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UNIT:PRINCIPLES OF PURCHASING AND SUPPLIES

# What Are Purchasing Records?

Purchasing records are documents and data that track all activities and transactions related to buying goods and services for a business.

They may include:

Purchase orders (POs) — official documents sent to suppliers to request goods/services.

Purchase requisitions — internal requests for purchasing approval.

Supplier quotations — price offers from vendors.

Goods received notes (GRNs) — confirmations of received items.

Invoices — bills sent by suppliers.

Payment records — proof of payments made.

Contracts/agreements — terms and conditions of supply.

Vendor performance records — data on supplier reliability, quality, delivery times.

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## ✓ Uses of Purchasing Records

### 1 Budget Control & Cost Management

Compare planned vs. actual spending.

Identify cost-saving opportunities.

2 Inventory Management

Track incoming stock.

Help avoid overstocking or stockouts.

3 Supplier Management

Evaluate supplier performance over time.

Resolve disputes about deliveries, prices, or quality.

4 Audit & Compliance

Provide proof of transactions for internal/external audits.

Ensure compliance with company policies and legal requirements.

5 Forecasting & Planning

Analyze trends in purchasing to plan future needs.

Support negotiation for better deals based on historical volumes.

6 Internal Controls & Fraud Prevention

Maintain accountability by matching POs, invoices, and receipts.

Prevent unauthorized purchases.

7 Reporting & Decision-Making

Support management with data for strategic sourcing.

Monitor supplier diversity, sustainability goals, etc.

## What Is Warehousing?

Warehousing is the process of storing goods and materials in a designated space (warehouse) until they are needed for production, distribution, or sale.

A warehouse is a building or facility where inventory is received, stored, protected, and managed.

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## Main Functions of Warehousing

### 1 Storage

Hold raw materials, work-in-progress (WIP), and finished goods until needed.

### 2 Protection of Goods

Keep goods safe from damage, theft, weather, or spoilage.

### 3 Inventory Management

Track stock levels, movements, and conditions.

### 4 Order Fulfillment

Pick, pack, and dispatch goods to customers or production lines.

5 Value-Added Services

Activities like labeling, repacking, kitting, quality inspections, or light assembly.

6 Transportation Coordination

Serve as hubs for consolidating and distributing shipments.

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✅ Uses & Importance of Warehousing

Balances Supply & Demand — stores surplus goods for future use.

Ensures Continuous Production — keeps raw materials ready.

Helps Bulk Purchasing — companies can buy in large quantities and store safely.

Improves Customer Service — quick and accurate order fulfillment.

Stabilizes Prices — by storing excess supply until demand rises.

Supports Seasonal Products — stores goods made year-round but sold seasonally (e.g., holiday items, farm harvests).

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Types of Warehouses

1 Private Warehouses — owned and operated by manufacturers or retailers.
2 Public Warehouses — rented by companies that don't own storage facilities.

3 Bonded Warehouses — stores imported goods until customs duties are paid.
4 Distribution Centers — modern warehouses designed for fast-moving goods and frequent shipments.
5 Cold Storage Warehouses — for perishable items (food, medicine).

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Key Activities in Warehousing

Receiving and inspecting goods.

Storing items in suitable locations.

Keeping accurate records (stock control).

Picking and packing orders.

Shipping goods to customers or other facilities.

Managing warehouse safety and efficiency.

Key Factors Affecting Warehouse Selection

1 Location

Proximity to suppliers: Reduces inbound transportation costs.

Proximity to customers/markets: Enables faster delivery and better service.

Access to transportation modes: Near highways, railways, ports, or airports for smooth shipping.

Availability of labor: Skilled and affordable workforce for warehouse operations.

Infrastructure: Good roads, utilities, and communication networks.

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## 2 Cost Factors

Land or rental costs: Affordable property cost in the desired area.

Taxes and duties: Local tax rates, customs duties (for bonded warehouses).

Operational costs: Utilities, labor costs, security, and maintenance expenses.

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## 3 Size and Layout

Adequate storage capacity for current and future needs.

Proper design for efficient material handling, loading docks, and expansion.

Ceiling height and floor load capacity for racking systems.

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## 4 Nature of Goods Stored

Special requirements for perishable, hazardous, or fragile goods (e.g., cold storage, bonded warehousing).

Climate control and safety features.

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## 5 Technology and Equipment

Availability of modern warehouse management systems (WMS).

Automation, robotics, or special material handling equipment.

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## 6 Security and Safety

Fire safety, surveillance systems, and secure fencing.

Compliance with health, safety, and environmental regulations.

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## 7 Flexibility and Scalability

Ability to expand operations if needed.

Flexible lease terms or space-sharing options for seasonal demand.

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## 8 Government Policies and Regulations

Local zoning laws.

Environmental restrictions.

Incentives or subsidies for setting up warehouses in certain regions.

What Is Transportation?

Transportation is the movement of goods and materials from one place to another in the supply chain — from suppliers to factories, warehouses, distributors, retailers, or final customers.

It's a critical logistics function because it connects all other supply chain activities.

1 Road Transportation

What it is:
Movement of goods by trucks, vans, or other road vehicles.

Advantages:

Door-to-door delivery.

Flexible routes and schedules.

Suitable for short to medium distances.

Good for small loads and frequent deliveries.

Disadvantages:

Affected by traffic, road conditions, and weather.

Higher cost per unit for large volumes over long distances compared to rail or sea.

Less eco-friendly (carbon emissions).

Examples:
Parcel delivery trucks, container trucks for domestic freight.

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## 2 Rail Transportation

What it is:
Goods transported by trains over rail networks.

Advantages:

Economical for large, bulky, or heavy goods.

Reliable schedules, not affected by road traffic.

More fuel-efficient and eco-friendly than road for bulk freight.

Disadvantages:

Limited to areas with rail infrastructure.

Requires other modes for last-mile delivery (often road).

Less flexible routes and schedules than road.

Examples:
Coal, minerals, grain, cars, and containers over long distances inland.

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## 3 Air Transportation

What it is:
Shipment of goods by aircraft.

Advantages:

Fastest mode — ideal for urgent, high-value, or perishable goods.

Can reach remote or landlocked areas.

Disadvantages:

Expensive — high freight charges.

Limited capacity and weight restrictions.

Requires good airports and security handling.

Often needs road transport at origin/destination.

Examples:
Pharmaceuticals, electronics, express parcels, fresh flowers.

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4 Water (Sea) Transportation

What it is:
Shipping goods by ships or barges over oceans, seas, or inland waterways.

Advantages:

Lowest cost per unit for large, heavy shipments.

Suitable for international trade and bulk cargo.

Can carry oversized or hazardous goods.

Disadvantages:

Slow — long transit times.

Weather and port congestion can cause delays.

Limited to ports — needs road/rail for inland transport.

Examples:
Crude oil, containers, vehicles, agricultural commodities, minerals.

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5 Pipeline Transportation

What it is:
Transportation of liquids, gases, or slurries through pipelines.

Advantages:

Very efficient for continuous flow of large volumes.

Low operating cost once installed.

Safe and reliable with low human handling.

Disadvantages:

High initial investment.

Limited to specific types of products (liquids, gases).

Inflexible — fixed routes only.

Examples:
Crude oil, natural gas, water, petroleum products, chemicals.

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Summary Table

| Mode | Best For | Cost | Speed | Flexibility | Example Cargo |
|---|---|---|---|---|---|
| Road | Small to medium, local/regional | Medium | Medium | High | FMCG goods, parcels |
| Rail | Bulk, heavy, inland | Low | Medium | Low | Coal, grain |
| Air | Urgent, high-value, perishable | High | High | Medium | Electronics, express parcels |
| Water | Large, heavy, global trade | Very Low | Low | Low | Containers, crude oil |
| Pipeline | Liquids/gases | Very Low | Continuous | Very Low | Oil, gas |

ood question — here's a clear breakdown of the key factors to consider when choosing a mode of transportation for goods:

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✅ Factors to Consider

1 Nature of Goods

Type of product: Is it perishable, fragile, hazardous, bulky, or high-value?

Perishables → Air or refrigerated trucks.

Bulk (coal, minerals) → Rail or sea.

Liquid/gas → Pipelines.

Size and weight: Large or heavy cargo is more cost-effective by rail or ship.

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2 Cost

Transport cost per unit: Total cost should align with the value of goods.

Budget constraints: Low-value items can't absorb expensive shipping.

Total landed cost: Includes freight, handling, insurance, duties.

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3 Distance & Route

Short distances → Road is flexible and practical.

Long distances (inland) → Rail.

International, intercontinental → Sea or air.

Availability of direct routes or transshipment points.

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4 Speed / Urgency

How fast must the goods reach the destination?

Urgent → Air.

Non-urgent bulk → Sea or rail.

Just-In-Time operations → Fast and reliable modes.

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5 Reliability

Consistency of delivery schedules.

Dependability during bad weather, strikes, or port congestion.

Carrier's reputation and track record.

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6 Flexibility

Can routes or schedules be adjusted if needed?

Door-to-door delivery capability (road is best for last mile).

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7 Security & Safety

Risk of theft or damage in transit.

Special handling needs (temperature control, fragile handling).

Insurance coverage options.

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8 Accessibility & Infrastructure

Availability of roads, rail terminals, ports, airports, or pipelines.

Ease of loading/unloading facilities.

Local transport laws and regulations.

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9 Environmental Impact

Company sustainability goals — prefer greener modes.

$CO_2$ emissions of mode (rail and sea usually greener than air and trucks).

Compliance with environmental regulations.

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1 0 Regulatory & Legal Constraints

Customs requirements for international shipping.

Restrictions on hazardous goods by air or road.

Permits, taxes, or road tolls.

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Example

Exporting fresh flowers from Kenya to Europe?

Fast, perishable → Air freight is best despite high cost.
Shipping crude oil from the Middle East to Asia?

Huge volume, non-urgent → Tanker ships or pipelines.
Delivering groceries within a city?

Flexible, small lots → Refrigerated trucks.

What is Containerization?

Containerization is the system of transporting goods using large, standardized, sealed containers (usually metal boxes) that can be easily transferred between ships, trucks, and trains without unloading the cargo inside.

The container itself acts as a secure, modular unit of cargo.

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✅ Key Features

Standard sizes: Most commonly 20-foot or 40-foot long (TEU: Twenty-foot Equivalent Unit).

Intermodal: Same container is used across multiple modes (sea, rail, road) — no need to handle the cargo itself during mode changes.

Sealed & secure: Protects cargo from damage, theft, or weather.

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Why is Containerization Important?

1 Efficiency: Speeds up loading and unloading at ports and terminals.
2 Cost savings: Reduces labor costs and handling time.
3 Cargo safety: Minimizes damage and pilferage during transit.
4 Global trade enabler: Makes international shipping simpler and more economical.
5 Standardization: Allows use of specialized equipment (cranes, container ships, container trucks).

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Example

A manufacturer in China packs electronics into a 40-foot container → the container is loaded onto a container ship → on arrival at a US port, the same container is placed on a rail wagon or truck → it reaches the warehouse without repacking.

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Common Container Types

Dry containers: Standard for most cargo.

Refrigerated (reefer) containers: For perishables like food or medicine.

Tank containers: For liquids.

Open-top or flat-rack containers: For oversized or heavy cargo.

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Simple Definition

Containerization = using standard metal boxes to move goods easily across ships, trucks, and trains — without unpacking in between.

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If you'd like, I can also explain:
✓ How containerization transformed global trade (the "container revolution").
✓ Different container sizes and codes.
✓ Advantages and limitations.

Would you like that?