

UNIT – 4

LOGISTICS & SUPPLY CHAIN MANAGEMENT (25%)

WHAT IS LOGISTICS MANAGEMENT?



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- Logistics and transportation are two very important parts of transportation and distribution services, and they are different. Transportation is the movement of goods and logistics is the management of the inward and outward transportation of goods from the manufacturer to the end user. These terms are often used interchangeably, but they are two extremely different part of the supply chain. Logistics and transportation deals with getting products and services from one location to another.
- Although logistics and transportation are used interchangeability, the differences are simply logistics deals with the integration of storage, transportation, cataloging, handling, and packaging of goods. Transportation deals with the function of moving products from one location to another.

Logistics refers to what happens within one company, including the purchase and delivery of raw materials, packaging, shipment, and transportation of goods to distributors.

Definition – Logistic Management

- 1. Logistics Management** involves getting your products to your customers on time, in the correct quantities, in good condition at the right price. This includes overseeing transportation, as well as storage of materials, production and inventory management. Logistics also includes the packaging of products for storage and shipment. Logistics involves both internal and external distribution networks.
- 2. Logistic Management is** “that part of supply chain management that plans, implements and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customer’s requirements”.

The Difference between Logistics vs. Transportation

Although both transportation and logistics deal with getting valuables from one location to another, logistics has added benefits and functions. Logistics executives also have to make decisions dealing with packaging, containerization, documentation, insurance, storage, importing and exporting regulations, freight damage claims, working and collaborating, managing vendors and partners, and risk mitigation. Even though these terms have been used as a substitution for each other, the key differentiators are that logistics deals with the integration of storage, transportation, cataloguing, handling, and packaging of goods while transportation deals with the function of moving products or individuals from one location to the next.

Important Tips For Effective Logistics Management Include:

- Proper planning is the first step to accomplishing a task. Planning involves obtaining the products, facilities to store the good before delivery, and transportation of products to the end users.
- Automaton plays a major role in increasing the efficiency of a transportation company. Automation has a vital role in optimization.
- Value relationships or the team is an essential aspect of a transportation organization. The team is responsible for growth. From the delivery guy or the warehouse manager, logistics means training employees and having a logistics manager with interpersonal skills. Logistics

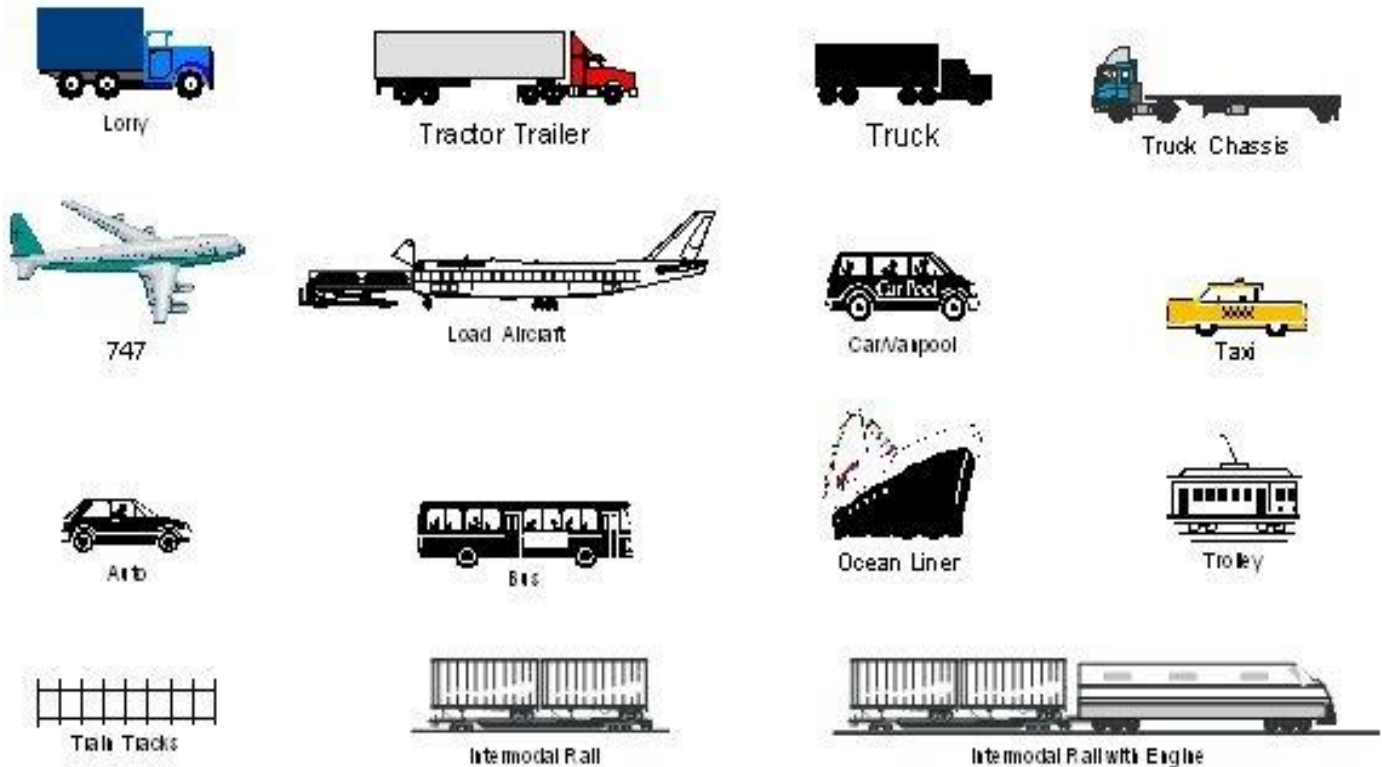
requires an emergency back up plan and a reliable person who can sort out problems and issues.

- Warehouse management is part of effective logistics management. Warehouse operations are dependent on the type of goods you are handling as well as the logistics manager.
- A good logistics network optimization needs to integrate analysis, feedback, and measurement. When a logistic manager deploys new strategies in the system, you need to analyze the output. Analyzation is important as it regulates the success or failure of the industry.
- Adapt the latest technology and innovative approaches to transportation and distribution services. Effective logistics management is constantly evolving to improve the efficiency of operations, ensuring customer satisfaction, and increasing productivity.

Logistic Management – Modes of Transportation

Top 5 Modes of Transportation in Logistics

1. Road Transportation.
2. Rail Transportation. ...
3. Marine Transportation. ...
4. Air Transportation. ...
5. Intermodal Transportation.



1. Road Transportation: There are many advantages to road transportation, especially for companies who rely on fast delivery to retain their customers. If goods are meant to be transported immediately, your best bet would be ground shipping transportation. Water transport is notoriously slow, and it can be a hassle to book railway transportation.

However, there are roads that lead to pretty much everywhere, and are built and paid for by the government; more often than not, you'll only have to pay a small fee to use them. Roadway transportation can also be cost-effective since it provides **door-to-door or warehouse-to-warehouse service**. This allows cartage, as well as loading and unloading expenses, to be significantly lower compared to other methods.

2. Rail Transportation: Railway transportation is arguably the most dependable method of transport and pretty much anywhere else. Unlike road and marine transport, rail is hardly affected by weather conditions. Transport trains will run in rain, fog, snow, and other conditions that would otherwise delay shipments carried by other methods. With fixed schedules that run regularly, railway service is more certain compared to other methods of shipment.

Rail transport also offers huge carrying capacities, which can grow to fit your needs. Unlike trucks or boats, which have a fixed amount of space that can't be exceeded, additional wagons can always be added to trains if you need more room. In addition to all the benefits for you and your company,

you'll also be giving great opportunities to surrounding communities. Rail transport can provide employment opportunities to both skilled and unskilled workers, making it a positive choice for the entire community. The biggest disadvantage, however, is that if there are delays in the transportation, it can actually take much longer to get your freight delivered than with other methods of transportation. With rail transportation, you need to schedule container drop off and pick up at the terminals which could end up taking a long time.

- 3. Marine Transportation:** Marine transportation is notoriously slow, but that doesn't matter when a product has a long lead time. This is a great option for those looking to ship bulky items that aren't in much of a rush. Often cheaper than road transport, ships are usually the main cost that you'll incur—you won't have to worry about road tolls and other similar charges. While roadway transportation can easily be delayed by rain or other types of inclement weather, the same conditions may not affect marine transport.

The main disadvantage of marine transport is that it can be **difficult to monitor the exact location** of the goods in transit, which can be a deal-breaker for some. As you've read in our past posts, being able to track freight is a common expectation of consumers who order things from online retailers and can affect their purchase decision. While there are many advantages to marine transport, the downside of the lack of ability to closely track the exact whereabouts of the specified freight can be crucial.

- 4. Air Transportation:** Air transport is extremely useful for many reasons: it's convenient, fast, and doesn't have to compete with natural barriers. While road transport is the quickest way to deliver goods that only have a short distance to travel, **air transportation is the fastest option for freight** that have a further destination—it's even regarded as the best mode of transportation for perishable goods for this reason.

In addition, air transportation doesn't require the infrastructure investment that railways do; airplanes fly freely, which means you don't need to spend the initial cash building a pathway to your destination for it to get there! The lack of barriers also means that it's accessible to all areas, regardless the obstruction of land. However, one main disadvantage is that planes can easily be affected by pretty much any type of inclement weather. Whether it's rain, snow, or high winds, your shipment is likely to get delayed if any weather condition becomes extreme.

5. Intermodal Transportation: As you've probably noticed through reading this post, each method of transport has its advantages and disadvantages. What if you could combine the pros of each method to create one innovative method? That's exactly what intermodal transportation is.

Intermodal transportation offers the best of both worlds: it combines various transportation methods to give you the fastest shipping time possible. Not only is this method time-efficient, it's cost-efficient as well. More shippers are taking advantage of the option to reap the benefits of the cost savings, environmental benefits, and highway safety results. With the lower rates, predictable pricing, standardized transit schedules, and flexibility, intermodal transportation is continuing to rise in popularity.

Conclusion: Each mode has its advantages and disadvantages for its role in the supply chain. A primary responsibility of logistics managers worldwide is calculating what the best mode is for a specific shipment. Each factor comes into play: volume, speed, distance, and cost. What traits are important to your company? Do you value speed over cost, cost over volume, volume of distance, or the exact opposite? By knowing what mode is best for your company, you can make the decisions necessary to grow your business and create a winning supply chain.

Characteristics	Rail	Road	Pipeline	Air	Water
Door to door service	Sometimes	Yes	Sometimes	No	Sometimes
Price	Low	High	Very low	Very high	Very low
Speed	Slow	Medium	Slow	Very fast	Very slow
Reliability	Medium	Medium	Very high	Very high	Low
Packaging needs	High	Medium	Nil	High	High
Risk of loss/damage	Medium	Medium	Very low	Low	Medium
Flexibility	Low	High	Very low	Very low	Low
Environmental impact	Low	Medium	Low*	High	Low

* Possibility of disaster causing significant impact

Warehouse

A warehouse is a commercial building generally used for storage of goods and warehousing is the process of proper storage and handling of goods and cargo using scientific methods in the warehouse and making them available easily and smoothly when needed. In recent days, warehousing is considered as one of the most important aspect of trade.

Warehousing

Warehousing is a place where goods and products are stored prior to it being distributed, sold or used. The act of re-position of material is called as **warehousing**.

Through warehousing or warehouses, the businesses or companies can store our products in big godowns and protect them from various uncertainties. These warehouses are used by wholesalers, importers, exporters, customs, etc.

Objectives of Warehousing

1. Primary Objectives-

(i) Deployment Of Marketable Goods - In this first objective or importance of the objective of warehousing, warehouse caters the various needs of the marketing function of the company. Any company is not so famous that it has an advance order to supply. Moreover, production and supply have a genuine time difference.

The finished goods are deemed for future delivery in warehouses.

(ii) To Meet Consumption Requirement - The production process of companies does not work according to market needs in general. Once the product is manufactured it is stored in order to maintain the economies of production, the availability of labor, raw material, and fashion in the market.

2. Secondary Objectives-

(i) Speculative Purpose- In this objective of the importance of the warehousing, some traders used warehouses to dump goods and create artificial scarcity of the item in the market. Because of scarcity increases prices in the market, these traders earn surplus profit by providing them at increased prices.

(ii) As Production Against Anticipated Supply- Sometimes, goods are kept in warehouses to cater to anticipated demand in the future. Through this factor, the prices of products are also can be affected.

Functions of Warehousing

It includes various basic functions of warehousing like:

- 1. Storing Function-** This is the first functions of warehousing and it means that the warehouses help to store all the materials or goods or products in the safe and the secure manner. The warehouses are protected from various uncertainties like damages, uncertainties, etc.
- 2. All-Around Function-** In this functions of warehousing, the warehouses play a combo role between the **vendors** and the manufacturers because it helps to receive materials from both manufacturers and vendors and distribute according to their purpose.
- 3. Stabilization Of Prices-** Warehouses play an efficient role in the process of price stabilization. It is managed by the formation of time utility by warehousing services. Fall in the costs of materials when supply is in abundance and exceeds in their costs during the break season is avoided.
- 4. Service Function-** This is the fourth functions of warehousing and it means that the warehouses are work for providing the services to our customers and dealers. So, they provide prompt and efficient services to customers with the protection of their goods or materials.
- 5. Financing-** In this function, the warehouse's owners or dealers finance the customers against various securities of goods deposited in warehouses. It can act as a security and protection factor for our customers.
- 6. Information List:-** In this functions of warehousing, the warehouse owners or carers share the list of damage, wastage, and likeage to the customers or dealers of a particular product.
- 7. Packaging-** In recent days, warehouses provide the facilities of packaging, grading, and processing of goods. They packed up goods in their convenient sizes as per the guidelines and instructions of the owner.

5 Basic Functions of Packaging in Marketing a Product

Packaging performs five basic functions:

1) Protection 2) Containment 3) Information 4) Utility of use 5) Promotion

- 1. Protection:** One of the major functions of packaging is to provide for the ravages of time and environment for the natural and manufactured products. The protection function can be divided into some classes viz.

A. Natural Deterioration: It is caused by the interaction of products with water, gases and fumes, microbiologic organisms like bacteria, yeasts and moulds, heat, cold, desiccation (dry environment in deserts and high-altitude areas), contaminants and insects and rodents.

B. Physical Protection: The packaging is also used for physical protection, which include improving shock protection, internal product protection and reducing shock damage caused from vibration, snagging, friction and impact..

C. Safety: A special kind of protective packaging is required for products that are deemed hazardous to those who transport them or use them. These product include highly inflammable gas and liquid, radioactive elements, toxic materials etc. The packaging should also be done so that children could not easily use or dispose them

D. Waste Reduction: Packaging also serves to reduce the amount of waste specially in case of food distribution

- 2. Containment:** This involves consolidation of unit loads for shipping. It starts with spots of adhesives on the individual shippers that stick them together, straps of steel and plastic, entire shrouds of shrinkable or stretchable plastic films and paper or corrugated wraps that surround an entire pallet of product.

There are some special bulk boxes or pallet bins made from unusually strong corrugated board or fabricated form plastics or metal, the method of which depends on the type and weight of product and its protective needs. The cargo containers made of aluminum used to hold many pallet loads of goods can be transferred to or from ships, trains and flatbed trucks by giant cranes.

- 3. Information:** The packaging conveys necessary information to the consumers. The common information that packaging provides include general features of the product, ingredients, net weight of the contents, name and address of the manufacturers, maximum retail price (MRP).

Packaging of medicine and some food products is required to provide information on methods of preparations, recipes and serving ideas, nutritional benefits, and date of manufacturing, date of expiry, warning messages and cautionary information. Sometimes, the colour of the packaging itself provides some information. For example, orange colour of the bottle of Mirinda or Fanta conveys the information that these brands are of orange coloured soft drinks.

- 4. Utility of use:** The convenience packaging has been devised for foods, household chemicals, drugs, adhesives, paints, cosmetics, paper goods and a host of other products. This type of packaging includes dispensing devices, prepackaged hot metals, disposable medical packaging.
- 5. Promotion:** Companies use attractive colours, logos, symbols and captions to promote the product that can influence customer purchase decision.

Supply Chain Management



Supply chain management is the handling of the entire production flow of a good or service — starting from the raw components all the way to delivering the final product to the consumer.

Supply Chain Management (SCM)

Supply chain management is the management of the flow of goods and services and includes all processes that transform raw materials into final products. It involves the active streamlining of a business's supply-side activities to maximize customer value and gain a competitive advantage in the marketplace.

SCM represents an effort by suppliers to develop and implement supply chains that are **as efficient and economical as possible**. Supply chains cover everything from production to product development to the information systems needed to direct these undertakings.

How Supply Chain Management Works

Typically, SCM attempts to centrally control or link the production, shipment, and distribution of a product. By managing the supply chain, companies are able to cut excess costs and deliver products to the consumer faster. This is done by keeping tighter control of internal inventories, internal production, distribution, sales, and the inventories of company vendors.

In SCM, the supply chain manager coordinates the logistics of all aspects of the supply chain which consists of five parts:

- The plan or strategy
- The source (of raw materials or services)
- Manufacturing (focused on productivity and efficiency)
- Delivery and logistics
- The return system (for defective or unwanted products)

The supply chain manager tries to minimize shortages and keep costs down. The job is not only about logistics and purchasing inventory.

According to Salary.com, supply chain managers, “make recommendations to improve productivity, quality, and efficiency of operations.”

Improvements in productivity and efficiency go straight to the bottom line of a company and have a real and lasting impact. Good supply chain management keeps companies out of the headlines and away from expensive recalls and lawsuits.

5 Functions of Supply Chain Management

When you need to buy something, you just head to the nearest store or supermarket. You pick up the product, pay for it and return home. **Have you ever wondered how products reach the store shelves? There is an entire process called supply chain management behind it.**

Supply chain management maintains the balance between the demand and supply and involves activities right from procurement of materials and converting them into finished goods to ensuring delivery at the right time to reach the end-consumer. **Hence, supply chain management is the lifeline of an organization.** It needs to be really efficient to keep the operations running like a well-oiled machine. A streamlined supply chain management chain can enhance customer relationship, lower down operational costs.

The five functions of supply chain management include the following:

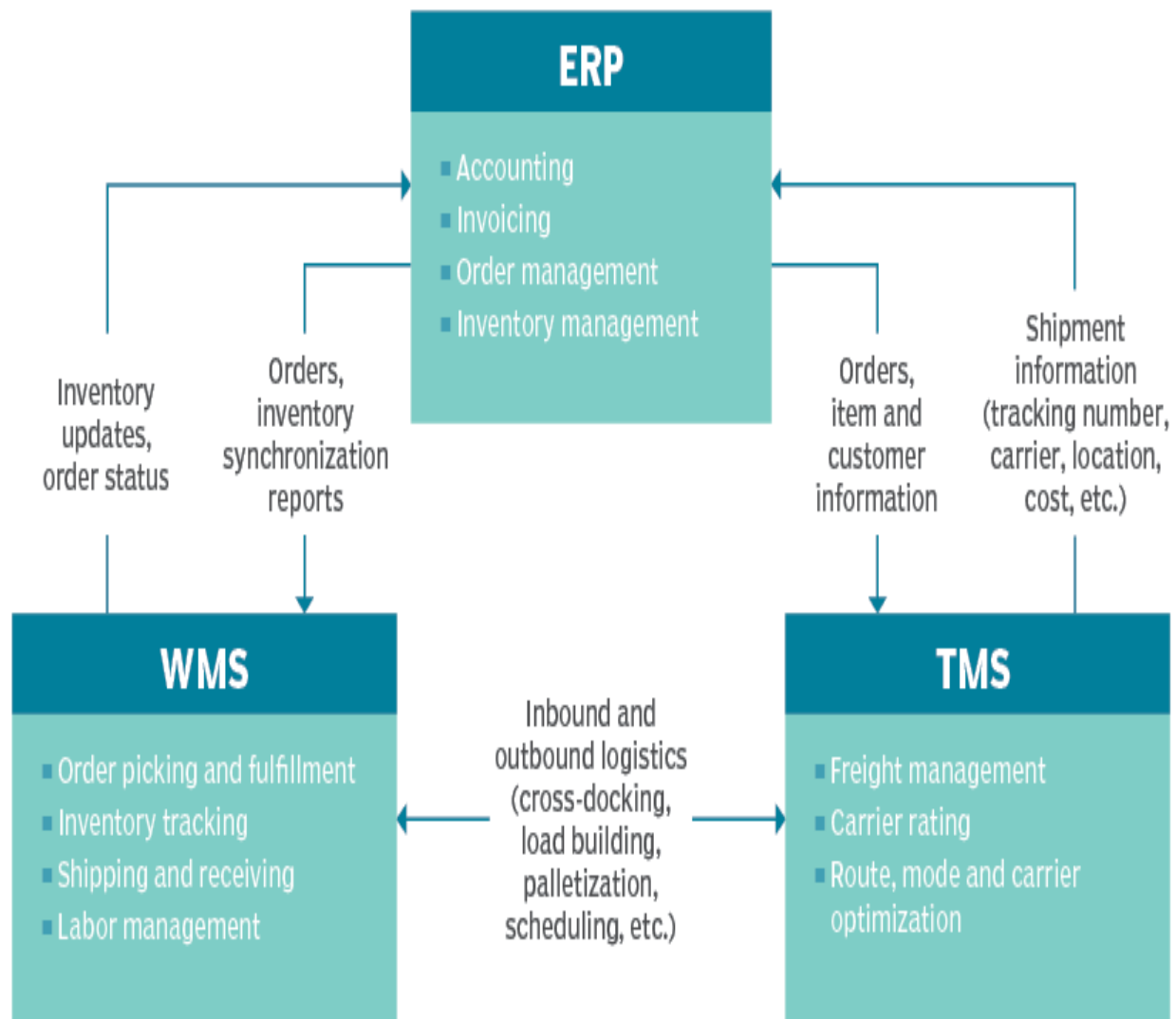
1. **Purchasing** - Purchasing is the first function of supply chain management and pertains to procuring raw materials and other resources that are essential for the manufacturing of a product

or good. It requires coordination with suppliers in order for delivery to arrive without any potential delays.

2. **Operations** - Within supply chain, the operation team engages in demand planning and forecasting. In order for the team to be able to properly order materials, the company has to anticipate potential market demand and the number of units that will be needed to be produced within a timely manner. This runs over into inventory management, production, and shipping. If you over anticipate demand, then it could easily result in excess inventory cost. If the demand is under anticipated, the organization could be unable to meet consumer demand, which leads to revenue loss.
3. **Logistics** - Logistics pertains to requirement for coordination. The manufacturing of products has commenced, in which it needs space for storage til it shipped for delivery. This will call for making local warehouse arrangements. **Logistics ensures that the products will reach the end-point delivery without any hindrances.**
4. **Resource Management** - Production consumes raw materials, technology, time, and labor. All processes need to be efficient and effective, in which this phase will be taken care of by the resource management function team. It decides the allocation of resources in the accurate activity at the right time to optimize the production at reduced costs.
5. **Information Workflow** - Information sharing and distribution is what keeps all of the other functions of supply chain management on track. If the information workflow and communication are poor, it could break apart the entire chain.

It is important and essential to understand the five functions of supply chain management (SCM).

How supply chain systems process orders



The Role of SCM Software

Technology is critical in managing today's supply chains, and every major supply chain management process has a software category dedicated to it. Most vendors of ERP suites offer supply chain management software, and there are thousands of niche vendors.

Besides managing specific processes, SCM software has an important role to play in tying together the people, processes, and systems that participate in the supply chain.

Other commonly used SCM modules include the following:

- a **transportation management system (TMS)** for managing the transport and storage of goods, especially across global supply chains;
- a **warehouse management system (WMS)** for all of the activities inside warehouses and distribution centers; and
- an **order management system**, to handle processing of customer orders through WMS, ERP and TMS systems, at all stages of the supply chain. (See "How supply chain systems process orders.")

The increasingly global nature of today's supply chains and the rise of e-commerce, with its focus on nearly instant small deliveries straight to consumers, are posing challenges, particularly in the area of logistics and demand planning, while boosting demand for order management software capable of handling omnichannel commerce. A number of strategies -- such as lean manufacturing -- and newer approaches -- such as demand-driven material requirements planning -- may prove helpful.