

## **Supply planning and execution**

The supply function mission is to satisfy a demand with a delivery, taking into account the company objectives and the environment constraints.

Optimize this function is the object of an increasing interest, particularly the planning part, highly critical because of its direct influence on sales, logistics costs and inventories financial cost.

During the 10 ultimate years we noticed a strong growth of IT offers relative to supply chain planning, and for these last years we identified the development of advanced offers of APS (Advanced Planning and Scheduling).

Among the main IT offer we find Manugistics , ILOG , i2 Technologies, Logility, SynQuest, InterTrans, , Numetrix, SKEP, AZAP, SLIM.

Moreover, the main ERPs (Enterprise Resource Planning) have develop very efficient specific modules in this field. We can list in particular SAP (SCOPE / APO), PeopleSoft (ERO), Baan-LN (SYNC), J.D. Edwards (One World – completed with ILOG technology). See Free-Logistics spec sheet "Supply Chain Planning SCP"

### **The supply function**

The supply function intervenes on 3 types of flows:

- physical: products or provided services,
- information: sending and receiving of follow-ups data
- administration: orders, invoices, delivery notices, receiving orders, delivery disputes ...

The supply function goals vary according to the context of each company.

They can be, for example:

- Improve the service rate
- Reduce lead times
- Increase profits or margin
- Reduce costs
- Optimize the production device

The supply function will be generally driven by three main indicators (see free-logistics.com spec. sheet " KPI Supply "):

- service rate or product availability rate
- stock level
- costs relatives to the supply activity

## **The supply process**

This process intervenes at strategic, tactic and operational level.

### Strategic Supply Planning (Supply Chain Network Design)

Realized annually, generally for the annual budget building.

It allows the supply chain and logistics network dimensioning.

See free-logistics.com spec. sheet « Supply Chain and Logistics network dimensioning »

### Tactic Supply Planning (Supply Planning)

Realized quarterly to monthly according to each company.

It aims at the Supply Chain optimization, without modification of the existing logistic network structures.

It allows, for example, communication of supply plans to suppliers, Collaborative Planning Forecasting & Replenishment (CPFR) in order to insure the suppliers' capacities availability, warehouse and transportation resources sizing and communication with 3PLs ...

### Operational Supply Planning (Supply Scheduling)

It contains planning and execution activities and is realized, according to companies, with a weekly, daily or even multi-daily rhythm. We detailed after the execution steps of this process

#### *The demand forecast*

The operational planning process is based on demand forecast process results(see free-logistics.com specification sheet "Sales forecasts ").

#### *The operational supply planning*

After sales forecasting intervenes supply planning function.

It consists in translating the demand forecast in a realistic supply plan taking into account:

- existing inventory levels,
- orders sent to suppliers not received yet,
- suppliers purchasing conditions (lead times, minimum order quantity, packaging, discounts...)
- planning horizon determined by the defined stock rules
- service level goals by customer
- material and capacity constraints (warehouses, transport)

And this, looking for optimization according to the company objectives (reduced costs, profitability, service).

The supply person will have to decide on the best planning option. For that, he will have to answer to the following basic questions:

- When and how much supply from this supplier?
- When must the product be available?

Taking into account the environment constraints:

- Supplier capacity (tools and human, taking into account seasonality)

- Production capacity (tools and human, taking into account seasonality)
- Warehouses capacity (surfaces and human, taking into account seasonality)
- Transportation capacity (trucks and human, taking into account seasonality)...

*The supply planning execution, Order Management*

The ultimate step is the supply planning execution, also called Order Management.

This last one process consists in:

- produce the orders
- pass on them to the suppliers
- follow the delivery or manage the transport (according to the chosen Incoterm),
- solve eventual disputes
- facilitate the invoices matching

See Free-Logistics spec sheet "Supply Chain Execution SCE"

It is highly recommended to set up Electronic data interchange (EDI) to enhance reliability and make more productive this part of the process. See Free-Logistics spec sheets "Electronic Data Interchanges EDI" and "EDIFACT main Messages"

*See also spec. sheets:*

Wilson Formula economic order quantity

Kankan