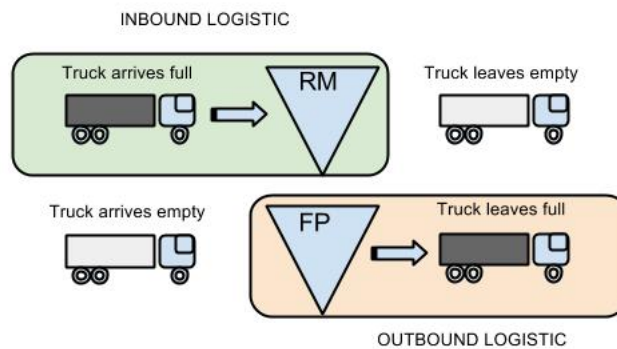**3dConsulenze**

1. SUPPLY CHAIN**ED** MANAGEMENT

The process that perhaps more than any other has revolutionized the way in which businesses operate is the supply chain. A proper supply chain allows companies to manage the ever increasing complexity.

Today we look at this process as a flow of incoming raw materials and outgoing finished products, along a time horizon. In other words, the supply chain and ERP systems that allow the management, are based on the concept that the demand (order or forecast) pulls the supply chain. The methods with which to satisfy the demand can obviously vary depending on the raw materials, the production and products, but the fact is that the demand acts as "triggers" in the time t.

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The Supply Chained introduces the concept of "concatenation" of supply chain processes that continue to be demand-driven but over different time horizons (it is a sort of "quantistic demand"). Deliveries to the plant are concatenated (chained) to shipments to customers.

The relevant issues are numerous and complex. They are in fact processes triggered from different demand with different timing that are happening at the same moment and the concatenation of which, allows huge benefits. In the case of deliveries of RM, for example, the same truck will be used for shipments of FP relative to a front planning.

We can say that the planning of RM "pulled" by demand in time t must be concatenated with planning of FP "pulled" from demand over time t-1.
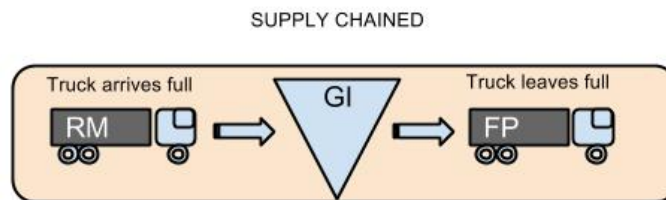
SUPPLY CHAINED

As we saw inbound and outbound logistics may benefit from the supply chainED. What about the rest of the company? Let's try to analyse.

If we give a look to the phisical flows inside a plant we see a lot of potential benefits as well. How long does a forklift is spinning empty in the company? What are the reasons why this happens? The physical flow of materials handling can be completely redesigned for the benefit of greater efficiency due to supply Chained. To do this we must take a further conceptual leap:

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Why in all ERP systems we need to indicate if a product is a finished product or a raw material? This division in the design of the supply chained, no longer makes sense to exist. All of them are items. The item is contributing to the construction or assembly that are sold as finished products are materials and as such all stored in the *same warehouse*.

From a warehouse for raw materials and one for finished products, to a single warehouse for items. Beyond a purely economic convenience in building a single large WH instead of two small, the advantages are considerable and we will list them below.

1. No more distinction between Raw Materials and Finished Products.
   Today all ERPs to perform correctly need to specify if an item is about to be bought (ie: raw material) or to be produced (ie: finished product). This information is used mainly for:
   a. the planning systems that will take into account those items.
   b. the warehouses that will store the items
   c. the orders (purchase orders/production orders) that will generated or inserted in the system.

In the new supply chained concept, all items are treated without those differences because the driver is just the specific customer that is requesting the item. For raw materials, the customer is the production. Only purchase orders will be generated by the planning system, where the "supplier" is external or internal the company.

In the General Warehouse all the items will be stored in specific locations for maximum efficiency. Items both bought (to be delivered) and sold (to be shipped) will be stored in locations with same rotation to benefit from optimal forklift usage. Infact it is the same forklift that will store the purchased item and pick the sold one.

The Supply ChainED planning system will organize the picking list together with the putaway list to optimize the phisical flow of the items. Inbound and Outbound logistics will be treated as a single "chained" process.

Huge benefits will be obtained in trasportation as well and will be described in the next paper.