



# UNIT-2

## Types of Warehouses

### Learning Outcomes

**By the end of this unit the learner will be able to:**

- ✓ Discuss the different types of warehouses and their functions
- ✓ Determine which type of warehouse is most appropriate for any given business
- ✓ Evaluate the pros and cons of the different types of warehouses

## Unit 2

### Types of Warehouses

There are five basic classifications of warehouse, within which almost all facilities fall:

1. Private Warehouses
2. Public Warehouses
3. Government Warehouses
4. Bonded Warehouses
5. Co-operative Warehouses

**Private Warehouses** - These are the facilities that are owned and/or operated by the businesses using them, exclusively for their own use. They are constructed (or purchased/leased) in strategic locations, such as close to the owning company's factory, farm, business centre or retail outlet. A private warehouse can be built and arranged in any shape, size and specification to suit the needs of the company that owns it.

**Public Warehouses** - Also referred to as shared warehouses, a public warehouse is built (or purchased) by a third-party company, which then rents or leases the facility and its services to clients. Commonly used by manufacturers, wholesalers, exporters, importers and so on, public warehouses may be made available by way of a long-term contract, or a month-by-month 'rolling' contract. Public warehouse services typically combine the physical space to store goods with additional services, such as delivery handling, movement of materials, insurance and so on.

**Government Warehouses** - A government warehouse is a public service facility that's made available exclusively to public service offices and organisations. In the UK, for example, some facilities are used by the NHS to store essential supplies. They are operated strictly on a non-profit basis and are not open to business customers or everyday members of the public.

**Bonded Warehouses** - Bonded warehouses are heavily-controlled storage facilities that fall under the watch of customs officials. They are used to store goods that have entered a country via imports, though have not yet been cleared for entry due to pending import duty/tax payments or other issues. Essentially, bonded warehouses allow goods and materials to enter the country, without *officially* entering the country in a legal/market capacity.

**Co-operative Warehouses** - These warehouses are owned, managed and controlled by co-operative societies. They provide warehousing facilities at the most economical rates to the members of their society.

### Private and public warehousing

When a warehouse is owned (or leased) by the company using it and isn't open to other businesses and users, this is known as a private warehouse. A private warehouse can also be owned by a third-party and made available exclusively for the use of one specific client. Where multiple parties are able to use the same facility for their needs, this is classified as public warehousing. This is true even if the warehouse is available strictly for business use, as opposed to being open to the general public.

Whether choosing to go with public or private warehousing, there are various factors that must be considered to assess the potential costs for the business:

1. The costs of raising the capital needed to buy or lease the facility
2. The costs of raising the capital for supplementary equipment
3. All short and long-term maintenance and repair costs
4. Potential depreciation of equipment and the building
5. Adequate insurance to cover the facility and its contents
6. Fixed costs by way of price by square metre
7. Variable costs by way of price per unit handled
8. Manpower/admin costs in the case of public warehousing
9. Taxation/legal costs when buying a private warehouse
10. Ongoing utility (gas, electricity, waters etc.) and consumable costs

Establishing which of the two options (private or public) is most suitable means considering the advantages and disadvantages of both. These must be assessed in accordance with the requirements, the objectives, the priorities and the budget of the organisation in question. Private and public warehouses can both be advantageous in their own unique ways, but nonetheless bring certain issues and drawbacks into the equation. The most important of which we will now be examining in more detail.

### **Private warehousing**

Building, managing and maintaining a private warehouse can be very expensive. It's therefore important to carefully consider and evaluate all associated costs, before choosing the private option.

#### **Examples of which include:**

1. Initial expenses by way of land acquisition and the construction/purchase of the facility
2. Surveys, valuations and associated legal costs when purchasing land or warehouse facilities
3. Secondary expenses to cover the costs of essential warehousing equipment, such as storage racks, pallet trucks, forklifts, the construction of mezzanine floors and so on
4. The need to cover staffing costs during periods of peak activity, including additional pay for overnight workers, bank holiday workers and anyone working overtime
5. Premium payments for more senior and experienced warehouse operatives and managers
6. Periodic and unpredictable expenses to cover the costs of urgent repairs and equipment replacements
7. Setting up offices and administrative areas within the warehouse, while also paying for the required manpower
8. General ongoing maintenance costs and utility bills, ensuring all electrical installations, plumbing systems and so on are safe and operational
9. Acquiring the necessary insurance to cover both the facility and its contents
10. The costs of recruiting qualified and capable workers to run the warehouse

### **Public warehousing**

It can therefore be argued that private warehousing is typically only suitable for larger organisations

with more extensive requirements and more working capital to work with. In all other cases, it may be preferable to choose a more affordable public warehousing option. Public warehousing operates on more of a 'pay as you go' basis, meaning it can be far more affordable for smaller businesses with fewer goods to store and move. Nevertheless, larger organisations with extensive requirements could end up spending more by using a public warehouse long-term.

## Advantages of public warehousing

**Some of the advantages of public warehousing include:**

1. Considerably fewer initial expenses, as the facility and its equipment already exist
2. Most public warehouses are strategically positioned and readily available
3. There is often no need to enter into a binding contract, which provides the client with greater flexibility
4. Customer service levels can be boosted at a lower price by using a public warehouse
5. A typical public warehouse will already have a complete contingency of manpower, eliminating the requirement to hire operatives
6. Working with a public warehousing service means gaining access to the experience and expertise of its workforce
7. Public warehousing costs are far more consistent and predictable, as the business does not have to worry about repairs, maintenance, equipment replacement and so on
8. A certain amount of insurance will automatically be provided by the public warehousing service provider
9. Scalability is also worth considering - public warehousing services can be expanded, modified or scaled-down at any time, as and when the business requires
10. There is no significant initial outlay to worry about, which may otherwise prove problematic for smaller and newer businesses
11. The manpower needed to cope with seasonal shifts in demand and unexpected fluctuations is already available
12. A public warehouse may benefit from the kind of cutting-edge material storage and movement systems that the client would otherwise be unable to afford

### Disadvantages of public warehousing

1. Public warehouses are shared, therefore you will not be guaranteed the undivided priority and attention of the service provider
2. Your business will always be at the mercy of the public warehousing company, meaning *their* problems (operational, financial, legal and so on) become *your* problems
3. Large-scale users may find public warehousing an expensive option long-term
4. The specialised services you need or want may not always be available
5. Many businesses prefer to take more direct control over their materials and their storage/handling.

## Advantages of private warehousing

The advantages of private warehousing include:

1. With private warehousing, the company takes complete control and ownership of its warehousing operations and overseas materials handling. This can be useful from a quality control perspective
2. Private warehouses are run by operatives who work for the organization itself, who are inherently more likely to work efficiently and consistently for the benefit of their employer

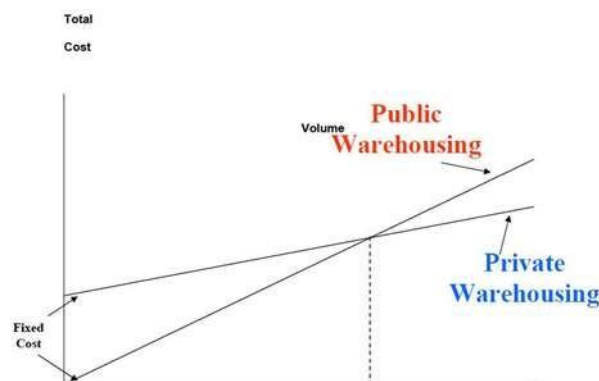
3. There are instances where no suitable public warehouse is available in a location suitable for the client. In which case, private warehousing may be the only viable option
4. To set up a private warehouse from scratch is to have every aspect of its layout and design tailored to meet the exact requirements of the organization
5. Following the initial costs of setting up a private warehouse, ongoing operational costs can be comparatively low
6. Businesses with private warehouses have the option to expand or modify their facilities at any time, which is out of the question with a public warehouse

### Disadvantages of private warehousing

1. Raising the capital required to build or purchase a private warehouse
2. Adapting a private warehouse to meet the changing requirements of the business can be complex and costly
3. All potential repair and maintenance costs fall directly with the owner of the warehouse
4. The organization needs to recruit, train, deploy, supervise and pay its own contingency of warehousing operatives
5. Private warehousing removes the potential benefits of gaining access to third-party advice, support and expertise, which can be an advantage of public warehousing.

The graph below provides a basic overview of the impact of fixed costs in relation to the volume of goods handled in both private and public warehouses. As can be seen, the greater the number of goods handled, the more cost effective it becomes to run a private warehouse.

As such, this is one of the most important considerations to factor in, when determining whether to go with a private warehouse or a public warehousing solution.



There are some instances in which organizations use both public and private warehouses at the same time. In addition, it's also worth remembering that private warehousing doesn't have to mean purchasing a warehouse outright, or building a facility from scratch. It is also possible to lease a facility to be used as a private warehouse, which may be offered as an empty space or with a contingency of equipment to work with (partial or complete) included in the price.

When working with public warehousing services, your materials and goods are entirely at the mercy of the operatives of the warehouse in question. The warehousing service you work with will be responsible for overseeing the welfare of the items you entrust to their facility. In some instances,

the fact that the public warehouse operative has no direct connection to or investment in the goods being handled can lead to substandard performance and poor handling practices. As a result, it is essential to be as proactive and strategic as possible, when selecting a public warehousing service.

If you choose to go with a public warehouse, use independent reviews, recommendations and business case studies to guide your decision. Choosing at random is always inadvisable.

### **Location of warehouses**

One of the biggest challenges when setting up a warehouse is deciding on its location. Unfortunately, it's impossible for any organization to position itself equidistantly between *all* of its clients and customers. The location of a warehouse or distribution facility will have a marked impact on speed, efficiency and cost-effectiveness for your business.

Some key issues to be considered when selecting a warehouse location include:

1. Proximity to the production facility
2. Proximity to the end customer
3. Access to major transport links
4. The requirement to set up multiple facilities
5. The long-term viability of the location

Above all else, it's essential to consider how the proposed location will deliver a strong long-term return on the initial (and ongoing) investment. In some instances, positioning facilities in close proximity to raw materials and manufacturing facilities is preferable. In others, nothing matters more than ensuring that facility is as close as possible to the end customer.

The most effective option may be to set up multiple facilities in several locations, but this isn't always an option for businesses with lower outputs and restricted funds. However, the costs of operating from multiple locations can be reduced significantly by working with several public warehousing companies, rather than buying multiple facilities.

There are three primary costs to consider when assessing the suitability of a location for a prospective warehouse, public or private:

- The cost of transporting all inputs required from their respective sources
- The cost of transporting outputs to the markets at the various locations
- The cost of providing the warehousing facilities that has been or is to be acquired

All three of these costs need to be taken into account, combined and analysed as one complete cost for the business. The idea being that you work out the location with the lowest total combined cost, which will inevitably mean certain trade-offs. You may wish to position yourself as closely as possible to the end customer, but it could work out significantly more cost effective to locate your warehouse closer to the source of the raw materials you work with.

Where a warehousing facility stocks finished goods ready to ship to the customer, locations in close proximity to major motorways, railway lines, airports and so on may be preferable. In all instances,

however, it's important to consider future requirements and objectives, as well as today's.

Make no mistake about it - establishing the most cost-effective location for a warehouse isn't an easy job. Many businesses use advanced computer software and complex algorithms to help evaluate the available options.

Other key considerations when evaluating the location for a warehouse include:

1. Access to major transport links, such as motorways, airports and rail links
2. The area/market you will be serving and how much it will cost to ship items to this area
3. Availability of primary utilities (water, electricity, gas etc.) and their costs
4. Presence of competing businesses already operating in the same area
5. Availability of suitable labour/manpower and associated recruitment costs
6. The general economic and industrial climate in the proposed area
7. Potential restrictions on the development and operation of commercial facilities
8. Land values, property values, taxation and associated real estate costs
9. The potential for future expansion or diversification
10. Likelihood of depreciation of the facility's value if sold at a later date

### Characteristics of an Ideal Warehouse:

1. Again, ensuring the warehouse has quick and easy links to major motorways, railway stations, airports and so on cannot be overstated
2. No warehouse should provide *just* enough room to store the required goods. There should always be additional space available to accommodate the shifting needs of the business
3. The facility should have (or be able to accommodate) all of the equipment and general handling machinery the business needs
4. Special requirements should be taken into consideration, which may include cold storage, protecting fragile goods, storing dangerous items and so on
5. The physical properties of the warehouse should provide robust protection from both intruders and adverse weather conditions
6. Accessibility should also be taken into account, both for the benefit of warehouse operatives and the delivery trucks that will ship your merchandise
7. Adequate measures must be in place to automatically deal with fires (sprinkler systems, automated alarms etc.) and unauthorized access
8. The warehouse should be a safe and comfortable place for operatives to work in - a safe and content workforce is a high-performance workforce

### Qualitative factor rating method of comparison

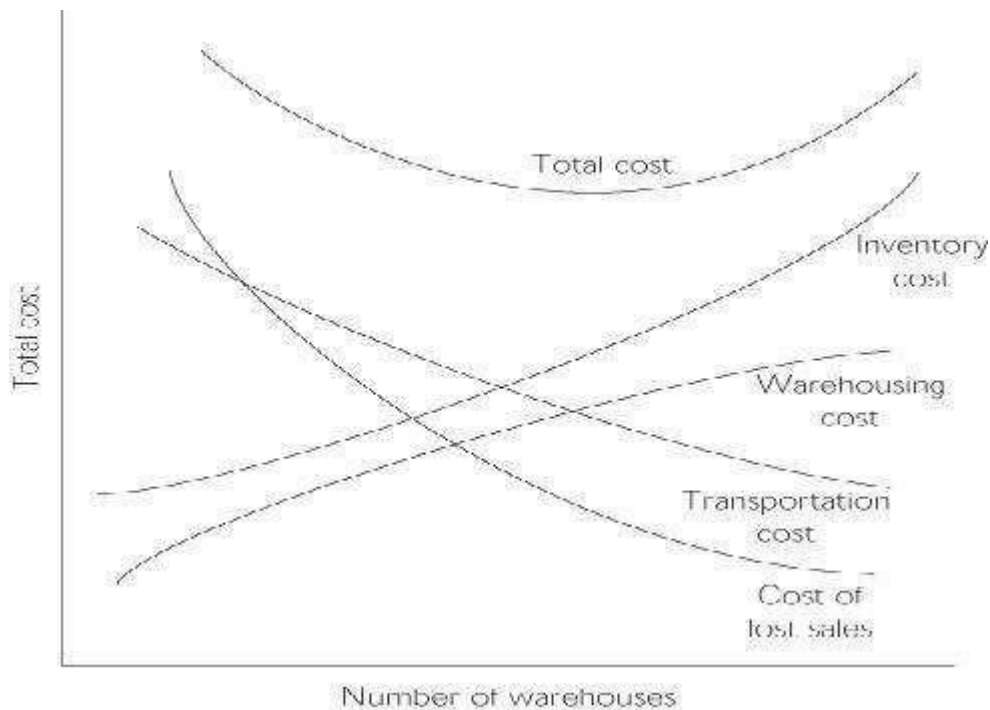
One option for assessing the viability and cost effectiveness of a warehousing location is to use the qualitative factor rating method. This is actually simpler than it sounds, involving the allocation of a score to each important factor being considered. After which, it's simply a case of seeing which prospective location has the highest score, which will most likely turn out to be the most suitable location for the warehouse.

**Procedure for qualitative factor rating:**

1. Develop a list of relevant factors.
2. Assign a weight to each factor to indicate its relative importance (weights may total 10)
3. Assign a common scale to each factor (ex 0-100 points) and designate any minimum.
4. Score each potential location according to the designated scale, and multiply the scores by the weights.
5. Total the points for each location, and choose the location with the maximum points.

### Multiple warehouses

Where establishing multiple warehouses is an option, it's important to consider the extent to which various costs can be affected by doing so. Some ongoing costs (such as transportation) can be reduced by using multiple warehouses, whereas overall warehousing costs may increase:



Important factors to consider where multiple warehouses are concerned include:

- Inventory costs
- Warehousing costs
- Transportation costs
- Cost of lost sales
- Maintenance of customer service levels
- Service small quantity buyers

**Further Reading:**

- ✓ *Warehousing by Michael G. Kay April 23, 2015*
- ✓ *Warehouse Layout Optimization by Kyle T. Bentz*