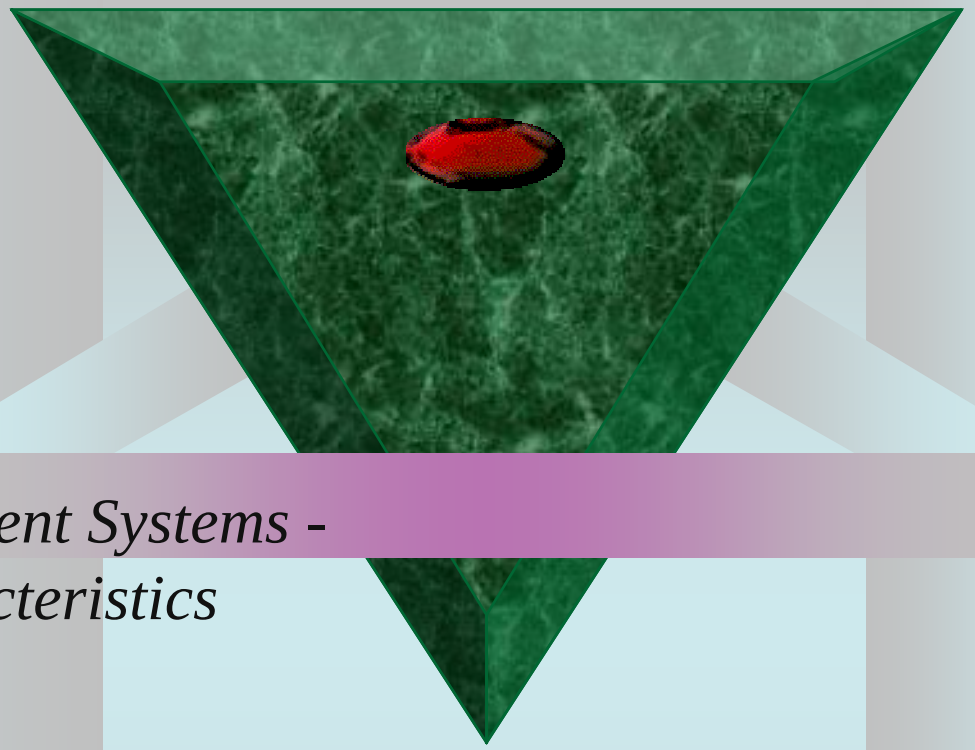
# Informatics For Business Administration



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## Chapter 4 Supply Chain Management (SCM) systems

# 4.1 Definition

**The supply chain can be defined:**

*„as a network of suppliers, manufacturers, distributors, retailers, and customers that are linked by information, wares, and capital that move among the participants.”* [1]

**Supply chain management (SCM) is the conduct of the interrelated elements among the supply chain's functions, like procurement, logistics, and inventory management, as well as the interactions between the firm and outside companies within the supply chain.**

[1] Business and Competitive Analysis: Effective Application of New and Classic Methods by Craig S. Fleisher, Babette E. Bensoussan, FT Press,2007

# Definition

**In a general context, SCM can be defined as „***the systematic, strategic coordination of traditional business functions and the tactics across these business functions within a particular company and across these businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole”.* **[1]**

**Supply chain management is „the close linkage and coordination of activities involved in buying, making, and moving a product.” [2]**

**[2] Kenneth & Jane Laudon – Essential of Management Information Systems, Fifth Edition, Prentice Hall, Pearson Education International, 2003**

# Definition

**American Production and Inventory Control Society (APICS, 1998) gives to SCM the following definitions:**

*„The processes from the initial raw materials to the ultimate consumption of the finished products linking across supplier-user company";*

*„The planning, organizing, and controlling of supply chain activities."*

# 4.2 Supply Chain Management Systems - processes, flows, and characteristics

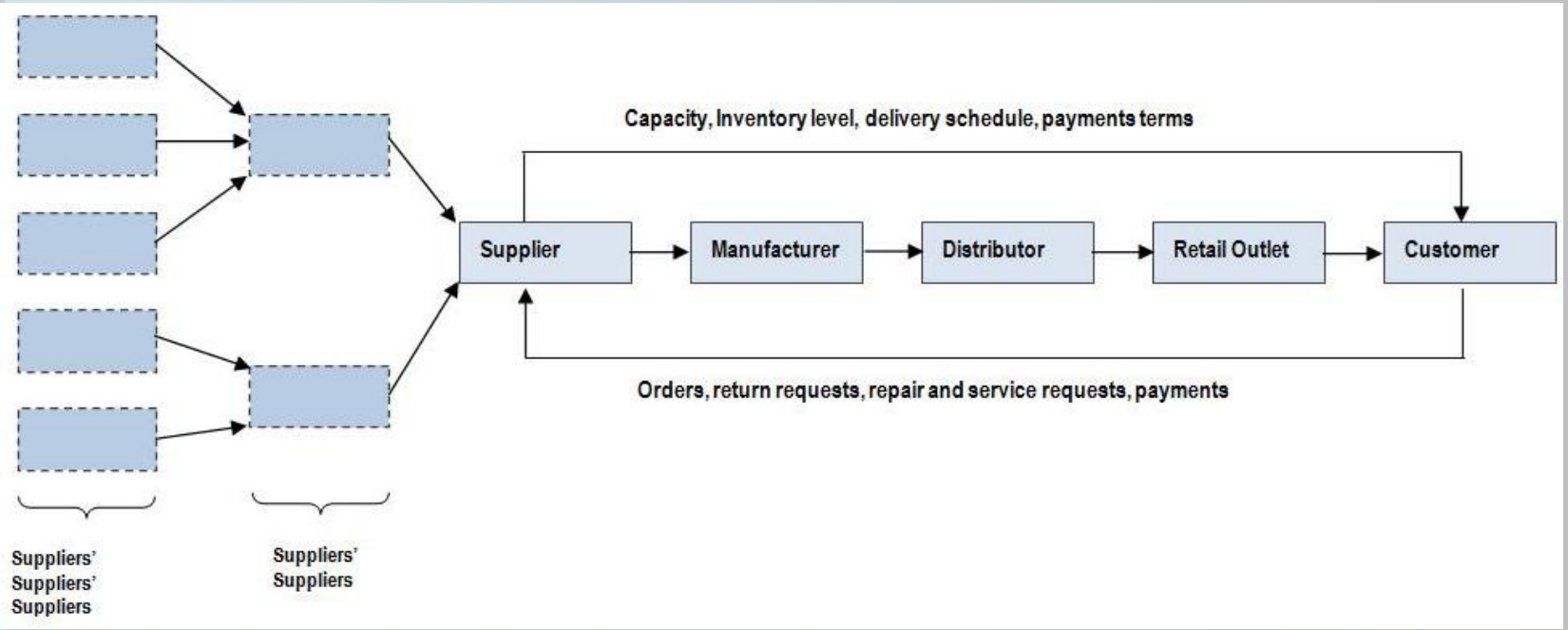



**Figure 4.1 Supply chain management (Source: Kenneth & Jane Laudon – Essential of Management Information Systems, Fifth Edition, Prentice Hall, Pearson Education International, 2003)**

Major flows of activity:
-Internal;
-Upstream;
-Downstream.

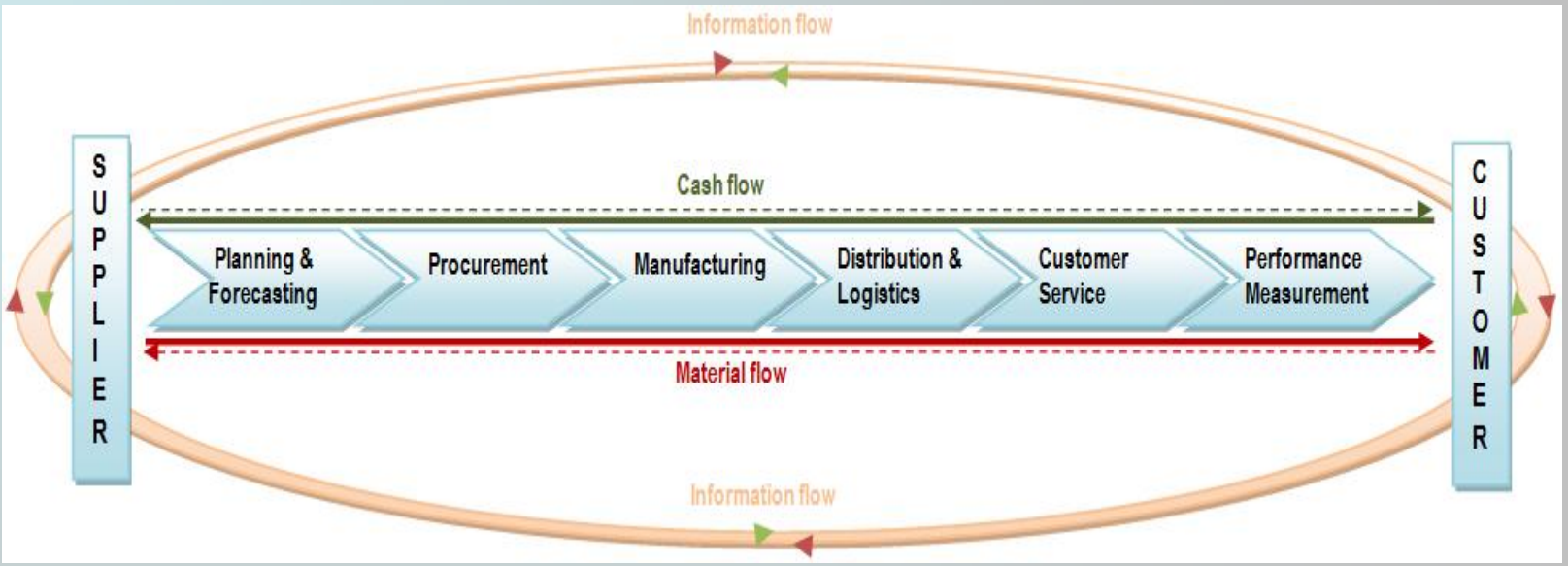



**Figure 4.2 SCM internal activities and flows**

**Flows:**
**- information/data flow;**
**- raw material/product flow;**
**- financial flow.**

**Supply chain collaboration can be divided into two segments:**
**- Organizational;**
**- Inter-organizational main results:**

- ***Increased integration of the entire supply chain*;**
- ***Improved customer service;***
- ***Reduced supply chain costs*.**

**Effective supply chain characteristics:**
**-Flexibility;**
**-Coordination.**

# Supply chain strategies

Can be divided into two categories:

- S**trategic** (S) - a long-term set of goals and initiatives that aligns with the corporate strategy;
- O**perational** (O) - a set of short-term goals that focus on the day-to-day decisions.

# Supply chain strategies

Four areas in supply chain management - location, production, inventory, and transportation - that require decisions, strategic and operational, to be made:

- **Location** - define production, stocking, sourcing points, and possible paths of product flow. They are strategic in nature and outlines how to access the market and impacts revenue, cost, and level of service.

- **Production** - are operational strategies that define the types of products to be produced (the day-to-day tasks are mapped, including production schedules, workload balancing, and quality control measures affecting revenue, costs, and customer service).

# Supply chain strategies

- **Inventory** - are operational strategies including deployment and control policies that determine optimal levels of order quantities, reorder points, and safety-stock levels - since inventory exists at every stage of the supply chain.

- **Distribution** - with both types strategies: strategic, when determining how to ship, and operational, when determining the shipping schedules.

# 4.3 SCM problems

- **Bullwhip Effect – stockpile inventory;**
- **Coordination – bad->bottleneck.**

# 4.4 SCM systems

## 4.4.1 SCM Characteristics

Kenneth & Jane Laudon -> supply chain management systems fits into two broad categories:

*supply chain planning* and *supply chain execution*

**Supply chain planning systems:**

- Order planning;
- Advanced scheduling and manufacturing planning;
- Demand planning;
- Distribution planning;
- Transportation plans.

**Supply chain execution systems:**

- Order commitments;
- Final production;
- Replenishment;
- Distribution management;
- Reverse distribution.

# 4.4.2 Supply-Chain Operations Reference-model (SCOR)

Supply-Chain Operations Reference-model (SCOR) is a process reference model that has been developed and endorsed by the Supply-Chain Council (SCC) as the cross-industry standard diagnostic tool for supply-chain management.

SCOR enables users to address, improve and communicate supply-chain management practices within and between all interested parties.

The SCOR-model has been developed to describe the business activities associated with all phases of satisfying a customer's demand.

The SCOR model looks at SCM from a strategic, rather than operational or design perspective and should therefore be more helpful to analysts looking to analyze SCM for business and competitive purposes.

# SCOR

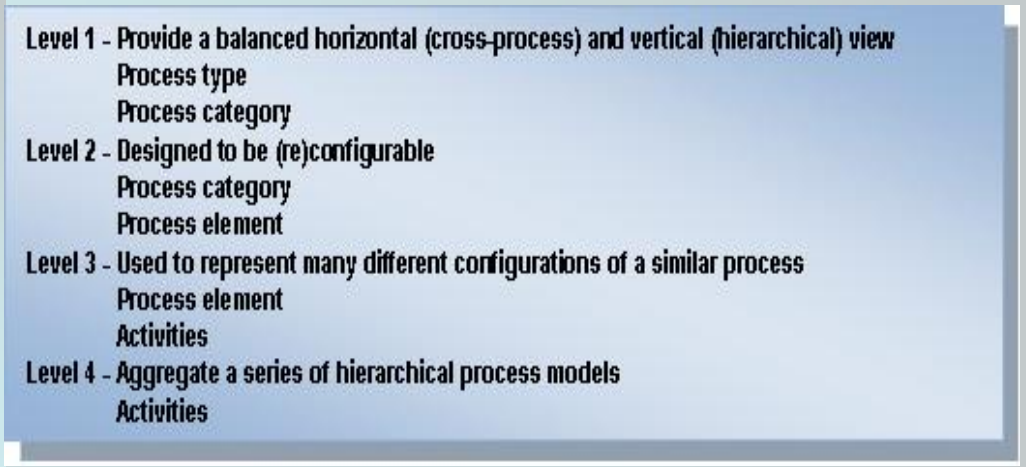



Figure 4.3 SCOR processes stack

**SCOR model identifies three levels of process detail (figure 4.3):**

**- Level I - process types;**

**- Level II - process categories;**

**- Level III - process elements**

**- Level IV and lower - activities.**

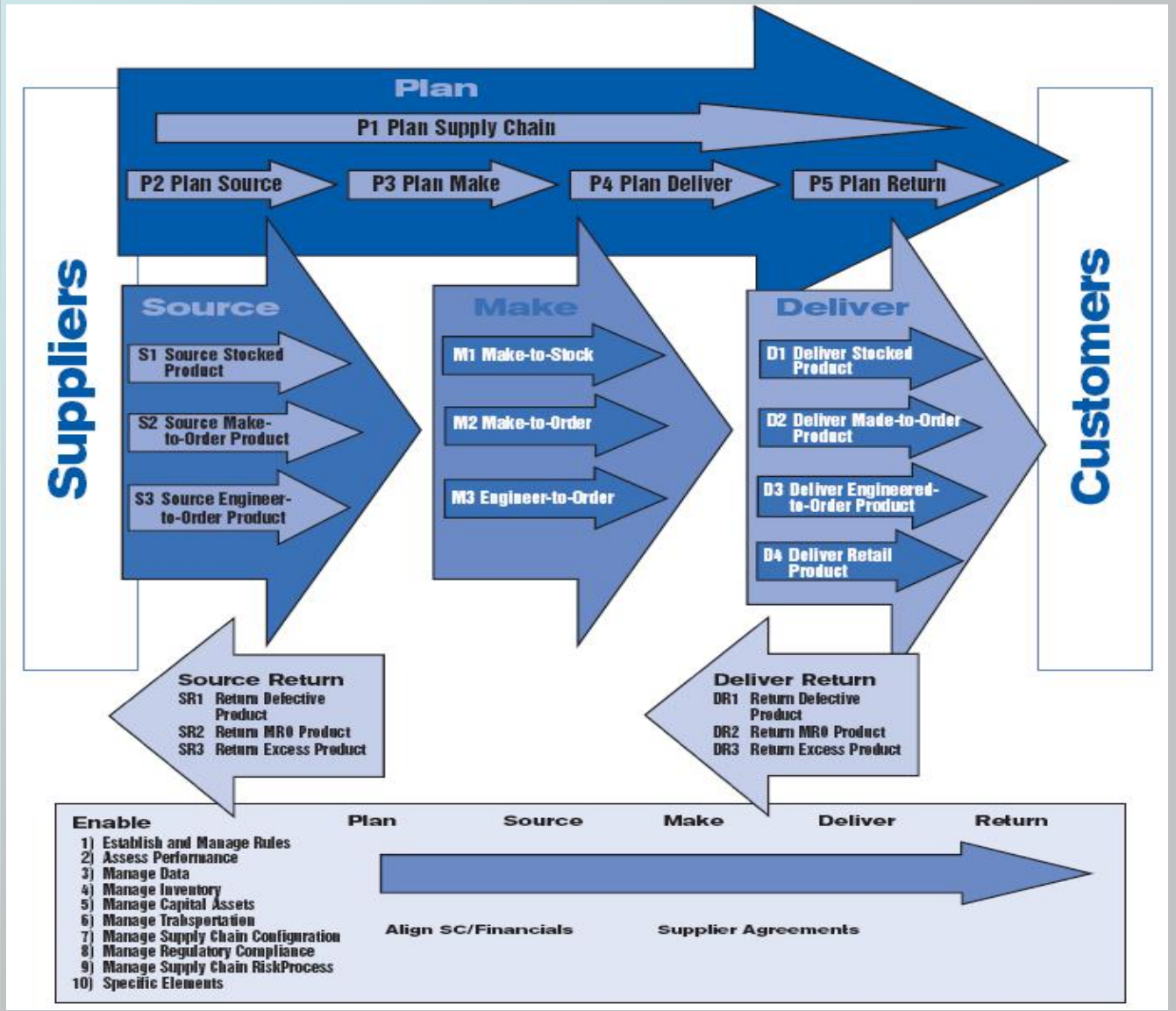
# SCOR

A supply-chain configuration (figure 4.5) is driven by:

- **Plan –** that implies levels of aggregation and information sources;
- **Source –** that specifies locations and products;
- **Make –** specifying the production sites and methods;
- **Deliver –** defining channels, inventory deployment and products;
- **Return –** specifying the locations and methods.


**Figure 4.5 A supply chain configuration**

# SCOR Model (figure 4.6)




**Process types:**
**-planning;**

**-execution;**

**-enable.**

# 4.4.3 Oracle SCM

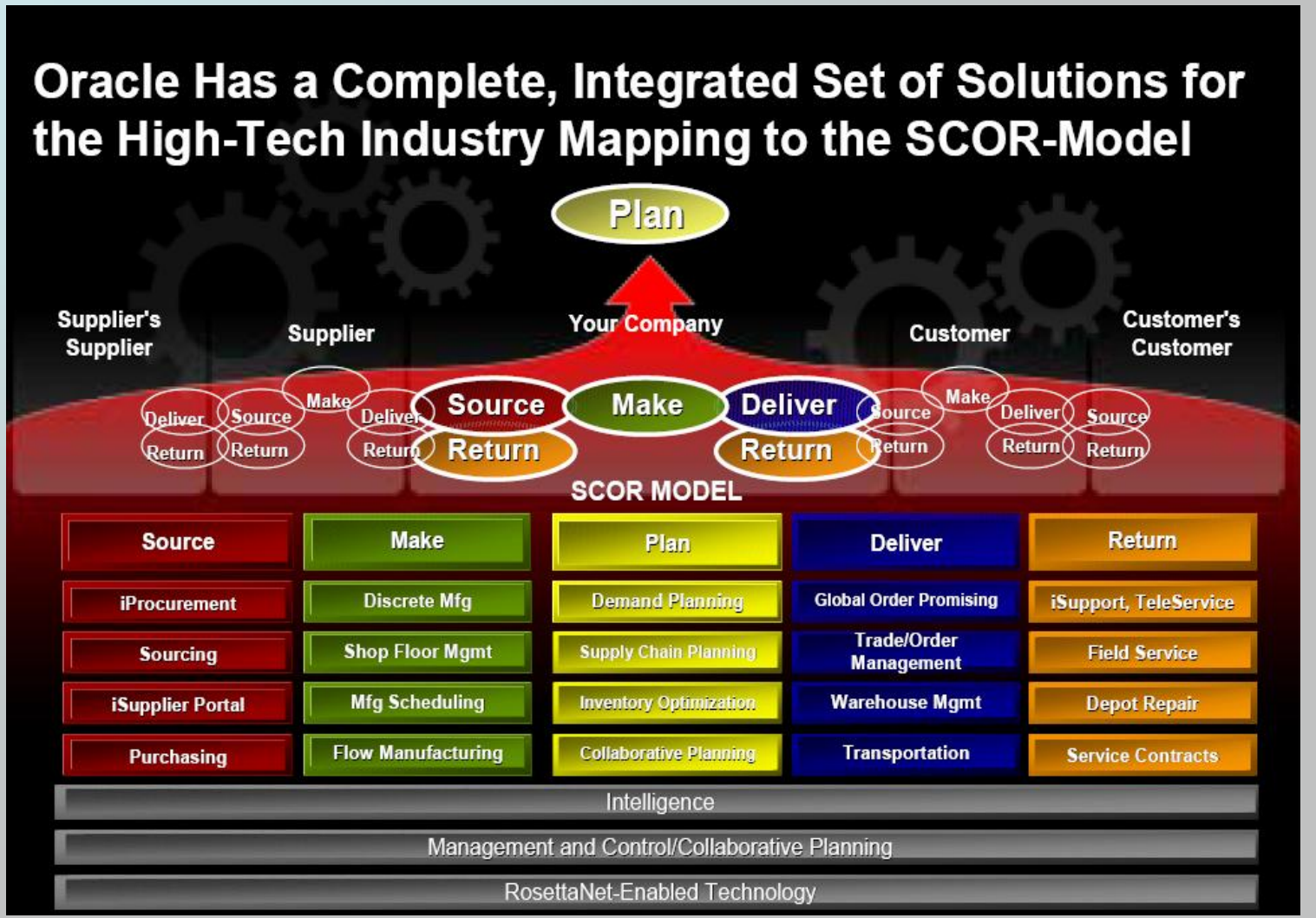



**Figure 4.7 Oracle SCM based on SCOR model**

# 4.4.4 SAP Supply Chain Management

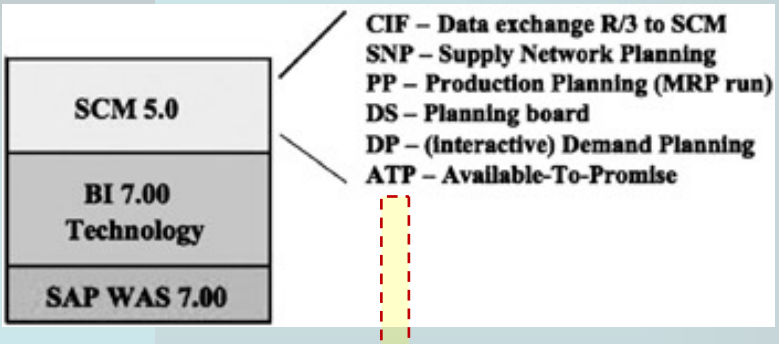



Figure 4.8 Technical layers and functional modules of SCM Figure

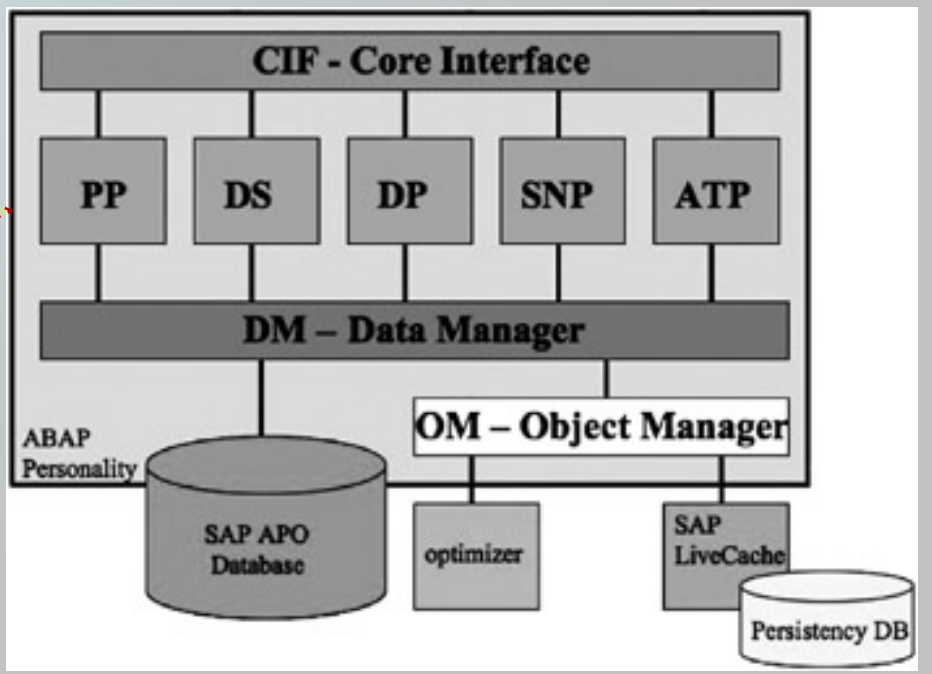



Figure 4.9 SAP APO building blocks

# SAP InfoCube

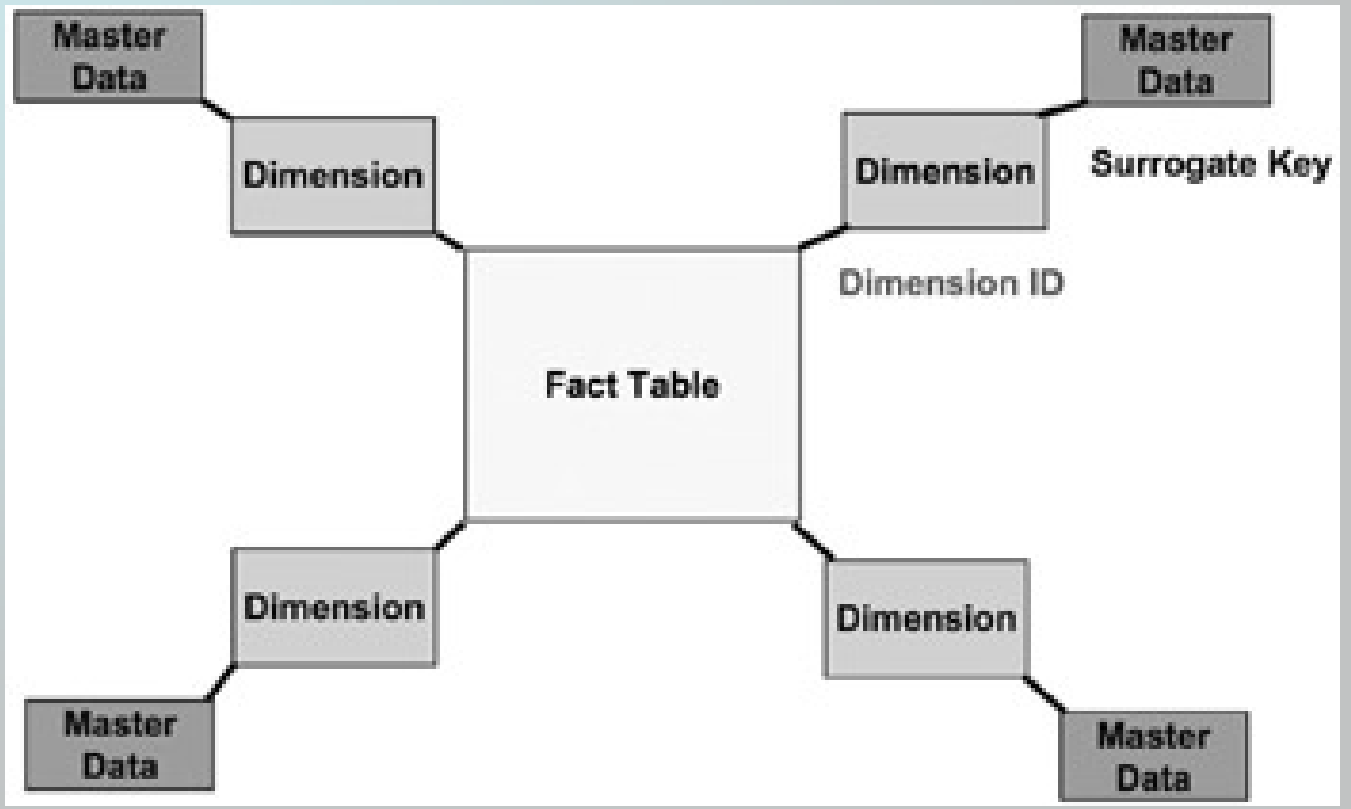



**Figure 4.10 Technical layout of an SAP InfoCube (©Copyright SAP AG)**

# There are several categories of application software: - Back-office; Front-office; ERP; - eApplications.

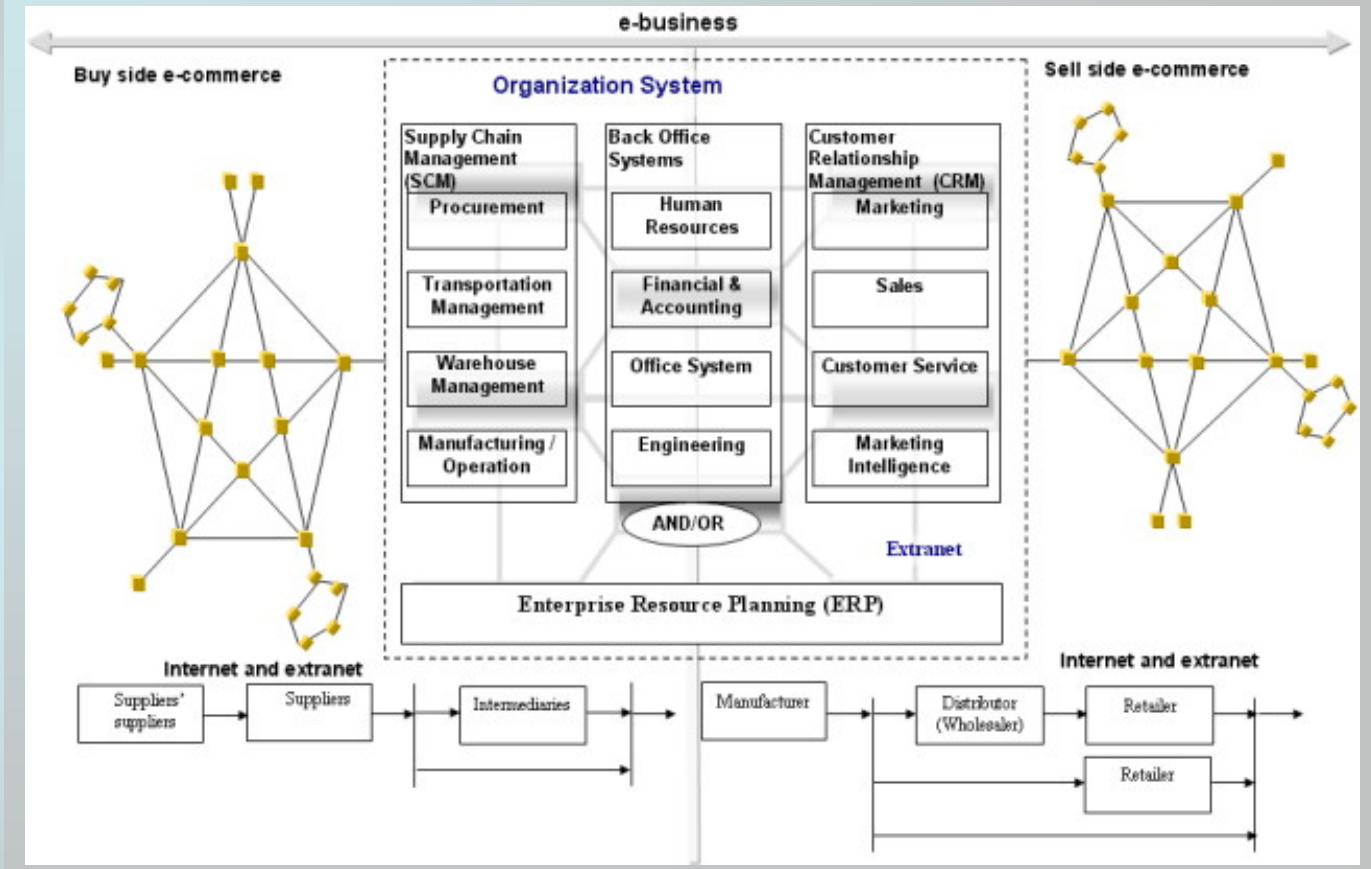



**Figure 1.4 The extended company and management of customers and suppliers relationships** (Source: Internet Technologies for Business - Business categories and models in Internet, Vasile Avram, http://www.avrams.ro)