

# Test Logistics Maturity of the Industrial Zone in the Region of Gabes

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*Abstract: Faced with globalization, companies are faced with the challenge of achieving the logistics maturity. This is the purpose of this article is the result of a survey conducted in the region of Gabes in Tunisia. For the understanding of the questionnaire developed some elements regarding logistical audit techniques to improve productivity and integrated logistics and cooperated. The most important in this article is the content of training that will allow the cited becoming a logistics hub in mature area.*

*Keywords: logistics, integration, maturity, investigation, cooperation*

## 1 . Introduction

The term logistics comes from a Greek word meaning the art of reasoning and calculation. About Gift military context, it concerns all that is necessary for the application in the field of strategic and tactical decisions.

Today, this term is identified with the set of acquisition, storage, transportation and delivery of goods. She appeared at the end of the Second World War by conversion of Military Components logistics specialists. Logistics has evolved [1]. In

1960, it is characterized by the Taylorist fragmentation. Indeed, it considers its different axes:

- forecast
- supply
- planning
- Inventory management Production
- handling
- Storage
- packaging
- and storage of finished products
- order processing
- schedule distribution
- transport and shipping

In 1980, there is the post- Taylorist time and talk about logistics lover and downstream. This is the period of coherent logistics. In 2000, we developed the global and transversal management and talk about global supply chain. This article is based on a well-known definition of logistics, "Logistics is the management of the flow of material and information." It gives the results of the survey that was done in the industrial region of Gabes in Tunisia on the maturity of the logistics. It is also based on this definition for the survey: "The company has a mature logistics when she mastered" Before addressing the questionnaire I developed

elements for understanding. This is discussed in the following paragraphs. I note that I have not made a state of the art because there is no research in scientific journals on logistics maturity

## 2. Audit Logistics and techniques improving productivity

### 2.1. The logistics audit

The logistics audit consisted in position for 1 to 3 months near a machine or a workshop for information on its elements:

Disruption of production due to:

- defective or missing tool
- RM defective or lack of RM
- Machine failure
- bad- setting machine

Then, apply a improving technical productivity.

The latter will be developed in the next paragraph.

### 2.2. TAP [2]

#### a) Display poka -yoke

This is stick near machines instructions and recommendations for the proper functioning of the latter

#### b) Animation objective

It is set objectives when addressing an action

#### c) Art to educate

The best maintenance workers become trainers by internal training.

#### d)self-maintenance

This operation is performed by the agent of production. It is the elimination of sources of contamination, cleaning, lubrication, etc. Details are given in the book [2].

#### e) Brainstorming

This is a meeting to solve problems. The book [2] provides details.

#### f) SMED

This is to adjust as quickly as possible. These are the work of experts.

#### g) The Five Whys

The question is asked why five times when we have a problem

#### h) The 5S

##### i) Ishikawa

It is enumerating anomalies causing adverse effects in several areas:

mid-

Middleweight

Machine

-labor

##### k) Saving movement

It is enumerate movements and eliminate unnecessary movements. Other TAP are described in the book [2]

## 3. Integrated logistics and cooperated

### 3.1. Application of integrated logistics

#### a) Definition

Integrated logistics is composed of all the processes that add value to the product of the exchange of information between services

#### b) Application

\* First case: between production department and maintenance department

Agents: one marketing department and production department 2

Operations:

Op1: communicating the results of the demand forecasting and statistical analysis applications

Op2: Communication PIC

Op3: Communication gap between production and demand

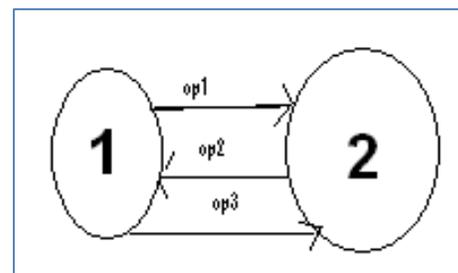


Figure 1: Case Study 1

Case study 2: between the maintenance department and production department

Agents:

Agent 1: maintenance department

Agent 2: Production Department

Op1: Communication schedule preventive

maintenance and operation rate  
 Op2: Communication production planning  
 Op3: Communication schedule preventive maintenance taking into account the data of production planning

The same pattern is obtained as the case study # 1

Case study 3: Continuous service improvement and other business services.

Agents:

Agent 1: Continuous Improvement Service

Agent 2 : Service Production

Agent 3 : Marketing Department

Agent 4 : Supply Service

Agent 5: Maintenance Service

Agent 6: Distribution Service

Operations:

Op1 : Communication performance indicators

Op2 : Communication of improvement action

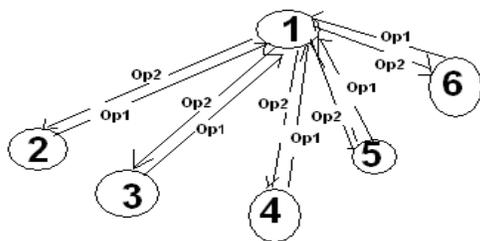


Figure 2. Case Study 3

### 3.2. Application logistics cooperated

#### a) Definition

Logistics is cooperated with techniques for value added to the product of the cooperation between actors in the supply chain

#### b) Application and Examples

Synergy is the fusion comparison of the processes used in the supply chain. The synergy of skills is the sharing of personal data by the different actors in the supply chain \*

\*First example: synergy process  
 For this example, we consider a group of plants the same manufacturer belonging to one owner. Agents are different scmanger of plants numbered 2, 3, 4 and SCMANAGER conductor numbered 1

The operations are :

Op1: Description of process

Op2: Choosing the best process standardization and fusion processes and standardization

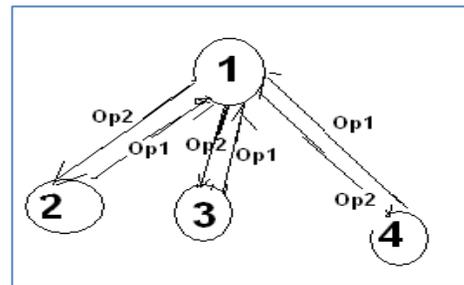


Figure 3

\* First example: synergy of skills  
 Agents are different scmanger of plants numbered 2, 3, 4 and SCMANAGER conductor numbered 1

The operations are:

Op1: Functional analysis of know-how

Op2: Choosing the best skills, decision making trainers few people in the company

The same diagram in Figure 3 is obtained.

#### c) First example: synergy tools

Agents are different scmanger of plants numbered 2, 3, 4 and SCMANAGER conductor numbered 1

The operations are :

Op1 : functional analysis tools

Op2 : a specification of the merger choosing the best tools or development

The same diagram in Figure 3 is obtained as

## 4.Questionnaire

The questionnaire is a methodological tool with a set of questions that keep coming in a structured way. The questionnaire survey is a monitoring tool to quantify a state. The questions we used are:

1. Is this nomenclature is identified and written documents?
2. Are procedures and job descriptions are identified and written documents?
3. Is the method of inventory management is optimized?
4. A CAM and a CMMS do you use?
5. Get logistical regular audits to conclude technical

improvement?

6. In the case of low competition, do you use statistical analysis to optimize inventory management?

7. Does the marketing department cooperate with the generation service?

8. Does the maintenance department cooperate with the generation service?

9. You standardize your documents and packaging?

10. Discuss up and compare yourself your tools and management methods with your partner?

#### It concluded its four levels: 4 levels of maturity: logistics

Level 0: total absence of logistics  
 Level 1: non-formalized Logistics is reduced to enforcement activities. Considered non-strategic. Not formalized.

Level 2: Logistics is fragmented partially formalized. It is born between partition functions Branch , Sales, Production, Quality , Purchasing

Level 3: Supply Chain presence of the first signs of a supply chain based on The realization of the importance of logistics audit to monitor the SC  
 We obtain these results

**Table 1**

Les questions	companies	Maturity
1.	16	Partial presence of logistics
2.		
3.	1	Presence of logistics formalized with an is
4.		
5.	9	Presence of sc
6.	15	Integrated logistics
7.		
8.		
9.	3	Collaborative logistics
10.		
11.	40	Total lack of logistics

## 5. Action with the results

It is proposed to the API (agency promoting the industry) these training :

- training logistics expert
- training expert service
- training expert production management
- training SCMANAGER

In what follows you will find the content of training:

### 5.1 Training Skills to be an Expert Logistics

This training is designed to train logistics capable of logistical audit and implement techniques to improve productivity from the latter

Method of training:

\* Chapter 1: Basic ( 1 hour)

- Definitions
- Evolution of logistics

\* Chapter 2: Logistics audit ( 1 hour)

- modality of the logistics audit
- example, logistics audit

\* Chapter 3: Techniques for improving productivity ( 3:00 )

The 33 - techniques to improve productivity

\* Chapter 4: modeling of integrated logistics and cooperated for a diagnosis

### 5.2 Training Skills to be an Expert in Maintenance Management

This training aims to train leaders maintenance service

Method of training:

\* Chapter 1: Basics

- Definitions

\* Chapter 2: Failures

- classification of failures
- failure mechanisms
- Tool failure analysis

\* Chapter 3: Costs and indicators

- costs
- the investment in maintenance

- the maintenance budget
- indicators
  - the dashboard
- \* Chapter 4: Organization optimized maintenance
- \* Chapter 5 : Methods of inventory management of spare parts - classical method
  - simulation method

### 5.3 Training Skills to be an Expert in Production Management

This training is designed to train logistics capable of managing a production department.

Method of training:

- \* Chapter 1: Mathematical models for production management
  - Fundamentals of linear programs
- \* Chapter 2: Classification of production systems
- \* Chapter 3: Scheduling in specialized workshops
  - TOM
  - Scheduling on 2 machines
  - Scheduling on 3 machines
  - Example - resolution flexible job-shop
- \* Chapter 4: Inventory Management
  - costs model - wilson
  - bulk orders the phased - supply
  - calculation of safety stock
  - The Pareto method
- \* Chapter 5: MRP
- \* Chapter 6: Techniques of JAT
  - basics
  - kanban
- \* Chapter 7: Project Management
- \* Chapter 8: Design of a production center
  - Configuration specialist workshop
  - Balancing of an assembly line Decision - capacity
- \* Chapter 9: ERP
  - The pros and cons, example - CAPM

### 5.4 Training Skills to be a Responsible SCM

This training aims to train leaders SCM able to implement the best practices in their businesses

Method of training:

- \* Chapter 1: Basics
  - Growth Environment
  - Definitions of logistics, SCM and SCM
- \* Chapter 2: The basics of the SCM
  - CPFR and forecasting techniques
  - GPA
  - VMI

- ECR and practice by using statistical programs for reactivity
- \* Chapter 3: best practices
- \* Chapter 4: 10 case studies
- \* Chapter 5: Business Supply Chain Manager

### 6. Conclusion

The questionnaire has been prepared based on its steps to achieve excellence. The steps:

Step 1: Identify the classifications of products and make sheets.

Step 2: specify the procedures and job descriptions and action sheets.

The Action Statement should include these elements:

- The product to be manufactured
  - The machine where there is a problem
  - What process: supply or production or distribution
- } case the procurement process must specify the raw material and raw material defects or lack of raw material.
- } case of the production process , it must specify whether it is a lack of tool failure adjustment maintenance task and the person who will perform specifying the time taken for repair.
- } case of the distribution process , you must specify whether it is due to a planning error , a breakdown truck, not ready in time finished products
- Corrective action :

Step 3: adapting techniques to improve productivity by analyzing the statistics of action cards (there is a logistics audit) and adapt best practices for organizing a maintenance department.

Step 4: Adapting the integrated logistics and cooperated

Step 5: invite consultants or invite students to training courses and projects according to the model described.

In the future, we will address more pertinent issues. We designed a survey to 30 in the capital of Tunisia

### References

- [1] Christian Hohmann Combined audit quality, supply chain organization editions, paris 2004
- [2] Robert Chapeaucou, Continuous improvement techniques in production, Wiley, The new plant