

A Study for Supply Chain Management Improvement

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Abstract—The management of multi-site enterprises is very complex. However, it is true that it allows an advantage compared to companies mono-site and this article proves it. In the face of competition from more and more fierce thanks to the globalization of trade, businesses are confronted today with the challenge of an faster responsiveness through an effective information system. It is in this framework that I have developed this article.

Keywords—supply chain management (SCM), B to B, information system, reactivity

1. Introduction

Research in the field of SCM is abundant. Indeed, a study by the Elsevier group found 6055 items newspapers for the period between 2000 and 2010. These articles [4] cover various topics: definition of SC, managerial and academic performance of SCM, SCM contribution of the different functions of the business relationship SCM and sustainable development, the relationship between SCM and systems and processing technologies and dissemination of information, etc.

The concept of SCM has as was the case for logistics undergone several definitions. In 1997, Bechtel and Jayaram found over 50 definitions of SCM classified into five categories. Copper and all [3] developed 13 major and Mentzer and all [7] more than 20 possible.

Recently, Stock and Boyer [9] were able to identify up to 166 SCM approaches in their attempt to provide a definitive definition. We are based on this article on the definition of the Council of Supply Chain Management professionals (CSCMP) association of 10,000 members of practitioners, consultants and teachers. "Supply Chain Management encompasses the

scheduling and the management of all activities Involved in sourcing and procurement, conversion and all logistic activities. Importantly, it also includes coordination and cooperation with channel partners, all which can be supplier, Intermediaries, third-party providers and customers' service. In essence Supply Chain Management Integrates supply and demand management within and across companies" [5].

This definition has its several aspects of all activities for the delivery of the product to the customer:

- Supply logistics
- Production logistics and support
- Distribution logistics
- Reverse logistics
- Logistics integration and cooperation

Bayraktar et al [1] identified three types of IS / IT. They were grouped into three categories The IS / IT "extended enterprise", the IS / IT integrators and IS / IT enablers. Those of the first type are the ERP systems. This is a Shared Database. ERP and allows that a coherent system and standardization around a common language [8].

The IS / IT integrators in the term are those enabling decision support in supply chain through better integration of information. One thinks of the APS (advanced scheduling systems), SCE (Supply Chain Execution), WMS (warehouse management system and management tools (transport management system) [6].

There are also the CRM (customer relationship management ship), SRM (supplier relationship ship management) [3]. On the facilitators, they can accelerate the dissemination and processing of information among partners. They allow GPA, GMA or CPFR.

2. Impact of IS / IT on the performance of the CL

Many were interested in the impact of IS / IT tools on the performance of the SC. They have proposed a conceptual model. They showed that the use of these tools has no direct influence on the performance but may improve due to the positive effect on integration. Note that the sharing of information allows for better integration and synchronization. Today, IS / IT tools allow visibility events related to performance of the sc. They allow rapid strategic and tactical decisions regarding the unexpected. Questions arise:

- What are the information to share?
- How to integrate this information?
- What is the need for real-time sharing of information?
- What are the coordination mechanisms?
- What is the appropriate level of information sharing?

3. Implementation of IS / IT within an SCM

The objective of this section is to illustrate the key success factors of IS / IT. This item [11] has a decomposition into 5 categories :

- Strategic Planning[2]
- Knowledge Management and Management IS / IT
- Infrastructure[10]
- E-collaboration
- Implementation

3.1. Strategic Planning

This is the construction of a common organization of the extended enterprise, developing original forms of cooperation. To do this, we must identify the needs IS / IT in a specific way

3.2. Knowledge management and management of IS / IT

Knowledge management is based on the ability to identify useful knowledge, formalize, store, communicate. It requires strategic alignment with partners, collaboration with local universities and training in IS / IT. Knowledge management of IS / IT requires planning, coordination and control of all activities.

3.3. Infrastructure IS / IT in SCM

The infrastructure of the IS / IT is divided into hardware, software, networks, databases,

installation, and HR services. SCM ERP CRM VMI CPFR are such systems

3.4. e-collaboration

The e-commerce can expand the number of trading partners, industry partners and create new services produced. B to B includes information sharing.

3.5. Practical implementation of IS / IT systems in the SC

The project requires

- Involvement management teams
- A change in the level of organization of the scm
- Visible and accessible information
- A change in the power games

4. Advice for SCM improvement

4.1. Advanced B-to-B

B to B has its advantages. Indeed, thanks to the sharing of data, the factory and the customer tend to reduce the cost of storage. However, advanced scientific methods do not exist in the literature for exploitation of data. This section illustrates a method. It is divided into three parts: simulation of the application of the simulation method (s, q) and simulation method (S, T)

a) Simulating the demand

We consider these statistics

dem	Cumulative Prob
20	10%
30	30%
40	80%
50	100%

We simulate with this program

Float z;

```
For(j=1;j<=30;j++)
```

```
{
```

```
Z=aleat (); (number generated between 0 and 10)
```

```
If (z<1) dem[i]=30;
```

```
If ((z>=1)&&(z<3)) dem[i]=30;
```

```
If ((z>=3)&&(z<8)) dem[i]=40;
```

```
If ((z >=8)&&(z<=10)) dem[i]=50;
```

}

b) Simulation method (s, q)

We use the method consisting of buying q quantities each time the level s is got. In the following, we develop the program.

```
Float rate_satisfaction(int s,int q)
{
  Int dem_total=0;
  Int dem_satisf=0;
  Int add_stock[31];
  Int stock=30;
  Int dem_incourse=0;int delay=3;
  Float z;
  For (int i=0; i<=30;i++)
  Add_stock[i]=0;
  For (int i=0;i<=30;i++)
  {
    Dem_total=dem_total+dem[i];
    If (add_stock[i]<>0) dem_incourse=0;
    Stock=stock+add_stock[i];
    If (stock>=dem[i])
    {
      Stock=stock+dem[i];
      Dem_satisf=dem_satisf+dem[i];
    }
    If (dem_incourse==0)&&(stock<s)
    {
      If (i+delay<=30) then add_stock[i ]delay]=q;
      Dem_incourse=1;
    }
  }
  Z=dem_satisf/dem_total;
  Return(z)
}
```

c) Simulation method (S, T)

we use the method consisting of making the stock reach s each T times. It consists of changing the code in the case where the delay=0 by:

```
if (i%T==0) stock=S;
```

Then to determine the optimal parameters, it suffices to vary q and s or S and T so as to achieve the desired level of satisfaction.

4.3. Requirements at the SI for a quick response

Before developing the supplements at the SI to achieve rapid response, we must first explain the first two essential steps:

Step 1: Identify classifications and make product descriptions

Step 2: specify the procedures and job descriptions

The following step is to record details of the action: Indeed, the action sheet should include:

- order
- the product to be manufactured
- what process supply, production or distribution.

If it is the procurement process, it must be specified if it is one of these two cases:

- Default-raw materials (RM)
- Lack RM

It should also establish the causes and the period set to the end of the problem. If this is the production process It should be noted if it is one of these cases

- A fault with the type
- A lack of tool
- problem with a too

Then, it should be noted
-Timing operation of putting the end of the fault
If this is the distribution process
It should be noted if it one of these cases

- A defect-planning
- Breakdown truck
- Non-lending products in time

The action must be described with timing. This form of action embedded in a shared database enables quick response. It must propose the people involved in the action. We tried to implement in the company LEONI Wiring in Tunisia. I develop in the following advantages of this form of action. In the following, we develop the possible improvement in leoni.

First, I want to clarify that the OOSMED method (optimized smed organization) is to assign the setting for the best adjuster it's the same thing for OOMAITENANCE. The improved AMDEC is to replace criticality rate of improvement in productivity.

The following table is obtained:

Table 1.

	oosmed	oomaintenance	Amdec improved
before	Non applicable	Non applicable	difficult
after	applicable	Applicable	easy

5. Conclusion and Outlook

This hard work is the fruit of a deep understanding of gaps if present in all businesses. I note that this form of action allow visibility and transparency of cl. It did not address risk management. A work in progress is getting to be developed. It is better APR method combining elements of improvement actions. The latter approach aims to achieve a specification of an expert system. We note that we can never rob us of meetings but it will reduce their frequency.

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