



P01

The Warehouse Story

E215 – Warehousing and Storage

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Learning Objective



- Identify and explain the different strategies and types of warehouse
- List the roles and services commonly offered by 3PL
- Understand the warehousing trend and challenges in Singapore.
- Appreciate the warehouse schemes and initiatives offered by the Singapore government

What is a Warehouse



- A Warehouse is any location where goods are stored on their journey through the Supply Chain



Why are Warehouses needed?



- Balancing customers' requirements/demands with the production output.
- Act as necessary storage at key points.
- Value-adding activities such as labelling, sorting, assembling with low costs.
- Distance between manufacturer and end customer

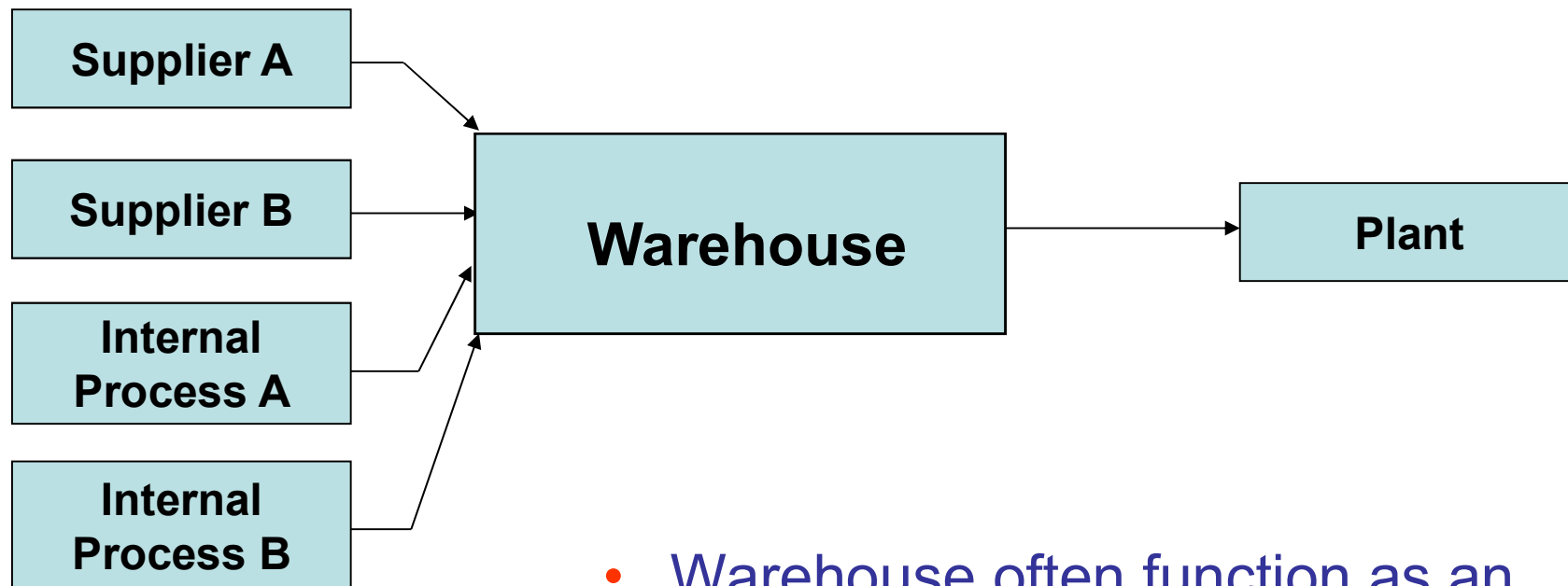
Allows the right product to be delivered to the right place, at the right time, to the right person, at the right price, at the right quantity, at the right condition.



Types of Supporting Functions of Warehouse



- Manufacturing support warehouse

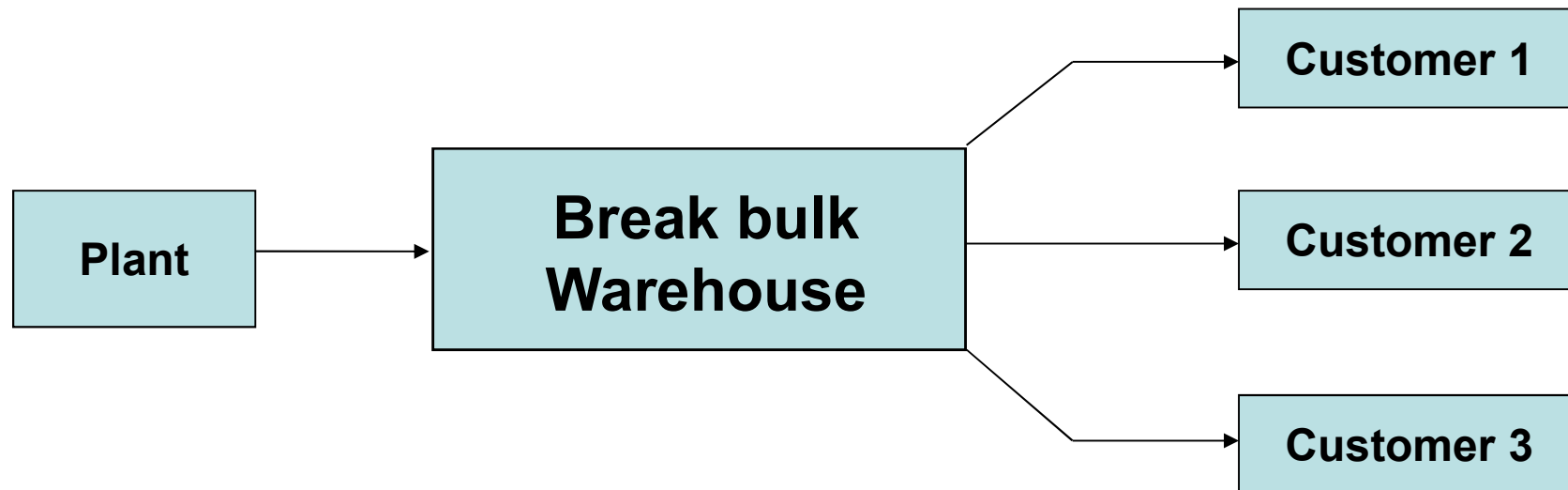


- Warehouse often function as an inbound consolidation points.

Types of Supporting Functions of Warehouse



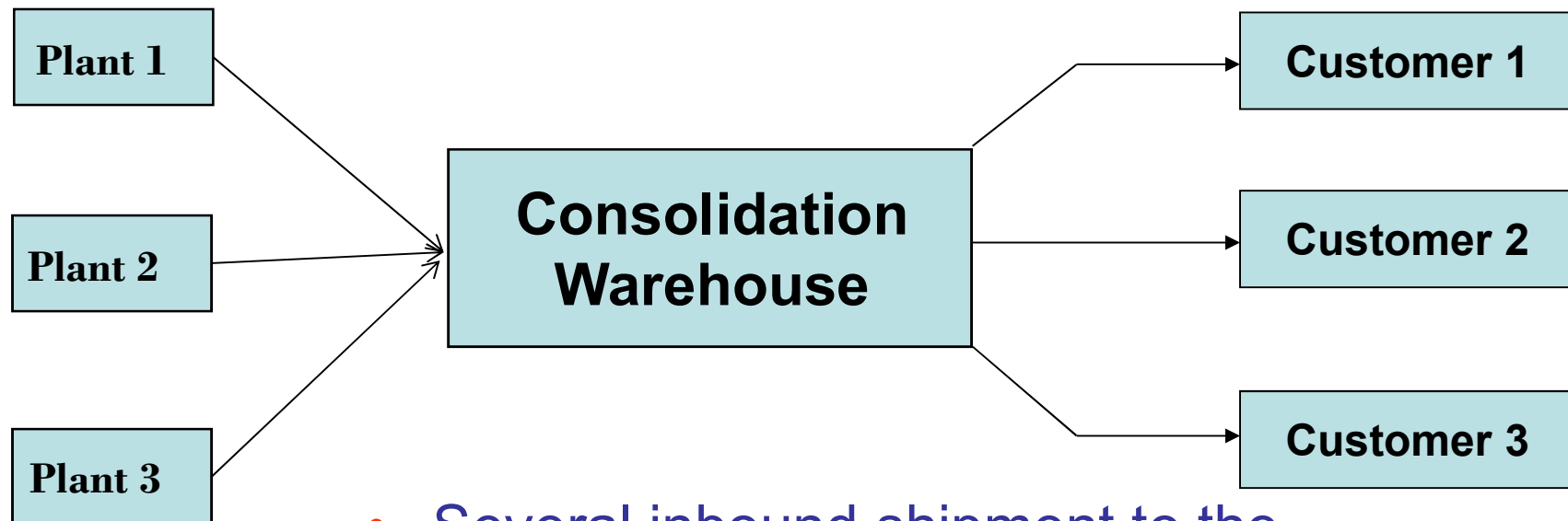
- Break-bulk warehouse



- Several customer orders are combined into a single shipment from the plant to the break-bulk warehouse.
- There, the shipment is then subdivided or broken down into smaller shipments for customers in that area.

Types of Supporting Functions of Warehouse

- Consolidation warehouse



- Several inbound shipment to the warehouse
- These shipments are then consolidated to a single shipment to a customer.
- This is a typical 3PL setting.

Types of Supporting Functions of Warehouse



- **Cross-dock centres:**

- Arrival of material at warehouse is co-ordinated with departures to customers
- Goods are usually stored temporary. And transferred within 24 hours from receiving to shipping



- **Distribution Centre (DC)**

- Foundation of retailing network.
- Products received from suppliers in large quantities and delivered in small quantities to retailers or wholesalers.
- Supports retailers by quick replenishment



Types of Supporting Functions of Warehouse

- **Reverse logistics warehouse**
 - Focus on handling material flow from consumers back to the source.
 - Materials maybe recalled due to:
 - Design or production errors
 - Recycling
 - Product service



Special Types of Warehouse



- **Climate-controlled warehouse**
 - Store products that need special storage and handling conditions, in terms of temperature and humidity.
 - There are generally 2 types:

1. Refrigerated warehouse:

- Store perishable goods and other materials that require refrigeration.
- Chilled and freezer facilities are used



Special Types of Warehouse



2. Controlled humidity warehouse:

- Store delicate products (e.g. pharmaceuticals and highly sensitive computer products e.g. wafer chips).
- Constructed with vapour barriers
- Utilized humidity control equipment to maintain humidity at desired level



Special Types of Warehouse



- **Chemical warehouse**
 - Store chemical-related products (hazardous or non-hazardous)
 - Safety is a top priority
 - License from government is required to store hazardous materials



Warehousing Strategies



- **Generally, there are 3 warehousing strategies:**
 - **Public Warehouse**
 - **Private Warehouse**
 - **Contract Warehouse**



Public Warehouse



- **Maximum inventory location flexibility**
- **Lower variable**
 - **Economies of scale due to other users of the warehouse**
 - **Higher productivity**
- **Short-term commitment**
 - **Customers can come in or leave anytime**
- **Professional operation**
 - **By the warehouse operator**
- **Fewer risks and liabilities**
- **Allows organisation to concentrate on core operation**

Public Warehouse



- Service offered by the operators are limited & standardized and controlled.
- Fees
 - Based on storage space, volume, weight
 - Duration of storage
 - Types of service rendered



Private Warehouse



- **Full Control and Visibility**
 - **Responsiveness**
 - **Flexibility**
 - **Allows integration to other logistics activities**
- **Need to invest in facility**
- **Need to manage facility**
 - **All operations under the company**
 - **Running cost may be higher than using public warehouse (but can be more economical in the long run)**
- **Undertake all risks and liabilities**

Contract Warehouse



- **Combines the best of Public and Private warehouse**
- **Ideal for companies that desire specialized services**
- **Long Term relationship**
 - **May result in cheaper cost and better service as compared to public warehouse.**
- **Assume negotiated risks and liabilities**

Contract Warehouse



- **Contract warehouse operators can also offer many services:**
 - **Transportation**
 - **Inventory control**
 - **Order processing**
 - **Customer service**
 - **Reverse Logistics**

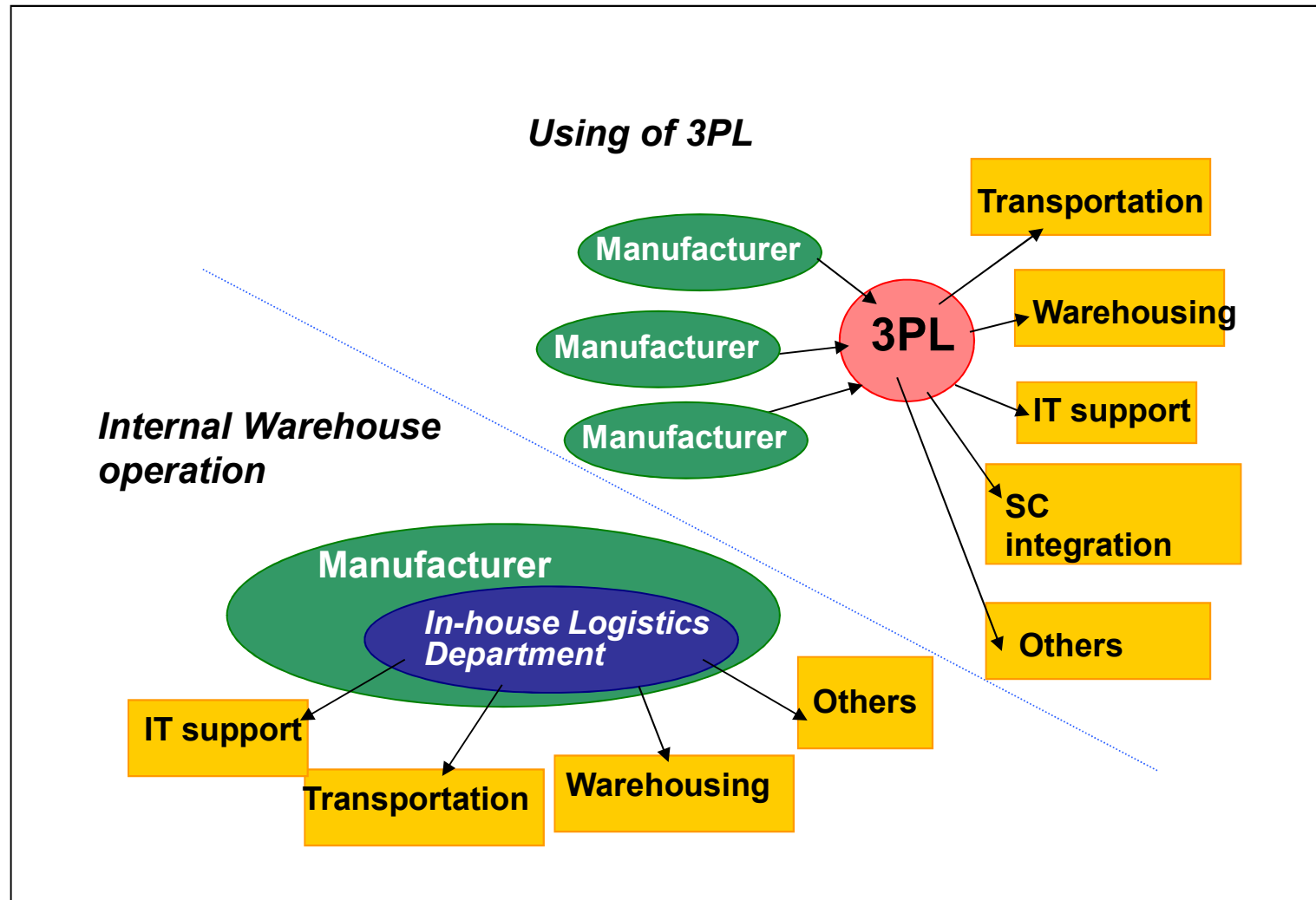
3rd Party Logistics (3PL)



- **Definition**
 - **Warehousing service provided by a party other than that of the first party (the manufacturer and seller) or the second party (the purchaser and receiver). The third party (the party not involved in the direct transaction), provides a service, namely warehousing, that unites the two other parties**

(Warehouse Management Handbook, Tompkins, J. A. & Smith, J. D)

3rd Party Logistics (3PL)



3rd Party Logistics (3PL)



- Some characteristics of 3PL
 - Performs outsourced activities
 - Provides customized services
 - Provides value added services
 - Mutual benefit and risk-sharing
 - Long-term relationship



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3rd Party Logistics (3PL)



- **Advantages of using 3PL**
 - The company can focus on core competency
 - Less overhead cost
 - No need to increase asset
 - Can tap on 3PL expertise and latest technology
 - Flexibility
- **Disadvantages of using 3PL**
 - Loss of control over certain process
 - Impact on current in-house workers
 - Need to share sensitive information

Warehousing in Singapore



Singapore started with “godowns” along the Singapore River. Today there are 4 main areas that warehouses are located in Singapore:

- **Jurong Area**
 - Mainly to support manufacturing in that area
- **Toh Guan/Clementi Hub**
 - High Tech warehouse, initiated by the government



Warehousing in Singapore



- **Changi South Warehousing belt**
 - Foreign players, global freight forwarders, 3PLs
 - They have brought in technologies and systems that changed the local warehouse scene
- **Airport Logistics Park of Singapore (ALPS)**
 - Next to air freight center and Free Trade Zone
 - Warehouses there support regional and even global operations



Warehousing in Singapore



Challenges

- **Small domestic markets and a relatively high cost of operations**
- **Increasing regional competition**
- **Manpower productivity**
- **Lack of adequate land space**



Singapore Government Initiatives



- Singapore Government has started many initiatives to strengthen its position as a leading logistics hub in the region.
- They initiated the following:
 - **Warehouse Retail Scheme by EDB**
 - Allows business to have cost savings by allowing other business function such as retail within the industries/warehouse development
 - Give rise to Giant, IKEA and Courts at Tampines



Singapore Government Initiatives



- **Emphasis on technology by Enterprise Singapore**
 - Capabilities Development Grant - Technology Innovation (CDG-TI) - technology consultancy services, expert help and funding support for local companies to invest in technology

[Watch Video](#)

- Innovation Centers to provide consultancies to the companies (e.g. Centre of Innovation for Supply Chain Management at Republic Polytechnic)
- **Warehouse Schemes**
 - Licensed Warehouse
 - Zero GST Warehouse
 - Specialised Warehouse Scheme

Warehouse Scheme in Singapore



- Licensed Warehouse: to store imported dutiable goods with Duty and GST suspended.
 - Tobacco
 - Liquor
 - Motor vehicles
 - Petroleum



Warehouse Scheme in Singapore



- Zero GST (ZG) Warehouse: Storage of imported non-dutiable goods with GST suspended

Features	Type I	Type II	Type III
At least 80% of the goods are to be re-exported	✓		
No requirement on re-exported goods		✓	✓
One ZG warehouse per license	✓	✓	
Able to move goods between warehouses under a single license (Multiple ZG)			✓

Warehouse Scheme in Singapore



- Specialized Warehouse Scheme
 - With effect 1st January 2012
 - Provides specialized storage facilities to overseas persons with at least 90% of the goods (e.g. fine art) stored eventually exported.
 - A warehouse with approved status under SWS is known as “Approved Specialized Warehouse”



Recommendations to Kevin



(The following are some feasible solutions for Kevin, there are some other options too)

- Immediate requirement
 - As the sales volume projected to be growing, he may consider to engage warehouse service provider to run the warehouse operation – Public Warehouse
- Set up Distribution Centre (DC) in 2019
 - Rent a warehouse space and operated by 3PL through contract warehouse.
- Long Term Solution
 - Emphasis on technology through Capabilities Development Grant - Technology Innovation (CDG-TI)

Learning Outcomes



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E215 Warehousing and Storage Topic Flow

