان الذي ينبغي أن يكون فيه، من حيث الكمية والنوعية المتوقعة وبأفضل تكلفة .للقيام بذلك، فإن المخاطرة متأصلة في أي شركة، مما يعني تنفيذ نظام الرقابة الداخلية وإدارة المخاطر لإدارة وتوجيه الأنشطة المختلفة بشكل أفضل. ومن الضروري إجراء تقييم ومتابعة لفعالية هذا النظام، وفي هذا السياق، ظهرت مراجعة الحسابات كأداة مستقلة وموضوعية تعطي تأمينا على درجة مراقبة العمليات وتساعد الشركة على تحقيق أهدافها.



**الكلمات الرئيسية :**وظيفة اللوجستيات، ولوجستيات التوزيع، والرقابة الداخلية، وإدارة المخاطر، ورسم خرائط المخاطر وأطر مراجعة الحسابات، ومراجعة الحسابات، ونظام المعلومات، والنقل، والمستودعات، والأداء.

## General introduction:

In an era of globalization and increased competition, technological change and changing market demands, companies face fundamental challenges. They are, hence, obliged to adapt quickly to optimize their performance. In this context, mastering logistics and related areas of competence has become a key element that contributes to a company's flexibility and agility. To achieve this, companies must thrive in this environment and ensure that by delivering high-quality products at the right time, in the right place, in the right quantity and at an agreed-upon price, while consuming fewer necessary resources for greater clients' satisfaction.

Logistics has increasingly become an essential function of companies, as evidenced by the NF X50-600 standard: "the logistics approach allows, through rigorous management of interfaces, to transform a succession of operations into an integrated global process... The logistics process takes place throughout the life cycle of the product, according to seven major stages: identify, design, develop, produce, sell, support and control. It allows the product to move from one stage to the next. It is driven by an information system. The aim of the system for controlling the logistics process and its components is to ensure that the logistics operations are carried out correctly and that they are interfaced to guarantee the continuity of the process, control their execution, and correct and prevent errors and deviations. This process consists of several logistics activities"[1].

Through this evolution of logistics, the physical distribution represents the most important part of the logistics process. "Distribution logistics is a set of interconnected activities whose objective is to ensure that the product desired by the customer is where it should be, when it should be, in the quantity and quality expected and at the best cost"[2]. On the other hand, distribution logistics means determining the work procedures in warehouses, order processing, packaging, storage, handling, and transport.

The primary objective of distribution logistics is customer satisfaction at the lowest cost. To achieve this, risk-taking is inherent to any business. There is no growth or value creation without risk-taking. If not properly managed and controlled, these risks can affect the company's ability to achieve its objectives. Continuing to prevent and manage the internal control and risk management systems plays a key role in the conductand management of the various activities.

The internal control system is defined and implemented under the responsibility of the company. It comprises a set of resources, behaviors, procedures, and actions adapted to the company's specific characteristics, which contribute to the control of its activities, the effectiveness of its operations, and the efficient use of its resources. In addition, the internal control system must enable the company to take appropriate account of all risks, whether operational, financial, or compliance-related. The management of these risks allows the managers to maintain the risks at an acceptable level for the company. "It is a management lever that contributes to:

- Create and preserve business value and assets;
- Secure decision-making and processes to achieve objectives;
- Promote the coherence of actions with the company's values;
- Mobilize the company's employees around a common vision of the main risks"[3]

An evaluation and monitoring of the effectiveness of the internal control and risk management system are necessary to provide an overview of achievements, assess the quality of the system's results, and, identify possible areas for improvement. In this context, the audit appears to be an independent and objective instrument that assures the degree of control of operations, offers advice on how to improve them and, contributes to creating added value. It helps the company to achieve its objectives by evaluating, through a systematic and methodical reference system, the management, control and,governance processes and by making proposals to strengthen its performance.

**Topic interest:**

The emergence of logistics within companies has given rise to a certain dynamism in the pursuit of their activities and their sustainability. That is why we have chosen a theme related to logistics. An interesting and topical subject of study, because every company can only be sustainable if it is efficient through the control of its internal and external activities. This control is located at each management level of the company and logistics is presented as the art of management allowing the achievement of the set objectives.

**Research Problem:**

The overall objective of this work is to study, and analyze the internal control system of distribution logistics and establish a relationship between the logistics audit and the performance of the company; which leads us to pose the following problem: **How does the logistics audit contribute to the performance of the company?**

To answer and achieve the overall objective, we have built our reflection on the following sub-questions:

- **What are the internal control and risk management resources to be put in place to control distribution logistics?**
- **How to optimize road freight plans?**
- **What are the methods for auditing distribution logistics?**

[1] J.LAURENTIE, F.BERTHELEMY, L.GREGOIRE, C.TERRIER, " Processus et méthodes logistiques ", Afnor, 2013,P.XVIII

[2] I.GOZE-BARDIN, "Les défis de la logistique de distribution à l'horizon 2035", 2009, P.219 https://www.cairn.info/revue-management-et-avenir-2009-4-page-217.htm

[3]http://www.audentiagestion.fr/AMF/AMF_Gestion%20des%20risks%20and%20contr%F4le%20interne_Cadre%20de%20r%E9f%E9r ence.pd

**Assumptions:**

To answer these questions, we proposed the following hypotheses:

**Hypothesis 1:** The logistics function is becoming more complex and turbulent and requires more management and monitoring. Hence the need to set up an internal control and risk management system.

**Hypothesis 2:** The design and implementation of an efficient transportation plan will improve customer satisfaction and control operational costs.

**Hypothesis 3:** The logistics audit offers the possibility of evaluating the level of maturity of a company's logistics to identify possible areas for improvement.

**Research methodology:**

To answer our problem and the questions posed and to confirm or refute the stated hypotheses, we adopted a methodology focused on and divided into two stages:

In the first step, we conducted a literature search based on the compilationof books, journals, articles, and theses to address the different theoretical aspects of distribution logistics, internal control systems, risk management, and logistics audit.

In the second step, we conducted a case study within the company "Alpha" (Client of Deloitte). To do this, we conducted a survey with the head of the finance and accounting department and the head of the sales department. Two main sources were used: on the one hand, we consulted internal company documents to analyze its distribution policy and transport plans, its risk management policy, and the components of its internal control system. On the other hand, an interview survey was conducted and a logistics audit was carried out with the sales manager and the head of the audit unit of "Alpha".

**Presentation of the drafting plan:**

To carry out this work, we have opted for a structural approach, composed of three chapters which are as follows:

- The first chapter deals with the elements of setting up an internal control system for distribution logistics, the risk management approach, and the evaluation of road freight transport plans;

- The second chapter focuses on the logistics audit and includes the logistics performance audit, the ROUX, and LIU method for the audit of logistics platforms, and finally the transport audit;

- Finally, the third chapter deals with the internal control system of distribution logistics within "Alpha", then the analysis of logistics performance within "Alpha", and finally the audit of distribution logistics within "Alpha".

# Chapter 01:
# Internal control of
# Distribution logistics

## Introduction:

Internal control is an approach aimed at improving the capacity of thecompany and its management to manage risks, federate actions and strengthen the governance and steering of the company. It is a tool to help managers make decisions, enabling them to act on all the levers for improving performance and thus becoming a means of creating value.

The internal control system is global and systematic for each company and guarantees exhaustiveness in the consideration of constraints and threats andsimplification of the company's management. An effective and efficient internal control system remains focused on achieving the company's major objectives.

There is a strong interrelationship between internal control and risk management, which means that the main function of internal control is to put in place all the measures needed to make the risks acceptable to the company.

The implementation of an internal control system for distribution logistics allows the organization of the function, the control of its proper functioning, andthe detection of weaknesses and alerts in case of need.

This chapter is divided into three sections, the first of which is entitled "Elements for setting up an internal control system for distribution logistics", the second is entitled "Analysis of the risks associated with distribution logistics" and the third is entitled "Assessment of road freight transport".

## Section 01: Elements for setting up an internal control system for distribution logistics

Logistics is a transversal function[4] that influences the global performance ofthe company. It has become both an organizational and a management system, which the company uses as a strategic weapon to differentiate itself from its competitors. The optimization of logistics flows allows the company to achieve its objectives: the minimization of costs and deadlines, the quality of products and services provided to customers, and the flexibility of the company to adapt to changes in the environment and its instability.

For better control of the logistics function, it is essential to set up a well-thought-out and rational internal control system. This system includes a set of means, behaviors, procedures, and, actions adapted to the company's criteria. It contributes to the control of its activities, the effectiveness of its operations, and the efficient use of its resources. The internal control system aims to:

- Carry out and optimize operations;
- Ensure the reliability of financial information;
- Ensure compliance with applicable laws and regulations.

In order to set up an internal control system for the distribution logistics function, there are prerequisites for achieving the set objectives. In our study, we have based ourselves on the elements indicated by COSO[5].

### 1-1 The internal control framework:

An effective internal control system is based on good governance and starts with the setting of objectives at the top of the hierarchy, by agreed benchmarks.

[4] Cross-functional functions include activities relating to the management and steering of resources, activities, and means common to the various business lines of the company. This is why we say that logistics is present in all sectors of activity.

[5] COSO is an internal control framework designed to limit attempts at fraud in corporate financial reporting. It wasdefined by the Committee Of Sponsoring Organization of the Treadway Commission in 1992. However, it is only since 2002 that the COSO model has emerged. Internal control is a process implemented by the board of directors, management and staff of an organization, designed to provide reasonable assurance regarding the achievement of the following objectives: effectiveness and efficiency of operations, reliability of financial reporting. Compliance with applicable laws and regulations.

### 1-1-1 Reasons for setting up an internal control system for distribution logistics :

"In an increasingly globalized world, companies are operating in an increasingly hostile environment. Increased competition, unstable markets, and the emergence of risk and fraud could make the business less profitable.

This premise leads to a flexible and decentralized organization, offers real efficiency in the management of the various functions of the company, based on the delegation of powers and accountability at different levels, systematically accompanied by internal control measures and systems to ensurethat the powers and operations delegated are in accordance with the rules and within a previously established framework

This interest in internal control is also reinforced because of the increase in fraudulent acts within companies and is designed to better control all companyfunctions, including distribution logistics.

The objective of internal control is to highlight weaknesses, threats and possible improvements in distribution logistics in order to increase the company's competitiveness and profitability"[6].

### 1-1-2 The choice of the repository[7]:

One cannot embark on the organization of an internal control without referring to a well-defined model.

A reference system makes it possible to know where we want to go; in other words, to identify the objectives of the approach and the control points that canbe prescribed and that will require the implementation of appropriate systems.

Internal control has been progressively developed based on referenceframeworks, the best known and first of which is COSO 1 and which has been supplemented in terms of risk management by COSO 2.

[6] F. BERNARD, R. GAYRAUD, L. ROUSSEAU, " Internal control: fight against fraud ", ed. Maxima, Paris, 2010, P.15

[7] It is a reference document as exhaustive as possible drawn up by professionals in the form of good practice guides. It is the set of prescriptions (standards, objectives, paradigms, models, directives) imposed on an organization or retained by it and to which the auditor will refer to compare what will be found with what should be.

#### 1-1-2-1 Presentation of the COSO 1 framework:

"It is a reference framework for the overall management of internal control, the basic question of this model is "how to best control one's activities". It defines the components of internal control; that is, the important areas for whichit is essential to put in order or maintain internal control.

COSO 1 highlights five fundamental components of internal control:

- Control environment;
- Risk assessment;
- Control activities;
- Steering;
- Information and communication "[8].

#### 1-1-2-2 Presentation of the COSO 2 framework:

"COSO 2, also known as "Risk Management", is an extension of COSO 1.

As mentioned earlier, COSO 1 identifies five elements for effective internal control, and COSO 2 adds a risk management component to COSO 1. Risk management must be supported by internal control.

COSO 2 identifies eight elements of internal control:

- Internal environment;
- Goal setting;
- Event identification;
- Risk assessment;

[8] J. RENARD, "Comprendre et mettre en œuvre le contrôle interne", éd. Eyrolles, Paris, 2012, P.53

- Treatment of risks:
- Control activities;
- Information and communication;
- Monitoring activities "[9].

## 1-2 Elements for setting up an internal control system for distribution logistics:

The implementation of the COSO 1 model has sometimes been difficult to achieve in companies that have adopted this standard. This observation led the Risk Management organization[10] to perfect this model by adding the risk management section, to make it much more effective and adaptable, which gave rise to the COSO 2 model.

According to COSO 2, the elements for establishing an internal control systemare as follows:

### 1-2-1 Internal environment:

Distribution logistics allows products to be transported from the place of manufacture to the place of sale. The organization of its environment is complex,it includes a whole set of functions aligned between them, by physical flows and information flows, and linked by the various actors involved, the circuits, and the distribution channels.

"The quality of this environment will condition the quality of internal control; it determines the level of staff awareness of the need for control. Without a favorable control environment, it is useless to hope to achieve a significant result and therefore a satisfactory control of the distribution logistics activities.

The distribution logistics environment requires ethics, policy, and control- sensitive human resource management"[11.]

#### 1-2-1-1 Ethics:

The purpose of internal control cannot be to evade internal or external rulesif the distribution logistics environment is anchored by bad habits. It is difficult to build something solid and the edifice will be constantly questioned. This is why it isimportant to involve the values of compliance and respect (code of conduct and ethics) which are favorable factors contributing to the quality of internal control.

[9] J. RENARD, 2012, op.cit. P.73

[10] Enterprise Risk Management (ERM), which enables companies to link their risk management strategy totheir overall business strategy and to integrate risk management into existing business processes.

[11] F.BERNARD, R.GAYRAUD, L.ROUSSEAU, op.cit. P.26

Any breach of ethics can affect the operation of distribution logistics, so internal control must take into account this dimension by assessing the quality of this environment (J. RENARD, 2010).

After ethics, a policy is one of the main components of the internal control environment.

#### 1-2-1-2 General policy:

The distribution policy is vital for a company because it is not only about designing a good product, but also about distributing it properly. It mainly includes the choice of strategy and the distribution channels used.

The organization of this policy must also be exemplary and its quality contributes to the quality of the control environment.

The board of directors must play its role to the full, as must the audit committee, and the directors and committee members must have a good knowledge of the company's distribution policy, which will have a direct influence on the quality of internal control.

A good policy is also an adequate working structure, a right balancebetween the different functions of the distribution logistics for a transparent transmission of information, which facilitates the achievement of the objectives.

#### 1-2-1-3 Human Resources Management:

A good control environment requires competence and integrity in human resources management. If salary policy[12] and social policy are obscure, career management rules are incomprehensible, training policies are neither clear nor useful, and if staff rotations in strategic positions are continuous, then staffparticipation in management quality is not promising.

On the other hand, if personnel management encourages skills to be expressed and developed and if remuneration systems encourage good work results and sustained attention to the risks encountered, internal control will be favorable (J. RENARD, 2012).

### 1-2-2 Goal setting:

The objectives of distribution logistics must be set in accordance with the organization’s risk appetite. These objectives determine the acceptable risks and consequently the internal control system to be put in place to limit the risks.

As a result, "the objective of distribution is to ensure that the company conquers new markets, or maintains existing markets by offering customers a levelof service that is equal to, if not better than, that offered by competitors.

Defining a level of customer service consists of setting objectives in terms of product and service availability, order processing time, and delivery, which strengthens the company's competitive position while being compatible with the means available to the company to carry out its distribution logistics plans"[13].

"Once the objectives are defined, the implementation of an internalcontrol system will be protective in terms of identifying the risks likely to affect their achievement.

To avoid building an internal control system that risks being either insufficient or excessive and that does not fulfill its role, it is necessary to know theoverall level of risk that the organization is willing to face. This postulate requires risk managers to define two areas and submit them tomanagement for approval.

These two areas are risk appetite and risk tolerance"[14].

#### 1-2-2-1 Risk appetite:

Risk appetite is an organization-specific assessment, the formulation of which is implemented when defining risk management objectives and strategy. Thus, risk appetite does not only represent an overall target situation of risk exposure but rather an aggregation of multiple target situations across all operational levels, making risk appetite multidimensional.

The declination of appetence then consists in determining the level of riskthat the company can bear. It is a matter of seizing opportunities by putting forward the wisdom and competence of the board of directors to achieve an expected benefit that is weighed against the accepted risk. The same is true for risk tolerance (J. RENARD, 2012).

#### 1-2-2-2 Risk tolerance:

It is expressed in figures and must be consistent with the appetence. It is a matter of setting a figure below which there is no significant threat to the business and the objectives and above which there may be a problem if the loss were to reach. The figure set will be the one above which protective measures are required. But risk tolerance is also assessed in percentage terms (tolerance threshold).

Whether it is a number or a percentage, the definition of risk tolerance must always be accompanied by the precision of the threshold above which it is appropriate to alert the hierarchy and from which action must be taken (J. RENARD, 2012).

[12] Also known as the remuneration policy, it includes all the remuneration and benefits granted to anemployee. The success of the company's salary policy is a strong motivational lever.
[13] J.C.TRANDEAU, D.XARDEL, " La distribution ", éd. PUF, Paris, 1998, P.29
[14] J.RENARD, 2012, op.cit. P.75

#### 1-2-3 Event identification:

"The aim is to identify the risk universe applicable to all distribution logistics activities, i.e., the identification of events, operations, and actions likely togenerate risks to be taken into account or which already generate them.

This analysis amounts to identifying the inherent risks[15] or the specific risks attached to each operation. Identifying events means also, and positively, identifying opportunities to be seized. In this approach, it is necessary to take the opinion of the manager and the operational, because they are better placed to appreciate and to inform, so we must go from the largest to the smallest, from the strategic operations to the operational activities"[16.]

The potential events to be monitored are the result of various influencing factors that each must analyze according to a grid established by two possible approaches.

### 1-2-3-1 The categorical approach:

This is the approach adopted by the COSO: events are classified by category, by nature (endogenous, exogenous) before being analyzed. To do this, there are several techniques and procedures:

- Analysis through interviews;
- Conducting surveys or questionnaires;
- The definition of alert thresholds by event; when the threshold is reached, the level of risk is examined before it becomes a concern;
- The constitution of a library of listed events, this method focuses on events that have already been produced or may be produced in the future.

Nevertheless, this method has the advantage of being universal and providinga ready-to-use framework. On the other hand, it cannot be adapted specifically to the company, its profile, and its constraints (J.RENARD, 2012).

### 1-2-3-2 The activity-based approach:

It is the breakdown and analysis of each activity and process to identify the risk-bearing events (strategic, legal and regulatory, operational, human, health, etc.)

This method has the opposite advantages and disadvantages of the previousone; no universal categories, but activities, encouraging the staff to participate in this process, each in his or her area of responsibility.

[15] This is a risk related to the company's environment or the nature of its activities (risk of significant errors).
[16] J.RENARD, "Théorie et pratique de l'audit interne", éd. Eyrolles, Paris, 2010, P.154

Ideally, workshops should be set up with people from different hierarchical levels, which allow for brainstorming[17] always enriching. In this approach, it is mandatory to imagine the unpredictable, potential, or real risk events, hence the importance of setting up procedures and crisis plans. There are many different methods, but the essence is always the same: to arrive at a sort of inventory of risks, regardless of the classification adopted. This inventory is the first element of risk mapping. This approach is necessarily a prerequisite to risk assessment: we will analyze it in its entirety (J. Renard, 2012).

### 1-2-4 Risk assessment:

This dimension remains the cornerstone of the overall risk management approach, which is considered essential for the implementation of an internal control system for the distribution logistics function.

This requires a clear definition of the concept of risk and a method for its assessment, which ends with the establishment of a risk map.

#### 1-2-4-1 The concept of risk:

"The IFACI[18] defines risk as "a set of hazards that may adversely affect an entity and that internal control and audit are responsible for controlling as much aspossible". For a much clearer definition, we add that "risk is the threat that an event or action will adversely affect the company's ability to successfully achieve its objectives.

In all cases, these definitions emphasize the notion of objectives as a criterion for selecting risks, which should be addressed.

In any case, it is impossible to eliminate all risks. Risk is inherent in every activity, hence the need to separate the good from the bad"[19]

#### 1-2-4-2 Risk typologies:

They can be classified in different ways:

- By origin: external risks (unforeseen competition, failure to deliver, natural disasters, etc.) and internal risks (fire, insufficient training, etc.);

[17] In a company, brainstorming is a technique that consists of bringing together a group of employees to collectively produce as many new ideas as possible on a given theme. A brainstorming is organized each time a satisfactory solution to a problem is missing.
[18] The French Institute of Internal Auditors and Controllers is the French chapter of the Institute of Internal Auditors. Founded in 1965 as an association, its mission is to provide dynamic leadership to the internal audit profession.
[19] J.RENARD, 2010, op.cit. P.155

- By activity: technical risks, social risks, IT risks;
- By geographical location: head office risks, warehouse risks, factory risks;
- By residual importance: specific (inherent) risks, internal control risk (residual risks[20] after-treatment of the risk; i.e., implementation of the internal control system).

Some advocate a three-step analysis:

- Exposure analysis: i.e., identification of risks that may affect the assets;
- Analysis of the environment: i.e., the risks that may affect operations;
- Threat scenario analysis: i.e., identification of risks related to fraud, malice, and accidents.

It is important not to use several classification criteria at the same time, which would lead to omissions or duplication and make comparisons and themeasurement of changes difficult. The whole constitutes a nomenclature, an essential step in the mapping (J. RENARD, 2012).

### 1-2-4-3 Nomenclature and evaluation:

For a better assessment of the risks, it is necessary to put them for further processing.

At this stage, several actors are involved and there is no uniform method.

- **Actors and methods:**

For the elaboration of a risk map[21], there are three actors involved.

Firstly, the risk manager: through his knowledge of the distribution logistics function, he draws up the risk policy and proposes it to the management, which will then be applied in the dual field of prevention and protection. He/she collects information, builds the cartography, and ensures that it is updated.

[20] Residual risk is the risk that remains after responding to a given risk by taking various actions. Residual risk is also the part of the risk that a company intends to keep voluntarily or that it must bear.

Secondly, the community of operational managers: are the ones who communicate information to the risk manager and draw his attention to sensitive points. In addition, they apply the policy and put in place the means to control unacceptable risks and limit acceptable risks.

Thirdly, internal auditors: are the ones who assess the quality of the mapping and do not participate in its development. They identify gaps and deficiencies and make recommendations to address them.

The risk manager must ensure that the mapping can be linked to internal control. The internal control system will be implemented based on these defined risks.

To achieve this, we asked ourselves what is the best approach:

Should you first identify the strategic risks of the general management and then go down to the lowest operational level?

Or should we start at the bottom and work our way up? In other

words, "top down[22] " or "bottom up[23] "? The answer is both:

It is appropriate to start at the top to clarify management's concerns and ensure that there is no impact on their operations. These management concernsare strategic risks that affect the bottom of the organization and are the subject ofthe implementation of the appropriate internal control system for each activity.

Then, it is necessary to report information on the risks of each activity so that the management is informed (J. RENARD, 2012).

- **Traditional evaluation:**

"For the elaboration of a risk map, there are many methods, from the most elementary to the most complex, let's remember that everything is organized in four successive steps"[24]:

[21] It is defined as the process of identifying, evaluating, prioritizing, and managing the risks of an organization. It is an essential lever for risk management and forms the basis of the risk management strategy.
[22] Also known as the top-down approach, this is the traditional view of power as a pyramid structure: decisions are made at the highest level of the hierarchy, by management, which gives the orders and which the lower levels must execute.
[23] Also known as the bottom-up approach, in this approach ideas and initiatives come from the bottom up and management takes on the role of a conduit between the parties. The model is participatory and collaborative.
[24] J.RENARD, 2010, op.cit. P.157

- **Step 1: Development of a risk nomenclature:**

We list all the types of risks likely to be encountered in the distribution logistics function. This list will be more or less detailed depending on whether one wishes to draw up a more or less summary map. However, it is also possible to have several nomenclatures; for example, one for operational risks, one for strategic risks, and one for financial risks.

- **Step 2: Identify each process/function/activity to be estimated:**

- This list should cover all activities of the function;
- It will be detailed according to the objectives;
- Each dimensioned item can be the subject of an audit mission.

- **Step 3: Estimate each risk for each activity:**

This assessment will focus on two points:

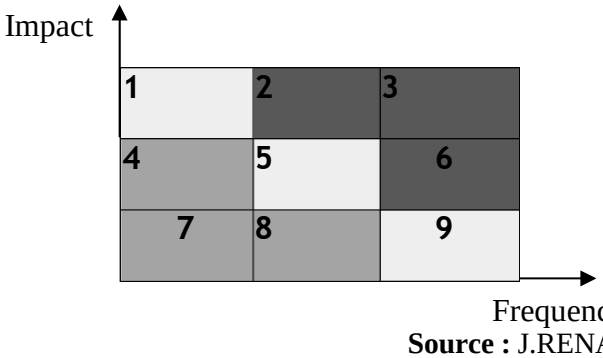
- The impact of the risk; that is, the severity;
- The estimated frequency; that is, the vulnerability (frequency).

This assessment is qualitative; it is done by considering the maximum possible risk by assigning the impact and frequency of each risk. In general, a three-position scale is used: Low (F); Medium (M); Important (I).

These assessments are visualized on a double entry graph:

- significant impact and frequency: significant risk (boxes 2, 3, 6);
- low impact and frequency: low risk (boxes 4, 7, 8);
- high impact and low frequency or low impact and high frequency:medium risk (boxes 1, 5, 9).

**<u>Figure 01</u> : Impact/Frequency of Risks.**




**Source :** J.RENARD, 2012, op.cit. P.86.

- **Step 4: Overall assessment of each risk in each activity:**

This assessment is quantitative, it offers advantages:

- An appreciation on a larger scale;
- Obtaining a total coefficient by multiplying the two coefficients(frequency and severity). By adding the coefficients of the risk of activity can then be assessed globally.

This risk mapping will form the basis on which we will build our internal control system.

### 1-2-5 Treatment of risks:

"To take risks into account, it is important to choose the treatment tobe applied to them. There are four possibilities and the choice must be consistent with the risk policy that has been chosen"[25.]

#### 1-2-5-1 Acceptance:

The acceptance of risk must be consistent with the defined policy on risk appetite and tolerance. In this case, one does nothing; that is, one accepts to run the risk.

#### 1-2-5-2 Sharing or transfer:

In this case, the aim is to reduce the risk, and there are several methods to achieve this:

- Outsourcing or subcontracting: the risky activities are then carried out and care must be taken to ensure that no areas of responsibility remain. And it is often the most serious risks that are the most difficult to eliminate;
- The joint venture: which is a contractual sharing of risk for a given operation;
- Insurance: insuring an activity against a risk is shared among the community of insureds of which one is a member.

#### 1-2-5-3 Avoidance:

The risk is eliminated by ceasing the activity that generates it.

[25] J.RENARD, 2012, op.cit. P.91

#### 1-2-5-1 Risk reduction and removal:

And it is through the implementation of an adequate internal controlsystem that should reduce the risk to the point of making it acceptable if it occurs or preventing it from occurring.

The choice between these four risk treatment options is obviously a function of the policy chosen.

### 1-2-6 Control activities:

This refers to the internal control system specific to each activity to counteract risks, through the application of standards and procedures.

### 1-2-7 Information and communication:

"Information must be relevant, accurate, timely and disseminated to the right recipient. Its circulation must be multidirectional (top-down, bottom-up, transversal). If information does not reach the various players, either because it is incomplete or of poor quality, or because communication is deficient, the parties concerned are poorly informed about their risks, which results in the failure to design an effective internal control system.

Communication is the indispensable tool for the transmission of information. A distinction must be made between external communication, the content and methods of which are defined by the general management and the board of directors, and internal communication, the content and methods of which are defined by internal rules"[26].

### 1-2-8 Piloting:

"The steering system allows management to assume its role of implementing an internal control system, by validating its effectiveness through the treatment of weaknesses in order to strengthen the achievement of objectives.To do this, the system must be coordinated, evaluated and updated"[27].

In order to develop a rational internal control system for distribution logistics, the company must address the problem of risk in its entirety, and internalcontrol must be built around it.

[26] F.BERNARD, R.GAYRAUD, L.ROUSSEAU, op.cit. P.27
[27] Idem, P.27

## Section 02: Distribution Logistics Risk Analysis

The logistics function is becoming more complex and turbulent and its management requires more management and monitoring. Like other company functions, it represents several professional risks. Therefore, logistics risk management is a new theme recently created by logisticians, given the remarkable importance of flow management in the feasibility of strategies. It is a method that ensures the sustainability of the company by giving it a competitive advantage.

The purpose of this section is to analyze the various risks associated with the distribution logistics function. To achieve this, we will develop a detailed mapping to prioritize the risks. Indeed, this mapping facilitates the assessment of risks and the correction of actions implemented through controls associated with them.

### 2-1 The areas of distribution logistics:

"The distribution logistics function is traditionally defined as the set of activities whose aim is to make a given quantity of product available at the lowest cost at the time and place where the demand exists. Also known as downstream logistics, its purpose is to optimize the physical distribution of goods"[28.]

Physical distribution is defined as "all the means and operations that makeit possible to make the goods and services produced by companies available to end users or consumers"[29.]

Physical distribution is therefore a good between manufacture and purchase, its purpose is to make the product accessible to purchase for all those who want to acquire it. It includes the following areas:

#### 2-1-1 Storage:

"Warehousing can be defined as a combination of functions or operations performed on goods. These operations take place from the time the goods arrive in the warehouse until they are used or removed. The warehousing function represents an important item in the economic balance sheet of companies. Its performance and costs must be continuously monitored"[30]

The study of warehousing and warehouses consists of analyzing, understanding, controlling, and managing products, their routing, and physical storage locations.

[28] A.GUAGNOL, P.ROULE, " Management des organisations ", éd. Gaulino, 2009, P.144
[29] M.VANDERCAMMEN, N.J.PERNET, " La distribution ", éd. Boeck, Brussels, 2005, P.26

A warehouse is made up of different zones[31:]

- **The reception area:** includes the truck unloading docks, the reception control, packaging and mass storage areas.
- **The storage area:** groups together the storage means separated fromeach other by circulation aisles.
- **The order receiving area:** is used to prepare customer orders.
- **The shipping area:** includes a packing area, a control area, and a waiting area for departure.

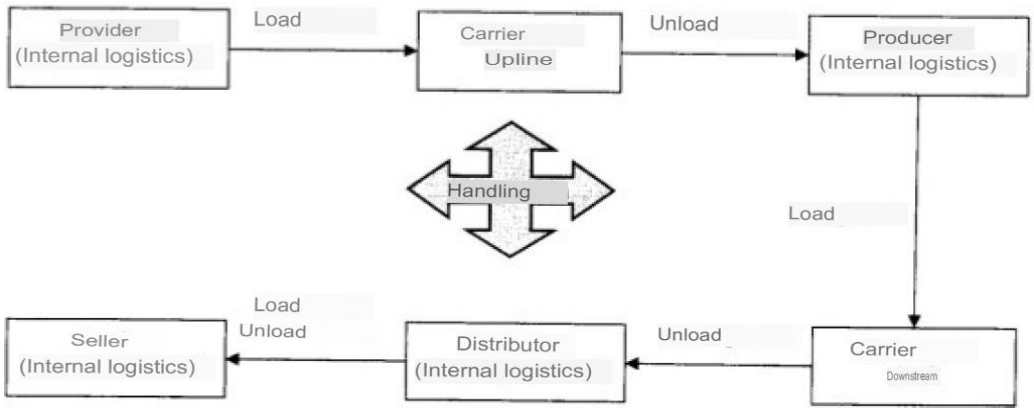
### 2-1-2 Handling:

"Material handling is the movement of materials through and from the production process at the warehouse, receiving, and distribution areas.

Handling is therefore all the material activities and movements which, while not changing the value or nature of the products, contribute to their movement in the best conditions, speed and safety from the place of production to the place of storage and from the place of storage to the place of distribution. It requires physical effort by one or more workers.

An indispensable tool, material handling is involved in the entire supply chain, from suppliers to suppliers to customers to carriers to producers to distributors to vendors"[32.]

**Figure 02 : Positioning of materials handling in the supply chain.**




**Source:** L.AMEDEO, F.YALAOUI, op.cit. P.47

[30] L.AMEDEO, F.YALAOUI, " Logistique interne : Entreposage et manutention ", éd. Ellipses, Paris, 2005, P.53
[31] R.LE MOIGNE, "Supply chain management: Achat, production, logistique, transport, vente ", éd. Dunod, Paris,2017, P.271
[32] L.AMEDEO, F.YALAOUI, op.cit. P.73

### 2-1-3 Transportation:

"The transport of goods includes any movement of goods on board any modeof transport: rail, road, waterway, etc. It is measured in tonne-kilometers or, on a given journey, in tonnes. It is carried out on its own account or by third parties. When the transport of goods is carried out by third parties, it is carried out within the framework of a transport contract.

Our studies are based on road transport, which consists of transporting goods from one place to another by road.

Road freight transport is an intermediate consumer good and should be considered as a factor of production in the process of making products available ona market"[33].

### 2-2 Supply chain risk management:

The supply chain is a set of people, actions, resources, and operations, a system, a chain of processes, a network of an organization, or even a dynamic network structure at the origin of flows, it can even become a mode of analysis. Supply chain management is a type of management, coordination, exchange, or even a managerial study of this chain. THI LE HAO and BIRONNEAU (2011).

Using the definition of the Council of Supply Chain Management Professionals[34] according which "supply chain management covers the necessary planning and management activities related to sourcing and procurement, conversion and all logistics activities"[35].

Recognition of the nature of the environment in which the supply chain operates has led managers to incorporate risk management processes when it is subject to disruption. This risk management process is called supply chain risk management (SCRM), which is primarily about managing demand disruptions along the value chain.

### 2-2-1 Identification and assessment of supply chain risks:

In general, a typical supply chain risk management process is broken downinto two steps:

[33] V.BASMORCEAU, E.COUZINEAU-ZEGWAARD, O.MEIER, " Management de la supply chain : Mode d'emploi ",éd. EMS, Paris, 2020, P.134

#### 2-2-1-1 Risk identification:

"Risk identification is a process of researching, recognizing, and describing the sources of risks, their areas of impact, potential events, their causes, and possible consequences. The aim is to produce a list of possible risks.

The identification of supply chain risks is the first step in the risk management process. This step consists of segmenting the risks into categories according to their origin: intrinsic supply chain risks and extrinsic supply chain risks. Alternatively, it is necessary to detect the common supply chain risks presentin the variation of demand, deteriorations during transport, operational risks related to warehousing, and catastrophic events that can affect the logistics network units. If not, it is a prerequisite to identify supply chain risk factors in events such as delivery delays, order errors, inventory levels and supply interruptions.

After identifying these different risks, managers develop evaluation techniques that allow them to determine their degree of importance"[36].

#### 2-2-1-2 Risk assessment:

Supply chain risk evaluation is a process that provides a framework for comparing risks and distinguishing between those that should be addressed and those that should not. Risk evaluation is the process of determining the importanceor value of risk within the supply chain. Several approaches approach this exercise from different angles, for example, supply chain simulation techniques that allow the assessment of losses and damages caused by risks, and are done using advanced mathematical techniques.

Risk assessment provides a diagnosis of the various activities and leads to the administration of appropriate treatment. The treatment of supply chainrisks allows a competitive advantage by reducing or eliminating risks that harm performance of the logistics function.

Evaluating risk also means adopting an active behavior in the face of it, and there are two ways of doing this: firstly, it can be avoided or reduced; secondly, it can either be transferred or shared, or accepted.

Whatever decision is taken, it is necessary to integrate all stakeholders in thesupply chain

[34] CSCMP is the world's leading association of supply chain management professionals. CSCMP is a not-for-profit association that provides leadership in the development, design and improvement of logistics-relatedprofessions.

[35] C.ELOCKSON, "Supply chain risk management and the performance of agri-food companies", University OFARTOIS, 2017, P.2. https://www.theses.fr/2017ARTO0102.pdf

[36] J.MAHMOUDI, "Simulation and risk management in distributed supply chain planning: Application to the electronics and telecommunications sector", 2006, P.82.https://depozit.isae.fr/theses/2006/2006_Mahmoudi_Jaouher.pdf

through information sharing.so that the level of comparison is the same for all. To do this, it is necessary to access a large database

### 2-3 How to help the supply chain identify risks:

"It seems possible to propose some recommendations to logisticians facing the problems of supply chain risk management.

The first recommendation is to become aware of the dimension of the problem of supply chain risk management. To do this, the establishment of a think tank within the supply chain on this issue is the first step. The risk management approach must be formalized in such a way as to make it visible, understandable and necessary. It implies, in particular, the prediction of risks by the scenario method[37] to envisage the realization of certain risks and to reflect on the means to identify, anticipate and manage them.

Another alternative is the awareness of the relationship between risk and the different elements of the supply chain. This leads managers to separate andclassify activities according to their different characteristics in terms of added value, based on the probability of occurrence of the risk for each activity.

Finally, it consists in encouraging the different actors: logistics expert and risk expert to collaborate with each other. This type of collaboration is of a cooperative nature between stakeholders, which is based on anticipating problems and studying them, in order to analyze them and decide whether or not to validate them at each stage of the process, in order to quickly provide solutions to resolve them. This allows to save time in a global way and to answer to the imperatives of cost, delays, quality, etc. Two principles must be respected for better management of logistics risks: the principle of risk anticipation and that of close collaboration between players.

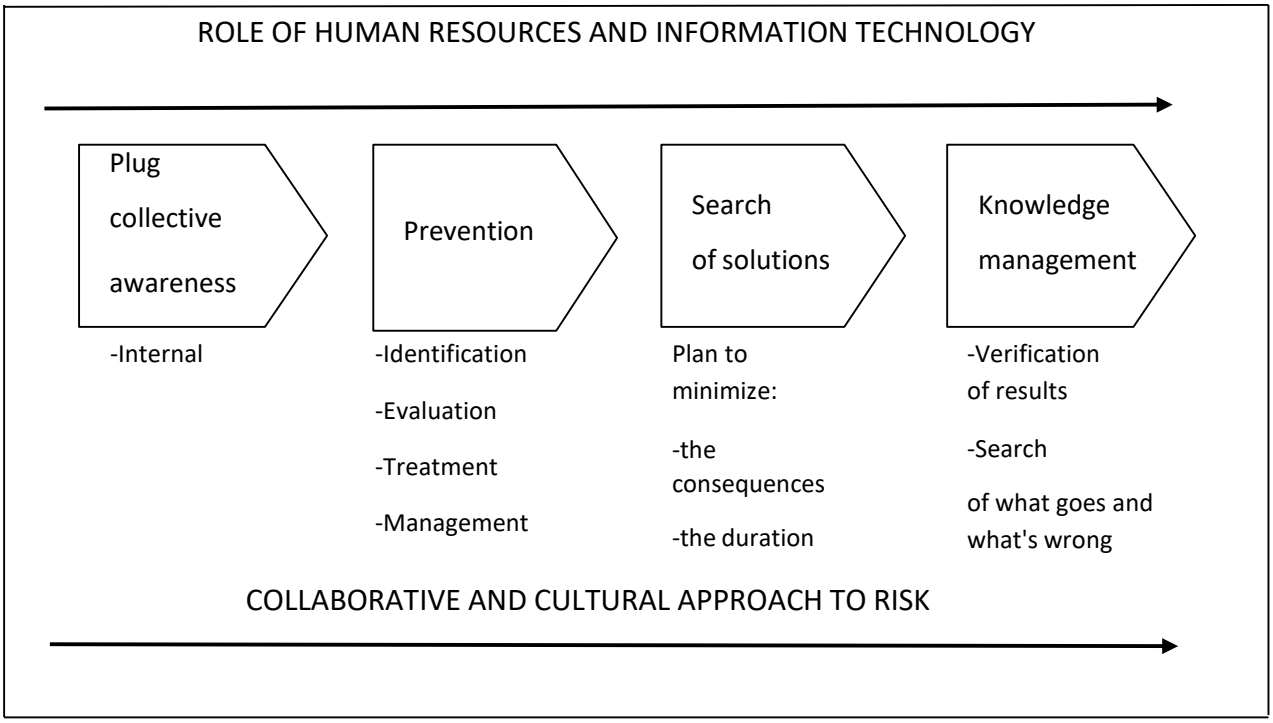
As a summary, we can outline the approach to be followed in order to ensure the continuity of the supply chain's operation as best as possible. But this approach is based on a preliminary analysis:

- Internal and external risks.
- Market risks.
- The degree of relationship and collaboration to be established betweenthe different activities in the chain"[38].

[37] It is a synthetic approach which, on the one hand, simulates step by step and in a coherent way, a sequence of events leading a system to a future situation, and which, on the other hand, presents an overall picture of the latter.

[38] P.MEDAN, A.GRATACAP, " Logistique et supply chain management : Intégration, collaboration et risquesdans la chaîne logistique globale ", éd. Dunod, Paris, 2008, P.250

**Figure 03 : How to ensure continuity of supply chain operations.**




**Source:** P.MEDAN, A.GRATACAP, op.cit, P.254.The risks of the distribution logistics function:

Each activity of the distribution logistics function is exposed to different risksthat must be controlled.

### 2-4-1 Risks of the warehousing business:

Warehouses involve risks to which staff and stored goods are exposed. It is essential to detect the main logistical risks in warehouses in order to take preventive measures and ensure the safety of employees and the proper maintenance of stocks. These risks include[39:]

- Risk of fire, explosion, flooding, electrocution;
- Falls from the same level (slippery floor, bulky objects), falls to alower level (stairs);
- Shocks and collisions, unstable shelving, inappropriate lighting, obstacles;
- Collapsing objects (improper stacking of goods);

[39]A.TALBI," L'analyse des risques associés à la fonction logistique ",2012, P.05. https://www.researchgate.net/publication/279985063_L%27analyse_des_risques_associes_a_la_fonction_logistique

- Contact with substances harmful to health (chemical and toxic substances);
- Mental load due to the variety and importance of the distribution of the packages and their destinations.

### 2-4-2 The risks of the handling activity:

The growth of activity in logistics platforms has given rise to various risksrelated to handling, we can distinguish[40]:

- Risk of falling of the load to be handled due to its bulk, lack of stability, exposure to permanent vibrations, uneven distribution of the load;
- Risk of falling on the same level due to the problem of the ground;
- Electrical or explosion hazard;
- Mental load due to carrying heavy loads, or excessive numbers of movements to be performed, stress;
- Excessively slippery surfaces or moving machinery can cause serious injury;
- Risks of musculoskeletal disorders generated by repetitive activity;
- Ergonomics: poorly adapted workstations for picking up, placing, pushing and moving the load.

### 2-4-3 Risks of the transport activity:

Transport involves risks that can damage the goods. Indeed, many hazardscan occur during delivery: theft, loss, damage, etc. We distinguish:

- Risk of accidents due to the inadequate organization of travel;
- Risk of accidents due to lack of skills;
- Risks of aggression;
- Fire or explosion incidents;
- Risk of damage to goods;

[40] A.TALBI, op.cit. P.04

- Risk of breakdowns and delays in delivery.

Based on the above, the risks of this function are:

- General workplace hazards;
- Allergy risks;
- Mental workload, musculoskeletal risks;
- Risks related to handling equipment;
- Risks related to handling loads;
- Risks of falls from heights;
- Fire or explosion hazards;
- Ground level hazards;
- Natural hazards;
- Transport and traffic risks.

### 2-4 Development of the risk map:

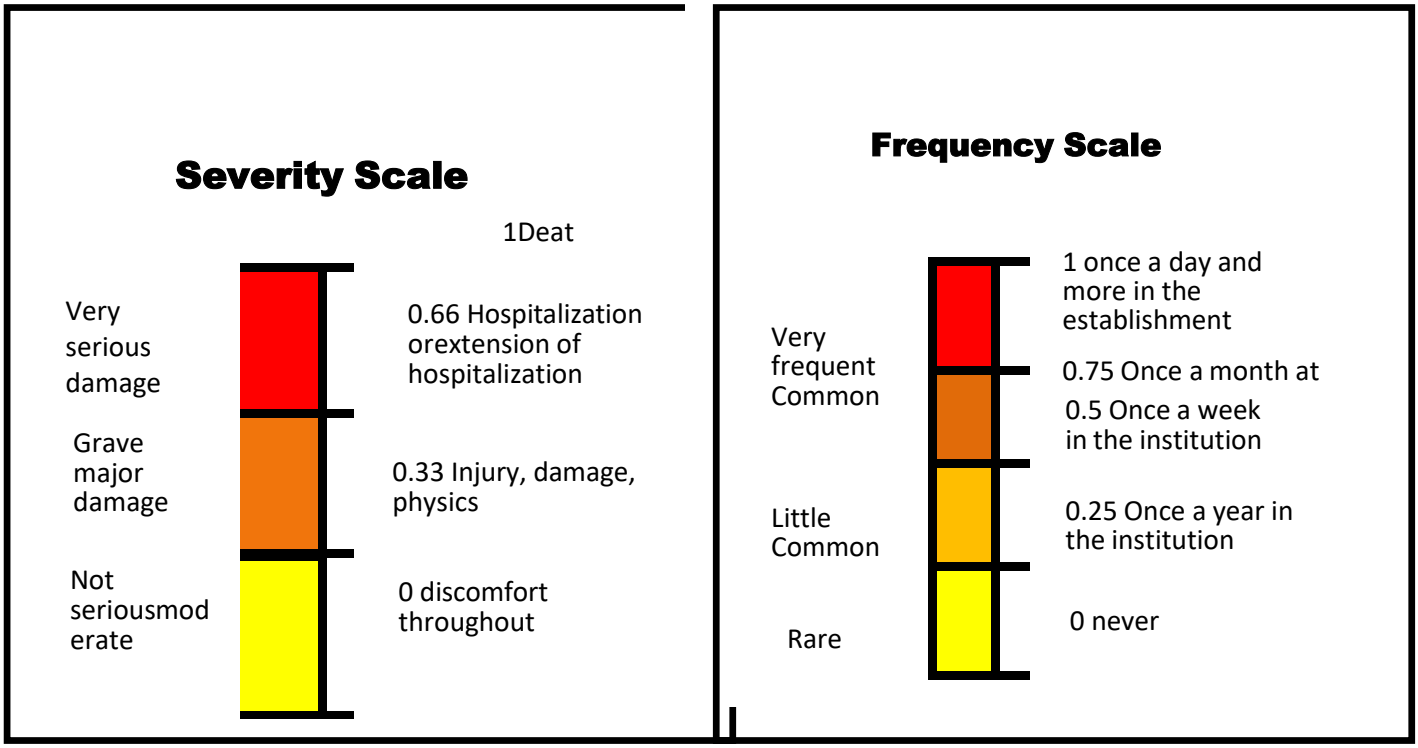
Risk mapping is the starting point for all actions necessary to reduce, control and transfer risks.

#### 2-5-1 Severity and frequency grid:

"This document makes it possible to identify the main risks of an organization and to present them in a synthetic and hierarchical form. First, the two reference axes studied must be chosen: the axes probability/severity allowing to define the two axes of graphic presentation according to frequency and severity"[41] .

[41] A.TALBI, op.cit. P.06

**Figure 04 : Severity/Frequency of distribution logistics risks.**




**Source:** A.TALB. I, op.citP.07.

### 2-5-2 Risk assessment:

We estimated a risk assessment for the distribution logistics function as follows:

**Table 01 : Risk assessment of the distribution logistics function.**

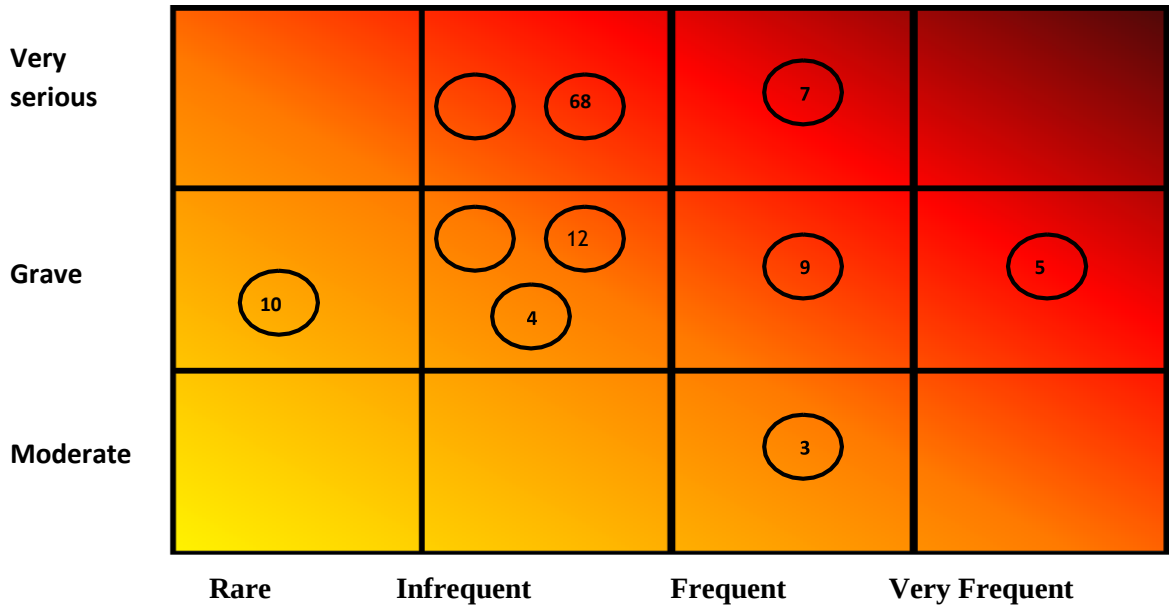
| **Risks** | **Frequencyof occurrence of the risk** | **Severity of risk** |
|---|---|---|
| **No. 1** General work-relatedrisks | | |
| **No. 2** Risk of allergy | | |
| **No. 3** Mental workload, musculoskeletal risks | | |
| **No. 4** Risks related to the handling of loads | | |
| **No. 5** Risks related to handling equipment | | |

| | | |
|---|---|---|
| **No. 6** Risk of falling from a height | | |
| **No. 7** Transport and traffic risks | | |
| **No. 8** Risk of fire or explosion | | |
| **No. 9** Ground level risk | | |
| **No. 10** Natural hazards | | |

**Source:** A.TALBI, op.cit. P.07

### 2-5-1 Graphical representation of risks:

**Figure 05 : Graphical presentation of distribution logistics risks.**




**Source:** A.TALBI, op.cit. P.07.

The risks are classified according to their severity and frequency as shown inthe following chart:

Ultimately, supply chain risks can arise from the management of the various supply chain activities. Risks due to transport, storage, and handling difficulties can arise because of the actors, the nature, the means used, etc. In order to cope, there is a risk management approach: risk identification; its purpose is to determine all the risks that are likely to occur, and risk analysis; its purpose is to understand and estimate the probability of occurrence and the impact of the risk. And to achieve this, it is mandatory to refer to a previously established

risk map.

## Section 03: Evaluation of Road Freight Transport (RFT)

The transport of goods is one of the factors of globalization and the development of trade. Today, for short and medium distances, road freight transport is the most suitable and mobile mode of transport. Its great flexibility makes it a means that is well suited to the just-in-time requirement, whichrequires the goods to be delivered at the right time.

Road freight transport has changed considerably in recent years. Among the many factors of this evolution: the development of logistics in companies coupled with the attentions of deregulation and deregulation of transport.

The analysis and control of the road freight transport system and the implementation of a method of evaluation of the latter provides managers with useful information for their decision making and contributes to improving the performance of the company.

### 3-1 Management of a road freight transport system:

A Transport Management System (TMS) is a technology-based logistics platform. The TMS mainly meets the needs of traceability of deliveries and optimization of transport and allows a better organization of the latter.

"The transportation management system provides visibility into transportation operations, trade compliance information and documentation. It also ensures timely delivery, streamlines the shipping process and makes it easier for companiesto manage transportation operations.

Information systems and performance measures are used by business managers to better plan and control transport operations"[42].

#### 3-1-1 Information systems:

An information system is the set of human, material and software resources that are concerned with the collection and distribution of information within the company.

[42] J.ROY, "A Global Planning Model for Road Freight Transport", P.27.
http://biblos.hec.ca/biblio/theses/1984NO7.PDF

"Information systems first appeared in the financial function, which requires the handling of large databases, then in the logistics function and the management of human resources, which require a lot of planning and rigor. Also, the marketing and purchasing functions, which work in a network, have opted for both intra- and inter-organizational information systems.

Information systems must be consistent with the company's strategic needs. They help managers to steer processes, optimize the functioning of services,analyze and improve performance and make decisions. The training provided must be up-to-date, reliable and appropriate to the situation"[43].

#### 3-1-1-1 Logistics information systems:

"The smooth functioning of the supply chain is based on the information flows that circulate internally and externally to the company. The flexibility of this flow is justified by the use of logistics information systems (LIS).

The LIS is a subsystem of the information system that provides information specific to the logistics business. Its operation is based on three components: input flows, the database, and output flow.

In a supply chain, information flows are classified into several categories "[44]:

[43] O.ZEROUALI OUARITI, L.ZEROUAL, "L'impact des systèmes d'information sur la performance des chaînes logistiques :une revue de littérature",Maroc,2017, P.291. https://eujournal.org/index.php/esj/article/download/8852/8499

[44] K.CHAFIK, O.BOUBKER, "Information system and logistic practices: analysis based on the SCOR model: Case ofa Moroccan automotive industry company", Morocco, 2016, P.49. http://www.issr-journals.org/links/papers.php?journal=ijisr&application=pdf&article=IJISR-16-072-14

**Table 02 : Type of logistics information system.**

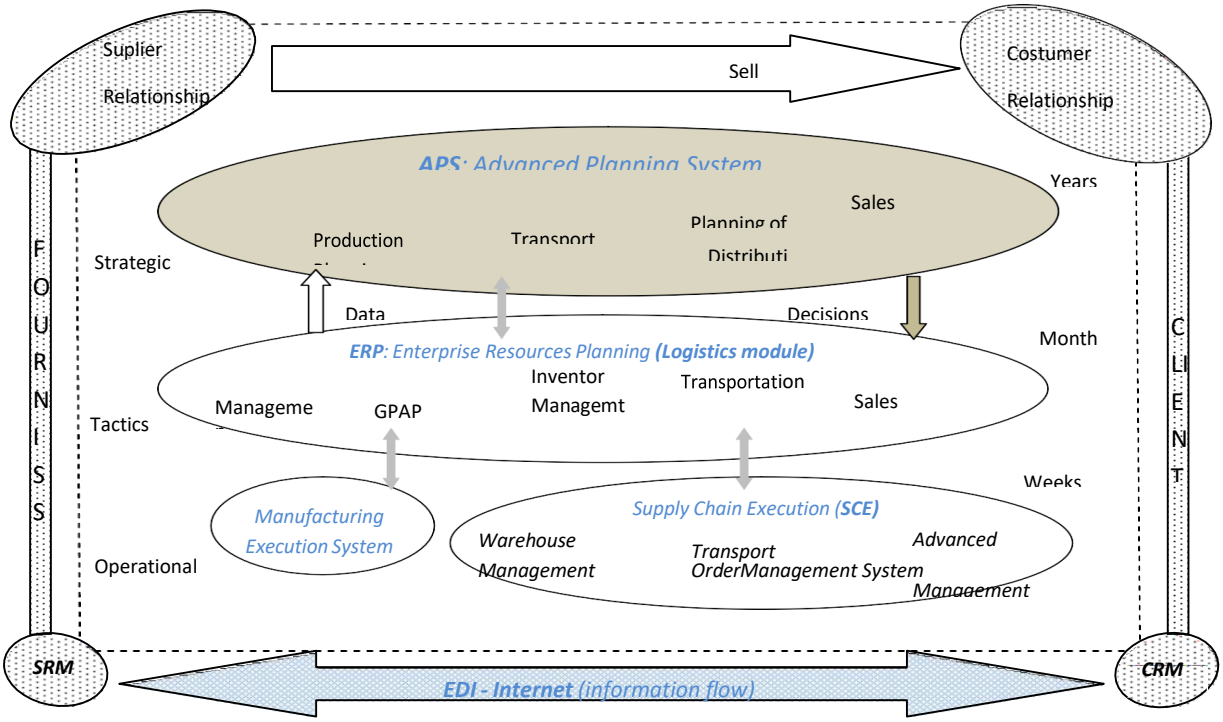
| LIS types | Definition | Features |
|---|---|---|
| ERP<br>(Enterprise Resource Planning) | Also called ERP (Integrated Management Software) is an information system that allows to manage and monitor all the information related to the functions of the company. It is a central software allowing to make the logistic chain more productive and organize its management by being based on a unique database. | • From a single database and facilitates cross- functionality;<br>• Optimal management of the various functions of the supply chain;<br>• It facilitates the creation and analysis of information and guarantees its uniqueness;<br>• Ensures the standardization of data exchanges within the organization. |
| APS<br>(Advanced Planning System) / (Supply chain Planning: SCP) | It is a planning system for all ofthe company's flows, which facilitates the optimization ofthe supply chain and helpsoperational staff and supply chain managers to make decisions. | • Long- and medium-term planning of all supply chain processes such as demand planning, distribution, and transportation;<br>• Decision-making mechanism for logistics processes;<br>• Provide the best solutions for the organization of the supply chain based on optimal profitability analysis. |

| | | |
|---|---|---|
| SCE<br><br>(Supply Chain Execution) | It is the set of software packages for the operational management of the supply chain that is designed to streamline the order processing cycle. | In the SCE there are:<br>• MES (Manufacturing Execution System) is a production software that controls and monitors manufacturing systems at the shop floor level. It ensures the effective execution of manufacturing operations and the improvement of production;<br>• The WMS (Warehouse Management System) is a warehouse management system that aims to optimize and manage the level of stocks;<br>• The TMS (Transport Management System) is a software allowing for management and optimize the operations of transport of goods;<br>• AOM (Advanced Order Management) is a customer order management software that simplifies the order placement process. |
| EDI<br><br>(Electronic Data Interchange) | It is a system for the exchange of standardized electronic documents between two partners, from computer to computer. It replaces the traditional channels (mail, fax...) and thus facilitates the | • Reduce data processing costs;<br>• Reduce errors and optimize the speed of data processing, by improving the traceability and security exchanges; |

| | | |
|---|---|---|
| | fluidity and optimization of information flow. | • Improve customerrelations by reducing errors and delays. |
| CRM<br><br>(Customer Relationship Management) | It is a software for themanagement of the customer relationship to maintain the relations with the customers. It includes all marketing operations aimed at optimizing the quality of customer relations. | • Build loyalty and maximize revenue per customer;<br><br>• The CRM includes both the techniques of collecting and analyzing customer data and marketing operations;<br><br>• Manage and develop customer relationships. |
| SRM<br><br>(Supplier Relationship Management) | It is a supplier relationship management software. It helps companies to keep in touch with their suppliers andsubcontractors to ensure the flow of information between them. | • It guarantees a competitive advantage for companies (better knowledge of the market);<br><br>• It ensures the improvement of the upstream logistics(the supply part). |

Based on the idea that the logistics information systems are the backbone of the company, we have deemed it useful to present them as follows:

**Figure 06 : Functional coverage of logistics IS.**




**Source:** K.CHAFIK, O.BOUBKER, op.cit. P.49. [45]

### 3-1-1 Logistics performance measures:

Good logistics practices are a lever for improving productivity and the overall performance of the company. Logistics is not only measured by cost reduction, but also by the quality of its products and services. The notion of performance is much broader than the simplistic equation "reduce costs to increase profits". It contributes to improving the value/cost ratio, i.e., to improving the net creation of value.

The overall performance of the company is conditioned by the logistics performance. The latter is also represented by the rate of service to the customer, by delivering products of good quality, in the desired quantity, at the right timeand within the required deadline, at the right place, in good condition, and by consuming fewer resources. We note that logistics performance is
"...the contribution of logistics activities to the company's turnover andprofitability, to customer satisfaction, as well as to employee motivation; it is also the ability of logisticians to meet and anticipate customer expectations and its contribution to the creation of value for the company"[46].

#### 3-1-2-1 The main levers of logistics performance:

"These action levers are consistent with the objectives of logistics, i.e. to meet demand at

[45] https://revues.imist.ma/index.php/RMLT/article/download/12158/6890

[46] C.JACOB, " Une analyse des besoins et des pratiques de formation en logistique dans les entreprises manufacturières québécoises ", Québec, 2002, P.19. http://depot-e.uqtr.ca/2578/1/000100457.pdf

as a fixed level of service at the lowest cost. We distinguish four logistics levers, divided follows: logistics reliability, logistics efficiency, logistics reactivity, eco-logistics"[47].

- **Logistics reliability:** this is the ability of a logistics system to function without failure over a given period. It is expressed by the company's ability to deliver orders in accordance with customer expectations. Logistics reliability is expressed by a balance between the means used and the results achieved in relation to the specifications and predefined objectives. It requires specific skills and resources throughout the supply chain. Similarly, the products must be in line with the information produced and exchanged between the various players.

- **Logistics efficiency:** Efficiency is the ratio (effectiveness/cost). It is expressed by the minimization of the means to achieve the objectives set by the logistics system. It should not be confused with the notion ofeffectiveness which measures the achievement of objectives without taking into account the means used. Logistics efficiency is achieved by standardizing processes, automating operations, optimizing resources, rationalizing products and processes and eliminating waste through a continuous improvement approach. When logistics seeks to achieve customer response efficiency, it is a prerequisite that all the actors in the logistics chain have the objective of optimizing all thetasks involved. Logistical efficiency can then be illustrated by the increase in the effort provided, in order to obtain a satisfactory result that meets the requirements of the customers.

- **Logistical reactivity:** Reactivity and agility are the key factors oflogistical performance. A company is said to be responsive when it has flexible means to be agile. Responsiveness is the speed at which the logistics system responds to changing market demands. From an agility perspective, it is the speed at which logistics systems adapt their cost structure and service level to cope with unstable, turbulent, uncertain, and risky environments and market opportunities. In addition,indicators of responsiveness include time-to-market[48], time-to- volume[49], inventory turnover, product flow speed, cycle time and transit time, etc. To achieve logistical responsiveness, all links in the supply chain need to be agile and ready to optimize all deadlines.

- **Eco-logistics:** This is the association between "logistics" and the term "ecology" has given rise to eco-logistics or green logistics. It goes beyond the simple aspects of sustainable logistics with one aim:to reduce the impact of logistics activities on the environment. The eco-logistics demand extends over the entire life cycle of the product through the use of ecological

[47] S.EL HAFID ALLAH, "From Logistics to Supply Chain: Determinant of Productivity of Industrial Firms," 2019, P.1358 .https://www.citefactor.org/journal/pdf/De-la-logistique-a-la-chaine- logistics-determinant-of-productivity-of-industrial-firms.pdf

[48] Also known as time-to-market, it is an Anglo-Saxon expression used to express the time needed to develop a product before it can be launched on the market. The shorter the time to market, the more agile a company is said to be.

[49] Also known as lead time, it is a marketing metric that measures the time it takes to develop a new product from conception to launch.

[50] An international environmental certification standard, it is a framework defining rules for integrating environmental concerns into a company's activities in order to control environmental impacts.

raw materials, the use of renewable energies, the use of recyclable materials in production, the reduction of gas emissions, the automation of information (less paper), lesswaste and more recycling. This is achieved through the application of several sustainability programs such as the ISO14001 certification[50] regarding environmental management. But these programs must be balanced with the search for economic and financial performance. Each failure in one of these levers impacts the rest of the supply chain, which includes not delivering the product or service desired by the customer, and from there any commitment to provide customers with a quality product can be threatened and even led to failure.

### 3-1-2-1 Logistics performance measurement criteria:

"Logistics performance measures are driven by managers' needs to manage the supply chain. Among the key factors that drive managers to measure logistics performance:

- The need to go beyond internal measures to cover the entire supply chain;
- The complexity of the supply chain;
- The need to define the correlation between the performance of each player and that of the overall supply chain;
- The need to align logistics activities and share performance-related information, for the implementation of a strategy that enables the achievement of logistics objectives;
- The need for supply chain differentiation to gain competitive advantage;
- The intention to improve cooperation between business functions and supply chain members"[51.]

"Logistics performance measurement is an indispensable means of assessing overall business performance. Logistics performance measures reflect the complexity of the supply chain and encompass the operations of all players, from the first suppliers to the final customers. In this respect, logistics performance measures can be summarized in two key areas: customer service and the traditionalQuality-Cost-Delivery triptych"[52.]

**Customer service:** Responding to customer demand is a key part of a company's strategy. To do this, it must identify the elements that enable it to win its customers and acquire new market shares.Customers are always waiting for various services. These include:

[51] D.M.LAMBERT, T.L.POHLEN, " Mesurer la performance globale de la chaine logistique ", 2002, P.07.
[52]B.LYONNET, M.P.SENKEL, S.CLAMENS, " Supply chain management ", éd. Dunod, Paris, 2019, P.195

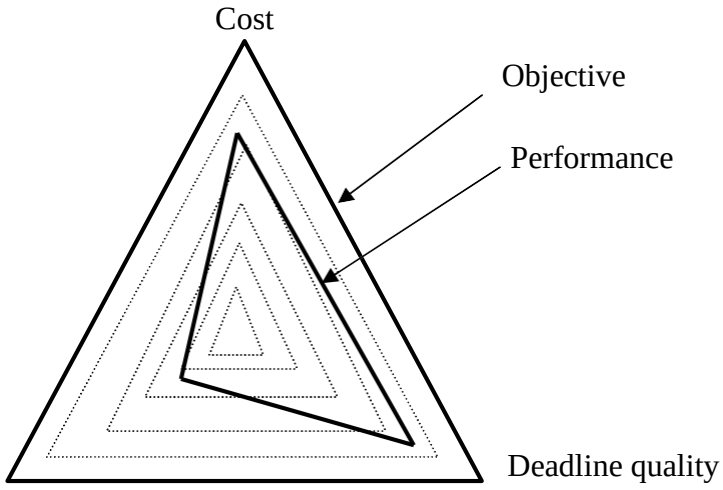
- Renewal of a product offer;
- Speed of flow;
- Respect for delivery deadlines;
- Product traceability.

In addition, purchasing methods have changed considerably over the last few years, with new consumption patterns and the demand for products to be made available more and more strongly. This has led to an evolution of consumption modes from multichannel to omnichannel.

In the supply chain, the primary objective is to meet customer demand, in order to improve customer satisfaction. The most important thing is to understand the services expected by the customer and ensure that all the links in the supply chain understand them and seek to achieve them. The challenge of the supplychain is to interact with the constraints, the hazards of the links of the chain, and the satisfaction of the customers.

✓ **Quality-Cost-Delivery:** This triptych summarizes the objectives of a service. Its use is indicative of the desire to find the best possible compromise between the three objectives.

**Figure 07 : Quality-Cost-Delivery triptych: three complementary objectives.**




**Source:** B. LYONNET, M.P.SENKEL, S.CLAMENS, op.cit. P.198.

**- Quality:** An essential variable for any company that offers a product or service on the market. A product is said to be of quality when the customer is satisfied. The quality of a product covers its performance but also its availability. It has become an essentialcriterion of choice for customers. For the company, on the other hand, quality implies the availability of products at advantageous costs.

**- Cost:** Logistics involves significant costs, which can be summarized in two main categories:

a- **Transport costs:** Can be associated with supply or distribution and conditioned by the choice of transport mode. These choices are linked to the imperatives of delivery times.
b- **Warehousing costs:** include all costs related to warehouse management: handling labor costs, equipment and maintenance costs and packagingcosts.

**- Lead time:** Customers do not only expect a quality product at an attractive price, but also an optimal lead time. This time dimension sometimes plays a major role in a customer's choice of supplier.

### 3-2 Optimization of a road freight transport system:

The development of an efficient freight transport system allows improving customer satisfaction while keeping operational costs under control.

#### 3-2-1 The freight forwarding plan:

"The transport plan represents a network developed by the company toorganize the alliances between the different actors of the logistics chain. It contains all the departure and arrival times of the vehicles according to the journey times; the regulations and the human and material means.

Before the advent of online sales, deliveries of goods were made only between suppliers and sales outlets, which limited the complexity of transport plans. The organization of this system was based on the addresses of factories, warehouses and sales outlets and their opening hours. The success of online sales has disrupted this simplified organization and created a remarkable complexity in the elaboration of the transport plan:

- Collection and delivery points have been reduced due to theemergence of home delivery;

- The addresses are not limited to those of warehouses, factories andsales outlets, as delivery can be made to many corners of the world.

With these upheavals, transport professionals have adopted the TMS so that the company remains competitive. This migration for a management of the transport plan completely computerized, gave birth to:

- Standardization of information;
- Ease of communication between different departments;

- The use of a single tool gathering all the information to limit the risksof errors;

- The flexibility of the transport plan "[53].

### 3-2-2 Transportation Plan Performance Issues:

Transport is an essential customer loyalty axis for the company's image.

#### 3-2-2-1 Organizational issues:

"The organizational challenges of designing a transport plan are manifold. It is mandatory to consider the reality of operations before planning the lines and connections between the different hubs and distribution centers, to ensure thatthis implementation will be operationally possible. Constraints may be presented when designing the transportation plan:

- Security constraints;
- Handling constraints: order preparation time, vehicle emptying time,manual or automatic sorting;
- Constraints related to the shipping and destination entities.

These elements have a significant impact on the implementation of a transportation plan. It is mandatory to take them into account to ensure that the transportation plan will be implemented properly. The performance of a transportation plan is dependent on its ability to cope with organizational constraints"[54].

#### 3-2-2-2 Financial issues:

"The main purpose of optimizing the transport plan is to minimize the logistical costs and to achieve savings for the company. For this purpose, the various transport lines must be designed according to financial criteria.

In the first place, transport costs can be minimized simply by the way in which the various hubs are aligned. In order to optimize costs, networks must be built in such a way that the number of trips is reduced to a minimum.

Secondly, maximizing the vehicle load factor will reduce the number of trips between two warehouses, which in turn will reduce costs. At this level, the role played by the transport plan is to reduce the loading time of the vehicles as much as possible. For a better optimization it will be necessary to replace two small vehicles with one twice as large one carrying out the same route.

[53] L.CHARLON, "Le plan de transport. Improving customer satisfaction and controlling operational costs through the design and implementation of an efficient transport plan", 2016, P.13. https://dumas.ccsd.cnrs.fr/dumas-01454881/document
[56] L.CHARLON, op.cit. P.18

In addition to these cost minimization issues, optimizing the transport plan is also a guarantee of maintaining the level of customer service. The higher the level of service, the higher the cost, depending on several criteria:

- Delivery time;

- Traceability of the goods;

- Terms of repayment;

- Package type "[55].

### 3-2-2-3 Ecological issues:

"Road freight transport is the most energy-intensive activity. This type of transport depends on single fossil energy (oil) and a single fuel (diesel), which is responsible for significant $CO_2$. It is in this context that the company must face up to major ecological challenges and must resort to innovative solutions. The transport plan plays a role in this issue through the need to control the company's energy consumption, the integration of new vehicles (electric or hybrid), or through the reduction of energy consumption and $CO_2$ emissions through a better organization of delivery "[56].

In order to face these challenges, there are several levers:

- Training drivers in eco-driving

- Regular maintenance of vehicles

- The replacement of obsolete equipment with low consumptionequipment;

- The transport plan must then analyze all of its solutions, in order to achieve asustainable development approach[57].

### 3-2-3 Transportation plan constraints:

For a better deployment of the transport plan, it is necessary to look at the internal and external constraints that may hinder the execution of the plan.

[55] Idem, P.17

[56] L.CHARLON, op.cit. P.18

[57] Sustainable development is a concept of development or growth that takes a long-term view and integratesecological and social constraints into the economy.

### 3-2-3-1 External constraints:

"There are three types of constraints that can influence the development of the transport plan: legal, related to subcontractors (suppliers), or related to customers.

In the transport sector, the legislation provides a very strict framework forthe transport plan. The legal constraints concerning the authorized driving times, in order to limit abuse and overexploitation of the drivers, which obliges the companies to elaborate their transport plan according to these limits. The elaboration and optimization of the transport plan will have to be done taking into account the legal driving times.

Furthermore, the elaboration of a transport plan is subject to constraints linked to suppliers. Companies must take into account the volumes required bytheir suppliers in order to optimize their transport plan. Carriers have to adjust their lines according to the volume amplitudes to be transported, which impliesthat the transport plan must be as flexible as possible and adaptable.

Finally, customer requirements in terms of deadlines, quality, and costs are constraints for transporters. This pushes companies to show ingenuity in the elaboration of the transport plan in order to best meet their customers' requirements"[58].

### 3-2-3-2 Internal constraints:

"There are many internal constraints that influence the organization and optimization of the transport plan.

Financial and material constraints are imposed on the development of the transport plan according to the resources available. They thus make it possible to determine the needs in acquisitions or investments for better optimization of the network established by the transport plan.

The optimization of the transport plan also depends on operational andhuman constraints. For its success, it must be understandable and easily exploitable by the employees. The transportation plan is considered a reference for the operational staff to manage departures and arrivals.

The performance of the transport plan is closely linked to the company's ability to bring together the operational and planning teams"[59].

Information systems and performance measures are used by company managers to better plan and control transport operations. In order to bettermanage transportation, it is essential to develop a transportation plan that must beoptimized on a daily basis.

[58] L.CHARLON, op.cit. P.19

[59] Idem, P.20

## Conclusion:

The implementation of an internal control system necessarily requires human and financial resources. As such, it is based on a voluntary decision by the management bodies.

Each process in the company has control activities that enable the reliable linking of its activities.

The essential contribution of the implementation of an internal control system is to guarantee the harmonization, coordination, and optimization of all activities through the dissemination of an internal control culture within the company.

# Chapter 02:

# Logistics audit.

## Introduction:

Logistics is considered the backbone of the company on which its efficiency is based. To ensure its performance, it is essential to take an interest in the management and optimization of physical, human, and material flows which are fundamental strategic elements. In this aspect, the logistic audit finds all its interest, it allows to target the failures and to set up relevant solutions, guaranteeing reinforced agility and increased resistance to react quickly and effectively to the risks and gaps that the company meets.

Measuring and evaluating the company's logistics performance is an essential means of maintaining and developing its ability to satisfy customers and ensure continuous improvement.

In this chapter, three sections have been combined with the following names: the first section is called "Logistics Performance Audit", the second section is called "ROUX and LIU method for auditing logistics platforms" and the third section is called "Road freight transport audit".

## Section 01: Logistics Performance Audit

An audit is a procedure that consists of verifying and analyzing the quality ofa function or service within a company.

For the logistics audit, it is a question of verifying, for each of the logistics functions, that all the principles of optimization of the chain have been implemented, that the means used are the best adapted, and that the safety rules are respected.

The logistics audit is defined according to the ISO 10011-1 standard[60] as a A "systematic and independent review to determine whether logistics-related activities and outputs meet pre-established requirements (specifications, standards, etc.) and whether these requirements are implemented effectively and are suitable for achieving objectives"[61.]

Logistics performance auditing is "a technique for independently, objectively and reliably examining whether companies, systems, activities or organizations are operating in accordance with agreed standards. It is a planned review of alllogistics flows and activities, i.e., the audit review is concerned with the planning, evaluation, and control of the various functions in the supply chain. Performing a performance audit review allows companies to apply good logistics practices and efficient and effective management procedures for the audited entity in order to achieve a number of objectives"[62.]

### 1-1 Logistics Performance Audit Framework:

In order to effectively audit a company's logistics function, it is necessary to choose the most optimal benchmark specific to this function.

#### 1-1-1 Expected objectives of a logistics performance audit:

An audit is an essential tool for measuring logistics performance. It can be carried out by the company's managers, following a variation in demand, a change in customer requirements, a change in product characteristics or following a malfunction in the logistics chain in order to identify the weak points that emerge, to explain the causes and to provide recommendations and adequate solutions.

The logistics performance audit must be linked to the organization’s logistics strategy, which is itself dependent on the company's overall strategy, in order to achieve the following objectives[63:]

[60] ISO 10011-1 (International Organization for Standardization): is a standard that provides guidance on auditing principles, managing audit programs and conducting quality or environmental managementsystem audits.

[61] M.ROUX, T.LIU, " Optimize your logistic platform ", éd. Eyrolles, Paris, 2004, P.184

[62] A.SADDIKI, L.TOUHAMI, S.EL HAFID ALLAH, "Approaches and techniques of evaluation and improvement oflogistics performance", Tangier, Morocco, 2017, P.670.

[63] We have taken the objectives from A. SADDIKI & Al, Op.cit, P.671.

- Measuring the performance of the logistics chain and organization;To deal with and resolve dysfunctions by practicing a demand forpermanent progress;
- Implement an action plan and measure progress.

Thus, measuring the performance of the logistics function will allow:

- To ensure that the means are implemented to ensure the quality of the target service to customers;
- Ensure that the organization has the means and procedures to control logistics costs;
- To introduce trust between the different actors of the supply chain.

### 1-1-2 The choice of repository:

In its mechanism, the audit is based on benchmarks, which constitute an indispensable basis for comparison in order to formulate the judgment.

There are several reference systems for carrying out a logistics audit. There aretwo types of reference systems, those that have been created and studied to apply to the reality of large companies, such:

- The ASLOG (French association of supply chain and logistics)excellence reference system;
- The AFNOR (Association Française de Normalisation) reference system;
- The global EVALOG repository[64] (merger of Odette's EVALOG repository [65] and MMOG[66]);
- The SCOR[67] (Supply Chain Operations Reference Model);

graph[68]:

[64]EVALOG is a tool to evaluate the logistics aptitude of a supplier and of all the actors of the logistics chain, withthe aim of improving it. EVALOG is structured in 6 chapters with a total of 70 questions. The first three chapters are devoted to cross-cutting issues: the customer/supplier relationship, work organization and objectives. The next three chapters analyze the procurement, production and distribution process from a logistics perspective

[65]It is an impartial, not-for-profit organization that addresses the needs of users in all areas of the automotive supply chain. This consensus ensures that the industry achieves maximum efficiency in the logistics process from the design phase to purchase.

[66]Materials Management Operations Guidelines is a global standard for logistics assessment. It allows the self-assessment or the logistic audit of partner sites (factories, suppliers) in the form of a questionnaire and the calculation of a score. It selects and proposes, according to the answers, "good practices".

[67] A global reference framework aimed at optimizing logistics processes, it is also a structured methodological approach, bringing together many players in the supply chain. It divides the chain into five processes and is based on two categories of indicators: customer indicators and internal indicators.

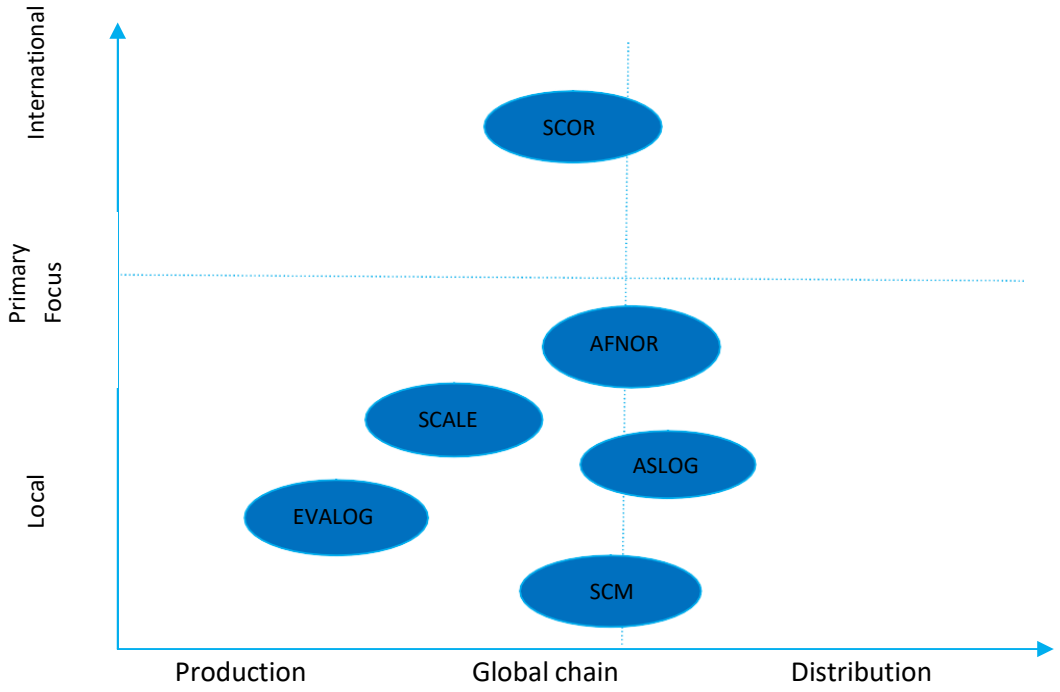
[68]A.DARTEVELLE, "L'audit logistique : Application à une société du secteur agricole", 2015/2016, P.32.

Others are intended for application to the reality of SME companies, such as:

- The SCM (Supply Chain Management) reference system;
- ASLOG's core repository;
- The SCALE (Supply Chain Advisor Level Evaluation) standard.

We can position these references in the following way; on the one hand, by locating the main focus towards the international or towards the local and then, bylocating them between the production and distribution axes, as shown in the following figure:

**Figure 08 : Positioning of logistics reference systems**.




**Source:**A.DARTEVELLE, op.cit. P.32

It is valid that the two most suitable reference systems are the ASLOG and AFNOR, since our theme is based on distribution and business
In this case, the activity is carried out locally. As a reminder, one of the key objectives of this work is to set up a more effective and efficient logistics internal control system for good logistics practices, in order to obtain maximum benefits. The standard chosen in this case is the ASLOG standard.

### 1-1-2-1 Presentation of the ASLOG standard:

ASLOG's own vocation is to promote logistics in all its dimensions and to support companies in their search for competitiveness and performance in all aspects of logistics: customer service, delivery times, and reduction of logistics costs.

Its content is presented in the form of open questions developed and tested by professional logisticians. These questions make it possible to identify the currentsituation of logistics practices in the company in a rational manner and help to detect the various risks and anomalies, highlighting possible points of improvement.

The ASLOG repository relates to ten (10) separate sections[69]:

- Management and strategy;
- Project-based design and management;
- Steering;
- Procurement;
- Production;
- Transport and travel;
- Storage;
- The sale;
- Returns and maintenance;
- The permanent progress approaches.

"Each of the questions of the reference system allows obtaining points according to the level reached by the studied company. The rating system includes four (04) levels:

- 0 point: the basic is not there;
- 1 point: the logistical basics are in place;
- 2 points: mastery is proven, progress actions are successfully carried out;
- 3 points: control of the existing situation, continuous improvement, benchmarking[70],logistics excellence is achieved.

The principle of the points is simple and fundamental:

- To have one (1), you must not have zero (0);
- But to have two (2), you must already have one (1);
- And to have three (3), you must have had two (2).

If a requirement is not met, the corresponding number of points cannot be obtained. To reach a given level, it is mandatory that all the requirements of the lower levels must be met. These four levels correspond to a certain level of maturity of logistics management in thecompany"[71].

[69] ASLOG document, P.03. https://kupdf.net/download/r-eacute-f-eacute-rentiel-aslog-complet pdf_5a051d35e2b6f5b0268f290e_pdf

[70] Benchmarking is a very specific approach aimed at comparing one's company, its organization, and its processes with its partners and, in the best of cases, with its competitors. The goal is to identify the best practices that can be deployed internally. But the approach can only work if an adequate metric is defined beforehand

### 1-2 Implementation of the audit and data processing according to ASLOG:

As mentioned before, the ASLOG standard was designed for large companies. Moreover, it has been established in such a way as to take into account all the logistics operations of these companies.

Firstly, we sorted the questions of the reference system in order to eliminate those that do not correspond to our study, namely the distribution logistics within Alpha. Indeed, some questions concern, for example, the design and management of projects which do not exist in our case. The questions on procurement and production do not apply either. In addition, questions related to sales and returns, and maintenance are not included in our study.

### 1-3 The ASLOG Logistics Performance Audit approach:

The present logistics audit framework is designed to improve the performance of companies and concerns their entire logistics system, given its role in terms of competitiveness and value creation. Based on the ASLOG questionnaire,we have selected some questions that will be the subject of our study.

#### 1-3-1 Management, strategy, and planning:

According to ASLOG, "logistics must be a major component of a company's strategy. It is recognized as "a lever to support the proper execution of the strategic plan. Logistics must be structured and have coherent objectives in relation to the company's strategy"[72.] "The overall objective of a company iscustomer satisfaction in order to guarantee the latter, it is necessary to define the sub-objectives such as customer satisfaction expressed by the quality of services: availability of products, respect of deadlines, reliability of deliveries, speed of information... The improvement of costs, for its part, passes by objectives of control of the level of stocks and optimization of flows. The information systems also represent a key point of management. Indeed, they allow the automation of some mechanisms, thus limiting manual data entry and re-entry, which often generates errors"[73.]

##### 1-3-1.1 The objectives of logistics performance:

"The search for the performance of the elements of the logistics process remainsa permanent concern. In the company, the objectives of the logistic performance are not defined and no indicator is set up for the moment to control it.

Priority rules exist intrinsically, but there is no automatism allowing one or another order to become directly prioritized. In this case, the manager will have tolaunch the orders according to his own planning, because there is no planning table or precise scheduling"[74.]

[71,73,74] Document ASLOG,P06 .

[72] Y.PIMOR, M.FENDER, " Logistique : production, distribution, soutien ", éd. Dunod, Paris, 2008, P.605

The following table shows the questions proposed by ASLOG to help managers define logistics performance objectives:

**Table 03 : Questionnaire related to logistics performance objectives.** [75]

| **Questions** | **Points** | | | | **Comments** |
|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | |
| How did the company choose to have its logistics audited? | | | | | |
| What audits are performed in the company? | | | | | |
| How is logistics integrated into strategy development? | | | | | |
| How does the logistics component of the strategy fit with the product, service, and customer categories? | | | | | |
| How do customer needs determine the company's logistics? | | | | | |
| How has the logistics approach been integrated into the company? | | | | | |
| How was the organization of logistics within the company chosen? | | | | | |
| How are logistics responsibilities distributed in the company? | | | | | |
| How are the logistical objectives set? | | | | | |
| How is information on logistics performance guaranteed? | | | | | |
| What are the company's risk practices? | | | | | |

[75] All questions are taken from the ASLOG repository (as are all the questions that follow).

### 1-3-1.2 financial flows:

"Logistics financial flows must be controlled, but there are no precise rules for evaluating the financial performance of the company. Logistics costs must be measured, including hidden costs, i.e., not only transport costs but also warehousing costs, non-quality costs, etc. However, there is no indicator that allows us to know the logistics costs and it is difficult to quantify the improvements. On the other hand, if the service rate and stocks are well monitored, then we have a group of very sensitive indicators that allow us to evaluate real progress"[76]. To better evaluate logistics costs, ASLOG has set up an audit questionnaire for monitoring financial flows:

**Table 04 : Logistics Financial Flow Assessment Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| How is the programming of logistics investments worked out? | | | | | |
| How do the trade-offs between "investing" and are the "outsourcing" decisions made in thecompany, in the context of strategic planning, in themedium and long term? | | | | | |
| How are the logistics costs worked out? | | | | | |
| How is the rotation of capital tied up in stocks worked out? | | | | | |
| How is financial and budgetary reporting on logistics expenses organized? | | | | | |

### 1-3-1.3 Information flows:

"The implementation of an information system adapted to the complexity of the flows, with sufficient calculation capacity and correctly used for better visibility and reactivity of the other flows, while allowing the optimization of the stock level.

Information flows support the movement of goods throughout the distribution process. It is essential to automate the information systems to avoid error- generating information duplication and improve performance"[77]. As shown in the following table, ASLOG has provided auditors with a questionnaire for evaluatingthe logistics information system:

[76] ASLOG document, op.cit, P.22
[77] ASLOG document, op.cit. P.29

**Table 05 : Logistics Information Systems Evaluation Questionnaire.**

| Questions | points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| What logistics information system is used for the downstream flow? | | | | | |
| How does the company deal with the different modes of communication and information transfer? | | | | | |
| How does the company use electronic communication and information sharing internally? | | | | | |
| How is the reliability of technical, customer, and product data guaranteed? | | | | | |
| How does the company ensure the traceability of the flow of information concerning customer orders and those placed with its main suppliers? | | | | | |
| How does the company ensure the traceability of its flows? | | | | | |
| How are sales forecasts developed and monitored? | | | | | |
| What are the company's planning practices? | | | | | |

### 1-3-1.4 Human resources:

"Human resources are a fundamental element of the company's value. Responsible management of jobs and skills in logistics, focusing on the safety and health of employees, their training, motivation, and commitment to the company, helps attract the best talent and retain employees, which is a lever for overall performance.

It is essential to assess the measures taken so that human flows can be as efficient and controlled and that they are also integrated into the company's request for progress "[78]. To do this, ASLOG has set up a questionnaire for the management of logistics personnel:

[78] Ministry of the Environment, Energy and the Sea, French Republic, "Logistics," 2016. https://www.ecologique-solidaire.gouv.fr/sites/default/files/logistique%20tour%20d%27horizon.pdf

**Table 06 : Logistics staff management questionnaire.**

| **Questions** | **Points** | | | | **Comments** |
|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | |
| How is the staff generally managed? | | | | | |
| How are the handling, receiving, shipping, and repair staff managed? | | | | | |
| What control does the company have over deadlines, through workforce management? | | | | | |
| What are the culture and ethics of the company? | | | | | |
| What is the company's security policy? | | | | | |
| What is the company's policy on working conditions? | | | | | |
| How does the company deal with knowledge management? | | | | | |
| What is the company's training policy? | | | | | |
| To what extent are we seeking to develop innovation? | | | | | |
| What incentive system is in place? | | | | | |
| How is teamwork promoted? | | | | | |

### 1-3-2 Move:

"The aim here is to check that movements and transport are well organized and programmed, the orders recorded and the intentions of the orders for the next few days. During this programming, a calculation of the load compared to the available capacity concerning the critical resources makes it possible to highlight the possible sources of problems to come.

Taking into account a strategy for determining distribution and transport operations that is consistent with best practices and the internalization of external costs[79], makes it possible to implement a preventive approach and a globalapproach to sustainable development. In fact, all stakeholders must have the same information, so procedures are used here as a means of prevention, but also of communication"[80].

For a better analysis of the transport and delivery on the downstream flow ASLOG has provided the auditors with an adapted questionnaire, as shown in the following table:

**Table 07 :Transport and delivery analysis questionnaire on the downstream flow.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| How are the carriers chosen for deliveries to customers or intermediary service providers and what logistical partnership exists with them? | | | | | |
| How are distribution and transmission resource requirements assessed? | | | | | |
| How the processing of documents, ordering of orders delivery issued; transport launched? | | | | | |
| What control is exercised over transport operations and transmission times for information? | | | | | |
| What control is exercised over the safety of products during transport operations? | | | | | |
| What control is exercised over the quality of transport and delivery? | | | | | |

[79] The internalization of external costs aims to give the right price signal so that users bear the costs theygenerate and thus have an incentive to change their behavior to reduce them.

[80]ASLOG document, op.cit. P.90

### 1-3-3 Store:

"The supply chain can function without stocks; the management of stocks represents a key element in logistics. Indeed, it is associated with one or morecosts (cost of ownership, breakage, management ...). The control of these costs is of capital importance. Beyond the will to obtain an efficient logistics and an optimal service rate, it is essential to try to decrease the level of allocation of immobilized resources that represents the stock of finished products, in order to increase the profitability of the company. In order to do this, it is necessary to set an ambitious but realistic objective for this stock, which nevertheless does not leadto a deterioration in customer service.

The evaluation of this parameter focuses on the methods used to guarantee a delivery time that meets the company's objectives. To do this, it is necessary to verify that there is a rational method based on the objective service rate for the creation, maintenance and management of the stock of finished products, in order to guarantee the desired service rate.

For better control in the supply chain, it is necessary that there is an integration between the production management system of the supplier and the distribution system of the finished products. This integration creates continuity in the supply chain. As a general rule for this step, it is necessary to carefully evaluate whether the internal management system of finished goods replenishment is based on an independent method, such as the order threshold, periodic order or a so-called dependent method, such as the "Time Phased Order Point System"[81]. The chosen inventory management method has a strong influence on the availability rate, then the service rate. The questioning of the methods used is one of the ways of progress in the field. Among the progress tools there is the DRP system[82] (Distribution Resource Planning), its vocation is to manage the stock levels in the distribution network.

Better inventory management guarantees shorter lead times, which can be a decisive competitive advantage. The lead time depends partly on how the capacity is managed, how the scheduling is done"[83.]

[81] It is called the chronological ordering point; it is a demand extraction system that regulates the chronological supply of products to the warehouses.

[82] Called distribution resource planning, it is a method of calculating the quantities to be supplied by reference in order to avoid shortages while limiting stock levels. This method makes it possible to dimension the necessary logistic and financial resources.

[83]ASLOG document, op.cit. P.102

### 1-3-3.1 Physical flows:

"Physical flows have an important influence on logistics performance: transport and handling account for a large proportion of logistics costs and also determine the reliability of the service offered to customers.

It is necessary to protect the products during handling and transport operations by choosing specific packaging and materials according to the distribution scheme, the mode of transport, the types of customers, or the customers' requests.

Furthermore, distribution operations require resources; they are carried out through close communication between the principal and the subcontractor, allowing the availability of products.

Means must be implemented to avoid errors during order preparation and dispatch operations, and this concerns the control of transport and delivery operations and the quality of execution. In order to minimize transport costs, it is necessary to set up a transport management system based on a precise analysis of distribution patterns, flows and operations carried out.

In order to offer a good service to customers and to ensure maximum flexibility in warehousing operations, it is necessary to properly manage the size of the material and human resources as well as the associated organization"[84].

The following table allows us to evaluate the physical flows for better logistic performance:

**Table 08 : Questionnaire for monitoring physical flows.**

| **Questions** | **Points** | | | | **Comments** |
|---|---|---|---|---|---|
| | **0** | **1** | **2** | **3** | |
| What layout has been studied to ensure warehouse operations? | | | | | |
| How are the handling and storage facilities managed? | | | | | |
| How are the packages managed? | | | | | |

[84] ASLOG document, op.cit. P.107

### 1.3.3.2 Stocks:

We are going to illustrate the different issues addressed by ASLOG, for better control of the stocks:

**Table 09 : Inventory Management Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| How is inventory management carried out? | | | | | |
| How are stock levels worked out? | | | | | |
| How are stock reservations managed? | | | | | |
| When are stock transactions posted? | | | | | |
| How is a reliable recording of movements andstocks ensured? | | | | | |

Distribution:

The following questions concern mainly those who have to deliver to their customers, through distribution entities. These links in the logistics chain are the closest to the customers.

**Table 10 : Finished Goods Inventory Management Questionnaire**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| How are finished goods stock management carried out at the production site? | | | | | |
| How are finished products managed outside the production site? | | | | | |
| How is finished goods inventory managed fortemporary storage at service providers? | | | | | |
| How is finished goods inventory managed for consignment storage at customers' sites? | | | | | |

### 1-3-4 The continuous improvement approach:

"The success of a logistics approach depends on all the actions carried out by the company with a view to progress. The actions taken must be coordinated and measured. The logistics approach is carried out in parallel with a quality approach that facilitates the consideration of the logistics impacts and consequences by departments that do not feel directly concerned.

The quality approach makes it possible to take into account the globality of the service provided. To guarantee continuous progress of the logistic performance, it is important to set up an improvement plan and a close follow-up of the quality approach.

With the evolution of the markets and the change in the environment, the companies must adapt permanently by implementing an approach of continuous improvement. It allows the company to keep in touch with the expectations of the market and precisely of the customers. This approach also requires the definition of objectives in terms of indicators, in order to verify whether or not the expected results have been achieved. The working method is based on the role of management is to control the implementation of the project"[85.]

For better management of progress, ASLOG has developed a questionnaire for continuous improvement.

**Table 11 : Continuous Improvement Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Is the company in a quality process? | | | | | |
| How were environmental constraints integratedinto the logistics strategy? | | | | | |
| What is the company's logistics progress plan? | | | | | |
| What are the means put in place to guarantee themanagement of a progress plan? | | | | | |
| How is openness to technological and methodological developments ensured? | | | | | |
| How does a "logistics method" department make acontinuous contribution to progress? | | | | | |
| How is the effectiveness of the general elements of the company's policy ensured? | | | | | |
| How is information on logistics performance provided in the company? | | | | | |
| How is communication with the outside world organized with regard to logistics? | | | | | |

The ASLOG benchmark is a tool for progress that aims to achieve optimal service improvement, reduce delays and cut costs.
Measuring the performance of the logistics function helps to ensure the quality of service to customers, cost control, and value creation.

**Section 02: The ROUX and LIU method for auditing Logistics platforms**

The aim of this method[86] is to help logistics managers to bring their site to the highest level of performance, by reminding them of the basic principles, describing the methodological tools available, providing a base of practical information, and above all, providing a means of self-assessment with its benchmark.

This method is based on several questions, four answers are proposed, each corresponding to a level of quality or performance. These answers are assigned a number of points ranging from zero (0) to three (3). Some questions have only two possible answers (yes or no).

All the points obtained from the answers are compared to the maximumpossible sum to be obtained. The questions asked by ROUX and LIU (2004) concern[87]
:

- The principles that governed the design of the site;
- Completion and acceptance of the work;
- Integration with the supply chain;
- Security provisions;
- Operating principles;
- Warehouse management software;
- Dashboards;
- The use of radio terminals;
- The use of automatic identification;
- Signage;
- Management of current or planned budgets;
- Progress actions underway.

[85] ASLOG document, op.cit, P.182

[86]Michel Roux and Tong Liu are two authors who have published a book entitled " Optimize your logistic platform ", for the audit, calculation of dimensions, times, costs ", Editions Eyrolles, Paris, 2004.

[87] M.ROUX, T.LIU, " Optimisez votre plate-forme logistique ", éd. Eyrolles, Paris, 2004, P.187.

This method makes it possible, on the one hand, to measure the efforts required to reach the level of best practices and, on the other, to measure the progress made over time.

Among these different families of questions, we will just proceed to thosethat are much more compatible with our study.

### 2-1 The design audit:

A logical approach for an investor who is obliged to build warehouses, is to start by defining his needs and then to study the surfaces, volumes and equipment best suited to his business. This approach allows the design of buildings accordingto the logistics process best suited to the activity carried out.
The following questions will make it possible to verify the methodology used during the design and the rigor with which it was applied (M. ROUX and T.LIU 2004).

#### 2-1-1 Analysis of logistic families:

"A logistics family is a group of items that require the same means to be handled and moved; that is, the same handling methods, the same storage methodsand the same order picking methods. This distinction is useful in that its application makes it easier to select the tools needed to handle the items"[88].

The attention given to the analysis of logistic families defines the quality of the design.

#### 2-1-2 The realization of the static dimensioning:

"Static logistics dimensioning is mainly applied to industrial sites and logistics platforms. A sizing study consists of calculating the volume of future stock in the warehouse and quantifying the operating needs of this stock. This calculation is done by storage mode as opposed to dynamic dimensioning which consists indefining how the products will be transited "[89].

The following questions define how the static design is carried out.

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[88] https://www.google.com/url?client=internal-element-cse&cx=partner-pub-4888946801548374:m3405cbycee&q=http://www.logistiqueconseil.org/Fiches/Gestion-des-stocks/Nomenclature-and-classification.pdf&sa=U&ved=2ahUKEwiszsSfhaTyAhXLAGMBHbu4C9YQFjACegQIAxAB&usg=AO

[89] M.ROUX, T.LIU, op.cit. P.191. All the questions in this section are taken from this book.

**Table 12 : Questionnaire for static design.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| What static databases were used? | | | | | |
| Have seasonal phenomena been studied? | | | | | |
| Have you defined thestatic extrapolation coefficients | | | | | |
| How was storage capacity determined? | | | | | |

### 2-1-3 The realization of the dynamic dimensioning:

Dynamic dimensioning determines the precise layout with the study of stock rotations (at what speed, with what constraints and with what means the stocks are transited). This type of calculation is done logistic family by logistic family, it allows to calculate the picking zones[90], the models of trolleys and the adequate transit means .[91]

The following questions allow a better realization of the dynamic dimensioning.

**Table 13 : Questionnaire for dynamic design.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Which dynamic databases were used? | | | | | |
| Have we studied the phenomena of seasonality? | | | | | |
| Have dynamic extrapolation coefficients been studied? | | | | | |
| Were turnover rates used? | | | | | |
| Have the operating times been defined? | | | | | |

[90] Picking is the preparation of parcels while maintaining excellent productivity for controlled logistics costs.

[91]The transitic means the internal logistics of a company, and the whole of the operations allowing the conveying, the transfer, and the handling of materials, products and information. The transitic is one of the aspects of the production. It is the science of internal logistics means at a production or distribution site. The transitic systems are the means and solutions implemented in order to respond to a specific and organized flow allowing management and traceability of the operations and treatments in a factory or a logistic distribution center.

### 2-1-4 Automation:

"All day long, the warehouse registers transfers of often heavy and sometimes cumbersome changes. Automation in a warehouse allows for faster order processing, greater precision in order management, increased storage capacity, and improved safety in the center and ergonomics of the workstations"[92].

### 2-1-5 Availability:

The availability of a piece of equipment or a facility represents the quality of the equipment or facility and allows it to be operational when needed. Availability is a function of reliability and maintainability. The notion of survivability is also mentioned, which is added to that of availability and expresses the total unavailability of the installation, which implies a less efficient operation. It is during the design phase that we find solutions to all these plant failures.

### 2-1-6 Development of the final design:

"The most professional method is to include all the most relevant solutions, then study them to keep only the best. The following questions help to select the best solutions for a final design"[93].

**Table 14 : Final Design Development Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Have several organizations been studied? | | | | | |
| Have several locations been studied? | | | | | |
| How were the different scenarios compared? | | | | | |

### 2-2 The audit of the reception of works:

In the following, we deal with the acceptance of work and equipment concerning sites that are about to be accepted or those that have recently been accepted. An acceptance of work is a statement between a supplier and a customer. This report allows the verification of the delivered supply or the realizedinstallation compared to the specifications[94].

[92] M.ROUX, T.LIU, op.cit, P.197

[93] Ibid, p.201

[94] The specifications describe precisely the needs to which the service provider must respond, and organize therelationship between the various actors throughout the project.

### 2-2-1 The reception of the floors:

The care taken in the execution and control of the floors is very important in order not to miss a warehouse. In order to better realize the reception of the floors, the following questions help.

**Table 15 : Soil reception questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| How were these measurements made? | | | | | |
| What results were achieved? | | | | | |

### 2-2-2 The reception of the pallets:

A pallet rack is a shelf, usually metallic, which allows the storage of pallets.
The reception of pallet racks must take into account the following points:

- Documentation: which will allow a smooth operation, maintenance, and possible modifications;
- The visual inspection: must allow a quick check of the appearance ofthe supply and the presence of all the compulsory accessories;
- The signage: it must be rational and complete to avoid confusion of address, which implies the provision of a bar code[95;]
- The dimensional characteristics: the measurements to be carried outare so important that a professional could be called in.

The following table helps with the acceptance of the pallets.

**Table 16 : Questionnaire for the reception of pallets.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Is the documentation complete? | | | | | |
| Is the visual inspection satisfactory? | | | | | |
| Is the signage compliant? | | | | | |
| How were the measurements taken? | | | | | |
| Are dimensional tolerances respected? | | | | | |

[95] The barcode is the graphic presentation of the product code. It is presented by black bars and white spaces intended to be deciphered by a reader in order to inform on the origin, the producer, the reference of the product...

### 2-2-3 Reception of the transitic system:

"The transitic systems are the means implemented for a better performance of the flows, allowing management and traceability of the operations in a warehouse or a logistic distribution center. The more important the transitive system is, the completer and more rigorous the reception must be. A transitive system is composed of an electromechanical part and an automatic part. The acceptance of an automatic handling system helps to improve the performance of logistics sites"[96].

The following table shows the essential points to be addressed for a better transitive system.

**Table 17 : Questionnaire for the reception of the transitive system.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Is the documentation complete? | | | | | |
| Is the visual inspection satisfactory? | | | | | |
| Are the security features satisfactory? | | | | | |
| Is the electrical equipment in compliance? | | | | | |
| How were the tests organized? | | | | | |
| Have all features been tested? | | | | | |
| Has the training been provided? | | | | | |
| Has all performance been tested? | | | | | |
| Has the availability of the facility been measured? | | | | | |

### 2-2-4 The reception of a warehouse management software:

Nowadays, better warehouse optimization is done with the help of an adapted software, WMS (Warehouse Management System)[97]. This software is designed to

[96] M.ROUX, T.LIU, 2004, p.cit. P.209

[97] A WMS or Warehouse Management System is a computer software dedicated to the optimization of stock management within warehouses. A WMS software must allow storage companies to benefit from a perfect knowledge of the state of their stocks, a better traceability of the products and an optimization of the surfaces...

automate administrative tasks, optimize physical transfers andinformation exchange, and is therefore essential for the operation of the site. In order to ensure an optimal mastery of this software, the table below serves as an aid.

**Table 18 : Questionnaire for the receipt of warehouse management software.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Have all features been tested? | | | | | |
| Has the ergonomics been validated? | | | | | |
| What is the performance achieved? | | | | | |
| Was the training provided? | | | | | |

### 2-3 The security audit:

"Warehouse safety is about the safety of the people who work inside the warehouse. Warehouse safety has always been important, but its importance is heightened by the increase in the storage of hazardous items, the handling of heavy machinery, the multiplicity of people involved, and the sometimes-unreasonable pursuit of "zero risk." It is crucial to establish proper safety protocolto ensure maximum safety for people"[98].

#### 2-3-1 Consideration of general safety:

In an attempt to make things less obscure in terms of security, the following questions are the face of a security control protocol.

[98] M.ROUX, T.LIU, op.cit. P.239

**Table 19 : General Safety Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Does the site have a security specialist? | | | | | |
| Do we know the regulations? | | | | | |
| How is the safety register kept? | | | | | |
| Do the protocols and safety booklets exist? | | | | | |
| Is there a waiting room for the drivers? | | | | | |
| Are the staff car parks properly protected? | | | | | |
| Are site entrances adequately protected? | | | | | |
| Are the docks properly equipped? | | | | | |
| Are the safety instructions posted? | | | | | |
| Do the fire extinguishers meet the regulatory requirements? | | | | | |
| Are evacuation drills practiced? | | | | | |
| Are the emergency exits in compliance? | | | | | |
| Is fire protection properly managed? | | | | | |

### 2-3-2 Hazardous Materials Management:

A material is considered hazardous when it presents a danger to health or theenvironment, due to its nature which can be explosive, flammable, toxic... Because of their harmful effects,

these materials require specific management measures to avoid any incident. This management process is the subject of the following questions.

**Table 20 : Hazardous Materials Tracking Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Are all the safety data sheets for hazardousmaterials available? | | | | | |
| Are the incompatibilities of products with eachother or with water managed? | | | | | |
| Is the storage of stored hazardous materials incompliance? | | | | | |
| Is the shipment of hazardous materials incompliance? | | | | | |
| Does the site have the required accessories anddevices for handling hazardous materials? | | | | | |
| Is the volume of hazardous materials stored monitored? | | | | | |
| Are staff trained to prevent raw material hazards? | | | | | |

### 2-3-3 Personnel arrangements:

Once the physical arrangements have been taken into account, it is necessaryto check what has been done for the staff. This is the subject of the following sections.

**Table 21 : Questionnaire on staff security training.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Have the staff been trained in handling postures? | | | | | |
| Have staff been trained in firefighting? | | | | | |
| Have the first aiders been trained? | | | | | |
| Is there a security service? | | | | | |
| Have the safety instructions for each positionbeen distributed? | | | | | |
| What was the number of work stoppages? | | | | | |
| Has the proper safety equipment been distributed? | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| What was the number of accidents at work? | | | | | |

### 2-4 The audit of the operation:

The design of the warehouse is an essential phase, but perhaps it was not carried out in the most efficient way, or it was approximate and some characteristics of the business have changed since the site was commissioned. The operations audit here looks at all the changes in the organization and equipment after the warehouse design, in order to measure the overall performance level of the sites.

#### 2-4-1 Personnel management:

"Having a site organization chart is important to identify personnel and workforce management effectively. An organization needs to visualize the structure of the warehouse to understand the role of each employee. The questions given for this section correspond to the existence of this document and its maintenance"[99].

**Table 22 : Personnel Management Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Is there an organizational chart of the teams? | | | | | |
| How many hierarchical levels are there? | | | | | |
| Is each position clearly defined? | | | | | |
| Is versatility managed? | | | | | |
| How is the use of temporary staff managed? | | | | | |
| What is the absenteeism rate? | | | | | |
| What is the age pyramid of the staff? | | | | | |
| What is the "turnover"[100] of the team? | | | | | |
| What is the history of the team? | | | | | |

99 M.ROUX, T.LIU, op.cit, P.26.

### 2-4-2 General organization:

The following issues are the subject of the general organization adopted at thewarehouses.

**Table 23 : General Organization Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| Is the site ISO 9000 certified[101] ? | | | | | |
| Are there any procedures? | | | | | |
| Are the appointments with the carriers managed? | | | | | |
| Do we know how to cross-dock[102] ? | | | | | |
| How are inventories managed? | | | | | |
| What are the inventory differences? | | | | | |
| Is traceability managed? | | | | | |
| How is traceability managed? | | | | | |

### 2-4-3 Equipment and its maintenance:

"Storage or handling equipment should be chosen according to a number of criteria:

- Logistics family (size, weight and reference nature);
- Volume of stock;
- Flow intensity
-

It must be ensured that these resources are adequate to the needs of the siteand properly maintained to provide an acceptable level of availability. The following table is the subject of this section "[103].

[100] Turnover refers to the renewal of the workforce, following recruitments and departures of personnel. It is a valuable indicator of the working atmosphere within the company.

[101] Refers to a set of standards related to quality management.

[102] Cross-docking is a method of organizing logistics flows that makes it possible to link and cross supply flowsfrom suppliers with terminal delivery flows to points of sale at a location called a platform.

[103] M.ROUX, T.LIU, op.cit. P280

**Table 24 : Equipment Maintenance Questionnaire.**

| Questions | Points | Comments |
|---|---|---|

| | 0 | 1 | 2 | 3 | |
|---|---|---|---|---|---|
| Are the storage facilities adequate? | | | | | |
| Is the storage capacity sufficient? | | | | | |
| Is the capacity of the picking areas sufficient? | | | | | |
| Are the means of handling adequate? | | | | | |
| Will the handling equipment be well dimensioned? | | | | | |
| Are the preparation methods suitable? | | | | | |
| How is the maintenance activity organized? | | | | | |
| What is the availability rate? | | | | | |

### 2-4-4 General maintenance of the premises:

"The quality of the maintenance of the site in general and the store in particular immediately gives an idea of the quality of the management. Thefollowing table helps to improve the maintenance of the premises"[104].

**Table 25 : General Premises Maintenance Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| How is the site maintained? | | | | | |
| How is the store maintained? | | | | | |
| How is packaging waste managed? | | | | | |

### 2-4-5 Overall warehouse performance:

In order to reach an optimal level for the performance of the warehouse, the following table is the subject.

[104] M.ROUX, T.LIU, op.cit., p.283

**Table 26 : General Warehouse Performance Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| What is the average order processing time? | | | | | |
| How are emergencies handled? | | | | | |
| What is the observed service rate? | | | | | |
| What is the error rate when ordering? | | | | | |
| What is the level of productivity achieved? | | | | | |

### 2-5 Audit of automatic identification and signage:

"Automatic identification is essential in all activities, it ensures extremelyfast data entry and almost complete elimination of errors. This identification is based on barcodes and electronic labels.

As for the signage, it helps to avoid wasting time or making mistakes and doesnot cause mental fatigue to the storekeepers"[105].

#### 2-5-1 Automatic identification:

The table below provides an important evaluation of automatic identification.

**Table 27 : Automatic Identification Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 2 | |
| Are the deliveries identified? | | | | | |
| Are the references identified? | | | | | |
| Is the handling equipment identified? | | | | | |
| Are the lot numbers identified? | | | | | |
| Are the preparers identified? | | | | | |
| Are the packages identified? | | | | | |

105 M.ROUX, T.LIU, op.cit. P.368.

### 2-5-2 Signage:

The questions below are used to conduct the signage.

**Table 28 : Signage Questionnaire.**

| Questions | Points | | | | Comments |
|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | |
| How is the tracking structured? | | | | | |
| How is interior design achieved? | | | | | |
| How is the exterior design achieved? | | | | | |

The warehouse is now considered a key element in the differentiation of a company and the satisfaction of its customers. The warehouse audit gives a clear vision of the logistic performance, by identifying the improvement areas andproposing the necessary actions to reach the set objectives.

## Section 03: Audit of Road Freight Transport

In recent years, freight transport has become the focus of managers' concerns. The evaluation of transport performance is one of the major challenges that companies have to face in order to improve the quality of service to customers. Transport performance measures are important in determining thecompany's ability to satisfy its customers. To measure transport performance, it is necessary to be aware of the challenges of logistics, which seek to ensure that the item ordered is consistent with the item delivered in an optimal time and with a minimum cost.

### 3-1 Performance indicators in transport activities:

The key performance indicators or KPIs[106] logistics, are indicators to measure the evolution of the various processes and to carry out actions of continuous improvement. They constitute an important database on which the company relies for decision-making in the search for logistics excellence. Logistics KPIs are figures that reflect the performance of a process by comparing it with other reference indicators, making it possible to identify positive or negative developments and to act accordingly.

Transport KPIs allow the analysis of the impact of the flow of goods on each part

[106] It is an acronym derived from the English, meaning Key Performance Indicator, it is used to help decision-making in organizations.

of the logistics chain. These indicators are based on the control of deliveries, costs and deadlines.

**Table 29 : Performance indicators in transport activities.**

| Indicator | Formula | Comments |
|---|---|---|
| Fuel consumption per 100Km | Total quantity of fuel consumed/total distance traveled in km | Allows to optimize and follow the variation of fuelconsumption, to meet therequirements of eco-logistics. |
| The average cost of operation | Sum of operating costs/ number of operations for the period | Evaluation of the average cost supported for a transport operation and to obtain a better profitability. |
| Average operating time | Sum of the operation times/ number of operations in the period | Evaluation of the average time taken to complete a transport operation. |
| Fluidity of operations %. | (Transactions fully processed on time/total transactions for theperiod) x 100 | This is a question of knowing how much of the activity is completed on time. |
| Service level per driver | Time, trip, or distance made in the period. | The service level of the drivers can be defined by zone, by product family... |
| Service level per vehicle | It is expressed in terms of tonnage, value, volume, distance, etc. carried out during the period | The level of vehicle service can be defined by zone, by product family... |
| Table of different transport coefficients | List of coefficients | Break-even point, gross yield per km. |
| Litigation rate %. | (Number of disputes/total business done) x 100 | Classified by area, customer or dispute category. This rate indicates the ability of thetransport to deliver the goods. |

| | | |
|---|---|---|
| Rate of Filling by vehicles | (Total quantity or volume loaded/total theoreticalcapacity of the period in quantity or volume) x 100 | Essential in the context of transport optimization, whether by geographical area, by loadgroup, by product... |
| Vehicle service rate | (Value, tonnage, volume, quantity, distance or time actually achieved/value, tonnage, volume, quantity, distance or time total forthe period) x 100 | Applicable to various measuring objects in transport. |
| Empty transport rate %. | (Number of empty km/total number of km done during the same period) x 100 | Optimizes vehicle operation by reducing empty runs to a minimum. |
| Vehicle of tracking | | Geographical position used |

**Source :** http ://www.logistiqueconseil.org/Articles/Controle-audit/KPI-transport.htm

### 3-2 SWOT analysis[107]:

"A strengths, weaknesses, opportunities and threats (SWOT) analysis requires an understanding of the company's internal and external factors (factors influencing the company). This analysis is based on the conclusions reached during the consultation process. It highlights the challenges and identifies areas for improvement to strengthen and optimize the transport structure"[108].

**Table 30 : SWOT analysis for road freight transport.**

| **Forces** | **Weaknesses** |
|---|---|
| • Competitiveness: existence of many road freight carriers allows competitive prices.<br>• Flexibility: door-to-door transport.<br>• Reactivity: delivery can be made the same day.<br>• Demand and growth assured: Road transport has grown enormously in recent years.<br>• Road transport: the last kilometer is always by road (flexibility). | •Sustainability: negative impact on the environment, CO2 emissions,traffic...<br>•Intensive use of resources: Road transport is fuel and labor intensive.<br>•Low profitability: the profitability of this type of transport is low.<br>•Low innovation potential: road transport lacks innovation.<br>•Average level of qualification of employees: road transport is still poorly qualified compared to other modes of transport. |
| **Opportunities** | **Threats** |
| •Demand and business prospects bode well: road transport is a fast-growing market.<br>•Increasing outsourcing: relies on service providers to remain competitive.<br>•Efficiency through the use of ICT. | • Rising oil prices: the cost of road transport is higher than that of other modes of transport.<br>• Long day at work.<br>• Tough competition.<br>• Road transport is generally considered to be a polluter. |

[107] The SWOT (Strengths, Weaknesses, Opportunities, Threats) or MOFF (Threat, Opportunities, Strengths, Weaknesses) analysis is a strategic diagnostic tool. It has the advantage of synthesizing the strengths and weaknesses of a company with regard to the opportunities and threats generated by its environment.

[108] European Commission," Transport and Logistics",2009,P15. https://ec.europa.eu/social/BlobServlet?docId=4189&langId=fr

### 3-3 Transportation Risk Reduction Strategy:

In the face of dangers, it is important to consider that if no preventivemeasures are taken, damage will inevitably occur.

As we pointed out in the previous chapter, the risks of the transport activity are multiple. "In order to eliminate or reduce these risks, the company must implement preventive measures designed for this purpose. There are different families of prevention measures as shown in the following table"[109].

**Table 31 : Example of a transport risk prevention measure.**

| Risks | Measures toeliminate the hazard or reduce itsharmfulness | Preventive measures by collective protection | Preventive measures For personal protection | Additional prevention measure |
|---|---|---|---|---|
| • Risks of fall, bump, trip or other movement disruption<br>• Risks of collusion related to vehicle traffic on site<br>• Risks related to traffic on mission<br>• Risks related to products emissions and hazardous waste | • Organization ofthe work ways to reduce travel;<br>• Regular cleaning, maintenance, andtidying of work and traffic areas;<br>• Maintenanceof the vehicles.<br>• Define theareas of Traffic for vehicles, machinery, and pedestrians;<br>• Remove obstacles by tidying and evacuating waste.<br>• Ensure proper maintenance of vehicles;<br>• Prepare the route before starting<br>• Design of astorage area adopted for hazardous products;<br>• The vehicles are equipped with the necessary equipment. | • Separate pedestrian and vehicular traffic areas are for storage, work, and parking of vehicles with the help of material protectors.<br>• Limiting the speed of forklifts;<br>• Install pedestrian gates for access to areas of traffic of the machines.<br>• Install mechanical ventilation in the garages. | • Carry shoes for anti-slip safety;<br>• Wear protective gloves suitable for the material being handled;<br>• Carry a cap with a protective shell.<br>• Putting seat belts on machines and vehicles.<br>• Put on the seat belt.<br>• The prevision of personal protective equipment. | • Report unsafe situations to those responsible;<br>• Analyze the difficulties and update the security protocol.<br>• Change damaged tools.<br>• Follow the safety protocol;<br>• Install maneuvering aids.<br>• Respect the eco-driving.<br>• Observe the loading/unloading constructions.<br>• Entrust the transport of dangerous goods to an experienced driver.<br>• No smoking during loading/unloading dangerous goods. |

[109] TUTOPREV'," Transportroutierdemarchandise",2018, https://www.inrs.fr/media.html?refINRS=ED%204465

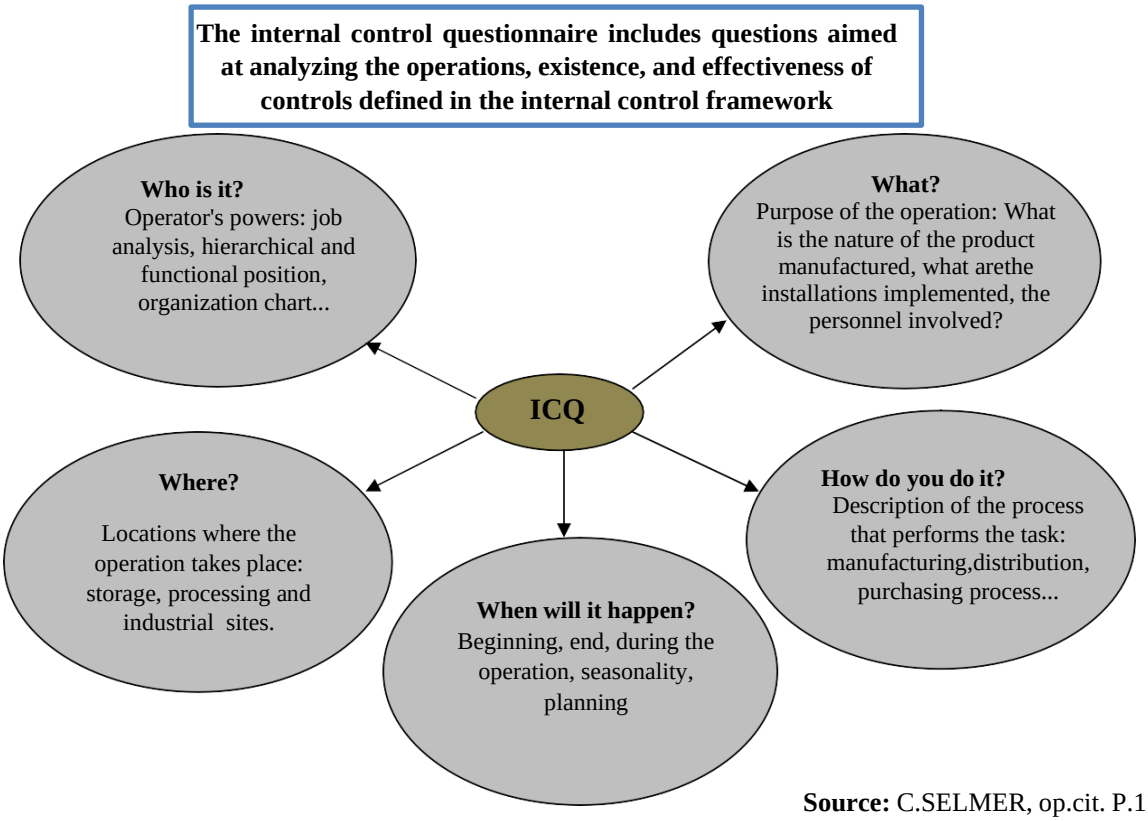
### 3-4 Internal Transport Control Questionnaire:

Monitoring and measurement are basic principles of quality in a process or function. When a malfunction is identified in an activity, it is possible that the result is not in accordance with what was expected. Consequently, it is customary to perform a control in order to detect possible anomalies and limit errors. A checkdoes not mean an absence of errors, but the absence of a check guarantees the persistence of the error. These controls are based on questionnaires called: internal control questionnaire.

"The purpose of the internal control questionnaire is to measure the qualityof processes and their control. Its objective is to reveal major dysfunctions and propose possible solutions. The internal control questionnaire is the auditor's guide for carrying out the compliance audit program. It allows the identification of the essential control points for each process and the measurement of their effectiveness.

questions aimed at analyzing risky transactions and the effectiveness of controlsdefined in the internal control framework"[110.]

**Figure 09 : Key questions in the internal control questionnaire.**




**Source:** C.SELMER, op.cit. P.174

"The WWWWH (Who, What, Where, When, How) helps to clarify the problem tobe solved during an inspection and to establish a preliminary approach to achieve this. Thanks to the WWWWH, the different actors involved are identified and the main theme of the self-

diagnosis grid defined: the transport of goods (distribution of pharmaceutical products in the case of Alpha). This grid focuses specifically on the fundamental principles to berespected when transporting goods "[111].

**Table 32 : Definition of the WWWWH transport problem.**

| **Distribution of pharmaceutical products** | |
|---|---|
| **Who is it?** | **Sender:**<br>• Manufacturer (Alpha);<br>• Subcontractors (approved agents).<br>**Receivers:**<br>• Wholesalers;<br>• Retailer;<br>• End customers. |
| **What?** | The basic principles that must be observed in the transport andstorage of pharmaceuticals. |
| **Where?** | • Transport of products;<br>• Product storage. |
| **When?** | At the time of storage, order processing and distribution. |

The internal control questionnaire is an essential tool for identifying risk areas, i.e., the places where the most damaging risks are likely to occur. This identification phase is essential to condition the quality of transport operations andtheir performance.

[110] C.SELMER, « La boîte à outil du responsable financier », éd. Dunod, Paris, 2018, P.175

[111] S.SOUMARE, "Good distribution practices for sensitive products (medicines)", P.11 https://www.utc.fr/master-qualite/public/publications/qualite_et_management/MQ_M2/2011-2012/projets/08_BP_produits_sensibles/QP10_groupe8_RAPPORT.pdf

**Table 33 : Internal Transport Control Questionnaire.**

| Questions | Yes | No | Comments |
|---|---|---|---|
| **Pricing:**<br>Is there a procedure for setting prices?<br>Are the prices:<br>regularly updated?<br>Disseminated to all stakeholdersin the billing process?<br>Are the set prices captured and passed on to customers in a timely manner?<br>Are the quotations sent to thecustomer verified and approved by an authorized person? | | | |
| **Ordering:**<br>Are orders subject to an acceptance procedure?<br>Is there a procedure for checking the availability of goods ordered from stock?<br>Are the orders:<br>supported by customer purchaseorders?<br>Approved by an authorized person?<br>Is there a sequential order tracking system? | | | |
| **Delivery:**<br>Is there a shipping note for each order preparation?<br>Each shipment of the order result in a multiple copy delivery note?<br>Do the goods issue managers check that the shipment of goods corresponds to the purchase order, a shipping order and the delivery note?<br>Are all shipments checked forcompliance with orders as to:<br>to quantities?<br>to quality?<br>on the delivery date?<br>at the place of delivery? | | | |
| **Segregation of duties:**<br>Is the person who issues a purchase order different from the person who prepares the stock removal and the person who posts the invoice?<br>Is the person distributing the goods different from the person loading the goods? | | | |

| | | | |
|---|---|---|---|
| **Staff training:**<br>Does the staff profile match the established strategy?<br>Is the staff motivated?<br>Do people have control over theactivities they perform?<br>Does the company conductperformance reviews?<br>Is the information fully processed and consolidated?<br>Is the communication between the staff excellent? | | | |

### 3-5 Transport audit analysis grid:

The audit analysis grid or audit questionnaire is a privileged tool for self- monitoring, self-assessment and audit procedures. The grid makes it possible to verify, by answering established questions, the conformity of practices in relationto reference systems.

Concerning the transport of goods, the audit analysis grid allows to verify the performance of the activity, to identify the improvement areas and to implement corrective actions.

**Table 34 : Transport audit analysis grid.**

| Questions | Yes | No | Comments |
|---|---|---|---|
| **Data and piloting:**<br>What is the quality of the transport data currently available?<br>To what extent do carriers report the data needed to manage performance?<br>What transport data can be used to monitor and improve the quality of service provided to customers?<br>Is the information flow in line with the physical world of operations? | | | |
| **Quality of service:**<br>Have you defined a transport promise to customers?<br>- To what extent is it held?<br>Have you defined performance indicators and respective targets with the carriers?<br>-To what extent are they reached?<br><br>Do you have a structured approach to continuous improvement? | | | |

| | | | |
|---|---|---|---|
| **Performance of transport schemes:**<br>How do you measure the performance of your transport scheme or plan?<br>Is your transportation plan agile enough toadapt to fluctuations in customer demand?<br>Do you know your operating costs from thefactory floor to the consumer?<br>Do you have transportation plans in place? | | | |
| **Contracts and billing:**<br>Do your transport contracts adequately reflect the responsibilities of each stakeholder?<br>Are your expectations in terms of service quality clearly described in the contract of carriage?<br>Does the invoicing of transport operations correspond to the agreements in force and to the reality of your activities?<br>What indicators have you put in place to measure the reliability and accuracy of carrier billing? | | | |
| **Operational performance:**<br>Is operational performance in line with expected customer service?<br>What mechanisms have been put in place to facilitate the measurement of the performance of transport operations?<br>What are the performance improvement leversdelivered by the carriers and by the organization to the customers?<br>How to manage carrier relationships in the search for a better performance of operations? | | | |
| **Carrier tracking:**<br>What tools or mechanisms have been put in place to enable the steering and monitoring of transport contracts?<br>Is current reporting geared towards continuous improvement of operations? | | | |

**Source :**https ://www.faq-logistique-conseil.com/expertise-detaillee-audit-transport.html

Transport flow analysis is a new model, based on evaluation and audit diagnosis. The transport audit provides managers with a frame of reference for decision making, to face changes in the internal and external environment of the company and to achieve customer satisfaction.

## Conclusion:

The search for performance has always been a preoccupation of logistics, andit follows that the measurement of this performance is a major problem in the management of supply chains at all levels of the company. In order to meet the requirements of customers and the competitive position of the company, themanagement and control of logistics have become important strategic obligations.

The evaluation of the supply chain is the basic mission of the logistics audit inorder to master the fundamental keys and constitutes an essential element to meet the expectations of the customers, to increase the operational efficiency and to improve the reactivity of the company.

Logistics auditing is based on logistics performance evaluation and risk assessment and management. An effective logistics audit provides a flexible supply chain to changes in the environment.

# Chapter 03:
# Logistics Audit within Alpha
# (Client of Deloitte)

## Introduction:

International audit firms, especially the Big Four, are dominating the world through their expansion and the development of their networks. The expansion of these global firms leads to the search for new countries to establish themselves and acquire new shares in intellectual service markets, which puts emerging countries at the center of their concerns. Moreover, Algeria is not immune to this phenomenon, it has also had the intention of these firms (this is due to several economic factors as well as the strategic location), especially the efforts made by the Algerian legislator to put the accounting system of the country and the organization of the accounting profession to the ranks of world requirements.

These effects have encouraged international audit firms to establish themselves in Algeria and to build groupings of firms by revealing the local firms.

In the two previous chapters, we have defined all the theoretical aspects of internal control of distribution logistics, the concept of risk and its assessment, and the logistics audit.

Now, to show how these approaches work, we need to establish this chapter, which will focus first on the firms that we had the opportunity to deal with, whether it is the host firm with which we interned or the second firm that we got to audit.

We will also explain our research methodology and the tools we used to conclude our work. Adding to that, the results we obtained from the assessment of internal control and its role in the auditors' final work.

# 1 Section 1: Introduction to the Deloitte Internship Site

## 1-1 Deloitte worldwide: [1]

Deloitte is a multi-cultural and multi-national organization. Its comprehensive and balanced geographic coverage enables it to mobilize the best resources where its clients operate. With revenues of $46.2 billion and approximately 312,000 employees worldwide, Deloitte is the world's leading professional services firm, ahead of its competitors, both in terms of revenues and employees. It is a leading global player with a balanced geographic presence. Deloitte refers to one or more member firms of Deloitte Touche Tohmatsu Limited DTTL, a private company limited by guarantee, and its network of member firms that are independent and legally separate entities.

Deloitte provides professional services in audit and assurance, consulting, financial advisory, legal & tax, and public accounting to its public and private sector clients, whatever their field of activity. It combines world-class skills with high-quality service to help itsclients meet their most complex challenges. **31,000 employees in more than 150 countries, distributed according to the following table:**

**Table 35 : Deloitte employees worldwide.**

| Staff | Continent |
|---|---|
| America | 136400 |
| Europe/Middle East | 108500 |
| Asia/Pacific | 67100 |

**Source**: Deloitte internal documentation, 2022, audit department.

Deloitte's offices in French-speaking Africa are linked to the Deloitte France office (DeloitteParis headquarters).

### 1-1.1 Deloitte Afrique Francophone:

Deloitte has been active in French-speaking Africa for more than thirty years: Maghreb, West Africa and Central Africa. It has 13 offices in 16 countries. This presence allows it to mobilizethe best resources locally and to coordinate its teams to respond to the economic problems of the African continent, as well as to the

[1]Internal documentation of Deloitte 2022, audit department.

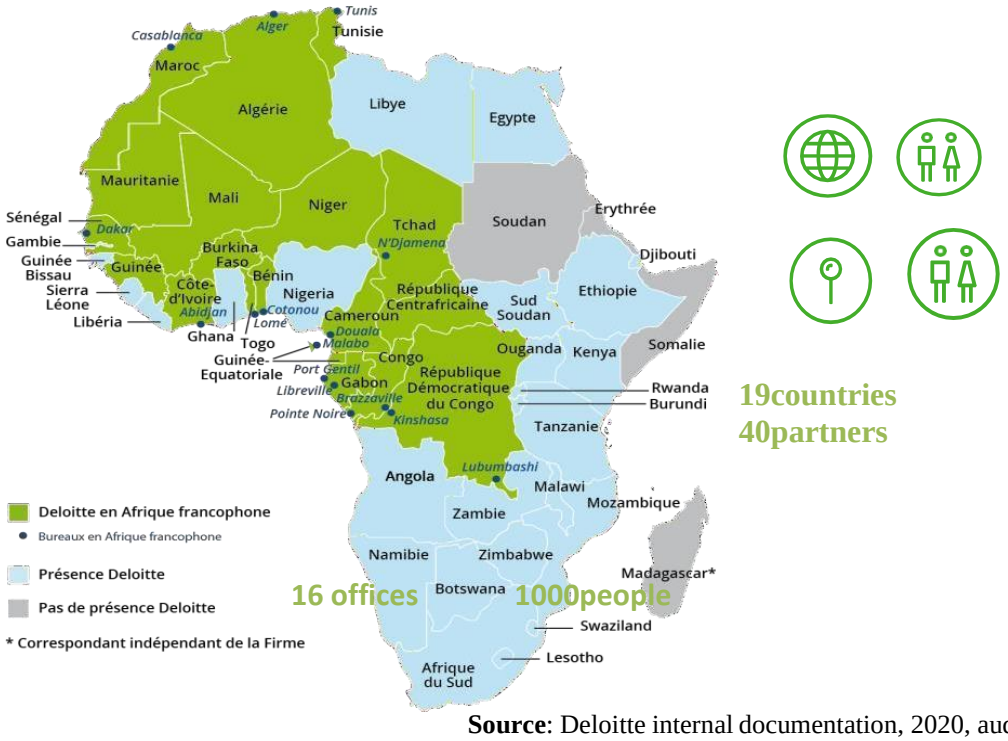
expectations of foreign investors, regulatory reforms, emergence of new markets,

privatization programs, audit and evaluation of projects financed by international donors, audit of subsidiaries and tax, legal and social assistance, etc.

A central team based in Paris coordinating our activities and guaranteeing our clients the respect of Deloitte's standards of excellence and quality, it is characterized by :

-An organization by priority industries (Energy & Resources, TMT, ISP, Public Sector).
-A single point of entry for the entire area.
-Annual training to ensure the required level of competence.
-Coordination with other firms in the network in Africa.

**Figure 10 : The distribution of Deloitte offices in Africa.**




**Source**: Deloitte internal documentation, 2020, audit department.

-Deloitte firms are present in 19 African countries; this area is called Francophone Africa.
-16 offices are located in the continent.
-There are a total of 1000 employees in these 19 countries.
-40 partners are responsible for leading and making decisions about the operation ofDeloitte's audit firms.

### 1-1.2 Deloitte in Algeria: [1]

Deloitte Algeria is an association of SARL Deloitte and EURL Deloitte Audit Algeria createdin 1993, under the name of AMS Audit, the latter joined the Deloitte Africa francophone network in 2007.

Deloitte has become today a leader in Algeria in Consulting, Transactions, Audit, Accounting, Legal and Tax. Integrated in the worldwide network of Deloitte LLT and having its support, Deloitte Algeria meets all the criteria of quality and ethics which made its reputation of Deloitte throughout the world. Thanks to its collaborators who are essentially graduates of the best Algerian and foreign universities, Deloitte Algeria has recognized expertise in various sectors of activity.

Deloitte in Algeria has quickly established itself as a major player in the consulting and intellectual services sector in Algeria. Integrated in the Deloitte global network and having its support, Deloitte in Algeria has demonstrated a commitment to the respect of the values which found our culture, in particular:

**-Integrity and excellence**: adherence to professional standards of conduct, behavior that lives up to our reputation, financial, managerial and professional independence, etc.

**Solidarity and mutual commitment:** Relationships based on trust and respect, teamwork, respect for work-life balance, etc.

**-Diversity:** Richness of the international network, openness to new ideas, proximity and conviviality, etc.

**A commitment to meet the challenges of its customers:**

-Optimization of knowledge and talents, services to meet the technical and professional developments of its customers.

-Search for excellence in service quality.

-The diversity of the missions and clients, the dynamism and the relationships of trust woven atthe highest level are among the most attractive characteristics of our Algerian firm.[1]

[1]Internal documentation of Deloitte 2022, audit department.

### 1-1.2.1 KEY FIGURES:

20%+ + 90+

**Employees Growth**

**Projects per year ofactivity**

50/50+ 40

**Men/women**

100

**Training hours per year**

-Deloitte Algeria has more than 90 employees in its firm.
-The firm's activity has grown by more than 20% in the last year.
-Deloitte Algeria closes over 100 contracts per year.
-The latter advocates the principle of equal opportunities for men and women, and schedulesmore than 40 hours of training per year for its employees.

### 1-1.2.2 Trades:

Deloitte mobilizes a diversified set of skills to meet the challenges of its clients, of all sizes and in all sectors, serving all organizations (large international groups, medium-sized companies, start-ups, investors, small companies, public institutions, local authorities, associations, etc.).

**Figure 11 : The different services offered by Deloitte.**


**Source** : Deloitte internal documentation, 2022, audit department.

Each department provides different services:

**AUDIT Department:**

- Audit of financial statements.
- Advice on accounting procedures.
- Governance, risk, and internal control.
- Transmission operation.
- Security, privacy, and fairness.

**Advisory and Risk Advisory Department :**[1]

- Strategy and innovation.
- Governance, risk and internal control.
- Marketing and sales.
- Operations, supply chain and purchasing.
- Talent and human resources.

**Financial Advisory Department:**

- Advice on mergers and acquisitions.
- Due diligence for acquisitions and disposals.
- Restructuring of companies in difficulty.
- Evaluation of companies.
- Financial modeling.

**Tax & Legal Department:**

- Corporate taxation (transfer pricing, indirect taxes).
- Individual taxation.
- Audit and tax litigation.
- Legal advice.

**Accounting Department:**

- Accounting.
- Payroll.
- Financial control.

[1]Deloitte internal documentation, 2022, audit department.

### 1-1.2.3 Strategic Direction:

At the local level, Deloitte's development strategy is based on three priorities:

- Participation in all promising sectors of activity.
- A diversified and complementary offer.
- Increased local assistance.

**Deloitte in Algeria, a multidisciplinary offer adapted to the needs of its clients:[1]**

Deloitte mobilizes a diversified set of skills to meet the challenges of its clients, of all sizes and in all sectors, serving all organizations, especially the:

- Large international groups.
- Medium-sized companies (listed, family businesses, investment funds, etc.)
- Start-ups.
- Investors.
- Small businesses.
- Public institutions, local authorities, associations.

**An organization by strategic sector of activity** (Global Industries), responding to the needs and expectations of its customers seeking a high value-added service quality, in the following areas

-Life and health sciences.

-Energy and resources.

-Consumer and industrial products.

-Public sector.

-Technology, media, telecom.

-Financial services & real estate.

-Banking and insurance.

-Manufacturing.

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-Life and health sciences.

-Energy and resources.

-Consumer and industrial products.

-Public sector.

-Technology, media, telecom.

-Financial services & real estate.

-Banking and insurance.

-Manufacturing.

**A single point of contact:** For each client, a responsible partner is responsible for:

-The quality of services.

-The feedback on adapted information

-Access to the best resources

-Budget control

-Managing conflicts of interest

-Management of collegiality (audit)

-In addition, it has authority over the global network.[1]

[1]Deloitte internal documentation, 2022, audit department.

### 1-1.3 The hierarchy within the Audit department at Deloitte:

#### 1-1.3.1 The hierarchy chart:

**Table 36 : Hierarchical presentation within Deloitte.**

| |
|---|
| **Associate Partner** |
| **Associate** |
| **Director** |
| **SM: Senior Manager** |
| **Manager3** |
| **Manager2** |
| **Manager 1** |
| **AM: Assistant Manager** |
| **S2 Senior 2** |
| **S1 Senior 1** |
| **A2 Junior 2** |
| **A1 Junior 1** |
| **Intern** |

**Source:** Deloitte internal documentation, 2022, audit department.

### 1-1.4 Deloitte's client “Alpha”:

Alpha is a Public Economic Company (EPE)/SPA, which has for object the manufacture and the marketing of the pharmaceutical products and of body hygiene.

For its development, Alpha has opted for a strategy oriented towards a diversity of products with high added value and a high level of quality. At the present stage, it is confronted with a favorable environment characterized by:

- Strong market attractiveness;
- Good quality products;
- Competitive prices;
- Strategic actions to follow such as:

    - Increasing market share;
    - Expansion of the product range;
    - Commercial presence and strength;
    - Rigor in internal control.

Alpha's mission is the production and marketing of pharmaceutical products. Its objectives are summarized in the following points:

Increase customer satisfaction;

- Improve production costs;
- Minimize purchasing costs;
- Improve skills and communication;
- Valuing human resources;
- Improve turnover.

In a permanent vision of excellence, innovation, improvement, and satisfaction of its customers' expectations, Alpha has set up a managementand quality system, certificates, and labels.

Alpha is managed by a board of directors chaired by a Chairman and CEO. Its main missions are:

- The definition of the company's programs;
- Approval of programs and budgets and site performance;
- Direct management of production sites.
-

The CEO's staff is composed of the following structures:

- General Management;
- The audit unit;
- The Finance and Accounting Department;
- Commercial management;
- The management, quality, safety, and environment department;
- Production Management;
- The Human Resources Department;
- Procurement Management;
- Means management.

## Section 02: The internal control system for distribution logistics within Alpha

The internal control system is a set of organized, formalized, and permanent processes for the pursuit of excellence, chosen and defined by the company's management, executives, and operational staff. This set of processes is implemented by operational staff at all levels to control the functioning of their activities, with a view to providing reasonable assurance as to the achievement of the objectives of the distribution logistics within the company.

Before analyzing the internal control system of the company Alpha, it is necessary to examine the organization the distribution logistics within the company.

### 2-1 Transport in Alpha's supply chain:

In order to ensure its competitiveness and conquer significant market shares, Alpha has called upon approved agents (distribution centers) selected according to defined criteria to satisfy its customers. These agents ensure the distribution and availability of Alpha products in the different regions of the country. This collaboration has expanded Alpha's distribution networks and reduced the cost of transportation and logistics.

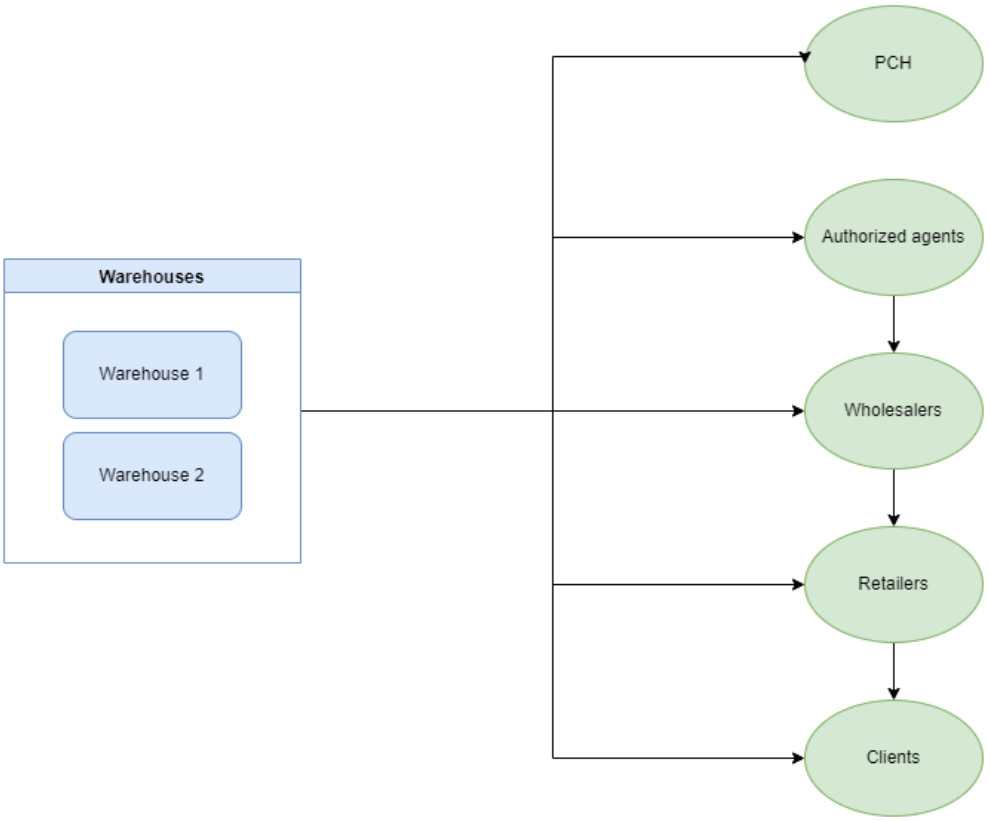
The distribution network of Alpha is made up of a central warehouse adjoining the main production unit which is quoted in theproduction of compresses, cotton, plastered and/or elastic bands, and hydrophilic gauze pieces. It also consists of a secondary warehouse adjacent to a second production unit specialized in the manufacture of sanitary towels and diapers. These warehouses supply several distribution centersidentified by their location on the Algerian territory. In turn, the centers supply wholesalers in the region where each wholesaler is connected to a set of retailers, and each retailer is connected to a set of final customers; that is to say, a product passes through several floors before reaching the final customer.

80% of Alpha's customers are hospitals, for which it makes deliveries by its own means, but for hospitals located in the extreme south of the country, it usesservice providers to make deliveries to them and this is due to the high costs and the long distance to the hospital range. Of this 80%, military hospitals are considered significant customers for Alpha.

On the other hand, the company ensures the delivery for the Central Pharmacy of Hospitals, which is also an important customer for Alpha.

The distribution policy of Alpha implies that if a customer places an order higher than 1.000.000DA, the company ensures the delivery by its ownmeans.

**Figure 12 : Alpha's distribution network.**




**Source:** Compiled by us using data from Alpha.

### 2-1-1 Levers for optimizing transport within Alpha:

In this section, we will discuss the results of our study on the optimization of the distribution of the various products. The company Alpha adopts several parameters to optimize the various shipments. The following are the main points.

#### 2-1-1-1 Information systems:

The mastery of new information and communication technologies allows the control of activities through the respect of standards and work procedures.

The information system at Alpha level concerns the introduction of data, infrastructure, supply chain, and customer relations.

**a- Scrabble Express:**

Scrabble Express is a powerful integrated management tool, specially designed to link all aspects of a company's activity. It provides a methodical and detailed approach to the main functions of the business through financial management, human resources management, logistics management, and commercial management, and provides a means of replacing a large number of independent systems with a single modular system in which each module is responsible for a specific function, but operates in concert with the other modules.The main features of Scrabble Express are:

- Functional richness;
- Flexibility of use;
- Integration of modules;
- Ease of customization;
- Customer satisfaction.

Technosoft[112] is one of the main publishers of the Scrabble Express software package on the Algerian market. Technosoft's activity is oriented towards the development of customizable integrated solutions for companies, in particular, "Integrated Management and Enterprise Resource Planning" of the ERP type.

Alpha has adopted Technosoft's ERP software to build computer applications in a modular way while sharing a single, common database, which eliminates multiple entries and avoids data ambiguity. ERP offers several advantages to Alpha:

- Consistency and homogeneity of information ;
- Integrity and uniqueness of the information system ;
- Cost minimization ;
- Facilitating communication between the different structures of the company.

**b- Warehouse Management System (WMS):**

A warehouse is a platform for several flows: physical flow, personnel flow, information flow, and finally financial flow. The information flow will manage the other three, but it is exclusively concerned with the physical flow and the personnel flow.

Alpha has adopted the WMS to control personnel, equipment, and goods within the warehouse as smoothly and efficiently as possible. This internal WMS activity is perfectly connected and synchronized with the operations of the external links in the supply chain.

The WMS software allows Alpha to eliminate errors, improve data accuracy and fulfill orders more quickly, thereby improving customer retention.

[112] Software publisher since 1983, Technosoft is a leader in the ERP market for SMEs in Algeria. Its software in web and client-server architecture are modular and varied, they go from HR-Payroll or Financial Accounting for large accounts, Maintenance Management (CMMS), and Integrated Management ERP Type.

**c- Transport Management System (TMS):**

The IT department within Alpha is preparing a TMS type software which will be launched soon, in order to better manage the fleet of vehicles and drivers, the organization of loading schedules, deliveries, unloading, and invoicing.

**d- Electronic mail (messaging):**

E-mails are the communication media in the Alpha company, 85% of which are used by an Outlook messaging system integrated into all functions; this allows information to be exchanged in a short period of time and in complete security.

### 4-1-1 The strength of the fleet:

Alpha has invested a lot to allow the distribution and routing of its products in full safety by respecting scrupulously the deadlines.

**a- The human fleet:**

Alpha focuses on human management, which is considered a new policy for better productivity optimization.

The company takes care of human management in order to choose the right human resource to achieve a certain level of performance. Alpha invests and trains its drivers on different aspects, namely: planning of the teams and the exits, application of the safety procedures and also are considered as commercial agents because they are in direct link with the customers.

**b- The physical fleet:**

Transportation is an essential and main link in the supply chain of Alpha, which has led the company to invest in the acquisition of new vehicles, it now has about 71 vehicles of different sizes, with a maintenance service within the company.

### 2-1-2 The elements of optimal transport:

Each operation carried out by Alpha depends on the following criteria:

### 4-1-2 Transportation costs:

To improve transport performance, Alpha must reduce its costs by optimizing rounds and distribution networks and, above all, the vehicle fill rate. The cost of transport includes variable costs; the cost of fuel, maintenance, tires, etc., and fixed costs; drivers' salaries, insurance costs, etc. As variable costs are more or less the same for a loaded vehicle as for an empty vehicle, Alpha often tries to optimize filling capacity of vehicles to minimize costs as much as possible.

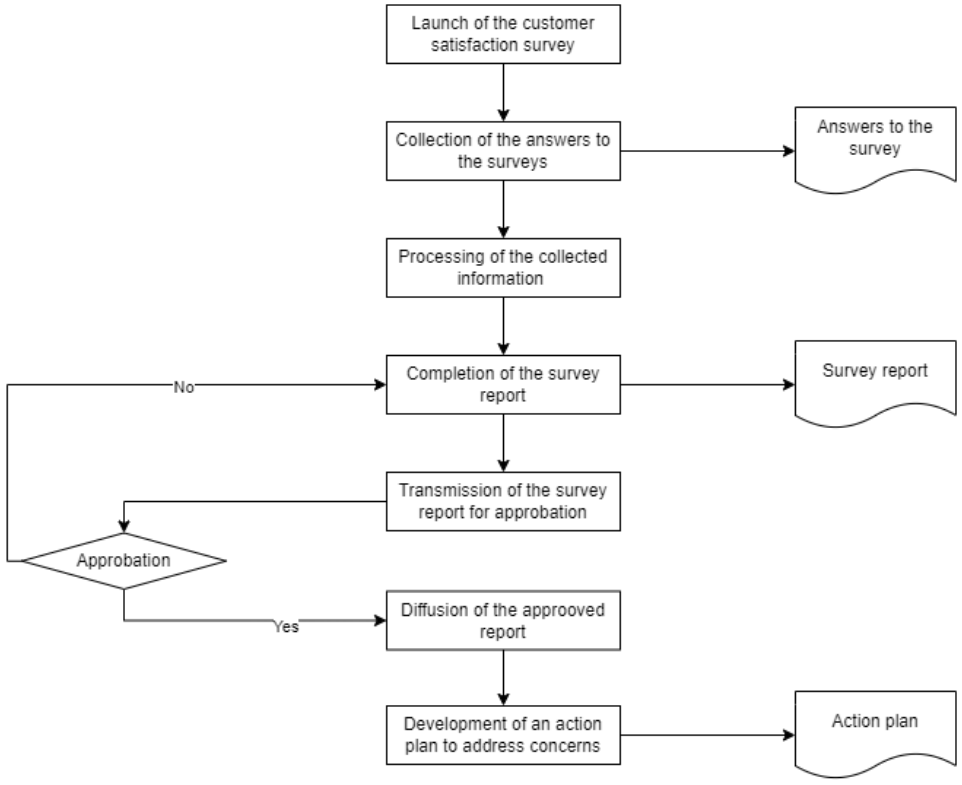
### 4-1-3 Deadlines:

For Alpha, it is a question of ensuring that the delivery times arecompatible with the characteristics of the goods and the demands of the customers. The total duration of the transport and the respect of the delivery deadlines are the key factors of success more and more important for the company.

### 4-1-4 Customer satisfaction:

Alpha takes care of customer constraints in order to satisfy their demands. It has established a process for evaluating customer satisfaction.

**Figure 13 : Alpha's customer satisfaction assessment process.**



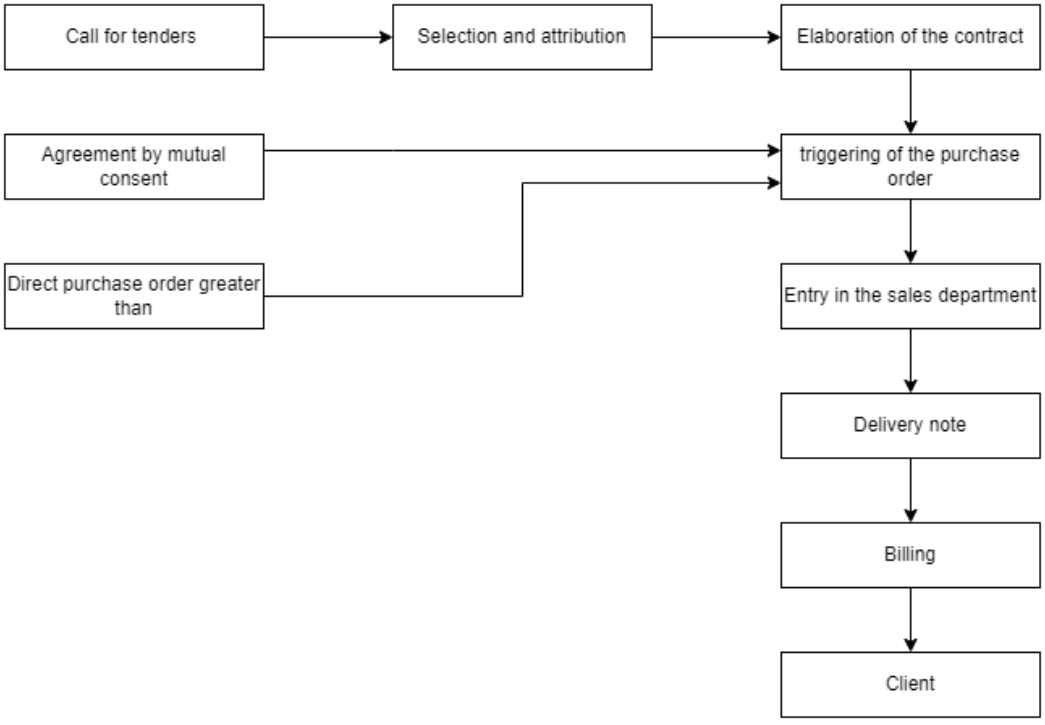

**Source:** Alpha Quality, Safety and Environment Management Department.

## 2-2 Order planning within Alpha:

When a call for tenders is issued by public institutions, Alpha, like other competing bidders, offers its services. If the offer is judged economically more advantageous on the basis of the criteria of the specifications, it will be designatedas the successful bidder to whom the contract is to be awarded. Once the company has been awarded the contract, a contract will be drawn up, then a purchase orderwill be sent by the customer, then entered into the sales department and a delivery note will be drawn up as well as the invoice.

For a mutual agreement, the customer triggers an order whichwill be entered at the level of the sales department, then a delivery order and an invoice will be issued. It is the same for a direct purchase order higher than 1.000.000DA.

**Figure 14 : Order preparation process at Alpha.**




**Source:** Compiled by us using data from Alpha.

## 2-3 The organization of the warehouses within Alpha:

Within the first storage unit, there are four warehouses for storing finished products;

- 1st store: stocks of plaster strips;
- 2nd store: Pharmaceutical product stocks;
- 3rd store: Another pharmaceutical products stocks;
- 4th warehouse: stocks of goods for resale.

If an overstock is registered at any store, the stock will be automatically sent to the second unit. Alpha uses the FIFO (first in first out) method for stock removal.

## 2-4 The internal control system within Alpha:

Based on the principles of COSO 2013 and the ISO 9001 version 2015 standard, Alpha has set up internal control systems for each process.

Based on our analysis, the internal control framework for the distribution (customer process) is developed as follows:

### 4-1-5 The components of the internal control system:

There are five basic components:

### 4-1-6 Control environment:

The establishment of a control environment is the first step in setting up an internal control system. It is an essential building block for its creation and maintenance.

Culture, which is unique to Alpha, is a very important element of its control environment; it primarily determines the level of staff awareness of the need for control by imposing discipline and organization. Factors affecting the control environment at Alpha include the ethics, integrity and competence of staff; the leadership doctrine and management style; people management and the integration of young and motivated people; and the policy of delegation of responsibilities, organization, and training.

### 4-1-7 Risk assessment and management:

Alpha is confronted with a series of internal and external risks which areevaluated once a year. This assessment consists of identifying and analyzing factorslikely to affect the achievement of objectives. Given the constant evolution of its environment, Alpha has a method for identifying and controlling risks.

### 4-1-8 Integration of control activities in the process:

Control activities consist of applying controls in the processes to ensure the implementation of the guidelines set by management.

To deal with the risks, Alpha has put in place effective measures and procedures at all hierarchical and functional levels and include equally varied control activities: performance assessment, separation of functions, and process verification.

Through separating functions, Alpha has selected; and developed IT control activities to facilitate the achievement of objectives.

### 4-1-9 Information management and communication:

Information systems are an important part of the organization andmanagement of information within Alpha and allow the control of activities.

Alpha is aware of the importance of communication between all staff. It applies a multidirectional flow of information. Management has advised all staff of their control responsibilities so that they understand their roles in the internal control system and the relationship between their own activities and those of otherstaff members. They should be able to provide feedback.

### 4-1-10 Monitoring and steering of the internal control system:

Numerous changes in the environment may render certain aspects of the internal control system unsuitable. This is why Alpha ensures that the systemis periodically monitored to ensure that it is effective and evaluated over time.

### 2-4-1 The responsibility of internal control players within Alpha:

Each Alpha employee contributes to some extent to internal control.The role of each one counts, nevertheless, a level of responsibility and implication as we will see below.

### 4-1-11 Management:

The Managing Director is ultimately responsible for the internal control system within Alpha. He is responsible for communicating the principles of conduct that positively influence the control environment. The Director's responsibilities include overseeing the implementation of the elements of theinternal control system.

In turn, the managers of each division must manage the development and implementation of the necessary internal control procedures for the achievement of their division's objectives and ensure that they are consistent with the overall objectives of Alpha.

Department heads are also directly involved in the implementation of detailed standards and control procedures. This allows good coordination of the company's actions at all levels of the hierarchy.

### 4-1-12 The Head of Accounting and Financial Services:

It plays an equally important steering role; its control activities are carried out across all the operational and functional units. It ensures that the internal control system covers the entire process and not just the "accounting" part because the internal control system must cover the definition of requirements and the correct delivery of products and not be limited to the entry and payment of the invoice.

The head of accounting and finance indirectly oversees the activities of all departments and divisions and is directly involved after the director in the design and implementation of the internal control system. He or she plays an important role in determining the company's objectives and strategy and in risk analysis and decision-making regarding change management.

### 4-1-13 The Head of controlling:

Controlling is carried out within Alpha on a permanent basis to provide managers with indicators enabling them to assess the internal control system. It mainly ensures the management of procedures and requirements of the control environment.

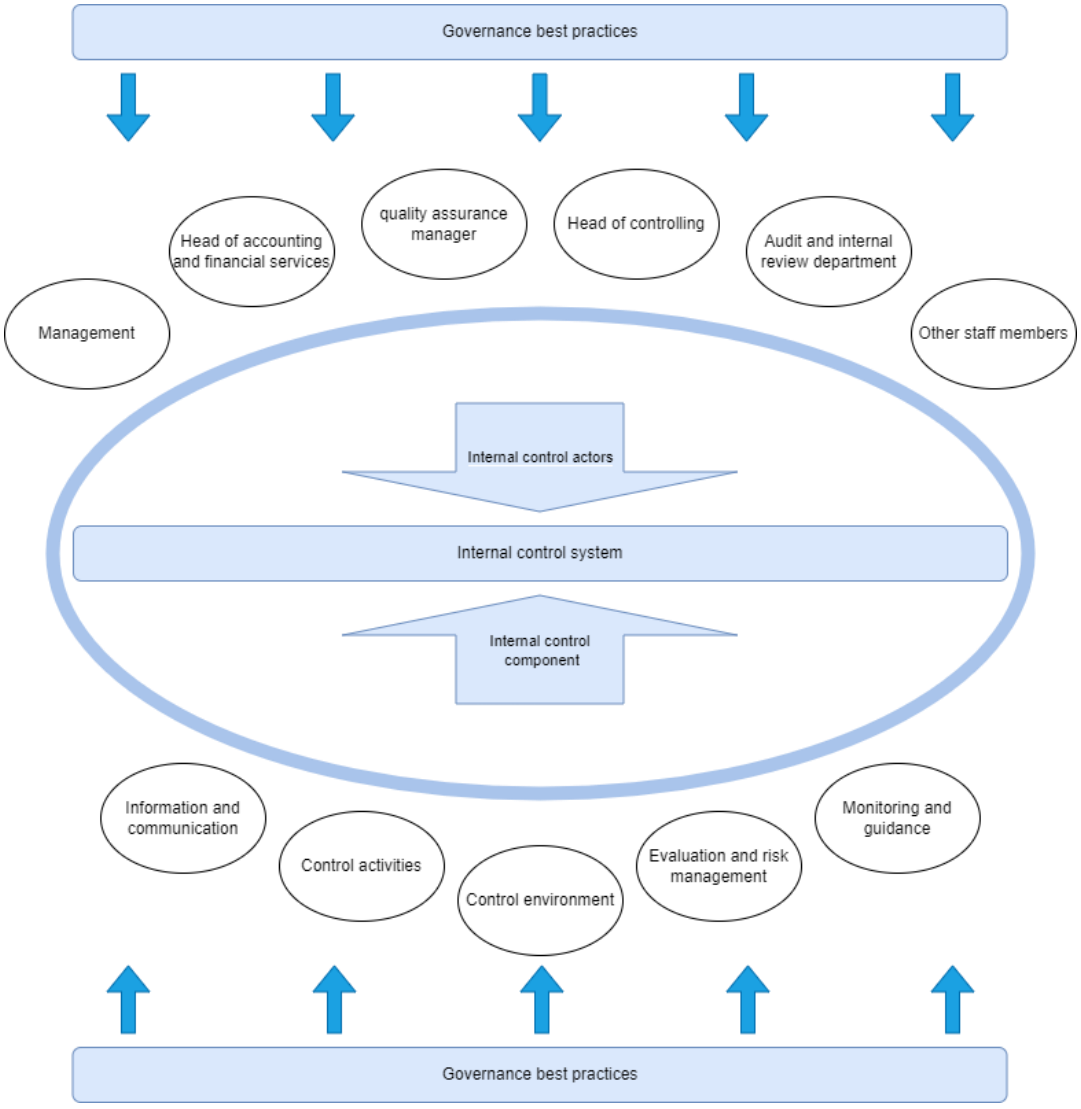
### 4-1-14 Internal audit and review services:

Alpha's internal audit and review services carry out a direct review ofthe internal control system and recommend improvements where necessary. The mission of the Internal Audit and Review Services covers all the company's activities and includes the following tasks:

- Examine the reliability and integrity of information;
- Review information systems;

- Review systems in place to ensure compliance with standards, requirements, and procedures that may impact all activities;
- Examine how resources are used to ensure that they are efficient.

**Figure 15 : Alpha's internal control system.**




**Source:** Synthesis of Alpha data.

## 2-5 Risk and opportunity management procedure for Alpha:

The purpose of this procedure is to define the method to be followed to control the risks and opportunities related to all processes, activities, products

Alpha's quality, environmental and occupational health and safety servicesfrom a life cycle perspective.

**4-1-15 Area of application:**

This procedure is applied to:

- All of the company's processes and activities, taking into account internal and external environmental issues;
- All routine, one-off and new activities (new works, exceptional interventions, etc.);
- The activities and requirements of all internal and external stakeholders: subcontractors, customers, suppliers, and staff;
- Modifications due to changes in process, technology, and acquisition ofnew equipment;
- To behaviors, skills and other human factors;
- Environmental impacts related to processes and activities;
- Incidents (fire, explosion, earthquake, flood, etc.).

**4-1-16 Responsibilities:**

Each player assumes his or her responsibility to control risks within Alpha.

**4-1-17 Quality, safety and environment management committee:**

The quality, safety and environment management committee are an essential player in controlling risks and opportunities within Alpha:

- Identify business processes, activities and services;
- In collaboration with the process pilots, identifies the risks related toquality, environment, health and safety;
- Follow up on risk analysis and action p l a n s for theprocess risk management;
- To establish the environmental analysis of the company with the collaboration of the persons in charge of the structures and the whole of the personnel;

**4-1-18 The process drivers:**

In collaboration with the process actors, the pilots:

- Identify all risks, stakeholders and opportunities related to theprocess;
- Evaluate the criticality of risks and opportunities;
- List the risks in order of priority;
- Define preventive and corrective measures to control risks;
- Implement risk prevention action plans;
- Pass on information to the CMQSE.

**4-1-19 Chief Executive Officer (CEO):**

In turn, the Chairman and CEO approves the risk and opportunity management procedure and the QSE program.

**4-1-20 Conduct of the procedure:**

The procedure for controlling risks and opportunities goes through threephases:

- Identification of risks related to Alpha's processes, activities andproducts;
- Quantification of identified risks;
- Risk assessment and prioritization.

**4-1-21 Identification:**

To identify process risks, we will review:

- All activities and process steps of the company in the different phasesof the life cycle;
- Compliance obligations;
- The internal and external context.

This review provides an exhaustive list of risks for each process and activity.

**4-1-22 Quantification and scoring:**

In this phase, the following must be determined either by measurement orcalculation and based on:

- The internal and external context of the company;
- Customer complaints,

- Competitive and information intelligence;
- Corporate strategy;
- Incoming and outgoing flows (material balance);
- Accident and fire files;
- The inspection, diagnosis and inventory of fixtures, ...

### 4-1-23 Evaluation:

Risk rating is used to evaluate risks. For each process and activity, two criteria are taken into account, namely:

- Frequency (F);
- Gravity (G);
- Mastery (M).

#### a- Frequency and severity:

For each criterion, a score from 1 to 4 is assigned; these scores correspond to the following assessments:

**Table 37 : Frequency and severity of risks at Alpha.**

| CRITERION | Weighting Indexes | | | |
|---|---|---|---|---|
| | **1** | **2** | **3** | **4** |
| Frequency (Occurrence) (**F**) | **Extremely rare:** (Never seen) | **Rare:** (More than one once a year) | **Likely:** Already Produced a few times (<5 / year) | **Common:** More than five times/ year |
| Gravity (**G**) | Minor consequence very limited (at level structure) | Significant damage visible | Grave: damage important | Review: great shame serious |

**Source:** Alpha's quality, safety and environment management department.

The environmental impact factor (**EIF**) is calculated according to the following formula:

**FI = O x G**

The rating of environmental aspects is based on the following matrixand methodology:

**Figure 16 : Alpha's risk map.**

| **Evaluation criteria** | | **Occurrence (frequency)** | | | |
|---|---|---|---|---|---|
| | | **1 exceedingly rare** | **2 Rare** | **3 Current** | **4 Common** |
| | **1Local impact** | **1** | **2** | **3** | **4** |
| | **2 Impact limited to the factory** | **2** | **4** | **6** | **8** |
| | **3 Environmental impact limited to 100m** | **3** | **6** | **9** | **12** |
| | **4 Significant impact** | **4** | **8** | **12** | **16** |

**Source:** Quality, safety, and environment management department Alpha.

Each impact will be listed according to its rating:

- **Low impact:** score between 1 and 3;
- **Medium impact:** score between 4 and 8;
- **Significant impact:** score between 9 and 16.

**b- Criticality:**

It is the product of frequency, severity and control, each risk will be listed according to its rating, the criticality is calculated as follows:

**Risk (Criticality) = Frequency (F) x Severity (G) x Control (M)**

### c- Mastery:

For the risk control criterion, a score from 1 to 3 is assigned; these scores correspond to the following assessments:

**Table 38 : Risk control table at Alpha.**

| Mastery (M) | Rating |
|---|---|
| Good control and full communication to all (procedure in place and implemented) | **1** |
| Existing but insufficient and not formalized control | **2** |
| No control, no action taken | **3** |

**Source:** Quality, safety, and environment management department, Alpha.

The effectiveness and performance of the internal control system within Alpha are due to its managerial vision which consists of mobilizing the entire company's team to achieve its objectives, through its commitment to ethical behavior and integrity, and promoting good governance and values based onresponsibility, commitment, team spirit and innovation.

**Section 03: Analysis of logistics performance in Alpha.**

Based on the results in Annex 01, the information gathered by all Alpha staff was processed so that it could be classified and the strengths and weaknesses of logistics in the company could be identified, as shown in the following table.

**Table 39 : Results of the logistic audit according to ASLOG.**

| The elements treated | Score obtained | Maximum score | % |
|---|---|---|---|
| **Management, strategy and planning** | **92** | **108** | **85,18** |
| -The objectives of logistics performance | 29 | 36 | 80,55 |
| -Financial flows | 13 | 15 | 86,67 |
| -Information flows | 21 | 24 | 87,50 |
| -Human resources | 29 | 33 | 87,87 |
| **Transport** | **15** | **18** | **83,33** |
| -Transport and delivery on downstream flows | 15 | 18 | 83,33 |
| **Storage** | **22** | **36** | **61,11** |
| -Physical flows | 07 | 09 | 77,78 |
| -Stocks | 11 | 15 | 73,33 |
| -Inventory management of finished products | 04 | 12 | 33,33 |

| **The permanent progress approach** | **25** | **27** | **92,59** |
|---|---|---|---|
| -Permanent progress | 25 | 27 | 92,59 |

**Remark:**

The results obtained in the above table are calculated as follows:

Taking the example of financial flows; there are five questions for thiscategory and the maximum points obtained by each question is three points, so the maximum points for the five questions are 15 points. And to get the percentage of performance, the rule used:

15 ⟶ 100 points

13 ⟶ X Points

$$\frac{13 \times 100}{15} = 86,87$$

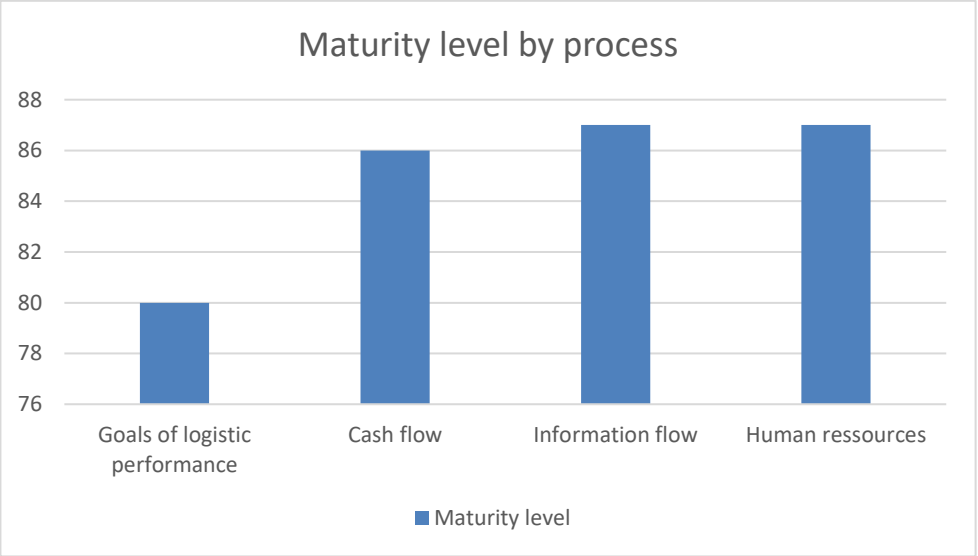
**3-1 Management, strategy, and planning**:

In relation to the standards of excellence proposed by ASLOG, Alpha obtained an average of 85.18%. This means that at the strategic level the company is at the third level of maturity[113].

However, the graph below shows us that all the processes related to management and strategy have reached a homogeneous level of maturity, which means that there is coordination between the different processes. It is interesting to analyze how these processes are controlled.

[113] This means that the company has achieved a significant level of performance.

**Figure 17 : Distribution of management, strategy, and planning results**




**Source:** Synthesis of information collected.

### 3-1-1 The objectives of logistics performance:

At Alpha, the logistics performance objectives are perfectly defined with an average of 80.55%. The company organizes internal logistics audits, the conclusions of which are brought to the attention of all departments and serve as a steering tool for the general management. Logistics at Alpha plays an essential role in the development of strategy; for the major decisions it has totake, a logistics study (service, stock, transport, etc.) is systematically carried out with care and then really taken into account.

As far as scheduling is concerned, priority rules exist; Alpha adopts a mechanism to allow one or another order to take priority, depending on the degree of urgency of the order. An order organization plan is drawn up and checked regularly, allowing for the efficient scheduling of orders.

### 3-1-2 Financial flows:

Financial flows within Alpha are under control, with0 an average of 86.67% recorded. There are indicators to evaluate the performance at t h e company level. Logistics investment projects are studied, the calculation of return on investment is made and really takes into account all the parameters, such as time, savings, remuneration of the immobilizedcapital, which makes it possible to know the logistic costs. Based on the results recorded, Alpha implements improvement plans that contribute to the definition of objectives. The value of fixed assets and their evolution are known and associated with the action plan.

### 3-1-3 Information flows:

Information flows are perfectly controlled. Alpha requires precise traceability of its products by using ERP software to manage all operations. In addition, a WMS has been set up to manage stocks and warehouses and a TMS is being installed to better control the transport system within the company.

### 3-1-4 Human Resources Management:

In terms of human resources management and safety, there are formal indicators and strict rules at Alpha level and staff are trained internally to avoid work-related accidents. Motivation processes are put in place to improvestaff productivity, such as training, mission expenses, etc.

In terms of safety and the environment, Alpha is certified ISO9001/2015114, which covers all the requirements relating to the management of human resources in terms of safety.

## 3-2 Transportation:

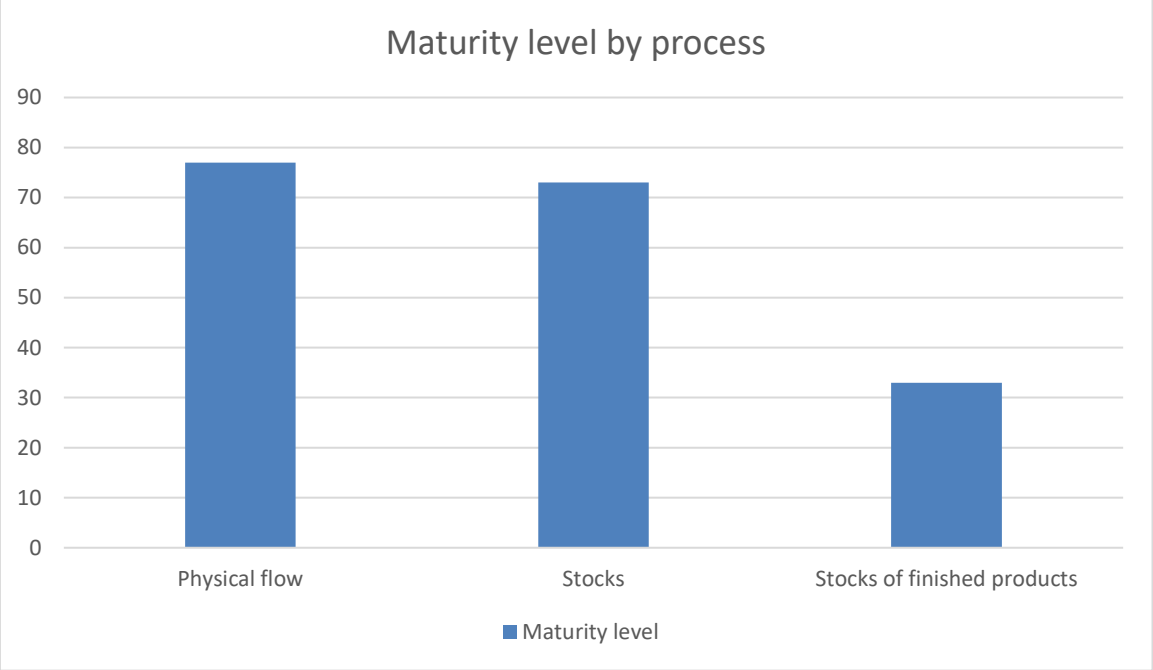
In the area of travel and transport, Alpha obtained a score of 83.33%, which reflects the level of transport maturity. The choice of transporters is made according to a precise procedure; it provides for the prior drafting of specifications to evaluate achievements in relation to commitments. Distribution and transport resource requirements are assessed using a formalized procedure, based on sales, inventory and supply forecasts to ensure that they are acquired or available. Transport plans are consistent with order processing and customer satisfaction in terms of lead times and quality. To improve customer satisfaction, surveys are carried out to measure their level of satisfaction with transport and delivery.

114 Alpha is certified ISO 9001/2015 in 24/05/2018.

### 3-3 Storage:

For stock management and storage methods, Alpha obtained an average of 61.11%. The graph below shows us the points that are mastered and those that are not.

**Figure 18 : Distribution of storage results.**




**Source:** Summary of information collected

#### 3-3-1 Physical flows:

The stores are managed with the help of information systems that govern stock locations. The routes are direct and managed by the handlers and the filling rate of the warehouses is monitored by them. Regular analysis of needs allows for thepreventive management of surface resources, handling and storage means, in orderto smooth the activity of the stores and optimize the use of resources. This also makes it possible to optimize and reduce storage costs and optimize physical flows.

#### 3-3-2 Stocks:

To ensure the management of its stocks, Alpha adopts a voluntary and continuous approach, seeking to optimize the trade-off between stock levels and the

rate of shortages to guarantee the desired level of service to customers.

The analysis of the ageing of stocks is done regularly to determine the provision for depreciation of stocks, in order to treat and eliminate them. Thanks to the WMS, the stock level is updated quickly and avoids the need to re-enter data to reach a level deemed satisfactory.

### 3-3-3 Inventory management of finished products:

For each product category, there is a specific warehouse designed for its storage. In order to continuously improve the efficiency of the finished product stock management method, Alpha relies on regular internal audits based on the evolution of the markets in which it is active and draws any constraints from this.

## 3-4 The continuous improvement approach:

In the field of continuous improvement, Alpha has made significantprogress in its logistics function. Certified ISO 9001/2015, the company has a total quality approach. To integrate environmental constraints into its strategy, Alpha is ISO 14001/2015 certified[115] and has a global strategic approach in this area. A logistics progress plan has been set up and is monitored by the steering and regular organization of meetings concerning logistics activities within the company.

The openness to technological developments and the participation of the company in external events and the training of staff in this area, has enabled Alpha to obtain a strong information system.

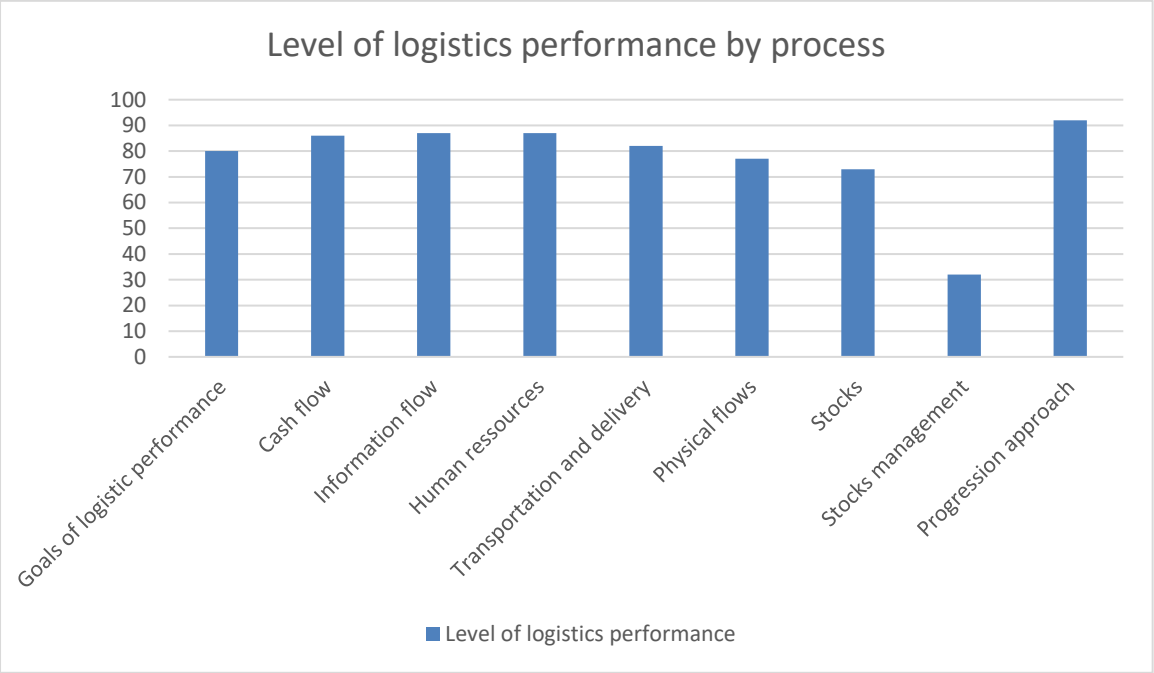
To ensure the effectiveness and performance of this approach, information is widely disseminated within the company and regular meetings are held with all partners, enabling the development of a permanent search for improvement of the entire supply chain.

## 3-5 Summary of results:

After going through all the sections of the ASLOG standard concerning distribution logistics, we concluded that Alpha has reached a high level of performance maturity concerning its distribution logistics. This constitutes a strong competitive advantage, which enables it to acquire a significant market share and to achieve its objectives.

[115] Alpha is certified ISO 14001/2015 in 24/05/2018

**Figure 19 : Level of logistics performance within Alpha.**




**Source:** Synthesis of information collected.

**Section 04: Audit of distribution logistics within Alpha**

The analysis of the logistic platforms and the transport at the level of Alpha, allowed us to draw the assets and the gaps of its distribution logistics. We built our analysis on questions adopted to each function and interviews with managers (commercial, warehouse, auditor ...).

**4-1 Audit of logistics platforms:**

Referring to the audit results in Annex 01, the following table:

**Remark:**

- **NMR:** Maximum benchmark score;
- **NP:** Score attributed according to the reference system.

**Table 40 : Results of the audit of logistics platforms.**

| **Headings** | **NMR** | **NR** | **%** |
|---|---|---|---|
| **Design audit** | **36** | **23** | **63,88** |
| The realization of the static dimensioning | 12 | 10 | 83,33 |
| The realization of the dynamic dimensioning | 15 | 09 | 60 |
| Development of the final design | 09 | 04 | 44,44 |
| **Audit of the reception of works** | **60** | **46** | **76,66** |
| The reception of the floors | 06 | 05 | 83,33 |
| The reception of the pallets | 15 | 10 | 66,66 |

| | | | |
|---|---|---|---|
| Reception of transit system | 27 | 20 | 74,07 |
| Receiving warehouse management software | 12 | 11 | 91,66 |
| **Security audit** | **84** | **66** | **78,57** |
| Consideration of general safety | 39 | 31 | 79,48 |
| Hazardous Materials Management | 21 | 17 | 80,95 |
| Personnel arrangements | 24 | 18 | 75 |
| **Operational audit** | **99** | **78** | **78,78** |
| Personnel management | 27 | 25 | 92,59 |
| General organization | 24 | 18 | 75 |
| Equipment and its maintenance | 24 | 18 | 75 |
| General maintenance of the premises | 09 | 08 | 88,88 |
| Overall warehouse performance | 15 | 09 | 60 |
| **Audit of automatic identification and signage** | **27** | **16** | **55,25** |
| Automatic identification | 18 | 11 | 61,11 |
| The signage | 09 | 05 | 55,55 |

**Source:** Synthesis of information collected.

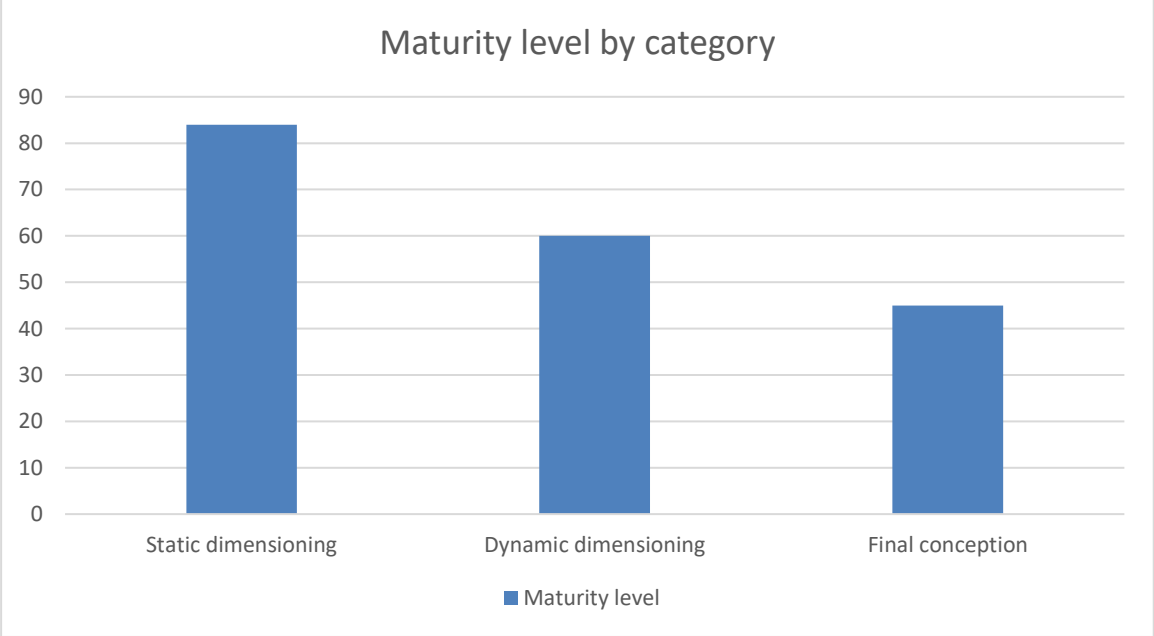
### 4-1-1 Design audit:

Occupational risk prevention is always more effective and economical when it is integrated into the design of logistics platforms and the choice and installation of equipment.

The prevention of occupational risks and the improvement of working conditions are integrated into the warehouse design process within Alpha, in accordance with study procedures and the labor code[116].

The graph below shows the degree of maturity of the warehouse design process within Alpha.

**Figure 20 : Distribution of design audit results.**




**Source:** Synthesis of information collected.

#### 4-1-1-1The realization of the static dimensioning:

The static dimensioning, during the design of the warehouses, at the level of is carried out by procedures and surveys carried out by a research firm, taking into account the phenomena of seasonality by the analysis of the logistic families and the forecasts of static and dynamic evolutions. In addition, the storage capacity has been determined, product family by product family.

[116] The employer is responsible for the health and safety of the employees in his company.

From the sales predictions and target coverage rates and from the targetstock and optimal occupancy rate.

Alpha obtains an average of 83.33% for this item.

#### 4-1-1-2 The realization of the dynamic dimensioning:

For this item, Alpha obtains an average of 60% less than the static dimensioning. The dynamic databases were extracted from the WMS and the phenomenon of seasonality was studied just for the last 12 months. In addition, a single dynamic extrapolation coefficient was assumed and the turnover rate was carried out logistic family by logistic family. Concerning the operating times, the results of a benchmark carried out in the profession were taken into account.

#### 4-1-1-3Development of the final design:

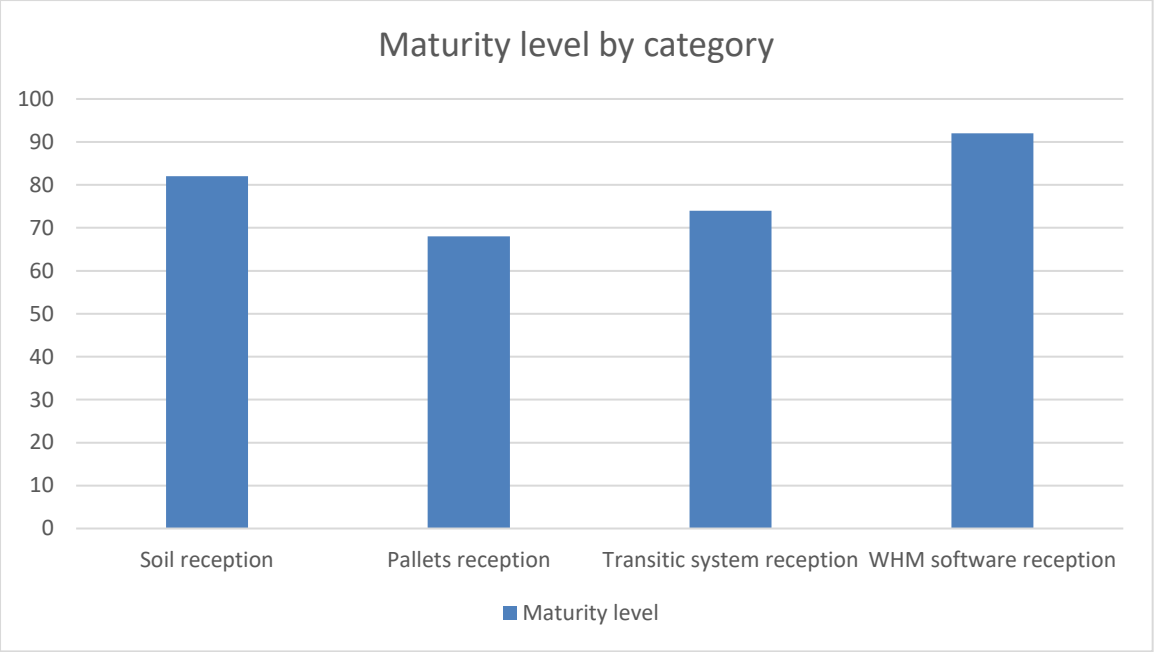
Alpha received a score of 44.44% for the final design of the warehouses, and did not take into consideration the study of several organizations. On the otherhand, the previous implementation was renewed with some improvements.

### 4-1-2 Audit of the reception of works:

The construction of a warehouse is one of the most complex areas forlogistics managers. Once the location of the facilities has been chosen and the warehouse design has been completed, the work is handed over.

The graph below represents the degree of control of warehouse construction work at Alpha.

**Figure 21 : Distribution of the audit results of the reception of works.**




**Source:** Synthesis of information collected.

#### 4-1-2-1Reception of floors and pallets:

In order to accept its soils, Alpha carried out soundings to take the appropriate measurements and the results were satisfactory. However, the pallet rack installation file was incomplete and contained some inaccuracies. After visual inspection, some measurements were found to be slightly out of tolerance, which meant that corrections were quickly reported.

#### 4-1-2-2Reception of the transitive system:

The installation file of the transitive system at Alpha is incomplete. The control of the electrical equipment gives rise to non-compliant points, contrary to the safety provisions are satisfactory and compliant in all respects. To validate the transitive system, installation tests and controls were carried out and the personnel is trained to operate it.

#### 4-1-2-3 The reception of a warehouse management software:

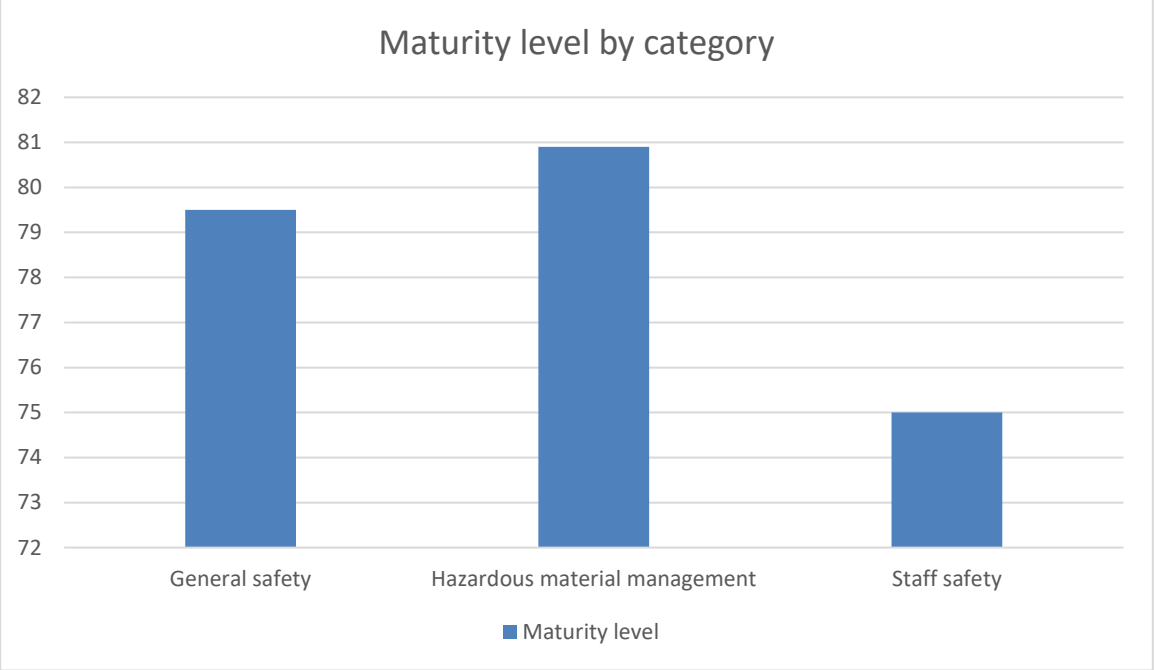
When Alpha received the warehouse management software, all the functionalities were checked before it was put into service, particularly the interfaces with other systems. The performance of the system is quite satisfactory thanks to the specific training given to the operators and the computer specialists.

### 4-1-3 Security audit:

To ensure the safety of its warehouses, Alpha has developed a safety checklist for logistics warehouses, in accordance with the ISO 9001/2015 standard. It is used by warehouse staff to identify safety risks and propose preventive measures to avoid accidents during warehouse operations. It is also based on the evaluation of safety and security processes in warehouses, as well as on theimplementation of emergency and safety procedures.

This list was used to identify and record potential risks at the warehouse level as shown in the following graph:

**Figure 22 : Distribution of safety audit results.**




**Source:** Synthesis of information collected.

#### 4-1-3-1 Consideration of general safety:

Alpha was certified in 2015 to the BS OHSAS 18001 standard for health, safety and environment (HSE). Note that this standard is, now, replaced in 2018 by the ISO 45001/2018 standard. The company has provided employees with important texts, which are accessible and known by everyone. The safety lists and registers are perfectly maintained.

#### 4-1-3-2 Hazardous Materials Management:

The safety files of the dangerous materials are available and generally exploited by the personnel. The incompatibilities of these materials are stored

in the logistics database and managed automatically by the WMS. The storage of

hazardous materials complies with the requirements and their volume is monitored in real time by the warehouse management software, hazard class by hazard class.

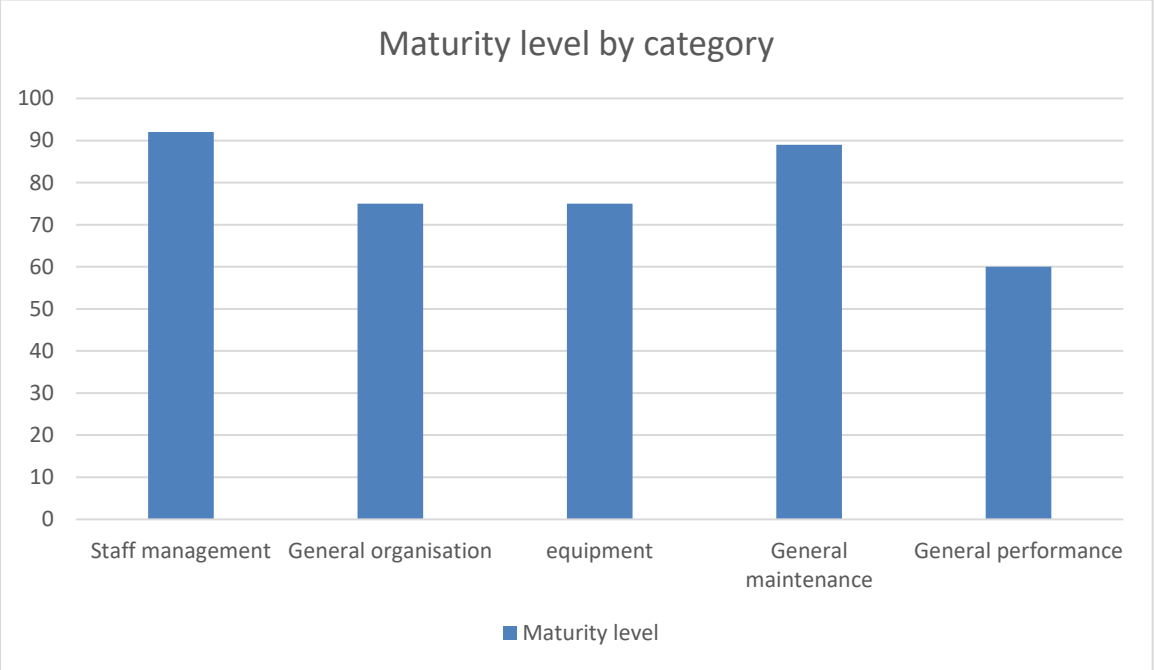
#### 4-1-3-3 Personnel arrangements:

Alpha staff are trained in handling postures and firefighting on a random basis. Safety instructions and equipment specific to each position havebeen drawn up and distributed, which has limited the number of accidents at work.

### 4-1-4 Operations audit:

The operation of the warehouses within Alpha is efficient and consistent, the company obtains a score of 78.78%, which reflects its level of maturity as shown in the graph.

**Figure 23 : Distribution of operational audit results.**




**Source:** synthesis of information collected.

#### 4-1-4-1 Staff management:

To protect the physical integrity of its employees, ensure the preservation of stored goods and guarantee the proper functioning of storage systems, Alpha has illustrated a team organization chart, which is clearly defined and updated.The age pyramid of the staff is harmonious and the working conditions within the company are in line, which explains the decrease in the rate of turnover.

#### 4-1-4-2 General organization:

Inventory management at Alpha is not always controlled, which sometimes

causes low stock rotation: increasing the risk of stock shortages and extending delivery times. Alpha does not carry out cross-docking; goods must be returned to stock before being dispatched. As far as traceability is concerned, itis perfectly managed by the packaging batch number PCB117.

#### 4-1-4-3 Equipment and its maintenance:

The maintenance of handling equipment within Alpha is carried out by a specialist experienced in the adjustment of handling machines. Sometimes, the maintenance department calls upon external service providers with whom agreements have been made. The number of forklifts is sometimes insufficient, particularly in the event of breakdowns or during regulatory checks, which slows down handling operations.

#### 4-1-4-4 General maintenance of the premises:

As Alpha is specialized in the pharmaceutical sector, the cleaning of its warehouses is carried out meticulously and regularly. The management of packaging waste is essential, as part of green logistics (Alpha is ISO 14001 certified), this allows for the protection of the environment, the stored products aswell as the personnel.

#### 4-1-4-5 Overall warehouse performance:

Order processing times are perfectly controlled; orders are processed the same day and shipments can be made directly after processing. Emergencies are taken into account first and deliveries are immediate.

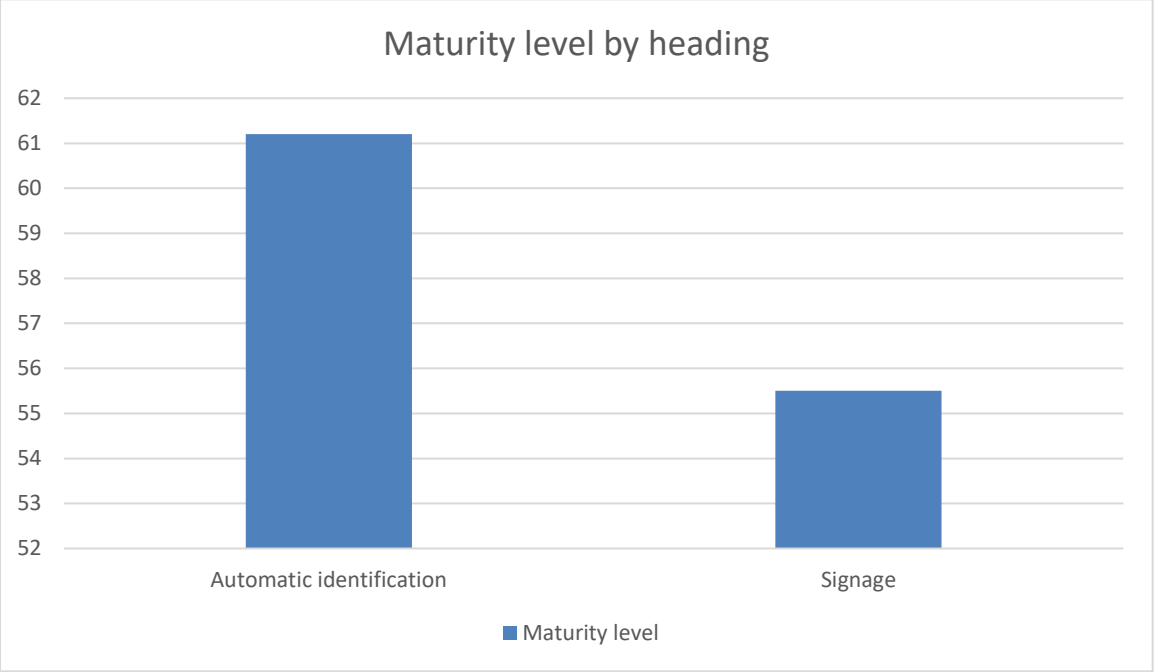
### 4-1-5 Audit of automatic identification and signage:

Alpha has installed an automatic identification system, which is linked to the warehouse management system and guarantees greater traceability of its stocks and flows. In addition, signage in the warehouses is available and helps operators to identify restricted access a r e a s (those reserved for dangerousgoods), areas where trolleys circulate or order preparation and packaging areas.

[117] It is a unit for quantifying the items, the number of sub-packages and the number of packages respectively.

The graph below shows the degree of control of these processes at Alpha.

**Figure 24 : Distribution of audit results for automatic identification and signage.**




**Source:** Synthesis of information collected.

#### 4-1-5-1 Automatic identification:

The deliveries are automatically identified and the articles carry their batch number and their bar code, as well as the packages carry their identification internally. This makes it easier to prepare orders and meet delivery deadlines.

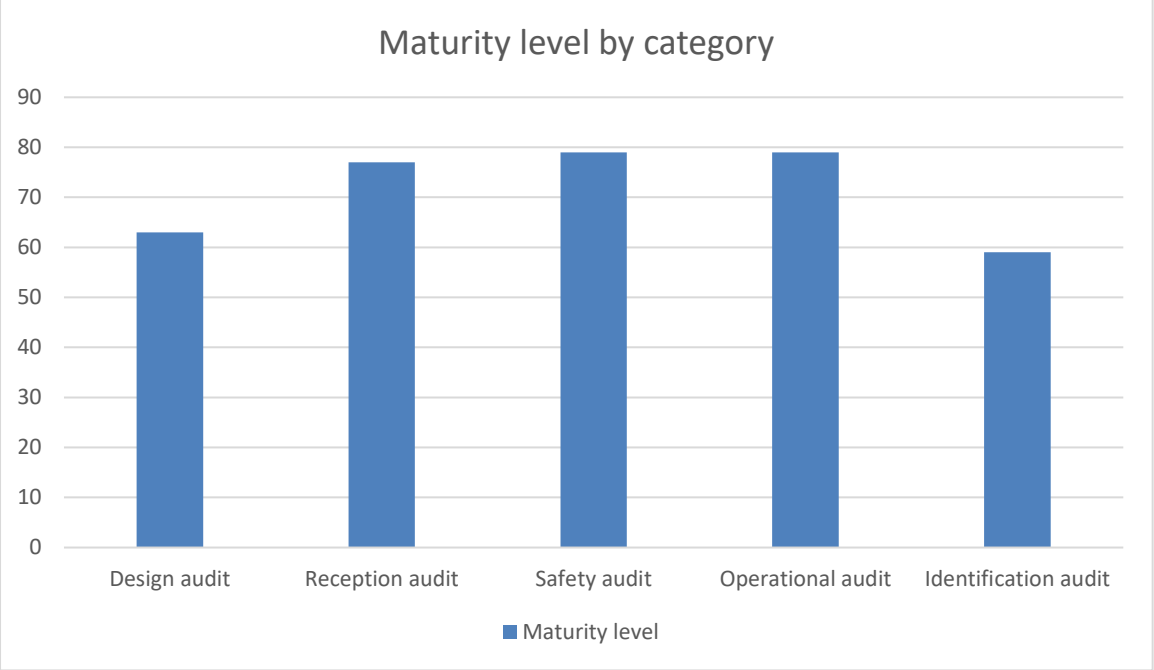
#### 4-1-5-2 Signage:

To avoid any accidents in the warehouses, Alpha has opted for signage and floor markings, the location is complete and perfectly structured.

### 4-1-6 Summary of results:

The objective of this approach was to provide a tool for performance management and continuous improvement of warehouse processes, with a view to customer satisfaction. To meet this objective, the ROUX and LIU methods enabled us to monitor performance through the analysis and quantitative and qualitative evaluation of warehouse operations. This visibility allowed us to evaluate the state of the warehouses within Alpha and to communicate the results in order to draw out possible avenues for improvement.

**Figure 25 : Distribution of audit results for logistics platforms.**




**Source:** Synthesis of information collected.

### 4-2 Transport audit:

Transport is an important link in Alpha's logistics chain. It enables the company to obtain supplies, distribute its products and even ensure the link between its various customers. It is a major element in the quality of service to thecustomer, and is often the first logistical cost item, which requires optimal management to minimize the cost and ensure customer satisfaction. To ensure the performance of the transport process within Alpha, we conducted a questionnaire on the subject (Annex 03).

#### 4-2-1 Pricing:

Setting the selling price of products within Alpha is an important and delicate task, so that customers are sufficiently interested. The selling price is set by combining the cost price and the competition on the market. Prices are regularly updated and circulated to all those involved in the billing process. Then itis distributed and passed on to customers in a timely manner.

#### 4-2-2 Orders and deliveries:

Before the preparation of the orders, it is mandatory to check the availabilityof the ordered goods by referring to the warehouse management software. Afterwards a dispatch note and a delivery note are prepared and checked with the warehouse managers. All shipments are checked for quantity, quality, date and place of delivery.

### 4-2-3 Segregation of duties:

To ensure timely delivery, Alpha has opted for the strategy of segregation of duties; the invoicing department prepares orders, the stock management department prepares the release of stocks and the accounting department accounts for the invoices. On the other hand, the transporters takecare of loading the goods and shipping them.

### 4-2-4 Staff training:

The transporters within Alpha are chosen according to their experience, their age and their mastery of the activity. They are motivated above all by the mission expenses, which amount to 1,000,000 DA/journey (if the distance coveredis long) and the good maintenance of the vehicles. For their part, they ensure that information is passed on to the hierarchical level.

### 4-2-5 Data and steering:

In order to maintain quality data, Alpha's transporters collect information about customers, the market and competitors. This data is necessary for performance management and consists of the quality of service compared to competitors and the conformity of products and packaging to customer requirements. To ensure the performance of its transport activities, Alpha ensures that the flow of information is in phase with the physical flow of operations.

### 4-2-6 Quality of service:

When contracts are drawn up, Alpha has defined transport promises to customers; delivery is guaranteed after a maximum of two days from the launch of orders, but in the event of an emergency, orders are delivered the same day. With the increased competition, Alpha is implementing actions enabling it to continuously improve its transport process:

- Maintain and continuously improve its vehicles;
- The quality/environmental policy is drafted and implemented by switching to LPG vehicles which emit less CO2 than an equivalent petrol engine;
- Taking into account the results of the analysis to determine the existence of the need to acquire new vehicles.

### 4-2-7 Performance of transport systems:

The transport plans within Alpha are daily and elaborated according to the urgency of the orders. Their performance is measured by taking into account delivery times and the service rate to customers. Transport costs are recorded and recognized from the time the goods leave the site until they return, including mission costs and fuel costs.

### 4-2-8 Contracts and billing:

Since Alpha delivers orders by its own means, the transport contracts it draws up consist of transport to the far south of the country. These contracts reflect the responsibility of each stakeholder in terms of cost, time and quality of service.

### 4-2-9 Operational performance:

Operational performance within Alpha is in line with the expected customer service: delivery times are respected and the quality of products and packaging corresponds to the standards and requirements of customers. The levers for improving transport performance at company level consist of optimizing the filling of vehicles to reduce the number of kilometers travelled, increasing staff availability, optimizing the life of vehicles by minimizing usage costs and reducing related expenses (fuel, parking, maintenance, etc.).

### 4-2-10 Carrier tracking:

Alpha is in the process of installing a TMS type software for monitoring carriers. It is an analysis and control software and a real decision-making tool.

The transport process within Alpha is proven to be efficient and contributes to the achievement of the company's objectives through customer satisfaction and the assurance of optimal service. To ensure the strength of its equipment fleet the company has invested in the acquisition of new vehicles and the follow-up of the transporters.

## Conclusion:

Today Alpha is positioned as an essential company in the manufacture and marketing of pharmaceutical products on the Algerian market. It acquired a position of an important competitor, with a distinguished strategy ofdevelopment: it opted for the diversification of its products which enabled it to conquer considerable market shares.

To ensure the satisfaction of its customers, Alpha has woven a distribution network important enough, to put at their disposal the products in the places, quantities and or time desired what has created continuous commercial relations between them.

Alpha has been able to hold its place on the market by implementing an internal control system oriented towards governance practices and the participation of all personnel in the creation of added value by promoting communication and the transfer of information to the hierarchical level.

Auditing the distribution logistics within Alpha allowed us to reveal the strengths and weaknesses of each function, which facilitates the identification of areas for improvement.

# General Conclusion

# General Conclusion:

The questions at the origin of this dissertation concerned the analysis and control of the distribution logistics process. The problematic posed in this present research work is:

**"How does the logistics audit contribute to the performance of the company".**

The approach adopted in this thesis is based on the importance of the internal control and risk management system to better control distribution logistics activities, as well as the effectiveness of transport plans to optimize physical distribution. In addition, this approach is oriented towards the analysis of the performance of distribution logistics and its importance in achieving the objectives set by the company.

It should be noted that the analysis of the distribution logistics function has become a very important approach to reduce costs and presents a source ofcompetitive advantage for the provision of a better customer service. For this reason, companies must pay special attention to it and try to have an efficient management that allows them to meet the needs of consumers in the right timeand space, at minimum cost and guarantee a certain profitability to the company.

Through this work, we are interested in the analysis of the internal control and risk management system of the distribution logistics within Alpha, through the presentation of its distribution strategy, the organization of its internal control system and its risk management policy, in order to achieve customer satisfaction.

We have also set up an analysis of the performance of distribution logistics at Alpha level, based on adapted audit questionnaires. This allowed us to detect its degree of maturity.

Following our analysis, we have noticed that the control system set up by Alpha has allowed it to:

- Creating a healthy control environment;
- Establish good information and communication management;
- The implementation of good governance practices;
- Setting goals;
- Assessing your risks;
- Integrate into the processes the control actions intended tominimize these risks.

The effectiveness of Alpha's internal control system enables it to controlits distribution logistics activities, which means that it can achieve its objectives.

Thus, we can confirm our first hypothesis which states that **"It is necessary to implement an internal control and risk management system to control all activities".**

Alpha has invested heavily in the distribution logistics sector, through the acquisition of new vehicles, the establishment of a distribution network, considered effective and efficient, which allows the availability of its products in the four corners of the country. In addition, it has anchored a warehouse management system of WMS type which allows a good traceability of the products within the warehouses and an information system of ERP type to coordinate between the various activities. In addition, Alpha is preparing to launch another TMS-type information system for better control of the transport process. These investments have enabled the company to establish efficient transport plans to improve customer satisfaction and minimize operational costs.

So, we can assert our second hypothesis, which is that **"the design and implementation of an efficient transport plan allows for the improvement of customer satisfaction and the control of operational costs".**

After analyzing the logistic performance of the distribution within Alpha, we found that it has reached a significant degree of maturity, which ensures its competitive position in the market.

Finally, we can ensure our third hypothesis, which is **"the logistics audit offers the possibility of evaluating the level of maturity of a company's logistics".**

The recommendations mentioned represent points to be improved by Alpha and offer the following recommendations:

- Use of SCE software for warehouse management and order processing,tracking order progress and optimizing transport scheduling;
- Strengthening the skills of the logistics staff by training or hiring the necessary skills to meet the company's needs;
- Strengthening of control at the logistics level through the control of the logistics plan and the development and updating of logistics procedure manuals;
- Evaluation of internal control systems to ensure that they arestill effective and relevant;
- Carry out audits on distribution logistics that allow to:

✓ Identify his strengths and weaknesses to help him adapt to theconstraints of his environment;
✓ Adaptation of new logistics management techniques;
✓ Updating its website to detect flaws and plan corrective measures;
✓ Analyze the performance of your internal and external communication;
✓ Audit and improve key storage activities;

✓ Evaluate handling tools to ensure personnel safety.

In the end, we can deduct from our study that Alpha has put all the means and knowledge possible to maintain its degree of logistic performance and necessarily up to date, to become in the image of the big companies with a considerable efficiency and reactivity.

Other lines of research related to our problematic can be explored, in orderto deepen the analysis of the distribution logistics. Studies that can be long and complex and that can eventually lead to explicit and detailed results.

# Bibliography

**The works:**


- A.GUAGNOL, P.ROULE, " *Management des organisations* ", éd. Gaulino,2009.
- B.LYONNET, M.P.SENKEL, S.CLAMENS, "*Supply chain management*", ed.Dunod, Paris, 2019.
- C.SELMER, "*La boîte à outil du responsable financier*", ed. Dunod, Paris, 2018.
- F.BERNARD, R.GAYRAUD, L.ROUSSEAU, "*Internal control: fight against fraud*", Maxima, Paris, 2010.
- J.C.TRANDEAU, D.XARDEL, " *La distribution* ", PUF, Paris, 1998.
- J.LAURENTIE,F.BERTHELEMY,L.TERRIER,*" Processus et méthode logistiques*", Afnor, Paris, 2013.
- J.RENARD, "*Comprendre et mettre en œuvre le contrôle interne*", éd.Eyrolles, Paris, 2012.
- J.RENARD, "*Théorie et pratique de l'audit interne*", éd. Eyrolles, Paris, 2010.
- L.AMEDEO, F.YALAOUI, " *Logistique interne : entreposage et manutention* ",éd. Ellipses, Paris, 2005.
- .M.ROUX, T.LIU, " *Optimize your logistic platform* ", Eyrolles, Paris, 2004.
- M.VANDERCAMMEN, N.J.PERNET, "*La distribution*", Boeck, Brussels, 2005.
- MEDAN, A.GRATACAP, " *La logistique et supply chain management : intégration, collaboration et risques dans la chaîne logistique globale* ", éd. Dunod, Paris, 2008.
- R.LE MOIGNE, "*Supply chain management: purchasing, production, logistics, production, sales*", ed. Dunod, Paris, 2017.
- V.BASMORCEAU, E.COUZINOU-ZEGWAARD, OMEIER, " *Management de la supply chain : mode d'emploi* ", éd. EMS, Paris, 2020.
- Y.PIMOR, M.FENDER, " *Logistique : production, distribution, soutien* ", éd. Dunod,Paris, 2008.


**Theses and dissertations :**


- A.DARTEVELLE, " *L'audit logistique : appliqué à une société du secteur agricole* ", Mémoire présenté à HEC-Ecole de gestion de l'ULG, 2015/2016, https://matheo.uliege.be/bitstream/2268.2/1334/4/M%C3%A9moire%20Arnaud%20Dartevelle%20HEC%202016%20version%20finale%20%C3%A0%20imprime r.pdf accessed on : (05/21/2022 at 11 pm)

- C.ELOCKSON, "*Supply chain risk management and the performance of agri- food companies*", Thesis presented at D'ARTOIS University, 2017. https://www.theses.fr/2017ARTO0102.pdf (05/21/2022 at 11pm )

- C.JACOB, " *Une analyse des besoins et des pratiques de formation en logistique dans les entreprises manufacturières québécoises* ", Mémoire présenté du Québec à Trois Rivières, 2002. (05/21/2022 at 11pm )
- http ://depot-e.uqtr.ca/2578/1/000100457.pdf accessed on 17/05/2022
- J.MAHMOUDI, " *Simulation et gestion des risques en planification distribuée des chaînes logistiques : application au secteur de l'électronique et des télécommunications* ", Thesis presented at the Ecole nationale supérieure de l'aéronautiqueetdelespace,France,2006. (05/22/2022 at 12am ) https://depozit.isae.fr/theses/2006/2006_Mahmoudi_Jaouher.pdf accessed on 17/10/2021. (05/22/2022 at 12am )
- S.BOUARAB, *« la mise en place d'un dispositif de contrôle interne de la logistique de distribution »*, Thesis presented in UMMTO http://www.ummto.dz/dspace/bistream/handle/ummto/17406 Consulted on (05/22/2022 at 12am )

- J.ROY, "*Un modèle de planification globale pour le transport routier de marchandises*", Thesis presented to the École des hautes études commerciales, Canada, December 1984. http ://biblos.hec.ca/biblio/theses/1984NO7.PDF (05/25/2022 at 6pm)

- L.CHARLON, "*Le plan de transport. Improving customer satisfaction and controlling operational costs through the design and implementation of an efficient transport plan*", Dissertation presented to Grenoble Alpes University, 2016. https://dumas.ccsd.cnrs.fr/dumas-01454881/document . accessed in: (05/25/2022 at 8pm)

**Items:**

- AMF (Autorité des Marchés Financiers), "*Les dispositifs de gestion des risquesetdecrôle intern :cadrederéférence*",2010. http ://www.audentia-gestion.fr/AMF/AMF_Gestion%20des%20risques%20et%20contr%F4le%20interne_Cadre%20de%20r%E9f%E9rence.pdf
- A.SADDIKI, L.TOUHAMI, S.EL-HAFID ALLAH, "*Approaches and techniques of evaluation and improvement of logistics performance*", Tangier, Morocco, 2017.
- https://www.ijser.org/researchpaper/Demarches-et-techniques-devaluation-and-improvement-of-logistics-performance.pdf
- A.TALBI, " *L'analyse des risques associes à la fonction logistique* ", 2012. https ://www.researchgate.net/publication/279985063_L%27analyse_des_risques_associes_a_la_fonction_logistique consulted on (05/29/2022 – 1 pm).

- European Commission,"*Transport and Logistics*", 2009. https://ec.europa.eu/social/BlobServlet?docId=4189&langId consulted on: ( 05/29/2022 at 3 pm)

- D.M.LAMBERT, T.L.POHLEN, "*Measuring the global performance of the supply chain*", 2002. https://www.researchgate.net/publication/262902602_Mesurer_la_performance_globale_de_la_chaine_logistique consulted on: ( 05/29/2022 at 4 pm)

- DocumentASLOG. https://kupdf.net/download/r-eacute-f-eacute-rentiel-aslog-complet-pdf_5a051d35e2b6f5b0268f290e_pdf . consulted on: ( 05/29/2022 at 4 pm)

- I.GOZE-BARDIN, "*The challenges of distribution logistics on the horizon 2035* ", 2009. https://www.cairn.info/revue-management-et-avenir-2009-4-page-217.htm consulted on: ( 05/29/2022 at 6 pm)

- K.CHAFIK, O.BOUBKER, "*Information system and logistic practices: analysis based on the SCOR model: case of a company in the Moroccan automotive industry"*,Morocco,2016.http://www.issrjournals.org/links/papers.php?journal=ijisr&application=pdf&article=IJISR- 16-072-14, also a second document is available at https://revues.imist.ma/index.php/RMLT/article/download/12158/689. consulted on: ( 05/29/2022 at 7 pm)

- Ministry of the Environment, Energy and the Sea, French Republic,"*Logistics*", 2016 https://www.ecologique-solidaire.gouv.fr/sites/default/files/logistique%20tour%20d%27horizon.pdf consulted on: ( 05/30/2022 at 1 pm)

- O.ZEROUALI OUARITI, L.ZEROUAL, "*The impact of information systems on supply chain performance: a literature review*", Morocco, 2017. https://eujournal.org/index.php/esj/article/d consulted on: ( 05/31/2022 at 6 am)

- S.EL HAFID ALLAH, "*From Logistics to Supply Chain: Determinant of Productivity of Industrial Firms*," 2019. https://www.citefactor.org/journal/pdf/De-la-logistique-a-la-chaine- logistics-determinant-of-productivity-of-industrial-firms.pdf consulted on: ( 05/31/2022 at 12 pm)

- S.SOUMARE, "*Good distribution practices for sensitive products (medicines)*". https://www.utc.fr/master-quality/public/publications/quality_and_management/MQ_M2/2011/2012/projets/08_BP_produits_sensibles/QP10_groupe8_RAPPORT.pdf consulted on: ( 05/06/2022 at 7 pm)

- TutoPREV, " *Transportroutierdemarchandise*",2018 https://www.inrs.fr/media.html?refINRS=ED%204465 consulted on: ( 05/06/2022 at 9 pm)

# Annexes

## Logistics Performance Audit Questionnaire

| The objectives of logistics performance | | | | | |
|---|---|---|---|---|---|
| **Questions** | **Points** | | | | **Comments** |
| | **0** | **1** | **2** | **3** | |
| How did the company choose to have its logistics audited? | | | x | | Alpha adopts internal audits to improve its process logistics. |
| What audits are performed in the company? | | | | x | The company organizes Internal logistics audits the conclusions of which are communicated to all departments. And external audits for all the company's activities. |
| How is logistics integrated into strategy development? | | | | x | A study of the logistical consequences are carefully carried out and taken into account for the major decisions of the company. |
| How does the logistics component of the strategy fit with the product, service and customers? | | | | x | The product and service Categories are defined in the contracts. |
| How do customer needs determine the company's logistics? | | | | x | Preventive actions and surveys of satisfaction are made. |
| How has the logistics approach been integrated into the company? | | | | x | Permanent questioning, based on the collectionof exogenous and endogenous data is a common practice. |
| How was the organization of the logistics within the company chosen? | | | x | | The organization in place Includes all responsibilities for the planning, and the distribution, with theaim of ensuring control over the the overall satisfaction of customer needs. |
| How are logistics responsibilitiesdistributed in the company? | | | | x | All the elements of the logistics process are mastered and participatein the development of the strategy and the planning of physical operations. |

| | | | | | |
|---|---|---|---|---|---|
| How are the logistical targets set? | | | x | | The objectives are developed in line with the company's general objectives. |
| How is information on logistics performance guaranteed? | | | x | | The information system and procedures used to ensure the reliability of the indicators in an objective manner and independently. |
| What are the practices of the company in terms of risk? | | | | x | Logistical risks are identified and assessed. |
| **Evaluation of logistical financial flows** | | | | | |
| How is the programming of logistics investments worked out? | | | | x | The projects investments The logistic costs are studied and the return on investment is calculated. |
| How do the trade-offs between "investing" and "outsourcing"made within the company, when making choices inherent in mediumand long-term strategic planning? | | | x | | The arbitration is made in such a way that thedelivery times to the customers are not increased. |
| How are the logistics costs worked out? | | | | x | Based on the recorded Results a plan in place of improvement has been put implementation |
| How is the rotation of capital tied up in stocks worked out? | | | x | | Clearly, identified actions can reduce the capitalization of this capital (cost of the tied-up stock, calculated by the company). |
| How is financial and budgetary reporting on logistics expenses organized? | | | | x | Through continuous improvement actions are established to ensure that each year the cost reduction logistics. |
| **Evaluation of the logistics information system** | | | | | |
| What is the information system used on the downstream flow? | | | | x | An ERP-type information system is useful, in addition to a WMS. |

| | | | | | |
|---|---|---|---|---|---|
| How does the company deal with the different modes of communication and information transfer? | | | | x | The company has also putin place the appropriate tools to connect its site with its system main information system. |
| How the company uses internally electronic communication and information sharing? | | | x | | The use of a box email (outlook) integrated in all structures. |
| How is the reliability of technical, customer and product data guaranteed? | | | | x | An improvement plan is established. It aims to reduce the causes of errors and minimize risks of all kinds to ensure the integrity of the databases. |
| How does the company ensure the traceability of the flow of information concerning customer orders and those placed with its main suppliers? | | | | x | For failures and non-conformities, preventive actions are decided and applied. |
| Comment on the company to ensure the traceability of its flows? | | | x | | Any failure and non-compliance related to the application of these procedures is subject to corrective action. |
| How are sales forecasts developed and monitored? | | | | x | Forecast quality rates are measured regularly. From objectives have been set. |
| What are the company's planning practices? | | | x | | Information from commercial sources provides a broader view of the near future. |
| How is the staff managed in general? | | | x | | Staff needs are assessedand the training program Includes information on the company's objectives. |
| How are handling, receiving, preparation, shipping and preparation personnel managed? | | | x | | Staffing requirements for these categories arebeing reviewed. |
| What control does the company have over deadlines, through workforce management? | | | | x | Based on the results observed, an Improvement plan wasdefined and implemented. |

| | | | | | |
|---|---|---|---|---|---|
| What is the culture and ethics of the company? | | | | x | The company has developed management models that are based on practices that promote excellence through employee involvement. A charter social policy exists and is being implemented. |
| what is the company's policy in terms of security? | | | x | | Adapted security Indicators are in place. |
| What is the company's policy in terms of working conditions? | | | x | | Appropriate indicatorsare in place based on logistical criteria. |
| How does the company behave in the management of knowledge? | | | | x | The company has a vision of its needs in competence in the medium term. Potential skills are identified. Additional training is provided by proposed. |
| What is the company's policy in terms of training? | | | | x | A company training plan includes a logistics training component to meet the following objectives general. |
| To what extent are we seeking to develop innovation? | | | | x | The effects of this strategy and this are measurable. |
| What incentive system is in place? | | | | x | Values of are specific and known. |
| How is teamwork promoted? | | | | x | teams contribute to the evolution of their own mission and thus advance the work on the different logistic flows. |
| How are the carriers chosen for deliveries to customers or intermediaryservice providers and what logistical partnership exists with them? | | | x | | The choiceof carriers is made according to a precise procedure and includes the prior drafting of a specifications. |
| How are distribution and transmission resource requirements assessed? | | | | x | A manager is responsible for preparing the meetings, simulating solutions in order to optimize supply chain management. |

| | | | | | |
|---|---|---|---|---|---|
| How are orders processed, delivery orders issued, and transportationinitiated? | | | x | | Means are in place to ensure that all orders to be shipped according to the transport are indeed so. |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | If a problem arises, customers are notified of the delay and informedof the likely delivery date. |
| How much control is exercised over door-to-door transactions and the timeliness of transmission of information? | | | | x | Transport times and costsare under control, as shown by the published indicators. |
| What control is exercised over product safety during transport operations? | | | | x | Any incident or hazard that occurs during transport, are product invoicing is developed. |
| Whatcontrol is exercised over the quality of transport and delivery? | | | x | | The analytical status allows following upon damage and delivery errors. |
| **Monitoring of physical flows** | | | | | |
| What layout has been studied to ensure storage operations? | | | x | | Bins are managed. The computer system gives a bin address available in the recommended areas. |
| How are the handling and storage facilities managed? | | | | x | The layout is rationalized and regularly revised (reception, storage and dispatch areas , circulation plans product locations according to therate of turnover per for example). |
| How are the packages managed? | | | x | | The company has a reduction program number of references (types, varieties). |
| **Stocks** | | | | | |
| How is inventory management ensured? | | | | X | A continuous, voluntary approach seeks to constantly optimize arbitration between inventory levels andstock-out rates to ensure the level of service to the customer. |

| | | | | | |
|---|---|---|---|---|---|
| How are stock levels worked out? | | | x | | Objectives are set with a view to concrete improvement. The analysis of the aging inventory is done regularly. |
| How are stock reservations managed? | | | x | | This management is computerized and covered by a procedure whose knowledge and application are checked regularly. |
| When are stock transactions posted? | | | | x | The integration of the information systems avoids the reuse of data and allows, by simple validation, the rapidupdate of the level of stocks during movement. |
| How can I reliably check? Is it possible to ensure the movement ofgoods and stocks? | | x | | | The movements are processed quickly and reliably. |
| **Inventory management of finished products** | | | | | |
| How is the inventory of finished products managed in the production site? | | | x | | Actions are carried out to improve production parameters(quantity to Be launched) and reduce the occurrence of such events. |
| How is the management of stocks of finished products outside the production site ensured? | | | x | | Alternative procurement and inventory management methods are being considered. |
| How is finished goods inventory management provided for stocks temporarily stored at service providers? | x | | | | There is no product management with partners. |
| How is finished goods inventory management provided for customer consignment inventory? | x | | | | There is no management. |
| **The permanent progress approach** | | | | | |
| Is the company in a quality process? | | | | x | Certified to the ISO9001/2015 standard the company has of a total quality approach. |

| | | | | | |
|---|---|---|---|---|---|
| How have environmental constraints been integrated into the logistics strategy? | | | | x | Certified to ISO 14000series standards, the company has a comprehensive strategic approach to this issue. |
| What is the company's logistics progress plan? | | | | x | The plan is monitored with each action undertaken: an objective, a due date, a responsible for resources. |
| What are the means put in place to guarantee the management of a progress plan? | | | x | | A steering committee exists. It sets the objectives, regulates the activities and monitors implementation. |
| How is openness to technological developments ensured? | | | x | | The company organizes missions for the personnel to participate in the events. |
| How does a "logistics method" department make a continuous contribution to progress? | | | | x | The permanent search for time reductioncontributes to the reduction of the deadlines. |
| How is the effectiveness of the general elements of the company's policy measured? | | | | x | The results are widely disseminated and help to advance the elements of the the company. |
| How can information on the logistics performance is given in the company? | | | | x | It is a source of permanent progress. |
| How is the communication with the external part of the company which concerns the logistics? | | | | x | Frequent contact andmeetings with the partners of the company are organized allow to improve thesupply chain. |

## Platforms audit questionnaire

| Design audit | | | | | |
|---|---|---|---|---|---|
| **Questions** | **Points** | | | | **Comments** |
| | **0** | **1** | **2** | **3** | |
| **The realization of the static dimensioning:** | | | | | |
| What static databases were used? | | | | x | Existence of procedures to carry out its projects. |
| Has seasonality been studied? | | x | | | Studies and surveys are conducted. |
| Has defined coefficients of static extrapolation? | | | | x | Separate forecasts, static and dynamic developments have been retained after investigation. |
| How was the storage capacity determined? | | | | x | The storage capacities were determined, family by family, on the basis of thetarget stock and the rate optimal occupancy rate. |
| **The realization of the dynamic dimensioning:** | | | | | |
| Which dynamic databases were used? | | | | x | Precise statistics were extracted from the stock management software andthe management software existing warehouse. |
| Has the phenomenon of seasonality been studied? | | x | | | An overall analysis was conducted. |
| Have the static extrapolation coefficients been defined? | | x | | | A single coefficient of activity was assumed. |
| Were turnover rates used? | | | x | | An analysis logistics family logistics has been achieved. |
| Have the operating times beendefined? | | | x | | We used ratios. |
| **Development of the final design:** | | | | | |

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| Have several organizations been studied? | | x | | | The company the previous organization with some improvements. |
| Have we studied several locations? | | | x | | A new location has been studied. |
| How were the different scenarios compared? | | x | | | The logistic index method was used to compare the different locations. |
| **The audit of the reception of works** | | | | | |
| **The reception of the floors:** | | | | | |
| How were these measures carried out? | | | x | | Some polls were carried out. |
| What results were achieved? | | | | x | All the measurements made were satisfactory. |
| **The reception of the pallets:** | | | | | |
| Is the documentation complete? | | | x | | The installation file is incomplete and contains a number of inaccuracies. |
| Is the signage compliant? | | | x | | The design is generally in conformity but has some errors. |
| How were the measurements taken? | | | x | | Some measures have been conducted by survey only. |
| Are the dimensional tolerances respected? | | | x | | Some measurements were slightly out of tolerance andthe small corrections could be made quickly. |
| **Reception of the transited system:** | | | | | |
| Is the documentation complete? | | | x | | The installation file contains a number of inaccuracies. |
| Is the visual inspection satisfactory? | | | x | | The control attracts some inaccuracies. |
| Are the security features satisfactory? | | | x | | The installation attire a few minor remarks. |

| | | | | | |
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| Is the electrical equipment incompliance? | | | x | | On distinguishes someshort comings. |
| How were the tests organized? | | | x | | The on-site tests were conducted in a methodical way and complete with the help of a recipe book. |
| Have all features been tested? | | | x | | All functions have been tested. |
| Were all performances tested? | | | | x | Performance is assured onall stations. |
| Has the training been provided? | | | | x | Comprehensive training was provided to operators and maintenance staff. |
| Has the availability of the facilitybeen measured? | | | x | | The measures were carried out approximately, by the maintenance department. |
| **The reception of a warehouse management software:** | | | | | |
| Have all features been tested? | | | | x | All the functionalities were checked before going into service, in particular interfaces with othersystems. |
| Has the ergonomics been validated? | | | x | | The ergonomics of the screens and manipulations need improvement. |
| What are the performances obtained? | | | | x | The performance of the system is quite satisfactory. |
| Was the training provided? | | | | x | A complete and specific training was given to operations and IT specialists. |
| **The security audit** | | | | | |
| **Consideration of general safety:** | | | | | |
| Does the site have a security specialist? | | | X | | It is the person in charge ofthe site which tracks security issues. |
| Do we know the regulations? | | | x | | Most texts are accessible and known. |

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| How is the safety register kept? | | | x | | This register is available but not uploaded. |
| Do the protocols and safety booklets exist? | | | x | | The signage is correctly put in place. |
| Is there a waiting room for thedrivers? | | | x | | A room exists without any facilities**.** |
| Are staff parking areas adequately protected? | | | x | | The parking lot is locatedinside the warehouse. |
| Are site entrances properly protected? | | | x | | Yes, it is properly secured. |
| Which ones are properly equipped? | | | x | | Safety equipment is available. |
| Are the safety instructions posted? | | | | x | The signals arecorrectly displayed. |
| Do the fire extinguishers meet the regulatory requirements? | | | | x | The number of fire extinguishers is sufficientand the verification dates are scrupulously respected. |
| Will assessment exercises be conducted? | | | | x | Exercises are held on a regular basis. |
| Are the court's tissues in compliance? | | | | x | Number and arrangementof emergency exits are in compliance |
| Is fire protection properly managed? | | | | x | The system is fully compliant and the checks are carried out correctly**.** |
| **Hazardous Materials Management:** | | | | | |
| Do we have all the safety data sheets concerning hazardous materials? | | | x | | Most of the records areavailable and are generally used. |
| Are the incompatibilities of products with each other or with water managed? | | | | x | These incompatibilities are stored in the logistics database and are automatically managed by the WMS. |
| Is the storage of hazardous materialsin compliance? | | | x | | Most of the arrangements have been made**.** |

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| Is the shipment of hazardous materialsin compliance? | | | | x | Declarations and labels are generated automatically by the WMS in real time. |
| Does the site have the required accessories and devices for hand ling hazardous materials? | | | x | | Most of the consumables and safety equipment are available. |
| Is the volume of hazardous materialsstored monitored? | | | | x | The value in the warehouse is monitored in real time by the WMS. |
| Are staff trained to prevent material hazards first? | | | x | | Most staff have been informed and trained. |
| **Personnel arrangements:** | | | | | |
| Have the staff been trained in handling postures? | | | x | | Some training is available at dispensed randomly. |
| Have staff been trained in firefighting? | | x | | | Training has been providedto staff in general. |
| Have the first aiders been trained? | | | | x | There are several rescue workers. |
| Is there a security service? | | | | x | This service exists; it is perfectly organized. |
| Have the safety instructions specific to each been distributed? | | | x | | Most stations have their own instructions. |
| What was the number of work stoppages? | | | x | | No downtime for 6 months. |
| Has the proper safety equipment been distributed? | | | | x | All useful equipment has been distributed and is being used regularly. |
| What was the number of accidents atwork? | | | x | | No accidents in over two years. |
| **Operational audit** | | | | | |
| **Personnel management:** | | | | | |
| Is there an organization chart of the teams? | | | x | | The organizational chart is complete but not up to date. |
| How many hierarchical levels are there? | | | | x | There are many levels of hierarchy. |

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| Is each position clearly defined? | | | x | | Most positions have a definition. |
| Is versatility managed? | | | | x | Perfectly managed. |
| How is the use of temporary staff managed? | | | | x | A genuine partnership with a service provider was established in place. |
| What is the absenteeism rate? | | | | x | Absenteeism is rare. |
| What is the age pyramid of the staff? | | | | x | The pyramid is "harmonious". |
| What is the "turnover" of the team? | | | | x | Turnover is adequate. |
| What is the seniority pyramid of the team? | | | | x | The pyramid is "harmonious". |
| **General organization:** | | | | | |
| Is the site ISO9000 certified? | | | | x | The site has been certified for several years now. |
| Are there any procedures? | | | x | | The missing procedures are being drafted. |
| Are the appointments with the carriers managed? | | | x | | Appointments are made with one or two transporters with one-hour slots. |
| Do we know how to do cross docking? | x | | | | The goods must be returnedto stock before they can be shipped. |
| How are inventories managed? | | | x | | The site has implemented the inventory process turn. |
| What are the inventory differences? | | | | x | Are in minimum number. |
| Is traceability managed? | | | | x | The traceability is managedby package and by article. |
| How is it possible to be traced? | | | | x | The Nodelot of PCB packaging, or of the article. |
| **Equipment and its maintenance:** | | | | | |
| Will the means of storage be adequate? | | | | x | The stocking methods seem to be perfectly adapted. |
| Is the storage capacity sufficient? | | x | | | The occupancy rate is between 90% and 95%. |

| | | | | | |
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| Is the capacity of the picking areas sufficient? | | | x | | The average frequency of replenishment varies from 2 to 3 days. |
| Are the means of handling adequate? | | | x | | Seem partially adequate. |
| Are the handling means well dimensioned? | | | x | | The number of trolleys is sometimes insufficient, especially in case of breakdowns. |
| Are the preparation methods suitable? | | | | x | The preparation methods are well adapted. |
| How is the maintenance activity organized? | | | x | | Most systems are properly maintained. |
| What is the availability rate? | | | | x | The rate is significant. |
| **General maintenance of the premises:** | | | | | |
| How is the site maintained? | | | x | | The site is well maintained. |
| How is the store maintained? | | | | x | The whole warehouse is perfectly tidy. |
| How does packaging waste are they managed? | | | | x | Waste is collected in on the items that generate them. |
| **Overall warehouse performance:** | | | | | |
| What is the average order processing time? | | | | x | Order processing time is perfectly controlled. The shipments can take place on the same day. |
| How are emergencies handled? | | | | x | The surgeries shall be managed within a period of between two hours and four hours. |
| What is the observed service rate? | x | | | | The service rate is not known. |
| What is the error time on theorder? | | | | x | Mistakes are rare. |
| What is the level of productivity achieved? | x | | | | Productivity level is not known. |
| **Audit of automatic identification and signage** | | | | | |
| **Automatic identification:** | | | | | |

| | | | | | |
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| Are the deliveries identified? | | | | x | In practice, all the deliveries are automatically identifiable. |
| Are the references identified? | | | | x | In practice, all articles are identifiable automatically. |
| Is the material handling equipment identified? | x | | | | This feature is not used on the site |
| Are the batch numbers identified? | | | | x | The items that require it carry their NO bar-coded batch. |
| Are the preparers identified? | x | | | | This feature is not used on the site. |
| Are the packages identified? | | | x | | The parcels carry only one internal identification. |
| **Signage:** | | | | | |
| How is the tracking structured? | | | | x | The site mapis completeand perfectly structured. |
| How is the interior designcreated? | | | x | | It respects the principles of of ergonomics in its entirety. |
| How is the exterior signage created? | x | | | | It is non-existent. |

## Internal Control Questionnaire:

| Questions | Yes | No | Comments |
|---|---|---|---|
| **Pricing:** | | | |
| • Is there a procedure for setting prices? | x | | By combining cost and competition in the market. |
| Are the prices: | | | |
| - Regularly updated? | x | | |
| - Disseminated to all stakeholdersin the billing process? | x | | |
| • Are the prices set reasonable and transmitted to customers on time? | | | |
| • Are the quotations sent to the customer verified and approved by an authorized person? | x | | Approved by the commercial manager and the general assembly. |
| **Ordering:** | | | |
| • Are the orders subject t o a acceptance procedure? | x | | There is aformalized procedure. |
| • Is there a procedure for checkingthe availability of goods ordered from stock? | x | | Based on the WMS. |
| • Are the orders: | | | |
| - Supported by customer order forms? | | | |
| - Approved by a person authorized? | x | | |
| - Is there any order tracking ? | x | | From the moment the order is placed to the moment it is delivered. |

| | | | |
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| **Delivery:**<br>• Does each order preparation result in the establishment of a shipping order? | x | | |
| • Each shipment of the order result in the establishment of a leap delivery of several exemplary?<br>• Those responsible for stock removals check whether the shipment of goods is the same as the purchase order, a shipping order and the delivery note?<br>• Are all shipments subject to control in accordance with the orders when:<br>- Quantities?<br>- To quality?<br>- On the delivery date?<br>- At the place of delivery? | x<br>x<br>x | | For administrative reasons. |
| **Segregation of duties:**<br>• Is the person who issues a purchase order different from the person who prepares the stock removal and the person who posts the invoice?<br>• Is the person distributing the goods different from the person loading the goods? | x | <br><br><br>x | It is supported by the billing department and the stock management department.<br><br>It's the same person. |

## The audit analysis grid:

| Questions | Yes | No | Comments |
|---|---|---|---|
| **Data and piloting:**<br>• What is the quality of the transportdata currently available?<br>• To what extent do carriers reportthe data needed to manageperformance?<br>• What transport data can be used to monitor and improve the quality of service provided to customers?<br>• Is the information flow in line with the physical world of operations? | | | The information is passed on verbally.<br>They remontant information at the hierarchical level.<br>Customer, market and competitor data. |

| | | | |
|---|---|---|---|
| **Operational performance:**<br>• Is it in line with the expected customer service?<br>• What mechanisms have been put in place to facilitate the measurement of the performance of transportoperations?<br>• What are the performance improvement levers delivered by thecarriers and by the organization to customers?<br>• How to manage carrier relations in the search for better performance of operations? | x<br>x | | Consists of optimizing the filling of vehicles to reduce the number of kilometers traveled.<br>Optimize life span vehicles and increase staff.<br>Evaluate the transport service. |
| **Carrier tracking:**<br>• What tools or mechanisms have been put in place to enable the steering and monitoring of transport contracts?<br>• Is current reporting geared towards continuous improvement of operations? | **x** | | Alpha requires the installation of a TMS type software. |

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# Table of Contents