KOSHYS
INSTITUTE OF MANAGEMENT STUDIES

UNIT-1

OVERVIEW OF ILM

MEANING

Logistics management includes the design and administration of systems to control the flow of materials, work in process, and finished inventor

Logistics is the management of the flow of goods, information and other resources, including energy and people. It involves the integration of information, transportation, inventory, warehousing, material-handling, and packaging, and occasionally security to support business unit strategy.

Logistics is the management of the flow of goods and services between the point of origin and the point of consumption in order to meet the requirements of customers.

LOGISTICS

logistics refers to the planning and execution of a complex operation. This can include both long and short term logistics operations.

Logistics management is part of the supply chain. It involves planning, implementing, and overseeing the effective storage of goods and their transportation from the point of origin until the final destination (the point of consumption).

In other words, ***logistics manages forward and reverse merchandise flows***.

Definition

- Logistics is... the management of all activities which facilitate movement and the coordination of supply and demand in the creation of time and place utility.*(Hesket, Glaskowsky and Ivie, 1973)*

Logistics is... the positioning of resource at the right time, in the right place, at the right cost, at the right quality.

(Chartered Institute of Logistics and Transport (UK), 2012)

DEFINITIONS

- ***American Council of Logistics Management*** defines logistics as "the process of planning, implementing and controlling the efficient, ost effective flow and storage of raw materials, in process process inventory, inventory, finished finished goods and related related information information from point of origin to point of consumption for the purpose of conforming customer's requirements".
- ***Philip Kotler*** defines logistics as "planning, implementing, and controlling the physical flows of materials and finished goods from point of origin to point of use to meet the customer's need at the profit"
- ***Donald J Bowersox*** defines "Logistics is concerned with getting products and services where they are needed and when they are desired.

Concept - Evolution

- Right Time, Right Place@ Minimum Cost Logistics Packaging Warehousing Started as a business concept in 1950's.
- The concept of logistics management was evolved during the Second World War (1939-1945).
- The American military forces during the World War II ensured that all the food and supplies reach at different places in a definite amount of time to the troops and cantonment using different logistics concepts and principles still used but in advanced version.
- • British fishermen used natural ice to preserve their fish stock piles Late 1820's Movement of food from rural areas to urban consumption markets.
- 1857 The first shipment of refrigerated beef was made from the Chicago stockyards to the East in an ordinary box car packed with ice.
- The concept of 3PL (third party logistics) was developed and proposed in 1985, by Ken Ackerman and Dean Wise.

EVOLUTION

- Safexpress Pvt Ltd first company in the Indian logistics industry to use the GPS Maersk India, had taken steps to facilitate research in the production, harvesting, warehousing, and packaging of bananas. The company provided end-to-end cold chain logistics support, besides undertaking training of local banana exporters in cold chain management.

Components

Logistics comprises five essential components.

1. **Demand planning** - To guarantee customer order fulfilment, demand planning is an essential logistics function. By ordering merchandise in the correct quantities and at the right price and mobilising suitable transport, customer demand is met and profits protected.

2. **Storage and materials** - Because demand is unpredictable, it's important to have surplus goods on standby until consumers demand them. Warehouses are responsible for the storage, care, retrieval, packaging, and unitisation of merchandise. Warehouse management systems (WMS) optimise storage capacities, equipment (forklifts, for example), retrieval speeds, and warehousing processes.

3. Inventory management - Inventory management controls the flow of goods in and out of a warehouse. It dictates how much stock to hold and where to locate it using targeted data to predict consumer demand.

4. Transportation management - Logistics involves mobilising different modes of transport to move merchandise from one stage of the supply chain to the next. Merchandise might need to travel via road vehicles, freight trains, shipping, or even air travel for long-distance supply chains.

- Consolidation is the process by which shipping companies or carriers combine multiple smaller shipments in one. This speeds up deliveries and keeps costs low.

5. Control - Logistics is a complex operational procedure that requires a lot of precise information to be effective. Forecasting demand, transportation times, and inventory are crucial to keeping the operations to a tight timescale.

Objectives of Logistics

1. Reduction of Inventory
2. Economy of freight
3. Reliability and consistency in delivery performance
4. Minimum damage to products
5. Quicker and faster response

Functions of Logistics / Work of Logistics

- 1. Order Processing: Processing the orders received from the customers is an activity which is very important and also consumes a lot of time and paperwork. It involves steps like checking the order for deviations in the agreed or negotiated terms, price, payment and delivery terms, checking if the materials in available in stock, producing and scheduling the material for shortages, and also giving acknowledgements to the owner, by indicating any deviations.

2. **Inventory Planning:** Planning the inventory can help an organization in maintaining an optimal level of inventory which will also help in satisfying the customer. Activities like inventory forecasting, engineering the order quantity, optimizing the level of service, proper deployment of inventory etc. are involved in this process.

3. **Warehousing:** This serves as the place where the finished goods are stored before they are sold to the customers finally. This is a major cost centre and improper warehouse management will create a host of problems

4. **Packaging**: A critical element in the physical distribution of the product, which also influences the efficiency of the logistics system.

5. **Transportation:** Helps in physical movement of goods to the customer's place. This is done through various modes such as rail, road, air, sea respectively

Logistics sub-systems

- Physical Supply or Management of flow of raw materials, spare parts, consumable stores and machinery & tools from suppliers.
- Physical distribution or management of finished goods from the factory to the buyers &
- Logistical Controls for managing the logistics system, it helps an efficient co-ordination of physical supply & distribution sub-systems.

Primary Activities

Primary activities relate directly to the physical creation, sale, maintenance and support of a product or service. The product or service. They consist of the following: y consist of the following:

- Inbound logistics – These are all the processes related to receiving, storing, and distributing inputs internally. Your supplier relationships are a key factor in creating value here.
- Operations – These are the transformation activities that change inputs into outputs that are sold to customers. Here, your operational systems create value.
- Outbound logistics – These activities deliver your product or service to your customer. These are things like collection, storage, and distribution systems, and they may be internal or external to your organization

- Marketing and sales – These are the processes you use to persuade clients to pur s to purchase from you chase from you instead of your competitors. The benefits you offer, and how well you communicate them, are sources of value here.
- Service – These are the activities related to maintaining the value of your product or service to your customers, once it's been purchased.

Supporting Activities

- Procurement (purchasing) – This is what the organization does to get the resources it needs to operate. This includes finding vendors and negotiating best prices.
- Human resource management – This is how well a company recruits, hires, trains, motivates, rewards, and retains its workers. People are a significant so ificant source of value, so businesses can create urce of value, so businesses can create a clear advantage with good HR practices.

- Technological development – These activities relate to managing and processing information, as well as protecting a company's knowledge base. Minimizing information technology costs, staying current with technological advances, and maintaining technical excellence are sources of value creation.
- Infrastructure – These are a company's support systems, and the functions that allow it to maintain daily operations. Accounting, legal, administrative, and general management are examples of necessary infrastructure that businesses can use to their advantage.

Integrated Logistics

- Process of anticipating customer needs and wants.
- Acquiring the capital, materials, people, technologies and information necessary to meet those needs and wants.
- Optimizing the goods-or-service-producing a network to fulfill customer requests
- Utilizing the network to fulfill customer request in a timely way

- Integrated logistics is a business management model that is increasingly used to accelerate product delivery and improve customer service. In this model, all departments, processes and resources are aligned to work in perfect sync and operate as one cohesive unit. This results in seamless operations and ensures that customer orders are dispatched quickly.

- Integrated logistics management systems worked as the catalyst to achieve efficiencies in logistics operations and maximize the profits of organizations.

- Integrated logistics management brings together the different internal functions of the organization, aligns, and melds them with those of its suppliers and other service providers such as a transporter or a clearing and forwarding agent.

Operations involve in Integrated Logistics

- Inbound Logistics: The activities of receiving, storing, and disseminating incoming goods or material for use
- Outbound Logistics: The movement of material associated with storing, transporting, and distributing goods to its customers.

Activities related to Integrated Logistics

- Physical Distribution
- Materials Management
- Logistics Engineering
- Business Logistics
- Logistics Management
- Integrated Logistics Management
- Distribution Management
- Supply Chain Management

Barriers to Internal Integration.

- Organization structure - cross-functional process, authority and responsibility
- Measurement systems - Unless a measurement system is created that does not penalise managers it would be more difficult to achieve logistical integration.
- Inventory ownership - Inventory ownership is to maintain adequate supply to gain comfort and protect against uncertainities like demand uncertainty and operational uncertainty. The availability of inventory can support the economy of scale. Forward committment of inventory can also serve to facilitate sales. Creating benefits are associated with related costs.

- Information technology - The key resource to achieve integration is information technology. Sharing of information among various functional departments can be helpful in achieving internal integration.
- Knowledge transfer capability - Failure to transfer information or knowledge containment leads to foster the functional orientation by developing workforce composed of specialists. The failure to transfer knowledge can also create a barrier to integration when an experienced employee retires or for some other reason leaves the firm.

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UNIT-2

MARKETING AND LOGISTICS

INTRODUCTION

- In sales, commerce and economics, a customer (sometimes known as a *client, buyer, or purchaser*) is the recipient of a good, service, product or an idea- obtained from a seller, vendor, or supplier via a financial transaction or exchange for money or some other valuable consideration.

- A person who buys goods or services from a shop or business.

- A person of a specified kind with whom one has to deal.

CUSTOMER FOCUS Marketing

CUSTOMER FOCUS Customer focus can be defined as the degree to which a firm continuously satisfies customer needs and expectations.

It includes

- Emphasis on customer-defined quality
- Emphasis on customer service
- Integration of customer information for new product development
- Partnering with customer for the product development, R&D, technology forecasting.

IMPORTANCE OF CUSTOMER FOCUS

- The customers are the valuable assets for any organization.
- The success of an organization depends on the satisfied customer.
- The satisfied customer tends to purchase frequently and more.
- The manufacturing and service organization use customer satisfaction as the measure of quality.
- Identifying the customer expectation is the key to satisfy the customer.

International Marketing

Do you know that **Apple** - the tech giant designs its **iPhone** in California; outsources its manufacturing jobs to different countries like - Mongolia, China, Korea, and Taiwan; and markets them across the world. Apple have not restricted its business to a nation, rather expanded it to throughout the world. Apple is a multinational organisation dealing in international business / marketing.

Meaning

International Marketing refers to application of marketing principles in more than a nation. International marketing involves making one or more marketing mix decisions across national borders. International marketing involves establishing production facilities overseas and coordinating marketing strategies across the world.

In simple words, international marketing involves business activities that directs the flow of an organisation's goods or services to consumers or users in more than a nation for a profit.

Definition

According to **Cateora** and **Graham**, "international marketing is the performance of business activities designed to plan, price, promote and direct the flow of a company's goods and services to consumers or users in more than one nation for a profit."

Accordingto **Terpstra** and **Sorathy**, "international marketing consists of finding and satisfying global customer needs better than the competition, both domestic and international and of coordinating marketing activities with in the constraints of the global environment."

Importance of International Marketing

- To expand target market
- To boost brand reputation
- To connect business with the world
- To open doors for future opportunities

Nature of International Marketing

- **Broader market is available**
- **Involves at least two sets of uncontrollable variables**
- **Requires broader competence**
- **Competition is intense**

Difference between Domestic marketing and International Marketing

Domestic

- ✓ Political factors are of minor importance.
- ✓ One language and culture.
- ✓ Uniform financial climate
- ✓ Normal risk is involved.
- ✓ Minimum payment and credit risks

International

- ✓ Political factors play a vital role.
- ✓ Many languages and differences in cultures
- ✓ Variety of financial climate.
- ✓ Higher risks of different nature are involved.
- ✓ Considerable payment and credit risks.

International Trade

International trade is referred to as the exchange or trade of goods and services between different nations. This kind of trade contributes and increases the world economy. The most commonly traded commodities are television sets, clothes, machinery, capital goods, food, and raw material, etc

Classification of International Trade

(a) Import Trade: It refers to purchase of goods from a foreign country. Countries import goods which are not produced by them either because of cost disadvantage or because of physical difficulties or even those goods which are not produced in sufficient quantities so as to meet their requirements.

(b) Export Trade: It means the sale of goods to a foreign country. In this trade the goods are sent outside the country.

(c) Entrepot Trade: When goods are imported from one country and are exported to another country, it is called entrepot trade. Here, the goods are imported not for consumption or sale in the country but for re- exporting to a third country. So importing of foreign goods for export purposes is known as entrepot trade.

Characteristics of International Trade

- Separation of Buyers and Producers
- Foreign Currency
- Restrictions
- Need for Middlemen
- Risk Element
- Governmental Control

Importance for International trade

- Reduced dependence on your local market
- Increased chances of success
- Increased efficiency
- Increased productivity
- Economic advantage
- Innovation
- Growth
- Uneven Distribution of Natural Resources
- Division of Labour and Specialisation:

International Trade

Advantages

- Optimal use of natural resources
- Availability of all types of goods
- Specialisation
- large-scale production
- Exchange of technical know-how
- Increase in efficiency
- International co-operation and understanding

Disadvantages

- Impediment in the Development of Home Industries
- Economic Dependence
- Political Dependence
- Mis-utilisation of Natural Resources
- Import of Harmful Goods
- Hardships in times of War

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MODULE 3: BASICS OF TRANSPORTATION

Transportation Functionality and Principles; Multimodal Transport: Modal Characteristics; Modal Comparisons; Legal Classifications; International Air Transport; Air Cargo Tariff Structure; Freight: Definition, Rate; Freight Structure and Practice

Transportation is one of the most visible elements of logistics operations.

Transportation functionality

a. Product movement
b. Product storage

- Product Movement - A primary transportation function is product movement up and down the value chain. Transportation utilizes temporal, financial, and environmental resources, it is important that items be moved only when it truly enhances product value.
- The major objective of transportation is to move product from an origin location to a prescribed destination while minimizing temporal, financial, and environmental resource costs. Loss and damage expenses must also be minimized.
- Product storage - A less common transportation function is temporary storage. Vehicles make rather expensive storage facilities. However, if the in-transit product requires storage but will be moved again shortly (e.g., in a few days), the cost of unloading and reloading the product in a warehouse may exceed the profitability.
- A second method to achieve temporary product storage is diversion. This occurs when an original shipment destination is changed while the delivery is in transit.

Principles of Transportation

- **Economy of scale**
- It refers to the characteristic that transportation cost per unit of weight decreases when the size of the shipment increases.
- It is also generally true that larger capacity transportation vehicles such as rail or water are less expensive per unit of weight than smaller capacity vehicles such as motor or air. Transportation economies of scale exist because fixed expenses associated with moving a load can be spread over the load's weight

- **Economy of distance**

It refers to the characteristic that transportation cost per unit of distance decreases as distance increases.

Transportation economy of distance is also referred to as the tapering principle since rates or charges taper with distance. The rationale for distance economies is similar to that for economies of scale.

Multimodal transport

Multimodal transport is essentially an international through-transport combination with various modes of transport such as ship, rail, truck, aeroplane, etc., primarily through the use of containers. Containers will ensure the transport of unitised cargo from its origin to its final destination, with efficiency and least possible risk

Multimodal Transport

Multimodalism refers to transportation of goods between two points by more than one mode of transport. This could be by road-rail, road-rail-coastal or any other combination.

The distance over which the goods have to be transported is an important consideration because the characteristics of haulage charges and terminal charges vary widely from mode to mode.

Multimodal Transport…

After the goods are loaded in a "multimodal equipment" at the commencement of the journey, they travel across multiple transport modes without any further handling of the goods until the goods reach the intended destination.

The carrier responsible for the entire carriage is referred to as a multimodal transport operator, or MTO.

Modal Characteristics

1. System concept
2. Management and Co-ordination
3. Control over cargo
4. Mergers
5. Multimodal Transport Operators
6. Modal Integration
7. Through rates and billing
8. Information system
9. Logistics channels
10. Deregulation

Multimodal Transport: modal choice criteria

- Cost
- Speed
- Cargo value, security & safety
- Route
- Equipment availability
- Cargo characteristics

Multimodal Transport Advantages

- Reliable, cost effective & safe
- Cargo safety assured: no shortage/theft /damage/pilferage- less insurance cost
- Multiple pickup/deliveries: FCL/LCL
- Environmental friendly as it reduces pollution
- Fuel saving compared to road transportation
- Provides faster transit of goods
- Single window operation
- Reduces overall transaction costs

Intermodal Transportation

- In simple terms, intermodal transportation is defined as the movement of cargo from the point of origin to its destination by several modes of transport where each of these modes have different carriers responsible, each with its own independent contract.
- In short, **each leg of the shipment is handled by a separate transport carrier**. Therefore the shipper has to deal **with several contracts**, one with each transport carrier that handles their specific leg of the shipment.

3 Types of Air Service

- Express Air Service. Express air service means your cargo is hoping on a flight straight to its destination. ...
- Standard Air Service. While on occasion, a standard air service may fly direct to destination, it usually includes one or two stops along the way. ...
- Deferred Air Service.

Advantages of air transport for international trade

- deliver items quickly over long distances
- give you high levels of security for sensitive items
- be used for a range of good
- Fastest available option
- Reliable transportation
- Worldwide access
- Reduced risk of theft or damage
- Lower insurance costs, more savings

Disadvantages of air transport for international trade

- air transport can involve higher costs than other options, and is not suitable for all goods
- flights are subject to delay or cancellation
- you will need to pay taxes at each airport you use
- fuel and currency surcharges will usually be added to freight costs
- further transportation may be needed from the destination airport to the final destination

What Goods Are Shipped via Air Freight?

- Plants
- Drugs, vaccines, and pharmaceuticals
- Perishable foods
- Spare parts for land vehicle and aerospace industry
- Live animals
- Intercontinental mail
- Luxury goods
- High-end consumer goods
- Artwork
- eCommerce

Air Cargo Tariff Structure

- AIR CARGO - The rate is **the amount charged by the carrier for the transportation of the shipment by a specific unit of weight (kg or lb)**. A charge is an amount paid for the carriage of a consignment for additional costs connected to the transport. This charge depends on the declared value and the weight or volume of the shipment

CARGO

- Cargo is goods typically shipped by ship or aircraft. In this case, mail can be called cargo. The term cargo does not have as many uses as the term freight. There are no payment terms associated with cargo. It is a fairly straightforward term that is easily identifiable

Air cargo tariffs

- Air cargo tariffs are determined by each air carrier, or at the industry level. They are openly accessible, and are also referred to as “General Cargo Rates (GCR), “TACT Tariffs”, or “TACT Rates”. Airlines have to, for most countries, file tariffs with the relevant air transportation agency. Tariffs will also be used for Airwaybill rating; serve as a base for the calculation of special commodities (live animals; human remains; valuables; vulnerables…); and be used for airline interlining activities, under the MITA convention.

- The actual rate paid a freight forwarder to an airline may differ from the tariff, and are bilaterally agreed & remain confidential. They are commonly known as “rates” and accessible via IATA Net Rates

Freight is a term used to describe goods shipped in bulk by sea, truck, train, or by air; however, freight only applies to commercial goods and not mail. Freight can also refer not only to the product or merchandise but also to the amount due or the money charged for the shipment, also known as “freight costs”, or “freight charges”. Freight has numerous meanings within the shipping industry.

What Is the Difference Between Freight and Cargo?

- When you talk about air freight and air cargo, the term can mean a difference in the merchandise being shipped versus money charged for the shipment. But when referring to the goods being shipped; air freight and air cargo are generally the same.

How Much Does Air Freight Cost?

- Many determining factors go into the pricing of air freight costs. There is no such thing as flat rate shipping when it comes to air freight costs. International air freight can cost between $0.50-$5.00 per kilogram, or more, depending on the type of air cargo being shipped.

How Is Air Freight Cost Calculated?

- The weight and volume are determining factors.
- Air carriers can charge by volumetric weight, which is dimensional weight, or by actual weight.
- To determine the volumetric rate, the general rule is to divide the volume of the shipment in cubic centimeters by 6000. Whichever is higher, the volumetric weight or actual weight, that is the amount that will be used for pricing the air freight cost. This is most important when shipping lightweight items that take up significant space. For example, a metric ton of feathers would be more costly than a metric ton of steel, as its volumetric weight would be very high.

What Are Common Air Freight Accessorial Fees?

Air freight accessorial fees are fees incurred in addition to the standard shipping costs due to the consignment needing special needs during the shipment. Knowing these fees will give you a better understanding of the actual air freight costs. Some of the common air freight accessorial fees are:

- Airport Handling Fee
- Airport Screening Fee
- Airport Transfer Fee
- Dangerous Goods Fee
- Fuel Surcharges
- Handling fee
- Letter of Credit Fee
- Security Surcharge
- Terminal Handling Fee

What Are International Air Freight Weight Rates?

- Air Rates, or “air cargo rates”, are rates agreed between the airline and the freight forwarder. They can be “General” rates, also known as “Street” rates or “Market” rates; Promotional Rates; Contract Rates (bilaterally agreed, confidential and committing or not the freight forwarder to a certain volume of activity), Surcharges, Add-ons or Spot/Ad Hoc Rates, which would be negotiated for a single air cargo shipment, based on available capacity. Spot/Ad Hoc rates can also be referred to as “dynamic pricing”, as they allow the airline to provide the best applicable rate based on different criteria such as capacity, relationship, and priorities.

Why Are International Air Freight Quotes and Air Freight Prices Changing?

- International air freight prices are changing due to capacity and market conditions. Some of the market conditions are fluctuating oil prices, restrictive measures from G20 governments, and rising geopolitical concerns. All these factors play a role in the pricing of air freight. Air Freight prices have risen significantly since the COVID-19 pandemic started, due to the lack of capacity.

Transportation Charges / Freight charges

- Air cargo rates and charges cover the transport of air cargo between airports. The rate is the amount charged by the carrier for the transportation of the shipment by a specific unit of weight (kg or lb). A charge is an amount paid for the carriage of a consignment for additional costs connected to the transport. This charge depends on the declared value and the weight or volume of the shipment.

Service and Related Charges - Transportation charges include the cost of carriage of a consignment from one airport to another. However, there can be a number of additional service charges incurred when shipping air cargo, such as:

- Pick up and delivery to and from the airport
- Storage and warehouse services
- Insurance charges
- C.O.D.
- Customs charges
- Duties & taxes
- Repairing damaged packaging
- Forwarded or Returned consignments

The freight structure

- The freight structure has been mainly determined by three factors, adoption of trade route, inland mode of transport and the liner conference with minor influences exerted by freight forwarders, cargo consolidators and in some cases the Non vessel owning operator .

- Certain types of time sensitive cargoes like perishables, white goods and garments attract higher freight while others like scrap, metal waste, steel coils and such voluminous inexpensive cargoes which cannot afford to pay higher freight are charged less for the same transportation route. The factor of one way empty container haulage also affects the freight structure.
- Another important factor affecting the freight structure is the detention charge and the responsibility of causing such detention. A container either loaded or empty gets detained sometimes by the different parties involved for a variety of reasons like traffic congestion, non-availability of cargo, custom regulations and so on resulting in rise of expenses.
- There are also other factors affecting the freight structure like demand and supply, competition amongst the lines, the transportation characteristics of the cargo like susceptibility to pilferage and damage, the length of the voyage and lastly availability of infrastructure.

THANK YOU

MODULE 4: CONTAINERIZATION AND CHARTERING

Containerization: Genesis, Concept, Classification, Benefits and Constraints; Inland Container Depot (ICD): Roles and Functions, CFS, Export Clearance at ICD; CONCOR; ICDs under CONCOR; Chartering: Kinds of Charter, Charter Party, and Arbitration.

Containerization means the increasing use of the containers as a support for freight transportation.

- It involves processes where the containers are increasingly used because it either substitutes cargo from other means of transport or it is adopted as a mode supporting freight distribution ,the reason being that a large number of transport systems are able to handle containers.
- Both inter modal transportation and containerization are mutually connected, self strengthening and depend on a set of driving forces linked with technology, infrastructures and management.

Containerization permits the mechanized handling of cargoes of different types and sizes that are placed into boxes of standard sizes. Thus goods that took days to be loaded or unloaded from a ship can now be handled in a matter of minutes. Containers are either made of steel (the most common for maritime containers) or aluminum (particularly for domestic) thus helping in the flexibility

The usage of containers has helped in a faster movement and a standardization of loads. The container has substantially contributed to the adoption and diffusion of inter modal transportation which has led to a lot of changes.

Through reduction of handling time, labor costs, and packing costs, container transportation allows a considerable improvement in the efficiency of transportation. Thus, the importance of containers is not what they are but what they enable.

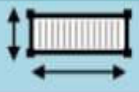
A major change in freight transportation could not have taken its current form without containerization.

- Containerization is the practice of carrying goods in containers of uniform shape and size for shipping. Almost anything can be stored in a container, but they are particularly useful for the transport of manufactured goods. It is a method of distribution of goods using containers.
- The use of containers has, indeed, facilitated carriage of goods. Exporters need not go to the seaport for export of goods. Instead, the goods can be sent to Inland Container Depot/Container Freight Station for sending goods to the destination.

- Containerization is a shipment method in which commodities are placed in containers, and after initial loading, the commodities, per se, are not rehandled in shipment until they are unloaded at the destination. This allows for goods to be shipped more securely and efficiently.
- Containerization has become a popular shipping method in recent years due to its many benefits.
- For example, it minimizes damage to goods during transport and eliminates the need for freight forwarders. Additionally, containerization helps reduce inventory levels and improve turnaround times.

ADVANTAGES

Standardization



ISO standard (modes and equipment). Unique identification number and size type code.

Flexibility

Commodities, manufactured goods, liquids and refrigerated goods.

Costs

Low transport costs. Economies of scale at modes and terminals.

Velocity

Fast transshipment operations. Low terminal turnaround times.

Warehousing

Own warehouse; simpler and less expensive packaging. Stacking capability.

Security & Safety

Contents unknown to carriers. Reduced spoilage and losses.

CHALLENGES

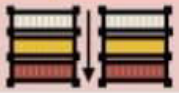
Site constraints

Large consumption of terminal space. Draft issues with larger containerships.

Capital intensiveness

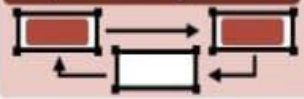
Container handling infrastructures and equipment are important investments.

Stacking



Complexity of arrangement of containers, both on the ground and on modes.

Repositioning



Divergence between production and consumption; empty repositioning. 20% of all containers.

Theft and losses

High value goods vulnerable to thefts, particularly between terminal and final destination.

Illicit trade

Illicit trade of goods, drugs and weapons, as well as for illegal immigration.

Containerization Classification

1. General Cargo Container

a) Dry Cargo Container

b) Special Dry Cargo Containers

c) Open Top Containers

d) Flat Rack Containers

e) Closed Ventilated Containers

- **Dry Cargo Containers:** The most commonly used shipping containers are general cargo boxes. These are the steel containers that are visible in virtually every seaport around the world. They are fully enclosed with strong, rigid walls, a roof and floor and resistant to the elements as well as animals, birds and vermin.
- **Special Dry Cargo Containers:** Sometimes, loading and unloading cannot be easily accomplished through the end or side doors and therefore special containers are used to do so.

- **Open Top Containers:** Open top shipping containers have similar characteristics to dry cargo containers but do not have a hard top steel roof. Such containers are used for heavy, bulky or fragile items such as sheet glass or machinery
- **Flat Rack Containers:** Flat rack containers lack the superstructures of enclosed dry cargo boxes. They do not have therefore, fixed walls or any load-carrying structures.
- **Closed Ventilated Containers:** Where goods need to be protected against excess moisture or humidity, special ventilation-adapted containers are used.

2. Specific Cargo Container

- **Thermal Containers:** Thermal containers are known in the industry as reefers. They are characterized by interior insulation on the doors, roof, floor and walls.
- **Insulated Shipping Containers:** Insulated shipping containers do not utilize any devices for temperature regulation. Only the internal insulation helps maintain an ambient temperature.
- **Refrigerated Shipping Containers:** Refrigerated shipping containers have no external power or energy supply, so cold temperatures are maintained using dry ice or liquefied gas.

- **Mechanically refrigerated Containers:** In these cases, a power supply is required to a refrigeration appliance. This is providing on land at sea ports, or road distribution trucks, or even on some container ships.
- **Heated Containers:** similarly, a power supply is needed to run a heat-producing device.
- **Named Cargo Containers:** These containers transport items such as cars, others vehicles livestock and poultry.
- **Dry Bulk Containers:** Dry Bulk containers are used where no external packaging is required. Grains and dry foodstuffs fall into this category
- **Tank Containers:** Tank containers incorporate a tank for the transport and distribution of chemicals, gases and hazardous liquids

Inland Container Depot (ICD)

- An Inland Container Depot (ICD)/Container Freight Station (CFS) also known as dry ports are multimodal logistics centres with public authority status under Customs. They are connected to a seaport either by rail or road and serve as a transhipment point for export and import cargo. In addition to being transhipment points, they offer services for handling and temporary storage of import/export laden and empty containers, warehousing, temporary admissions, re-export

Container Freight Station (CFS)

- An ICD is generally located in the interiors of the country away from the servicing ports. CFS, on the other hand, is an off dock facility located near the servicing ports which helps in decongesting the port by shifting cargo and Customs related activities outside the port area. ICDs and CFSs provide much needed logistics infrastructure for movement of containerised cargo for imports and exports and thus play an important role in facilitating trade.
- CFS - A freight station for shipping containers is located near a seaport and mainly consolidates and segregates the cargo. CFS majorly handles LCL shipments, since they require consolidation services. CFS is set up to decongest the ports and free up the valuable physical space near the sea.

Roles ICD/CFS

- Receipt and dispatch/delivery of cargo.
- Stuffing and stripping of containers.
- Transit operations by rail/road to and from serving ports.
- Customs clearance.
- Consolidation and desegregation of LCL cargo.
- Temporary storage of cargo and containers.

Functions of ICD

As Inland Container Depots act as a makeshift warehousing storage for twenty-feet-

- ICDs are physical facilities that store the containers temporarily before they are moved to the port and loaded on the ships. Exporters can also place their cargo inside the containers at an ICD.
- Along with being a storage facility, ICDs can also provide export and import customs clearances. All the services that are provided at a port, can also be availed at the ICD situated far away from the port.
- ICDs also act as servicing and repair facilities for containers and other moving equipment.

- An Inland Container Depot (ICD) is a container storage facility situated in the hinterlands, away from any major port. Shipping companies use ICDs to store and move shipping containers before and after transporting them to the seaport.
- As they are located away from the sea or any major river routes, Inland Container Depots are also sometimes referred to as the 'Dry Ports.'

Export Clearance at ICD

- The exporters may take the goods to the ICD/CFS and file the Shipping Bill and other documents. The goods are examined by the Customs Officers and they are stuffed into the containers and thereafter the containers are sealed. Such containers are transported to the Seaports (gate way ports) by the Container Corporation of India or any other authorised agency, either by rail or road, when the containers are loaded into the vessels (ships) for delivery of the same at the specified foreign port.

Export Clearance at ICD

- In the case of export through ICD, the exporters are requested to file two additional copies of Shipping Bills known as "Transference Copies" along with other documents as discussed. The rest of if the procedure is the same as in the case of exports through Customs Port/Airport.

CONCOR

- Container Corporation of India Ltd (CONCOR) was incorporated in March 1988 under companies Act, and commenced operation from November 1989 taking over the existing network of seven ICDs from the Indian Railways. The company was setup with the objective of developing multi-modal logistics support for Indias International and Domestic Containerized cargo and trade.

ICDs under CONCOR

- The combined traffic from the terminals make Northern Region the largest Region for CONCOR, both in terms of traffic handled, as well as in terms of the terminal network it controls.
- The potential for growth in this region is significant, and forms the basis for massive expansion plans in terms of new terminals and services.

CHARTERING

- In the field of transport, chartering is defined as **a lease contract between two parties: the owner and charterer.** The owner refers to the person owning the means of transport required by the charterer. The latter forges a professional partnership with a view to using these logistical means.

- Chartering is an activity within the shipping industry. In some cases a charterer may own cargo and employ a shipbroker to find a ship to deliver the cargo for a certain price, called freight rate.
- Freight rates may be on a per-ton basis over a certain route or alternatively may be expressed in terms of a total sum - normally in U.S. dollars - per day for the agreed duration of the charter.

- A charterer may also be a party without a cargo who takes a vessel on charter for a specified period from the owner and then trades the ship to carry cargoes at a profit above the hire rate, or even makes a profit in a rising market by re-letting the ship out to other charterers.
- Depending on the type of ship and the type of charter, normally a standard contract form called a **charter party** is used to record the exact rate, duration and terms agreed between the shipowner and the charterer.

Types of chartering

1 Voyage chartering

2 Time chartering

3 Time charter on trip basis (TCT)

4 Contract of affreightment (COA)

5 Bareboat chartering

1 Voyage chartering

- The voyage chartering means that the ship-owner promises to carry on board a specific ship a particular cargo for a single voyage from one or more loading ports to one or more discharging ports.
- The payment is called freight and the contract is called a voyage charter party. Voyage charters are concluded between the shipowner or disponent owner and the charterer. The person who charters the ship is known as voyage charterer. The person who charters out his ship is known as shipowner or disponent owner

Time chartering

- The time chartering means that the ship-owner provides a designated manned ship to the charterer, and the charterer employs the ship for a specific period against payment of hire instead of for a certain number of voyages or trips. Time charter generally does not include loading and unloading costs in the charter rate. A single voyage Several months or years. The time charterer may be a shipowner who for a time needs to enlarge his fleet or a cargo owner with a continuous need for transport, who does not want to invest money in a ship but wants to have the control of the commercial operation of the vessel

TCT Time Charter on Trip Basis

- TCT means that the charterers employ vessels on a time charter basis for the period of a specific voyage and for the carriage of a specific cargo and this practice has given rise to the term time charter on trip basis:
- TCT is similar to voyage chartering with regard to the fact that the intention of the parties is to employ the vessel for one or two voyages.
- The period of TCT is depend on the voyage and not fixed as time chartering.

Contract of affreightment

It is a generic term which covers all contracts for the carriage of goods by sea (both charter parties and bills of lading are contracts of affreightment).

It is also used in a more limited sense when it means a contract, by which the shipowner promises to satisfy the charterer's need for transport capacity over a certain period of time, often one year or several years.

Contract of affreightment can often be related to voyage charter.

The length of the chartering period lies on the total quantity of cargo to be transported. Cargoes carried under COA are usually bulky dry/liquid cargoes

Bareboat chartering

- The bareboat chartering is a charter of a different type. This contract amounts to a lease of the ship from the shipowner to the charterer.
- The bareboat chartering ordinarily means that the vessel is put at the disposal of the charterer for a long period employment without any crew.
- The charterer thus will take over almost all of the shipowner's functions except for the payment of capital cost. This means that the charterer will have the commercial as well as the technical responsibility for the vessel and will pay for maintenance, crew costs and insurance, etc.

CHARTER PARTY

- A contract under which a charterer agrees to hire the use of a ship from a shipowner. The charterer in some cases will be empowered to issue his or her own bills of lading, known as charter party bill of lading, subject to the conditions of the original charter party contract. The charter party itself is not a bill of lading, but a contract between the shipowner and the charterer.

- Charterer is the party that has chartered (think of simple word “hired”) the ship.
- If the shipper has chartered the entire ship then shipper will also be the charterer.
- In most of the cases, charterer is a kind of middle man between shipper(s) and shipowners
- This is particularly the case if there are more than one shippers.

For example, if the vessel is to load 50000 tons of cargo, there could be 10 shipper, say each of them with 5000 tons of cargo.

- Alone none of the shipper would want to hire the entire vessel of 50000 tons capacity for their 5000 tons of cargo.
- So they contact a charterer for transporting their cargo.
- The charterer's job is to find a vessel for the cargoes they have from different shippers and maximazing the space on ship they plan to hire.
- Charterers may not be the only person involved in filling the gap between shipowner and shipper.
- Sometime there are some other companies or persons who help shipper, charterer and shipowner to connect with each other for a fees.
- They are called "Brokers".
- So the shipper's broker is the person or company that help shipper find a charterer for a fees called brokerage.
- And charterer's broker is the person that help charterer find a ship to hire.

Arbitration

- Arbitration is the legal method of solving the disputes being arisen from the contract.
- Arbitration as a dispute settlement mean is widely used in the disputes on a carriage of goods by sea.
- Shipping disputes are referred for arbitration as an alternative to the litigation because of the costs, delays and procedural complications of the court proceedings.

- The existence and validity of an arbitration agreement is fundamental to the question of whether or not there is a duty to perform it and is essential to the outcome of the claim.
- Litigation and arbitration are two methods of a dispute settlement, which in the resolution of commercial and maritime disputes, "…coexist, complement each other, and to some extent, may be said to compete with each other..."10 Arbitration always has been seen as an alternative to the traditional dispute resolution mechanism which is litigation

- The advantages of arbitration include impartiality of the decision maker, finality, confidentiality, informality, speed, harmony, costs, and universal enforceability.
- Arbitration contract created by reference in the bill of lading to the charterparty arbitration clause is based on provisions in standard forms of two documents – bill of lading and charterparty

THANK YOU

MODULE 5: INVENTORY MANAGEMENT AND PACKAGING

- Inventory Management: Introduction, Characteristics, Functionality, Components, Planning; Packaging and Packing: Labels, Functions of Packaging, Designs, Kinds of Packaging;

Inventory

Inventory is an asset that is owned by a business that has the express purpose of being sold to a customer.

Inventory refers to the stock pile of the product a firm is offering for sale and the components that make up the product.

In other words, the inventory is used to represent the aggregate of those items of tangible assets which are

- Held for sale in ordinary course of the business.
- In process of production for such sale.
- To be currently consumed in the production of goods or services to be available for sale

The inventory may be classified into three categories

- Raw material and supplies: It refers to the unfinished items which go in the production process.
- Work in Progress: It refers to the semi-finished goods which are not 100% complete but some work has been done on them.
- Finished goods: It refers to the goods on which 100% work has been done and which are ready for sale

Inventory management

- Inventory management is the practice overseeing and controlling of the ordering, storage and use of components that a company uses in the production of the items it sells.
- Inventory management supervises the flow of goods from manufacturers to warehouses and from these facilities to point of sale. Inventory control means efficient management of capital invested in raw materials and supplies, work- in – progress and finished goods.

Objectives of Inventory Management

The objective of inventory management is to maintain inventory at an appropriate level to avoid excess or shortage of inventory. Inventory management systems reduce the cost of carrying inventory and ensure that the supply of raw material and finished goods remains continuous throughout the business operations.

A. Operating objectives: They are related to the operating activities of the business like purchase, production, sales etc.

a. To ensure continuous supply of materials.

b. To ensure uninterrupted production process.

c. To minimize the risks and losses incurred due to shortage of inventory.

d. To ensure better customer services.

e. Avoiding of stock out danger.

B. Financial Objectives

a. To minimize the capital investment in the inventory.

b. To minimize inventory costs.

c. Economy in purchase.

Factors affecting the level of inventory

1. Nature of business
2. Inventory turnover
3. Nature of type of product
4. Economies of production
5. Inventory costs
6. Financial position
7. Period of operating cycle
8. Attitude of management

The key components for effective inventory management are

- **1. Inventory forecast analytics:**

Understanding customer demands and planning inventory according to the market requirements is a laborious task for inventory managers. Integrating effective data science tools to analyze the market environment will help in delivering insights to forecast future demand. Practicing, sales forecasting can also help in driving insights, but it is a guesswork game and consumes a lot of quality time and patience.

- **2. Optimized purchase orders:** In today's complex supply chain environment, it is difficult to closely monitor and control actions towards every customer. An optimized purchase order model will help in enhancing the business operations and a close note on order intakes. Managing inventory availability and costs becomes lots easier with inventory analysis
- **3. Inventory management & Control:** Assorting Inventory based on future demands creates transparency in inventory management and optimizes the storage space at the warehouse. Manual inventory management systems suffer from slow processes and are prone to human errors. Inventory management tools provide quick solutions and reliable information to make inventory control more effective.

4. **Organized Work Environment :** A clean, spacious and neat work environment might save you a lot of time trying to search for products. Research also indicates that such a work environment may raise the effectiveness of you and your employees. If your storage or warehousing space isn't already organised, it is worth investing time to improve inventory management. There are no flaws to that – only clean profit.

Inventory Management Techniques and Terms

- **ABC Analysis:**

  This method works by identifying the most and least popular types of stock.

- **Batch Tracking:**

  This method groups similar items to track expiration dates and trace defective items.

- **Bulk Shipments:**

  This method considers unpacked materials that suppliers load directly into ships or trucks. It involves buying, storing and shipping inventory in bulk

- **Consignment:** When practicing consignment inventory management, your business won't pay its supplier until a given product is sold. That supplier also retains ownership of the inventory until your company sells it.
- **Cross-Docking:** Using this method, you'll unload items directly from a supplier truck to the delivery truck. Warehousing is essentially eliminated.
- **Demand Forecasting:** This form of predictive analytics helps predict customer demand.
- **Dropshipping:** In the practice of dropshipping, the supplier ships items directly from its warehouse to the customer.

- **Economic Order Quantity (EOQ):** This formula shows exactly how much inventory a company should order to reduce holding and other costs.

- **FIFO and LIFO:** First in, first out (FIFO) means you move the oldest stock first. Last in, first out (LIFO) considers that prices always rise, so the most recently-purchased inventory is the most expensive and thus sold first.

- **Just-In-Time Inventory (JIT):** Companies use this method in an effort to maintain the lowest stock levels possible before a refill.

- **Lean Manufacturing:** This methodology focuses on removing waste or any item that does not provide value to the customer from the manufacturing system.

- **Materials Requirements Planning (MRP):** This system handles planning, scheduling and inventory control for manufacturing.
- **Minimum Order Quantity:** A company that relies on minimum order quantity will order minimum amounts of inventory from wholesalers in each order to keep costs low.
- **Reorder Point Formula:** Businesses use this formula to find the minimum amount of stock they should have before reordering, then manage their inventory accordingly.

- **Safety Stock:** An inventory management ethos that prioritizes safety stock will ensure there's always extra stock set aside in case the company can't replenish those items.
- **Six Sigma:** This is a data-based method for removing waste from businesses as it relates to inventory.
- **Lean Six Sigma:** This method combines lean management and Six Sigma practices to remove waste and raise efficiency.

THANK YOU

PACKAGING FOR TRANSPORTATION

MODULE 6

Introduction

The primary role of packaging is to contain, protect and preserve a product as well as aid in its handling and final presentation. The package is physical container or wrapping for product. It is an integral part of product planning and promotion. Packaging also refers to the process of design, evaluation, and production of packages. The packaging can be done within the export company or the job can be assigned to an outside packaging company

Packaging provides following benefits to the goods to be exported:

- **Physical Protection** – Packaging provides protection against shock, vibration, temperature, moisture and dust.
- **Marketing**: Proper and attractive packaging play an important role in encouraging a potential buyer.
- **Convenience** - Packages can have features which add convenience in distribution, handling, display, sale, opening, use, and reuse.
- **Negative** :The design of the package should not give any negative message.
- Companies sometimes change packaging to update their image and reach a new market.
-

Packaging

The package = physical container or wrapping for a product.

- Protecting of products for distribution, storage, sale, and use
- Negative message
- Change packaging

1955 1970 1985 2007 2013

Functions of Packaging

1. Promotion & Selling ofproduct
2. Defining product identity.
3. Providing information.
4. Ensure safe use.
5. Protecting the product.

Promotion & Selling of product.

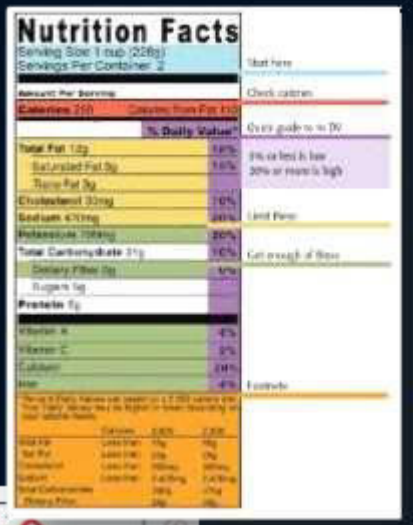
Promotion & Selling of product. Customer reaction to a package and brand name is an important factor in determining marketplace success or failure. Attractive, colorful and visually appealing packages have promotional value. A well designed package is a powerful selling device because it helps the product stand out from its competitors

Defining product identity

Packaging is sometimes used to promote an image such as prestige. Convenience or status. Can be a crucial part of marketing strategy particularly in advertising.

Providing Information

Packages give directions for product use, information about contents, guarantees, nutritional information, and potential hazards



Ensure safe use

Packaging helps to eliminate potential injuries or misuse of a product.

Formerly glass containers are now plastic.

1. Childproof caps
2. Tamper resistant packages.

Including stickers, labels, tags, or paint

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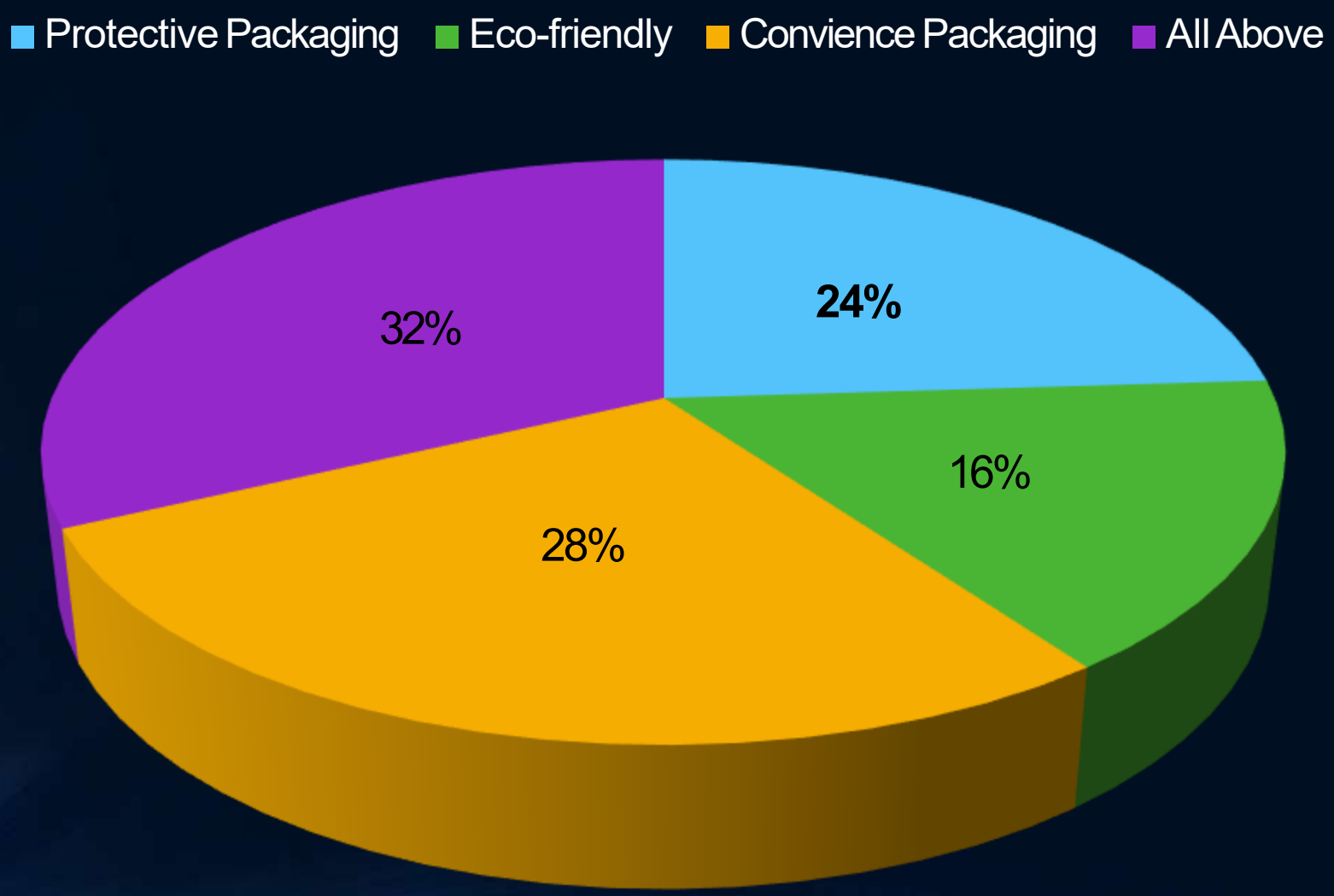
Protecting the product.

Packages protect a product during shipping, storage, and display, prevent tampering, and protect against spoilage and breakage

Consumer Priority Towards Packaging



Packing

- Packing refers to the external containers used for transportation
- durable enough

Packing list

Name and address of the consignor

Name and address of the consignee

Order or requisition number

Bill of lading number

Description of the material shipped

Factors Influencing Packing

Type of Product

- Large and heavy objects- Crates
- Powders like cement – Bags
- Liquids like acetic acid – Drums or Containers
- Small and heavy items – Wooden Crates
- Bulky materials like cotton - Bales

Marking

- Marking means to mark the address, number of packages etc. on the packets. It is essential for identification purpose and should provide information on exporters' mark, port of destination, and place of destination, order number and date, gross, net and tare weight and handling instructions.
- It should also be ensured that while putting marks, the law of buyer's country is duly compiled with.
- Marking can be included in stickers, labels, tags, or paint.
- Care should also be taken to ensure that the marking conforms to those written in the invoice, insurance certificate, bill of lading and other documents.

The application of numbers, letters, and labels, tags, symbols,.

- Identification purpose
- Destination ,Port of entry
- Including stickers, labels, tags, or paint.

Country of Origin

- Handling instructions including symbols
- NAFTA goods shall be marked in English, French or Spanish
- Non-NAFTA goods shall be marked in English or French

Country	Marking of origin
USA	Every article of foreign origin
China	Imported foods
Canada	Many categories of goods
Japan	Imported foods
Russia	All consumer goods

Labeling

A label is an information tag , wrapper, seal or imprinted message attached to a product. A label's main function is to inform about the contents and give directions. Information about product use, care other features. Protects businesses from legal liability if someone if injured while using the product. It contain a brand name, logo, ingredients, special promotional messages, and other useful information. Many package labels must meet local, state, and federal standards to prevent manufacturers from misleading consumers. all kinds of sign and symbols and should also maintain all the nationally and internationally standers while using these symbols. Labeling should be in English, and words indicating country of origin should be as large and as prominent as any other English wording on the package or label.

A label is an information tag, wrapper, seal or imprinted message attached to product

- Content and give direction
- Product use

Types of Labeling

Brand label

- trademark or logo

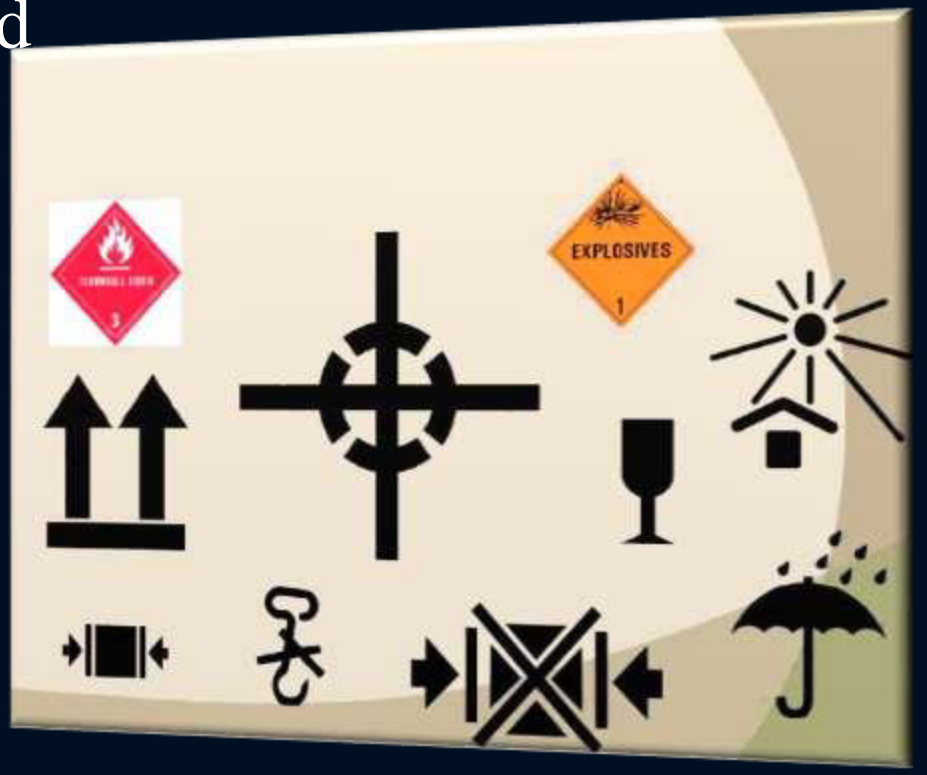
Descriptive Label

- product use
- construction
- care
- performance,

Grade Label

- the quality of a product

Symbols for package labeling are nationally and internationally standardized



Conclusion

- Packaging, packing, Marking & Labeling are important
- Packaging increases sales & improves
- The Federal Food and Drug Administration

The FDA administers the **Federal Nutrition Labeling and Education Act** passed in 1990, which protects consumers from deceptive labeling and establishes standards for use of terms and health warnings


Thank you!